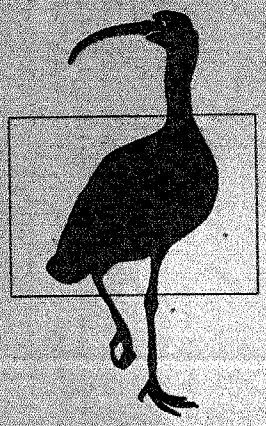

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL BIOLOGICAL SERVICE

BIOLOGICAL SCIENCE REPORT 5

A CRITICAL REVIEW OF THE AERIAL AND GROUND SURVEYS OF BREEDING WATERFOWL IN NORTH AMERICA

National Biological Service

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BIOLOGICAL SCIENCE REPORT 5
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A CRITICAL REVIEW OF THE AERIAL AND GROUND SURVEYS OF BREEDING WATERFOWL IN NORTH AMERICA

By

Graham W. Smith

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A Critical Review of the Aerial and Ground Surveys of Breeding Waterfowl in North America

by

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Abstract. The U.S. Fish and Wildlife Service and the Canadian Wildlife Service in cooperation with others have conducted an annual survey of breeding waterfowl throughout central Canada, the north-central United States, and Alaska since 1955. The area comprises more than 50 strata of habitats. Ducks are counted from aerial transects , and the counts are adjusted upward to account for birds that are not observed by aerial crews. These adjustments, called visibility correction factors, are developed from counts on the ground during which all waterfowl are assumed to have been detected. Counts on the ground are made of a subsample of the aerial survey. Visibility correction factors are calculated for each species and for each aerial crew. The total number of ducks by species and by strata is then calculated as the product of the observed density, the visibility correction factor, and the area of the strata. A problem arises if the aerial or ground crews count an insufficient number of individuals of some species on the visibility portion of the survey in a year. A minimal count is needed before the visibility correction factor can be reliably calculated. When insufficient birds are seen in a given year, the data from previous years must be used for the calculation of the visibility correction factor. Data from all strata that a particular aerial crew collected during the recent past should be summed to calculate visibility correction factors that meet precision criteria. A standardized procedure for using historical data, when needed, is presented. This new approach, coupled with recent changes of the survey and increased sampling effort, increased the precision of the population-size estimates of breeding waterfowl.

Key words: Duck abundance estimation, duck populations, visibility correction, ratio estimator, North America.

Each May, the Canadian Wildlife Service and the U.S. Fish and Wildlife Service in cooperation with other federal, state, and provincial resource-management agencies sample waterfowl in more than 3.6 million km^2 of breeding habitat in Canada and in the United States to estimate population sizes of various species of ducks. This survey of wildlife is probably the most extensive anywhere in the world. Population-size estimates from this survey are the most important information for the annual development of hunting regulations (Martin et al. 1979).

The first survey in 1947 was experimental. In 1955, the survey became operational. It is conducted in more than 50 habitat strata in the United States (Alaska, Montana, North and South Dakota) and in Canada (Alberta, Manitoba, the Northwest Territories, western Ontario, Saskatchewan, the Yukon Territory; Fig. 1; Table 1).

Initially, the survey was biased because it was not corrected for birds that were not observed from the air. Since 1959, ground crews have conducted an annual survey of a subsample of waterfowl on the aerial transects (Fig. 1). The surveyors identify and count all ducks in the subsample (*[1]Canadian Wildlife Service and U.S. Fish and Wildlife Service 1977) and are assumed to detect every bird and thus provide true censuses. These ground surveys became operational in 1961 and provide visibility correction factors (VCF) for species-specific surveys.

From 1955 to 1973, a complex scheme that accounted for unidentified birds was used to estimate duck populations (*Bowden 1973). In 1973, Bowden (*1973) suggested re-

[1] An asterisk denotes unpublished material.

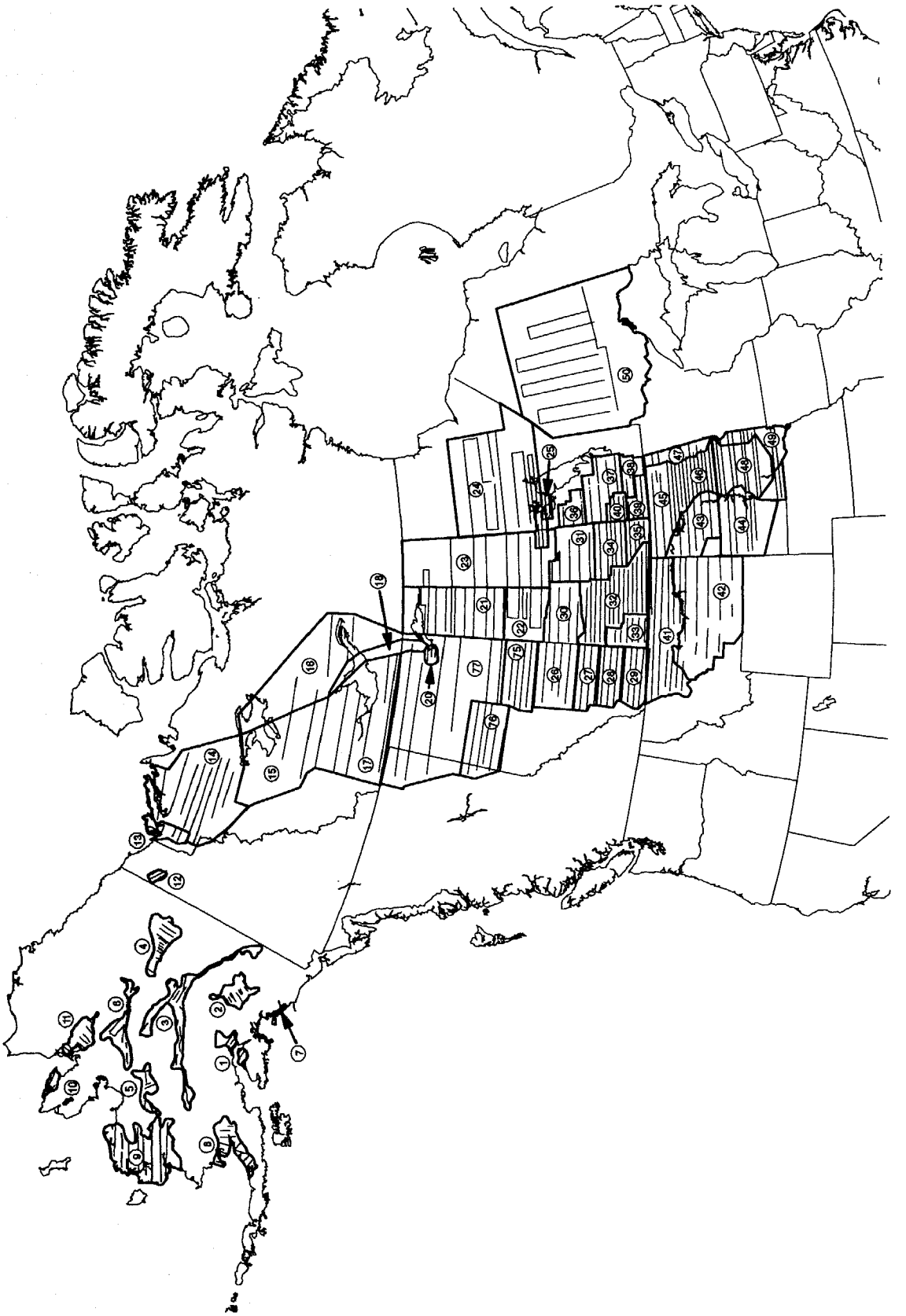

Fig. 1. Transects and strata for the survey of breeding ducks (Anatinae, Aythyinae) in North America.

Table 1. Strata for the survey of waterfowl in May: name of strata, AGCS (air-ground comparison segments), crew number, size of area, number of transects, and size of sample area.

Strata - name	AGCS	Crew	Area km^2	Number of transects	Sample area km^2
1 Kenai-Susitna	0	6	3540.5	6	64.0
2 Nelchina	0	6	6276.3	10	83.7
3 Tanana-Kuskokwin	0	6	14966.5	18	212.4
4 Yukon Flats	0	6	17380.4	12	128.7
5 Innoko River	0	6	5471.6	7	70.8
6 Koyukuk River	0	6	6598.1	10	128.7
7 Copper River Delta	0	6	643.7	7	32.2
8 Bristol Bay	0	6	15932.1	11	148.1
9 Yukon Delta	0	6	42807.4	8	418.4
10 Seward Peninsula	0	6	6195.8	4	45.1
11 Kotzebue	0	6	8609.8	7	77.2
12 Old Crow Flats	0	6	3170.3	3	57.9
13 McKenzie River Delta	0	7	7941.9	4	57.9
14 Northwest Territories Forest Tundra	0	7	127483.9	8	586.6
15 Nothwest Territories Forest Tundra	0	7	81208.5	2	175.4
16 Slave River Parklands	0	7	93051.3	4	152.1
17 Northwest Territories Closed Forest and Forest Tundra	0	7	111094.8	5	478.0
18 Northwest Territories Pre-Cambrian Edge	0	7	18881.9	3	43.5
20 Athabasca River Delta	0	7	2615.1	4	50.7
21 Northern Saskatchewan Mixed Forest	0	8	72293.0	11	463.5
22 Northern Saskatchewan Mixed Forest	0	8	32633.4	6	267.9
23 Northern Saskatchewan Pre-Cambrian Shield and Mixed Forest	0	8	109947.4	6	296.9
24 Manitoba Pre-Cambrian Shield, Muskeg, and Mixed Forest	0	8	134849.7	8	695.2
25 Saskatchewan River Delta	0	8	10969.0	7	21.7
26 Alberta Parklands	17	1	42562.8	6	405.5
27 Alberta Prairie	10	1	18867.4	3	231.7
28 Alberta Prairie	4	1	20743.9	3	210.0
29 Alberta Prairie	6	1	21299.1	4	275.2
30 Southern Saskatchewan Mixed Forest	6	2	29884.7	4	246.2
31 Southern Saskatchewan Mixed Forest	11	2	33933.7	5	231.7
32 Saskatchewan Prairie	19	2	61011.2	14	919.7
33 Cypress Hills	8	2	18257.5	6	144.8
34 Saskatchean Parklands	8	2	21184.8	5	282.4
35 Saskatchewan Parklands	7	2	14554.5	6	202.8
36 Manitoba Interlake Region	1	3	8851.2	3	94.1
37 Manitoba Interlake Region	6	3	26529.3	4	210.0
38 Manitoba Parklands	4	3	9100.6	3	86.9
39 Manitoba Parklands	8	3	10544.1	5	195.5
40 Manitoba Parklands	5	3	7299.8	4	108.6
41 Montana North River	5	5	52949.2	7	811.1
42 Montana South River	3	5	65587.0	7	586.6
43 North Dakota West River	4	5	31920.5	5	282.4
44 South Dakota West River	2	5	43932.3	5	347.6
45 Drift Prairie and Missouri Coteau (ND)	5	4	42847.6	7	499.7
46 Drift Praiire and Missourit Coteau (ND)	3	4	22913.2	8	434.5
47 Red River Valley (ND)	0	4	12586.3	6	72.4
48 Missouri Coteau, James River Valley, and Prairie Coteau (SD)	6	4	39567.9	9	506.9
49 South and Eastern South Dakota	3	4	25475.2	11	275.2
50 Western Ontario Mixed Forest	0	9	284216.9	5	977.7
75 North Alberta Parklands	5	1	31199.5	4	289.7
76 North Alberta Parklands	7	1	42619.1	5	354.9
77 North Alberta Closed Forest	0	7	187126.2	6	724.2

vising the statistical methods for correcting visibility biases. Beginning in 1974, the ratio estimator was used to calculate VCF. For consistency, estimates from 1955–73 were recalculated with the new analytical procedures.

The U.S. Fish and Wildlife Service contracted Bowden in 1984 to conduct a second review with a focus on visibility correction of the survey (*Bowden 1984). Here I present my evaluation of recommendations proposed by Bowden (*1984) to improve the survey and to consider related topics; my new procedure (in light of the recommendations and my evaluation) with current or recent data for developing annual VCF; my evaluation of the adequacy of the survey by species; my comparison of results of former and new methods; and my recommendations for additional improvements of survey methodology.

Survey Procedures

Field Methods

Survey methodology is discussed in *Standard Operating Procedures* (*Canadian Wildlife Service and U.S. Fish and Wildlife Service 1977, 1987) and is only briefly discussed here. The survey consists of 52 strata where each strata is an area with similar habitat and duck densities (Fig. 1; Table 1). In each stratum, transect lines—most of which parallel latitude lines—were systematically placed after a pseudorandom placement of the first transect; these lines serve as the samples for the aerial portion of the survey. For recording of data, transects consist of a series of 25.6-km segments in Alaska or 28.8-km segments elsewhere. Transects differ in length according to the geographical boundaries of the strata and are multiples of the segment lengths. The number of transects (varies from 2 to 18) and the spacing of transects differ by strata; the number of transects is greater and the transects are more closely spaced in areas with greater average duck densities (Fig. 1). In most instances, the transects extend from one side of a stratum to the other. Crew areas, the strata that each aerial crew flies, were geographically organized on the basis of similarity in habitat, equitable distribution of workload, and alignment with political boundaries. The nine crew areas were Alaska and Old Crow Flats, strata 1–12; Northwest Territories and northern Alberta, strata 13–18, 20, 77; northern Saskatchewan and northern Manitoba, strata 21–25; southern and central Alberta, strata 26–29, 75–76; southern Saskatchewan, strata 30–33; southeastern Saskatchewan and southern Manitoba, strata 34–40; western Dakotas and eastern Montana, strata 41–44; eastern Dakotas, strata 45–49; and western Ontario, stratum 50 (Table 1).

An aerial crew consists of the pilot and an observer; both crew members are biologists trained to count birds. Waterfowl on the transects are surveyed from the airplane traveling about 193 km/hr at a height of 30–50 m above the ground. All identified waterfowl within 200 m of each side of the aircraft are counted. The pilot is responsible for the left side and the observer for the right side of the transect. Observations are recorded into tape recorders and later transcribed into a computer; a software program was developed to do this. All waterfowl that are observed and identified within the transect boundaries are recorded. In addition, all identified waterfowl in flight over the transect are also recorded if they were associated with the transect (e.g., ducks suspected of flushing ahead of the aircraft). For all observed and identified species, the following groupings are recorded: (1) lone drakes—single drake without a visible, associated hen (lone hens are not recorded), (2) flocked drakes—two or more drakes in close association, (3) pair—male and female grouping, and (4) group—three or more of a mixed sex grouping in close association that cannot be separated into singles and pairs (a hen and 2 drakes are recorded as a pair, and a lone drake and 5 or more flocked drakes are recorded as groups). In addition to ducks, American coots are recorded, but only as the total observed number. The observers in prairie-parkland areas (strata 26–49 and 75–76) record water count data on their halves of the transect. The number of artificial water areas and the number of natural water areas are recorded separately. Temporary water, sheet water, small wet areas in fields, and wet depressions, which can be expected to persist less than 3 weeks, roadside or borrow ditches, and muskegs are not counted.

The survey is conducted in the prairie areas from approximately 1 May to 25 May and in boreal forest areas from approximately 12 May to 12 June. The survey begins in Alaska approximately on 18 May depending on the date of ice breakup in spring. To obtain the most representative sample of the breeding population for the greatest number of duck species, the survey does not begin until the majority of transient species migrate north and most late-arriving species are occupying breeding territories in the area. Several reconnaissance flights in each survey area are conducted to determine the appropriate time for beginning the operational survey. Survey times are from 1–2 h after sunrise to noon each day. Surveys are conducted when weather conditions permit; adverse wind, rain, fog, smoke, dust, and so on delay the survey.

In prairie-parkland portions of the survey areas, aerial and ground crews conduct surveys of certain air-ground comparison segments (AGCS). The purpose of these segments is to provide correction factors for waterfowl that are present but not observed by the aerial crew. The number of ground surveys differ by crew areas, and the individual segments serve as the samples for the visibility correction portion of the survey. The aerial crew conducts surveys in each AGCS in the same manner as on other operational transects. The ground crew of 2–4 persons conducts the

survey in the segment to obtain a complete count of all present waterfowl. The ground-crew members walk around or through all areas to the extent necessary to ensure sighting and identification of all waterfowl. Only waterfowl inside the segment boundaries are counted. The ground crew record the data in the same manner as the aerial crew, however, also record lone hens of redheads (*Aythya americana*), scaups (*Aythya* spp.), ring-necked ducks (*Aythya collaris*), and ruddy ducks (*Oxyura jamaicensis*). The ground crew counts all water areas in the same manner as the aerial crew except that all water areas inside the segment boundaries not only inside the half strip width are counted.

Potential problems of the ground surveys include the recognition of strip boundaries, the double-counting of flushed birds, and the inability of the ground crew to observe or identify all birds on the transect. The effects of these problems are minimized with the use of well trained crews, established AGCS, identification of all strip boundaries on aerial photographs, and specific operating guidelines.

Data Analysis

Population-size Estimation

The sampling scheme is a double-sampling plan with stratification. The estimator of the numbers of ducks of each species in each stratum is:

$$\hat{Y}_s = A\hat{B}\hat{R}$$

where S is stratum and A = area of the stratum; a constant measured without error. $\hat{B}$ = the number of ducks seen by the aerial crew divided by the area of the surveyed transects (i.e., the observed density). $\hat{R}$ = the VCF by species in the crew area (all strata over which a particular aerial crew surveys) in which the stratum occurs. The VCF for the survey of each species is not calculated on a per-stratum basis but on a per-crew-area basis because of sample size considerations. Too few AGCS are in each stratum to calculate a VCF by stratum. VCF are calculated only for strata in the north-central United States and for strata in the prairie-parkland portions of Alberta, Manitoba, and Saskatchewan (Strata 26–49, 75–76). No ground segments were established in Alaska and in the boreal-forest portions of Canada.

Bird counts per transect are calculated as

x_1 = (2 × drakes) + (2 × pairs) + groups, except of the redhead, scaup, ring-necked duck, and ruddy duck where x_1 = drakes + (2 × pairs) + groups.

Then,

$$\hat{B} = \bar{x}_1/\bar{m}$$

where $\bar{x}_1$ and $\bar{m}$ are respectively the mean counts and areas of the transects in the stratum (Martin et al. 1979).

Similarly, x_{2j} is the count on the aerial portion and y_j is the ground count of the jth AGCS. The combined ratio estimator (Cochran 1977:165) is used

$$\hat{R}_c = \sum_{j=1}^{k} y_j \Big/ \sum_{j=1}^{k} x_{2j}$$

where k = the number of ground segments in the cth crew area (*Bowden 1973).

The estimate of the total population is

$$\hat{Y}_T = \sum_{c=1}^{c} \sum_{j=1}^{J_c} A_{cj}\hat{B}_{cj}\hat{R}_c$$

where T is total, c is the crew area, j is the strata in the crew area, and J_c is the total number of strata in crew area c.

Variance Estimation

An appropriate variance estimator of the population estimator is

$$\hat{V}(\hat{Y}) = A^2\left(\hat{R}^2\hat{V}(\hat{B}) + \hat{B}^2\hat{V}(\hat{R}) - \hat{V}(\hat{B})\hat{V}(\hat{R})\right)$$

and the estimated variance components are

$$\hat{V}(\hat{B}) = \frac{1}{\bar{m}^2}\left[\sum_{i=1}^{n} x_{i1}^2 - 2\hat{B}\sum_{i=1}^{n} x_{i1}m_i + \hat{B}^2\sum_{i=1}^{n} m_i^2\right] / n(n-1)$$

where n is the number of transects in the strata, and

$$\hat{V}(\hat{R}) = \left[1/\sum_{j=1}^{k} x_{2j}/k\right]^2 \left[\sum_{j=1}^{k}(y_j)^2 - 2\hat{R}\sum_{j=1}^{k}(x_{2j})(y_j) + R^2\sum_{j=1}^{k}(x_{2j})^2 \Big/ k(k-1)\right]$$

(Martin et al. 1979:196).

Ideally, variance estimation is obtained from replicated subsampling (Eberhardt 1978). However, logistically this is not possible for the VCF for this survey because of the effort and expense. As a result, the variance is calculated with the estimator for the ratio estimator. The variance of $\hat{Y}_T$ is

$$\hat{V}(\hat{Y}_T) = \sum_{c=1}^{c}\left[\left(\hat{R}_c^2\sum_{j=1}^{J_c} A_{cj}^2\hat{V}(\hat{B}_{cj})\right) + \left(\left(\sum_{j=1}^{J_c} A_{cj}\hat{B}_{cj}\right)^2\hat{V}(\hat{R}_c)\right) - \left(\hat{V}(\hat{R}_c)\sum_{j=1}^{J_c} A_{cj}^2\hat{V}(\hat{B}_{cj})\right)\right]$$

(Martin et al 1979:197).

Previous Review and Related Topics

Elimination of Errors

Bowden (*1984) discussed the need to examine the aerial and the air-ground data sets for errant data and inconsistencies. The improved automation of data entry and analysis, the daily entry of data into computer files by field crews, and the improved validation procedures minimized the number of errors.

I found no errors in the operational aerial data of 1974 through 1991. A search for errors was done by comparing the original field tapes and data sheets with the computer files. An examination of the AGCS data from 1961–91 revealed fewer than 10 errors, which had been made prior to 1974. My calculated visibility rates matched those stored on file in all cases.

Potential Bias

The observed density may be biased because of the systematic placement of transect lines (Cochran 1977; Thompson 1992). However, Buckland et al. (1993) noted that a systematic sample is often operationally superior to random sampling. I know of no way of judging the bias of the survey. Similarly the placement of AGCS may effect survey results; although AGCS were not randomly placed, neither were they systematically placed. Whether their placement resulted in a biased VCF estimate is not possible to determine.

Visibility Correction Factors

Calculation of Visibility Correction Factors

All AGCS are not of equal length. I investigated weighting the AGCS by line length. However, using a weighted combined ratio estimator did not increase the precision of the VCF for the survey of mallards (*Anas platyrhynchos*) during 1974–90. I chose 1974 as a starting date for the analysis because before this date data were not available from the Dakotas and Montana. Of the 48 estimated VCF for mallards that differ between the two estimators, precision increased of 26 and decreased of 22. Bowden strongly rejected weighting; I yield to his conclusion (*Bowden 1973; Bowden, Department of Statistics, Colorado State University, personal communication).

Bowden (*1984) recommended that a calculated VCF be used whenever possible but offered few suggestions for determining whether this is possible. For a ratio estimator, Cochran (1977) recommended that the sample size (in this case the number of AGCS) be at least 30 and that the counts among samples be large enough for the coefficients of variation (CV) of the numerator and for the denominator to be less than 10%. The homogeneity of habitats and duck density in the strata largely determine whether the sampling intensity is adequate to meet these criteria. The criterion that CV be 10% was not met by the estimates of any species in any crew area. Before 1991, fewer than 30 AGCS were in any one crew area. Cochran's (1977) rule-of-thumb cannot be met because of survey logistics and less conservative criteria are necessary. Doing so may result in biased estimates; however, no alternative exists.

For all transect sampling, a minimal count is needed before the survey is valid (Eberhardt 1978). What should this count be? It is a reflection of the variation among samples and the magnitude of the counts per AGCS and is, thus, an alternate precision criterion. If the number of observed ducks per AGCS varies little among segments, a smaller count (fewer ducks) suffices than if the number of ducks varies greatly among segments. The magnitudes of the counts are critical to a ratio estimator. If the numerator or denominator counts are inadequate, small changes in either could markedly change the point estimate. Counts below the minimum level indicate inadequate sampling intensities. The AGCS may be too few to ensure they are representative of the operational survey in such cases; or some species may occur in such low densities that adequate minimal counts cannot be obtained.

A delay between counts from the air and on the ground is necessary because both procedures can flush birds off the transect. The delay allows birds time to return to the transect before the second count. However, this delay can affect the VCF depending on the density of birds in the crew area. If the density of a species in the area is low, the chance occurrence of not counting several pairs or flocks of birds in both surveys can highly influence the value of the VCF. If the sample is adequate, the fact that the same birds are or are not counted is not critical. If the count is adequate, the relation of counts from the air to counts on the ground stabilizes or averages out. An adequate count can be obtained by increasing the survey effort with either an increase of the AGCS lengths or with the addition of new segments, although for precision the latter is preferable.

Use of minimal counts—as an alternative to the use of coefficients of variation among samples—as criteria for judging the adequacy of the current year's air-ground sample is warranted. Minimal counts are easier to use than CV criteria because of the operational time and computational constraints. In the past, neither CV nor minimal counts were formally used for calculated VCF. Rather, decisions to use calculated VCF were based on whether the calculated VCF was within some ranges of values. If the value was outside a range of values, a

long-term average VCF was used. The range of permissible values was plus or minus three times the standard error. This approach is undesirable for several reasons. First, no evaluation of the adequacy of the calculated value is made, and the sampling intensity that went into its estimation was not evaluated. Second, long-term averages should be periodically updated to include the most recent and therefore the most relevant data. These averages have not been updated in the recent past.

Minimal counts of 40 indicated birds of the more abundant species—but not of the less abundant or rare species—were typically obtained (Table 2). For ring-necked ducks, goldeneyes (*Bucephala* spp.), buffleheads (*Bucephala albeola*), and mergansers (*Mergus* spp.), the minimal-count criteria were never met in any crew area in any year.

I recommend annual updating of VCF and believe that predetermined minimal counts should be used to determine the use of either a long-term average or an annual VCF. A minimum of 40 indicated birds from the air and the ground on AGCS in a crew area should be the minimum necessary before a VCF is used. Forty indicated birds equates to 20–40 observed birds. An examination of graphical plots of air counts versus ground counts of all species revealed that counts of 40 are usually adequate but that 50 to 60 birds may be needed in about 5% of the cases before the value of the VCF stabilizes. However, a criterion of 50 or more indicated birds would result in greater reliance on long-term VCF. Use of 40 indicated birds as a critical value still leaves the selection process vulnerable to the influence of extreme values obtained from one or more AGCS. These can be caused, in part, by large numbers of flocked birds; a condition suggesting survey-timing problems. Such flocks should be excluded from VCF calculations. Average VCF values may have to be used when such conditions exist.

Still necessary may be additional criteria to evaluate extreme VCF values outside historical experience. I do not believe that the creation of a statistical cookbook that accounts for all situations is necessary. Designing a reasonable course of action for all situations is not possible. Extreme values should be evaluated on a case-by-case basis by considering biological and statistical implications. Generally, I believe that average VCF that are calculated from the most recent data should be employed if the rejection of extreme values is ever necessary. In my review of past data, I found no cases of extreme values leading to rejection of calculated VCF. However, I suspect that past problems had already been dealt with by survey biologists and analysts.

To determine a VCF that can be used when one does not meet the established criteria, other sources of information such as counts from past years, other crew areas, and other species must be considered. Bowden (*1984) recommended using the most representative, available data to estimate a VCF when it cannot be calculated. He offered several suggestions: lumping species, lumping data from previous years and calculating long-term averages, and

Table 2. Number of years when fewer than 40 birds were indicated in the sample obtained from aircraft and in the sample obtained on the ground for comparisons of the samples within crew areas in the breeding waterfowl survey, 1975–1994.

	Crew area				
Species	1 Southern Alberta	2 Southern Saskatchewan	3 Southern Manitoba	4 Eastern Dakotas	5 Western Dakotas and Montana
Mallard	0	0	0	0	0
Blue-winged teal	0	1	0	0	5
Northern pintail	0	1	2	0	3
Gadwall	0	0	5	1	3
American wigeon	0	4	13	18	2
Green-winged teal	7	18	14	21	21
Northern shoveler	1	0	0	2	10
Redhead	4	17	13	8	20
Canvasback	15	5	3	19	21
Scaups	0	1	5	6	15
Ring-necked duck	21	21	21	21	21
Ruddy duck	21	21	21	19	21
Goldeneyes	21	21	21	21	21
Bufflehead	21	20	21	21	21
Mergansers	21	21	21	21	21
American coot	1	4	3	2	20

Table 3. An examination of whether visibility correction factors differed by species, crew, and year for mallards (*Anas platyrhynchos*), 1974–1994. DF = degrees of freedom, SS = sum of squares, MS = mean of squares, F = F distribution, *P* = level of significance.

Source	DF	SS	MS	F	*P* > F
Species	2	755.0	377.5	233.4	0.0001
Crew	4	123.8	30.9	19.1	0.0001
Year	20	147.2	7.4	4.6	0.0001
Species × Crew	8	110.5	13.8	8.5	0.0001
Species × Year	40	149.3	3.7	2.3	0.0001
Crew × Year	80	315.3	3.9	2.4	0.0001
Error	160	258.8	1.6		

using only data from ground surveys and ignoring data from aerial surveys.

Lumping species is inappropriate because VCF differ among species. I used analysis of variance procedures (SAS Inc. 1987) to determine the effects of species, crew area, and year on VCF for estimates of mallards, blue-winged teals (*Anas discors*), and northern pintails (*Anas acuta*; Table 3). Data from the years 1974–94 were analyzed because VCF were unavailable from surveys in all areas before 1974. The 3-way interaction term was excluded in place of replication (Sokal and Rohlf 1981). Northern pintails, blue-winged teals, and mallards were used for this analysis because they are the most abundant species and, therefore, provided the most adequate samples for the calculation of VCF (Table 2). Differences in VCF occurred among species, crew areas, years and the species by crew area, species by year, and crew area by year interactions.

In a second analysis, I used an analysis of variance to test whether VCF for surveys of mallards differed among crew areas. Because the number of indicated birds was inadequate (<40) in about half of the strata, I was forced to use VCF calculated at the crew area level. Data were grouped by year into 5-year periods. Analysis of variance was used to test whether VCF differed among crew areas, 5-year periods, or the crew area by 5-year interaction terms. Individual years in each 5-year period served as replicates. Counts were adequate for the calculation of all VCF in all crew areas for all years. Crew area, period, and the crew area by period interaction explained significant ($P < 0.03$) variation in mean VCF (Table 4). Tukey's studentized range test indicated ($P < 0.05$) that VCF were similar among periods during 1974–89 and during 1980–94; the extreme years were different. This analysis suggested that differences in VCF were greater among crews than for years within crews. It follows that any necessary summing of AGCS data should occur first over years then over crew areas. VCF for years within a period may correlate, and perhaps this should have been considered in the analysis of variance. I decided not to do so because I see no reason to treat this potential correlation any different than the multitude of other correlations that may exist; the same survey lines are used year after year, transects inside a strata are related, and so on. Whether such potential correlations bias the survey results is unknown. My personal prejudice is that such worries are more imagined than real.

From these analyses, I recommend that aerial and ground counts in a crew area be summed across recent years if an annual VCF cannot be calculated. Temporal changes in VCF, similar to those noted of the VCF for surveys of mallards, may have occurred for surveys of other species. These changes will probably continue because habitat conditions continue to vary in the survey area. The use of recently available data to calculate VCF seems warranted because this permits calculations of VCF that reflect only recent survey conditions.

These analyses demonstrated the weakness of the survey in the calculations of VCF for surveys of some

Table 4. An examination of whether visibility correction factors differed by crew, and multiple year periods for mallards (*Anas platyrhynchos*), 1974–1994. DF = degrees of freedom, SS = sum of squares, MS = mean of squares, F = F distribution, *P* = level of significance.

Source	DF	SS	MS	F	*P* > F
Crew	4	11.4	2.8	6.75	0.0001
Period	3	4.0	1.3	3.1	0.0300
Crew × Period	12	11.5	1.0	2.3	0.0155
Error	85	35.9	0.4		

species (Table 2). Consideration should be given to expanding the number or lengths of AGCS in the Dakotas and in Montana. AGCS do not have to be full-length segments, although that would be desirable to decrease the variation among AGCS. Implementation of this recommendation would not involve a great expansion of effort. In many cases, a careful and innovative effort would substantially increase precision.

Bowden (*1984) suggested that, if the aerial counts are inadequate or not representative, ground counts could possibly be projected to the whole crew area. This is not a viable alternative because too few birds are observed in ground counts to project a reliable estimate.

I did not consider alternate VCF estimators of the combined ratio estimator in my analyses; to do so was beyond the scope of the purpose of the review. However, several alternative approaches exist and warrant future consideration. Johnson (1989) developed an empirical Bayes estimator for the survey. This may be an improvement over current approaches when data are inadequate. Boot-strap (Efron 1979; Schreuder et al. 1993) or other replicated subsampling procedures may be appropriate (S. Sheriff, Missouri Department of Conservation, personal communication). Recent development of improved variance estimators for ratio estimators and approaches dealing with outliers, warrant investigation (Chamber 1986; Gwet and Rivest 1992, Chambers et al. 1993; Schreuder et al. 1993)

Representativeness of Air-ground Segments

The sample of AGCS should be representative of the crew area (*Bowden 1973, 1984). To help achieve this, Bowden recommended that the AGCS be on the survey transects and not on additional transects. Historically, some AGCS were not on the operational transects because of the need for easy access on the ground. In addition, Bowden (*1984) recommended that each AGCS have counts similar to other, average AGCS in the same strata. In the early days of the survey, AGCS were established in only the best duck habitat, and many ducks were counted in each AGCS.

Bowden (*1984) concluded that AGCS were representative of each area except in southern Saskatchewan where AGCS were off-line in high density duck habitat. I examined data from all crew areas of 1985–89 and determined an absence of any problems in the order of magnitude observed by Bowden (*1984). However, in all cases the average number of observed ducks was significantly greater ($P < 0.05$) in AGCS than in segments in which waterfowl were surveyed only from the air (Table 5). I believe these differences probably do not significantly bias population-size estimates; however, that possibility exists. The selection of the AGCS is a compromise between logistical concerns and sampling design. The statistically most desirable AGCS would be a random sample. This is logistically impossible because some segments where waterfowl are surveyed from the air are inaccessible from the ground. Also, some minimal number of ducks must be counted on an AGCS before the expense of the effort to collect the data can be justified. Therefore, AGCS tend to be selected where indicated ducks exceed minimum critical levels, resulting in AGCS where mean counts are greater than counts in segments in which ducks are surveyed only from the air.

Counts in AGCS should be similar (*Bowden 1984). A single AGCS should not dominate other AGCS in the crew area (because of the use of the combined ratio estimator, an AGCS with large counts can contribute most of the data to the estimate). Also, AGCS should provide samples of the waterfowl on the actual survey transects and should not be located off-line as many have in the past. Given these statistical concepts, I concur with Bowden's (1984) recommendation that all AGCS be located on an aerial transects and that unrepresentative segments be dropped; specifically, this includes East Plentywood in Montana and Hay Lakes in Alberta. Counts in these two AGCS have been high and have dominated counts in the respective crew areas. New

Table 5. Mean number of indicated mallards (*Anas platyrhynchos*) in segments during aerial surveys or from comparisons of AGCS (air-ground comparison segment), 1975–1989. The *t*-test is a paired test (df = 14) comparing the difference between the mean number of mallards in segments during aerial surveys and in AGCS; each year is a replicate.

	Aerial		AGCS			
Crew area	$\bar{x}$	SE	$\bar{x}$	SE	t	P
1 Southern Alberta	23.02	0.44	27.16	1.16	−3.09	0.008
2 Southern Saskatchewan	29.32	0.35	22.86	1.03	−5.81	<0.001
3 Southern Manitoba	19.97	0.48	20.78	0.83	−3.57	0.003
4 Eastern Dakotas	10.80	0.21	14.29	0.74	−7.01	<0.001
5 Western Dakotas and Montana	8.60	0.17	20.27	1.69	−6.79	<0.001

AGCS should be established on transects where waterfowl counts are similar to other AGCS in the crew area.

Operationally, examinations of the relations of individual aerial to ground counts were not revealing. Too few birds of most species were seen on individual AGCS for a valid comparison among AGCS (therefore, the use of the combined ratio estimator). The problem of too few birds was exacerbated in recent years because duck population sizes were at record lows.

Visibility Correction Factors and Pond Counts

Bowden (*1973) described a mathematical relation between estimates of pond density (determined on the ground and from the air) and the VCF for the estimated number of mallards in southern Manitoba. At that time, AGCS were not on survey transects but were off-line in areas with high duck densities. As a result, the VCF for estimates of mallard density was adjusted for pond density with a regression equation. This adjustment rendered a more representative VCF for the aerial survey. In 1979, all AGCS in southern Manitoba were relocated on-line. Later, Bowden (*1984) recommended that VCF for estimates of mallards in southern Manitoba no longer be adjusted for the density of ponds; the relation between VCF and pond counts for estimates of mallards was no longer functional. Bowden (*1984) noted that any relation that existed had disappeared when AGCS that were off-line were replaced with AGCS that were on-line.

Variance Considerations

Strata 1–25

These strata consist of two physiographic types; Strata 1–7, 12–18, 20–25, and 77 are boreal forests and Strata 8–11 are tundra (Fig. 1; Table 1). Bowden (*1984) noted in 1983 that the variance of the VCF for the survey of mallards in Strata 1–25 accounted for 84% of the total survey variance. Constant values, derived from the average 1961–73 VCF for surveys in the prairie, had been used for these areas. He noted the survey's quality would be improved if variances of the VCF from these strata were reduced.

Data from helicopter surveys in Alaska and in northern Canada during 1986–88 are a source for revising VCF for surveys in the boreal-forest strata (*Hines et al. 1989). Other surveys with helicopters were conducted in the tundra of Alaska in 1988–91. In these surveys, helicopters replaced ground crews. In all cases, ducks in the AGCS were first surveyed from the fixed-wing aircraft. After a minimum of 2 h but within 2 days, the helicopter was slowly flown over the transect, and all waterfowl was carefully counted. I realize that surveys from helicopters are not the exact equivalent of ground surveys and that the helicopter crew may miss some birds, that is, helicopter crews are not able to conduct complete censuses as are ground crews. This may result in biased VCF and population-size estimates. However, I believe results from these surveys in the boreal forest and in the tundra are better than average values from prairie strata used in the past.

Stratum 19 (Renumbered 75–77)

Bowden (*1973) noted that the number of ducks in stratum 19 made a large contribution to the total population-size estimate of mallards. He also noted that the precision of population-size estimates in stratum 19 was poor. Strata 19 was an area that had undergone conversion of boreal forest into agricultural and more open parkland. The Canadian Wildlife Service and the U.S. Fish and Wildlife Service divided stratum 19 into three strata that are fairly homogeneous (Strata 75–77; Fig. 1) and established 12 AGCS in Strata 75–76 in 1989. The precision of the estimates from the new strata improved substantially and is now comparable to that of neighboring strata.

Calculation of Visibility Correction Factors

Ducks

After considering Bowdens's recommendations and my subsequent investigation, I developed procedures for calculating VCF. I took into account the evaluations and improvements that have occurred to the survey since the development of the original standard order of procedure.

Methods

The process I developed accounts for species and for annual and regional availability of data. A similar procedure was used for the surveys by helicopter of strata in boreal forest in Alaska and northern Canada and in tundra in Alaska.

Each count from the air and on the ground had to exceed 39 indicated birds (at any level of grouping) before I calculated a VCF. For the survey, the sampling units are the AGCS. Sample sizes can be increased by pooling either across years, across crew areas, or across both. I made the decision that the CV of the calculated VCF should be no greater than 20% and that the data from more years or areas must be collapsed until the 20% level is obtained. A CV of 20% or less is the precision at which annual VCF are obtained from the survey. An average CV of 17.5% for VCF for surveys of species with adequate data from 1980–89 was obtained (Table 6).

Table 6. Average coefficients of variation (percent) of visibility correction factors when sample sizes exceeded 40 in each year, 1980–1989.

	Crew area				
Species	1 Southern Alberta	2 Southern Saskatchewan	3 Southern Manitoba	4 Eastern Dakotas	5 Western Dakotas and Montana
Mallard	11.4	12.3	11.8	13.8	14.9
Gadwall	22.4	19.5		21.3	
American wigeon	23.3				
Blue-winged teal	18.9	22.4	14.0	15.5	
Northern shoveler	16.4	24.3	15.8	17.5	
Northern pintail	17.6			18.3	
Scaups	18.5				

When calculating the calculated VCF, the CV decreases as the sample size increases.

Prairie and parkland. Strata 26–49 and 75–76. The following hierarchial approach was used to estimate the VCF for surveys of each species in each crew area when annual VCF could not be calculated.

(1) The VCF for surveys in the crew area was estimated by pooling (summing) counts from the air and on the ground during the previous 4 years and the current year. If each of the air and ground counts exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its variance as calculated with the ratio estimator were used; otherwise (2) was completed.

(2) The VCF for surveys in each crew area was estimated by pooling counts from the air and on the ground during the previous 9 years and the current year. If each of the air and ground counts exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its associated variance were used; otherwise (3) was completed.

(3) The VCF for surveys in each crew area was estimated by pooling counts from the air and on the ground during the previous 14 years and the current year. If each of the air and ground counts exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its associated variance were used; otherwise (4) was completed.

(4) The VCF for surveys in each crew area was estimated by pooling counts from the air and on the ground during the previous 19 years and the current year. If each of the air and ground counts exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its associated variance were used; otherwise (5) was completed.

(5) The VCF for surveys in each crew area was estimated by pooling counts from the air and on the ground during all years of data. If each of the air and ground counts exceeded 39 and if the CV of the VCF in a crew area was <20%, the VCF and its associated variance were used; otherwise (6) was completed.

(6) The VCF was estimated by pooling counts from the air and on the ground in all crew areas over all years. The VCF and its associated variance were used regardless of the counts or the value of the CV.

For VCF in years in which surveys were not conducted in AGCS, I used the average VCF from the 5 years that immediately followed. Average values were used for the initiation of the survey in the mid to late 1950s because the AGCS portion of the survey was not begun until later. Because data on oldsquaws (*Clangula hyemalis*), scoters (*Melanitta* spp.), and mergansers did not exist, I used the constant VCF from the 1986–88 survey of these species in the boreal forest (Table 7). For the American black duck (*Anas rubripes*), a VCF was obtained from a survey in eastern North America that is being developed (J. Goldsberry, Flyway Biologist, Office of Migratory Bird Management, U.S. Fish and Wildlife Service, personal communication). I used a value of 3.58 (SE = 3.58) from previous tundra surveys of eiders (*Somateria* spp. and *Polysticta stelleri*) from a fixed-wing aircraft and a helicopter, where the helicopter was treated as the equivalent of a ground survey (B. Conant, Waterfowl Investigations, Region 7, U.S. Fish and Wildlife Service, personal communication of a 1968 unpublished report).

The Boreal Forest. Strata 1–7, 12–25, 50 and 77. VCF were calculated from the data that were collected in concurrent surveys from fixed-wing aircraft and a helicopter (the helicopter replaced the ground survey) during 1986–88. Waterfowl in the boreal forest in Alaska, in northern Alberta and the Northwest Territories, and in northern Manitoba and northern Saskatchewan were surveyed by 3 different crews from fixed-wing aircraft. VCF were calculated for each crew. As in the prairie and parkland areas, the criterion was to use minimal samples of 40 from counts from fixed-wing aircraft and helicopters. A CV of the VCF of >20% led to the pooling of years, crew areas, or both with the following hierarchal procedure:

Table 7. Visibility correction factors (VCF) and standard errors (SE) derived from surveys of ducks with fixed-wing aircraft and with helicopters in boreal-forest habitats, 1986–1988.

Strata	Alaska 1–12		Northern Alberta and Northwest Territories 13–20		Northern Manitoba and Northern Saskatchewan 21–25, 50	
Species	VCF	SE	VCF	SE	VCF	SE
Mallard	3.574	(.323)[a]	2.737	(.426)[b]	3.670	(.556)[b]
American wigeon	3.654	(.206)[a]	6.214	(.961)[b]	5.711	(.811)[b]
Green-winged teal	8.883	(.810)[a]	7.844	(1.273)[b]	4.228	(.820)[b]
Blue-winged teal	0.178	(2.089)[c]	10.178	(2.089)[c]	10.178	(2.089)[c]
Northern shoveler	3.353	(.445)[b]	3.478	(.408)[c]	3.478	(.408)[c]
Northern pintail	2.515	(.185)[a]	2.646	(.217)[c]	2.646	(.217)[c]
Canvasback	.433	(.457)[b]	2.576	(.456)[c]	2.576	(.456)[c]
Scaups	1.821	(.123)[a]	2.294	(.311)[b]	2.364	(.323)[c]
Ring-neck duck	3.991	(.577)[c]	3.991	(.577)[c]	3.309	(.513)[b]
Goldeneyes	3.494	(.947)[c,d]	3.494	(.947)[c,d]	3.494	(.947)[c,d]
Bufflehead	1.859	(.298)[b]	2.212	(.402)[e]	2.212	(.402)[e]
Oldsquaw	1.932	(.708)[c,d]	1.932	(.708)[c,d]	1.932	(.708)[c,d]
Scoters	0.921	(.170)[b]	1.433	(.286)[b]	1.446	(.286)[e]
Mergansers	1.278	(.344)[c,d]	1.278	(.344)[c,d]	1.278	(.344)[c,d]

[a] VCF for the area calculated for each of the 3 years and averaged.
[b] VCF for the area calculated by pooling over the 3 years.
[c] VCF for the area calculated by pooling all 3 areas over the 3 years.
[d] Coefficient of variation greater than 20%.
[e] VCF for the area calculated by pooling over Canadian areas over the 3 years.

(1) The VCF for the survey in each crew area in each of the 3 years (1986–88) was estimated. If each count from the fixed-wing aircraft and from the helicopter exceeded 39 and if the CV of the VCF from each year was ≤20%, the VCF and its associated variance from that year and the mean VCF from the 3 years were used for the VCF in all other years; otherwise (2) was completed.

(2) The VCF for the survey in each crew area was estimated by pooling counts from the fixed-wing aircraft and the helicopter during the 3 years. If each count from the fixed-wing aircraft and from the helicopter exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its associated variance were used; otherwise (3) was completed.

(3) The VCF for the survey in each crew area was estimated by pooling counts from the fixed-wing aircraft and the helicopter during the 3 years. Whether the VCF differed among crew areas was examined with program CONTRAST (Sauer and Hines 1989). The counts from the air and on the ground in the crew areas were pooled when no differences ($P > 0.05$) were detected. If the count from the fixed-wing aircraft and from the helicopter exceeded 39 and if the CV of the VCF was ≤20%, the VCF and its associated variance were used; otherwise (4) was completed.

(4) The VCF was estimated by pooling counts from the fixed-wing aircraft and the helicopter across all 3 crew areas and all 3 years. The VCF and its associated variance were used, regardless of the value of the CV. For the surveys of mergansers, goldeneyes, and oldsquaws, pooling counts from the air and on the ground over crew areas and years did not result in a CV of the VCF of ≤20%; because no other data on these species exist, I used the calculated values.

No VCF for surveys of gadwalls (*Anas strepera*), redheads, ruddy ducks, and American coots[1] (*Fulica americana*) in the boreal forest were available; therefore, I used the average VCF for surveys of these species in the prairie-parkland during 1986–88. The VCF for black ducks and eiders used in the prairie-parkland were also used in the boreal forest.

The tundra. Strata 8–11. The criteria for sampling and the precision of VCF in tundra areas were similar to criteria for sampling in the boreal-forest strata. However, only one crew conducted surveys in all tundra strata during the 3 years, 1989–91, and thus counts from the fixed-wing aircraft

[1] The American coot is not a waterfowl (Order Anseriformes) but a rail (Order Gruiformes). It has been included in the surveys of breeding waterfowl in North America because it is a game species, is highly visible, and is regarded as ecologically equivalent to waterfowl.

and from the helicopter (equivalent to ground) in all strata were pooled a priori. The following hierarchal approach was used to derive usable estimates of VCF in tundra strata.

(1) The VCF for the surveys in each of the 3 years was estimated. If each count from the fixed-wing aircraft and from the helicopter exceeded 39 and if the CV of the VCF in each year was ≤20%, the VCF for the survey during that year and its associated variance and the mean counts from the fixed-wing aircraft and the helicopter during the 3 years in all other years were used. If the CV of the VCF from each year was >20%, (2) was completed.

(2) The VCF was estimated by pooling counts from the fixed-wing aircraft and the helicopter during the 3 years.

Because VCF did not exist for surveys of blue-winged teals, gadwalls, redheads, ring-necked ducks, canvasbacks (*Aythya valisineria*), buffleheads, goldeneyes, mergansers, ruddy ducks, and American coots, I used VCF from surveys of these species in the boreal forest (Table 7) or prairie-parkland. For eiders, I used the previously reported value from the tundra.

Results

Estimates. The VCF that were calculated with the described criteria (Tables 7 and 8) are designated for future use in the boreal forest and in the tundra until further research is conducted. The new, calculated VCF are generally lower than previously used constants (SOP 1977) and decrease population-size estimates.

The new procedure results in more frequent use of calculated VCF (than annual VCF) than in the past; however, the new VCF are calculated with inclusion of the more recent data. The frequent use of calculated VCF demonstrates the inadequate sample sizes obtained for some species.

Variance. Various modifications improved the precision of many VCF. The increased numbers of AGCS added in the 1980s in each prairie crew area and the replacement of off-line AGCS with on-line AGCS improved the precision of the VCF. Constant VCF obtained from experimental surveys by helicopter in the boreal forest and in the tundra are more precise than the 1961–73 averages from the prairies that were used in the past.

Table 8. Visibility correction factors (VCF) and standard errors (SE) derived from surveys of ducks from fixed-wing aircraft and helicopters in tundra areas (Strata 8–11) in Alaska, 1989–1991.

Species	VCF	SE
Mallard	4.008	(0.557)
American wigeon	3.835	(0.467)
Green-winged teal	8.358	(1.353)
Northern shoveler	3.790	(0.479)
Northern pintail	3.045	(0.229)
Scaup	1.933	(0.206)
Oldsquaw	1.867	(0.272)
Scoter	1.167	(0.105)

Ponds

Ponds were surveyed in the prairie-parkland portions of the survey, and VCF were calculated. Aerial crews have counted ponds on only half of the strip transects; the observer but not the pilot counted ponds. The number of ponds that the aerial crew estimated was two times the observer's count. If the ponds are not distributed randomly about the transect centerline, these estimates were inaccurate. The ground crew then counted all ponds on both halves of the transects. A comparison of these two counts creates a potential problem, especially when the number of ponds is low or when few AGCS are in a crew area. This may occur in crew areas in the Dakotas and in Montana, especially during drought years. I recommend that in the future the ground crews record on what side of the centerline ponds occur and that VCF be calculated from only ponds that the aerial observer counted. Additions of more AGCS in the Dakotas and in Montana would also reduce potential problems.

Evaluation of Survey Adequacy by Species

The annual population size of the following species or groups of species during 1955–91 was estimated: northern pintails, American wigeons (*A. americana*), green-winged teals (*A. crecca*), blue-winged teals, northern shovelers (*A. clypeata*), mallards, American black ducks, gadwalls, scaups, redheads, ring-necked ducks, canvasbacks, buffleheads, goldeneyes, oldsquaws, mergansers, scoters, ruddy ducks, eiders, and American coots. When data from some strata in some years were not available, population sizes by species were estimated with the average population-size estimate by species from the 5 years after the year without data. Averages were used in strata 1–20, 41–47, and 48–49 in 1955; strata 1–12, 41–46, and 48–49 in 1956; strata 41–46, and 48–49 in 1957; strata 41–42, 44–45 and 48 in 1958; strata 41 and 42 in 1959; strata 41 and 42 in 1960; strata 1, 7, 41 and 42 in 1961; strata 41 and 42 in 1962; strata 43 in 1963; strata 7 and 21 in 1964; strata 7, 12 43 in 1965; and strata 43 in 1966. Birds in strata 7 were not surveyed in 1967–83 and in strata 50, not in 1971 and 1974–85.

Northern Pintail

The population size of the northern pintail was high in the mid-1950s, declined to a low in the mid-1960s, increased through the mid-1970s, and declined steadily through 1991

(Fig. 2). Breeding northern pintails are present in the more northern strata of the survey, and the largest portion is in Alaska (Appendix A). Canadian prairies and parkland are also important nesting areas. Northern pintails breed outside the survey area, although the survey area seems to encompass the majority of the continental population (Bellrose 1980). Limited numbers breed in Ontario and Quebec. Additional birds occur in British Columbia, California, Colorado, Idaho, Oregon, Utah, Wyoming, and Washington. The species seems to opportunistically respond to wetland conditions during the breeding season (Stoudt 1970; Hochbaum and Bossenmaier 1973). During wet years, the population is more widespread, and more birds nest farther south than during dry years when a larger proportion of the total population is farther north (Crissey 1969; Smith 1970, Henny 1973; Steward and Kantrud 1973; Derksen and Eldridge 1980). During wet years, the population in the prairie portion of the survey (strata 26–49) averaged 68%, but during the dry years of 1988–91 this decreased to 42% (see Appendix U for the estimated numbers of ponds).

Timing surveys of northern pintails seems to have been excellent in prairie-parkland portions. An average of 7.3% of the birds occurred as groups; 92.7% occurred as drakes or pairs. Analyzed data were from 1974–94. In boreal-forest portions of the survey, the proportion that occurred as groups increased to 8.3% and in Alaska, to 16.3%. The number of indicated birds was adequate for calculations of VCF in all crew areas in which ground surveys were conducted in 1994 (Table 9). The efficacy of the survey was good as indicated by an overall CV of 6.3% for the estimated total population size in 1994.

American Wigeon

American wigeon (Fig. 3) populations fluctuated in response to the precipitation patterns in the prairie. Low population sizes were associated with droughts in the 1960s and 1980s. The majority of the American wigeon population nests in the boreal forest of northern Canada and in the tundra of Alaska (Appendix B).

The survey covers the bulk of the American wigeon's breeding range. Other populations occur in intermountain marshes from northern California to central Utah and southern Wyoming. Other breeding populations occur in British Columbia and in Minnesota, and small colonies occur in eastern Ontario, southwestern Quebec, New Brunswick, Nebraska, Kansas, Colorado, and Wisconsin (Bellrose 1980).

Survey timing seems to have been excellent. Few birds occurred in groups in prairie-parkland (8.1%), boreal forest (7.5%), and Alaska (11.2%) regions of the survey. In 1994, 5-year calculated VCF were used in southern Manitoba and in eastern Dakota; the number of birds in all other areas in which ground surveys had been conducted was adequate for the calculation of an annual value (Table 9). The efficacy of the survey was good as indicated by an overall CV of 5.5% for the estimated total population size in 1994.

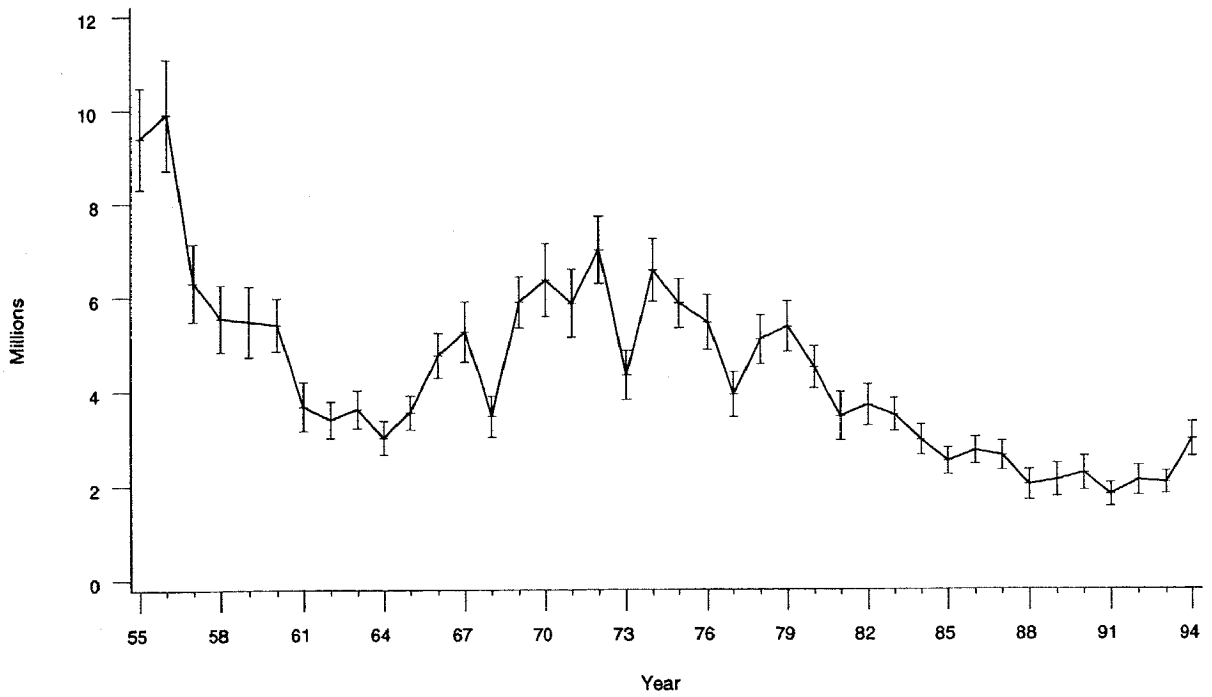

Fig. 2. Northern pintail (*Anas acuta*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

Table 9. Sources of data used for visibility correction factors for each species in 1994 for prairie-parkland regions (Strata 26–49, 75–76) of the survey.

	Crew area					
Species	26–29	30–33	34–40	41–44	45–49	75–76
Mergansers	all[a]	all	all	all	all	all
Mallard	1994	1994	1994	1994	1994	1994
Americn black duck	other[b]	other	other	other	other	other
Gadwall	1994	1994	1994	1994	1994	1994
American wigeon	1994	1994	1990–94	1990	1990–94	1994
Green-winged teal	1994	1994	1994	1985–94	1985–94	1994
Blue-winged teal	1994	1994	1994	1994	1994	1994
Northern shoveler	1994	1994	1994	1994	1994	1994
Pintail	1994	1994	1994	1994	1994	1994
Canvasback	1994	1994	1994	1975–94	1990–94	1990–94
Scaups	1994	1994	1994	1990–94	1994	1994
Ring–necked duck	1990–94	1980–94	1990–94	all	1980–94	1990–94
Goldeneyes	all	1980–94	all	all	all	all
Bufflehead	1994	1990–94	1985–94	all	all	1994
Oldsquaw	other	other	other	other	other	other
Eiders	other	other	other	other	other	other
Scoters	other	other	other	other	other	other
Ruddy duck	1990–94	1990–94	1990–94	1975–94	1994	1990–94
American coot	1994	1994	1994	1994	1994	1994

[a] All years inll crew areas.
[b] Values obtained from experimental surveys from a helicopter.

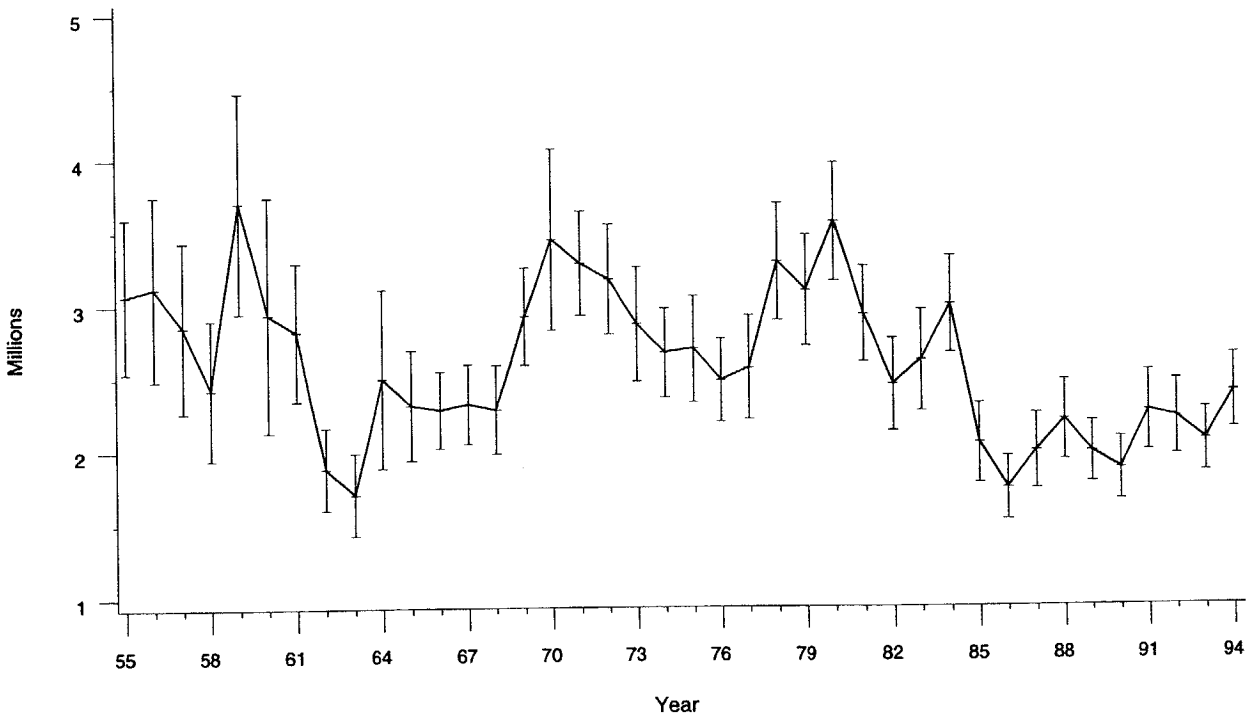

Fig. 3. American wigeon (*Anas americana*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

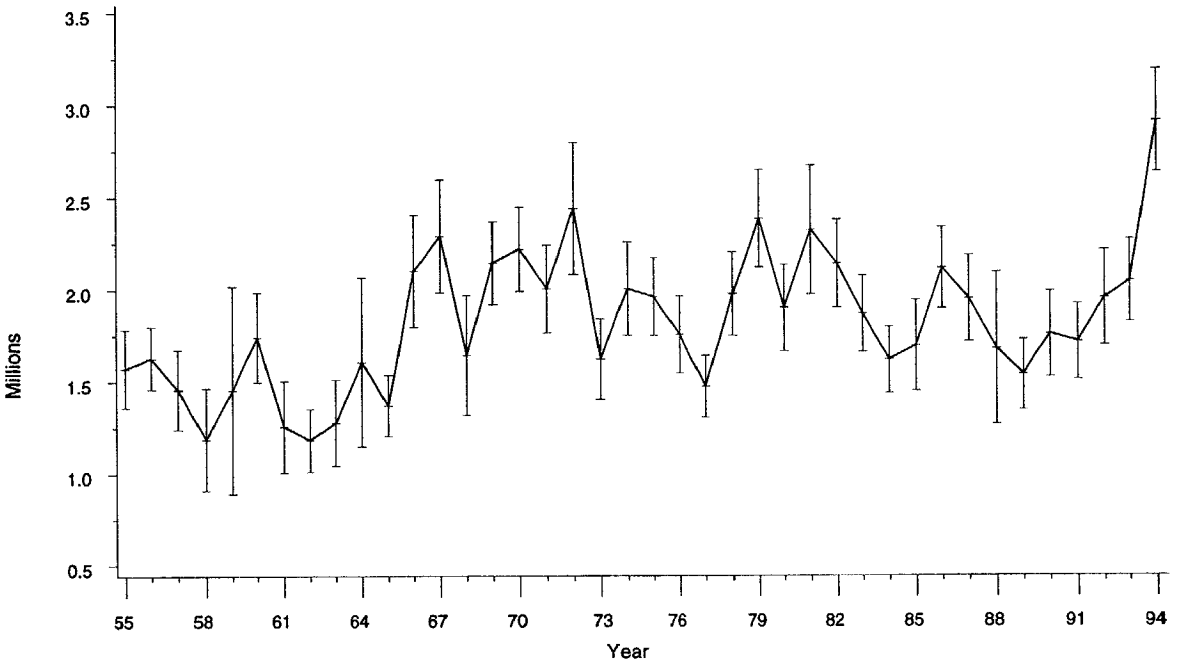

Fig. 4. Northern shoveler (*Anas clypeata*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

Northern Shoveler

The population size of the northern shoveler was low in the early 1960s, rose to a peak in the early 1970s, declined in the mid 1970s, recovered in the late 1970s, and fluctuated throughout the 1980s (Fig. 4).

Northern shovelers were most abundant in prairie-parkland of Alberta and Saskatchewan (Strata 26–35; Appendix C). Large numbers also occurred in Alaska and in northern Canada (Strata 1–25). The survey adequately covers the breeding range of this species, although additional birds breed outside the survey areas in intermountain marshes from British Columbia to Colorado and in Nebraska, Minnesota, and Wisconsin. Additional breeding birds occur in California, Oregon, Washington, and Idaho. Minor breeding areas extend east through Ohio, New York, southern Ontario, and southern Quebec (Bellrose 1980).

Survey timing was excellent. Few birds occurred in groups in prairie-parkland (6.0%), boreal forest (5.1%) and Alaska (7.1%) regions. The number of birds in all crew areas in which ground surveys had been conducted was adequate for the calculation of an annual VCF value in 1994 (Table 9). The efficacy of the survey was good as indicated by an overall CV of 4.9% for the estimated total population size in 1994.

Green-winged Teal

The population size of the green-winged teal reached a peak in the late 1950s, declined to lows in the early 1960s, and maintained fairly constant levels throughout the 1970s and 1980s (Fig. 5). In the survey area, green-winged teals occur primarily in the boreal-forest and parkland strata (Appendix D). More limited numbers occur in the prairie.

At least 30% of the green-winged teal population breeds outside the survey area (Bellrose 1980). Breeding birds that are not surveyed occur in British Columbia; throughout the northern states of the Pacific and Central flyways; across Ontario, Quebec, and the Northwest Territories; and eastward through Newfoundland and the Maritimes (Bellrose 1980).

Survey timing seems to have been good. Few birds occurred in groups in prairie-parkland (11.8%), boreal forest (5.1%) and Alaska (4.2%) regions. In 1994, VCF calculated with 10 years of data had to be used in the Dakotas and Montana; these areas are outside the species breeding range (Table 9). The efficacy of the survey was inadequate; large portions of the breeding range were outside the survey boundaries. However, the precision of the estimated population size of the green-winged teal in the survey area was excellent as indicated by a CV of 7.2%.

Blue-winged Teal

The population size of the blue-winged teal seems to be adversely affected by droughts in the North American prairies. The population size was low in 1962, 1969, and 1973 but recovered relatively rapidly. The population size

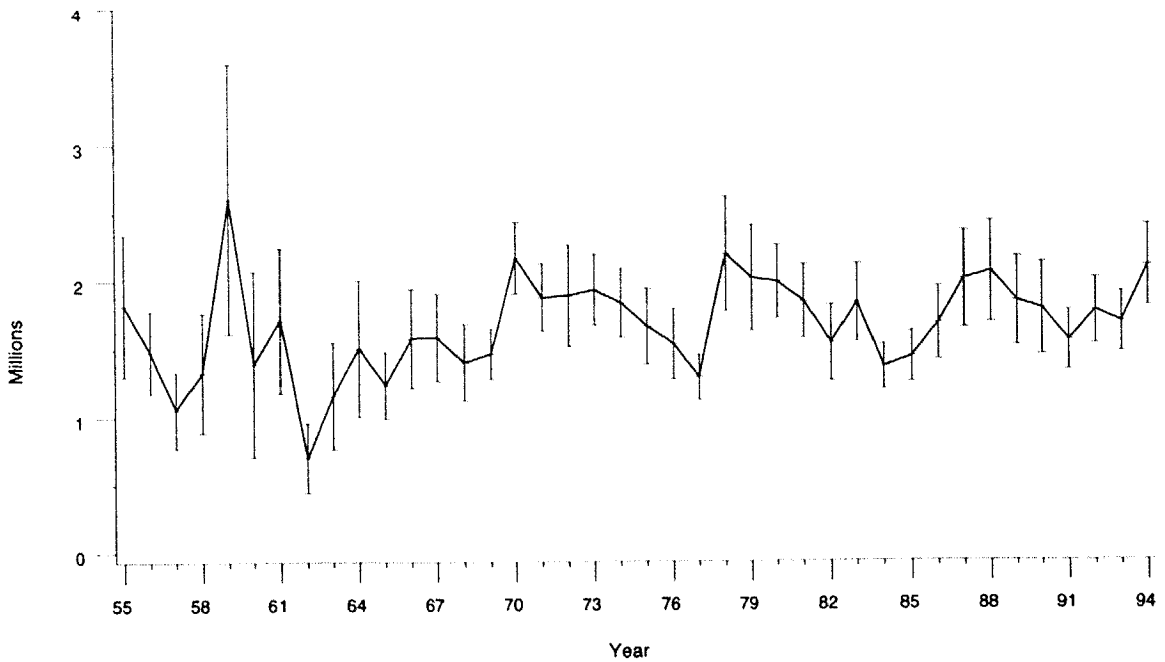

Fig. 5. Green-winged teal (*Anas crecca*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

was at an all-time high in 1975 but generally declined through 1991 (Fig. 6).

The blue-winged teal is a prairie species. The greatest numbers of birds in the survey area are in eastern Montana, North Dakota, South Dakota and prairie portions of Alberta, Saskatchewan, and Manitoba (Appendix E). Few blue-winged teals occur in Alaska or west of the Rocky Mountains. The density of birds in the boreal forest of Canada usually is low. Limited populations exist east through Ontario and Quebec. The blue-winged teal is a bird that seems to markedly change its breeding distribution in response to water conditions in southern portions of its breeding range (Bellrose 1980). During dry years, the birds seem to overfly drought areas in search of more favorable wetland conditions (Johnson and Gruer 1988). Favorable wetland conditions outside the survey area may also affect survey results.

The blue-winged teal arrives late on its breeding ground, and the proportion of the species in groups in the prairie-parkland (19.0%) and in the boreal forest (15.9%) areas reflect this. In 1994, in all prairie-parkland crew areas, adequate numbers of birds were observed on AGCS for calculation of an annual VCF (Table 9). Since the initiation of AGCS, fewer than 40 indicated birds were observed from either the air or the ground only 4 times annually in a crew area (Table 2). Overall survey efficacy was good as indicated by the CV of 5.6% for the estimated total population size in the survey area in 1994. Except in certain years when wet conditions in areas outside the survey area caused a redistribution of birds to areas outside the survey area, the efficacy of the survey was good.

Mallard

The population sizes of mallard populations were at high levels during the late 1950s and during the early 1970s (Fig. 7; Appendix F) but were depressed during the mid-1960s. Populations sizes gradually declined through the mid-1980s and have been stable since then.

The portions of the population in the different physiographic regions of the survey change with wetland conditions. During wet years, 60–75% of the surveyed population was in the prairie portions of the survey (Strata 26–49). During the drought conditions of 1988–91, this decreased to a low of about 50%. Population sizes were more constant in the boreal forest (Strata 1–7, 12–25, and 50) than in the prairie. This was due to the more stable wetland conditions in the boreal forest.

The survey provides samples from the primary breeding range of the mallard in North America; but not all breeding areas are included in the survey area. Mallards breed in the northern Atlantic states, in Ontario, and in southern Quebec. An extension of the survey in these areas is under development. Large numbers of mallards also breed in the Midwest, on the Pacific Coast, and in British Columbia. These populations are not included in the survey, but some are annually surveyed by state wildlife agencies. Annually, the U.S. Fish and Wildlife Service incorporates some of these estimates into its annual reports. An expansion and improvement of the survey—especially into the Pacific Flyway—is under development.

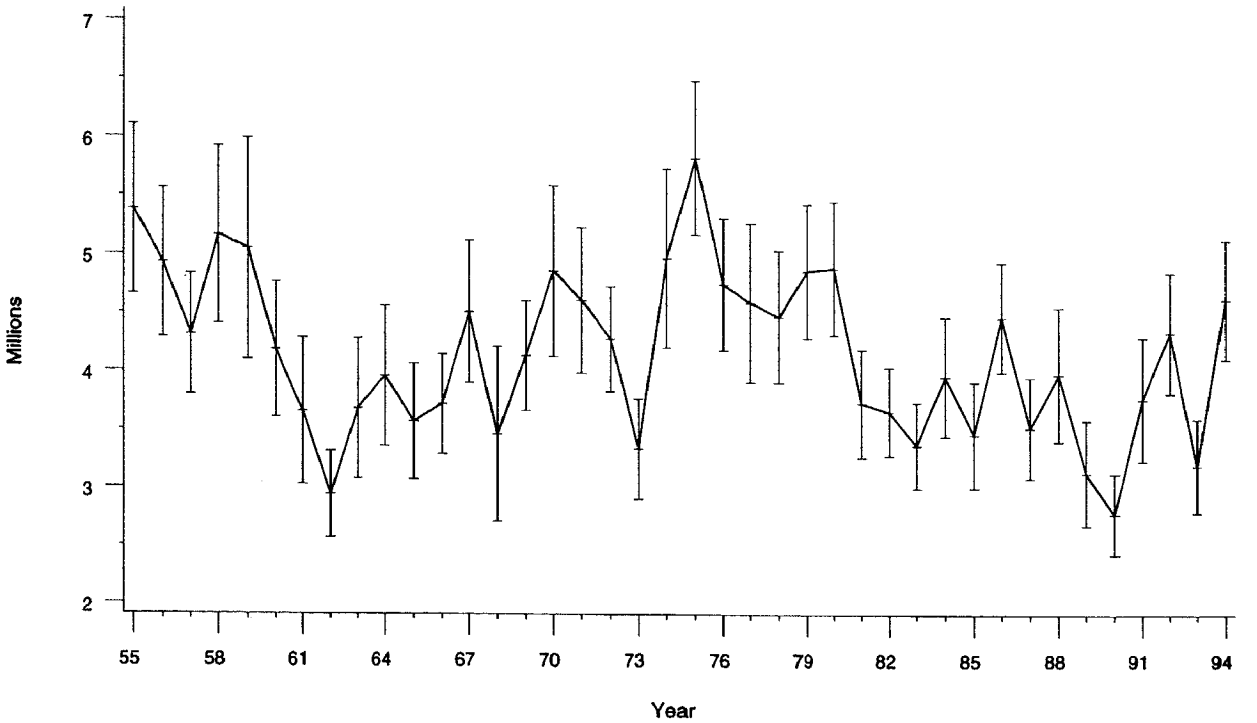

Fig. 6. Blue-winged teal (*Anas discors*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

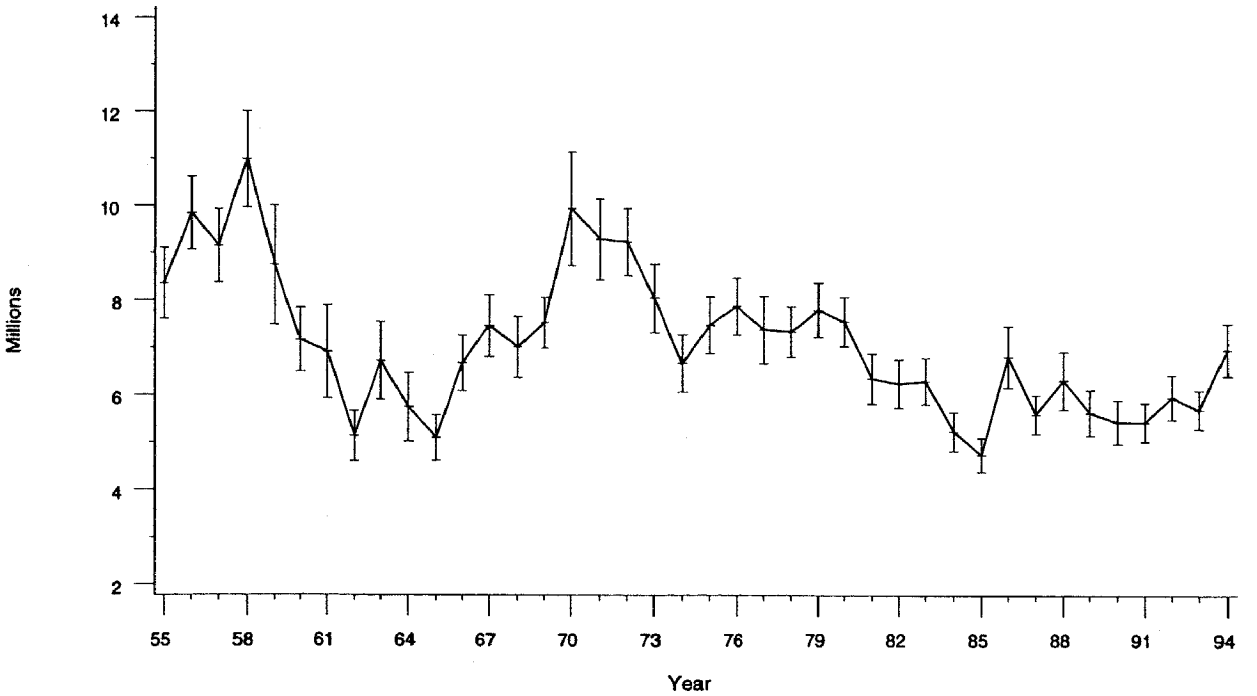

Fig. 7. Mallard (*Anas platyrhynchos*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

The survey targets the mallard; the most abundant duck in North America. Timing of the survey has been excellent. Few birds occurred in groups in prairie-parkland (5.3%), boreal forest (8.5%) and Alaska (6.8%) regions. Annual VCF have been used for surveys of the mallard in all crew areas in all years since the initiation of AGCS in crew areas (Table 2). The precision of the estimated population size in the survey area was excellent in 1994; the CV was 4.1%.

Gadwall

The population size of the gadwall increased during the late 1950s through the 1960s and reached the largest record numbers in 1968 (Fig. 8). Since the early 1970s, the abundance of the gadwall in the survey areas has been fairly constant at about 1.5 million birds; the population size has been increasing in recent years. Gadwalls are confined primarily to the prairie portions of the survey (Strata 26–49), and their abundance is high in the transitional Strata 22 and 75–77 (Appendix G); few occur in the boreal forest.

The 52 strata of the survey are the bulk of the breeding range of the gadwall. Minor populations also exist in the intermountain marshes (the Great Salt Lake in Utah and the Carson Sink in Nevada), the Klamath Basin (border of Oregon and California), the Central Valley of California, and the Columbia Basin in Washington. Limited numbers occur elsewhere in Oregon, British Columbia, Idaho, Wyoming, Colorado, the Lake States (Wisconsin through Ohio), New York, and Massachusetts (Bellrose 1980).

Timing of the survey of this species seemingly was good. Few birds occurred in groups in prairie-parkland (11.8%), boreal forest (7.3%) and Alaska (7.0%) regions. In 1994, the number of birds in all crew areas with AGCS was adequate for the calculation of an annual VCF (Table 9). Data were inadequate 9 times in the past (Table 2). The increased sampling effort in prairie-parkland in Canada should be adequate in the future. A CV of 6.1% for the estimated population size in 1994 suggested good efficacy of the survey.

Redhead

The population size of the redhead fluctuated similarly to those of other prairie species; it was high during years with ample numbers of ponds and lower during years with relatively few ponds. The population size declined to a low in the early 1960s, increased during the 1970s, and again declined through the late 1980s (Fig. 9).

The largest numbers of breeding redheads occur in the prairies and parklands (strata 19–20, 26–40) of Canada (Appendix H). Limited numbers also occur in the north-central United States (strata 41–49). The survey seems to cover the bulk of the breeding population in North America. Other minor breeding areas are outside of the survey area in British Columbia, Washington, Oregon, California, Minnesota, Nebraska, Kansas, Colorado, Montana, and Wyoming (Bellrose 1980).

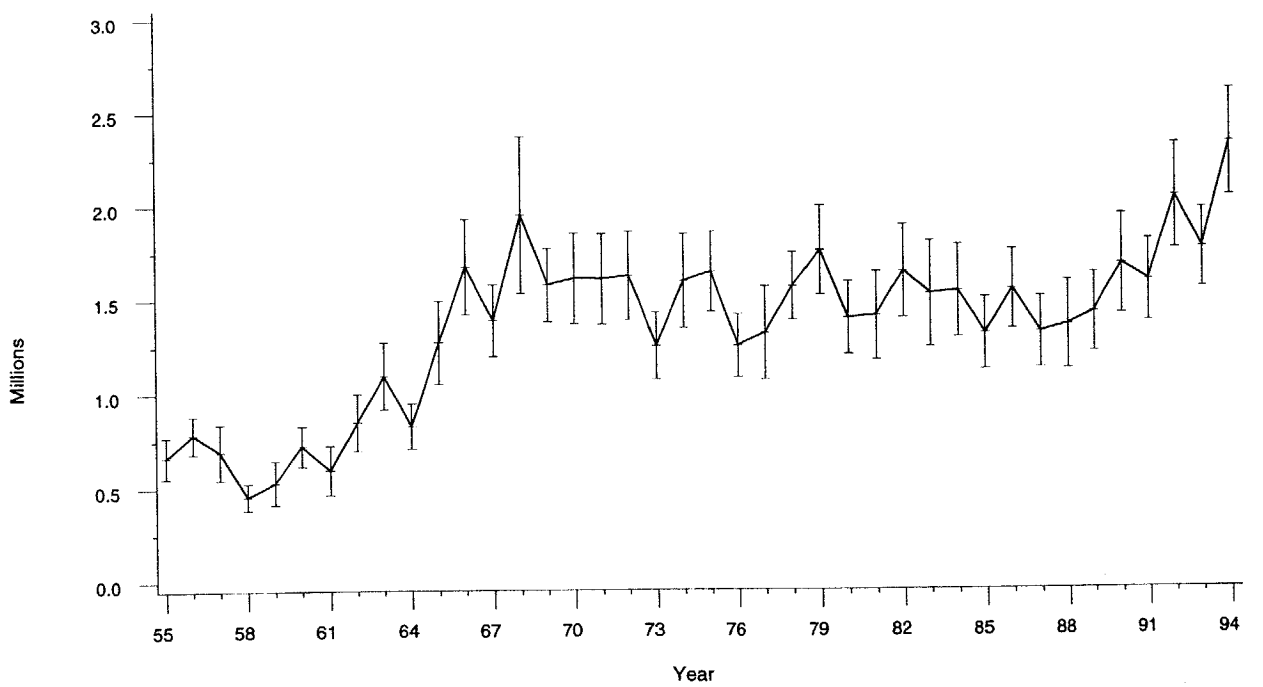

Fig. 8. Gadwall (*Anas strepera*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

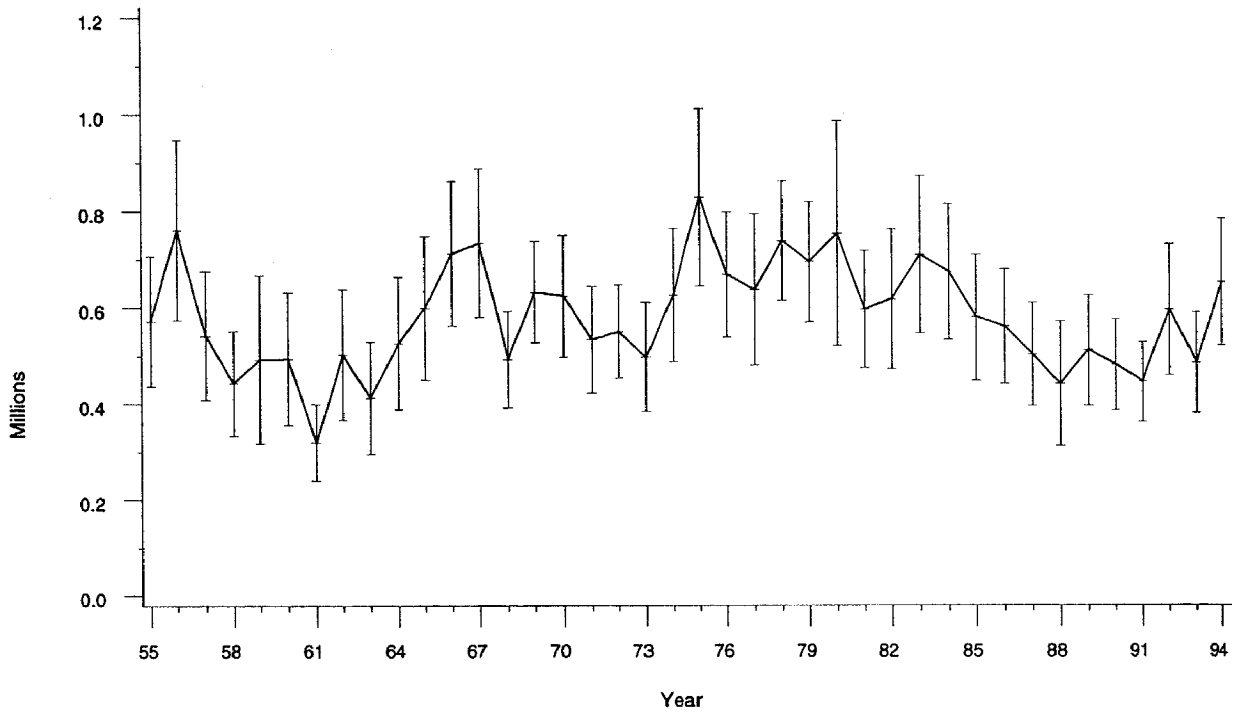

Fig. 9. Redhead (*Aythya americana*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

The sex ratio of diving ducks is highly skewed toward males (Bellrose 1980). This may account for the proportions of birds occurring in groups in prairie-parkland (18.1%) and in the boreal forest (16.4%) regions. The survey of this species also may have been conducted too early. In 1994, a calculated 5-year value had to be used for VCF in southern Manitoba and a calculated 15-year value in the western Dakotas and Montana (Table 9). Calculated VCF frequently have been used in the past (Table 2). This may be more a reflection of the lower abundance of this species than those of other species (Appendix H). A CV of 10.2% for the estimated population size in 1994 reflected the relative poorer precision of the estimated population size of redheads than those of some other species.

Scaups

The greater scaup (*Aythya marila*) and the lesser scaup (*A. affinis*) are not differentiated in the survey. According to Bellrose (1980), the greater scaup occurs in the Canadian Arctic and Subarctic (mid-Hudson Bay west and north to the Arctic Ocean) and in the tundra of Alaska (Strata 8–11). The breeding range of the lesser scaup extends from Minnesota west to northern California, north to the Bering Sea, and east to about James Bay (Bellrose 1980). The largest numbers of scaups in the survey area occur in Alaska and in the boreal forest of Canada (Appendix I). Limited numbers of nesting birds also occur in the prairie and in parkland portions of the survey area. The only major breeding areas of the lesser scaup that are not in the survey area are the intermountain region of British Columbia, eastern Washington, Utah, Idaho, Wyoming, and eastern Oregon. Some lesser scaups also nest in the sandhills of Nebraska (Bellrose 1980).

The estimated population size of the scaups has varied over the years; it was lowest in the 1960s and in the mid- to late 1980s (Fig. 10). The record numbers were highest during the 1970s and early 1980s.

Similarly to those of other diving ducks, the sex ratios of the scaups favor males. The proportions of these birds observed in groups in prairie-parkland (39.0%), boreal forest (31.3%) and Alaska (19.9%) regions may reflect the sex ratio or that the survey of these species has frequently been conducted too early. Samples were adequate for the calculation of annual VCF (Table 9) in all crew areas except in the western Dakotas and in Montana in 1994 where a calculated 5-year value had to be used. Calculated values have had to be used in the past (Table 2). The recent increase in AGCS in Canada seems to have solved this problem there. Too few scaups were seen in the western Dakotas and in Montana during many years. The CV of 5.6% for the estimated overall population size in 1994 was excellent.

Canvasback

The population size of the canvasback seems to be more constant than those of other ducks and varies little in

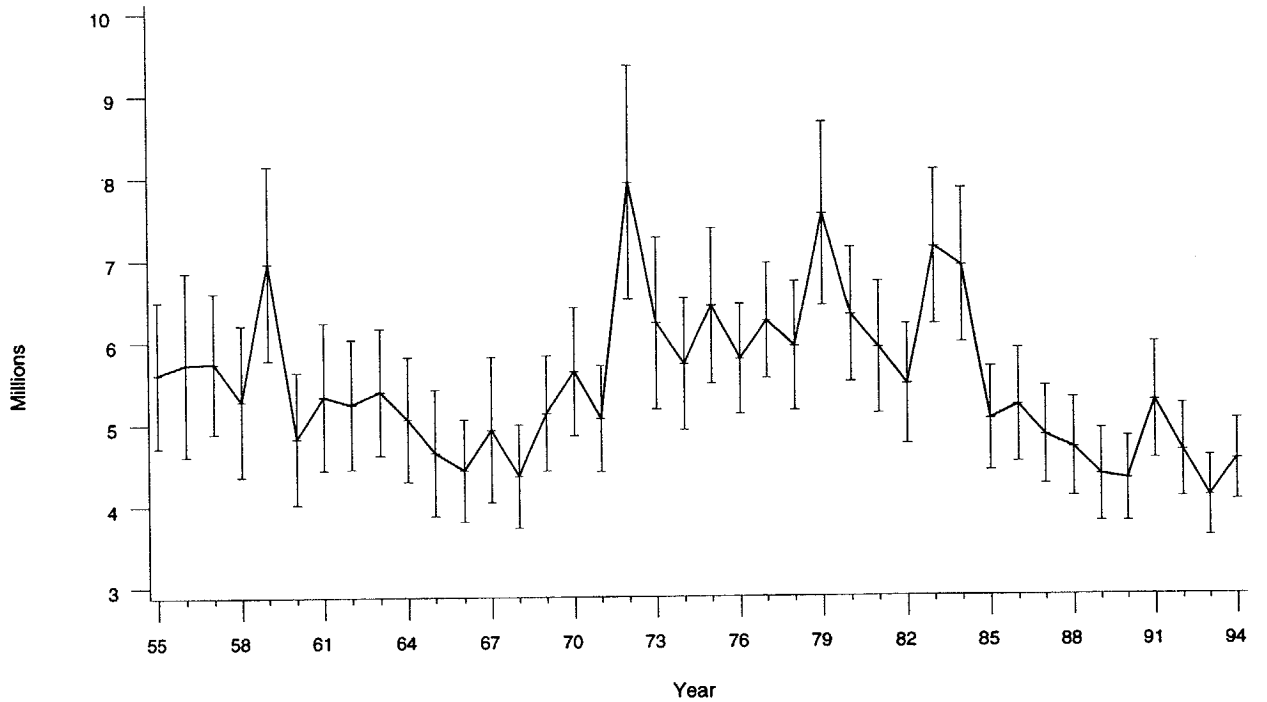

Fig. 10. Scaup (*Aythya affinis, A. marila*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

response to changes in pond abundance in the Canadian prairies (Fig. 11). Abundance was low in 1962, 1978, and 1985, but the population remained constant around 500,000 during 1955–94.

The distribution of the nesting canvasback population is similar to that of the redhead, although major nesting areas of the canvasback also occur in Alaska (Strata 4; Appendix J). Canvasbacks also occur in boreal forest regions of the survey area (especially Strata 12, 13, and 17). Limited numbers also occur in the north-central states. The survey seems to encompass about 80% of the continental breeding population (Bellrose 1980). Minor breeding areas occur outside the survey area in British Columbia, Wyoming, Oregon, Nevada, Idaho and Washington.

Timing of the survey of canvasbacks seems to have been comparable to that of redheads. The birds occurred in groups in prairie-parkland (11.6%), boreal forest (16.8%) and Alaska (35.1%) regions. As in other diving ducks, the sex ratio in canvasbacks also favors males, indicated by the larger portions of grouped birds, primarily of not-mated males. In 1994, calculated VCF had to be used for the estimation of population sizes in the western Dakotas and Montana (20-year), eastern Dakotas (5-year), and central Alberta (5-year). Calculated values frequently have had to be used in the past (Table 2). Similar to that of the redhead, the survey adequacy may be a reflection of the lower abundance of this species than those of other species (Appendix J). A CV of 13.5% for the estimated population size in 1994 reflects the poor efficacy of the survey of this species.

Other Species

Most American black ducks occur where they are not surveyed, namely in eastern Canada, in the northern portions of the Great Lakes states, and in New England (Bellrose 1980). They are surveyed only in Ontario (Strata 50) and to a lesser extent in northern Manitoba (Strata 24–25; Appendix K). The survey of this species is inadequate. No visibility correction data exist from the survey.

Ring-necked ducks occur in the boreal forest of Alberta, Manitoba, Ontario, and Saskatchewan (Strata 13–25, and 50; Appendix L). The principal breeding range does not extend farther north into open boreal forest. The breeding range, still inside the same closed boreal-forest habitat, extends east through southern Quebec to the Maritimes and south and east through the Great Lakes states (Bellrose 1980). A range expansion into eastern Canada was noted by Mendall (1958). A more recent expansion seems to be in a northwestern direction into Alaska (Appendix L). Additional ring-necked ducks occur in British Columbia. Limited numbers also occur in the prairie-parkland of Canada. The timing of the survey seems to have been adequate. Groups of birds occurred in prairie-parkland (14.7%), boreal forest (9.3%), and Alaska (11.0%) regions. AGCS data have always been inadequate for this species because the prairie-parkland areas are not

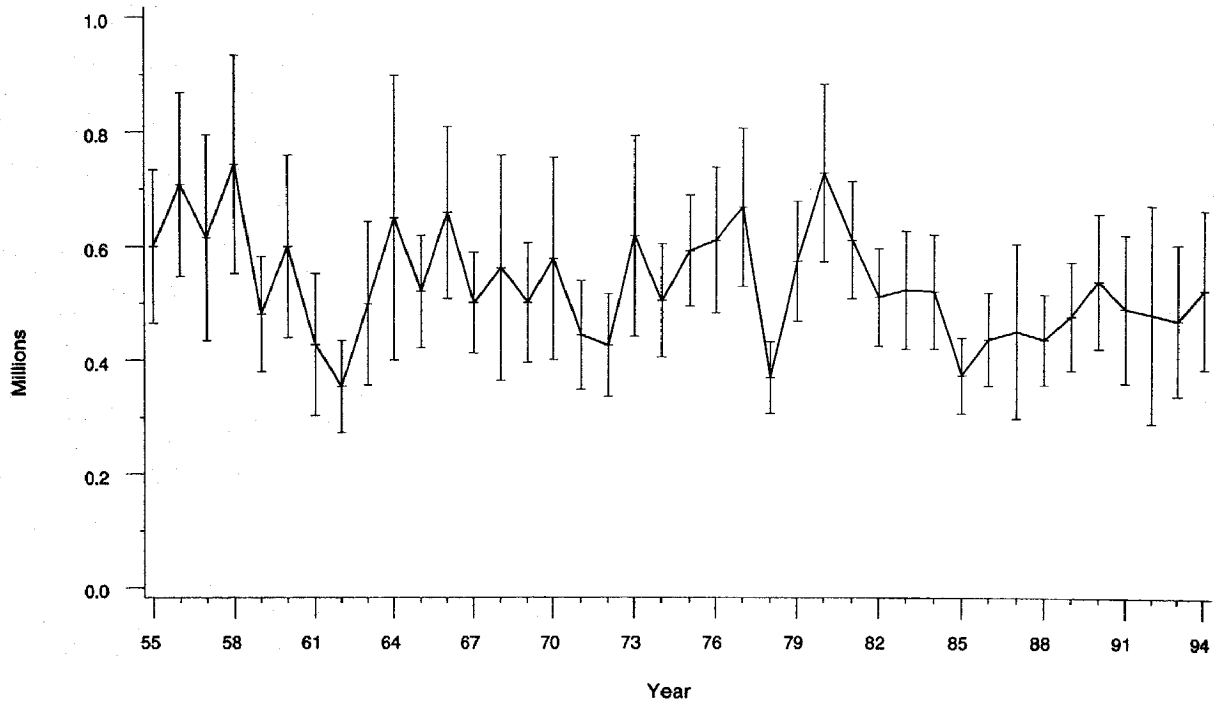

Fig. 11. Canvasback (*Aythya valisineria*) breeding population-size estimates with 95% confidence intervals, 1955–1994.

in the breeding range of this species. The survey of this species is inadequate.

The bufflehead breeds in forested and mountainous terrains from Alaska through southern Quebec (Bellrose 1980). In the survey area, the largest numbers occur in Strata 2–4, 14–26, and 50 (Appendix M). According to population-size estimates reported by Bellrose (1980), the survey annually enumerates more than two-thirds of the population. The timing of the survey seems to be excellent. Few grouped birds occurred in prairie-parkland (8.8%), boreal forest (4.0%), and Alaska (1.4%) regions. Annual VCF were calculated for populations in Alberta in 1994; calculated values had to be used for the estimation of population sizes in all other areas (Table 9). Calculated values frequently have had to be used in the past (Table 2).

The Barrow's goldeneye (*Bucephala islandica*) and the common goldeneye (*B. clangula*) are not differentiated in the survey. The breeding range of the Barrow's goldeneye extends over Alaska, the Yukon Territory, British Columbia, and mountainous regions of Idaho, Montana, Wyoming through Washington, Oregon, and northern California (Bellrose 1980). The common goldeneye breeds in forested areas of Canada from the Maritimes to central Alaska. Strata 1–8 of the survey are in the breeding range of the Barrow's goldeneye and of the common goldeneye, but Strata 12–25 and 50 are in the breeding range of the common goldeneye (Appendix N). A large portion of the breeding range of both species is outside the survey boundaries. Bellrose (1980) estimated about 125,000 to 150,000 Barrow's goldeneyes and about 1.25 million common goldeneyes; estimates from this survey were less than half this value. If Bellrose's numbers were correct, they imply that the survey reveals less than half of the goldeneye population. The survey of this species is poor; few visibility correction data are available (Table 9).

The oldsquaw nests in the tundra of Alaska and northern Canada. Except for Strata 3–14, most of the breeding range is not in the survey area (Appendix O). The survey of this species is poor. No visibility data except from experimental helicopter surveys are available.

Three species of mergansers breed in North America: the hooded merganser (*Mergus cucullatus*), the red-breasted merganser (*M. serrator*), and the common merganser (*M. merganser*; Bellrose 1980). The breeding range of the hooded merganser is centered around the Great Lakes, and stratum 50 includes only portions of the breeding range (Bellrose 1980). The red-breasted merganser nests in open and closed boreal forest from Alaska across Canada to the Maritimes (Bellrose 1980). Major portions of the breeding range of this species are outside the survey boundaries in northern Alaska, in the Northwest Territories, in Ontario, in Quebec, and in the Maritimes. The breeding range of the common merganser is farther south than that of the red-breasted merganser but overlaps it in the southern boreal forests of Ontario, in southern Quebec, and in southern portions of the Maritimes (Bellrose 1980). Major portions

of the common merganser's breeding range are outside the survey boundaries. Mergansers are not surveyed in eastern Canada, in northern New England, in the Great Lakes states, in British Columbia, in the Rocky Mountains south through Colorado, and in the Cascade Mountains south through northern California. At present the survey, because of the extensive breeding areas outside the survey areas, provides a poor indicator of the abundances of these species, and visibility correction data are poor (Table 9; Appendix P). The surveyors do not distinguish the three species. Distinction between the hooded merganser and the large (common and redbreasted) mergansers in future surveys from the air is desirable. As the survey is expanded east into Canada, mergansers will be encountered more frequently.

Three species of scoters nest in North America the black scoter (*Melanitta nigra*), the surf scoter (*M. perspicillata*), and the white-winged scoter (*M. fusca*; Bellrose 1980). Black scoters nest in Alaska, but little is known about their nesting range; this species may also nest elsewhere. Surf scoters nest in open boreal forest of Canada from the southern shore of the Hudson Bay west through British Columbia and north through the Yukon and Northwest territories and Alaska. White-winged scoters nest in closed and open boreal forest from Manitoba west into Alaska. Limited numbers also nest in the prairie parkland of southern Canada. The surveyors do not distinguish among the species of scoters; breeding birds are observed mostly in Strata 1–18, 21, 23–24, 26 and 77 (Appendix Q). No visibility correction data are available except from experimental surveys from helicopters (Table 9). The survey excludes scoters in major breeding areas, and its efficacy for monitoring the abundances of scoters is poor.

Four species of eiders nest in North America; all also breed along the eastern Russian coastline (Bellrose 1980). The breeding range of the king eider (*Somateria spectabilis*) in North America is along the northern arctic coastline from Alaska east through Greenland and south along the western shore of Hudson Bay. This entire area, except portions of Strata 13 and 14, is outside the survey boundaries (Appendix R). The spectacled eider (*S. fischeri*) in North America nests along the western and northern coasts of Alaska. Ducks in only a portion of this area (Strata 8–11) are surveyed. The breeding range of Steller's eider (*Polysticta stelleri*) in North America is restricted to coastal Alaska between Anchorage and Demarcation Point on the Arctic Ocean (Bellrose 1980). This population consists of few birds. Only portions of Strata 8 and 9 are in this area. The common eider (*S. mollissima*) has the widest range of any of the eider species that breed along the coastal area from Alaska north across arctic Canada and south along the Hudson Bay and along the Atlantic Coast of the Maritimes. Only portions of Strata 8, 9, 10, 11, 13, and 14 are in this area. No visibility correction data are available for these species except those from an experimental survey from a helicopter. These species are poorly surveyed.

Ruddy ducks occur in the prairie and parkland areas of Canada and in the north-central United States. In the survey area, the largest number of ruddy ducks is in Strata 26, 30–32, 37, 39–40, 45–46 and 48 (Appendix S). The survey seems to be adequate for the monitoring of the ruddy duck population size because the birds are surveyed in the majority of their range. Other breeding areas occur in the intermountain marshes of British Columbia and in California, Idaho, Minnesota, Oregon, Utah, and Washington (Bellrose 1980). The survey of the ruddy duck may be too early. Large numbers of ruddy ducks in groups were seen in prairie-parkland (47.9%) and boreal forest (33.8%) regions. As in other diving ducks, the large number of groups may be indicative of a sex ratio that favors males. Only in the eastern Dakotas were enough ruddy ducks seen to calculate an annual VCF in 1994 (Table 9). Calculated 5-year values had to be used for the estimation of population sizes in most other areas and calculated 20-year values for the estimation of population sizes in the western Dakotas and in Montana.

The American coot breeds throughout much of North America (Robbins et al. 1966). Its breeding range extends from Mexico northward to the open boreal forest and eastward through southern Ontario and Quebec. In northern areas, the American coot is migratory; farther south it is not. The survey is of only a portion of the migratory population. In the survey area, the abundance of American coots is greatest in the southern boreal forest throughout the prairie-parkland (Strata 20, 24–49, 75–77; Appendix T). The portion of the continental populations that is surveyed is unknown. The calculation of VCF for the coot seems to be good. Counts were inadequate in only one area, the western Dakotas and Montana (15-year); annual values were used for the estimation of population sizes in all other area (Table 9). Most formerly calculated VCF also were adequate (Table 2).

The survey has not been of other species such as swans, geese, wood ducks (*Aix sponsa*), and harlequin ducks (*Histrionicus histrionicus*). These species are recorded when observed, and their population sizes have been estimated.

Pond Numbers

The amount of precipitation influences pond numbers in the Canadian prairie and in the north-central United States. Pond numbers increased during the early 1960s, fluctuated widely in the early 1970s, and declined during the late 1980s (Fig. 12). Ponds have been surveyed only in Strata 26–49 and 75–76 (Appendix U). These surveys were initiated in the early 1960s in the Canadian prairie but not until 1974 in

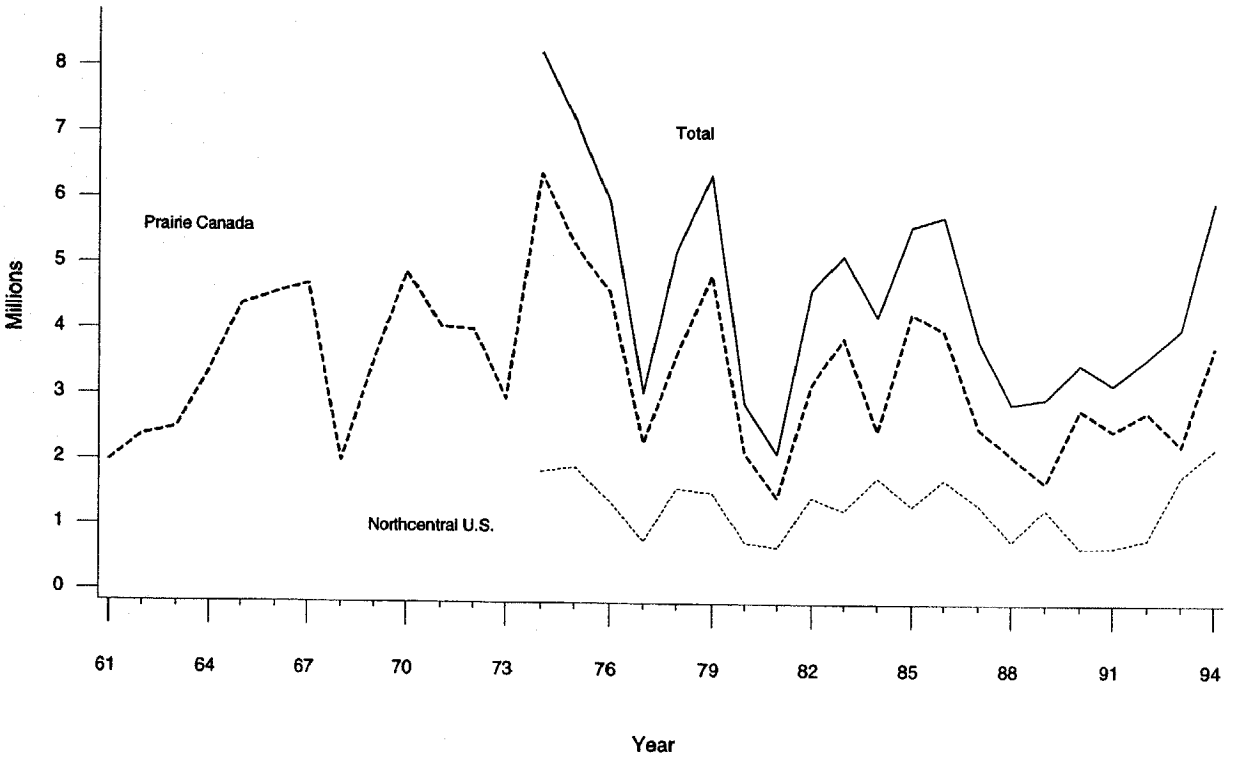

Fig. 12. Estimated number of ponds in Canadian prairie, 1961–1994, and in the north-central United States, 1974–1994.

all areas of the Dakotas and in Montana. Ponds in Strata 75 and 76 have only been surveyed since 1989.

Comparison With Former Procedures

Estimates

Population sizes that were estimated with calculated VCF (northern pintail, northern shoveler, blue-winged teal, mallard, gadwall, scaups, American coot) were generally similar ($P > 0.05$) to former estimates that were calculated with constant VCF (Figs. 2–11). Of the 10 species of which the U.S. Fish and Wildlife Service reports annual abundances, the largest differences between former and recent estimates were of the American wigeon, the green-winged teal, and the redhead. In 1989, the recent population-size estimate of the green-winged teal was 33% smaller than the former (Fig. 5). The decline was largely due to the greater use and the lower values of the new constant VCF. Annually calculated VCF decreased in the 1980's because of drought and changes in habitat conditions. However, constant VCF that were larger than annually calculated VCF had been used in accordance with the *Standard Orders of Procedures* (*Canadian Wildlife Service and U.S. Fish and Wildlife Service 1977).

Variance

The recent population-size estimates were more precise than the former estimates. An examination of the VCF and of operational count components of the total variance revealed that most improvements in precision of the population-size estimates were due to the increased precision of the population-size estimates in the boreal forest and in the tundra (Table 10; *Bowden 1984 [Table 1]). The total variance in 1991 was 80% smaller than that calculated by Bowden (*1984) in 1983; improvements were made in all crew areas. On average, the VCF portion of the total variance was 35.8% in 1991 and 78.3% in 1983. The estimates from the boreal forest and from the tundra continue to supply a disproportionate share of the total variance. In 1991, ducks in these areas were 44.0% of the population but contributed 66.0% of the variance. Variance estimates from the boreal forest and from the tundra strata were probably unrealistically small. I have no basis for this statement other than my belief that VCF calculated with data from surveys from helicopters are not the equivalent of VCF calculated with data from surveys on the ground. From a helicopter, some portion of the birds are missed, either because of the nature of the survey from a helicopter or because of behavioral responses by the birds. If my suspicions are correct and the

Table 10. A comparison of the magnitudes of mallard (*Anas platyrhynchos*) population-size variances with new and former procedures. New values are from surveys in 1991 and former values are from surveys in 1983 (from Table 1, Bowden 1984).

	Coefficient of variation		Variance (visibilty component)[b,c]		Variance (bird count component)[b,c]		Visibility component portion of total varience	
Area[a]	new	former	new	former	new	former	new	former
Southern Alberta	8.2	12.1	1540	6318	2480	4173	38.4	60.2
Southern Saskatchewan	12.1	11.7	2875	16762	6595	5843	30.7	74.2
Southern Manitoba	5.8	9.3	388	4656	358	442	52.2	91.3
Eastern Dakotas	9.8	13.8	494	3059	1372	987	26.7	75.4
Western Dakotas and Montana	9.9	10.1	632	1805	848	617	43.1	74.5
Other[d]	8.2	19.5	12441	183327	21932	47921	36.7	79.3
Total	4.4	8.3	18370	215897	33585	59983	35.8	78.3

[a] Strata 50 excluded from the analysis.
[b] $X10^{-6}$
[c] The interaction term in the variance equation is assumed to have a neglible value.
[d] Strata 1–25, 75–77 (former 19; boreal forest and tundra).

estimated variances of population sizes in the tundra and boreal forest are too small, then some of the improvements in the total variance are artificial. There is no way to judge this.

The precision of the mallard population-size estimate in 1991 was best (CV = 4.4%) at the continental level, intermediate (CV<13%) in the crew areas, and poorest (CV<37%) in the individual strata. The relatively poor precision in the individual strata complicated drawing inferences at this level. Precision was better of the population-size estimates of the mallard than of those of other species. The recent addition of more AGCS in the Canadian prairie may allow future inferences at the strata level in this region.

Recommendations

The survey, probably the most extensive survey of wildlife populations worldwide, is critical to the sound management of duck populations in North America. Survey results form the basis of the long-term monitoring of these populations and are the key database from which biologists derive their understanding of the dynamics of these duck populations. The analytical techniques and the geographical coverage of the survey continue to evolve. Such evolution is critical to ensure that the survey continues to meet changing management needs.

Specific recommendations are:

- Minimal sample count criteria should be used to calculate new VCF for surveys of ducks in the prairies. When counts are inadequate, data from AGCS in past years should be used in the crew area to obtain minimal sample count criteria.
- VCF that were determined from fixed-wing aircraft and helicopters for surveys in the boreal forest and tundra strata should be used in these areas.
- The current-year AGCS data should be used, to the degree possible, for the calculation of VCF.
- Any AGCS that remain off-line should be moved onto survey transect lines.
- AGCS that are not representative or that have abnormally high counts that dominate AGCS counts for a crew area should be replaced.
- Increased ground sampling effort is needed in Crew Area 5 (western Dakotas and Montana) and to a lesser extent in Crew Area 4 (central and eastern Dakota) to allow the use of annually calculated VCF for surveys of gadwalls, American wigeons, and scaups.
- Surveys of several species, for example, the green-winged teal, coot, redhead, and canvasback, are presently inadequate for the calculation of VCF. Increasing the number or length of AGCS may improve the precision of estimates of some of these species. However, in some crew areas, densities of these species are so low that only large increases in AGCS would improve precision. Where substantial portions of the breeding range are outside the survey boundaries, the population-size estimates of continental populations will continue to be poor.
- Without major expansions of the survey area, some species, for example, the ring-necked duck, goldeneyes, bufflehead, and merganser will always be

inadequately sampled. The surveys of other species, which nest in forested habitats (e.g., wood duck, hooded merganser) from fixed-wing aircraft also will remain extremely difficult.

- Pond VCF should be calculated from matching aerial and ground counts. Variances can then be calculated in a similar manner as variances of duck population sizes.

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[3] An asterisk denotes unpublished material.

Appendix A. Breeding population-size estimates and standard errors of the northern pintail (*Anas acuta*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	3281	3575	4267	4161	63889	40679	106639	100203	36249	36509
1956	3530	3522	4347	4082	66770	39787	112287	97735	39831	35657
1957	1383	906	654	482	45663	16687	74693	16393	16834	6405
1958	4265	1737	5231	2961	52841	16497	86236	27943	29927	8274
1959	4426	3324	10462	4302	60420	13885	163323	47711	73215	15827
1960	3227	1822	3269	1403	52624	13467	207442	39487	30462	10251
1961	4317	3391	1635	756	60031	17085	62131	12620	60122	17025
1962	7147	3402	10135	2649	182431	42148	204386	31586	60389	11950
1963	9880	5463	2942	790	98357	29462	132409	22739	95890	29850
1964	3596	770	4527	1568	76956	17088	117131	18785	77539	16334
1965	3320	1243	5659	1624	68217	17214	93252	13356	62770	14649
1966	2213	1296	3018	1504	37209	8571	137163	55738	34591	5560
1967	4980	2941	4904	1325	69330	16870	173830	32463	43919	10239
1968	5394	1003	6790	2621	98870	21865	312351	58806	103774	22599
1969	8023	6218	4150	1684	60243	24732	119848	23316	48195	9586
1970	3181	1827	6413	2067	53865	17539	112378	21328	50332	8778
1971	1936	613	1886	1290	35437	9922	69260	13517	38089	11569
1972	9406	5339	4150	1573	68571	14114	144971	38681	44308	10268
1973	4980	1922	8865	3589	50852	12569	195559	32632	78705	22187
1974	1936	566	10563	2315	55282	12986	119848	19935	65102	19852
1975	8299	3278	1886	821	45005	10067	156854	30235	56357	15542
1976	2766	1499	6036	3924	50321	11786	119848	16708	44697	13140
1977	4426	2401	7545	2676	154666	43203	340870	77389	192584	55660
1978	1383	862	4904	2721	61306	22104	211855	31204	62187	17223
1979	4150	2405	9808	4960	47132	11365	99816	18968	37312	7363
1980	2213	605	12072	2978	119778	28249	500100	107653	86673	9431
1981	1936	1426	4904	1643	87176	44286	242072	44291	82980	17697
1982	4703	3987	5281	2701	49258	10263	208460	43691	45085	7060
1983	2766	1304	4150	1633	49966	17116	205744	39090	43919	5833
1984	3596	2685	2263	1381	71229	18784	188089	36801	68988	17018
1985	1660	1186	1509	502	42702	11012	84538	13132	46640	16216
1986	6363	4707	2641	1531	35616	8813	222389	28050	65299	7275
1987	1660	1410	2264	965	61309	25668	177911	34813	56942	13435
1988	553	334	9054	4107	43590	15276	202696	53355	65104	13202
1989	2490	1197	5470	2831	57940	14809	179941	42794	40810	9705
1990	3873	1783	3961	2571	57940	14691	170435	41229	51693	7170
1991	2490	1464	4904	1544	76367	15580	181978	41060	34786	10569
1992	3865	2115	5836	4813	45979	14348	80985	19413	30451	5951
1993	1104	1082	3765	2118	26526	9339	133168	24224	35300	5236
1994	828	812	377	356	33953	12159	82679	21014	39761	5082

Appendix A. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	14542	15007	4888	3264	30198	29033	198533	139207	70707	88359
1956	15345	14666	5147	3223	32841	28354	205007	135834	69722	87103
1957	8764	4163	5345	3191	27388	7554	111721	23441	24553	6021
1958	27251	13189	2716	3168	19115	9770	325598	78278	85097	27248
1959	10679	2724	4024	3150	44267	9701	326450	60516	144913	35087
1960	11048	4217	11066	3136	50304	13336	190574	40745	40898	18502
1961	17615	3910	5782	3126	20121	5728	231122	34730	74714	20544
1962	17308	5708	7142	3117	35464	8527	166399	45244	105637	39484
1963	32222	9717	19314	3111	59861	10122	293971	53031	42887	15183
1964	25133	3837	5944	3106	123681	25309	248589	31728	40592	26965
1965	19978	4169	5973	3103	38712	6877	160943	34677	35212	14867
1966	11342	5461	5985	3100	45929	14671	267615	60964	102703	33193
1967	24972	5612	5977	3098	39040	10607	209289	30044	44994	18357
1968	23716	7081	5951	3096	30510	9868	616637	151002	125200	59824
1969	16884	6098	5908	3094	56427	11807	235489	30469	34234	16969
1970	22942	10858	5851	3093	45273	9765	249524	44869	98791	52773
1971	11342	4140	5784	3092	20668	5332	163438	26011	19562	12539
1972	20622	7583	5710	3091	61020	12241	362122	69895	76294	26844
1973	19591	4300	5630	3091	37400	9036	464115	50818	88031	23058
1974	25262	5292	5545	3090	65941	17296	341225	51820	115419	29388
1975	13662	4635	5456	3090	52491	9758	175915	27170	61133	41105
1976	24231	6765	5364	3090	60364	9886	269798	45757	133025	18600
1977	22556	4152	5266	3090	131883	27432	603849	113301	244531	99232
1978	21524	4906	5160	3090	57740	11977	378029	47604	104170	35841
1979	18689	5496	5046	3090	47242	9304	235177	39410	146299	79538
1980	66249	10088	4923	3091	89890	15657	500296	63227	225947	105991
1981	62253	8090	4797	3091	55771	14837	501856	78709	283796	190895
1982	42018	11758	4667	3092	37400	8455	219581	42220	84678	48643
1983	43693	9068	4534	3093	34119	6299	299429	39194	134562	65215
1984	52071	8411	3420	1790	44617	11247	276348	39326	108153	50571
1985	24747	5542	4627	1410	49866	24124	193381	25816	95996	64758
1986	48722	11661	3119	1610	32807	6756	276972	44770	77551	45744
1987	34930	7781	3169	1112	51506	14800	317832	34956	140431	82065
1988	30935	4587	1509	485	49210	14827	325629	47243	235169	120454
1989	29000	5644	1509	799	34243	9047	272918	67558	107526	83072
1990	31320	5941	2314	1094	50766	13386	363010	70611	128822	66127
1991	32093	8695	1408	677	46345	8455	298368	64909	131961	74807
1992	20839	3700	1205	398	42339	12167	346675	47628	121199	84893
1993	24441	6437	1506	439	43323	9475	273346	34943	95198	65512
1994	19810	3529	2008	617	32164	10978	275218	39671	111554	48690

Appendix A. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	58356	52427	70663	30979	166828	76379	238981	92417	142238	104253
1956	56500	51629	65588	30265	44486	23438	205803	79186	19886	102476
1957	42288	7842	39929	19367	59869	43798	145845	19974	72997	101057
1958	72815	16542	41386	10104	225603	134309	123428	35460	33180	99921
1959	106646	19354	102882	22660	235094	109024	471162	207065	617154	99010
1960	43398	5150	98219	25186	309565	108786	182768	67399	46452	98277
1961	54466	12522	42843	7470	116087	65740	243295	129598	112813	97686
1962	53689	10474	14864	3028	110976	84931	87824	51193	72997	97208
1963	45534	7225	27688	14719	43076	22143	92571	30940	19908	96821
1964	35000	8175	14864	4668	35045	16546	111560	25784	13272	96507
1965	54368	11177	37847	28040	90533	40684	124615	57470	19908	96252
1966	65242	29884	4663	2332	15332	2788	32611	13578	6636	96045
1967	41456	13105	18653	6002	10952	2644	24923	14608	0	95876
1968	85291	26310	30019	7969	11682	1529	22237	9853	79633	95738
1969	40776	9860	15447	4721	22633	8555	5934	3589	0	95626
1970	66262	18883	18653	5449	14602	3149	26788	9035	8532	1765
1971	63203	16479	21859	7722	13872	5353	22549	6561	17064	2807
1972	84271	20520	17487	6997	21416	3917	96102	23344	99541	8197
1973	154950	34049	11804	1169	32855	4534	116786	48494	42660	26151
1974	111455	27888	20402	4579	21173	5885	71309	10858	8532	1765
1975	65242	13190	9618	3295	15332	2224	24556	7401	62711	16033
1976	104999	43951	32934	5427	29569	17292	101281	33788	12443	5673
1977	175338	59974	47652	25909	61694	16167	177677	31110	92075	65542
1978	91067	41927	12532	1933	16792	6027	76974	16662	18177	11797
1979	68980	17588	32497	14493	10221	2657	41091	10531	7466	9321
1980	109077	27730	99239	27076	77026	18334	101281	19757	39816	8131
1981	99222	20417	61933	28267	25554	8276	103133	46963	24885	31069
1982	73397	18381	13698	2226	10952	3133	11162	6493	17420	16802
1983	70679	13140	31768	9639	13507	7812	92600	29476	44793	14130
1984	92766	35786	14427	5172	157338	65010	57875	14405	14931	18641
1985	77475	22401	13990	6641	10221	5180	128483	48211	29862	7836
1986	79854	22609	31185	8228	18618	6563	70608	27934	27374	19352
1987	74757	20303	36723	16267	21903	6377	46300	20474	42305	8781
1988	154610	54122	24482	4218	30299	12448	43406	17891	7466	873
1989	125648	41937	21130	9479	24824	13624	46300	12461	7466	5614
1990	192925	117489	45903	22953	28109	13672	32989	13096	2489	1871
1991	134229	42025	81315	21504	13142	3629	74080	17730	12443	1198
1992	158416	89144	41922	17016	28807	15728	78622	25398	5188	1203
1993	78868	13364	26783	7499	17867	12141	47404	19098	14204	4993
1994	168954	52522	20233	7985	15315	12477	36420	14503	4971	1305

Appendix A. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	55833	41965	217009	100443	28277	18144	90748	42206	0	0
1956	21587	2902	109863	53373	0	0	75747	24168	0	0
1957	18009	7857	128842	89208	27773	14027	68139	20488	0	0
1958	43222	22712	263968	113506	13887	1144	46433	18739	0	0
1959	212507	60286	568788	148164	86792	17132	108253	24660	6646	3903
1960	10805	8940	34567	18564	10415	1931	20607	11551	0	0
1961	14407	10292	153981	27715	38188	12511	198647	136177	3128	3310
1962	39620	22404	31425	16066	3472	1753	68963	20079	0	0
1963	14407	10292	47137	25032	13887	7014	26102	12735	3128	2945
1964	7204	5146	87989	52141	20830	10520	20607	5777	1957	3847
1965	25213	3325	50280	32843	6943	3507	41488	20170	0	0
1966	18009	20489	62850	15645	3472	1753	6594	2700	0	0
1967	0	0	25140	17394	6943	3507	8517	2818	0	0
1968	3602	2573	21997	13373	3472	1753	32146	10219	0	0
1969	25213	28685	6285	8778	0	0	3847	1049	8458	5951
1970	3259	2316	22979	18242	2314	1772	3297	1366	15191	6418
1971	0	0	8036	3647	0	0	7418	2820	1266	1307
1972	13035	6454	118703	32235	11572	8860	14012	3415	0	0
1973	9776	6949	72791	11486	11572	6423	15111	2627	782	770
1974	19553	13898	21997	12041	2314	1772	4121	1247	794	802
1975	19553	8283	130727	37300	16201	5611	20881	7423	0	0
1976	16294	12473	66230	21927	9258	2770	5770	2413	7403	3118
1977	65176	41267	68087	15049	16201	5611	8380	5255	6905	3470
1978	52140	18136	32187	15043	4629	3544	10303	2658	5630	3064
1979	6518	5307	34043	10090	13887	7014	3022	1971	3753	1899
1980	3259	3473	30949	10465	6943	3507	27613	12540	2921	1571
1981	22811	10626	48280	7997	42817	21910	24590	10354	4833	2483
1982	9776	5676	18569	4544	2314	2408	6045	3005	1945	1011
1983	71693	46408	50756	22025	11572	8860	74046	14354	771	759
1984	35847	19426	58802	19179	20830	15178	23079	5797	0	0
1985	22811	9704	49518	12289	9258	3605	4121	1839	0	0
1986	0	0	30949	7297	6943	5316	3297	1751	3753	1665
1987	3259	3661	44566	13028	16201	8290	12776	1776	3430	1616
1988	9776	5676	53232	18144	9258	7088	18271	11242	5908	2652
1989	9776	3483	40852	12217	13887	10632	14012	7580	572	575
1990	0	0	24511	10270	2314	1772	9891	4734	0	0
1991	32588	14344	30949	9867	11572	3055	9891	4584	618	610
1992	13020	9255	60591	21238	4624	3540	15369	6863	571	567
1993	6510	3064	62446	24188	6936	5310	21132	10139	1562	1066
1994	3255	4006	9892	3637	4624	3540	2744	1544	1660	1098

Appendix A. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	19556	10148	1444	1627	0	0	121679	80704	449884	43546
1956	18646	10655	29371	27168	0	0	12087	10104	374515	42293
1957	5333	5010	10885	4934	1626	1424	18151	1523	361588	45402
1958	7000	1300	0	0	2361	2796	21176	4670	337482	36345
1959	16000	9596	16846	5618	5086	3959	21176	4616	191292	20932
1960	8889	7241	1497	1436	1033	1085	39560	15792	249612	28551
1961	78223	67856	15257	5150	15065	5117	17375	5352	232505	43219
1962	5333	3047	0	0	7438	3792	17686	3877	114332	26104
1963	18667	10479	3051	1867	7438	7110	19237	4433	424098	83428
1964	20800	6810	4492	5996	6072	5329	26684	10236	89700	17903
1965	6222	3993	7928	5599	3967	3734	16445	5040	217778	42960
1966	21333	19906	1326	1299	0	0	13342	1812	308708	37774
1967	2667	2505	10108	2738	15128	9709	11790	4034	257299	66450
1968	12973	5110	10781	6286	24794	6835	27925	9494	168028	39804
1969	5838	2563	2414	1713	41559	25647	44990	21176	410295	100932
1970	28541	12686	6384	5086	22540	20505	77413	49702	426122	112273
1971	5838	2978	0	0	35626	28582	29476	19226	637483	120919
1972	6487	3862	5990	6728	2419	1499	15824	3833	616868	115695
1973	12667	9149	4852	3962	5361	3586	22029	6178	352350	63646
1974	5189	3550	4492	5046	3628	1715	8688	4176	740443	145880
1975	8432	6704	14375	10715	17661	7795	9681	4609	479009	96478
1976	13622	6188	6317	5232	7855	3532	14117	3846	327730	51271
1977	11676	6411	0	0	20286	9734	16910	6040	153644	26507
1978	19135	7676	18660	9809	14876	5673	16445	9038	254966	70855
1979	5189	5064	4043	3821	12685	3576	5275	2266	392113	82225
1980	6487	2323	4901	3760	7279	5082	4964	1404	326112	67943
1981	4541	2520	15402	8639	16809	9845	12566	4683	271389	50970
1982	11333	7915	1348	1337	1681	1056	3413	1553	167272	33079
1983	649	654	0	0	13774	9342	8998	3241	147492	44790
1984	1297	1308	7522	7869	5883	4904	4964	2401	136961	50435
1985	3243	1931	1348	1363	0	0	4964	2230	154923	46193
1986	7135	4098	0	0	2781	1342	3413	2417	143241	29848
1987	7784	4196	0	0	3673	1956	21564	11592	140887	37535
1988	3243	2478	1207	1182	2521	1764	2792	412	58086	19589
1989	1297	1266	0	0	5883	2748	2792	1339	66656	17914
1990	7135	3845	0	0	3606	1776	2172	1501	103136	35947
1991	16865	7463	0	0	8041	3741	2792	978	66675	18369
1992	2592	1813	0	0	5897	2558	9763	5781	65461	17034
1993	1296	738	0	0	971	930	3012	1285	70042	26095
1994	3888	1742	0	0	3065	1584	4820	2565	80381	29198

Appendix A. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	378833	54061	516868	56048	245939	42805	490575	119231	803490	283970
1956	424035	50162	510124	77335	212785	47601	787805	173022	1351191	303160
1957	294858	25374	409370	46580	184815	43348	498684	84110	1033059	324815
1958	281357	37405	393745	47660	211286	43050	178391	32953	460825	155323
1959	125558	13132	263121	40020	252677	35216	72143	20156	266705	92987
1960	197922	27423	437807	56150	202142	35535	140352	25775	438881	139963
1961	107737	11085	126873	14527	46204	11373	120553	32330	176431	45984
1962	35171	7839	99294	17263	79788	13005	70992	26153	161221	62892
1963	154526	35129	149886	34266	83421	22914	194730	69062	118927	41541
1964	65959	13091	142143	35255	119821	30206	147588	53655	153276	59405
1965	173555	31432	202767	34188	182986	54251	121705	44477	62259	18607
1966	280846	31609	414885	44733	260713	31023	212239	80988	308876	108773
1967	314523	82306	552379	128914	435262	105283	190230	98113	187139	59437
1968	36482	4424	124886	17196	172158	38193	152865	55131	115109	29466
1969	368532	58512	445580	36515	360130	91823	291189	120587	176068	46071
1970	346311	65143	374332	85937	219649	54246	285692	74887	205745	51812
1971	459865	105042	490021	135536	175685	23306	327979	134573	257499	93674
1972	296869	84741	417561	30865	385111	75985	337315	108432	405547	100790
1973	232839	32449	269724	42705	170190	23345	171655	69894	146184	59936
1974	695684	91412	444242	87803	242701	39287	318371	96227	228954	97123
1975	442247	69495	320622	52530	311255	64747	227029	62275	183865	53432
1976	183628	26246	234961	32053	210183	48817	285162	67076	240334	87861
1977	39791	13941	63937	12122	88427	32705	108162	34618	110082	39973
1978	191612	44479	259387	50503	381603	88699	97028	14364	119209	33304
1979	201884	44937	302811	70380	559543	144757	185456	15695	184885	37790
1980	143145	21420	203285	40639	169745	50628	167040	35750	112194	42251
1981	83429	15882	153817	40905	148707	48816	112866	16142	113857	29948
1982	75689	16644	118251	23624	215610	67586	65626	10557	94311	39949
1983	71092	33093	96362	26692	65868	14644	114726	26541	135698	46181
1984	51556	17455	52179	20727	59081	18412	63546	13325	122831	34433
1985	198011	29438	149546	20124	90917	22895	91115	29316	82379	34886
1986	38796	8557	34792	8417	25817	8801	73481	26249	60054	31487
1987	68007	19365	134134	39519	104322	44691	22570	6611	30173	11514
1988	30913	6893	47130	10695	35265	11544	22448	6209	23100	9177
1989	77219	22931	92317	38219	77446	33757	32092	16761	42655	19857
1990	70074	18589	65221	17561	79303	32596	53647	14248	44418	17255
1991	12133	5027	21671	6338	15792	8456	35383	10238	19442	7325
1992	19986	5116	10486	3637	8000	4229	77688	21095	98190	46847
1993	123102	29718	88683	15309	90695	28419	32188	13900	15533	10058
1994	81366	21984	57198	20005	164458	68997	50059	25406	35949	17489

Appendix A. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	2661320	321437	760168	208990	198104	71291	162837	21289	0	7221
1956	3010823	427125	468322	142361	285039	53838	319001	41899	38671	7076
1957	1057436	176884	242491	58079	241686	49196	172558	20664	0	6967
1958	583920	90030	231592	54706	220744	24829	137560	40607	0	6886
1959	238013	42617	98086	18589	84053	11153	16041	4204	0	6825
1960	607578	92964	179825	50429	157917	25530	140963	16789	591	571
1961	343410	85972	164484	45404	27043	8094	14738	5090	0	6745
1962	259621	66541	23854	9164	59163	17253	6221	2060	0	6719
1963	370398	87154	82268	25257	29582	8692	27996	7022	0	6700
1964	321595	64048	64540	21343	65590	18660	100797	21580	0	6685
1965	355312	54909	78510	14844	56673	10877	42105	12397	5140	6675
1966	648192	106523	186959	36814	91127	20487	57389	8809	0	6667
1967	800715	146049	280017	78262	116379	34379	96622	21360	3143	6661
1968	394882	79076	61932	13985	61032	10053	23352	5746	0	6657
1969	878925	117920	222225	36232	158202	39784	229545	55247	0	6655
1970	1360737	255619	218880	39044	144852	37445	201267	39360	11498	9784
1971	1104461	186911	230143	62012	164999	54484	136959	27376	5587	3414
1972	800717	141345	158557	65833	278158	51017	281259	57747	2523	2357
1973	443629	170675	116906	59643	71523	20563	56413	16862	0	0
1974	1043099	165881	198039	37860	197469	33840	200066	30476	1329	1241
1975	925221	127520	195507	43168	251878	60501	266832	40566	1590	588
1976	1134653	168301	271836	64830	224929	56691	392650	118417	6156	5757
1977	300242	76380	44068	11515	63545	23519	46436	13203	724	453
1978	416655	60745	145438	43593	96003	15180	87454	14368	313	292
1979	610339	67278	162790	38837	219483	47356	216966	46462	2907	2719
1980	326822	51969	35718	10001	139935	22746	115882	20738	422	394
1981	175482	29093	44746	11080	59446	15386	19786	5439	360	337
1982	618187	111738	154357	70515	140991	32143	148568	25816	2073	1365
1983	489710	80863	56791	15147	115282	24844	117145	19151	6313	3341
1984	207337	40159	16551	4925	58739	11298	23069	4274	851	794
1985	200310	38073	40562	10101	71218	13777	35045	6818	363	339
1986	216503	74948	78199	41841	52732	16744	64965	17058	535	501
1987	135018	32328	74460	44382	44567	11719	37055	9171	0	0
1988	29410	7099	19200	5137	17379	4165	2217	579	968	904
1989	192046	99761	76829	33210	6413	2243	13681	5267	335	384
1990	91556	23542	34414	13178	95443	28401	17187	7024	1047	643
1991	72185	19536	36021	9469	38309	14674	19649	9888	768	497
1992	148611	30366	30097	7665	53301	10584	48992	12373	703	421
1993	125785	38868	37887	11430	21116	8195	7858	3038	0	0
1994	517227	92189	95316	33171	31756	7040	54867	9787	0	0

Appendix A. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	103610	70853	18439	6493	61468	10139	29915	6549	63190	77479
1956	70129	37121	31241	7692	90000	9383	54071	6560	71749	76214
1957	77343	41689	16311	4556	47832	11353	50795	6090	79719	75288
1958	58372	26718	7801	5859	59580	15300	61642	9978	87037	74601
1959	74424	58096	8510	4450	17937	3280	26903	5603	93753	74087
1960	94638	36497	13474	2162	57272	6828	51196	9166	99795	73698
1961	29498	11875	11403	7919	35467	11043	21583	6290	105153	73403
1962	45138	28079	8320	1012	23942	3636	27410	4061	109999	73178
1963	87941	38474	15128	10257	38934	6180	35119	5390	114498	73005
1964	25218	12243	3604	1757	38065	4929	48062	9848	118696	72873
1965	53010	29308	9248	3161	22276	4923	39364	6674	255093	60082
1966	26105	12678	14378	1816	26145	3088	30049	4589	235351	50547
1967	53195	25359	20600	7866	39936	9536	51839	16856	254711	93346
1968	22590	13004	1893	727	7391	1510	22720	5356	53844	32720
1969	103091	56040	21782	8092	101003	26215	40391	10302	123533	37246
1970	65814	29749	22734	7614	63215	15327	35498	7005	160090	47826
1971	42952	14765	33879	16020	33824	9306	23293	6442	100836	32569
1972	64416	24780	19674	8925	62234	10204	63125	18641	202019	52608
1973	30666	11229	636	488	27164	6988	15090	4719	113137	19591
1974	149496	76838	19238	2512	72392	11076	59349	8437	96642	39876
1975	70520	18527	20373	4601	83927	17519	39788	6959	223099	63623
1976	75264	30946	11656	6432	99567	22748	56758	22629	176385	88792
1977	6810	3070	0	0	9345	3590	9316	2970	82506	23569
1978	34855	6345	2437	821	24560	4484	28483	5204	295874	110079
1979	52246	17488	29955	16010	53154	14848	57666	17503	267108	82656
1980	13596	4214	6575	2562	25393	3968	22602	6701	105089	47932
1981	20796	10217	2807	720	19614	6449	15437	3600	112856	61923
1982	22978	6212	15008	5440	45182	10206	21855	6895	270418	106868
1983	25682	7512	6250	1564	26151	4453	32839	6506	71428	26306
1984	6862	4183	1422	552	10740	3494	6996	2136	65893	26590
1985	6826	2587	2829	1143	19356	5752	11412	2773	43281	16236
1986	39549	19670	17884	7981	34073	10910	28498	9756	81297	28370
1987	14150	11738	4590	2808	18909	4446	18655	7349	107569	48706
1988	13008	2841	539	617	6941	1334	12110	2874	29462	6782
1989	900	640	1865	1110	12007	5683	1676	541	38926	12425
1990	11958	2816	1166	888	10961	4343	30124	8715	105498	35980
1991	6710	3692	856	668	6390	2633	9061	3562	35780	16579
1992	23386	6232	3525	1816	33681	9842	29154	8517	40605	10394
1993	10866	5190	3276	2534	16025	6386	7357	3083	81615	27277
1994	8913	4403	13957	7605	23253	5043	1581	980	169670	64381

Appendix A. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	31201	0	39470	0	39098	166381	158610	93753	68808
1956	0	30415	0	37892	0	37185	182620	155130	100550	67299
1957	0	29836	0	36770	0	35776	197785	152364	105875	66100
1958	0	29403	6501	5789	1217	34739	210158	43590	113722	43141
1959	0	29078	0	0	3333	2439	54729	16368	8027	4520
1960	0	28831	1232	1040	7774	1574	503504	125193	122419	29902
1961	0	28643	5201	4631	19987	10585	163404	19012	76261	17927
1962	1712	28499	2601	2316	41084	16562	203278	52089	212727	43887
1963	5921	28389	18011	33955	23000	9603	197867	60269	104806	30899
1964	9890	28304	1558	1662	4593	2573	157048	48694	71665	27649
1965	32288	9418	25796	33639	20700	11322	252971	40968	189985	50321
1966	27597	6728	29240	33531	34501	10172	214426	64370	238011	50285
1967	22553	9532	65803	8456	68753	19311	319502	93270	141748	43086
1968	18398	4304	17547	3654	32201	7895	90771	30200	61070	16439
1969	32860	10259	37794	8440	28846	9060	441204	53459	195357	26073
1970	31158	5174	106784	28586	57357	11215	560269	168775	145234	41527
1971	23435	7673	32995	6569	63060	17518	569385	115035	80529	24473
1972	38577	12338	119982	28867	117063	31642	429305	157150	144859	48739
1973	54601	16743	50992	19255	75135	16546	138236	62888	61304	26673
1974	20195	8294	28019	11485	41403	16153	337591	108369	106362	25825
1975	36127	10505	58990	27716	97698	26964	277885	67361	105383	26017
1976	49660	23847	41831	16183	26627	12821	107666	35751	55320	17917
1977	35955	14047	34654	13108	69469	25739	41027	11238	15419	5726
1978	53018	21176	114246	31494	117999	42923	261453	58430	206305	42156
1979	57670	20120	77072	22742	68467	23890	282688	50104	144081	33480
1980	41487	12117	22581	9259	23086	7707	203446	43715	65772	15697
1981	44445	26894	23734	12280	26541	13703	87151	23157	22840	8092
1982	36480	13625	100502	28490	58618	27092	173759	35516	91936	15714
1983	16860	6736	50295	18696	66934	25419	175630	37719	101762	26663
1984	33857	13145	73815	33931	59281	25902	183294	47088	116810	25263
1985	13259	3858	24977	6534	28612	9896	126846	41355	45728	15599
1986	14596	5605	39798	15095	77284	22485	136869	19978	82033	13743
1987	38450	12393	57893	17884	82848	21101	81663	18891	51243	11502
1988	32141	8828	32814	7811	40690	13736	62698	22322	52945	18216
1989	19097	4489	19131	7667	25056	9906	53994	9079	35133	6876
1990	25652	7237	36392	9845	30522	6838	11384	3413	14002	4598
1991	7319	3006	10357	3974	14063	6083	20673	7235	18255	6288
1992	34885	11207	25316	8119	19716	8217	61971	15762	24021	6791
1993	48767	13389	22523	6832	42768	11993	38690	14536	59781	10238
1994	74868	34482	70913	29545	78985	24197	160990	34714	136690	29506

Appendix A. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	12918	154739	128184	42863	28141	0	0	61626	53424
1956	0	12668	157614	124559	41663	27387	9600	5767	58102	53233
1957	0	12469	159921	121676	40461	26788	0	0	36926	42549
1958	0	0	161782	119383	39340	26312	0	0	208824	234688
1959	0	0	16203	5636	5950	1864	9722	4139	54753	28978
1960	5512	5512	238431	46802	59500	10484	6767	4941	7640	4277
1961	0	0	134572	26713	20825	4997	2986	1755	15280	13594
1962	11024	11024	418568	44002	98175	13034	0	0	1273	993
1963	0	0	143769	37435	54835	13120	3455	3367	5093	6218
1964	0	0	74373	16193	29879	7319	0	0	30560	29717
1965	9799	9799	100315	23478	7933	2531	0	0	61119	74617
1966	13619	13619	183330	39999	11026	3617	1727	1721	12733	15545
1967	17844	7447	100534	30589	17280	9102	0	0	10187	7941
1968	0	0	82626	26633	14239	6009	4751	3031	21646	4464
1969	19335	6208	323461	63115	44285	15092	3097	1769	16553	12903
1970	19360	13830	224429	70558	51560	25401	4645	3054	16553	12903
1971	7109	6885	146867	38688	37866	16049	3025	7721	36926	28784
1972	54942	22679	243514	92532	34861	15034	5585	3473	19736	15385
1973	6535	4854	166918	73820	33067	14965	6193	2948	14007	3444
1974	15168	8371	46927	13477	10772	3454	2847	7719	6367	4963
1975	13378	7820	109225	28269	11283	6505	2781	7719	22920	7846
1976	3779	4068	69579	25696	15503	8068	2711	7720	14007	4522
1977	0	0	52128	15862	9228	3079	2635	7722	5093	3970
1978	6476	6272	477921	128139	82526	24492	2552	7725	5093	3970
1979	13504	6469	160630	47528	50864	20646	2458	7728	14007	8399
1980	0	0	56728	20999	39934	10678	2351	7732	1273	993
1981	1491	1444	16569	4798	9925	3799	2224	7736	15280	9391
1982	3173	3437	130380	37647	15210	5879	2074	7742	5093	3970
1983	1716	1011	117302	19621	39521	10563	1895	7748	11460	8933
1984	1540	920	164252	33289	39986	13363	1681	7755	31009	21964
1985	1364	1473	98925	26482	37777	11035	1428	7764	5093	3970
1986	1281	1240	253203	46188	59037	16256	0	0	1273	993
1987	842	816	104788	18979	25125	6994	3097	3185	3820	2138
1988	1264	1227	61898	21137	15827	5259	0	0	8913	6948
1989	706	683	110822	24072	12410	5114	0	0	20589	10128
1990	0	0	23094	8349	9832	3051	4645	1942	14837	6897
1991	0	0	49458	17732	6295	2953	0	0	3898	1591
1992	761	738	34188	8977	11759	4191	0	0	4527	2576
1993	5881	4139	101692	22488	22190	6206	0	0	1687	1027
1994	6924	5094	134493	33802	16597	4157	0	0	5239	5092

Appendix A. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	21375	26468	138476	96334	9368659	650750
1956	21510	26274	130729	95458	10016279	689501
1957	4473	26108	22292	14823	6292962	486719
1958	4473	25968	170904	117446	5760992	440674
1959	102872	25849	126321	73405	5628336	362962
1960	4473	25747	70591	30415	5506496	313433
1961	35781	25660	349239	397970	4027983	489917
1962	4473	25585	26007	15944	3456114	230249
1963	4473	25519	40868	27955	3699115	243417
1964	0	25462	148612	93055	3162897	226456
1965	0	25412	33438	22403	3591918	221851
1966	0	25367	44584	20867	4811934	265557
1967	33048	25761	28940	11546	5277693	341940
1968	8945	25294	22292	21829	3489395	244623
1969	6958	8494	10853	4984	5903888	296191
1970	48703	37964	18194	8608	6391987	396727
1971	10436	1442	16496	5111	5847204	368133
1972	22612	17626	51932	23923	6978954	364513
1973	13915	7409	49488	21019	4356220	266988
1974	86969	30146	78279	54276	6598182	345810
1975	38266	9408	91644	37383	5900370	267326
1976	6958	5423	5611	2667	5475644	299161
1977	13915	4020	43302	27951	3926093	246802
1978	13915	10847	32992	20967	5108179	267756
1979	26091	16895	79955	52538	5376133	274413
1980	5218	721	2749	1693	4508077	228608
1981	16524	4361	22443	10115	3479479	260506
1982	3479	822	27493	16612	3708758	226559
1983	6958	2010	32992	15911	3510642	178068
1984	29467	6319	30860	9413	2964801	166782
1985	10436	4702	21995	6132	2515493	142969
1986	8697	3352	17871	7538	2739747	152100
1987	8697	6779	31617	16366	2628344	159412
1988	1739	1356	16496	5851	2005522	164048
1989	14574	6537	21041	9885	2111902	181253
1990	8650	4121	46290	18133	2256630	183280
1991	3351	1895	33665	7862	1803385	131280
1992	3891	1751	60485	25383	2098139	160972
1993	1254	878	49488	29561	2053418	124184
1994	7302	3464	15121	4063	2972266	188005

Appendix B. Breeding population-size estimates and standard errors of the American wigeon (*Anas americana*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2050	0	11439	15050	21916	10405	68245	2488	14027
1956	0	2007	0	11183	15554	21547	15460	66148	3146	13650
1957	0	0	475	497	32368	10338	21707	6578	8542	3951
1958	0	0	1900	1207	14790	4976	49334	11630	5436	1525
1959	0	0	1425	726	16993	4682	36352	7657	3883	982
1960	0	0	0	0	18409	6839	24667	5122	6989	2696
1961	522	1907	1900	1568	11329	3353	45388	8646	4659	2447
1962	335	296	950	995	41916	17966	77948	19178	2330	2209
1963	0	0	475	497	7890	3837	7400	3726	4437	1889
1964	402	341	3837	2828	24941	9240	20720	7355	5083	2229
1965	5628	3420	5482	3599	21112	5314	65779	13741	24568	7880
1966	1206	1024	1644	1181	25232	7421	76468	24355	10731	3841
1967	1407	1128	3837	3366	31558	8116	84362	16395	7907	2453
1968	1206	712	4385	2384	44800	13751	121363	26317	16943	4781
1969	402	341	9593	3904	38620	12380	108536	16463	19767	5748
1970	1206	486	7400	3141	62822	19224	183524	28833	25415	6466
1971	1206	712	4659	1986	49434	15511	84855	13513	7907	3287
1972	2412	890	19186	10578	47889	10590	75975	12708	8472	2906
1973	804	558	7674	3438	40680	10630	85349	15885	11295	2944
1974	1206	486	9867	2949	55098	15283	124816	15960	40664	14565
1975	1608	967	5482	3476	29866	8460	72028	12256	21461	5490
1976	0	0	1644	854	44285	13922	99655	17444	9036	3264
1977	3618	3501	20830	6321	75646	21421	174644	32186	29933	8806
1978	3216	980	12060	4090	76726	24721	202271	33180	44335	13446
1979	0	0	24119	7134	66170	20492	149977	26395	29368	7616
1980	3618	1349	13704	4221	87539	20943	292553	61038	50265	14370
1981	1206	486	38919	20681	78271	26023	375435	62115	27391	7883
1982	804	396	7674	2549	74924	20093	167737	26974	14684	2380
1983	3216	1161	7674	2780	57158	15127	166257	31351	34451	9835
1984	2412	2641	18637	6809	44542	13185	175137	36022	30498	6525
1985	1206	347	9867	3938	69774	21402	133203	17690	12425	3184
1986	2814	2230	13154	5632	47884	14592	148480	20390	41224	7769
1987	2412	932	5481	1959	46597	14630	147000	21798	23153	4889
1988	804	788	14525	8450	62043	25039	154893	20763	13553	4768
1989	402	394	19186	9768	68229	16704	194871	25912	16378	4707
1990	1206	1182	37001	19396	75181	23330	146030	27195	31627	5263
1991	804	788	34534	12497	70804	19690	159843	18169	18073	4871
1992	4818	2464	18889	13654	61975	19813	66521	12984	43717	10723
1993	2008	1167	7118	3384	59918	15663	135014	21331	37230	9965
1994	3614	2628	14509	4712	70204	15938	155709	23006	42025	10930

Appendix B. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	2317	14023	0	6537	773	9565	13802	27475	3057	14343
1956	2592	13664	0	6424	1129	9378	12572	26787	2727	14099
1957	8241	3735	0	6342	4823	3706	40822	8189	9044	3414
1958	5886	2355	1722	6282	3797	2587	27544	7390	2768	1415
1959	5886	2294	1316	6237	2531	1701	4164	1973	0	0
1960	4013	2554	4970	6204	2531	1701	11222	3704	1384	1408
1961	624	570	0	6179	1266	1282	7141	3075	4543	4591
1962	4816	2984	1169	6161	3797	2652	1925	1261	923	840
1963	1873	1492	585	6147	2531	2564	3400	1606	0	0
1964	6742	2018	0	6136	3302	1298	15694	3572	1230	1623
1965	8990	1895	0	6129	11555	3785	14517	5164	1846	943
1966	12361	3413	0	6123	7428	5279	20403	4427	0	0
1967	14983	3564	0	6119	5365	2557	42375	6728	6152	6922
1968	16107	6299	0	6115	12381	5785	44729	8236	9843	10921
1969	20789	3976	0	6113	5778	2082	65132	14938	6152	6922
1970	6368	1154	78	6110	19396	7966	43944	9250	7383	3772
1971	17230	4169	331	6109	11968	4710	45514	10227	15996	6142
1972	20976	7013	577	6107	18158	7152	53361	13981	2461	3245
1973	19478	5624	823	6106	9492	3250	70625	12479	11074	9137
1974	38207	7396	1073	6106	14857	6018	87104	23111	6152	6922
1975	8990	3416	1323	6105	11555	4375	41590	10309	1230	1623
1976	14983	4183	1575	6105	11555	3010	34920	18369	1230	1623
1977	20976	3224	1830	6105	14031	5507	47083	7271	12304	14164
1978	64614	27998	2091	6105	23111	6620	88673	21838	14765	11914
1979	26969	8398	2355	6105	10730	2971	87889	16454	11601	9307
1980	31464	5160	2618	6106	18158	5265	76903	16265	15820	10170
1981	51317	7101	2876	6106	31777	13038	87889	14576	18984	17039
1982	41203	13543	3127	6107	15682	6541	43944	13180	7383	5740
1983	44949	12722	3365	6109	19809	7449	75333	15687	13710	13468
1984	33525	5443	4020	1944	30539	7701	122024	20529	50096	29483
1985	13297	3846	2046	682	15682	5589	54538	7224	4219	4155
1986	34457	7320	1169	387	18158	6164	69448	13715	7383	7105
1987	24719	3208	1900	449	18984	5382	91420	19207	8437	8309
1988	33334	5585	731	355	15682	4910	86319	22127	19511	16973
1989	31464	3850	3070	1732	16508	4273	72979	15651	8965	7396
1990	27719	5563	2631	704	14489	4040	70845	11176	9698	8970
1991	39705	7553	1169	518	22341	6925	90270	20696	15293	11482
1992	29369	6392	2701	1125	46694	20269	134752	22292	38016	27865
1993	29556	8604	3066	986	24793	10487	117466	25510	10560	10780
1994	40967	8790	3796	1087	23967	5788	141823	32120	16896	9209

Appendix B. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	20339	25323	35834	124285	89679	221917	99022	68895	42493
1956	0	19976	29131	34964	39159	12952	242932	45486	154750	41890
1957	11171	3265	19723	9810	47705	22534	191779	46801	30971	41418
1958	5129	1990	22444	12579	40890	7917	127397	39232	15486	41049
1959	4735	1913	30605	9796	189117	86647	177248	45920	77429	40758
1960	2931	2127	55090	20080	407197	264858	210482	86421	46457	40528
1961	733	769	57130	15805	80076	22447	318492	107124	61943	40346
1962	5984	2768	38087	16237	172079	51657	185556	48365	46457	40201
1963	5129	2419	43528	19282	98818	25849	204943	52425	30971	40086
1964	10686	4954	25845	11753	25556	8883	207712	63211	92914	39995
1965	10259	5173	39308	32538	81780	26676	307414	138400	61943	39922
1966	11969	4313	79671	29387	39186	14080	117322	35527	139372	39864
1967	26502	9461	56450	17688	39186	20613	116319	36362	108400	39817
1968	29922	19445	45908	22726	30668	7517	50490	16960	30971	39780
1969	22228	6103	40127	13684	66446	35025	124627	29071	61943	39750
1970	25647	6291	41487	16352	104497	16778	161488	40751	46457	7187
1971	50440	14903	31966	13256	46001	12620	152322	35668	112825	24268
1972	37616	14436	25164	19849	90867	43878	98456	47116	79641	43017
1973	47020	22705	30605	12198	47705	16077	249498	62781	79641	39442
1974	47875	11058	29925	7504	34075	16187	157159	44818	39820	19721
1975	10259	4285	19043	5416	20445	10403	98977	38182	62717	9727
1976	11114	3550	12242	2279	58780	21075	170170	40186	11614	3385
1977	52149	15808	34006	7576	85188	25710	333588	118614	40650	19678
1978	66683	16446	27885	13568	54520	18112	237698	55021	48477	12832
1979	50440	10691	104058	34175	25556	5795	236348	57440	29036	21979
1980	62408	17424	86375	15814	92855	20962	230945	56130	107432	59043
1981	55569	15377	90116	20135	86891	23532	290679	73852	69686	20309
1982	44883	13120	42167	22367	41742	10142	161488	41669	29036	21979
1983	62408	11632	69032	20284	44298	16196	199883	45288	23229	17583
1984	41890	10798	105079	37149	192524	33865	329536	66454	87107	30402
1985	44455	15945	37067	15851	10223	4625	278215	83410	46457	13540
1986	57706	15209	35026	21387	18741	7521	97240	29945	23229	6770
1987	52149	10470	40571	8982	65170	17745	230011	57971	42310	32056
1988	83781	30935	42508	13552	59631	29813	175572	44943	63879	9986
1989	60271	14253	58490	14009	42594	17411	178274	38209	40650	19678
1990	67177	19591	52709	14802	29816	8089	108045	29966	17421	10396
1991	68593	13818	119701	26061	109040	33175	286318	75652	29036	13668
1992	90736	40737	55052	23749	49375	11685	186248	51945	24222	7730
1993	61632	13473	49614	7870	57888	13765	167353	46815	39793	8330
1994	95016	14646	119279	51222	80872	27166	126865	33947	5803	7223

Appendix B. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	50914	39673	343397	142722	72892	61366	61251	20050	14252	8931
1956	58795	46739	102594	39506	64766	33524	64071	26144	0	0
1957	92456	48073	300661	232957	97217	35372	67322	21509	0	0
1958	16810	12107	212663	110754	32406	5013	35905	6363	0	0
1959	50430	20913	696653	259208	48608	25162	85915	33530	0	19725
1960	8405	9544	469324	244826	48608	25162	19876	5484	6707	6321
1961	8405	9544	293328	58986	202534	89692	49369	12478	0	0
1962	33620	29670	124664	50871	105318	54517	21799	9016	13414	2058
1963	16810	19088	161330	64186	97217	35372	13464	3878	6707	6321
1964	25215	18161	205329	102551	81014	41936	53216	11030	19965	19473
1965	50430	12421	153997	42783	40507	20968	48087	30193	13414	2058
1966	16810	6971	161330	31153	56710	14870	19235	9724	22803	23263
1967	25215	28631	43999	32112	16203	8387	16670	5587	31095	12692
1968	8405	6054	51332	17666	48608	25162	16670	5984	42453	16952
1969	42025	33835	73332	79418	97217	21965	17311	6136	57008	24126
1970	30418	29246	101290	47631	172829	120080	23723	8039	73296	32513
1971	22814	20444	121899	47367	70212	15305	31417	6630	51579	18632
1972	7605	8096	118715	30256	97217	28707	22441	5095	53841	19596
1973	45628	34310	145597	50767	135023	80200	46805	18786	28504	8633
1974	7605	5451	69665	42511	37806	7129	12182	5487	13614	4842
1975	22814	20963	203374	41667	86415	20396	26287	7404	43435	14548
1976	15209	10902	98220	31275	75613	34224	22441	6399	40411	14401
1977	26616	17357	220996	55348	59410	22354	12823	4886	25172	9366
1978	117871	62970	171886	43954	124221	65472	23723	4226	34875	13520
1979	60837	49678	138664	37627	54009	33231	8335	3301	41582	17649
1980	53232	56675	209440	59950	121521	53751	29173	18133	55129	18321
1981	72244	23551	140108	25987	140424	83163	27570	9636	38869	11215
1982	22814	20963	112665	35383	81014	23724	15388	5583	26418	8457
1983	15209	18661	86665	25045	70212	31444	17311	6345	38005	12435
1984	83651	54448	147331	26386	75613	44368	51934	24943	49782	13426
1985	38023	29284	112665	36806	64811	43523	10259	2319	29861	9068
1986	15209	9111	75110	23883	108018	67945	19876	6468	32193	8063
1987	62332	37362	126287	37234	54107	20793	24233	9367	46587	14009
1988	45628	20077	173330	66564	81014	20849	17311	4271	58275	15676
1989	45628	13714	138664	42611	16203	8387	15388	3582	34327	10594
1990	7605	5451	95332	49720	32406	10514	5129	1772	34327	8038
1991	30418	12931	77999	31036	5401	4160	8335	2451	44413	12821
1992	45596	24408	106813	46291	16192	16837	11213	3807	30646	7965
1993	45596	30296	83718	27482	48575	15758	13455	2323	23471	9011
1994	15199	12992	43303	14433	21589	8802	17940	9817	58782	17893

Appendix B. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	32405	12062	9289	9194	49460	8502	67036	11130	234416	24434
1956	22872	13249	0	0	0	0	17297	4934	221253	23423
1957	3812	2337	28002	28002	13946	12860	5767	4200	313285	32196
1958	2144	2499	6306	6223	15191	7031	39645	18445	287178	23618
1959	8578	5989	28900	16302	49079	31430	44691	21111	356797	37926
1960	26687	13409	34464	34464	55385	24784	23288	7391	284070	40166
1961	45749	11834	47440	42793	10768	8937	12975	3009	336995	69150
1962	36218	11852	22902	10199	39877	13883	43249	9569	252300	39015
1963	17156	9107	29446	17020	50511	24534	31938	6404	213131	43223
1964	58330	22417	38534	23205	30382	20965	50568	14951	212558	26376
1965	53374	24234	34000	14252	85071	25249	46576	9349	191065	42392
1966	45749	30689	39797	22098	69959	27965	32270	7482	209607	39473
1967	32405	20055	18579	8064	61280	32675	43914	12734	197468	52007
1968	66768	21599	72251	34082	139569	32796	45911	8864	264125	72953
1969	54249	10121	51762	17075	182294	38592	61879	19629	146731	32660
1970	44512	14126	95828	26153	319015	215339	102800	31012	182838	36925
1971	98762	26323	78819	21698	150732	39454	83837	19051	229656	36623
1972	54249	15270	38534	12241	93370	20006	41918	10736	255170	43681
1973	65764	24895	65893	18619	91968	20532	51233	12873	198301	37699
1974	38948	8664	22478	9230	93370	27178	21292	5893	263940	61656
1975	31993	10580	50094	10295	46614	17350	23354	5425	205191	57175
1976	76506	28219	48769	18897	82123	18393	22290	9087	171041	43649
1977	89025	20152	27379	12971	105130	33822	16634	5580	116115	39308
1978	82070	19706	71139	21439	148874	39304	50568	18354	130198	35049
1979	83461	24174	43351	17644	103865	22194	21957	8060	174102	57660
1980	86243	23214	49919	19924	117070	27568	59883	14921	230564	60567
1981	61204	16411	103216	23400	109943	25754	69198	16818	85053	26536
1982	61475	24058	54911	17299	90117	15706	31938	10371	105841	28173
1983	48685	16265	52424	18695	139815	33877	17965	3981	96264	28613
1984	51467	18563	60489	27035	81105	22841	9981	2437	100612	21523
1985	50076	12893	26010	17032	74831	25394	20626	5691	86353	24862
1986	19474	9703	54759	20663	35777	8158	23953	7602	61604	14951
1987	30602	6346	41617	14619	64985	21508	18630	8410	52531	20990
1988	54945	16511	51762	12456	99129	21038	16634	5001	44176	13300
1989	38948	12636	72467	18244	141484	40242	31272	7731	59476	14394
1990	55640	11628	54350	13159	110205	25701	26615	11925	93322	33153
1991	50076	19948	37400	11297	115918	30425	33268	9837	76753	21214
1992	43116	9261	45079	8551	83541	20609	28607	10233	106294	20805
1993	59806	18417	52418	16167	74005	20768	18106	3986	114061	26395
1994	72324	27721	46517	25395	166685	44386	31038	8867	100630	20586

Appendix B. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	146342	13386	116906	16692	84640	21519	75411	14174	140604	61312
1956	156245	17640	111892	21123	46160	15075	121992	20604	262104	47311
1957	120009	16435	70943	13800	31548	15074	98362	12013	106477	35001
1958	123462	18496	95923	13804	42320	13704	72132	12980	122858	23812
1959	82884	25712	100919	11113	75407	22847	40309	17574	91461	19311
1960	110080	14562	91926	10956	53862	12097	67889	22890	113303	22102
1961	89017	17345	53204	10589	23093	8705	29702	17567	20476	3390
1962	50869	14072	44005	8580	32972	5766	26519	7515	51873	11059
1963	48596	10201	34346	7922	19175	5405	51978	8038	66207	19217
1964	58988	14127	41776	6716	32955	10251	73724	14791	43683	8303
1965	64096	18781	39693	12022	26057	13934	58342	11917	38223	18561
1966	71990	15532	64324	18008	39628	15226	65761	14279	61035	16666
1967	110500	18016	107095	26449	70212	24747	108649	18636	124741	27319
1968	52106	22564	46849	18820	104435	31093	76069	14221	72488	21198
1969	129192	46659	80403	30512	47468	15216	173731	32785	92579	16396
1970	120924	19110	62758	13466	67736	29105	163409	58731	104433	32676
1971	118096	25496	82789	8561	71499	18418	214716	57447	121708	34251
1972	74230	22014	65573	8336	53459	20476	200919	60490	110019	34461
1973	96914	27004	59019	8073	39902	7888	86612	21119	46542	16308
1974	127049	39143	68483	16630	55012	18272	128652	29172	45730	8863
1975	67964	14040	54086	13732	57058	25010	137556	46232	81221	29637
1976	66496	15731	62918	14643	44058	20271	78478	22427	64160	24071
1977	32257	10818	18092	10158	28443	15273	119215	34406	105431	42277
1978	45569	8615	48450	16848	79261	26216	91099	42121	79232	30668
1979	62924	20318	55346	19598	110120	42430	163213	35623	113181	22020
1980	40932	9222	65212	37212	67177	45723	184407	50237	92544	36963
1981	24716	8031	29762	13977	40279	21627	59515	7821	43443	10605
1982	17993	5914	30299	12117	45832	27891	75272	35134	69357	28176
1983	21584	6733	31845	12583	21180	5780	139390	45762	98401	41879
1984	28132	9039	23855	8030	5760	2921	53876	19293	79073	25358
1985	37464	10425	24944	6699	28492	8855	81598	10404	46689	18621
1986	13384	2849	3363	1426	11814	4157	78265	21221	40227	10458
1987	34347	17568	10070	5336	13445	7977	35524	8418	29071	7465
1988	15588	7366	13437	4774	12285	7267	60175	25092	53586	19006
1989	10728	1980	15530	10093	10198	4675	61429	20885	32358	12547
1990	11576	4638	11905	4708	6434	3926	41598	15661	26251	12884
1991	14079	5117	12879	3387	14187	6281	48144	17146	37095	12613
1992	39495	10581	17444	5300	7070	5136	90353	17426	67137	25846
1993	42060	14689	16041	8181	26331	13929	59545	19365	29389	12955
1994	34833	7958	23394	12232	34296	13622	71804	15220	31042	12256

Appendix B. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	202190	30632	53985	12484	108035	39610	40204	11017	0	3528
1956	242802	28946	41866	15063	194436	50752	82974	19474	11701	3496
1957	117692	19730	25339	11211	223272	70254	62883	19550	0	3470
1958	91023	15022	17627	3618	125684	45086	43815	24510	11702	3449
1959	49860	13713	19831	12903	201065	35895	70099	41576	0	3431
1960	87254	16266	18729	5173	63621	18059	14432	6655	6269	3740
1961	49657	13175	13220	6219	100233	26133	24741	12226	0	3406
1962	36525	11568	4407	2445	21607	8679	9278	4920	0	3396
1963	62614	11942	14322	5023	28809	13451	13401	3882	0	3388
1964	67542	12637	17076	6590	72023	19570	36081	11460	0	3382
1965	105807	22646	13220	3005	69623	13695	32472	7594	5851	3376
1966	71699	13161	29345	9448	51837	8774	22452	5816	4394	3372
1967	265764	45252	92928	26651	37475	10308	19551	7656	1707	3368
1968	110772	23507	22963	6044	51837	10538	28646	13414	4394	3365
1969	340236	46809	90865	15411	73474	17985	60775	9003	4394	3362
1970	404552	128064	33395	13968	52739	12579	60775	10884	3955	1387
1971	424954	95680	79336	24285	88327	32478	22374	7642	0	0
1972	239063	51854	30974	10562	118847	22915	72519	21749	2814	1036
1973	166604	32284	29513	17724	91320	33523	53776	10661	4402	4113
1974	267860	46528	49209	22107	92209	14929	49508	9768	4716	3100
1975	406863	118791	87399	27296	111768	30422	68916	15303	0	0
1976	376944	78024	62136	12408	66724	16043	71616	21565	1130	1301
1977	162303	52120	8404	5333	65884	14560	29447	9557	1978	1195
1978	246208	91462	34104	17227	47867	9783	21401	5882	738	455
1979	313712	67845	38460	8496	92229	26678	63352	17504	4006	1201
1980	221055	55043	23538	7055	47709	12376	41186	10729	7681	2186
1981	58148	10833	8500	2701	28053	4329	14036	2896	4596	3571
1982	317057	96340	55635	21462	49257	11559	27755	6056	1567	1054
1983	341763	114321	24203	9825	42944	15648	28322	8877	3637	1231
1984	138642	41492	5042	3638	37989	4997	7634	1817	1428	275
1985	98622	12892	13086	4087	34839	6857	15251	5877	1858	1735
1986	109343	30297	11204	6198	32958	6225	20329	3958	1493	901
1987	65688	11989	11597	3376	10930	5882	6617	3494	2237	1813
1988	46710	18593	4454	2289	20153	5303	9052	3600	2578	1618
1989	61946	11599	13479	3081	8870	2919	3321	875	2417	764
1990	61211	21902	11964	4637	31569	4106	4678	2889	3063	1333
1991	109011	55644	15547	6973	14969	4971	9549	3895	2680	956
1992	136374	27780	6215	3314	12979	3273	11829	3847	968	403
1993	75444	20263	20239	8648	5032	1692	5556	1834	0	0
1994	122639	25850	19265	8021	9361	2161	6891	1430	1805	595

Appendix B. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	46423	15089	3008	2274	17352	4458	28528	11018	22532	24609
1956	34039	37635	3008	1360	26914	6342	47256	7852	22813	24234
1957	34044	14657	0	0	20911	7139	60037	11965	23707	23959
1958	205809	57881	12032	9097	81420	19820	42097	12197	25093	23755
1959	109868	24453	12784	9687	51165	15161	73662	18561	26847	23603
1960	33127	7191	3008	2274	10233	1879	30444	9812	28812	23488
1961	46423	22651	1504	1137	31589	12471	37895	8871	30867	23400
1962	15474	13062	0	0	20466	6573	20864	4734	32945	23334
1963	37138	12610	3008	2274	22468	6977	23844	5115	35003	23283
1964	46423	27007	3008	2274	31144	6226	35128	9826	36991	23243
1965	46423	24642	6016	4548	34926	9717	37257	8357	31857	5979
1966	32540	12038	1130	852	31242	5084	28780	4977	30778	9824
1967	24381	7661	1975	2253	10395	3757	13939	4833	53137	16962
1968	40676	10620	1130	852	18044	6062	34376	5992	41891	15143
1969	45324	20876	7342	4926	35419	6103	19187	4729	59907	16562
1970	24526	9910	2259	1006	10179	1759	11597	4653	54613	14142
1971	13446	4595	0	0	4100	1853	11240	4487	41656	10957
1972	46324	15190	4702	3551	29461	8645	25649	5310	87352	16769
1973	34504	8726	8990	1637	23568	4974	40906	11959	51966	8955
1974	32475	10469	3940	1575	22317	6741	23596	3531	46333	20424
1975	18902	3394	1306	986	18155	3679	15921	7035	65379	27939
1976	22778	4558	0	0	21068	6732	11309	3392	55245	19652
1977	5315	4431	1102	833	6807	1808	9896	2289	38229	15062
1978	10572	3252	548	256	4231	954	6503	2108	95306	30747
1979	16916	6770	637	492	15592	5189	23316	8729	57395	34365
1980	25554	5594	1630	744	11958	3133	14378	3107	79317	33076
1981	13278	3721	0	0	5536	1400	11334	2755	27015	6685
1982	10527	3222	0	0	8808	1966	14112	4498	72342	19418
1983	8796	4112	0	0	7301	2428	10658	3683	38626	15452
1984	11516	3418	0	0	3277	1169	12252	2958	24676	8267
1985	8114	3708	0	0	9593	4231	13282	2745	25896	7506
1986	8693	2631	2772	502	13132	9731	13340	3210	31663	9283
1987	5259	1720	1869	737	5132	1801	6395	2302	36933	9684
1988	11082	5813	1148	504	3844	1760	8291	1408	20918	9233
1989	8119	3132	538	405	7209	3999	6565	1575	36399	9562
1990	12005	5328	0	0	8053	1577	8394	2778	71080	14765
1991	12604	2028	0	0	1025	462	5428	1612	32362	9952
1992	7807	3170	863	395	6665	1513	7545	2138	48267	16282
1993	5866	2877	1081	541	4243	1850	2601	1125	38242	7124
1994	8004	3151	1206	910	1864	984	3355	1050	75020	29673

Appendix B. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10244	19905	0	10504	0	23732	15143	21201	9933	8603
1956	9876	19539	0	10143	0	22501	13228	20323	8802	8261
1957	10118	19270	0	9887	0	21592	11706	19674	7807	8009
1958	10881	19071	0	0	0	20921	17997	11421	6683	2933
1959	12064	18921	0	0	0	0	12888	5669	12030	7245
1960	13537	18809	0	0	1782	1772	15231	5777	7519	6538
1961	15200	18723	0	0	0	0	3515	2664	1504	1721
1962	16981	18657	0	0	1782	1676	2343	1500	1504	1632
1963	18820	18607	3641	9251	0	0	6565	4688	6188	2778
1964	20656	18568	0	0	0	0	3188	3035	1364	1557
1965	4904	1902	5889	9180	0	0	0	0	0	0
1966	12408	4633	6929	9156	2773	1597	11691	4633	0	0
1967	10499	3325	12934	10647	29742	6410	9474	3256	5456	2253
1968	26725	8717	7055	2576	19595	4374	1271	722	0	0
1969	25934	7078	14954	4294	29669	5962	18734	6047	4574	1856
1970	37940	10404	11577	2836	16183	5690	15327	5071	2018	858
1971	16670	3963	11095	2857	16183	8381	15521	9189	1497	802
1972	42474	9685	14472	4400	95749	20166	6711	3656	5264	1271
1973	47246	10945	25567	7282	39379	10493	9895	3406	573	561
1974	30493	13950	4085	3028	14535	7198	35019	20646	3657	1494
1975	45240	19812	16216	7936	41211	17859	39972	21715	16640	6427
1976	44443	10710	22220	9215	28089	9361	30264	10118	8729	2167
1977	38821	14193	15190	5580	22446	8991	12848	5177	3698	1294
1978	61721	18245	39950	11782	49570	13832	17367	4013	12058	2601
1979	30493	18282	14637	8786	25969	16491	21593	5145	11219	2576
1980	69602	24545	10172	4459	21801	9175	52315	14870	21549	6889
1981	38213	18500	3723	2634	8326	5453	88810	20867	26622	7431
1982	17079	4496	20310	6051	25361	17710	10898	4584	8130	2936
1983	39321	15420	14693	8577	26752	13166	13897	4048	15069	3636
1984	48322	13128	12250	4327	32704	11438	14395	6223	11550	5881
1985	32798	10803	13186	4781	20011	7043	33517	9577	12147	3368
1986	20298	7152	13475	4570	11301	3521	11800	2438	5607	1312
1987	27936	7849	12658	3832	30306	9215	26283	6016	5184	1582
1988	23123	8948	6926	4629	18716	8101	17578	5285	16287	6449
1989	22398	5344	7210	3295	9191	4109	7524	3248	817	399
1990	55132	13512	20017	5450	24673	6933	1757	935	1081	814
1991	37974	12437	11938	3462	34298	18178	3544	842	5449	2062
1992	39959	13672	22130	8561	23260	8634	15205	7327	6800	3819
1993	27237	6183	7080	2547	8210	2916	5060	2172	1778	1046
1994	62690	23565	22010	9716	41110	14986	29061	16286	20360	10573

Appendix B. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1125	8402	13361	1114	9073	17788	6818	117121	41883
1956	0	1093	7414	12686	1219	8620	10303	5520	111148	41419
1957	0	1069	6578	12187	1276	8286	0	0	130798	67080
1958	0	0	5860	11820	1266	8040	0	0	115934	20909
1959	0	0	7082	5743	0	0	0	0	104044	36674
1960	0	0	5540	2103	2229	3364	3225	3250	62426	41282
1961	0	0	6070	2731	0	0	16009	7226	124852	19400
1962	0	0	4047	1602	2229	719	32018	11786	53508	10145
1963	0	0	0	0	3058	1310	11114	10834	59453	49163
1964	0	0	2416	1866	2022	711	16300	6217	83235	17870
1965	0	0	0	0	0	0	19834	8988	56481	28458
1966	0	0	4832	2145	2022	711	18523	13913	65399	33540
1967	0	0	0	0	0	0	4229	4028	56481	21737
1968	0	0	2313	1555	686	554	35656	23408	114448	50059
1969	2234	2162	1003	669	0	0	9961	6607	47563	37281
1970	1090	1055	2937	1551	2322	1450	0	0	68371	36482
1971	0	0	2770	1296	0	0	28179	42495	77290	54835
1972	2629	2375	1417	906	1935	1216	10265	6682	95126	57391
1973	0	0	3464	2801	822	929	24903	10841	109989	57711
1974	1339	1296	1804	1309	0	0	31065	42488	65399	39812
1975	0	0	1521	1119	0	0	31962	42485	44590	23548
1976	1086	1051	10727	2277	17817	7388	32819	42484	20809	10615
1977	0	0	4977	1700	1771	598	33619	42483	26754	15256
1978	0	0	36717	8984	6384	3177	34300	42486	59453	46601
1979	0	0	4406	2482	3215	1652	34790	42492	35672	11236
1980	0	0	14376	4345	5328	1917	35029	42501	63912	23547
1981	0	0	22749	6741	28908	13261	35003	42513	41617	32621
1982	2173	1750	11627	4516	3664	1892	34734	42530	35672	22232
1983	1483	1435	31293	12595	15793	10202	34285	42550	65399	45517
1984	456	488	29789	13660	24525	11341	33767	42575	84983	36814
1985	0	0	19069	7049	6139	3066	33307	42606	38645	30291
1986	0	0	18553	11225	9844	4515	0	0	38645	18916
1987	0	0	12639	3158	2677	1043	6641	4000	38645	5983
1988	0	0	20480	7502	9615	3698	36524	9398	50535	28189
1989	0	0	6446	2775	5973	4161	44825	20147	22328	5706
1990	0	0	800	812	1897	1525	23243	12281	52490	19719
1991	0	0	7258	3426	2870	1516	33204	17775	44656	10957
1992	0	0	8178	3773	1492	1260	36520	24801	51692	15601
1993	0	0	4387	1737	4682	1675	33200	13559	47256	13184
1994	0	0	36164	17957	6354	3165	36520	18960	34121	7921

Appendix B. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	110718	40712	388173	138407	3188419	297412
1956	104707	39677	374987	136091	3118683	227240
1957	104419	38884	277559	55679	2895324	291097
1958	41767	38276	242864	48089	2529020	177287
1959	187954	37808	503075	141225	3766632	338889
1960	20884	37447	329601	121699	2968119	406752
1961	135744	37167	572465	253204	3030289	319516
1962	52209	36950	130106	34687	1942165	144599
1963	31326	36781	164800	91451	1815564	169283
1964	135744	36649	494401	202036	2575644	259250
1965	62651	36546	164800	34732	2301124	189446
1966	31326	36466	338275	65192	2318376	139231
1967	32486	10232	90085	31028	2325465	136176
1968	20884	36355	147453	51568	2298570	156100
1969	56850	22309	95715	38256	2941435	168620
1970	40607	10904	210019	68766	3469903	318541
1971	28425	4927	208603	48176	3272855	186237
1972	60911	17466	336974	104236	3200102	194053
1973	32486	10232	162603	99518	2877944	197433
1974	64972	20465	133720	57612	2671974	159344
1975	73093	13859	129262	57549	2778347	192033
1976	60911	27097	86781	42860	2505181	152730
1977	69032	16763	67395	23061	2575130	185949
1978	16243	12732	215021	55958	3282423	208020
1979	32486	23718	176837	88216	3106495	198151
1980	44668	9015	147627	40540	3595488	213208
1981	40607	24015	88419	23937	2946043	172991
1982	69032	23512	125162	48887	2458713	167264
1983	52789	11137	99487	18531	2636238	181395
1984	77393	23727	219409	58690	3002226	174190
1985	24364	11342	131580	43210	2050681	143721
1986	40607	9501	112325	24653	1736521	109914
1987	24364	6542	227858	77989	2012530	134318
1988	56850	9484	202184	60633	2211090	139051
1989	39700	13789	121166	31518	1972873	106022
1990	31712	7087	130991	33223	1860101	108262
1991	56901	12268	140815	42289	2253971	139547
1992	30720	8224	141208	43356	2208357	131862
1993	50444	10505	195766	40424	2052985	109330
1994	63127	23818	70604	16849	2382249	130263

Appendix C. Breeding population-size estimates and standard errors of the northern shoveler (*Anas clypeata*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1069	0	2600	1338	18932	0	37811	0	10064
1956	0	1056	0	2563	1530	18679	0	37206	0	9919
1957	0	0	0	0	2970	1824	1810	1187	0	0
1958	0	0	0	0	1155	845	9958	5641	1425	762
1959	0	0	0	0	5716	2660	1906	1327	2850	1038
1960	307	303	0	0	4157	2191	0	0	1425	1352
1961	54	1022	0	0	11952	4607	6789	2571	0	0
1962	0	0	0	0	3118	1821	7242	4208	1425	1352
1963	0	0	436	456	1670	1256	1132	1181	1628	1567
1964	0	0	503	519	2012	1156	6337	3778	518	499
1965	0	0	0	0	7086	2775	10259	5574	2591	1573
1966	0	0	0	0	4724	1769	17199	5127	2073	1163
1967	0	0	0	0	1114	765	9052	2985	518	499
1968	0	0	2515	1520	24566	10158	72418	20513	10881	3576
1969	0	0	503	519	5197	1834	23536	6552	8290	3180
1970	369	361	1509	1556	12283	4601	35304	9644	10881	4572
1971	1844	1350	503	519	6142	2902	8147	2606	1036	616
1972	0	0	0	0	12283	4377	28967	9406	1554	1230
1973	0	0	8801	4554	8031	3180	22178	5549	5700	2472
1974	738	723	2012	1575	11338	3726	36209	8705	17099	5225
1975	738	723	0	0	8031	3068	7242	2402	4145	2609
1976	0	0	503	476	13937	5460	38020	11261	7772	2643
1977	1106	942	1509	1091	28666	9276	71513	16081	14508	4601
1978	369	361	1509	1148	24094	10041	74229	16777	15026	5740
1979	369	361	1509	715	11811	3647	39830	11020	6218	2123
1980	738	449	5281	3499	60943	24044	148910	33940	25389	6944
1981	369	403	8046	2429	83619	40357	188288	42047	35752	7296
1982	738	516	503	519	34960	10187	59745	13617	11917	2945
1983	369	361	2012	1098	24802	10914	71513	25103	18135	6049
1984	0	0	5029	2699	18897	6848	99575	17911	8808	4201
1985	369	361	1509	799	12283	4130	73776	22443	5181	2229
1986	738	628	4526	1727	18425	7072	104554	22784	34198	9937
1987	1475	1000	3017	1597	34960	13880	111796	26632	26944	10828
1988	738	723	2012	2075	32125	16821	135332	32989	29016	7537
1989	1844	1159	1006	1037	53384	11895	86902	14826	33161	11752
1990	4426	3001	2012	907	50786	15746	107722	24256	23057	5062
1991	1106	662	4023	1960	45825	11895	105007	19549	9845	3401
1992	1106	793	1508	1030	41304	13269	89546	18726	27698	10874
1993	1106	584	503	476	52397	14211	153765	28546	25369	7149
1994	737	449	3518	1224	44372	17184	166880	30060	44783	13840

Appendix C. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	8040	208	1989	0	4869	0	22182	0	19277
1956	0	7931	264	1978	0	4820	0	21861	0	19069
1957	0	0	325	1969	0	0	0	0	0	0
1958	491	497	402	1962	0	0	1008	927	0	0
1959	491	497	671	1957	0	0	1029	1107	1122	1229
1960	736	745	1878	1953	0	0	2016	1371	456	494
1961	1146	763	611	1949	0	0	1008	1086	1684	1843
1962	491	455	0	1946	0	0	0	0	0	0
1963	573	524	1073	1944	0	0	0	0	0	0
1964	0	0	852	1942	0	0	0	0	0	0
1965	1031	437	933	1941	816	822	3102	2425	0	0
1966	1375	970	1013	1940	0	0	3102	1221	0	0
1967	0	0	1092	1939	816	783	11633	4267	0	0
1968	7904	2831	1167	1938	816	859	21714	5444	1216	1603
1969	1375	761	1240	1937	3263	1760	12408	3222	0	0
1970	0	0	1309	1937	1631	1065	14735	6675	3648	3795
1971	2062	888	1375	1936	0	0	8531	3213	3648	2802
1972	3952	1644	1438	1936	0	0	12408	6588	2432	3206
1973	2406	1187	1500	1935	4078	1978	13184	2916	0	0
1974	11684	3499	1560	1935	4894	2649	31796	11857	6080	6169
1975	4124	2169	1618	1935	2447	1787	8531	2628	1216	1603
1976	2406	1108	1677	1935	4894	2196	8531	2548	0	0
1977	8935	2283	1734	1935	8157	4627	22490	6956	7296	4279
1978	32131	23428	1792	1935	10604	5888	26367	8865	14592	13824
1979	2406	1142	1849	1935	816	783	27143	10630	8338	7673
1980	15808	3453	1905	1935	4894	2348	53510	16010	30226	13831
1981	24399	4625	1961	1936	13867	7750	114776	23757	75044	67331
1982	7217	2575	2015	1936	2447	1251	29469	7896	5211	4754
1983	9279	2906	2067	1937	3263	1830	36449	10306	8338	6463
1984	9622	2908	2615	1955	8157	2938	49633	12524	15634	10668
1985	5498	3088	4895	2379	14683	8731	38000	9027	9380	9267
1986	16839	4366	1609	771	3263	1897	57388	11223	3127	2931
1987	19588	4055	2012	1312	10604	4591	76000	18726	16676	12943
1988	17183	4409	4090	1768	8973	3138	75225	21363	37522	25133
1989	8935	2339	2012	902	13867	8217	62817	12798	6254	5862
1990	13059	2662	1073	481	8587	3160	89485	24058	8440	5227
1991	10653	3324	1878	679	8973	3005	84143	17293	21888	16857
1992	14422	2703	1675	562	17129	5947	112059	18768	10423	7995
1993	24380	7444	1206	566	13866	4834	120977	23308	9380	7384
1994	16139	4591	1742	1197	19576	5711	110508	28478	11465	7016

Appendix C. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	14729	985	8174	6924	9652	584	6628	5255	7693
1956	0	14501	928	8045	0	0	0	0	0	7606
1957	0	0	0	0	0	0	0	0	0	7535
1958	1448	903	2292	1590	0	0	0	0	0	7476
1959	0	0	382	361	27755	21936	3111	2170	34796	7428
1960	0	0	2292	2165	15313	7495	0	0	0	7388
1961	0	0	764	444	5742	3701	3111	2038	0	7354
1962	0	0	1528	887	11485	5754	4667	3225	0	7326
1963	1690	1169	1146	1083	957	957	3111	2893	0	7303
1964	0	0	1528	374	0	0	3111	2038	17398	7283
1965	845	826	1412	7578	957	957	0	0	0	7267
1966	0	0	0	0	957	957	0	0	0	7253
1967	0	0	0	0	0	0	0	0	0	7242
1968	5069	2218	1910	708	957	957	0	0	0	7232
1969	2535	1109	0	0	5742	3360	0	0	0	7224
1970	3380	1653	382	361	1276	1276	0	0	0	0
1971	3380	1811	1146	555	0	0	4667	4339	0	0
1972	3380	1653	1910	1236	1276	1276	0	0	0	0
1973	4224	2367	2292	1110	957	957	10781	5973	0	0
1974	13518	8395	2674	1436	1914	1914	1731	1852	0	0
1975	1690	1169	1146	1083	957	957	0	0	3915	4301
1976	5069	1811	1146	195	1914	1120	3035	1832	0	0
1977	30416	10164	3056	1193	7178	3250	4552	2057	13048	3578
1978	16053	6349	1910	1236	957	957	0	0	3404	2675
1979	8449	2716	1910	815	957	957	0	0	3262	4068
1980	40554	10791	4585	1727	11963	7096	16690	6017	13048	3578
1981	51537	17366	25215	16758	17227	6616	7023	3337	3262	4068
1982	5914	1991	1146	555	0	0	0	0	3262	2459
1983	8449	4557	1910	1804	957	957	7587	3575	0	0
1984	13518	5774	3820	622	22012	11729	24277	15462	3262	2459
1985	7604	4704	3820	1987	0	0	1517	1526	0	0
1986	16053	6445	4203	727	0	0	0	0	0	0
1987	19432	6403	4203	3468	3828	2725	13656	11913	6524	4919
1988	55339	15962	6495	1088	19141	7453	4552	4515	3262	4068
1989	14785	6645	9551	1773	1914	1914	3035	3010	3262	2459
1990	35575	11823	17765	6178	6699	1980	0	0	6524	1789
1991	29571	9640	39744	10470	25848	9957	6071	2256	6526	4920
1992	43088	14489	5920	4152	6698	2957	4551	3038	3403	2675
1993	36329	13477	9549	3131	7655	1793	4551	4514	0	0
1994	62097	16358	18143	4530	8612	7409	4551	3162	0	0

Appendix C. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	3731	83536	82000	9644	10549	29309	13892	0	0
1956	0	0	0	0	0	0	43570	9253	0	0
1957	0	0	28835	40206	4551	2321	21610	2890	0	0
1958	0	0	90625	119834	4551	6801	11525	2790	0	0
1959	0	0	284233	269324	27305	5524	53304	7867	0	3447
1960	0	0	41193	57437	0	0	10085	4173	0	0
1961	0	0	107102	89382	9102	4642	30614	15567	0	0
1962	0	0	24716	22448	40958	20890	27372	9378	0	0
1963	0	0	16477	16636	4551	2321	7924	1122	0	0
1964	0	0	135938	151061	13653	6963	20889	7218	518	3394
1965	0	0	32955	9385	0	0	19449	10331	0	0
1966	0	0	53551	62595	0	0	19089	12739	0	0
1967	0	0	53551	69260	0	0	2521	1339	0	0
1968	0	0	32955	45950	0	0	14046	4026	5190	5164
1969	0	0	0	0	0	0	5042	1169	5544	3410
1970	0	0	10041	6465	6068	3550	11165	3711	0	0
1971	0	0	22825	10412	6068	4657	28093	9245	0	0
1972	4272	5251	40416	26817	6068	1877	19089	5829	0	0
1973	0	0	52578	18605	12136	4814	24851	7085	0	0
1974	0	0	14418	10399	0	0	4322	3183	0	0
1975	0	0	39271	15316	3034	3156	11525	2984	1659	1572
1976	0	0	47060	21363	0	0	15127	7947	0	0
1977	8544	5069	107914	26292	21237	7536	19809	5909	1810	1289
1978	0	0	6491	2101	0	0	11165	3055	0	0
1979	0	0	17850	7537	0	0	7924	1394	1640	1103
1980	0	0	48683	18085	9102	2816	47541	17384	3829	2407
1981	0	0	55174	19625	18203	13970	31874	14559	3168	2090
1982	0	0	22719	8564	3034	2328	14587	5257	850	834
1983	0	0	25964	9264	6068	3550	8644	1957	0	0
1984	4272	4551	55174	18632	3034	3156	10445	2126	1963	1933
1985	4272	3047	48683	12626	0	0	3962	2380	1659	1082
1986	0	0	102234	30303	3034	2328	14767	3441	1640	1118
1987	0	0	86006	23980	3034	2328	17828	4223	1499	1490
1988	12815	11469	92498	31152	9102	4642	18728	6067	17037	6986
1989	0	0	90875	24780	3034	2328	16207	4257	749	745
1990	0	0	49981	23097	12136	4814	7924	1845	0	0
1991	4273	4797	45450	21233	3035	3157	12609	4461	1621	1079
1992	0	0	102211	45744	0	0	20344	10961	3746	1778
1993	0	0	92476	49768	0	0	23405	6892	1025	1003
1994	0	0	30825	16525	0	0	12603	4795	3266	3217

Appendix C. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	2330	2190	1893	2131	0	0	2644	488	136440	15128
1956	0	0	1927	2169	0	0	0	0	139420	17195
1957	0	0	0	0	0	0	7931	5182	146738	19134
1958	2622	3058	0	0	0	0	881	676	191230	20492
1959	13109	6517	6625	5276	0	0	37452	15783	161283	25540
1960	0	0	0	0	0	0	15455	3677	187380	31138
1961	0	0	0	0	0	0	16676	5091	192700	46261
1962	6991	3661	2000	2041	0	0	26437	4420	142920	32440
1963	5826	3142	0	0	0	0	35385	8311	261202	51270
1964	37753	11688	11777	2635	5306	2341	47993	13755	189246	19317
1965	22139	12092	12470	9815	3467	3649	33758	12792	124994	26169
1966	23304	11437	3475	2523	0	0	36402	8359	188678	30060
1967	4661	2243	5678	4484	0	0	32131	8279	157536	40352
1968	11904	3900	1767	1774	8125	3504	21963	6486	235355	119270
1969	11904	5076	7910	6370	14858	6550	21556	9944	118613	30690
1970	15305	5680	5579	5909	29546	15330	20336	5612	137312	30784
1971	8503	4875	4818	5514	6311	5065	24810	6931	162547	31652
1972	5102	3161	9814	7527	0	0	27250	8504	233052	26014
1973	4370	2065	2120	2377	3514	3595	28877	7042	254904	59151
1974	3401	2308	3926	4407	0	0	8541	3107	252593	44149
1975	5952	3998	14133	9280	3562	3680	17977	5316	202168	37579
1976	5102	2925	0	0	5149	5319	8541	4587	135477	30556
1977	34012	20098	0	0	20682	11048	23183	7575	158620	32786
1978	13605	4313	2718	2731	1625	1736	24403	7820	64636	10909
1979	6802	3724	0	0	6047	4467	9355	2251	143140	28961
1980	14455	7190	9636	6873	0	0	19116	6232	234424	51692
1981	14455	9319	12619	8423	9916	5255	16269	5595	279274	56982
1982	9613	5353	1767	1753	4407	3067	22370	6442	136492	21756
1983	14455	9334	2465	2439	1204	1212	13829	3537	95873	28238
1984	13605	6417	0	0	2203	1440	17489	5683	116624	39778
1985	6802	4068	0	0	2407	1636	23590	8854	159234	48167
1986	2551	1031	0	0	1215	1221	9355	4243	141081	27379
1987	11054	6347	2120	2147	6019	4911	28267	8432	170587	40658
1988	22958	11421	14238	7821	11017	4717	22980	6778	90146	25688
1989	8503	3810	1582	1550	5509	5665	23183	11056	133204	24021
1990	5952	3986	18984	13662	8273	4432	17896	6671	209224	48877
1991	7655	4461	4158	2572	11715	12112	21969	7584	212327	38194
1992	40379	23550	6358	4420	44872	33832	13419	4720	131879	30620
1993	15302	8141	2464	2578	6371	2905	18971	6236	191155	31839
1994	19552	9913	5169	4906	8043	5858	22132	8128	149754	36969

Appendix C. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	127755	12962	108655	13631	24360	5616	73807	24004	122567	60311
1956	140188	12409	103120	19776	22235	5418	68308	16035	179996	48834
1957	113196	10590	70832	14203	19065	7649	124130	25760	159233	74846
1958	117653	10033	95245	20795	38129	12397	31748	4146	116282	29644
1959	52290	11521	57766	11361	49780	12130	30120	8514	80664	32724
1960	106957	15221	96276	11574	41306	7960	58611	11767	170756	42914
1961	57394	11308	39598	7967	13771	3212	21902	7317	29467	11288
1962	20435	4257	19933	3560	13529	2873	8960	5174	17936	3133
1963	73258	20234	29876	6254	13680	3955	32888	9515	27934	12588
1964	66575	26330	43174	8305	42965	9817	89707	16206	72262	18349
1965	79901	16313	43707	10810	27630	9650	47880	17019	26542	4635
1966	139143	18621	85762	16793	57256	14425	139050	36019	158434	53960
1967	148155	25804	155705	51865	77144	9929	123265	27290	160382	44842
1968	34157	11654	50166	17945	74957	28669	117823	26416	141771	65492
1969	128864	25835	109004	19838	76771	12523	116897	34506	99704	33456
1970	97282	16190	65391	11868	29097	12460	127795	38052	87558	24583
1971	115244	16922	98415	18493	47387	9814	149917	61269	107068	35079
1972	57658	17033	88855	6035	56171	9195	204971	61905	254064	87008
1973	99817	13807	72302	20620	39072	10890	121721	28029	137902	52267
1974	207651	26794	89337	25896	38389	10577	98041	26524	107276	44380
1975	164327	31704	96676	12097	87150	9574	103940	19448	115796	32201
1976	74637	14572	72622	11436	42299	9276	109059	21304	122680	37229
1977	30965	14829	14876	2621	16314	5460	89037	19654	106629	31098
1978	41723	10651	66886	18332	85725	19054	54737	18155	90279	29055
1979	47738	5714	65356	8018	135171	24259	108684	22664	123205	30911
1980	42474	6621	53810	6808	58060	34188	99711	21243	124422	45822
1981	77637	16826	79395	12170	67605	26310	100412	36335	76855	33785
1982	53695	13448	55371	8670	74806	28286	60072	16780	54167	16968
1983	37187	15506	35044	9554	32195	10046	82985	14535	105131	28252
1984	27592	12654	21327	10449	21759	10054	61212	15100	89168	21814
1985	91949	26195	53917	6495	16137	6712	164764	47247	149920	64020
1986	33584	14335	18380	5101	27670	16909	111750	23459	94255	31073
1987	91022	42126	34735	12172	34337	19098	57546	9381	53309	21741
1988	34515	11171	19461	5338	21454	12287	130948	123236	135741	125859
1989	33540	17235	31919	9625	29271	10837	71853	22655	46858	18257
1990	47464	25386	28494	9513	37332	18116	85015	27215	105118	42311
1991	30283	11052	27228	8187	24630	12203	100575	34014	78513	30907
1992	58926	36611	25677	7833	24925	8953	114343	27172	101307	44074
1993	128627	34501	40526	10153	60835	21362	56304	14461	51548	21142
1994	99416	19011	73518	9157	98756	32741	79951	33663	70246	30662

Appendix C. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	290593	29592	66791	16124	55746	19307	57569	15064	0	6641
1956	374125	46396	86991	24260	69837	9009	75120	9623	0	6515
1957	169513	21570	15218	3000	107963	18738	61811	18503	0	6419
1958	72076	16939	21136	8240	61391	16405	32724	10686	3440	6346
1959	22246	3842	16909	5791	83618	14732	30906	8122	0	6290
1960	179301	23526	46500	8570	105846	23358	43328	9979	0	0
1961	78745	22154	14475	5051	52273	28696	37005	16155	0	6214
1962	23941	10098	3102	3003	23992	8180	1873	1276	0	6188
1963	104615	27425	10930	5223	17448	6139	3122	1987	3544	6169
1964	103672	20974	12802	5357	50632	17870	46234	13407	9372	6154
1965	118161	19103	17596	4750	47256	11591	36212	8475	0	6142
1966	359331	96868	81728	20125	39478	8727	31869	8089	9622	6134
1967	333871	64815	83573	15954	68794	15587	37798	7353	36057	6127
1968	145441	34831	22988	8714	36404	12946	14993	5702	0	6122
1969	349443	60866	75328	17066	58443	13749	77566	13319	0	6118
1970	329080	61263	46050	16779	60915	13901	109257	23999	2784	2784
1971	389509	52677	89821	16454	82973	23558	88384	23937	3590	2088
1972	255598	74531	33447	18458	87259	17451	86564	17211	3385	3164
1973	206965	45999	25567	13669	26883	7740	19347	6359	426	398
1974	279381	38457	33487	6372	101516	21822	85513	17419	2402	908
1975	325528	45206	53196	12449	62707	13857	69163	16171	1021	954
1976	378201	65207	45645	14569	83358	21563	83989	24106	2764	2582
1977	157260	26270	8159	2977	37624	11469	24002	7559	1655	1548
1978	168203	24083	34287	6816	44405	13805	34740	10336	752	705
1979	262410	49499	50656	14673	70746	17582	76651	19038	733	686
1980	157958	33393	11854	4927	65882	13698	34860	8866	486	454
1981	90764	27186	13688	6931	38479	9085	15116	5349	3723	3480
1982	348400	69560	37887	15097	103699	16803	94806	16308	1933	1093
1983	379227	62249	29413	12805	97070	14855	99003	16816	2067	742
1984	101764	19303	11219	7063	91378	26496	16193	4612	530	496
1985	225318	54363	16537	6489	90995	19988	23450	6992	1718	635
1986	170267	33973	13467	4600	89895	21349	59127	13927	1165	1088
1987	130792	30692	21738	9105	72468	21088	39927	8594	0	0
1988	56835	52491	50754	49274	37127	15206	16903	6681	2870	1127
1989	95524	31201	11295	4006	7489	2159	10750	5086	1707	1146
1990	141937	35697	25917	9948	78063	18142	11761	5568	4580	1724
1991	162597	37550	27650	8999	73088	16161	30974	8992	436	407
1992	194072	39074	10205	4722	83291	14541	68705	17208	3742	3013
1993	151899	37422	13271	4926	30784	9416	23566	6358	8038	2862
1994	414407	53156	56861	15971	70735	17140	45259	7964	3148	2940

Appendix C. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	23651	8825	1768	772	18046	3199	11263	2563	29424	38434
1956	20006	7000	3535	1544	27715	4896	15263	2943	32339	38101
1957	27289	12746	10610	4100	22754	6255	24780	2558	35000	37838
1958	14554	7922	5305	3985	37662	9823	22436	4164	37448	37629
1959	96423	66986	6189	1712	21185	3580	37044	6296	39731	37462
1960	67584	33063	13262	7486	26154	5551	35542	5129	41903	37329
1961	47352	35021	11506	8778	33513	10441	29066	7562	44012	37223
1962	14995	14339	4555	2233	14821	4291	15086	2734	46077	37138
1963	65605	37423	3644	1613	26408	6279	25272	5852	48088	37070
1964	24786	7367	3212	1478	37652	8898	44786	9178	50027	37015
1965	43112	21846	6376	1225	31662	7024	26046	3377	58823	13871
1966	38677	9496	1979	876	25314	4513	23665	4048	68425	15749
1967	59122	17088	5561	2167	32693	5117	36577	5363	80630	17926
1968	30647	10831	2327	900	16797	6270	27407	5625	33596	8052
1969	64577	25677	12363	7961	54998	10454	19250	3400	82051	19415
1970	47951	19172	3975	3026	44419	12548	27549	7525	46139	13386
1971	24116	6920	6997	4042	21362	5488	12188	3014	50657	14396
1972	54571	11105	7540	3083	28149	5821	25402	5374	45663	12646
1973	18885	4471	2372	1181	10749	3182	15526	2964	30918	3781
1974	35506	12996	5352	4054	38409	7020	15883	4765	55515	13060
1975	14401	3506	3411	1388	22248	5567	10214	2743	81276	26334
1976	70563	20499	3079	1237	53270	17592	28055	6888	77007	26063
1977	10005	5395	461	351	8186	3254	18628	4845	24341	10565
1978	26528	7527	2513	1117	14668	4834	20698	7841	138905	45455
1979	34463	12961	8163	4192	23119	5350	19381	8229	154954	37023
1980	17622	7660	541	618	14767	5237	23262	5435	38773	15969
1981	52525	14560	377	286	20675	6547	22499	5004	100036	83205
1982	49990	13554	2153	1626	47115	9108	34191	6236	131729	54281
1983	36791	10058	2877	1411	38968	9314	40990	9418	49811	17290
1984	12824	6233	2953	1513	13686	3983	17813	6795	47792	17337
1985	28282	7423	2871	1156	20451	5237	23029	5016	28034	7555
1986	50464	20772	8432	3616	55109	16844	40997	9594	58778	21194
1987	17567	6215	3066	1389	32760	7350	33938	8421	59648	20692
1988	39664	8442	4339	1971	27750	10045	25203	6721	25454	9296
1989	13759	5071	1426	470	28145	15136	10979	3521	40492	17679
1990	31328	7586	1855	1401	13374	5813	26189	6255	67126	12120
1991	19929	8627	7289	5497	12761	1967	26504	9770	36364	10341
1992	42232	11101	2918	537	48613	11544	40386	10229	20198	4825
1993	17281	13806	2865	1290	18074	4381	14249	2711	72453	16975
1994	15507	7091	0	0	19860	4559	4125	1772	146461	48172

Appendix C. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	19749	0	26160	0	23844	9824	82014	15147	58724
1956	0	19483	0	25692	0	23249	25322	79160	28296	56604
1957	0	19271	0	25315	831	22781	40943	77005	38932	55000
1958	0	19102	0	0	4083	22413	48470	14299	14400	7302
1959	0	18967	0	0	6097	2304	36064	15515	9257	3498
1960	0	18859	0	0	1522	1735	133437	17046	46285	8445
1961	0	18773	0	0	7618	3997	47604	18407	59245	14214
1962	1129	18703	3570	3176	12193	2886	124060	22333	98125	39704
1963	3095	18648	8770	24145	25497	25497	67292	15300	144968	69274
1964	4908	18603	2139	2282	20522	16049	58989	16478	41640	11213
1965	6889	3400	12658	23980	6314	3936	148948	25033	117348	41971
1966	14664	2500	14461	23918	11050	5506	174802	47312	95874	19952
1967	17923	5157	36130	3508	33450	4854	218816	56612	136761	27999
1968	44400	17847	10036	6072	56148	12526	115974	33355	66038	10261
1969	27565	4508	42821	6825	32230	5807	183476	34168	73133	13617
1970	18738	4174	41998	14047	37295	13362	329766	42836	77223	13231
1971	14847	7134	28822	8778	31309	8095	152040	42976	38524	11293
1972	15479	5898	12352	3253	58014	19356	182648	71563	74417	21613
1973	16294	4684	23881	6539	17496	5430	74403	27515	31459	10674
1974	2617	1365	27335	13763	26623	9482	147406	69240	40077	14101
1975	18956	6054	43111	19482	57720	19799	140329	36326	41797	6433
1976	25209	7794	16988	6575	12389	3160	46957	10722	24220	7232
1977	6709	4107	14531	10390	22208	10660	40314	10250	16305	5419
1978	40323	18565	49727	15164	69280	20963	125982	29815	97025	21135
1979	34681	9742	51990	15823	41194	11895	230020	57793	149877	41009
1980	13431	6657	9805	4721	5060	1779	112454	40556	59664	19326
1981	21775	19131	59660	53777	23966	20691	159599	35800	41610	12142
1982	28992	8076	54478	14976	31931	7872	183614	31405	133937	16850
1983	12016	3567	41296	24177	47198	10825	98156	28384	53837	13858
1984	17233	8100	53999	27432	36036	12849	135981	21410	83348	13818
1985	6049	1960	27516	6746	16240	5295	92271	21374	33419	8664
1986	10566	4157	12460	6769	48105	15916	131402	19506	97009	14219
1987	13512	6338	29980	10556	41348	16780	139465	28410	84894	20893
1988	8238	3560	29840	11714	21729	11771	49920	18038	38666	13356
1989	18065	9106	10494	6403	17134	9617	86457	25378	60623	14231
1990	19161	5429	13720	8820	15041	3679	27457	12586	24850	9757
1991	15138	6615	14482	8753	7945	4684	40547	14556	20196	7896
1992	6919	2516	9146	3670	12032	4331	77076	15524	28484	8001
1993	20271	7858	22152	10759	47375	13724	67647	28659	81756	18031
1994	47859	23130	83409	31620	57828	25788	200525	29594	213762	25567

Appendix C. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	3642	11699	79586	96293	38023	38025	0	0	30139	21210
1956	4639	11342	81905	91704	39652	36285	0	0	28777	21116
1957	5388	11074	84909	88224	40328	34968	0	0	10024	8926
1958	0	0	87856	85587	40254	33972	0	0	56802	62663
1959	0	0	24082	7901	8234	12457	0	0	36754	28350
1960	5085	5085	135558	20225	19212	2917	1971	1934	3341	4074
1961	0	0	58545	8492	30190	8169	0	0	20048	24447
1962	45765	25517	221723	28304	101549	23674	0	0	28401	14940
1963	0	0	100105	25130	99776	26281	0	0	35083	42782
1964	0	0	61178	21011	14029	4657	0	0	20048	17853
1965	10397	10397	67045	16610	16835	4162	0	0	30071	36670
1966	5266	5266	60281	15336	36953	6973	0	0	11694	14261
1967	12052	11665	36985	7810	11769	9950	5170	4923	1671	1305
1968	2721	2582	78198	20106	16230	7714	0	0	3341	2610
1969	4591	3775	145104	33450	18341	3678	0	0	11694	9137
1970	5959	4162	194466	33107	28565	9742	0	0	1671	1305
1971	0	0	56428	20060	15498	4662	457	6816	23389	18273
1972	20439	13133	212038	58700	60800	22312	0	0	15036	11747
1973	0	0	76780	15325	16322	4584	0	0	5012	808
1974	4717	3192	16949	7479	7538	2904	1035	6814	21718	16968
1975	0	0	21968	6351	13162	3731	1236	6814	15036	2423
1976	1535	1661	30678	7912	13436	5733	1438	6815	3341	835
1977	0	0	25456	7142	10979	3972	1639	6817	10024	4578
1978	4773	4623	254539	56473	95262	24657	1840	6819	10024	1616
1979	15417	7774	223711	52355	76863	31734	2037	6822	10024	1616
1980	0	0	20874	9345	33327	15395	2230	6825	18377	11088
1981	3227	1934	28983	11695	13750	5575	2417	6829	10024	7831
1982	5370	4174	109013	36355	11442	3859	2597	6834	3341	2610
1983	978	946	89786	23583	63008	9899	2772	6839	6683	5221
1984	0	0	137713	22245	63193	16491	2941	6845	17689	5761
1985	0	0	69858	19112	27059	10696	3107	6853	5012	3916
1986	3814	2113	250069	45875	81595	22940	2030	1976	11694	9137
1987	1151	1115	154874	42428	30665	10164	2030	1976	8353	6526
1988	0	0	38250	13299	24388	10456	0	0	16706	1997
1989	1092	1057	146120	30839	22099	9576	2030	2032	33572	13398
1990	1050	1021	50222	21463	13982	8342	4059	2336	31869	14656
1991	0	0	73817	21025	35453	10958	6091	3850	18362	10962
1992	0	0	66536	18861	23440	8209	0	0	18770	8430
1993	3577	2513	124760	19327	41278	10313	0	0	14993	5396
1994	10105	7173	191607	38990	34087	6783	0	0	32413	10114

Appendix C. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	2709	27191	121098	70968	1593254	217861
1956	3796	26999	118563	70345	1737368	195519
1957	0	26840	38997	26738	1436516	180891
1958	5868	26708	63370	28219	1347945	184259
1959	29341	26598	107241	77384	1545082	300622
1960	5868	26507	126740	63549	1795038	128975
1961	0	26430	233981	98337	1356363	165592
1962	0	26366	77994	56162	1245093	112607
1963	17605	26312	43871	49520	1377156	142828
1964	0	26266	282727	164964	1699368	239718
1965	5868	26228	112116	63114	1423657	114109
1966	0	26195	107241	41779	2146961	163898
1967	27385	8211	56956	34202	2314697	154561
1968	5868	26143	53621	56795	1684488	176801
1969	11411	1364	31642	24275	2156783	117154
1970	18257	9806	29176	17986	2230415	117390
1971	9128	2282	46894	21965	2011420	122743
1972	25103	19613	86172	48009	2466458	182764
1973	20539	16047	40882	16595	1619001	112178
1974	41078	23171	50100	35396	2011299	129913
1975	13693	2207	57615	34194	1980758	106700
1976	4564	3566	14723	6466	1748066	106884
1977	61617	9931	73948	20032	1451847	82145
1978	11411	1364	42385	21984	1975298	115623
1979	31950	16547	49691	18116	2406509	135622
1980	6846	5349	60421	15953	1908201	119929
1981	45642	13685	71776	25519	2333551	177440
1982	18257	5474	34268	14027	2147638	121741
1983	2282	1783	25250	9739	1875653	105342
1984	4833	3993	18404	13661	1618247	91927
1985	4564	1141	50501	22772	1702092	125677
1986	20539	11586	84769	32824	2128193	111984
1987	4564	3566	79358	34554	1950177	118408
1988	2282	1783	79358	32355	1680920	210387
1989	53820	37121	66255	18659	1538342	95906
1990	69502	34573	77297	35276	1759343	118622
1991	42367	29409	57053	26471	1716185	104605
1992	81799	57281	46894	21803	1954372	132136
1993	31765	15139	88376	26817	2046470	114326
1994	32618	13137	45090	19904	2912022	141443

Appendix D. Breeding population-size estimates and standard errors of the green-winged teal (*Anas crecca*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	656	2267	0	6564	9547	21778	0	41264	0	11770
1956	669	2229	0	6440	11814	21483	0	40430	216	11530
1957	977	989	0	0	13768	6479	2398	2348	1888	1790
1958	814	803	1155	1209	24477	11047	28781	19841	4719	3304
1959	0	0	2310	1585	37863	12930	21459	10081	3775	3580
1960	1629	1140	0	0	8261	3054	4797	2923	0	0
1961	807	2131	0	0	5507	3256	23984	13063	0	0
1962	0	0	0	0	8950	4612	11992	8566	0	0
1963	1396	1262	0	0	13277	6870	14990	7980	7550	4692
1964	0	0	0	0	12658	7006	28781	13064	4118	1954
1965	1954	1915	0	0	55700	18323	54363	19234	19219	7096
1966	977	830	3997	3031	37550	15613	79147	26414	8237	2042
1967	977	830	3997	2716	41305	14407	129513	26057	24711	6771
1968	977	958	2665	1745	61958	23102	155895	40694	10296	4028
1969	977	830	6662	3469	26285	10265	52764	9834	8237	3856
1970	1954	970	5330	2358	37550	11794	47968	12492	15101	5297
1971	0	0	6662	3245	62584	21113	135509	36327	6864	3276
1972	977	830	5330	2658	35047	12502	69553	16084	10982	4488
1973	1954	1661	2665	1745	26285	9124	64756	23514	9610	2335
1974	1954	1360	15989	5521	57577	17226	86342	19650	27456	7241
1975	0	0	0	0	32544	18020	59960	13648	0	0
1976	1954	1181	2665	2750	36925	9651	50366	11806	13728	4144
1977	4886	1899	2665	1745	49300	16544	45569	13997	9610	5027
1978	1954	1661	5330	2658	41305	19051	88740	23398	20592	7678
1979	2931	1198	14657	5258	43809	15247	69553	11693	19219	8088
1980	977	1070	5330	2876	70094	27388	115122	24800	15101	5297
1981	1954	970	21319	5848	60081	17067	134309	29579	19219	5737
1982	2931	2873	6662	2262	53822	15630	52764	12257	6864	3885
1983	4886	1572	3997	2090	32544	10208	74350	13571	21965	7212
1984	977	830	3997	2090	52571	16965	69553	12086	9610	5334
1985	3908	1819	10659	4780	31918	10632	74350	22520	13728	3467
1986	977	830	6662	3245	47564	13057	110327	21754	48049	10420
1987	977	958	9327	5019	46313	15367	105530	17384	34321	9360
1988	977	958	17322	6748	50068	18199	105530	21828	10983	3379
1989	977	958	10659	4282	52571	16124	115122	31001	19219	8425
1990	977	830	22651	7459	50067	15156	95935	23442	30202	9737
1991	3908	1221	23984	7475	62584	13965	116322	29469	15101	4868
1992	3907	1689	13320	4421	81958	25662	50350	10098	31564	6303
1993	6838	1560	6660	2742	68820	17908	110290	25291	37054	10187
1994	8791	4542	18648	4484	66317	19329	95904	24024	52150	8284

Appendix D. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	8456	0	4526	90	11902	0	41309	0	10097
1956	0	8288	0	4476	1045	11680	0	40474	0	9928
1957	0	0	0	4438	0	0	14177	7658	3664	864
1958	0	0	355	4409	4137	4190	2223	2250	0	0
1959	5853	4119	711	4387	2758	2794	2268	2187	0	0
1960	0	0	711	4370	0	0	2223	2250	0	0
1961	0	0	0	4357	0	0	6669	3636	0	0
1962	0	0	0	4346	0	0	4195	2899	0	0
1963	1517	1684	5330	4338	16548	11198	3705	2394	0	0
1964	910	918	0	4332	9893	5383	13681	6795	5363	2785
1965	5463	3500	0	4327	16188	4693	30781	11475	0	0
1966	1821	1314	0	4323	7195	3305	22231	5988	5363	2785
1967	5691	2467	0	4320	7195	4501	53012	15274	2681	3527
1968	8194	1965	0	4318	10792	4594	42752	10234	5363	2785
1969	13202	3810	0	4316	8094	4401	68403	15653	2681	1392
1970	6373	3284	86	4314	7195	3117	104314	28683	8044	2636
1971	28225	6749	285	4312	3597	2365	38477	12976	16088	5271
1972	14568	5319	492	4311	1799	1812	40187	11702	2681	3527
1973	3642	1804	707	4310	15289	5195	75243	23544	5363	2785
1974	21852	7681	928	4310	21584	7265	131676	30912	10725	14109
1975	2731	2116	1153	4309	1799	1812	6840	3488	0	0
1976	10926	4149	1381	4309	12591	7948	37622	11803	4022	5291
1977	10015	2404	1610	4309	7195	4080	30781	10082	26814	6844
1978	17755	4188	1843	4309	7195	3482	71823	19341	10725	7213
1979	6373	2548	2080	4310	5396	2800	46172	14810	13790	14439
1980	11836	3128	2322	4311	5396	2800	53012	11886	20685	6588
1981	27315	5347	2572	4311	41370	12754	148776	34824	20685	5448
1982	10926	4528	2828	4312	8993	4261	42752	10618	4597	2305
1983	22762	6089	3090	4314	8993	3773	64983	16805	4597	5549
1984	12747	4035	0	0	8993	3568	112010	21376	6895	4919
1985	14568	5215	3908	1411	8993	4856	70113	14843	9193	2745
1986	33689	7739	1777	781	19785	6080	85504	18770	2298	2774
1987	19121	3569	1777	1024	12591	7438	90634	20738	6895	2562
1988	19121	4859	4619	3276	17987	5835	99184	21332	34475	20466
1989	24583	7672	4619	2478	30578	8365	115430	23479	9193	3384
1990	10926	3829	2843	1047	44967	12533	161602	40189	11492	4888
1991	19576	5936	4619	2611	39571	10934	200079	49997	22983	9048
1992	14108	5434	7104	1962	21591	7285	128294	28914	4598	5550
1993	22755	6728	2842	1226	35984	11924	126583	24639	6897	3238
1994	19114	4724	2131	998	43181	15714	180467	41182	13794	8789

Appendix D. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	10748	3856	5422	18395	12786	33838	34915	52037	44460
1956	0	10577	3978	5322	17196	6614	27262	3255	58611	43412
1957	1697	1647	858	811	6452	2366	44323	19130	19547	42637
1958	1597	1551	4292	1883	21505	8137	34958	16486	0	42062
1959	0	0	858	811	25806	5435	38453	17739	156373	41633
1960	0	0	7726	3712	19355	9921	27966	20766	19547	41311
1961	0	0	10302	3129	12903	3223	52436	12727	58640	41070
1962	12110	7842	6868	3139	4301	2548	31462	17109	19547	40889
1963	0	0	0	0	4301	4301	34958	18586	97733	40752
1964	0	0	4292	765	4301	4301	34958	14837	39093	40650
1965	5589	4012	3946	5001	12903	7643	83898	33669	19547	40574
1966	3726	2324	0	0	2151	2151	44026	17688	78186	40517
1967	0	0	6009	4399	10753	8221	45445	16728	19547	40476
1968	11178	7250	5151	2081	2151	2151	46027	14029	0	40446
1969	9315	4468	6009	2372	6452	6452	38453	19663	19547	40425
1970	14904	4253	858	811	22939	8360	19726	10008	75394	18720
1971	20493	9951	2575	1799	8602	6162	0	0	16754	3601
1972	11178	4585	6009	3277	8602	8602	20712	10047	41886	7194
1973	11178	8954	858	811	10753	5618	19380	17313	25131	28633
1974	20493	10836	7726	3564	6452	2366	3890	3919	16754	14429
1975	1863	1995	1717	1623	2151	2151	0	0	35184	15015
1976	14904	3582	858	811	2151	2151	10228	5219	7330	9119
1977	18630	6661	858	811	4301	4301	20457	6762	58640	17314
1978	11178	6066	0	0	4301	2548	6819	4530	22946	4555
1979	22356	6681	7726	2499	10753	6601	44323	20547	0	0
1980	14904	4551	1717	1623	47312	29282	97169	26270	76965	12520
1981	31671	16110	6868	1842	12903	5865	15781	6600	29320	8657
1982	11178	3624	6009	2003	2151	2151	32877	12135	21990	4000
1983	14904	5096	3434	2019	6452	4196	102283	24898	43980	7999
1984	26082	10151	6868	1842	25806	8807	51142	16284	36650	27767
1985	16767	8125	6868	1842	4301	2548	105693	25238	87960	38878
1986	13041	3776	14583	7919	17205	10191	57961	17640	73301	12434
1987	29808	8506	5151	3597	19355	13946	88645	24370	124610	56200
1988	22356	7773	2575	2434	19355	11595	27276	14194	51310	12290
1989	14904	5589	4292	1655	10753	6601	71598	30939	43980	40416
1990	22356	5373	19745	7436	15054	6819	20457	5768	14660	4328
1991	24219	8591	13736	3685	12903	5865	13638	7236	0	0
1992	14909	4550	4290	2800	8598	5093	23854	11775	22935	4548
1993	13045	7008	6864	3137	6448	2364	30670	9626	33492	28843
1994	49385	17097	12871	4768	19345	5130	27262	9480	29305	8649

Appendix D. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	8563	31243	243118	153516	90359	55826	25941	10503	3517	3731
1956	10604	12735	64761	36766	61324	31846	25884	8336	0	0
1957	0	0	101818	72608	51129	9709	21042	6421	0	0
1958	0	0	231405	174636	61355	14174	9711	3304	0	0
1959	21218	15299	731240	338803	132936	69042	40465	11107	10552	16054
1960	21218	24086	222149	84557	81807	24154	10521	4635	7449	7028
1961	0	0	296199	139321	235194	103174	29134	8135	4966	4685
1962	0	0	83306	60548	61355	31866	12139	5453	0	0
1963	0	0	212893	162004	112484	58420	7284	2060	0	0
1964	21218	10627	212893	119340	71581	27771	21042	6130	8645	15794
1965	10609	12043	166612	72755	30677	7087	8093	4239	14898	6418
1966	0	0	203636	64094	51129	9709	16186	5165	10130	5744
1967	10609	12043	120331	111609	20452	10622	3237	2148	7674	5835
1968	0	0	101818	42050	102258	53110	10521	2227	8083	3690
1969	0	0	46281	23402	20452	10622	2428	1437	11512	5383
1970	0	0	105289	53077	34086	26277	5665	3571	14070	6139
1971	0	0	114413	37916	47721	26405	7284	3957	10050	5623
1972	9599	10218	172550	55953	27269	14685	18614	3388	10552	3798
1973	28796	17040	148772	55292	34086	26277	14567	4672	19863	9234
1974	9599	6888	55537	19850	6817	7088	8093	1906	17640	6290
1975	0	0	144397	51389	61355	39477	11330	2254	18090	8004
1976	9599	11772	29171	7412	6817	5255	3237	1101	28852	10503
1977	0	0	134916	44750	6817	5255	5665	1595	21927	8003
1978	9599	10761	98452	45975	20452	10622	17804	6052	75481	23835
1979	0	0	113038	45091	27269	34146	8902	4281	36251	11257
1980	0	0	116684	35210	64764	42056	14567	8333	68185	21794
1981	0	0	127623	30749	98850	49754	27516	12098	17268	5918
1982	9599	11772	182319	57387	20452	10622	15781	5564	27797	10408
1983	124784	52281	288064	102577	129527	40273	30348	14133	23246	7467
1984	57593	13050	98452	25493	20452	6704	8902	3768	30320	14139
1985	38395	16412	116684	39232	34086	17489	9711	3075	20100	7173
1986	19198	8031	204200	58251	47721	26406	13758	2434	35754	12113
1987	67191	15866	222429	74662	34086	7548	12139	6960	40848	11697
1988	28796	20665	262540	82790	61355	23244	8902	2975	31892	12204
1989	76790	49786	280772	90077	20452	15766	21042	6948	15432	5979
1990	0	0	172474	62891	13634	8076	12949	6134	19970	8152
1991	0	0	91160	42865	0	0	9711	3653	27485	8391
1992	9594	10213	153072	43534	6814	5253	8898	5626	51021	11672
1993	9594	10756	160361	43999	13628	10505	7280	2974	38994	8059
1994	9594	10756	164006	65837	13628	10505	14560	5414	37070	7339

Appendix D. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	15525	8093	22927	10607	10986	8058	11742	6128	235764	47662
1956	9884	6168	25688	13328	0	0	0	0	112255	25918
1957	9880	7559	2469	2570	0	0	0	0	131677	35058
1958	0	0	0	0	0	0	0	0	148852	34770
1959	17466	8946	36110	19639	12113	9523	11208	4301	261064	65351
1960	0	0	0	0	3281	2328	1478	1579	190073	45180
1961	2823	1756	0	0	0	0	2463	1167	211828	62156
1962	7057	3427	2422	2420	17715	6943	10346	6409	53816	14530
1963	9880	5396	4845	4735	11810	4186	5665	3720	64121	21231
1964	30486	13344	7133	6972	28923	19529	6404	3042	95036	22996
1965	19054	9505	10070	5144	23096	11359	6897	2770	84731	22474
1966	16937	8340	8419	4694	22792	9499	15026	6154	142059	29319
1967	12702	7929	6878	3663	53379	21818	8129	6024	118177	30473
1968	5150	5029	17119	9405	37727	12361	15765	6598	96289	36791
1969	11329	3148	40242	12512	74985	27212	13302	5072	111081	24081
1970	25748	10594	27029	10408	35789	7928	17982	6119	144766	35298
1971	16479	4399	49605	13789	58096	15648	14287	5848	162819	50723
1972	22658	6296	28531	8767	49929	17102	18721	4763	242925	73519
1973	15878	5240	25678	6570	38303	12021	16750	7517	188492	37875
1974	23688	5914	28531	11544	49929	12479	6404	2995	277517	75955
1975	15449	3410	34237	17781	36671	13361	2562	1617	181455	72524
1976	36047	8386	56171	17704	51450	14741	11577	4803	236155	85943
1977	21628	8144	50680	13131	71577	16328	34978	11434	110408	28910
1978	50466	11454	75717	24248	182074	43851	24633	6065	153924	45642
1979	44287	17497	80244	24072	135497	34554	3449	1389	183265	26985
1980	94238	22284	116718	41736	114129	30542	8375	1952	178819	68192
1981	42227	15347	50439	25430	56716	18822	3449	2361	160407	37183
1982	21171	6142	38517	13656	50043	18514	3449	1250	84397	23842
1983	26263	12540	53745	14233	71444	20044	3449	1508	101522	13469
1984	13389	4020	43294	15901	40035	16975	8375	2690	68511	12258
1985	9784	4156	17119	3896	37909	12951	4927	2038	55259	18886
1986	11329	4131	54059	12984	36792	9900	11085	6220	69231	15743
1987	17509	6092	59059	20995	81651	20152	8375	2682	90366	43677
1988	47377	12287	63237	18232	56048	14240	13794	3436	137365	44119
1989	19569	5904	26828	7667	58050	15323	3449	1350	74539	17934
1990	22143	6988	44074	11199	84461	26167	4434	1530	79626	30209
1991	44802	10378	60419	17636	59583	17270	8868	3116	94169	23661
1992	48525	10612	80654	23168	145655	24089	88772	33646	119265	26008
1993	44268	8703	103656	18718	133978	23903	21373	7058	130617	32918
1994	25539	7105	41414	16642	110080	23784	13457	3141	107419	30407

Appendix D. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	55663	24991	41413	19800	18426	8939	55889	11228	116346	53561
1956	30229	10768	15651	6309	24105	10170	63262	30216	135685	47090
1957	31012	10906	22087	10675	1417	1394	37259	13890	65929	14837
1958	38169	13142	13804	5377	4252	4181	39177	11279	38782	11041
1959	4771	3922	20246	8571	38269	10125	15068	6547	34904	22533
1960	38964	8554	27609	6920	5670	3199	51232	25580	93077	30439
1961	62025	18717	36812	9363	9922	5713	32704	19897	0	0
1962	3976	3147	2761	2832	2835	2884	6027	5921	3878	3905
1963	3976	2000	1841	1281	2835	2787	21095	12004	17452	6412
1964	5566	1714	5522	3683	8504	6623	43698	13205	7756	5151
1965	30217	11707	2301	2222	0	0	33150	17468	11635	3924
1966	25066	11492	6694	3321	2291	1408	28462	11467	15513	5896
1967	26832	4402	17209	7256	12754	4490	54078	19484	44599	14909
1968	7397	4835	6716	4562	11115	5764	56924	25139	34904	15907
1969	36805	11792	41460	23373	15192	3454	71155	12820	40119	16457
1970	33062	4917	16526	3486	9274	3079	143733	28086	124102	24817
1971	51005	15416	34181	11891	15312	7025	69398	26097	87556	26437
1972	23456	10030	12945	8035	8745	3857	21553	4598	57191	23866
1973	66814	32283	37287	8771	19274	7025	42577	9793	60915	20304
1974	69514	17160	35574	12736	22228	8277	32326	9157	23182	7818
1975	24567	8109	11016	4132	13738	6175	57134	11231	52306	21145
1976	54654	23049	30027	13975	24808	10653	36431	9281	49573	12564
1977	13398	3424	13864	5366	14235	6802	25699	11191	28849	13470
1978	24127	11001	28295	12946	15973	7132	28653	11251	24401	10216
1979	20660	7251	18172	2905	34677	8728	76128	22242	69060	20257
1980	17330	5632	8130	4996	19769	12957	42734	11855	42307	13206
1981	6602	1814	7743	3025	5380	1789	38198	16074	52005	16328
1982	17107	4835	18120	13664	7869	4115	6092	4875	14267	3473
1983	20530	6184	10032	5655	4066	1999	41478	14399	35324	14738
1984	16289	5344	15521	8545	17421	9975	32096	13233	17572	6957
1985	20073	8512	15693	3719	15636	6962	56756	10675	45491	11686
1986	6001	3403	1005	1005	2445	1515	27152	5787	20233	6384
1987	21723	10396	5095	5095	3098	1984	10980	3119	10909	2668
1988	5544	2778	7802	3087	11332	5395	26063	11726	34017	10549
1989	9125	2572	5036	1226	17349	12626	41695	15151	39124	15342
1990	24692	8457	11846	5635	16360	9319	23890	9609	61248	21130
1991	10661	7565	10890	4705	15366	7321	30849	13917	51691	20930
1992	26951	11260	18730	5979	9489	3869	24614	10433	44544	23630
1993	27258	19072	6393	1958	11661	6780	24585	5607	22246	9672
1994	22471	4349	10223	2675	12461	5374	38888	16044	49523	30384

Appendix D. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	111231	25042	25039	5388	35075	11110	16065	4903	0	6319
1956	195275	46840	37544	18148	30402	7571	22092	6725	0	6201
1957	62590	42482	0	0	70150	32049	16065	9911	0	6114
1958	10706	4435	0	0	65473	20155	28114	10884	0	6049
1959	8235	3118	0	0	25722	14884	26105	10956	0	6000
1960	23059	6835	9390	4507	18707	10484	10041	3416	0	0
1961	21996	9964	4246	4111	25722	8652	17069	11153	0	5936
1962	28001	19044	6260	6060	0	0	0	0	0	5915
1963	23059	10140	3130	3030	7015	4748	2008	1914	0	5900
1964	15647	9494	0	0	0	0	2008	1824	0	5888
1965	54354	18034	3130	3030	14030	8765	9037	3532	0	5880
1966	34589	8883	18779	5923	12861	4326	4016	2561	22796	5873
1967	185298	54041	34429	15811	29229	14175	20081	8698	22796	5869
1968	54354	15237	14085	7604	30398	12804	10041	4407	0	5866
1969	135885	32822	25039	11016	71319	23504	65264	15740	0	5864
1970	409084	74053	18779	7626	51443	19134	54219	13156	0	0
1971	98914	25503	22612	9807	28060	11573	80325	25459	10521	9830
1972	24946	8200	2495	2417	60797	22564	65264	15242	2630	2458
1973	77613	20987	0	0	95871	38344	54219	21515	0	0
1974	87627	26098	3742	3624	75206	17932	73296	24497	3945	3686
1975	145170	31423	59884	19255	68201	13647	30122	11877	7891	3723
1976	116872	27336	3484	2400	70076	18352	80047	28611	2374	2223
1977	32899	8486	0	0	44761	14080	35924	10606	1207	493
1978	45139	11001	10503	4333	92687	18647	32521	11978	1936	719
1979	74276	22855	16177	8067	44087	9578	36267	8871	2908	2716
1980	26585	7039	0	0	33156	7517	29564	6635	1889	1764
1981	20069	8276	2211	2141	19439	4178	8929	4259	0	0
1982	38778	20149	5582	1757	26575	8243	21616	7303	1665	1915
1983	41720	9219	2172	1288	33604	8025	18088	5504	7897	5412
1984	43450	19356	0	0	31737	7267	7809	4171	3410	1630
1985	32845	9710	2448	1458	32268	7532	10095	3040	4667	1206
1986	9821	4114	2488	1487	21623	7863	14535	7205	2688	1894
1987	8825	3520	6708	5058	23628	10843	24763	11294	0	0
1988	9181	5962	1246	1206	13414	4374	8735	4946	1868	487
1989	19533	5729	0	0	6850	2456	8272	3589	4089	2424
1990	20810	6058	1551	1502	20918	6652	7310	2936	3535	1158
1991	15924	4739	1780	1724	23377	8947	8135	3182	3729	2088
1992	42377	15006	0	0	12451	5433	11617	4781	3121	1310
1993	24635	8211	2128	2062	3408	2317	815	846	0	0
1994	150549	41706	6731	4392	3510	1107	4031	1808	1760	1644

Appendix D. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	12057	7049	2930	3347	5200	2172	4977	2313	0	9172
1956	0	0	0	0	9535	3923	8295	3218	348	9027
1957	12057	7049	0	0	2600	1488	14930	4401	1146	8915
1958	12057	10529	0	0	19067	6756	43583	8553	1957	8828
1959	24115	12194	0	0	4333	2029	17418	6013	2774	8761
1960	7592	4109	0	0	3467	1729	9124	3340	3591	8709
1961	36172	23631	0	0	11267	3245	17418	5382	4390	8668
1962	6029	6663	0	0	2600	1339	2074	1407	5156	8636
1963	54259	24695	0	0	5200	1969	4147	2930	5879	8611
1964	0	0	0	0	3467	1379	829	824	6553	8591
1965	0	0	2930	2218	13000	6563	16589	5197	19825	6457
1966	9043	9995	0	0	8234	2939	5806	1754	7163	1957
1967	27129	14473	2930	3347	16595	5028	5640	1728	23521	7259
1968	12057	7049	2930	2218	7800	2575	19906	5951	8573	3657
1969	45215	20568	11719	8873	78002	19802	26542	6489	4793	1568
1970	24739	14043	5860	2668	28665	9080	15040	6580	6971	2932
1971	60079	22286	8789	3589	22630	5325	18800	9560	4357	2461
1972	42409	15905	5860	4436	31682	13223	24441	7527	18300	4848
1973	10602	8843	8789	6654	52804	14827	45121	11812	15686	4070
1974	54778	18659	2930	2218	39226	8356	5640	2196	21132	8763
1975	17670	10365	5860	4436	15087	3969	16920	4417	33332	7487
1976	43060	16484	5288	2533	29956	8362	30259	11813	11329	3797
1977	5674	1581	1344	1029	18512	8244	8624	3411	3921	1551
1978	76746	20157	1078	815	17769	3797	19030	3950	10021	4299
1979	9118	3839	1080	816	11121	5103	12473	2262	24400	12623
1980	8883	2581	0	0	5959	1511	10801	3291	5446	1533
1981	18333	3957	1086	1241	3913	1713	13932	4294	6100	3766
1982	8951	6135	928	1059	8120	2393	13094	2961	5229	2554
1983	15917	11160	0	0	14344	3002	11290	3491	13725	4983
1984	16798	5253	0	0	6519	2987	8124	4177	1307	803
1985	7315	3071	866	988	3123	742	3336	2087	3050	1522
1986	21367	9316	2495	1145	5910	2030	11847	3993	3921	1163
1987	13643	6057	1885	1444	15045	4344	7258	2630	3050	2344
1988	12236	3688	520	594	5893	1519	4006	1601	9804	8774
1989	13734	3824	911	1041	10905	4540	7306	2388	9586	3378
1990	15635	4366	2625	2086	9124	2737	5896	1734	6984	2820
1991	12885	4132	1187	916	4584	1816	7997	2407	9211	4144
1992	26212	9185	2608	1168	7161	1978	10597	5793	9023	5933
1993	2870	1016	0	0	306	288	0	0	5327	2339
1994	8277	4044	1960	2240	3533	2224	3145	1623	18297	9634

Appendix D. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	8779	0	9198	0	8321	0	23846	0	11621
1956	0	8631	0	8965	0	8012	0	22963	0	11187
1957	0	8517	0	8785	0	7777	0	22299	0	10860
1958	0	8429	0	0	0	7598	0	0	4502	3802
1959	0	8360	0	0	0	0	0	0	0	0
1960	660	8307	0	0	0	0	0	0	0	0
1961	1539	8265	0	0	0	0	4736	2729	2026	2071
1962	2362	8232	0	0	0	0	0	0	0	0
1963	3121	8206	2180	8277	0	0	0	0	0	0
1964	3813	8186	0	0	0	0	0	0	0	0
1965	2707	1961	3344	8213	0	0	0	0	0	0
1966	11194	4203	3873	8190	1446	1328	34728	28946	22285	6779
1967	6343	3062	17468	10460	6566	4192	5412	2070	4052	2574
1968	11940	4797	0	0	10943	4923	7687	3409	4727	1768
1969	3826	2521	1509	936	4218	1446	48317	11848	17220	4673
1970	21269	5410	8298	2904	11388	4786	84006	30702	41892	11467
1971	7178	2296	1509	936	8435	4410	16472	5924	5403	3491
1972	13433	5787	10938	3089	2531	1665	27230	6422	12831	3974
1973	35821	15057	17350	7036	3374	1669	16472	6808	4135	1725
1974	746	759	2263	2319	9701	2776	43925	9957	16545	8819
1975	19776	6716	12069	5391	21484	5724	40630	10641	3896	2368
1976	2239	1423	13578	5910	7592	4843	1098	1036	2701	1502
1977	0	0	6035	1401	7592	2466	0	0	1351	903
1978	8209	3924	6789	4129	10122	4164	10981	3599	2701	1807
1979	15672	5267	16595	8357	4218	2273	2745	2590	6078	4050
1980	4478	1730	2263	1024	6748	2136	59445	14536	30694	10636
1981	2985	3233	12824	5318	5905	2108	17679	5749	6455	2852
1982	8209	2525	17727	8887	18558	7693	24312	5687	10590	3197
1983	5224	2367	3017	1461	3374	2155	6810	2770	6581	2471
1984	9328	5401	4903	2657	4218	2273	7383	2675	3892	1428
1985	3358	2914	5280	2114	2531	1729	32550	9274	21090	9220
1986	2239	1593	4526	2847	4218	1996	4966	3481	8552	3016
1987	2985	1756	4526	1617	1687	1009	21715	7373	7284	3447
1988	2239	1518	3017	2303	5905	4057	17568	7282	7757	2794
1989	7463	2618	3017	1947	12653	4115	5993	1681	527	532
1990	8741	5268	24648	14544	7281	2096	0	0	2100	1082
1991	3198	2336	5657	3353	14910	8859	0	0	3451	2748
1992	7272	3423	8270	5126	685	664	5865	3409	0	0
1993	3041	1527	2306	1917	1289	691	4162	3077	2560	1826
1994	15669	7930	23038	9164	28177	11423	19909	7277	11302	3956

Appendix D. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	3551	0	22896	0	7337	0	0	38405	45455
1956	0	3453	0	21782	0	7041	0	0	38852	44871
1957	0	3381	0	20940	0	6820	0	0	11259	2202
1958	0	0	0	20305	0	6654	0	0	56294	25165
1959	0	0	0	0	0	0	9648	5366	123847	63729
1960	0	0	0	0	0	0	0	0	33776	26495
1961	0	0	2726	1980	0	0	5927	5829	18765	15525
1962	0	0	9996	5705	0	0	14224	3490	15012	18268
1963	0	0	2691	1908	0	0	19200	12645	18765	15525
1964	0	0	0	0	0	0	24138	10578	41282	28369
1965	0	0	0	0	0	0	0	0	37529	6135
1966	0	0	6279	2074	0	0	10972	5384	60047	65738
1967	0	0	2999	1595	0	0	12524	6976	11259	2202
1968	0	0	8996	3094	3557	1513	5029	3100	73182	35958
1969	0	0	19991	8867	4742	2981	0	0	37529	22244
1970	4451	2660	95459	23240	8299	5228	50398	17865	11259	8832
1971	0	0	10995	6566	5928	2524	21842	29201	75059	30509
1972	0	0	35985	11555	4095	1832	7601	5181	140735	67539
1973	0	0	21491	6011	4742	2981	7375	3445	75059	13454
1974	12241	9752	6997	2317	2371	1504	26045	29196	71306	48710
1975	2782	3053	14621	6066	1251	1006	27441	29194	30024	9559
1976	0	0	3998	2255	19481	7544	28963	29193	15012	4780
1977	0	0	1000	967	1186	1307	30610	29193	22518	4405
1978	0	0	11495	9195	16894	4395	32355	29195	75059	30509
1979	0	0	11495	4717	3557	3101	34167	29199	78812	33398
1980	0	0	39817	10902	23612	9332	36012	29206	45035	28121
1981	2240	2169	8046	3024	7157	4022	37868	29214	30024	16375
1982	0	0	11987	4041	4374	2368	39705	29225	52541	34001
1983	0	0	21696	9543	11553	6267	41489	29238	45035	21056
1984	0	0	8640	4567	9109	9058	43184	29255	51658	28035
1985	0	0	19047	7122	10040	5674	44760	29276	11259	2202
1986	2013	2178	33906	12164	13941	5939	27043	7313	26271	6836
1987	0	0	15274	4536	6394	2324	2458	2461	78812	26704
1988	0	0	14761	6147	4863	2795	63920	21275	99453	49404
1989	0	0	6235	2626	5546	1963	50398	15821	29312	11425
1990	0	0	0	0	1229	993	66378	21945	13414	7771
1991	0	0	2043	1374	0	0	24585	7298	29620	10578
1992	0	0	10678	3598	1266	1426	31973	12294	20475	5730
1993	0	0	3789	2679	1498	1215	55887	18600	18967	10057
1994	6208	6709	23699	10437	3307	2120	46625	15054	27762	15238

Appendix D. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	57327	49232	405754	188520	1788657	291361
1956	56375	48532	409369	183900	1508211	236058
1957	26365	47976	284710	97517	1087340	161030
1958	92279	47534	284710	74195	1333262	212030
1959	131826	47182	580370	275129	2640511	459242
1960	0	46899	448966	280990	1415116	310903
1961	65913	46673	383263	150538	1718494	251371
1962	79096	46490	175206	57642	713074	117292
1963	0	46343	405164	123153	1233304	226784
1964	65913	46223	657023	193495	1553129	244547
1965	26365	46126	317561	96897	1281993	150974
1966	79096	46047	405164	117327	1617319	173631
1967	64082	12229	227461	71546	1593690	165697
1968	39548	45931	229958	76765	1430896	146596
1969	15380	3008	71081	32123	1491016	103538
1970	30760	37432	95333	26703	2182469	137672
1971	61519	44962	234995	47173	1889342	132932
1972	148671	67929	270109	112823	1948224	185755
1973	117911	27420	253903	56484	1949204	131904
1974	71772	18675	135055	38707	1864466	131219
1975	66646	42430	213837	73978	1664842	148070
1976	30760	8386	157104	66197	1547490	133974
1977	76899	15042	139782	32966	1285810	87902
1978	51266	40214	498352	183161	2174210	219141
1979	128165	39126	378291	161643	2071738	198478
1980	66646	22441	168143	40737	2049867	140677
1981	102532	51114	314209	78815	1910501	141746
1982	25633	10419	407190	104185	1535688	140154
1983	76899	12570	117498	43426	1874974	148049
1984	65138	23319	169507	33520	1408237	91548
1985	46139	16917	218789	46595	1475406	100277
1986	25633	10419	332235	104960	1674923	136124
1987	56392	29018	423397	127736	2006242	180393
1988	71772	12914	423397	137205	2060757	188342
1989	21256	7753	380358	101046	1841674	166404
1990	27672	7588	427903	138893	1789489	172696
1991	27895	7931	268731	62056	1557776	111275
1992	42238	16849	251202	79180	1773069	123723
1993	63451	20025	226892	62912	1694464	112664
1994	94164	27350	297796	90864	2108448	152222

Appendix E. Breeding population-size estimates and standard errors of the blue-winged teal (*Anas discors*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	389	0	1121	0	2414	0	0
1956	0	0	0	382	0	1097	0	2348	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	1452	1408	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	2783	2909	0	0
1978	0	0	0	0	1452	1497	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	1452	1497	0	0	0	0
1981	0	0	0	0	2905	2166	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	1452	1497	0	0	0	0
1984	0	0	0	0	0	0	2783	2909	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	2783	2909	0	0
1987	0	0	1546	1594	0	0	0	0	0	0
1988	0	0	0	0	0	0	11132	3955	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	2906	2167	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix E. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	436	0	174	0	0	0	1107	0	2826
1956	0	428	0	171	0	0	0	1087	0	2784
1957	0	0	0	169	0	0	0	0	0	0
1958	0	0	0	167	0	0	0	0	0	0
1959	0	0	0	166	0	0	0	0	0	0
1960	0	0	0	165	0	0	0	0	0	0
1961	0	0	0	164	0	0	0	0	0	0
1962	0	0	0	164	0	0	0	0	0	0
1963	0	0	0	164	0	0	0	0	0	0
1964	0	0	0	163	0	0	0	0	0	0
1965	0	0	0	163	0	0	0	0	0	0
1966	0	0	0	163	0	0	0	0	0	0
1967	0	0	0	163	0	0	0	0	0	0
1968	0	0	0	163	0	0	0	0	0	0
1969	0	0	0	163	0	0	0	0	0	0
1970	0	0	0	163	0	0	0	0	9921	13004
1971	0	0	0	162	0	0	2109	2125	0	0
1972	0	0	0	162	0	0	0	0	0	0
1973	0	0	0	162	0	0	0	0	0	0
1974	0	0	0	162	0	0	0	0	0	0
1975	0	0	0	162	0	0	0	0	0	0
1976	0	0	0	162	0	0	0	0	0	0
1977	0	0	0	162	0	0	0	0	0	0
1978	0	0	0	162	0	0	2109	2017	0	0
1979	0	0	0	162	0	0	0	0	0	0
1980	0	0	0	162	0	0	2109	2017	0	0
1981	0	0	0	162	0	0	0	0	0	0
1982	0	0	0	162	0	0	0	0	0	0
1983	0	0	1	162	0	0	0	0	0	0
1984	0	0	0	0	0	0	2109	2017	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	1057	1008	0	0	0	0	2109	2195	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	1057	1119	0	0	0	0	0	0	0	0
1989	1057	1065	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix E. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	476	0	962	0	1625	0	5937
1956	0	0	0	467	0	0	0	0	0	5847
1957	0	0	0	0	0	0	0	0	0	5781
1958	0	0	0	0	0	0	0	0	0	5733
1959	0	0	0	0	0	0	0	0	0	5697
1960	0	0	0	0	0	0	0	0	0	5670
1961	0	0	0	0	0	0	0	0	0	5650
1962	0	0	0	0	0	0	0	0	0	5635
1963	0	0	0	0	0	0	0	0	0	5623
1964	0	0	0	0	0	0	0	0	0	5615
1965	0	0	57	440	0	0	0	0	0	5608
1966	0	0	0	0	0	0	5260	4841	0	5604
1967	0	0	1128	1067	0	0	0	0	0	5600
1968	0	0	0	0	0	0	0	0	0	5598
1969	0	0	0	0	0	0	0	0	0	5596
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	23118	20910
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	2826	2826	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	1128	1067	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	4480	4194	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	1128	1067	0	0	0	0	0	0
1989	0	0	0	0	2826	2826	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix E. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	28468	43781	0	8130	33886	21142	0	0
1956	0	0	0	0	0	0	8510	4889	0	0
1957	0	0	0	0	0	0	25524	8306	0	0
1958	0	0	24327	33676	0	0	25524	6954	36317	38365
1959	0	0	121636	73526	0	0	94651	38339	25725	26993
1960	0	0	0	0	0	0	24460	6600	0	0
1961	0	0	24327	7445	0	0	15952	5627	0	0
1962	0	0	24327	26009	0	0	23397	5259	12106	12788
1963	0	0	0	0	0	0	5317	2988	12106	11425
1964	0	0	0	0	0	0	34032	7831	12938	26617
1965	0	0	0	0	0	0	14889	4888	0	0
1966	0	0	0	0	0	0	18079	6082	0	0
1967	0	0	0	0	0	0	9571	4072	9354	5898
1968	0	0	0	0	0	0	5317	3834	70058	43265
1969	0	0	0	0	0	0	5317	2988	18709	8370
1970	0	0	0	0	0	0	5317	5123	41649	27489
1971	0	0	0	0	0	0	11698	8665	4900	5053
1972	0	0	11934	12439	8959	6946	10635	3720	2858	2771
1973	0	0	5750	5273	0	0	4254	2003	3026	2984
1974	0	0	0	0	0	0	2127	2419	12286	12012
1975	0	0	10542	9595	0	0	0	0	4900	4651
1976	0	0	45521	24338	0	0	6381	6148	36470	20810
1977	0	0	64688	31897	0	0	39349	14084	13363	7529
1978	0	0	23959	11519	0	0	35095	10633	32685	20821
1979	0	0	23959	14752	0	0	19143	10391	2421	2406
1980	0	0	105418	60206	17917	13891	26056	18675	32792	20467
1981	0	0	91043	44820	26876	20837	19143	7938	70158	19778
1982	0	0	52709	27143	0	0	5317	1775	10039	6740
1983	0	0	47917	37350	0	0	27651	17207	0	0
1984	0	0	45521	25170	0	0	20206	6580	37681	16028
1985	0	0	47917	21622	8959	6946	1063	1209	7350	3856
1986	0	0	112606	44581	0	0	27119	8742	12106	9965
1987	0	0	40730	18409	0	0	31373	19260	4426	4399
1988	0	0	57501	20348	17917	13891	36691	13199	32013	20262
1989	0	0	4792	4785	0	0	17016	13710	35406	13980
1990	0	0	0	0	0	0	7444	5842	8851	4051
1991	0	0	14375	15843	0	0	13825	7468	63414	21664
1992	0	0	47928	28593	0	0	12765	4831	77468	46033
1993	0	0	62306	45886	0	0	36167	13192	30271	11072
1994	0	0	4793	5282	0	0	24998	9812	6433	4273

Appendix E. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	13763	9041	0	0	0	0	44236	15361	965628	124305
1956	6883	6481	22768	20227	6294	6686	28630	17765	526024	80576
1957	3441	3240	30095	30010	0	0	7806	4290	575693	81803
1958	77415	36700	11381	10510	18280	19025	78064	38789	708447	85824
1959	30966	28011	35863	24246	0	0	54645	29018	571864	88549
1960	30966	24869	5796	5689	3999	4237	30024	12553	564205	119538
1961	13763	7484	0	0	0	0	22218	10974	648343	174184
1962	106660	60104	47243	41858	4798	5202	70858	29200	247038	45874
1963	134185	72983	23622	12931	0	0	136912	34535	361940	75819
1964	222954	68643	69553	55493	0	0	132108	31070	445244	69198
1965	72254	38675	6137	5953	10237	9659	76262	28072	334829	70910
1966	44728	16484	20524	17873	0	0	72059	25314	251321	56630
1967	37847	21070	39123	21706	84583	27144	51642	14690	325913	91026
1968	139346	46174	52165	34055	351887	176361	183750	44532	209753	70785
1969	97919	38041	107443	83729	168175	69168	129706	32232	224547	61207
1970	85365	33156	32946	9906	261734	239004	146519	60023	251056	72906
1971	30129	15695	0	0	14908	15101	135711	52429	457686	79464
1972	45193	19045	11592	11374	18726	15626	127304	34501	366006	60680
1973	54190	22058	12520	12119	13833	11113	79265	25824	366939	101349
1974	22597	13926	0	0	4681	4808	16814	7818	855431	218723
1975	91642	55714	6955	6764	15776	9077	49180	18663	624486	135667
1976	97919	34750	44014	18492	133027	68339	67855	20906	488455	150962
1977	135580	41279	65892	26578	78520	46208	142917	44481	544647	103196
1978	119260	34403	48152	23035	91171	47709	104485	33133	256789	52582
1979	75322	39090	15649	15743	17855	9226	96078	25965	395836	76634
1980	84110	39348	52165	32027	84523	43333	237794	79236	553333	92789
1981	114239	50891	89425	61575	102476	29983	132108	51617	740889	123511
1982	38707	18667	36515	15744	74823	36964	206568	55025	341609	85878
1983	47704	24175	0	0	17772	14423	87671	25577	236166	58621
1984	45193	14734	36394	18503	29279	19042	30625	11650	353792	93881
1985	153155	74037	36515	26567	39099	16615	52843	17829	200965	46166
1986	10043	6675	32946	13503	10763	7586	59448	16974	241978	59465
1987	75322	37324	18779	12856	28435	18530	88272	36121	487350	149239
1988	135580	39570	200873	119087	117115	69512	171140	45513	416535	95219
1989	126793	48557	70072	36939	48798	27386	138113	38295	274275	44086
1990	67790	25124	18686	10564	75031	37706	74461	25830	440378	88059
1991	64024	28666	98192	45722	131417	48222	63652	19102	443970	60675
1992	41437	14154	40697	32672	214836	99224	53455	16203	546843	122554
1993	121798	58851	65524	24103	120449	27645	86399	25625	308900	81975
1994	47715	27098	30542	21618	47521	23657	79393	30839	232169	66920

Appendix E. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	370553	71660	188775	24023	25282	7981	117367	14722	479488	240418
1956	243837	59276	114932	27151	18966	13185	230283	33835	641577	191571
1957	226942	45298	96440	28111	9481	7325	298307	81160	403137	125328
1958	259742	76325	88232	19292	22122	10503	61704	14266	109946	38624
1959	183504	78997	91310	11518	56884	31203	61704	22441	61081	14603
1960	159568	29307	109777	11922	44243	19578	99675	45354	146595	35872
1961	138858	33983	70367	22958	39542	9547	42709	19440	54961	25419
1962	40896	15395	39249	7765	19557	10648	39862	18383	51297	42844
1963	50870	16865	6926	4080	7112	2829	96807	25761	69618	28212
1964	100744	41937	56565	12555	32003	17030	71225	26754	86070	31375
1965	104516	30326	41512	11079	13228	3767	88084	17895	73527	25425
1966	140224	42849	87240	19231	54419	17281	203966	48296	128501	44312
1967	134265	39312	166265	53366	86491	22228	167964	47466	191720	58547
1968	36993	22007	27175	11552	51398	19223	92170	16195	136753	30814
1969	69957	17248	59130	19497	9586	5323	141811	31345	114049	39824
1970	98903	24734	49613	16506	41304	11739	255267	54775	118295	43016
1971	144921	43197	79894	23708	31792	6897	217127	99389	201901	62141
1972	53064	15992	42279	7429	33502	7417	230001	73543	222092	65129
1973	40087	14328	25412	9141	26779	6291	96414	30586	157647	65701
1974	240108	117028	80193	24595	33980	12748	136968	49478	170891	34384
1975	230985	43651	146093	29427	106611	21698	255376	37148	442420	112736
1976	148043	56722	96075	32239	87762	38321	181565	42308	222596	72796
1977	94454	27200	64010	14527	47847	13100	294909	64285	376723	114203
1978	44691	12973	37065	11193	54691	12695	93117	37063	139567	49472
1979	58681	10807	79685	12052	58721	12524	198621	37374	204900	45568
1980	88611	23854	105820	15307	86805	35878	290589	65976	274871	87969
1981	197403	42480	109386	35539	100397	17817	180501	29170	150712	37239
1982	55648	14110	43882	9675	57005	23606	52055	20769	56266	27659
1983	77291	16572	82887	13592	22789	9155	125840	18502	155085	47838
1984	31886	13933	28174	7705	15364	8591	170148	34414	117035	37161
1985	58471	14532	18701	4650	17181	7879	325166	69941	324174	105759
1986	48654	10624	34235	8081	37001	15421	167043	37044	131163	40297
1987	48387	13991	32896	8935	27999	14027	136125	28817	127458	47653
1988	87584	20214	47338	20173	1448	1423	140707	72806	230701	122883
1989	74822	14709	49139	13823	19916	6054	158862	70367	122415	63522
1990	33958	6733	21839	9426	24993	7963	146822	50323	173771	69857
1991	75035	28088	29486	7381	31744	13858	181724	71412	115171	45096
1992	91669	28576	40729	10159	36854	17077	258261	33152	259651	95586
1993	119979	38136	39621	14348	58058	32553	116013	33450	112213	58136
1994	137373	28966	36258	10054	60810	22511	133704	44949	169611	46977

Appendix E. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	652380	81954	101056	31177	412690	61235	305526	88505	0	11655
1956	803504	118049	83832	28253	481112	96479	302431	64081	8670	11508
1957	408580	82720	49296	13555	451825	93035	313165	46147	0	11392
1958	80419	16632	34507	9146	957014	297788	407114	92836	8671	11301
1959	63557	12593	7394	8016	532762	125166	360521	73046	17342	11229
1960	64854	15178	40669	11958	553218	51436	207758	36834	3716	3591
1961	89624	25927	8871	8587	213167	67673	173690	77998	12519	11126
1962	35014	9955	54707	34306	140786	39927	62086	19970	0	11090
1963	168844	33671	14786	14311	55173	16203	99665	26952	9274	11062
1964	247811	78010	27063	10270	90370	14898	213217	59447	9274	11039
1965	195170	42431	35439	13897	103687	24859	173188	53839	0	11020
1966	385835	76656	49442	13336	73558	19315	68434	16232	0	11006
1967	441728	112535	136354	43135	288302	77893	169608	36714	55327	10994
1968	195575	42925	32660	13619	148137	28135	114934	48712	0	10985
1969	354443	71676	53577	19660	143029	28716	159680	39521	9960	10978
1970	403202	83174	42748	19951	284470	43876	448632	77873	16691	2665
1971	390537	78300	48399	17770	198134	42336	235289	42161	9586	4734
1972	204368	49025	39831	19957	196559	44808	120037	24586	7861	4422
1973	170818	30261	22836	12362	190647	30666	249526	94512	0	0
1974	374352	62439	54441	13309	295135	79100	280428	67255	5948	3400
1975	929993	146062	148439	36765	271173	80058	312749	93871	0	0
1976	510549	106828	24120	8656	506188	83196	354592	75910	4674	4362
1977	507204	162058	9093	3505	213047	33589	230331	41154	6818	2475
1978	260091	63247	24576	11130	210338	55102	174672	40277	6818	2074
1979	452153	110698	57878	19450	307031	42177	262219	32631	14736	6968
1980	408479	87517	36489	14367	182299	30242	114437	20266	17914	8460
1981	257346	41732	11089	6722	113250	27605	68611	28690	12596	7516
1982	212026	38813	6605	5314	161221	20530	117705	21873	10737	1871
1983	338452	56726	17679	6742	173345	29574	152806	27896	10948	5371
1984	330739	71554	10966	7777	262912	76563	101792	39855	7576	2647
1985	335030	82415	7137	4394	219016	54719	116806	29615	2623	2451
1986	251277	51635	20223	9258	178471	32538	128322	22182	1636	1527
1987	189721	46491	18810	8883	100553	22239	102161	26027	3112	1883
1988	183841	86048	62212	34837	78695	20374	59187	15128	9691	2598
1989	187096	77408	14902	6977	42390	13992	52773	16097	11349	3339
1990	235149	66504	50186	23561	203483	41313	66065	16942	3795	2425
1991	330650	80748	83617	34208	131677	28597	93850	22414	6848	3454
1992	441101	77377	42672	19723	172058	47227	188689	41588	5581	2853
1993	159610	32024	27006	10798	86278	29141	68953	17879	21391	20017
1994	462096	72627	60242	22070	98467	22200	56043	14507	5647	2978

Appendix E. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	169691	49477	22288	13560	162521	20673	116099	17064	0	51557
1956	41271	27658	40113	10340	88666	17215	105989	19931	0	50915
1957	128415	35317	24517	11465	105820	20628	132504	27484	0	50398
1958	392123	69453	15601	8619	281857	54060	421910	51236	2439	49982
1959	619142	130403	64635	7573	191860	26575	354607	57680	6545	49645
1960	262774	66945	17830	13394	198454	32572	216424	34678	10516	49374
1961	129121	30872	19307	12541	197284	55569	163068	39577	14358	49154
1962	122628	65186	11919	5915	140679	29762	93128	16997	18050	48976
1963	112818	38898	41716	16919	153371	32574	84356	25602	21554	48831
1964	14715	10271	11919	9231	235875	44768	87055	17366	24848	48712
1965	85840	42967	11919	5550	121992	21775	64448	14930	93352	17632
1966	57948	23554	12801	6247	98452	12496	43849	8201	77129	20055
1967	160952	60782	78218	27801	185278	35577	147839	37143	69203	20485
1968	144870	38312	20481	11820	65887	16458	81899	17170	28450	13044
1969	134334	86163	29441	11045	199555	29009	72477	14847	101735	29300
1970	217624	87597	23102	7157	276440	64542	139065	32790	64013	13356
1971	91446	9660	18152	2890	94021	19875	101063	24800	48772	10130
1972	153158	35332	15324	14046	121746	40194	108167	30051	9145	4655
1973	55471	13175	19161	7685	175627	31431	149184	35460	4572	2805
1974	155850	59211	51349	27448	304083	55186	169537	62394	66665	17553
1975	63403	17802	15235	7938	225159	56587	57192	23062	51033	16002
1976	136584	25931	31886	7438	351180	54911	130285	43256	117664	29212
1977	97714	39209	12657	4192	94507	21177	81221	34808	66065	42456
1978	90084	17251	11814	3657	82996	22317	87452	45929	67939	30165
1979	130220	31291	34091	18303	133286	32643	128419	36149	93039	28262
1980	88419	19669	6516	3794	117011	31609	60364	10973	53329	15045
1981	121400	44723	18887	6091	46823	10627	54193	12989	48961	13187
1982	127248	21909	11040	2059	74692	18605	65922	10617	113831	34337
1983	73926	13236	10006	2433	71167	12153	60595	13601	57696	25992
1984	44786	10434	5063	3842	64309	15732	49274	12451	35536	19117
1985	57559	16492	13633	12784	55411	18535	43118	7262	15480	8916
1986	111543	24873	36442	14167	120802	17701	56123	14201	11623	2892
1987	41813	11670	29464	8419	73183	16462	55608	12002	21264	7283
1988	63010	16266	22937	9297	48040	8316	54175	6906	57484	23491
1989	48517	13248	11492	6709	61543	19107	43508	11265	45928	16941
1990	111679	21479	26633	10780	58124	12344	68362	13306	33618	14142
1991	63491	12645	23647	8202	59707	13391	54824	10247	38222	17182
1992	143006	33352	20869	9290	108378	19522	99155	25608	49384	9967
1993	124543	52477	9266	7071	54530	30867	59459	27615	38401	7319
1994	26012	14626	11681	3587	28686	7106	20757	3687	116136	31538

Appendix E. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	46675	0	59731	33607	69892	133028	220705	95496	163016
1956	0	46041	0	58794	37518	68447	156182	211714	136712	156194
1957	0	45529	298	58027	41568	67296	181534	205079	171555	151156
1958	0	45117	11434	10192	45552	66380	274917	99603	231837	48283
1959	0	44784	5717	5096	51281	34598	170033	33871	130169	45442
1960	0	44515	16551	16551	9768	4050	396744	65735	95713	34672
1961	0	44297	2859	2548	120876	80463	162575	34049	130169	36168
1962	0	44120	30277	30277	41513	19778	278914	55698	424964	46376
1963	0	43976	22733	55575	55641	36768	228265	29416	423865	191044
1964	858	43858	3430	3207	68287	13601	322727	119246	228708	79797
1965	44182	12794	30204	55212	68287	38144	501077	94842	382182	82890
1966	56124	20762	33725	55075	74610	49219	507067	121018	477383	62526
1967	13705	6021	73965	11215	59332	11157	499435	142094	492821	133352
1968	24799	11379	19295	13032	63160	22479	399473	201801	316988	149713
1969	48177	17342	39580	12843	61964	14213	484734	48981	333460	46667
1970	35241	13598	40899	16838	56063	13049	470677	114323	174317	34240
1971	38324	12397	60689	20541	76717	25617	873099	217863	281117	50316
1972	7831	4093	50134	12863	227201	75465	420062	68090	240661	36076
1973	3916	2991	22429	7601	96634	35303	407456	78524	148707	30043
1974	11024	5053	56514	15324	48065	16771	767981	211228	302470	79898
1975	47247	17134	81984	19134	110734	26011	643081	103609	293202	54912
1976	89422	22724	95240	24457	131648	27485	157248	50175	104561	19966
1977	27686	18005	132628	94497	57828	38190	101030	49622	48492	22131
1978	26003	10923	105136	34040	120507	40872	269047	58465	341010	77550
1979	24414	8542	78036	23680	97706	30417	357577	77085	310171	64500
1980	50048	15194	40472	14725	90515	27528	547371	134817	289707	64786
1981	32872	8480	25429	14091	25782	10313	174538	64554	43659	19447
1982	97123	21483	154324	41168	113023	45959	425527	55266	292925	42712
1983	22198	8470	117258	37143	150549	54131	237144	43081	178003	28762
1984	16555	8954	76288	43052	101270	51328	425872	105086	340766	62458
1985	23077	15254	70972	41563	77144	47368	289239	57219	157836	33176
1986	9953	3595	78253	31854	86881	19738	429369	50417	332349	36028
1987	18938	5323	64792	29103	84803	22021	301798	49733	201764	29802
1988	26020	14028	91701	39524	124802	48674	255477	47180	204422	37645
1989	19968	9300	45567	20515	75920	23700	165927	39657	123656	34522
1990	42638	16479	58202	24326	60141	22397	79318	17678	83553	19533
1991	39504	19193	83785	38976	106451	51577	76782	21261	71456	13139
1992	39648	12676	64123	28171	70709	35219	242100	45343	87639	18576
1993	21924	5282	52098	15132	79996	21941	124871	47911	109441	18621
1994	70282	17053	262051	114965	303531	72669	369736	58727	436811	65908

Appendix E. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1094	26626	222426	268202	248602	170002	0	0	63525	60947
1956	2582	25770	249281	253786	248752	160853	0	0	62521	60560
1957	4352	25143	274395	243122	244073	154085	0	0	14806	17968
1958	10515	10515	299153	235244	236832	149084	0	0	59224	25642
1959	10515	10515	236976	70462	124860	111715	0	0	187542	88356
1960	10515	10515	321749	61123	192965	54213	0	0	44418	17148
1961	0	0	311675	67436	241206	45908	0	0	54288	37657
1962	21030	21030	362333	67146	198640	45953	0	0	64159	16090
1963	11759	11759	590530	114605	555355	138088	0	0	59224	34439
1964	29677	12711	495179	165445	122802	47963	7355	7152	108577	40122
1965	0	0	542656	136456	92610	57407	0	0	54288	56390
1966	23518	23518	371570	51357	177714	19050	0	0	54288	46965
1967	39917	23404	196379	59830	57986	24051	7633	8051	4935	3892
1968	13992	13419	323409	166137	79496	40551	6129	6044	24677	19459
1969	45114	27152	566740	106198	113473	25773	0	0	24677	19459
1970	26831	11621	582411	137079	68281	31930	47946	20695	29612	23350
1971	23163	7029	436904	90091	140647	46878	8798	60999	54288	33584
1972	69425	30783	808311	108468	173519	39593	0	0	37015	29188
1973	10133	9807	498316	74044	182160	55766	0	0	32080	25296
1974	44353	21254	257999	73059	42749	16712	13346	60977	34547	18099
1975	33176	18900	276735	53346	49740	22353	14999	60981	182606	93770
1976	0	0	150294	36588	69740	20717	16672	60989	19741	5921
1977	0	0	198507	79250	62516	31312	18337	61003	66627	18309
1978	22182	21488	764598	177891	402212	85860	19958	61021	118447	40437
1979	80721	50332	553099	166034	255207	89332	21499	61045	39482	13479
1980	10850	6550	272881	69710	119921	47127	22920	61073	88836	20739
1981	9125	4681	137125	59366	91223	46836	24192	61107	74030	40056
1982	33554	16124	317134	65607	89766	41684	25303	61147	14806	3456
1983	13321	4673	362681	85136	288537	63941	26252	61194	14806	11675
1984	18070	4127	579923	108412	257646	84686	27059	61250	172445	35809
1985	28950	15840	359171	63946	168176	32916	27772	61317	14806	11675
1986	31798	10885	869240	144499	477357	90465	0	0	19741	15567
1987	11071	4260	510585	53616	181705	41253	0	0	88836	34297
1988	2327	2521	315381	46564	176952	41688	0	0	135721	45379
1989	3313	2521	572156	127404	212076	67158	29966	16422	86504	29215
1990	9335	5575	221260	37915	64914	22939	23973	12404	53948	24196
1991	1377	1333	542747	93297	426203	169354	23973	17182	68221	38609
1992	7564	3701	373660	76098	182051	45636	17984	11862	78148	33132
1993	16671	9467	418248	66013	181628	24296	95912	39048	39524	21501
1994	20196	11374	788107	126315	291976	46491	11989	12003	53937	18183

Appendix E. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	75329	70110	141608	140152	5224412	568502
1956	71036	69525	150730	135599	4919605	528583
1957	0	69026	0	0	4223567	468400
1958	34672	68603	57601	32059	5384892	484741
1959	364053	68243	144003	67232	5033347	334138
1960	17336	67936	331207	185467	4232487	295903
1961	138687	67672	345608	115979	3599992	300268
1962	17336	67445	115203	38982	2960654	212083
1963	34672	67247	28801	27713	3677817	324468
1964	34672	67074	331207	108327	3979062	321909
1965	0	66921	158403	70561	3594457	270410
1966	34672	66787	28801	22947	3733241	233560
1967	6742	5316	0	0	4491525	305733
1968	0	66565	0	0	3462528	389074
1969	6742	5316	9348	9959	4138588	239457
1970	0	0	15671	16410	4861825	372273
1971	26967	9206	21312	23067	4610201	322751
1972	33709	26581	50321	13967	4278530	230473
1973	6742	8182	0	0	3332530	220275
1974	33709	27998	29601	23559	4976222	394627
1975	47192	10416	22200	16801	5885357	337397
1976	26967	19854	59805	45378	4744744	294522
1977	94384	28308	367640	105719	4462839	328391
1978	53934	18413	154515	55260	4498618	293327
1979	53934	11238	144077	46148	4875866	297569
1980	13483	4044	218453	57948	4895079	295566
1981	53934	11238	146795	53236	3720649	242090
1982	60675	35283	101234	36168	3657565	203741
1983	26967	21265	31969	15314	3366531	197169
1984	57106	21586	27184	19798	3979328	267555
1985	67417	68852	55945	23844	3502357	246254
1986	53934	11238	242429	77718	4478820	237053
1987	101126	21008	178492	60671	3528696	220204
1988	74159	22242	258414	75287	4011108	290413
1989	74751	39809	51650	17257	3125255	229831
1990	106235	25558	21747	11807	2776382	178653
1991	58976	18650	51650	24459	3763687	270831
1992	80088	30299	95906	34188	4333105	263229
1993	16027	4890	106562	52309	3192940	205573
1994	41196	18495	69266	27941	4616162	259213

Appendix F. Breeding population-size estimates and standard errors of the mallard (*Anas platyrhynchos*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	891	4842	4482	6748	56027	28741	30066	41985	12638	7354
1956	1328	4755	4411	6607	53953	28226	32351	40987	12550	7223
1957	393	347	3903	3903	56584	18580	23160	5375	14430	2849
1958	655	646	2323	1074	57859	21853	43424	10613	13291	2147
1959	2359	1232	8363	5089	55397	14019	57899	10877	9873	5646
1960	3276	1511	1858	1012	31022	9208	29914	9469	13671	3436
1961	3007	4535	5111	1513	65922	19846	85401	16067	12152	4450
1962	7535	2281	1858	947	46533	10036	32809	6652	9114	2308
1963	5055	2192	11151	4703	45703	13962	45837	10804	12586	5136
1964	3735	2288	4825	3095	26537	7341	10615	3758	6628	2533
1965	2359	1686	2144	1238	54390	19070	34096	11367	12704	1911
1966	2752	1193	2949	2949	24677	7552	36669	9007	13809	5791
1967	8846	2358	1072	768	42141	11072	96980	21493	17399	4378
1968	4325	771	4825	2247	41296	11480	88778	23588	14361	4554
1969	1573	1221	536	553	24173	8972	41494	9325	10495	4632
1970	5504	1028	5629	2349	58670	19090	106630	20865	12704	3351
1971	3931	2216	2681	1035	38778	13634	54039	13563	8838	4713
1972	15726	8842	4825	1523	56908	14669	88778	16732	9942	3710
1973	2752	1113	10722	3459	51116	15945	69479	13009	9390	3837
1974	3538	2125	4825	2214	62951	17700	81058	19375	20437	5451
1975	2752	1238	3753	1118	22159	7167	34739	7793	6076	1958
1976	4325	2049	536	553	33742	10213	68514	17155	6076	2962
1977	13760	5225	8042	3212	104003	28950	132685	29128	22094	7404
1978	2752	1669	2681	1652	67987	25032	87813	17399	19884	5306
1979	5897	3446	7505	2137	73023	29092	48249	10875	14913	4120
1980	5897	2764	4289	2260	63958	16053	139922	27671	13809	4421
1981	6290	2001	25197	8716	99463	30791	148607	27473	11599	3279
1982	5504	1224	3217	1592	52375	15310	64654	12438	7180	3342
1983	8256	2872	3753	2445	51872	13674	84918	15538	9390	3238
1984	9435	6726	9918	5658	62699	15813	125930	28762	27893	4643
1985	7863	3115	4825	2474	43310	12028	47284	14540	14913	6982
1986	2292	621	3409	970	24820	8723	35797	7207	8928	1696
1987	1732	730	3281	1708	19601	6532	3404	5876	5273	1101
1988	2802	1417	3002	966	37947	13535	80326	14151	4781	2107
1989	5701	2589	3217	1592	58419	15713	164047	23364	15466	6452
1990	8649	5495	21980	9329	72268	18149	70926	16353	18227	7414
1991	5111	955	17155	4639	91153	21984	85883	12591	8285	2082
1992	12566	5718	11781	4644	77469	28623	38556	10979	20414	8103
1993	5891	2405	6962	1884	43262	12601	56388	9729	9379	2680
1994	5105	1721	12316	4822	63384	17919	52051	12084	10483	2897

Appendix F. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	4110	7303	7324	5147	13740	9443	26204	26935	5794	8677
1956	4179	7145	7496	5086	13852	9326	27519	26401	5347	8566
1957	733	751	7623	5040	14549	7286	28785	8611	3858	1685
1958	8897	4970	5718	5006	11242	7723	29851	12779	4622	4622
1959	6018	2421	9936	4979	11903	4616	17406	6155	9496	5804
1960	3925	2152	17584	4959	19839	6295	30917	6610	2411	2179
1961	6716	4152	7908	4943	13226	4403	59702	19068	8309	5569
1962	1570	1588	12009	4931	15871	5024	30173	5045	2893	1838
1963	6106	3533	18585	4921	11903	4348	43088	12480	1157	1157
1964	4396	1242	8121	4914	18977	5035	18042	3216	1286	1694
1965	5861	2054	8209	4909	17251	7205	37724	9370	1929	2878
1966	2931	670	8295	4904	12076	3285	19682	5788	1286	1694
1967	6411	2592	8372	4901	13370	7925	47154	10559	1286	1694
1968	9158	1884	8435	4898	15095	5733	44284	11789	2315	2315
1969	4030	1276	8486	4895	12076	4869	52485	13141	4822	4822
1970	5861	1920	8531	4893	24152	8340	56585	14621	1286	1694
1971	4396	1651	8576	4892	2588	1248	29523	6905	5143	6776
1972	9158	3525	8627	4891	16389	5955	37724	8787	1286	1694
1973	6594	2410	8686	4889	20702	5599	51665	12272	3858	1226
1974	10990	3267	8751	4889	19839	5769	50845	12157	1286	661
1975	3847	1710	8820	4888	11213	2804	26242	6941	7715	8024
1976	4762	2229	8891	4888	15526	5067	25422	8355	2572	2572
1977	20515	5394	8961	4888	22427	6182	54945	15871	15430	11234
1978	17401	5614	9031	4888	23289	7339	58226	14136	3858	5082
1979	17218	3628	9102	4889	11213	4671	57405	13273	4409	3535
1980	22346	3687	9178	4890	12939	4532	67246	11608	12124	10327
1981	31505	5365	9264	4891	26740	8150	59866	13282	16533	14874
1982	16485	3272	9366	4892	19839	6301	54125	19080	1102	1332
1983	18317	4248	9483	4893	31053	11451	74627	11687	1102	1332
1984	21247	5740	6576	1198	23289	7872	161145	35983	12124	7999
1985	10624	2030	9936	1984	16389	6514	48385	10665	3307	3100
1986	10483	3593	3333	973	27602	7598	85288	18230	11022	8832
1987	4842	1842	4934	1147	24152	7165	63556	12007	7715	6986
1988	16226	2592	6005	1025	38816	12538	78727	15766	25350	17356
1989	23445	4745	7577	2390	32778	7648	59866	12082	5511	6660
1990	16851	2822	8292	1965	31915	6990	86108	21296	4409	3959
1991	18683	4661	7362	1422	28265	7176	73481	17787	14673	11842
1992	12258	3874	12281	2775	20713	6551	95999	15568	2206	1095
1993	10246	3127	10139	2011	34521	10809	78358	19906	9925	8245
1994	21956	6245	11281	2772	33658	12606	98871	24052	0	0

Appendix F. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	4595	14214	7375	6393	41237	23698	81794	49263	97883	45433
1956	4374	13934	7105	6250	21785	5188	60740	25593	177527	44737
1957	6126	2407	0	0	16510	6291	36882	9658	109135	44200
1958	5361	2650	2696	1113	37522	8540	28057	7795	20463	43783
1959	7422	3546	17974	5509	62287	19501	172002	41848	60025	43459
1960	766	743	4194	2902	49530	10204	58554	11676	54568	43206
1961	7658	2650	9886	4259	67540	19888	148825	38034	68210	43008
1962	893	957	10485	4664	46528	13550	62214	21158	34105	42852
1963	3574	1368	4194	1852	33770	10499	142725	39645	61389	42730
1964	1787	1108	1198	791	6004	2295	65873	21954	81852	42633
1965	8041	2481	4886	5796	21763	7580	93930	32887	122777	42558
1966	2680	1795	685	589	20262	7178	48883	14671	61389	42498
1967	8934	4410	4793	1548	15009	4645	37816	16444	75031	42451
1968	5361	2548	2696	504	12758	3841	60540	18716	68210	42414
1969	1787	1108	899	543	33770	14335	26837	7790	59635	42386
1970	7147	2503	1198	943	20012	4733	82603	23194	73082	13583
1971	5361	2160	3295	1385	12007	6335	53674	18416	108161	48399
1972	11615	6447	899	443	16010	4673	24093	9998	61389	35945
1973	8041	3792	2247	1243	12758	2981	25361	6255	35079	22935
1974	9828	5134	3894	1931	6004	2864	31218	12335	20463	11982
1975	2680	1361	2696	1328	13508	6577	27534	10845	49111	13325
1976	8934	4963	2097	823	19512	6826	21416	6631	7674	9550
1977	50925	29154	5991	2641	60411	12085	95775	22776	63947	10441
1978	24123	4650	1797	1086	14634	7377	58298	14097	48043	17290
1979	19655	6899	7190	2499	17260	3692	49970	11812	30694	5404
1980	40204	13883	7190	2099	70167	11766	108863	28543	69062	30390
1981	25909	7088	15278	3554	36022	11320	54380	15815	48599	12124
1982	15188	5588	5692	2621	9005	4584	34418	8375	28136	16388
1983	24123	6352	4793	2766	15009	3575	139201	39998	98478	50094
1984	18762	6945	25164	7296	58535	13227	63057	17817	33252	5214
1985	10721	3369	1498	976	13508	2843	33313	9187	54994	11226
1986	17869	8287	2696	1846	27348	17815	148654	51005	146480	41075
1987	12508	6499	4194	2022	12191	5128	51539	14189	43283	10177
1988	55839	14612	6890	4553	76921	29569	66626	19266	40926	8131
1989	28590	7134	6890	1488	24765	7214	60083	12131	78015	62154
1990	17422	6376	9886	5542	16885	8982	47590	21487	15347	9160
1991	29277	10658	5991	1455	33020	8123	100534	29169	20463	10597
1992	33968	11240	7497	1744	22537	4696	70267	16881	32062	13161
1993	12515	2521	5398	1015	21034	4270	29774	11586	40968	23997
1994	33074	9480	8696	1953	32302	8184	52403	16141	7681	1361

Appendix F. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	43225	31200	327284	147858	88480	46953	138250	53013	88536	16629
1956	59295	20967	171367	69350	57153	29613	133434	31573	86203	56186
1957	33320	22549	187342	58389	67800	28465	90089	19954	77581	17545
1958	40724	7892	377914	157432	35684	11944	103644	41618	47411	19886
1959	59235	39906	723528	234603	171283	34028	128779	27985	36635	70635
1960	11107	9563	103361	21809	82073	23217	40949	16053	25860	8036
1961	22213	8986	345614	170607	189125	58981	251627	109713	47411	12330
1962	44426	50443	203492	114886	74936	14618	192886	77040	17240	9874
1963	22213	7858	209952	105829	124894	57991	61565	13680	17240	9874
1964	3702	4448	274553	132423	96347	15900	129908	62213	86820	69699
1965	44426	30893	64601	13712	32116	13311	129908	50649	56031	25984
1966	55533	18481	151812	83477	82073	12894	53093	28490	67409	49625
1967	48128	42767	135662	60613	64231	14552	32477	8143	256448	168865
1968	33320	33605	74291	16980	89210	26790	58741	10922	115362	30548
1969	29617	24078	71061	17793	64231	14552	84158	27083	142378	47772
1970	26797	17347	152215	56891	95157	50622	49139	13096	263426	121391
1971	33496	13536	169339	43297	80884	28784	56906	14321	71526	27459
1972	60292	14863	345431	110207	85642	28118	34172	8882	127206	29138
1973	3350	2401	187812	90266	88020	42725	57047	14212	101286	37724
1974	3350	4110	122741	47163	64231	26932	14685	3717	84207	20409
1975	20097	10165	274338	62096	42821	29261	46880	11574	61059	15021
1976	3350	3566	85253	19705	23789	3943	36713	14330	142832	50724
1977	90439	47891	181959	47056	88020	33156	51116	16220	109430	32864
1978	30146	13545	164145	44215	57094	19842	30783	6775	212485	47155
1979	36845	14290	148239	47985	42821	16118	21181	6722	200417	40443
1980	20097	16563	174960	44129	54715	12702	101667	32185	154593	58553
1981	23447	15294	150784	49473	98726	33256	71026	16216	128224	27562
1982	13398	10958	101795	25215	27358	6241	20475	6360	156371	33960
1983	30146	18492	211225	51344	66610	15902	36431	7521	116808	30458
1984	16748	14426	76346	17013	58284	11158	28241	13670	119710	36937
1985	30146	15552	191502	56665	49958	17694	23016	4635	97258	24094
1986	34876	17308	334531	93835	142426	55723	73879	14846	96114	26789
1987	49878	16628	148137	41593	60383	16400	22843	7146	134330	32949
1988	78715	28999	206135	53666	66610	20727	44621	14583	192132	45501
1989	16748	4032	134878	31561	16653	6128	24287	8033	140633	32748
1990	55268	32940	108475	51561	30926	10183	39961	14720	135905	38421
1991	33496	9708	68075	25491	28547	9274	43067	14441	180195	38223
1992	33530	17024	95531	17661	11907	6741	18234	3488	152061	27276
1993	26824	18795	179597	66057	19051	4674	47069	12989	135770	32848
1994	23471	16240	62413	36174	4763	1550	20213	7315	172878	36128

Appendix F. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	171499	63375	150238	45943	162101	27282	125070	31208	1063652	56467
1956	165378	58646	253267	78605	219580	66307	183441	29511	893726	81727
1957	115149	39673	173581	50891	137794	52575	139430	32662	1209198	103079
1958	306631	128723	160060	52734	390496	86396	195943	62650	1165780	83279
1959	226700	84357	301802	118260	192745	62008	157033	25063	989212	93931
1960	136587	89356	103180	34305	122437	36871	121008	47941	870174	92932
1961	107799	46055	88307	25469	186845	43432	111174	24227	902392	102738
1962	105349	37776	94614	41962	205010	52392	98773	21011	658689	91715
1963	183749	98896	48358	19508	146924	58889	100911	19756	854997	97700
1964	174194	95824	136198	78036	114360	39736	116732	37248	703474	80943
1965	164149	59761	209759	62221	289748	71569	100484	39661	569663	61104
1966	175174	66563	116915	47754	93514	23964	98346	18210	896903	117752
1967	268273	70124	360172	110096	478358	92907	178947	51402	758017	118392
1968	295438	56045	274872	84134	535305	144047	237313	52654	544233	102146
1969	359353	65875	302703	83560	563616	102025	303162	63589	581977	74486
1970	277560	54607	454535	123503	838679	452508	309362	83584	955998	175086
1971	229736	41035	240597	51584	327751	108943	169326	48746	1191470	190294
1972	183252	50858	177470	46404	236679	49385	145595	35564	1131736	129502
1973	203961	60985	198353	46237	345994	89005	136401	43684	1023338	170360
1974	167162	50969	140325	49583	148341	32976	79532	19264	965684	150261
1975	182805	42992	170866	49019	213435	38017	96721	29674	900750	122095
1976	212751	47806	278586	99627	439791	74325	139394	42969	922548	135587
1977	217668	43628	219936	79938	344014	95947	228761	67358	621640	83548
1978	288287	71602	415736	68282	489462	100079	139394	39689	513667	62061
1979	182358	47817	334303	67695	564971	103049	57297	12464	637804	97291
1980	229289	46916	204297	62651	380554	89176	181512	63218	598294	72691
1981	160904	30861	267973	55525	517159	110448	114594	31622	626307	111417
1982	157565	45290	188510	58113	319098	71749	101553	23917	503052	94608
1983	153753	35527	139941	36281	290431	83787	73118	21930	579832	81677
1984	89391	19735	168447	45529	162155	45040	56656	14847	515812	87607
1985	105929	35886	105863	23566	200581	42507	90435	30563	504089	73672
1986	86710	27593	108502	23623	122623	28405	49173	15686	466074	62507
1987	178783	38107	183867	38276	176537	42423	82097	28287	467606	70967
1988	179676	31407	276091	91804	265239	58643	66918	20012	412480	81292
1989	149730	28740	136382	28514	412337	116774	76966	19152	383321	53055
1990	176548	34727	197921	53017	343548	85661	70125	20843	468489	46235
1991	172972	43870	246904	48705	347840	89648	104118	27138	511099	56782
1992	120682	27797	225104	57541	518235	120272	55161	15392	482667	72434
1993	163590	33030	207326	41264	422059	94760	110967	24605	399152	43910
1994	155098	55042	160361	43515	517343	184719	135696	56882	463850	53426

Appendix F. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	349022	16548	284700	24965	209610	38499	442134	39917	761916	194486
1956	402824	24894	272746	20006	188338	51771	703475	79289	1074543	157719
1957	393749	47010	226538	24058	157208	42620	727433	89145	971591	229711
1958	434958	33213	268124	18951	203340	43110	529337	46056	1204891	217117
1959	302285	66799	226829	22142	234692	52683	291824	66134	669384	166016
1960	248512	20641	212580	11945	171092	35203	341163	38393	789479	183395
1961	226378	40008	134017	13559	68097	16915	309066	122895	487611	135480
1962	125003	22815	103051	13375	96362	25141	197604	35461	351647	67884
1963	181684	30611	101948	9761	89302	27459	302170	43366	394780	117872
1964	171119	45021	110644	18191	134170	45960	246272	50263	264533	71784
1965	144259	35815	96125	11410	83878	31541	166609	32225	225085	55853
1966	275463	34632	187007	17836	187365	43123	475007	60387	393918	88593
1967	228750	47752	246385	41059	269289	49716	353286	17093	334945	62161
1968	91373	8518	116599	12945	159758	35679	591909	62365	418862	94737
1969	205752	37604	160779	13469	172939	33259	479683	38428	392476	54761
1970	271018	45213	163799	12519	203738	55187	645337	112596	464833	102862
1971	338918	40062	171456	14496	169442	23976	842757	168494	611493	128242
1972	278050	45595	216983	12924	198551	29483	540495	63248	567782	118699
1973	303209	33353	211174	31258	191784	33702	544598	106711	562549	111886
1974	309958	40227	161105	24137	139468	24528	477846	77219	319459	55176
1975	245272	25586	118919	12124	133389	21954	462198	82507	429753	53384
1976	227689	45615	158818	20824	144536	32497	505848	62871	524661	55069
1977	98746	31366	51942	6998	80930	22545	675920	119476	721080	168123
1978	129418	14804	95596	15982	84807	11014	290994	53312	356151	46793
1979	111775	13367	92891	12630	140657	26065	378168	38233	434051	53539
1980	136764	13338	133509	12435	106589	25902	422621	49646	452892	86241
1981	96484	15019	113943	19491	110323	24386	354425	80815	398510	84523
1982	84991	13652	88785	16300	88943	24985	306725	60928	415349	94681
1983	94096	16528	87994	10791	83642	16782	318697	44623	340393	62012
1984	89484	19824	46324	7274	61424	18882	245403	34718	319288	85354
1985	122975	19979	95449	16505	80478	27630	275524	37485	243014	63423
1986	86277	11537	57089	7972	89355	24853	352171	67776	283101	62738
1987	108447	19947	76871	14485	101024	36487	253613	44521	238985	53797
1988	77985	12276	66687	20667	70274	21177	348865	100569	412263	117597
1989	73562	11132	63498	10645	65493	13586	254775	53571	258608	62925
1990	92011	12582	101069	11450	117108	34286	269643	72064	298479	70483
1991	76310	15359	85018	8219	96800	21877	260077	67953	205734	48432
1992	108362	34853	69295	15240	73204	16915	273700	29028	209226	50327
1993	141193	19821	103025	11113	110477	24141	209130	34650	206593	55945
1994	114441	13629	123953	12722	146540	39161	250561	27120	209015	46222

Appendix F. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1268395	110991	271599	27963	392417	62755	180729	20734	16966	10841
1956	1659374	160966	247775	44090	728706	61349	277556	31853	36748	10661
1957	938998	102788	168424	18327	880904	134643	300560	46568	13377	10527
1958	881513	99168	175574	21457	1401157	251641	341486	69147	31770	10427
1959	448595	63354	131879	18346	461177	39977	149298	25211	10032	10353
1960	664322	64002	154918	33498	767789	78092	249812	44113	15049	7183
1961	526125	93500	92528	14974	171530	44185	62829	23160	2780	10255
1962	327921	54197	58250	10808	147680	25974	42818	11412	7425	10223
1963	493775	70002	95582	20707	209356	50593	55762	9322	7705	10199
1964	363491	65018	65850	19371	276995	57396	170117	38463	6790	10182
1965	338421	47597	54364	11909	188063	49349	97385	25652	30259	10169
1966	618235	90390	157489	23333	215750	38535	115169	26737	24959	10159
1967	641514	47117	204371	9962	248320	51346	105973	27676	14611	10152
1968	750096	109128	145475	39019	162090	27285	63721	21044	3082	10147
1969	705146	72878	180379	20650	254288	62265	167990	50341	6850	10144
1970	1028905	170361	172445	30806	375768	91406	258198	60438	17342	5648
1971	1244671	165739	217105	38612	293770	72467	197453	45529	19163	6013
1972	776280	119322	126179	20164	452174	74724	248553	38168	10425	3581
1973	836699	123766	134264	29394	186802	41209	104183	27981	16437	8314
1974	661006	107855	133476	22107	334893	72313	147106	41292	16369	8128
1975	787154	63270	131166	25744	425431	97591	213512	56603	12896	5540
1976	1026314	101010	153597	21525	470968	76650	363352	66411	18585	11728
1977	908371	139918	182282	97488	244540	46173	137133	33178	6245	2380
1978	656769	84479	116176	13834	342863	33886	154606	22360	13200	5070
1979	667165	68761	103318	16692	397634	84854	263872	52751	11245	4131
1980	680110	78121	71499	13848	378484	47643	257393	26236	31316	2955
1981	375943	61090	54635	10647	231417	46283	94872	19684	20765	5290
1982	589527	68119	80064	10777	363248	45061	186168	28856	21763	2436
1983	555049	71354	70260	15263	232889	22322	152854	16458	29115	9085
1984	419029	48556	35538	9499	240080	34858	105398	17474	9543	5021
1985	311097	37485	56178	12394	194158	32666	93359	19024	12936	4098
1986	463803	78993	70732	15489	234867	35888	137930	22183	7484	2773
1987	374354	55426	88727	19284	196584	39634	121064	21881	6431	1315
1988	356340	91221	61835	24064	159487	37692	50439	12202	28206	10574
1989	228628	43297	47979	8141	96449	16976	65276	15765	13383	2086
1990	329549	52558	87020	21393	203247	36118	65754	14738	25712	4981
1991	276698	46665	58013	15126	143767	15172	86815	15442	15910	3854
1992	419433	51475	43803	13839	184566	17261	162663	28484	13200	1687
1993	321869	46205	47588	13590	158904	32050	92322	15315	16689	5105
1994	546396	57385	97012	18087	161414	31049	115894	14315	18006	2886

Appendix F. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	202092	39549	16043	2784	80860	10650	108820	13979	55582	62606
1956	225903	101867	41051	6497	113481	15651	210792	13934	67303	61886
1957	292985	73356	27560	10970	111891	19324	267132	26523	78056	61318
1958	323927	55476	18922	12368	154558	25589	391430	38703	87769	60867
1959	217563	16443	20979	12065	92795	10007	204077	25493	96370	60510
1960	201519	29219	31263	12511	88617	12990	189721	18858	103878	60227
1961	144008	28716	23195	9824	61244	10386	100184	17999	110393	60001
1962	83396	29317	12012	2297	30745	4844	60142	9458	116051	59820
1963	155542	37335	18383	13386	55752	9155	90302	13634	120953	59675
1964	171572	71663	19049	9706	88811	16458	131793	21322	125182	59559
1965	85612	25055	12983	5133	54261	13090	88404	19192	192503	38229
1966	142927	75032	15426	3924	56580	9564	93301	16586	322164	69451
1967	104781	35684	17850	8279	46091	12197	106024	17136	226014	62916
1968	95409	34031	9987	2846	29001	5385	60304	8746	105151	32221
1969	182331	47858	26560	6478	60337	13097	80445	18222	169794	41882
1970	169861	50406	29747	10438	115450	28616	115444	28088	177879	37211
1971	110783	38225	12324	4140	64912	17196	81759	22967	156019	24534
1972	173288	34926	32712	12058	92013	15627	122579	19415	228788	38925
1973	73372	14075	10650	3588	56592	10120	76635	11397	122779	22717
1974	151203	47646	18757	7851	69390	17860	85710	20699	118738	22536
1975	153152	50251	13462	5254	91106	23052	109193	21330	244322	85955
1976	222090	57190	13822	4269	148499	23989	137415	30363	103898	39103
1977	108355	39412	11617	4601	51750	12965	76099	15283	88846	20062
1978	125681	22532	5329	1825	48482	8862	97792	15641	179047	48934
1979	121828	38883	30864	14530	79617	20418	116228	26934	164747	29577
1980	148907	29672	27212	5545	93249	11857	113980	16229	126060	22162
1981	162207	29094	18288	2318	60566	7967	91122	14893	142756	28740
1982	167142	21061	30853	5999	97169	16806	102703	12738	185149	62196
1983	146062	17721	22112	6782	73631	8264	83647	8571	124251	25415
1984	66104	11012	8031	2001	40748	8383	52294	9627	99057	17036
1985	105904	19625	6916	1526	43231	7546	69776	10339	71454	11618
1986	149444	26212	42609	19152	88242	14382	94806	12991	97579	14765
1987	72910	9896	30446	8925	57523	12089	82601	15182	124096	28125
1988	106318	18946	18345	5327	47558	8515	73066	10755	122253	32997
1989	85111	13318	14741	3962	64308	13164	60794	9090	143173	22664
1990	123351	19638	19679	4150	46867	8541	77345	12008	86449	18383
1991	86632	11753	16416	1913	53601	5916	63922	9082	134811	26394
1992	111871	21332	28652	3608	77945	6580	102574	11811	125552	23839
1993	97781	21652	23160	3432	48960	6820	57101	12619	176543	23630
1994	139783	38438	27299	7107	67131	12766	48621	5711	199370	38250

Appendix F. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	17198	50432	0	42495	14063	59162	93422	138284	76197	66488
1956	27442	49764	0	41588	26505	57455	109393	134485	83814	64616
1957	37119	49235	0	40860	38197	56118	127409	131547	90017	63167
1958	46084	48816	22465	9633	48873	55070	259585	43165	109798	46140
1959	54210	48483	14603	6485	39823	13298	86162	11710	51762	15239
1960	61455	48218	7447	2233	50858	9934	202572	43813	75290	12934
1961	67863	48007	6738	1736	55656	17385	120077	19359	76466	28116
1962	73526	47838	15727	3439	83484	32189	111827	17838	97642	12812
1963	78522	47703	33812	38628	125226	18416	257285	50016	217566	74593
1964	82917	47595	12133	10281	53668	14570	213748	81292	42025	7478
1965	170829	33423	43323	38316	86466	26583	239506	43322	116835	21584
1966	167205	30084	47671	38201	48699	7034	198873	49171	218187	62278
1967	94886	23404	113734	16959	137636	28417	292286	50952	120071	17055
1968	93347	17125	46757	6375	139892	42197	227481	58719	131916	30432
1969	121479	23150	90728	15752	206391	32954	241448	45043	114406	19273
1970	133610	22265	77248	18703	130444	25437	507743	106688	129192	25796
1971	117883	25055	61695	10628	139720	23562	573648	168727	110823	30899
1972	145407	21210	104726	22077	216826	48139	431991	93329	93619	15401
1973	138482	25519	77248	18890	118849	20615	346294	97623	102757	23036
1974	79489	14207	66783	12235	88683	18147	297006	70432	85423	20190
1975	234077	76374	168067	56801	169706	56682	289900	55146	90662	15964
1976	64057	14234	49000	12826	40536	8486	208317	75239	106708	37865
1977	82175	19453	87291	22149	85077	17596	149351	35809	52385	14542
1978	103492	30266	126459	35473	130203	33642	237526	49903	131678	28198
1979	93515	14410	85283	11070	81196	10342	342414	74347	161861	38895
1980	130161	21199	71104	15407	97504	21701	302176	56200	106604	19973
1981	103037	22442	99053	18868	87147	19604	176708	53811	29438	7656
1982	138385	42163	135186	44383	143433	43832	219054	48394	93790	15129
1983	105817	14658	110289	13862	146721	21421	174279	24055	104895	16002
1984	90748	15373	91331	19177	112388	18925	314238	61267	124451	29005
1985	80522	17044	59182	15659	90545	15708	216689	42287	81788	20140
1986	59281	9491	114774	24063	147417	23024	241743	25122	114144	15155
1987	116793	24391	127611	23487	162003	38817	331565	46213	117651	22669
1988	95745	16659	73771	13660	110777	23174	178286	27096	98256	21274
1989	139622	24035	122750	26701	131959	21523	184764	23172	87596	12025
1990	61915	15648	52129	12440	69985	19075	52318	8041	33922	6756
1991	87883	14647	62613	13639	101360	19245	115134	23108	61599	9471
1992	114351	21854	77979	22496	76746	13126	204476	41684	75518	16800
1993	112061	17382	96673	17116	121481	19271	150589	26777	117532	15497
1994	169281	26077	145570	29902	215359	42495	423736	62460	305976	34543

Appendix F. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	4087	17624	67553	89638	45578	48252	41152	19071	165855	85007
1956	6309	17248	81981	86498	49518	46562	183768	35489	161323	84590
1957	8357	16958	94617	84068	52249	45255	69412	19214	114110	85237
1958	10523	10523	105459	82188	54019	44244	144031	32887	274127	213508
1959	9693	9693	47489	13009	20927	11926	127283	34396	278062	90392
1960	3231	3231	101303	13680	24415	5710	196876	76343	36725	7561
1961	22617	16181	84953	14171	71501	8200	163578	78957	201989	54498
1962	12924	12924	229796	23709	54062	5654	362134	86959	77385	19840
1963	4150	4150	238161	36954	172460	23477	185692	68555	95748	15109
1964	3206	3206	131289	20894	76143	12636	219974	62118	115422	51911
1965	30561	23103	176446	30979	51547	12816	53533	19352	125915	132742
1966	42400	15789	115750	27488	51873	14459	154744	52211	74762	52705
1967	18943	4819	83526	19225	27059	8089	171206	38539	64269	35295
1968	28488	21651	239348	57732	71435	21471	122208	40431	142966	74420
1969	16045	5905	192083	33955	44868	7206	136562	41778	114110	69281
1970	22430	7700	224494	45737	60305	20657	155766	38824	136408	21455
1971	23138	17250	179253	53859	73066	20990	226142	146005	107552	59167
1972	43663	15163	216355	45443	59810	14560	189109	36244	152803	61371
1973	20874	8416	228504	55666	85240	22206	227248	57847	171821	67641
1974	9203	4538	134143	31396	53700	12528	234860	145983	136408	66849
1975	17860	10254	147906	30879	36651	11031	238437	145975	114766	20815
1976	3974	2539	154822	55317	60868	25076	242454	145970	82632	19266
1977	3042	2096	71732	15234	29979	8421	246755	145970	56399	17266
1978	10889	7425	270701	54019	136431	27582	251083	145978	56399	36636
1979	51793	26461	234541	64123	125980	28091	255194	145996	121324	47916
1980	5468	2819	158712	30285	82648	18341	258960	146024	146901	42010
1981	3441	2043	58561	16656	41050	14139	262293	146062	100994	59020
1982	18430	4116	103837	22703	44397	11117	265128	146112	99683	29284
1983	9403	4573	107261	14466	60935	16342	267511	146174	186249	110723
1984	20305	9169	167033	27998	55520	15646	269670	146252	94436	51552
1985	3718	1909	140054	25170	79463	18978	271920	146348	62957	41773
1986	17128	6252	223621	33936	160955	31539	206977	57851	102306	29025
1987	5813	2465	269960	34881	124788	24955	256054	54668	134440	55612
1988	4633	1709	162911	23824	100432	23087	490771	104967	148212	23304
1989	8864	4068	226046	30357	113982	26893	421423	79497	139893	47581
1990	3839	1811	73159	12680	40381	10531	416088	99475	134142	34783
1991	22474	17430	147026	19316	94170	23480	237917	53937	151909	39996
1992	6146	3681	198547	43876	85313	29329	351017	89950	176327	38278
1993	9343	6597	260513	30690	109488	24271	255939	57320	113849	22343
1994	25403	10477	354022	56632	146473	26954	237839	46079	208781	33752

Appendix F. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	169613	99675	481469	189385	8569566	456925
1956	163630	98802	466704	186188	10268365	461677
1957	115180	98069	275547	87599	9132576	443320
1958	92144	97452	375051	161786	11087183	555502
1959	469935	96932	639117	204448	8892158	466470
1960	36858	96492	287029	156932	7252537	353933
1961	239574	96121	769237	346747	7222314	510436
1962	105966	95806	443938	324298	5438523	426736
1963	290254	95539	371224	70321	6660720	326674
1964	78322	95311	512824	194710	5984225	385127
1965	9214	95114	80368	15190	5131702	274752
1966	78322	94944	202834	35248	6731878	311405
1967	76147	29198	196254	63843	7509548	338183
1968	69108	94669	332953	86180	7089238	340846
1969	60917	10493	161475	66230	7531615	280209
1970	51959	17195	254048	53054	9985873	617159
1971	66293	16479	293114	58203	9416373	459544
1972	150502	87022	505043	130946	9265550	363881
1973	179169	92460	286978	80471	8079202	377483
1974	111085	30614	312702	146793	6880153	351801
1975	157669	89222	257635	73434	7726878	344098
1976	68084	18369	117037	26344	7933588	337357
1977	117356	39808	138769	30840	7397061	381767
1978	155877	48499	336302	95624	7424968	306982
1979	168419	26477	447921	111393	7883440	327000
1980	121835	68017	296654	71088	7706483	307169
1981	111085	32085	236242	63049	6409701	308382
1982	123627	59298	299486	85002	6408475	302232
1983	163940	51430	331346	64274	6456007	286937
1984	138487	56988	148103	33298	5415271	258361
1985	136168	21972	235765	41476	4960868	234729
1986	122731	36134	286742	68346	6124236	241640
1987	94960	19632	317186	74393	5789776	217897
1988	149606	35363	426218	118279	6369341	310251
1989	240331	83285	226128	58429	5645440	244144
1990	245890	34031	251414	68612	5452385	238607
1991	217533	32520	208789	36659	5444580	205581
1992	204571	35479	217357	59979	5976077	241003
1993	232517	33989	230809	54901	5708294	208872
1994	175578	28531	147265	29103	6980066	282764

Appendix G. Breeding population-size estimates and standard errors of the gadwall (*Anas strepera*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	222	59	443	409	502	0	241
1956	0	0	0	219	62	437	360	497	0	239
1957	0	0	0	0	0	0	819	802	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	863	894	0	0
1960	0	0	0	0	470	468	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	504	522	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	428	441	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	819	858	0	0
1976	0	0	0	0	0	0	0	0	469	451
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	428	441	819	768	469	451
1982	0	0	0	0	855	608	0	0	469	451
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	455	470	1711	1045	819	768	0	0
1985	0	0	0	0	0	0	819	814	469	451
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	911	651	0	0	819	858	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	470	501
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix G. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	104	113	138	0	1865	0	472	0	0
1956	0	103	110	137	0	1841	0	465	0	0
1957	0	0	107	136	0	0	0	0	0	0
1958	0	0	121	135	0	0	0	0	0	0
1959	0	0	243	135	0	0	0	0	0	0
1960	0	0	243	134	0	0	0	0	0	0
1961	0	0	95	134	0	0	0	0	0	0
1962	0	0	486	134	0	0	0	0	0	0
1963	0	0	0	133	0	0	0	0	0	0
1964	0	0	89	133	653	658	0	0	0	0
1965	0	0	87	133	0	0	0	0	0	0
1966	0	0	86	133	1306	1316	0	0	0	0
1967	0	0	86	133	653	658	0	0	0	0
1968	0	0	86	133	0	0	0	0	0	0
1969	0	0	85	133	0	0	0	0	0	0
1970	0	0	85	133	0	0	0	0	0	0
1971	0	0	85	133	0	0	0	0	0	0
1972	0	0	85	133	0	0	0	0	0	0
1973	0	0	85	133	0	0	0	0	0	0
1974	0	0	84	133	3266	1481	0	0	0	0
1975	0	0	84	133	0	0	0	0	0	0
1976	0	0	83	133	0	0	0	0	0	0
1977	0	0	83	133	0	0	0	0	0	0
1978	0	0	82	133	1960	1423	0	0	0	0
1979	0	0	82	133	653	658	0	0	0	0
1980	0	0	81	133	0	0	621	647	0	0
1981	0	0	81	133	653	658	0	0	0	0
1982	0	0	80	133	0	0	0	0	0	0
1983	0	0	80	133	1306	1316	0	0	0	0
1984	311	296	0	0	653	626	0	0	0	0
1985	311	314	0	0	653	658	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	653	658	0	0	0	0
1988	0	0	0	0	2613	1552	0	0	0	0
1989	0	0	0	0	3919	2845	0	0	0	0
1990	0	0	121	128	2613	1784	1863	1267	0	0
1991	0	0	121	128	7512	4805	1242	779	0	0
1992	0	0	0	0	3926	1714	0	0	0	0
1993	0	0	0	0	654	659	0	0	0	0
1994	0	0	0	0	1963	1381	0	0	0	0

Appendix G. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	163	0	636	0	1219	99	1248	0	1018
1956	0	161	0	628	0	0	0	0	0	1005
1957	0	0	0	0	0	0	0	0	0	995
1958	0	0	0	0	0	0	0	0	0	988
1959	0	0	0	0	0	0	0	0	0	982
1960	0	0	0	0	0	0	0	0	0	978
1961	0	0	0	0	0	0	0	0	0	975
1962	0	0	0	0	0	0	2705	1602	0	973
1963	0	0	0	0	0	0	0	0	0	971
1964	0	0	0	0	0	0	0	0	0	970
1965	0	0	46	600	0	0	0	0	0	969
1966	0	0	0	0	0	0	0	0	0	968
1967	0	0	0	0	0	0	0	0	0	968
1968	0	0	0	0	0	0	0	0	0	967
1969	0	0	0	0	0	0	0	0	0	967
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	1993	1881	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	832	832	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	832	832	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	677	662	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	832	832	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	832	832	1319	1327	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	1661	1401	0	0	0	0	0	0
1989	0	0	996	474	0	0	0	0	0	0
1990	0	0	0	0	832	832	0	0	0	0
1991	0	0	0	0	3328	3328	1319	1327	2836	2129
1992	0	0	0	0	3334	1370	1321	1233	2964	2322
1993	0	0	0	0	5834	2859	2643	1580	0	0
1994	0	0	333	314	3334	1370	6607	2930	2841	2133

Appendix G. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1253	0	6942	0	2282	461	2970	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	1566	839	0	0
1958	0	0	0	0	0	0	626	320	0	0
1959	0	0	0	0	0	0	313	301	0	2750
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	1253	639	0	0
1962	0	0	3581	2425	0	0	2818	676	0	0
1963	0	0	0	0	0	0	0	0	3564	3774
1964	0	0	0	0	0	0	2505	1172	1233	2717
1965	0	0	0	0	0	0	1879	1401	3564	3774
1966	0	0	0	0	0	0	1879	959	2424	2474
1967	0	0	3581	2425	0	0	313	301	5509	5427
1968	0	0	0	0	0	0	313	301	6446	3613
1969	0	0	0	0	0	0	313	301	1377	914
1970	0	0	2910	3307	0	0	2192	892	0	0
1971	0	0	0	0	0	0	1253	818	1443	1450
1972	0	0	1757	1873	0	0	7202	1449	0	0
1973	0	0	1693	1628	0	0	626	320	2673	2589
1974	0	0	0	0	0	0	939	543	904	929
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	3601	1252	1534	1501
1977	0	0	5644	2879	0	0	4071	366	787	830
1978	0	0	2822	1439	0	0	5010	1836	0	0
1979	0	0	7054	4700	0	0	2818	1044	0	0
1980	0	0	19752	7056	2638	2017	9551	4017	666	660
1981	3714	4574	25396	10448	5276	4033	8455	2629	6197	3962
1982	0	0	11287	6088	0	0	8298	2100	739	735
1983	0	0	0	0	0	0	2505	1555	1756	1087
1984	0	0	4233	3715	0	0	8455	2312	0	0
1985	0	0	4233	3047	0	0	0	0	0	0
1986	0	0	15520	6253	2638	2745	3444	1261	0	0
1987	0	0	1411	1409	0	0	3758	1153	2606	2590
1988	0	0	7054	3087	5276	5490	2818	754	1347	1334
1989	0	0	7054	3218	7913	2317	1879	1479	0	0
1990	0	0	18624	9323	0	0	3758	1305	652	647
1991	0	0	5644	3449	0	0	4697	1378	1409	1389
1992	0	0	14132	5987	2642	2020	2196	733	0	0
1993	3720	2639	8479	4112	2642	2750	6587	2729	3570	3495
1994	0	0	7066	5324	2642	2020	4391	2568	6638	3527

Appendix G. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1013	951	0	0	0	0	3831	1726	109527	17802
1956	1015	953	0	0	0	0	0	0	120490	23173
1957	0	0	0	0	5559	5919	0	0	110408	18692
1958	0	0	0	0	0	0	0	0	116973	20523
1959	19945	9593	5760	5983	0	0	9194	4058	189782	29844
1960	1013	951	0	0	0	0	354	330	205299	35377
1961	20768	9244	7825	4022	5723	3675	9371	2637	206512	50974
1962	7091	5799	0	0	2826	2701	2475	866	162912	37210
1963	4052	3805	1739	1775	0	0	13791	3728	124035	17910
1964	7294	4145	0	0	0	0	16266	3666	162097	30066
1965	19248	8857	3614	2292	0	0	15382	4544	138586	33387
1966	17222	11915	1511	1670	1487	1568	7780	1308	302638	73652
1967	29379	9576	16456	14069	0	0	15913	5850	189215	50188
1968	5914	1605	13823	4819	22370	5342	28289	9795	332937	132681
1969	14785	3838	12379	3932	18300	5485	35715	13133	141556	43814
1970	11089	6290	2425	2570	15413	14016	9548	3143	171929	45956
1971	5175	3180	0	0	1097	1051	20510	5510	183846	35967
1972	6653	2907	3413	3836	8270	7383	19449	5805	264048	70897
1973	15956	10288	1843	1868	2037	2085	20510	8046	164552	47112
1974	2957	1388	1707	1918	4135	4252	5304	2603	254704	61061
1975	2957	1336	0	0	1548	1600	12412	4014	143089	41199
1976	5175	2061	0	0	2238	1469	6011	2023	195874	42705
1977	19960	7730	2425	2481	3853	4074	14852	5277	311667	85594
1978	5175	1805	0	0	4239	2238	17327	5506	164493	47890
1979	4436	2514	0	0	0	0	14675	3736	204680	60387
1980	14046	4737	0	0	3111	3180	25107	7374	211284	52749
1981	24396	8907	8777	6731	11494	7013	13084	4733	198615	43254
1982	5319	2775	3072	2041	3831	2090	10608	3081	133946	34507
1983	11089	3295	2143	2121	0	0	3536	1238	89841	43070
1984	5914	2414	2143	2243	0	0	1768	1008	154241	42528
1985	2218	1510	0	0	1047	1065	9548	3629	71041	18801
1986	4436	2678	0	0	5282	2404	5304	2749	136180	29789
1987	3696	2820	1843	1990	1047	1020	7780	2733	71628	11386
1988	13307	4816	4126	2799	3831	2190	13791	6448	185616	50433
1989	6653	3374	0	0	1916	1312	9194	2492	182797	38331
1990	5175	2136	2751	2694	0	0	9548	3136	253247	81628
1991	26614	6773	1807	1715	5091	2667	14498	4266	181383	35983
1992	3702	1541	0	0	4043	4069	6376	1858	286376	73947
1993	8145	3436	0	0	6659	2075	16008	5100	239827	40713
1994	14069	5090	2251	2136	1168	1291	7574	2196	264541	68919

Appendix G. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	44762	4952	28300	4229	17730	6412	28045	9110	50793	22933
1956	89063	10724	42668	9170	17721	5144	51748	9940	84119	15710
1957	46006	5575	22544	6292	8126	1894	93952	38582	94580	52887
1958	61755	11879	28300	7206	12559	4444	19054	6229	42036	16102
1959	36058	19335	30699	8313	19208	6761	19054	11048	38533	18587
1960	84965	17176	50845	14340	28073	9736	31304	8313	52544	13768
1961	35960	8277	30356	7226	6787	4040	27846	19865	15358	7692
1962	20807	6458	14047	4899	10045	6251	59670	30236	107504	35862
1963	40416	7985	22679	5272	11643	3911	59001	14668	49051	22093
1964	46631	22486	29436	4725	18470	6341	65973	19588	34809	15100
1965	36513	10219	14410	5212	10797	5108	70753	21579	43358	14599
1966	101330	22761	44689	15898	30949	7586	89229	18028	89587	27262
1967	95322	12432	77923	23760	53304	18967	51547	8632	42556	16355
1968	47340	17998	84070	17350	27259	10106	136940	44215	115418	47799
1969	75470	20925	73980	15134	47975	18541	86748	26064	49263	15583
1970	94354	27090	52801	14427	24192	9173	81781	23959	57554	20192
1971	69853	25206	69249	7638	39890	8167	138346	39822	63989	18124
1972	82017	28565	60696	11871	38178	8112	81543	14401	61728	10208
1973	37746	14822	55190	9446	23534	7423	70612	13306	43734	13520
1974	132627	19542	77558	14594	30751	9434	137230	47658	64149	23193
1975	74347	16163	54524	13308	31736	11479	120877	29336	79463	24952
1976	57056	13878	28909	5665	26857	8262	73353	12012	64832	26563
1977	40369	10103	21778	5211	18421	6397	109945	24474	135316	38570
1978	38799	7609	33068	7498	43316	9683	78066	13497	80564	25499
1979	48937	8602	33966	11149	58864	20170	106502	10170	89759	24976
1980	22981	7867	53516	18342	31833	14649	99544	22591	60880	17685
1981	41556	9053	37161	11307	32098	11503	97386	26452	69434	27196
1982	22938	5366	29101	7947	29536	10153	52730	17231	71751	21146
1983	12469	5711	14081	8442	25902	13968	74425	19933	60046	24161
1984	23742	14167	15277	4062	11185	4720	76646	22221	87085	29533
1985	31626	5692	45782	7947	16442	5460	119173	28294	76677	38157
1986	27066	4561	21701	5385	41483	16349	119319	26692	90556	34982
1987	16326	4062	20514	5281	18625	8341	96252	28611	95034	32125
1988	29635	10315	29790	14863	11403	5137	109127	39931	90201	36420
1989	26946	6140	21067	7324	19354	8751	106392	33756	93549	33599
1990	68956	29340	47007	14158	45209	20245	123819	31627	63946	19804
1991	33525	10929	34904	15039	42928	9063	98248	26019	95471	23906
1992	28125	6986	28308	11421	15158	7128	154158	39548	107222	41277
1993	58997	16416	55529	11702	59936	22919	140265	39724	63798	32514
1994	81081	13760	71678	18471	94407	50177	133488	29071	104617	42344

Appendix G. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	211435	42336	42406	9246	10358	2771	16011	4878	0	2000
1956	195299	32905	33944	10173	38347	10893	18691	7114	0	1976
1957	111580	20366	16962	4067	43504	14572	15122	4075	0	1958
1958	31242	6787	12722	7265	22788	6888	8895	3092	0	1944
1959	43888	10164	14135	12006	48683	34955	7116	4648	0	1933
1960	71411	15066	32511	10254	25895	10216	13343	3303	0	0
1961	50301	23459	10329	5448	17609	8611	5337	3662	0	1918
1962	116318	35298	8263	6154	42986	17394	8006	2363	0	1913
1963	133553	35274	20607	8301	33146	9595	24017	5595	5049	1910
1964	109254	25888	18500	7263	38325	15536	50703	17601	0	1907
1965	305983	91349	13997	3923	31074	7484	16011	5065	0	1904
1966	299493	55277	47512	18626	25235	8609	24314	7045	0	1903
1967	216883	50508	45348	7219	34433	7952	18399	8543	0	1901
1968	343949	113896	55113	16765	18160	7431	10304	6514	0	1900
1969	231684	56326	59708	18283	13694	4021	22401	7613	0	1900
1970	240494	62188	48920	17211	28677	6461	54111	12493	2363	2363
1971	302246	62666	36289	22277	16702	3812	32599	8937	1708	1965
1972	238130	46122	21588	5944	39605	7760	46221	10980	2285	2134
1973	212209	42428	67062	38516	37671	9432	20219	4306	4815	1989
1974	316790	81634	24234	8283	44269	8201	58051	16299	0	0
1975	428605	58168	36146	7622	37500	13146	41978	10182	0	0
1976	375849	55257	26162	10067	95754	20232	43445	12006	1035	967
1977	290234	68728	6625	2119	31702	6721	33666	10932	969	906
1978	244798	43963	38906	9598	52422	11656	38105	14014	1264	781
1979	343537	69031	29799	5988	56821	12665	69059	14536	1560	752
1980	201733	45259	16061	4752	57644	16079	38701	12056	2752	1059
1981	148319	34265	19924	7627	43161	15469	31259	12758	4446	2135
1982	358214	80232	34035	18924	54689	10083	48308	12040	406	379
1983	284034	67018	21969	7493	73589	25962	59249	22918	636	598
1984	175191	44733	16518	7725	40583	7407	15793	3055	0	0
1985	287525	59907	23127	12569	60166	11960	21744	7718	802	749
1986	218725	36475	9262	3142	81824	18814	40180	10692	2159	553
1987	227424	60323	39750	14897	47255	16204	33413	12227	1974	947
1988	109322	41910	14622	6893	36425	9930	16511	4717	1311	807
1989	128863	35954	17792	6653	27503	8809	13836	4732	788	482
1990	194471	40608	35195	9898	99779	20369	22266	12610	3678	1952
1991	205386	55709	23822	6151	50175	10270	34575	14696	3300	1575
1992	210786	43195	3419	1334	71164	13814	80179	18736	1241	812
1993	110073	17991	17528	5968	63138	19577	34758	8599	5500	1730
1994	282926	42661	52399	13478	37212	7930	29135	4854	4626	612

Appendix G. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10682	7580	0	0	8830	3137	8083	2366	14833	35324
1956	2672	2557	0	0	9603	3387	6617	2384	21331	34578
1957	5341	3450	0	0	4991	1869	13227	3238	26872	34029
1958	13353	6212	1298	982	6910	2408	12492	3859	31392	33620
1959	8012	5305	0	0	6143	2562	12125	4138	35001	33314
1960	11770	7226	0	0	9214	2911	6613	1843	37784	33082
1961	21364	10622	0	0	13821	3882	17636	4247	39866	32905
1962	8012	5305	1298	1483	9982	2927	19473	4924	41445	32770
1963	21364	7481	2596	1964	20347	4299	21126	4045	42713	32666
1964	13353	9193	1298	982	26874	5472	12859	3491	43831	32587
1965	2671	2555	1298	1483	18620	5607	16533	4468	141231	20144
1966	39672	20061	1542	1760	16653	4394	20959	4491	93231	19292
1967	41428	35596	1917	879	19007	4730	19686	4981	81742	17525
1968	17558	10333	813	615	9135	2855	15184	5595	58854	30374
1969	3363	2173	1634	742	10393	1964	7402	1625	79623	23456
1970	15872	10200	1012	1156	21630	4387	9418	2933	34257	8472
1971	4590	2502	1902	1440	13960	5492	9156	3822	35414	10044
1972	23022	11291	0	0	19328	5924	22453	7620	11573	4378
1973	15528	10794	0	0	19886	6841	26158	4852	7870	1713
1974	11788	4181	1086	823	21807	4788	18116	5507	60434	27505
1975	10724	5513	1976	1498	17295	5760	10142	2295	54517	24087
1976	11121	3763	0	0	25519	8296	18488	7991	45044	15805
1977	24741	10669	0	0	16955	9319	24245	8907	15823	8037
1978	10753	4357	469	357	20777	4885	11139	5204	135574	30444
1979	17462	8619	2316	1081	24152	5928	20808	4667	63828	19709
1980	31127	9057	1022	1164	61177	35749	23281	8470	68711	17594
1981	16429	4599	1238	951	17534	6166	18010	4867	81569	28429
1982	11990	3976	1355	1027	17449	4623	16525	3273	59994	23071
1983	9402	3993	0	0	19520	7664	19551	8766	51878	16020
1984	5696	1526	755	569	5446	1424	3636	1101	28444	11537
1985	18594	4162	2234	1855	15185	4753	17920	3008	26634	10709
1986	25384	12763	4209	1459	40714	11492	27972	4487	28558	9922
1987	10611	4071	4398	2391	21516	5430	24931	7586	21879	3927
1988	16436	5712	3407	1809	9773	3075	25607	6228	20586	6270
1989	22762	7433	1755	819	16383	7332	18726	5558	98894	25397
1990	42362	10070	585	445	34209	8909	29672	5548	33389	3845
1991	18969	10340	4493	1629	20928	6291	17561	4195	41034	10673
1992	33557	8192	2074	554	35591	6385	33042	6183	83242	30291
1993	23812	8066	4084	3101	26639	7702	18346	3995	140199	39281
1994	24083	4441	2576	697	10170	2247	8541	1772	128262	30345

Appendix G. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	20444	0	24986	0	25769	0	90414	0	45564
1956	0	19942	0	24238	0	24714	0	86850	0	43873
1957	0	19571	0	23711	0	23942	0	84223	11951	42629
1958	0	19295	0	0	0	23378	16003	4019	28776	11633
1959	0	19087	0	0	0	0	4387	2086	9008	5450
1960	0	18929	0	0	0	0	41236	9540	43915	16625
1961	0	18809	0	0	2972	2628	37288	8267	19143	9117
1962	0	18717	0	0	4452	5054	88614	10588	67562	14054
1963	610	18647	3661	22409	39177	28172	111802	38259	98350	19342
1964	2043	18593	2086	2223	12291	2947	45979	10367	37935	6797
1965	6710	2314	6452	22265	26118	11599	124799	15689	95540	19752
1966	37265	9726	8047	22216	21509	12893	119578	41868	134399	45640
1967	18236	4983	19535	4638	29066	6936	105522	20817	83868	12420
1968	34886	18932	3907	3907	38949	11531	198459	57979	144959	38448
1969	14633	4076	12022	5354	40330	15850	191496	21980	116964	16687
1970	19029	5408	4809	4021	45259	20141	250079	53670	110928	23655
1971	13647	9321	18433	3655	19717	6813	243980	62652	104469	24124
1972	3964	1959	4809	3197	7170	4934	227801	49486	104106	25170
1973	3964	3012	5610	3183	26886	9097	143377	25475	71464	14120
1974	9160	4061	13889	7751	18637	7009	121120	24486	72377	14245
1975	18369	7539	41260	20139	22599	12116	203359	44323	80276	18727
1976	10287	5189	18567	5744	16610	6027	34041	4710	22852	5293
1977	3857	1664	5335	1096	6425	1242	78641	30348	17766	3360
1978	39246	11818	55097	9546	33271	16824	109484	15835	75177	11571
1979	14779	5988	69202	25724	18179	5390	224224	42048	75744	17508
1980	14759	8006	9422	3521	36000	7412	145208	27771	69678	12774
1981	38351	11343	53841	28838	46102	20672	138019	66771	62197	31060
1982	35064	13607	41887	16582	50655	19158	219324	53872	115822	27461
1983	19083	4505	36468	14316	54936	13172	279820	89354	117520	35337
1984	9813	6148	35073	15702	45559	17478	364151	67828	123473	31029
1985	14120	6031	23055	7300	23735	7268	164819	37470	86155	23593
1986	5255	2248	32485	22886	38611	13584	166840	44832	88402	25181
1987	10755	1768	19534	4413	33240	16893	179681	33032	74986	18355
1988	10119	7430	43152	23511	27165	10458	154861	41283	95096	31984
1989	29625	9413	55009	26776	35671	10546	143633	29342	96817	22257
1990	23262	6112	37230	17349	26781	7325	161507	61683	94619	31770
1991	55862	16625	39092	13354	92826	42162	91692	28080	65568	24762
1992	71138	23738	87125	38385	51383	15745	214636	53838	84770	22582
1993	41325	12418	47468	22680	56266	18611	121194	32205	115005	21414
1994	54596	12563	83325	28917	94642	30234	199127	44301	149272	30950

Appendix G. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	4837	0	71421	0	23301	0	0	125	10631
1956	0	4679	0	67842	0	22195	0	0	345	10425
1957	0	4563	0	65205	0	21382	0	0	0	0
1958	0	0	0	63262	1565	20784	0	0	2910	3556
1959	0	0	0	0	0	0	2770	2715	1455	1778
1960	0	0	9852	3486	0	0	0	0	0	0
1961	0	0	12627	6941	3339	1040	0	0	1455	1133
1962	0	0	55305	12632	14189	4422	0	0	0	0
1963	0	0	99849	21591	24994	7948	0	0	1455	1133
1964	0	0	39193	8041	2083	662	4331	2429	7276	5987
1965	0	0	83052	27827	6248	2555	0	0	1455	1778
1966	7482	3300	86048	31429	5385	1879	0	0	0	0
1967	7242	3795	36276	6562	9792	4322	11237	11878	0	0
1968	5608	5333	135319	54350	23496	10073	0	0	13097	7299
1969	2640	1790	178166	27040	25315	4195	0	0	0	0
1970	8097	6348	158910	46960	10351	5895	0	0	4366	3399
1971	5270	3034	124258	41128	18246	6973	1940	4880	4366	536
1972	16861	9588	167345	45542	17580	6564	0	0	4366	3399
1973	2768	2678	107206	19610	15847	6194	1765	1815	5821	4531
1974	6176	3235	57032	16680	9869	3835	1932	4879	7276	5664
1975	5235	2045	87283	27489	16483	5869	1925	4879	4366	536
1976	1053	1142	21052	5520	6915	6862	1915	4879	1455	1133
1977	1301	1259	20453	4139	4505	2369	1896	4879	2910	664
1978	4171	4037	143120	24806	57223	13920	1859	4879	5821	4531
1979	0	0	85091	26131	33412	12020	1798	4879	7276	5664
1980	0	0	20745	7605	13005	3675	1711	4880	8731	1072
1981	1541	1503	41186	24235	26271	19213	1598	4881	7276	5664
1982	4187	3197	116902	36499	21559	8042	1465	4883	7276	2772
1983	1203	1167	101560	34708	62468	24795	1324	4885	5821	4531
1984	6065	3733	169686	58160	48455	17484	1188	4887	12327	2616
1985	0	0	93559	23513	28173	7889	1075	4890	2910	2266
1986	0	0	164850	48764	50834	14927	0	0	8731	6797
1987	1740	1191	140498	31546	31982	11396	1765	1815	23284	3758
1988	1838	1781	155412	40799	39899	19746	1765	1767	42201	32853
1989	848	821	129792	49139	12188	4238	3529	2326	27037	15280
1990	2658	2578	69628	21458	29257	10017	0	0	12715	6333
1991	1572	1523	100933	30816	89153	31281	0	0	23567	7450
1992	2127	2059	179134	38950	50989	15672	0	0	15258	7276
1993	2169	2100	159755	31846	30616	6497	3535	2096	11546	10266
1994	1578	1528	219175	46536	69136	14605	0	0	23945	14312

Appendix G. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	615	11854	0	9711	608521	149305
1956	638	11565	0	9440	734843	142146
1957	0	11353	0	0	633216	147927
1958	0	11197	0	0	471771	89026
1959	0	11081	0	0	562375	72032
1960	0	10995	0	0	758654	67620
1961	10223	10931	0	0	631164	76777
1962	0	10883	0	0	882872	86353
1963	0	10847	0	0	1034387	88934
1964	0	10820	0	0	853671	72998
1965	0	10799	4246	4079	1260275	114776
1966	0	10784	0	0	1680441	132422
1967	0	0	2756	2583	1384634	97835
1968	0	10765	0	0	1948955	213913
1969	3976	907	0	0	1573390	100223
1970	3976	3095	9241	9695	1608072	123461
1971	1988	1548	0	0	1605616	122955
1972	7951	2245	1746	1647	1622943	120061
1973	1988	1548	6284	6049	1245616	90330
1974	0	0	0	0	1592352	128218
1975	1988	1548	0	0	1643881	109025
1976	0	0	1603	1549	1244760	85672
1977	13915	5126	7855	3316	1298991	126350
1978	1988	1548	1571	1523	1557988	92239
1979	3976	907	22443	15509	1757892	121008
1980	3976	907	10997	2515	1392884	98817
1981	1988	1548	9619	4994	1395367	120010
1982	0	0	31421	13958	1633765	126249
1983	0	0	0	0	1519210	144255
1984	2105	2475	9619	2862	1515045	124950
1985	1988	2428	9426	2780	1302986	98186
1986	11927	1465	25137	10411	1547139	107477
1987	5964	732	7855	4928	1305607	97099
1988	7951	9714	3142	2241	1349928	121145
1989	32253	14509	11222	6286	1414554	106626
1990	49838	20116	20840	4690	1672063	135774
1991	8508	2093	32062	6025	1583655	111841
1992	26029	22446	31421	6514	2032759	143437
1993	20117	7832	18853	7008	1755222	107856
1994	17165	7378	15710	4704	2318290	145157

Appendix H. Breeding population-size estimates and standard errors of the redhead (*Aythya americana*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	40	0	173	0	1951	0	2773	15	227
1956	0	39	0	171	0	1927	0	2731	19	224
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	482	479	0	0	0	0
1961	0	38	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	438	302	0	0	480	462
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	8390	7359	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	839	878	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	699	721	438	452	5453	2380	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	876	904	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	219	212	1258	793	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	2936	1552	960	565
1989	0	0	0	0	0	0	1678	1186	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	13424	7184	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	1679	1013	0	0
1994	171	168	0	0	438	452	840	787	0	0

ppendix H. *Continued.*

	Strata									
	6		7		8		9		10	
ear	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
55	0	141	44	125	0	0	0	375	0	664
56	0	139	45	124	0	0	0	371	0	657
57	0	0	46	124	0	0	0	0	0	0
58	0	0	0	123	0	0	0	0	0	0
59	0	0	0	123	0	0	0	0	0	0
60	0	0	0	123	0	0	0	0	0	0
61	0	0	49	122	0	0	0	0	0	0
62	0	0	0	122	0	0	0	0	0	0
63	0	0	373	122	0	0	0	0	0	0
64	0	0	53	122	0	0	0	0	0	0
65	0	0	54	122	0	0	318	331	0	0
66	0	0	56	122	0	0	0	0	0	0
67	0	0	57	122	0	0	0	0	0	0
68	0	0	58	122	0	0	0	0	0	0
69	0	0	59	122	0	0	0	0	0	0
70	0	0	60	122	0	0	0	0	0	0
71	0	0	60	122	0	0	0	0	0	0
72	0	0	61	122	0	0	0	0	0	0
73	0	0	61	122	0	0	0	0	0	0
74	0	0	61	122	0	0	0	0	0	0
75	0	0	62	122	0	0	0	0	0	0
76	0	0	62	122	0	0	0	0	0	0
77	478	321	62	122	0	0	636	663	0	0
78	0	0	62	122	0	0	0	0	0	0
79	0	0	62	122	0	0	0	0	0	0
80	0	0	63	122	0	0	636	641	1709	1532
81	0	0	63	122	0	0	1272	1214	2136	1947
82	0	0	63	122	0	0	0	0	0	0
83	0	0	63	122	0	0	0	0	0	0
84	0	0	186	135	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0
86	159	152	0	0	0	0	0	0	0	0
87	0	0	186	197	0	0	0	0	0	0
88	0	0	124	131	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0
90	319	189	62	59	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	855	1035
92	319	303	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0

Appendix H. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	186	18	711	0	1850	0	1428	0	986
1956	0	184	17	704	0	0	0	0	0	979
1957	0	0	0	0	0	0	0	0	0	973
1958	0	0	0	0	0	0	0	0	0	969
1959	0	0	0	0	0	0	0	0	0	965
1960	0	0	0	0	0	0	0	0	0	963
1961	0	0	0	0	0	0	0	0	0	961
1962	0	0	170	161	0	0	0	0	0	959
1963	0	0	0	0	0	0	0	0	0	958
1964	0	0	0	0	0	0	0	0	0	957
1965	0	0	12	677	0	0	0	0	0	956
1966	0	0	0	0	0	0	0	0	0	956
1967	0	0	0	0	0	0	0	0	0	955
1968	0	0	0	0	0	0	0	0	0	955
1969	0	0	0	0	0	0	0	0	0	955
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	346	371	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	852	852	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	170	161	852	852	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	1704	990	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	3408	1979	675	716	2904	3626
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	340	321	426	426	0	0	0	0
1989	0	0	1700	1605	426	426	0	0	0	0
1990	693	677	2551	2408	2130	830	4727	281	1452	1813
1991	0	0	340	321	3408	1854	4727	2617	0	0
1992	0	0	340	321	1279	1279	676	631	0	0
1993	0	0	0	0	9379	5081	4731	3502	0	0
1994	0	0	0	0	0	0	676	670	0	0

Appendix H. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	3154	1197	7356	0	1583	20434	5464	0	0
1956	0	0	0	0	0	0	16685	3522	0	0
1957	0	0	0	0	0	0	19557	6279	0	0
1958	0	0	0	0	0	0	11542	3062	0	0
1959	0	0	0	0	0	0	27251	7934	0	1461
1960	0	0	0	0	0	0	10740	3833	0	0
1961	0	0	11001	15367	0	0	17633	4487	0	0
1962	0	0	5500	3732	0	0	17954	7108	0	0
1963	0	0	0	0	0	0	6412	1325	0	0
1964	0	0	0	0	0	0	12023	3264	28	1443
1965	0	0	0	0	0	0	4649	2416	0	0
1966	0	0	0	0	0	0	4969	1164	0	0
1967	0	0	3667	5122	0	0	7855	1344	0	0
1968	0	0	0	0	0	0	5130	1579	330	332
1969	0	0	0	0	0	0	5290	1746	0	0
1970	0	0	0	0	0	0	3527	1309	0	0
1971	0	0	0	0	0	0	6091	1453	0	0
1972	0	0	0	0	0	0	3206	1270	0	0
1973	0	0	0	0	0	0	5611	2085	0	0
1974	0	0	0	0	0	0	2885	2154	0	0
1975	0	0	0	0	0	0	2405	2313	0	0
1976	0	0	722	799	0	0	1603	773	0	0
1977	0	0	6500	3868	0	0	7214	3034	0	0
1978	0	0	0	0	0	0	8175	1924	730	725
1979	0	0	0	0	0	0	2565	1853	0	0
1980	0	0	5778	3318	0	0	6091	5055	0	0
1981	0	0	0	0	5401	4134	8817	3852	4583	3452
1982	0	0	1445	1268	0	0	962	197	378	371
1983	0	0	0	0	0	0	5931	4855	1798	1741
1984	0	0	21668	23589	0	0	4649	2240	3058	1985
1985	0	0	5056	2355	1350	1405	1763	750	0	0
1986	0	0	10112	3671	0	0	7053	1902	2555	2580
1987	0	0	722	721	0	0	4168	1707	2668	1772
1988	0	0	7223	6258	0	0	4809	1007	3791	2637
1989	0	0	14445	14423	0	0	2725	938	1001	709
1990	0	0	2383	1478	2701	2067	1763	710	0	0
1991	0	0	4334	2496	5401	1610	13145	4354	1443	1423
1992	0	0	1446	714	0	0	3209	1236	0	0
1993	13320	14197	2891	1428	0	0	3209	1271	0	0
1994	1903	2342	723	708	1351	1034	1604	635	970	973

Appendix H. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	5186	5135	11794	11916	13456	14057	23926	4915	78596	16453
1956	0	0	0	0	0	0	16487	13280	80372	14269
1957	1037	1077	0	0	0	0	17258	4086	66593	12645
1958	0	0	0	0	0	0	0	0	83501	16503
1959	0	0	0	0	0	0	0	0	71275	14153
1960	18152	9333	1747	1714	1205	1165	20456	7670	44742	8999
1961	0	0	6231	6086	0	0	46343	9244	59049	14188
1962	11410	6980	0	0	0	0	10137	2110	37458	11605
1963	11928	5425	890	869	0	0	12672	2230	71275	18075
1964	15870	2133	13105	4263	1181	1036	20637	5595	67893	15672
1965	12965	10817	16651	16133	0	0	26792	10621	80900	16812
1966	7779	5643	0	0	3807	1285	22628	6422	123799	36010
1967	15558	8924	11794	5647	0	0	45075	13436	110163	36570
1968	21193	10468	13367	11195	14466	13706	34576	9227	55758	14787
1969	6055	2528	0	0	6613	6733	25706	13513	85784	15535
1970	2271	1437	0	0	47342	43066	19551	6607	55563	14330
1971	5677	2706	0	0	5618	5693	17016	7577	44183	16110
1972	3784	3136	0	0	1411	1492	16292	3980	71367	17409
1973	3890	2221	0	0	3649	3735	19189	7089	75949	22914
1974	757	431	0	0	0	0	4888	2186	116588	38466
1975	2271	1073	0	0	793	769	15767	7123	136356	28930
1976	12110	7594	1474	1434	3437	2996	3077	1130	122343	43015
1977	4163	3503	0	0	4603	4866	20637	4318	167143	36260
1978	757	739	4839	2872	723	773	11767	3018	100386	32336
1979	7569	4306	0	0	0	0	3258	745	82358	22718
1980	6812	3160	0	0	3185	2688	23352	6853	219647	104214
1981	11732	3369	6740	3213	3923	4035	42541	16822	82540	33031
1982	6612	3572	0	0	981	1009	20637	8426	43659	17798
1983	7947	4594	10971	10856	2143	2179	6698	1420	50518	15120
1984	4163	2733	0	0	490	504	3621	1709	74154	20633
1985	4920	2393	0	0	3215	3272	9051	3492	105505	41121
1986	4541	3547	0	0	4867	4944	4888	2066	106872	44578
1987	4541	2006	2831	1829	0	0	7422	2885	130582	41315
1988	6434	3082	1408	1379	2452	2038	7422	2497	78129	44281
1989	1135	826	0	0	0	0	5793	1953	77484	22935
1990	1514	943	0	0	4208	2890	10862	4883	145229	34810
1991	0	0	0	0	0	0	26068	8585	80194	15355
1992	1515	944	0	0	6205	6243	5073	1576	97299	27602
1993	0	0	1098	1086	0	0	7396	1651	80013	20961
1994	8712	3538	5758	4080	4181	1735	18842	6880	75782	26507

Appendix H. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	11381	3992	25089	7363	25438	13784	18272	10331	96766	41162
1956	29082	10129	17561	6799	18675	9045	62376	22779	181521	72726
1957	20595	7337	11290	4946	7406	5686	103053	47783	60250	26586
1958	20233	8646	17353	6635	6118	2902	30503	14607	54773	14778
1959	11381	3844	11917	4976	18676	11046	19862	13766	16432	10650
1960	7226	3172	11917	3227	7406	3808	23409	13258	62076	17307
1961	3071	1371	11499	4766	4508	1383	18444	16426	13693	6508
1962	723	462	4181	2149	1932	655	51784	21257	62076	23492
1963	4155	1734	4181	3167	0	0	9222	3662	8216	2742
1964	4878	3075	11290	3492	4508	2680	29084	12876	32864	16505
1965	3974	2020	5227	1819	3220	1265	8512	3751	35602	13471
1966	25656	12583	30956	13070	9730	2998	40198	11166	30125	14340
1967	19228	5291	38335	17857	26687	8033	54267	11994	46557	12504
1968	3839	3957	13098	9502	12276	10419	44888	11691	50209	19592
1969	8186	1570	14401	7491	9403	7560	44888	11337	28331	12256
1970	3525	887	11576	2732	4022	1798	32158	8743	50209	21799
1971	7081	5711	11625	3191	5834	2806	25070	9248	52190	23622
1972	17795	12726	18005	5169	10946	4799	41180	17558	55221	20094
1973	4831	2834	1889	1018	6430	3318	52902	15155	62946	34780
1974	21120	7430	16027	4891	1575	1173	38954	9052	75956	25254
1975	12464	6285	21066	6947	11849	9399	47869	12629	75694	18857
1976	9909	2300	36447	10279	4710	4630	63774	17456	64634	28582
1977	5254	2029	12884	7086	16801	9169	66556	40506	58021	34210
1978	7033	4412	11782	3914	14644	8946	33131	6567	26045	10057
1979	7380	3153	1574	963	9354	3779	42384	18391	57375	23687
1980	6889	5625	19485	8495	22343	12423	78162	23639	43027	15596
1981	6002	4890	10699	6596	11868	5819	66210	20319	30542	9997
1982	382	392	6713	5595	7074	2686	21751	13484	25259	12017
1983	5090	3415	2653	781	2151	2115	49684	17106	52604	18770
1984	2942	3029	17597	9060	3636	1444	50655	21470	77232	24945
1985	11716	6482	15389	11451	1337	1358	84312	29216	60936	20637
1986	865	501	6085	3657	9455	5711	88131	19134	42218	13441
1987	8602	3745	2242	1243	2120	1329	59468	18055	51977	20685
1988	2463	2521	4000	2179	1081	930	78802	28011	91226	32212
1989	9959	5526	5989	2324	3156	1951	83092	20257	20049	6613
1990	11195	6637	3535	2286	2865	1469	47015	17036	44986	16194
1991	11285	6031	12380	4788	6921	3475	55217	28934	31555	11015
1992	5391	4502	8581	4838	732	745	53908	31512	27873	14922
1993	14388	5196	10411	4777	5529	3039	28027	5580	24258	11495
1994	9302	6476	16702	9658	8489	5279	44732	17101	43688	22068

Appendix H. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	66433	20479	5894	3050	20055	8890	8018	2259	0	2621
1956	136622	41144	11779	6094	34256	8812	22584	9460	0	2596
1957	45749	16351	0	0	49101	13722	8612	2555	0	2576
1958	19773	5697	0	0	32849	8387	5642	2479	0	2561
1959	7754	2814	2210	1676	43914	18721	18411	10568	0	2549
1960	35669	13312	0	0	7953	3839	5048	2842	0	0
1961	7252	3608	737	713	5533	4736	891	534	0	2532
1962	27139	20747	0	0	9682	5766	0	0	0	2526
1963	18222	6605	0	0	8645	5506	297	308	0	2522
1964	27527	11358	0	0	13140	4949	2673	1331	0	2518
1965	50402	20503	0	0	12794	4748	6830	2634	0	2516
1966	44199	13095	1473	878	4897	2654	3738	1421	0	2513
1967	48463	11537	14735	8489	7252	2131	4725	3469	0	2512
1968	29853	8942	2210	1432	6125	3746	1601	1526	0	2510
1969	42260	9429	3684	1615	10028	6489	8612	3716	0	2509
1970	63137	14276	4420	2865	13779	3284	15890	4166	3454	3454
1971	37479	12406	10721	6877	31050	17405	12753	5808	3037	1725
1972	29505	7027	13657	8926	11897	4526	7095	2483	2602	1007
1973	25440	9288	1639	1773	14399	9929	18960	12103	0	0
1974	78898	20722	739	715	30315	8512	12764	4164	0	0
1975	115936	30693	11698	4965	24772	7428	29731	13185	1579	1476
1976	91502	18206	5796	3043	44334	11624	41631	11909	2597	1682
1977	41379	20486	1484	1445	26516	10636	30365	22560	4359	4075
1978	43508	16630	934	905	18673	4512	8023	4402	955	893
1979	45577	16582	2087	1535	43360	10472	29692	7504	0	0
1980	41733	12518	2374	1785	21490	9012	4143	1331	1163	580
1981	17561	6671	1011	979	20774	11885	2324	1218	9469	4629
1982	33375	10827	2174	981	19764	8838	21112	8896	576	540
1983	79522	25457	6891	6683	31969	4782	11562	4702	0	0
1984	56421	16057	0	0	16171	6063	1090	682	0	0
1985	40445	12242	7320	7086	22317	10655	4224	1787	0	0
1986	30919	9612	1211	1173	16491	7152	2630	1180	1148	859
1987	14852	4744	3442	2583	16328	4706	8185	2033	0	0
1988	6769	4732	0	0	9046	3403	3463	1382	3140	2401
1989	23177	6171	5356	3181	3760	1910	2346	1461	1229	572
1990	18017	6109	1122	1087	23436	9069	2627	2267	4764	3317
1991	12480	4059	1294	1253	22865	7676	7645	2993	1036	503
1992	21045	5608	533	516	33919	10350	12983	5889	607	568
1993	10656	3300	1266	1225	13202	3455	8269	2558	1203	1123
1994	62090	26338	11799	7394	13526	2793	7627	2568	605	565

Appendix H. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	16047	10761	0	0	7177	2293	19134	7656	2790	4073
1956	22303	8275	0	0	13851	5482	17306	4257	2902	4011
1957	17830	10063	0	0	3717	1709	16435	3955	2987	3966
1958	65971	37190	1733	1311	5767	1530	25653	9065	3041	3933
1959	72212	28950	0	0	24735	11160	26738	7167	3068	3908
1960	49957	34109	1300	983	10125	4447	6746	1980	3077	3889
1961	7132	5060	0	0	10253	3285	13982	5652	3077	3875
1962	17830	7687	0	0	12175	6951	10425	2370	3079	3864
1963	56165	39084	866	656	19609	6165	16435	4167	3091	3855
1964	57056	41396	0	0	14739	4547	25512	5797	3120	3849
1965	86476	39063	0	0	23710	11037	38390	10298	2204	1420
1966	55411	29904	1704	1296	9277	2657	17177	4865	3451	2014
1967	42552	34269	0	0	11939	3851	13672	6180	8047	3160
1968	24031	21047	0	0	4639	1967	9635	3735	1377	715
1969	32094	23376	1300	832	15508	3285	11284	2678	2204	1357
1970	35701	20163	987	1126	18797	5330	22474	7250	944	585
1971	30095	12760	0	0	20033	6972	12482	3644	2414	1375
1972	25473	7198	0	0	13646	3537	17802	7330	0	0
1973	22487	8426	0	0	16103	7098	18909	5594	2414	1527
1974	37906	21148	0	0	23973	8133	25020	12057	1049	547
1975	28283	11474	1172	892	22337	7949	13541	4096	735	359
1976	30004	13231	0	0	20851	7780	29696	10790	2667	1080
1977	33674	16206	0	0	30626	17821	19472	7531	2286	862
1978	42357	13352	1064	809	11507	3171	12973	4067	6984	2953
1979	24118	10577	0	0	16015	4452	33144	7605	12318	6074
1980	23434	13888	0	0	5002	2809	12466	3666	3937	2612
1981	79060	27515	0	0	3103	1041	16678	4931	13714	6527
1982	42186	11817	1283	984	16357	7932	13794	4240	11302	6173
1983	29251	10148	351	265	9049	4181	15110	3137	10286	5870
1984	4603	1827	0	0	5731	2544	6121	2817	4825	3426
1985	13216	4349	342	391	16573	8376	12084	2673	2667	1566
1986	13629	5278	213	164	8672	3685	9713	4433	3556	1294
1987	13422	9248	0	0	17608	5443	13758	3368	2794	1897
1988	17578	8352	1943	1472	13007	5190	10473	3879	2286	1680
1989	8259	3113	0	0	12340	2996	5858	2558	6603	2734
1990	36979	11160	295	226	10018	3962	22131	5797	7365	3121
1991	26445	7265	1154	879	13072	4558	32085	8908	3995	1573
1992	42842	14190	0	0	35010	12505	32775	8537	4949	3842
1993	13744	7812	0	0	10009	3715	11827	4539	3507	2539
1994	14236	9302	0	0	9724	4471	7790	2243	1904	781

Appendix H. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	4060	0	3774	85	1755	6216	51584	0	37198
1956	0	4004	0	3660	115	1686	12424	49775	0	35744
1957	72	3962	0	3580	147	1636	18491	48447	4820	34672
1958	156	3932	0	0	180	1599	21791	17035	12331	7840
1959	219	3909	0	0	0	0	9728	5003	5549	6018
1960	271	3891	0	0	673	757	76746	42095	8324	4819
1961	316	3878	0	0	0	0	12971	7988	26358	9895
1962	362	3868	0	0	0	0	64856	26950	26358	8736
1963	411	3861	120	3381	1393	1549	26494	13670	70752	32027
1964	464	3855	0	0	0	0	43237	17586	15260	9167
1965	435	426	344	3359	0	0	43237	19400	73526	36904
1966	719	521	477	3352	1393	910	112416	45473	90174	20341
1967	4314	3471	0	0	0	0	79309	41048	83792	23165
1968	0	0	0	0	0	0	60127	14068	33165	7455
1969	369	396	0	0	203	197	87639	18785	86917	16838
1970	1078	1095	0	0	0	0	85639	14048	67840	14166
1971	0	0	727	743	3454	2457	81576	27739	41426	8793
1972	0	0	0	0	0	0	83960	22248	42948	8547
1973	0	0	1453	1446	0	0	66828	23222	26275	9336
1974	0	0	0	0	0	0	69764	34987	40470	13503
1975	0	0	363	372	2388	1135	147541	66209	66899	31379
1976	0	0	10113	7544	0	0	31998	9493	21523	6488
1977	870	654	879	568	492	476	22812	11777	8212	3774
1978	0	0	1539	1112	2458	1481	97306	16793	92920	16720
1979	2392	1599	3737	2581	1475	791	108295	30711	79848	26232
1980	435	419	0	0	0	0	88664	27550	34030	8097
1981	11310	6575	3298	3279	492	476	51638	17409	20221	9912
1982	3697	2053	2418	2405	2458	2442	169781	55643	85986	25907
1983	217	235	9673	6674	1229	665	132761	51538	80699	32990
1984	14355	14185	2198	1515	1229	990	100715	32207	65570	21294
1985	0	0	879	874	0	0	72887	23746	41230	13719
1986	0	0	4397	3694	0	0	52733	13471	46350	11626
1987	652	704	1539	1530	0	0	68500	13543	28985	6744
1988	435	419	440	437	492	476	24599	10626	30157	14354
1989	435	419	3957	3456	1475	1429	73615	30124	47737	20879
1990	435	268	0	0	492	476	13243	5166	3715	1182
1991	2433	1873	447	458	2750	2136	6553	3386	7749	2705
1992	595	603	301	299	0	0	69131	22428	9329	4099
1993	1767	1445	4821	3330	3994	2981	42209	20112	53151	19788
1994	1449	1004	4760	3277	2047	1653	86400	24386	60621	14153

Appendix H. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	882	3087	1749	39409	0	10600	0	0	4217	8526
1956	802	3004	8285	37417	0	10203	0	0	4289	8390
1957	736	2943	14105	35948	0	9914	0	0	2233	1740
1958	0	0	19233	34865	0	9703	0	0	2233	2727
1959	0	0	0	0	0	0	0	0	16376	12762
1960	3810	3810	29387	11999	0	0	6142	4258	2977	699
1961	0	0	14312	6057	0	0	0	0	744	580
1962	0	0	52269	17366	4113	6191	0	0	5955	4641
1963	0	0	49141	15708	0	0	0	0	0	0
1964	0	0	50370	22732	0	0	0	0	7444	598
1965	0	0	39927	15952	16452	24765	0	0	0	0
1966	0	0	49141	11969	6170	2071	0	0	3722	299
1967	0	0	18481	10414	1624	1791	0	0	7444	5801
1968	0	0	29341	11895	4015	2598	0	0	17120	13342
1969	2502	2421	84269	24743	3331	2827	1807	1858	4466	3480
1970	0	0	43308	15845	10273	8314	0	0	0	0
1971	0	0	54567	22118	2669	3014	1031	6234	7444	5801
1972	0	0	44819	17826	3748	2268	0	0	2233	1740
1973	0	0	26917	8964	7662	5526	0	0	11910	6334
1974	422	409	17061	9573	3148	2182	971	6233	2977	2320
1975	0	0	18631	15689	6279	5090	966	6232	10421	8121
1976	0	0	4096	3204	0	0	957	6232	2977	2320
1977	0	0	9116	7030	1201	1325	938	6232	8932	4995
1978	0	0	128184	35320	13775	4936	899	6232	7444	5801
1979	6384	6847	33547	11530	15915	4455	832	6233	14143	5147
1980	0	0	23468	14368	4752	3340	730	6235	4466	3480
1981	0	0	12253	7257	9291	7107	590	6237	14143	11021
1982	0	0	23864	12548	18868	14497	419	6239	6699	2286
1983	3117	3030	63923	32148	17708	8812	229	6242	5211	4061
1984	1796	1741	83612	27666	27103	10990	39	6246	3941	3526
1985	1870	1815	26314	8892	9628	5272	0	6251	0	0
1986	0	0	43020	19387	21214	8276	0	0	0	0
1987	0	0	26541	9133	7546	3937	0	0	744	580
1988	0	0	14781	5455	3992	2162	0	0	0	0
1989	8125	7901	48101	24573	5508	3830	0	0	16407	6518
1990	0	0	13958	6168	2257	1903	2710	2713	15971	4861
1991	0	0	6194	2951	2721	2998	0	0	9257	4850
1992	0	0	36670	15949	4295	3686	0	0	24133	10341
1993	2037	1978	50314	19379	8137	5467	0	0	9141	7469
1994	3184	3085	82580	29429	13568	8034	0	0	12748	6667

Appendix H. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	37253	16335	10271	11248	537833	98858
1956	34565	16012	10780	11038	755704	119290
1957	15688	15762	0	0	507808	95678
1958	15688	15568	0	0	456063	66114
1959	70596	15417	19547	18780	497851	55401
1960	26147	15300	13032	10100	496941	66968
1961	20917	15207	6516	1388	322512	38635
1962	36605	15135	32579	17815	506752	59881
1963	5229	15078	6516	5307	412710	61812
1964	20917	15032	32579	25249	527452	67190
1965	2615	14997	2172	1683	599308	77731
1966	7844	14969	0	0	713086	77628
1967	3050	2377	7049	4120	735691	78974
1968	2615	14929	4344	6343	499386	53609
1969	0	0	0	0	633193	53600
1970	0	0	4727	2918	622252	64341
1971	1017	792	0	0	534420	56967
1972	5084	2176	7143	2900	550880	49378
1973	2034	1585	0	0	500776	57702
1974	2034	1585	0	0	626322	70838
1975	2034	1585	0	0	831901	93517
1976	0	0	820	761	665865	66283
1977	1017	792	9643	4283	633962	79899
1978	1017	792	12054	9762	724648	62168
1979	0	0	9020	5464	697470	63799
1980	2034	1585	16876	5003	728375	116659
1981	2034	1585	3280	1853	594925	61984
1982	0	0	4822	2603	616851	74198
1983	0	0	4018	2386	711902	83289
1984	4307	827	5740	6293	671321	71972
1985	0	0	1607	1558	578153	67099
1986	1017	792	6429	2874	559607	60472
1987	0	0	0	0	502425	54927
1988	2034	1585	3214	2598	441875	66246
1989	5331	4245	2460	1487	510712	58533
1990	10372	5531	820	888	480917	48237
1991	5729	4275	9020	2734	445621	42055
1992	48628	35654	4018	2337	595609	69710
1993	22602	22043	7232	3325	485418	53142
1994	10339	6848	1607	1558	653468	66731

Appendix I. Breeding population-size estimates and standard errors of scaups (*Aythya affinis, A. marila*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1592	6200	17623	15591	123357	65078	110739	101973	11020	9024
1956	1793	6039	19200	15164	128680	63597	131155	99191	12613	8797
1957	1402	1008	16099	4125	90730	25313	92931	18049	8320	2345
1958	2754	1155	13139	3118	95188	30131	132512	32818	11223	2482
1959	2204	1244	22135	4841	130691	43552	188398	57312	15479	6952
1960	751	395	19886	3434	126457	33463	146280	34844	15092	5405
1961	2663	5668	31132	6921	123634	36021	236752	56931	15673	4555
1962	8096	5403	38707	9639	267310	79274	240932	28386	22252	4515
1963	286	259	35748	7153	242551	77368	312842	57736	23661	4212
1964	2304	446	29229	7823	125110	46013	323782	85754	35321	7814
1965	7412	6636	21580	5465	79292	29552	215363	29172	13931	4059
1966	1603	1239	17073	3770	50680	14520	211184	58882	17309	3650
1967	300	329	24039	5765	55043	23428	126858	32534	13931	3338
1968	8113	5123	27863	6072	168336	95177	314440	54885	9991	2414
1969	1002	541	25678	4504	110599	50018	304360	51141	21530	4587
1970	2304	648	20624	3678	88402	34835	242161	39052	20264	7506
1971	3305	2258	20761	6072	68643	24432	224706	31217	7036	2528
1972	12720	9386	24585	5195	113037	47210	200612	28269	13509	2601
1973	2204	544	45755	9419	84938	28477	218559	49709	13509	2748
1974	4307	1058	36877	5317	64794	21880	241669	40380	17449	6746
1975	4708	1756	16936	4892	77239	31948	309769	82270	14213	3746
1976	13021	10170	42887	18212	104312	41060	348859	57762	22234	6456
1977	20132	8490	47394	12930	147099	53704	377623	73321	19842	5990
1978	801	516	29775	8288	68515	26237	252978	40873	22234	6554
1979	801	370	61599	15623	54658	18399	137429	31065	15902	6157
1980	2103	1261	29502	7042	130614	51711	487026	95549	23078	5306
1981	1603	871	36877	6610	68130	26772	417942	90248	9710	2309
1982	2204	1074	62008	14915	69028	22817	223476	49602	8584	1747
1983	1102	371	23765	2864	90455	33213	303623	46675	20686	5411
1984	2704	1184	58321	17325	88787	28776	368527	85914	19701	4942
1985	8914	2920	26087	5772	108033	51214	290347	54053	5770	1252
1986	4106	3273	28408	5892	62481	21591	234281	42681	12805	2850
1987	3005	1035	34553	7395	72488	32252	254439	43516	12946	4433
1988	3505	2372	34963	10354	82239	33060	221989	40941	13931	9230
1989	1903	492	36604	6402	92251	36111	219543	37378	6051	782
1990	2304	550	26634	5657	70054	24862	281251	74355	21249	9439
1991	8914	7787	53540	9666	107391	40832	258633	69881	9569	2568
1992	2002	885	30986	6076	115405	43218	187223	31924	19267	7407
1993	501	364	36582	9876	109506	47987	264865	89576	25596	10582
1994	5205	1479	45045	8778	107967	45836	268059	40876	18845	6854

Appendix I. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	40094	12627	962	10063	66694	30931	252855	68173	38986	23696
1956	39423	12334	2026	9878	66217	30375	250784	66312	38793	23500
1957	31733	10411	2752	9745	67605	22957	198840	34346	28795	16034
1958	27866	10811	1093	9648	70806	24040	305679	50553	45466	21693
1959	28799	7449	9870	9578	60281	28046	195965	39234	30198	16142
1960	49732	19840	9106	9527	56772	18967	243463	31805	30582	11762
1961	48999	19927	4135	9489	47523	18275	222896	50994	41218	23643
1962	48399	15188	33872	9461	85637	36000	299775	47790	53025	19807
1963	41221	11708	13768	9441	57729	15716	281084	44198	34348	19008
1964	25199	6576	5164	9426	71763	21278	239686	32422	37210	29435
1965	10266	2256	5580	9415	47634	14735	116086	17066	34885	30061
1966	19226	3695	6008	9407	89651	20737	223667	32010	30078	15588
1967	23100	6490	6430	9401	48050	13140	157220	22368	13954	11977
1968	23706	3663	6824	9397	49922	17564	242652	32247	28218	17532
1969	28279	7545	7173	9393	56370	17385	208440	27952	22636	16836
1970	10360	3912	7463	9391	71555	27668	240082	36440	28528	9042
1971	29586	6480	7691	9389	34737	11251	137246	21340	24187	18080
1972	19786	6198	7860	9387	70307	19501	178973	28560	17985	16677
1973	26319	5510	7985	9386	80291	29622	203100	27001	46513	10370
1974	28653	4342	8078	9385	49922	14472	212197	35551	25427	20096
1975	32386	9912	8146	9384	60114	18115	180358	33411	26667	22786
1976	30239	10060	8195	9384	74051	20426	221492	34304	53335	42166
1977	26786	5914	8242	9384	121268	32559	271328	38819	41241	16999
1978	27533	3921	8308	9384	108580	30368	254123	39251	34109	22408
1979	23240	6308	8410	9384	65522	13288	261440	47793	47310	17157
1980	26226	6078	8552	9384	81539	30549	281611	38575	39868	26972
1981	32479	5769	8722	9385	67186	22210	198552	36457	41729	20307
1982	25853	6663	8887	9385	66770	19996	193015	35988	37210	24280
1983	33693	6337	9013	9387	73011	20339	271723	33249	33489	20944
1984	32293	5342	3642	1939	90067	21380	228216	34312	36944	27329
1985	19133	3445	4808	2159	71763	18660	183522	27944	30300	21641
1986	26225	2613	1748	409	74467	21460	220701	64784	30831	19107
1987	26878	4313	4990	2464	63650	15171	211604	30918	28439	14046
1988	26131	4786	3751	2721	68851	20347	163944	21819	27376	16548
1989	32946	6154	3132	2228	56362	22323	167157	33330	25563	15792
1990	18386	3349	8523	4394	50733	20430	154670	36344	26206	14037
1991	31453	6198	7321	4000	112032	41968	265167	48208	43470	24829
1992	33579	3832	3094	1148	83282	23403	215225	35332	43256	19484
1993	24625	3392	4004	2015	63967	17833	206339	26579	41399	27091
1994	35258	3489	4004	1740	80582	21820	336659	53330	43521	23829

Appendix I. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	58625	22726	30983	42256	63292	44128	751393	235301	364774	173681
1956	58947	22219	36315	41329	49286	16660	762457	113396	459379	170547
1957	49408	11705	23729	6261	60386	27210	661172	132622	394492	168242
1958	51523	12724	39548	14051	64789	24934	693759	103342	174377	166537
1959	72391	17846	39548	5924	85861	29657	948871	174645	503121	165269
1960	65558	24349	67671	23321	109135	30783	839975	164574	194388	164322
1961	32871	7826	85750	34665	93410	15931	860936	154846	88618	163612
1962	86826	22346	67169	22359	78313	21163	923308	152055	177236	163078
1963	61834	19264	44319	10169	100958	37133	989770	172195	454524	162678
1964	67436	20768	43314	14912	69821	28997	900302	141833	240126	162377
1965	53431	14482	60476	38920	69507	21463	868605	139246	202964	162154
1966	56879	19122	104170	22705	42144	11456	870398	127706	200105	161988
1967	44598	7318	69303	28747	69192	14709	810323	149935	340178	161867
1968	48261	12266	53861	21281	102216	48081	507961	96578	188670	161780
1969	43521	11751	80351	33800	118885	49234	1001529	164146	317309	161718
1970	39858	7049	76208	30225	127901	27253	924124	167275	399393	134520
1971	65712	27324	88889	31275	76426	39650	913595	161916	369990	54358
1972	65066	13245	48085	15501	141739	49627	1023845	185281	559885	94094
1973	68513	15892	46453	24067	76111	27111	905549	166110	468000	139769
1974	53647	12215	56246	20146	62273	23209	861239	192466	437372	66126
1975	42659	10413	57250	25105	57241	26517	751993	160308	612321	183539
1976	58387	10099	80351	36134	82087	32481	894028	139364	245486	43445
1977	65712	9886	89893	37158	48120	19885	909486	157348	442732	133032
1978	64204	11450	60640	32166	50951	14057	678125	119457	554825	270227
1979	58602	11382	134589	54841	68563	34425	981786	150224	385917	52552
1980	58818	12792	75078	24234	121401	27298	1008711	175366	430940	143616
1981	52139	11087	98305	32967	144989	56028	1074907	205857	349469	66959
1982	54724	9236	102071	33183	72337	28266	826999	197469	233694	47665
1983	41366	7356	91023	40451	72337	32885	875579	138548	432012	93233
1984	70883	17343	95417	34017	156626	46119	1514314	287715	362333	60083
1985	22838	4978	45323	16611	60386	22610	844166	148681	376269	64277
1986	62265	11156	37163	12279	60700	23580	750425	123933	358045	149883
1987	46968	8108	37867	14209	64466	14268	773261	142196	528422	139075
1988	45029	9448	78468	17293	85861	40837	788321	136632	234766	87026
1989	59972	13104	67294	28912	42773	8286	924444	184360	240126	56974
1990	45201	10075	98179	30369	49064	16173	726492	145796	164015	23387
1991	100851	32153	172253	37654	88063	17321	749428	141167	177950	50260
1992	62383	10646	114286	36361	48344	9482	681334	139441	212135	107136
1993	85831	13607	88096	28255	44577	8763	605685	116857	220110	65037
1994	84540	15612	118923	25561	87898	19379	763950	130844	139098	50795

Appendix I. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	200602	163282	391977	271614	306301	173930	17135	17884	51798	29263
1956	151768	39218	337790	98673	203007	90074	12640	3639	8139	3990
1957	260663	91716	205762	30680	430704	151047	20239	6537	61520	12347
1958	234286	94540	262617	114850	234794	78610	18700	4486	42948	10575
1959	186188	55110	986844	303913	430704	162042	33258	7603	91264	64737
1960	251353	123733	343839	88297	355929	162903	8403	2068	34822	32239
1961	297900	155810	519819	207013	475569	182208	20002	8698	12768	6591
1962	221874	96330	452134	192348	515948	202864	29589	10590	66163	19399
1963	234286	72195	495453	72818	394812	157559	22843	12891	98664	23991
1964	335138	164678	346546	102149	385839	139136	13493	3322	63130	63723
1965	217219	113598	342485	151131	487533	160919	25802	9127	55716	31272
1966	373927	174450	397987	174922	278163	47095	25328	8587	51305	12998
1967	228080	83497	495453	245629	538380	231141	24145	8269	52023	18240
1968	116367	99100	304582	84463	351443	127084	23198	9376	69275	15805
1969	203255	147637	278861	119497	333497	120676	22251	5136	127814	43466
1970	372006	133673	326664	96079	320037	127099	24737	9513	128733	38255
1971	249876	45399	465050	157872	527413	117238	28879	8024	41815	6781
1972	661188	312676	1399211	445582	761709	291787	23671	6375	83590	13172
1973	467464	235923	483786	119841	478560	74366	47224	16168	126522	36700
1974	251279	68459	331655	82821	445659	172771	67818	36958	57726	16861
1975	369198	142678	431739	101640	575269	151131	42727	13398	76112	13555
1976	306028	127110	262371	50327	522428	177957	22724	9041	78182	9891
1977	464656	105568	473014	75299	326019	114318	41898	7715	81237	14781
1978	335507	65288	338096	58667	409767	158637	51840	15868	59895	6954
1979	415524	85306	530074	101402	334992	83942	65333	9919	135343	54063
1980	293393	129009	432485	90985	497503	178626	34205	15615	83702	32906
1981	395870	212623	438351	117473	334992	78835	55864	22969	66150	14954
1982	175474	87241	433552	113484	418740	126357	31601	14057	57514	13358
1983	256895	126315	442084	84878	397803	109285	51722	9735	350328	109938
1984	359372	94289	584468	156738	371881	90739	32903	11065	35852	11708
1985	317258	118406	242640	52626	312061	78435	19055	5179	114873	53784
1986	343930	124522	307166	87574	220337	63619	13848	6243	41555	7439
1987	209138	76477	290596	66610	215324	54961	24497	16304	151284	56473
1988	218992	78458	389290	68759	227316	111065	10889	3755	103706	23690
1989	279355	96410	338096	86156	200397	67726	17635	4339	92298	19965
1990	178282	78549	294474	62085	143568	35507	9587	2444	103119	20063
1991	249876	94789	227708	42209	179460	49988	12191	2929	112201	26105
1992	100884	20879	275718	59608	132353	40494	12759	4472	207008	67477
1993	253611	61662	238459	72738	117426	45282	11932	5064	93015	17893
1994	156930	30559	309252	78748	198031	75231	12995	2057	58371	7604

Appendix I. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	149777	70849	181672	63873	65912	26884	54022	48969	209027	27998
1956	89223	36812	66134	28656	64672	49368	87472	17711	235387	24754
1957	65651	19917	261439	51755	391009	198213	94063	25817	310554	49824
1958	56043	7382	61113	17558	199814	50313	62376	5178	291365	26900
1959	70888	38346	78778	17917	208578	65176	55889	10834	258971	26147
1960	28042	9660	26120	5333	42559	13690	23722	5544	198762	28937
1961	65651	30825	48697	19998	88059	39740	43989	11788	273732	56774
1962	45197	10378	53793	31765	74076	30619	31092	4428	181522	36030
1963	35300	7319	99658	55852	43709	17616	62184	20159	276931	51572
1964	86699	24176	95034	29371	67606	23690	72778	19590	288837	84543
1965	73569	33141	161234	110920	98154	36986	75081	25759	232005	58682
1966	90724	43466	50182	18794	40682	12897	70705	16187	171316	47229
1967	116457	50554	162379	53901	64882	29438	126326	37596	253213	67298
1968	71741	19814	108539	59129	232350	94502	105022	16379	165585	30170
1969	67648	18105	103022	29372	239076	49093	99149	24848	200365	33116
1970	90037	25251	236927	66968	237578	132911	138302	65886	257498	63394
1971	151186	50895	62068	18952	102562	19523	87058	22498	215018	62892
1972	151908	48106	228415	99622	188528	59449	122065	51652	294706	69438
1973	93776	29839	186066	137928	115066	16638	71972	19722	377271	104421
1974	192112	56161	262316	147520	115810	31205	202098	52757	237661	60572
1975	58982	17541	304775	230138	144711	29009	151948	39915	277168	35975
1976	76074	15693	143958	29642	137392	33516	59190	9866	463227	78571
1977	101112	33922	128730	45870	159362	51688	34892	9292	344523	57323
1978	120852	37175	260862	40263	107203	23953	75657	20697	334448	49990
1979	308150	118221	330868	244676	115560	26570	60111	12410	526114	129431
1980	126871	29267	136412	86606	88812	35992	59996	11841	356017	93744
1981	122778	15584	55734	7462	159397	36560	134156	17144	347062	78444
1982	230109	63547	108039	54888	63634	17437	39613	7098	371401	139506
1983	146130	47171	86542	49582	155411	52588	65869	6952	427558	105515
1984	214501	65380	115855	78149	64258	20835	39153	8573	281178	75599
1985	350279	101878	158056	101387	72934	13438	42377	8161	260550	95463
1986	97019	26631	157161	103631	90472	32643	57232	31980	246105	64708
1987	120612	46356	98435	34406	34422	12278	19231	5359	199656	76691
1988	70778	21148	146918	51339	97635	33342	42032	7256	256718	92060
1989	69815	30465	73011	17566	92020	26421	12897	5286	122921	34432
1990	114112	24244	175137	58724	117451	31935	38347	16996	226845	69050
1991	225334	68055	517243	240257	126341	31935	26140	11329	236241	55154
1992	164942	52439	167138	42118	174252	35312	113848	24442	241911	54912
1993	110203	28765	117447	32755	117467	33452	78030	17579	188253	42176
1994	77889	37264	74785	33759	107234	48283	36436	13668	172439	48026

Appendix I. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	89619	14839	94380	21205	34215	13908	120222	56948	220786	90634
1956	106532	22926	84320	16135	56966	30328	216860	109496	451867	117625
1957	100745	15124	68910	11466	34869	22463	289302	103724	200216	66002
1958	91698	27518	65938	12680	41624	19231	93775	41906	97365	31290
1959	53674	22845	57448	10136	30074	5975	118817	32602	118621	58783
1960	52818	18134	44997	10298	29202	14020	95374	58745	106964	24777
1961	45104	17274	35067	6571	39705	7928	99103	61721	43197	17234
1962	14985	6020	15038	2729	20359	6462	174763	108216	102850	40655
1963	32929	9986	28858	5651	19777	10837	49019	20795	27427	13468
1964	36548	11302	43774	13065	31310	15561	63938	30162	23998	7662
1965	31303	10123	25806	8220	17388	7634	101235	27011	47997	15373
1966	28551	9469	20930	5172	17909	6954	54623	26104	50487	14114
1967	22511	6037	39820	18856	31208	18735	59181	18281	95961	21295
1968	25733	6180	15432	3971	27242	10818	36188	15350	27755	13469
1969	47009	12628	57689	12246	45806	23714	81860	19349	67694	23761
1970	42132	10059	40827	6071	27453	12479	80600	25184	54150	18789
1971	30383	10408	30261	7150	23804	9306	58946	13602	31907	8471
1972	62492	34114	46693	11714	22874	7424	91094	31602	45365	19641
1973	112341	31629	57885	13557	41402	18678	75216	15983	60344	26953
1974	49081	17741	52601	13900	29287	11679	86578	22192	84301	27404
1975	39774	3765	34524	13541	31260	9648	130849	62068	91633	37724
1976	54844	12462	74433	12734	33426	22812	92204	29356	49227	21906
1977	36736	15654	64092	8022	32342	17874	206871	91752	183134	74967
1978	41587	13463	40439	9771	46487	20045	127138	63928	69375	16876
1979	41078	13078	63197	23963	57106	27784	258608	122259	166444	44568
1980	22785	7385	62203	13914	31958	19847	199776	74719	88925	32350
1981	25728	19938	56143	15148	40402	24655	105193	48578	47370	24082
1982	38709	30817	65133	39052	46834	26297	92308	50174	94028	29051
1983	27135	12949	27207	13220	10043	4871	355239	162745	138583	46451
1984	27252	19852	29097	10062	29966	13627	189934	97479	129558	49184
1985	28841	15926	57453	29224	16338	7876	134490	61251	68134	16266
1986	19558	10041	26954	11276	30127	11825	135833	71227	70512	21014
1987	21669	9578	29820	11142	5045	2848	86635	27947	43529	16189
1988	25629	15271	37471	20045	25339	13109	168891	84522	121316	54020
1989	14386	7130	9139	3867	11511	4208	115923	43233	56079	19889
1990	27479	8199	33980	14885	19014	9502	106382	60752	41394	23259
1991	19826	6073	21917	10474	21782	9015	124383	48647	64313	24849
1992	27766	7534	11630	4000	6734	2280	284441	140259	63097	28497
1993	32332	5299	21036	6018	26736	6184	247669	81163	41605	17705
1994	33304	11003	30359	10690	28862	8233	158914	59086	74593	29724

Appendix I. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	291171	82866	44270	11823	82950	31270	98897	36256	0	6721
1956	364952	89231	62532	17893	112313	28008	66133	27122	0	6644
1957	237335	54967	24902	14876	112071	30651	34292	10495	0	6587
1958	103088	30268	9961	6857	146045	39093	69720	40694	0	6545
1959	134247	58337	70278	30002	125969	64650	115190	90331	4301	6513
1960	127840	50006	10514	7874	103026	30739	40733	26621	12904	6117
1961	69093	31038	21028	13351	85156	26085	101928	78939	0	6472
1962	95225	47011	5534	3798	20958	9442	19514	13753	0	6459
1963	40478	12969	11067	3848	13678	6061	32776	23246	0	6449
1964	22132	6979	0	0	35739	14771	17051	9120	4301	6441
1965	55621	13602	7747	4274	16105	6072	28608	19000	2151	6436
1966	50400	12717	5041	4639	15391	5147	17567	12178	0	6432
1967	120895	24209	12365	3684	18521	5175	16464	8149	0	6429
1968	16804	6391	4528	1844	5425	2198	4941	4074	0	6427
1969	112851	25109	20004	6040	7424	2381	15192	6246	0	6425
1970	135685	38637	22159	15090	14353	7353	15882	8226	13320	4238
1971	74532	13890	21311	10482	24709	7809	11021	6850	3878	2394
1972	66898	21876	14238	7938	11834	4062	13142	7445	7803	3229
1973	60816	12323	8503	3297	11888	6441	13612	10082	3850	3602
1974	108283	31610	43144	33573	21626	5583	33967	17475	6486	4018
1975	241497	53436	39843	24414	40703	18186	77641	25840	16610	6891
1976	166030	47513	22631	15644	76257	30329	98296	36094	10038	5020
1977	201328	75582	12325	9349	50471	22710	48118	35343	9138	4034
1978	175246	43975	8257	4845	105738	39892	40415	29834	3237	1419
1979	256512	64520	25109	12329	53177	16274	36691	13799	9297	4441
1980	219302	71895	1812	1755	82459	38422	36696	23795	14448	6837
1981	56277	22878	29336	25817	22840	14317	16128	14942	13919	8827
1982	207687	62727	28440	18490	44034	17940	30098	23759	5769	2003
1983	216831	50126	40101	16709	57292	21467	36763	27281	16275	9374
1984	136326	49731	12674	7840	30359	9438	11323	9109	8391	4456
1985	76648	19867	2806	1291	29020	9886	8735	7206	9392	3575
1986	120258	39294	14580	6886	58216	26072	69510	48834	6393	2953
1987	61019	19070	7070	2165	39891	21639	40043	34031	7551	4298
1988	39214	17794	4516	3385	22554	7992	10419	9213	4094	1199
1989	18124	4691	2355	1939	5504	2065	10128	8908	6898	3490
1990	31624	17453	4217	2883	13746	3164	1967	1481	8212	2475
1991	45957	16999	15489	5628	11466	4295	3790	2189	6402	1977
1992	45919	15898	4205	2314	23834	11279	17069	7739	11371	4645
1993	49201	14228	6512	2598	5251	2881	1884	885	3949	1729
1994	83503	20385	3184	1980	19333	9852	4342	1811	15825	7323

Appendix I. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	51191	26664	0	0	48734	14526	71367	29616	16439	18443
1956	65992	56703	3041	1216	15212	4398	63632	17268	16842	18180
1957	80199	50064	553	632	25512	9871	81227	22143	17253	17975
1958	282118	121389	15756	11916	59773	32502	178019	49597	17615	17817
1959	174617	56623	0	0	65088	18307	116676	40708	17965	17693
1960	92396	24600	0	0	49470	16434	110650	38140	18370	17596
1961	87024	49056	276	209	66478	21263	73323	25791	18864	17521
1962	59723	47885	553	418	20687	6556	72228	21910	19448	17461
1963	92712	41309	0	0	57728	36711	56890	13726	20105	17414
1964	80768	41029	0	0	22895	8107	37875	8734	20818	17377
1965	51760	35226	2211	1672	21096	7127	53056	13462	20520	8494
1966	30137	18353	976	738	35238	13087	46093	13412	33516	13044
1967	44819	17461	407	307	31970	6400	43367	10360	25975	4934
1968	44080	31023	0	0	7556	3984	31606	10345	11132	2735
1969	29321	7761	1583	923	14343	2732	14511	3257	30380	10038
1970	27741	12204	865	518	21281	8116	25632	8847	26383	9619
1971	38792	11643	0	0	19650	8438	38809	25144	15030	4784
1972	28987	10179	511	583	10268	2978	21654	6237	27182	7878
1973	23956	6569	0	0	8251	2551	30122	13086	31979	16639
1974	54734	21432	887	365	40335	18036	43838	17206	30281	6749
1975	43497	15690	0	0	46859	16335	53063	23409	20857	6081
1976	75061	29429	3160	1620	75851	29674	44610	20208	21938	8634
1977	25814	11880	0	0	66791	25305	27967	15114	20393	9233
1978	88525	37051	1273	975	89343	28952	49135	17033	51904	25502
1979	37685	11525	1580	719	19341	6390	21737	7005	60253	21483
1980	71302	31641	0	0	22629	11423	53619	27145	29354	12359
1981	46025	29470	0	0	24857	16396	30129	22070	27549	13550
1982	49353	20376	3642	2217	40372	14518	30516	11962	38128	15998
1983	61769	26022	0	0	39553	17693	60082	26358	32998	14993
1984	36183	8543	217	248	8507	2790	27757	12656	29116	9852
1985	53462	20359	0	0	21451	8066	28929	12582	11624	4398
1986	43245	21608	14488	11458	105835	43863	81937	56102	25616	7111
1987	58132	30104	909	532	41555	23808	42157	21587	37643	9000
1988	30649	10210	869	401	36344	15464	37068	18744	45245	10840
1989	24717	11697	394	299	33683	11742	23263	12238	38057	8417
1990	34400	8689	7354	4203	36297	23845	28313	16466	21464	5119
1991	39671	16655	291	225	16561	10821	12326	5648	18409	4816
1992	32370	16238	2791	2211	37586	27074	23281	13484	10779	5761
1993	22770	8203	0	0	3680	2027	14582	7345	17522	4214
1994	40199	16709	3030	2382	30209	12832	28985	16737	19130	6007

Appendix I. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	3	15344	1162	27302	0	10751	10605	30472	8085	13952
1956	662	15068	1031	26643	0	10451	10135	30033	7822	13723
1957	1295	14853	983	26131	0	10223	9823	29681	7653	13539
1958	1851	14686	1828	1828	0	10049	638	3478	3492	1053
1959	2365	14556	1808	1808	831	831	2799	1197	17511	8353
1960	2897	14453	2017	2017	1025	1166	31486	14519	7184	4895
1961	3474	14373	2021	2021	512	453	9096	3655	7184	2935
1962	4097	14310	1796	1796	1025	1165	55276	21542	20654	7354
1963	4754	14260	2373	24652	1592	738	8218	5564	4490	2609
1964	5434	14220	1709	1709	0	0	350	388	898	1025
1965	7284	3191	3911	24460	7960	7294	8746	2836	1347	1459
1966	11228	7756	4740	24391	5307	4452	4898	2481	5837	1281
1967	16979	10539	675	675	803	436	7437	3250	14009	3703
1968	15884	7395	0	0	6827	1660	9005	4254	7633	4561
1969	19655	6562	2768	1302	3096	1921	20687	5240	12871	4859
1970	6846	3436	2768	1655	11763	3780	14846	4351	10198	2776
1971	555	530	277	284	619	615	17279	10165	10626	3933
1972	12324	4422	2768	1145	24764	10095	20466	5275	7184	3010
1973	17253	4846	23806	11981	12073	3589	9745	3091	8330	4308
1974	5557	3113	1605	1101	3290	2908	28383	10307	6866	1865
1975	5557	2676	10699	6110	3223	1236	49776	30092	9800	4377
1976	7938	2474	5617	3272	30807	28319	35677	11260	11678	2870
1977	14024	8681	1070	662	9272	8613	17551	5807	1062	542
1978	20204	7999	18852	8575	14405	6787	43060	10397	37854	9758
1979	28313	12852	108327	70242	11665	4837	41125	13103	42925	16681
1980	7409	1924	1605	721	598	594	40982	12608	5147	1934
1981	8274	3654	678	585	2401	2064	99040	56999	7383	3518
1982	22841	13932	13791	8197	8490	6377	73881	38588	16233	7467
1983	14129	10212	7998	3684	19378	4307	57254	27458	27365	9064
1984	24151	13520	26221	15033	19463	6592	70709	36711	23855	6269
1985	8338	2776	516	513	15580	13664	72310	32049	29274	12276
1986	7815	2222	15800	14916	5421	1899	80153	24371	33453	13638
1987	7094	3518	9702	4978	3302	1532	64084	18334	17606	6801
1988	10658	2965	7182	6298	5522	3826	40607	19821	35255	19407
1989	8820	4070	2609	1095	7052	2520	23484	13461	12701	7334
1990	11600	5191	3067	1987	9077	3333	22621	8945	17513	4996
1991	6793	1609	40827	34710	17017	4462	34250	16803	14855	6586
1992	3220	1650	2604	1651	7280	3687	12015	5239	8342	4459
1993	10776	4205	2896	2397	1234	1011	22363	12562	11306	6373
1994	9432	6159	16936	10480	3367	1457	48403	19969	43617	16406

Appendix I. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1563	9006	25163	4326	13891	1662	4 8116	46637	157829
1956	0	1538	9766	24646	3901	13624	252774	33324	48490	154258
1957	0	1518	10394	24233	3536	13411	74774	25783	53166	8567
1958	0	0	10904	23901	3235	13240	69064	26526	81119	13087
1959	0	0	7452	3484	5325	7983	92914	42775	160046	37734
1960	0	0	9304	5099	7987	2829	73672	27233	41656	21975
1961	0	0	3625	1143	3994	1415	83674	50579	99206	15770
1962	0	0	31216	11718	666	236	61509	20540	52618	23205
1963	0	0	6760	2590	2662	943	60909	15611	73446	18067
1964	0	0	1392	1198	0	0	78284	28441	182518	88768
1965	0	0	19881	6412	1331	1996	30894	12974	58647	25810
1966	0	0	19086	7974	5325	1886	80784	20639	46589	9832
1967	0	0	9304	4891	1051	851	58550	22838	138670	69267
1968	0	0	11298	5710	4204	2081	111078	17666	283369	80399
1969	0	0	7975	3289	1051	697	71257	12947	166075	127801
1970	493	478	55826	21734	6831	4854	59189	16359	259800	107298
1971	0	0	6424	2736	263	213	90746	71432	234039	121562
1972	0	0	13292	5424	3026	1675	117256	16227	322832	144751
1973	0	0	4316	2728	2843	1085	48271	15211	405595	275723
1974	423	410	7694	3649	2028	1310	90614	71411	254319	54960
1975	0	0	8209	4127	1312	1496	90626	71415	280628	148431
1976	1166	1130	8119	3264	6380	3490	90671	71425	126063	69936
1977	0	0	5238	2313	1864	1287	90752	71440	108524	52076
1978	0	0	37940	12810	21389	10083	90878	71461	151824	80564
1979	6798	5129	15455	8412	9572	4837	91054	71487	594690	320832
1980	0	0	2890	1276	1869	1397	91286	71519	94822	50824
1981	435	467	12294	7993	4397	3099	91577	71556	221981	109033
1982	0	0	15190	8297	19981	13068	91922	71600	144151	61067
1983	0	0	14172	5504	20712	9596	92300	71652	249934	118261
1984	0	0	20493	8163	18599	7765	92669	71712	349947	199843
1985	0	0	9757	4735	5296	3865	92958	71783	72898	54898
1986	0	0	46191	13180	53123	21067	158030	57111	147439	89799
1987	0	0	19044	6905	13076	9664	83325	31844	92629	22070
1988	0	0	33050	17522	24584	14705	77004	25222	53166	17535
1989	0	0	53971	33201	19419	10867	144813	31668	87172	34240
1990	409	397	23716	12493	10684	8657	162053	26282	137878	49037
1991	0	0	19034	10480	30749	15292	193659	39541	63769	9403
1992	0	0	29547	12839	11088	6184	171533	38330	75843	14385
1993	0	0	4871	2849	1185	891	36264	18087	67876	11397
1994	681	662	110150	49817	41732	17653	27629	10059	56303	17055

Appendix I. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	330829	67303	327707	162658	5580434	582140
1956	302256	64978	321406	159227	5958737	434034
1957	169424	63256	267076	101850	5735507	411742
1958	340773	61980	337444	126853	5322364	355117
1959	329222	61031	454190	88713	7012601	492311
1960	240659	60322	244687	45528	4846230	362509
1961	211780	59790	367830	70032	5360136	442248
1962	73160	59390	222297	57816	5268423	426367
1963	88563	59089	227095	72280	5422788	357951
1964	154022	58863	281470	46067	5118090	386145
1965	48132	58693	393418	167199	4639964	411222
1966	55833	58566	302260	48911	4439240	356173
1967	17220	9122	235652	118082	4927671	456101
1968	0	58403	375826	108955	4412682	351756
1969	17969	3135	248110	50240	5139780	378458
1970	29200	8625	224508	91702	5662477	391367
1971	52410	15413	303555	75221	5143262	333831
1972	69631	30899	519404	184024	7996967	718014
1973	41928	8453	401585	176683	6257416	523107
1974	32195	16494	337777	178329	5780464	409752
1975	32195	5515	374760	123097	6460024	485969
1976	51661	17983	194424	96148	5818746	348697
1977	38933	5894	194086	70210	6260238	362792
1978	42677	8461	257401	59512	5984411	402959
1979	88349	40229	384018	92065	7657943	548596
1980	38933	5281	244383	90705	6381655	421243
1981	53159	27102	234275	79153	5990883	414214
1982	69631	39950	324266	85094	5531964	380892
1983	95087	27512	702379	294857	7173798	494870
1984	157759	23979	285598	110471	7024320	484738
1985	52410	21638	203554	66335	5097956	333134
1986	64390	47622	260951	61933	5235304	355517
1987	90595	36183	412433	114019	4862729	303775
1988	19467	10875	311840	110639	4671351	309506
1989	40816	13647	296467	101222	4342050	291337
1990	57048	17318	277749	85912	4293141	264925
1991	60808	16458	251785	90096	5254899	364856
1992	77593	22615	194678	57456	4639232	291904
1993	69060	12511	210063	78209	4080145	249364
1994	75588	27141	177518	67719	4529044	253628

Appendix J. Breeding population-size estimates and standard errors of the canvasback (*Aythya valisineria*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2173	0	916	10948	14629	23810	37131	0	3440
1956	0	2153	0	907	11531	14532	25693	36782	0	3398
1957	0	0	0	0	2694	1360	49266	16692	0	0
1958	0	0	0	0	11941	4538	10182	5709	0	0
1959	0	0	0	0	10936	4489	35264	18409	0	0
1960	0	0	0	0	30922	12479	36457	16533	0	0
1961	0	2095	0	0	6034	3341	4598	3503	0	0
1962	0	0	0	0	14895	8365	7226	2911	0	0
1963	0	0	0	0	31919	23420	33665	16195	1773	1707
1964	0	0	0	0	9671	5924	66345	48421	0	0
1965	0	0	365	346	6171	3340	39413	11883	1128	632
1966	268	262	0	0	9599	6814	71600	49877	376	362
1967	0	0	0	0	13939	11929	22991	9846	0	0
1968	0	0	0	0	23654	15406	112984	30930	0	0
1969	0	0	0	0	23312	16321	34815	11532	0	0
1970	0	0	0	0	10456	5985	27918	7599	0	0
1971	0	0	0	0	10970	7449	24633	10475	0	0
1972	0	0	3649	3458	32911	27180	40727	14146	376	400
1973	0	0	730	530	21598	10194	93934	44811	940	644
1974	0	0	0	0	19198	13736	55507	18648	0	0
1975	1606	1372	365	346	9427	8145	20363	11540	0	0
1976	0	0	0	0	8399	4634	39413	13692	0	0
1977	8029	8769	0	0	35034	19221	96890	39405	4888	2087
1978	1338	1461	0	0	9599	7671	32187	16553	0	0
1979	0	0	0	0	19198	12638	33501	11329	752	514
1980	0	0	1095	838	21940	20966	97219	40533	1504	790
1981	0	0	0	0	17827	9157	62732	26808	3008	2484
1982	1873	1396	0	0	10627	5570	63718	25669	752	725
1983	0	0	0	0	25883	21062	70943	30608	1880	1344
1984	803	537	730	692	20226	9453	70943	28713	2256	1770
1985	268	262	0	0	9770	5977	42697	18125	0	0
1986	268	262	0	0	6856	3437	65688	24163	1880	1417
1987	2409	1691	365	376	16112	11966	54521	24239	3384	2065
1988	268	262	0	0	8570	4532	30217	17098	4888	1944
1989	535	525	0	0	18341	9735	59776	28148	13724	6998
1990	268	262	0	0	22797	12091	82439	34534	11656	4715
1991	0	0	0	0	10970	5415	85395	37633	1128	738
1992	0	0	0	0	15066	7978	30837	11592	1878	1170
1993	267	262	0	0	8560	4257	62986	31450	751	454
1994	0	0	0	0	7191	4431	45271	23620	8638	5232

Appendix J. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	421	2626	161	1380	10	734	282	5837	565	2393
1956	381	2601	190	1373	21	727	275	5768	478	2372
1957	499	448	225	1367	0	0	0	0	0	0
1958	712	662	0	1362	0	0	0	0	0	0
1959	356	331	292	1358	0	0	3302	2209	3062	3001
1960	356	388	1168	1355	803	813	0	0	0	0
1961	416	381	394	1353	0	0	0	0	1081	862
1962	0	0	0	1351	0	0	611	608	0	0
1963	0	0	195	1349	0	0	0	0	0	0
1964	1247	938	514	1348	0	0	0	0	0	0
1965	748	492	547	1347	0	0	9458	4642	0	0
1966	499	364	576	1346	0	0	1742	1247	0	0
1967	0	0	602	1345	0	0	0	0	0	0
1968	249	238	623	1344	0	0	498	502	0	0
1969	0	0	642	1344	0	0	0	0	0	0
1970	0	0	657	1343	524	527	498	476	0	0
1971	0	0	670	1343	524	503	1493	1047	0	0
1972	1746	1403	682	1343	0	0	1991	1408	0	0
1973	499	382	692	1342	524	503	3485	2255	0	0
1974	0	0	702	1342	524	527	996	599	0	0
1975	0	0	710	1342	0	0	498	476	0	0
1976	0	0	719	1342	0	0	0	0	0	0
1977	1372	671	726	1342	2094	2011	7965	7225	3122	965
1978	0	0	734	1342	0	0	1493	1428	2342	2434
1979	2494	2377	741	1342	0	0	1991	145	0	0
1980	499	346	748	1342	0	0	13441	6703	2676	2231
1981	249	238	753	1343	0	0	21406	9976	5352	4695
1982	10474	9736	757	1343	0	0	6472	2959	0	0
1983	748	713	759	1343	524	503	498	476	1338	1613
1984	499	346	876	729	524	503	11699	8494	0	0
1985	1247	956	4282	1877	2094	1644	3485	1787	669	806
1986	1247	956	0	0	0	0	996	726	669	396
1987	997	540	0	0	0	0	9707	6329	2007	1884
1988	3242	1407	0	0	0	0	7467	5722	5352	1987
1989	1247	589	925	637	0	0	8961	3467	4014	3768
1990	2743	1837	1557	1452	0	0	2489	1224	669	806
1991	3616	1855	925	796	0	0	1991	1223	0	0
1992	1494	639	0	0	0	0	4475	2267	5012	6040
1993	0	0	292	308	0	0	2486	1851	0	0
1994	3736	1919	97	103	0	0	3481	1463	0	0

Appendix J. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	516	5974	11878	11631	3044	12347	478	4584	3932	5558
1956	430	5918	11249	11503	0	0	0	0	0	5476
1957	1860	1806	4823	4560	2843	2843	0	0	0	5410
1958	0	0	16454	7765	3553	3553	0	0	0	5358
1959	1502	1017	22695	17676	4264	2537	0	0	25838	5316
1960	0	0	15887	8714	0	0	0	0	0	5282
1961	465	452	1702	1192	5685	4082	0	0	0	5254
1962	0	0	0	0	6396	2383	3466	3478	0	5232
1963	0	0	1702	1609	19899	16333	3466	3478	0	5214
1964	0	0	0	0	2132	794	11552	11592	0	5200
1965	1085	758	7608	11019	8528	8528	0	0	0	5188
1966	0	0	11996	12477	1421	1421	0	0	0	5178
1967	542	531	10780	9005	4264	4264	0	0	0	5171
1968	1085	1161	1702	813	0	0	8190	7603	0	5164
1969	0	0	4681	4055	17767	10951	2310	2286	0	5159
1970	0	0	2553	2414	14213	6133	0	0	0	0
1971	0	0	7943	2700	4264	3414	0	0	0	0
1972	0	0	10780	9816	0	0	0	0	0	0
1973	2712	1752	1986	794	1421	1421	0	0	0	0
1974	0	0	4823	4234	2132	2132	0	0	0	0
1975	2169	1656	4255	4024	1421	846	2173	2172	0	0
1976	0	0	0	0	2132	1391	1127	1193	9689	7354
1977	3254	2275	5248	2661	4975	3015	7323	6227	0	0
1978	542	531	284	268	2843	2041	2253	2266	2528	1998
1979	0	0	3688	2676	12081	5341	0	0	0	0
1980	4881	2366	8227	2493	12792	3900	1127	1054	0	0
1981	12745	10095	9504	1999	21675	7960	5867	3867	4845	6022
1982	1627	1592	3972	3387	4975	2275	2173	2172	0	0
1983	3254	2913	3404	2527	19188	6677	3380	2326	0	0
1984	5695	5572	3972	3755	24518	4454	9013	5343	0	0
1985	0	0	16029	7486	7817	6027	0	0	0	0
1986	1085	1061	5958	4779	12792	5285	3380	2281	0	0
1987	3254	2613	6525	4504	6396	4758	0	0	2422	3011
1988	1085	682	16170	11732	23452	8587	2253	2266	9689	2934
1989	8949	4184	15177	7885	42285	15737	3380	2520	0	0
1990	23049	20128	45391	18387	19188	16560	1127	1118	0	0
1991	6508	4008	15319	8962	33046	14934	3380	3161	0	0
1992	3792	2817	31039	6371	24853	10370	0	0	5051	1404
1993	2167	1093	4961	2746	48641	22533	9006	5145	0	0
1994	0	0	12756	10508	12072	9403	0	0	0	0

Appendix J. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1307	4852	22760	0	18032	25884	11833	0	0
1956	0	0	0	0	0	0	11758	4171	0	0
1957	0	0	0	0	0	0	12302	6028	0	0
1958	0	0	0	0	0	0	30755	21202	0	0
1959	0	0	6118	4212	0	0	34500	8608	0	2840
1960	0	0	27529	9887	0	0	25674	9684	0	0
1961	0	0	0	0	0	0	31290	18220	0	0
1962	0	0	0	0	0	0	17918	4817	0	0
1963	0	0	45882	49091	0	0	15244	5132	9133	9654
1964	0	0	24470	11987	0	0	31023	13309	795	2810
1965	0	0	0	0	0	0	36104	17040	0	0
1966	0	0	0	0	84481	44171	31023	7655	0	0
1967	0	0	0	0	3379	1767	10965	4799	0	0
1968	0	0	58117	80682	10138	5301	9360	5172	2753	1312
1969	0	0	33647	30903	3379	1767	4546	3075	0	0
1970	0	0	4971	2183	0	0	5349	3451	3697	2630
1971	0	0	3911	1967	20275	15657	6686	4786	0	0
1972	0	0	3001	2706	4506	3479	4814	2063	0	0
1973	0	0	5784	4540	0	0	12035	4784	0	0
1974	0	0	0	0	0	0	6419	2499	0	0
1975	0	0	13255	12049	2253	2342	7355	3857	0	0
1976	0	0	9037	2845	0	0	15645	6637	3275	2190
1977	3172	3887	3615	3610	4506	4684	9762	2493	672	662
1978	3172	3554	7230	4078	0	0	7889	3138	1827	949
1979	0	0	0	0	0	0	9360	4782	609	605
1980	0	0	3615	1979	12391	9568	18988	9600	0	0
1981	0	0	12652	7705	36045	14124	26075	6367	4705	3579
1982	0	0	22292	10026	2253	1740	4948	2427	0	0
1983	0	0	0	0	0	0	18052	7436	0	0
1984	0	0	8435	3464	4506	1507	3744	2165	1458	967
1985	0	0	1205	1203	0	0	1070	371	3389	3335
1986	0	0	9037	7965	4506	3479	14709	6109	609	607
1987	0	0	0	0	0	0	16314	5097	1113	1106
1988	3172	2282	9640	5951	9011	5803	2942	1874	1725	1229
1989	0	0	24702	20520	0	0	9360	4630	3895	2896
1990	0	0	3976	3879	0	0	2942	691	3895	2128
1991	0	0	28317	18905	0	0	5616	2444	1805	1781
1992	0	0	3612	3607	0	0	7883	3895	0	0
1993	0	0	4816	3268	0	0	3741	2555	2281	2235
1994	0	0	4816	2943	0	0	8818	4099	0	0

Appendix J. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10383	5564	11947	6589	0	0	43842	8309	74133	15986
1956	12968	12202	0	0	9487	10085	18961	7996	67354	16201
1957	0	0	0	0	0	0	5889	2348	82456	19293
1958	0	0	0	0	2298	2393	20285	15167	144827	55497
1959	4867	3358	31155	15438	9901	10286	69689	19308	62371	14538
1960	11248	9998	0	0	2011	1281	55570	18380	49685	13158
1961	18170	11412	25246	16116	0	0	68255	30976	55323	26038
1962	1730	1628	2970	3029	1207	1277	16007	5347	38762	8461
1963	14276	8104	19306	16377	0	0	42735	16281	75761	20730
1964	9344	4032	144297	107652	0	0	24765	12718	63780	11013
1965	11248	10091	15433	11535	6436	3259	44094	9475	81047	16783
1966	19900	7394	3871	3797	1270	1337	28087	10200	61061	13818
1967	17305	13813	8433	4774	16362	10245	34127	10934	84238	21914
1968	12628	9494	2624	2634	37206	33839	45000	21045	43515	9446
1969	6945	6105	5874	5891	5516	4119	12081	6303	18457	7323
1970	3788	2022	4143	4729	87759	71586	24614	8946	37463	16059
1971	1263	737	0	0	3749	3798	10872	4487	30170	8457
1972	6945	2619	0	0	4709	4972	9664	4369	52841	16828
1973	7787	3238	0	0	32178	32915	33523	9920	38092	6531
1974	1894	1850	0	0	1177	1209	6342	2205	76565	24849
1975	2526	1322	6996	6802	6612	4029	13349	3937	69502	17072
1976	12628	4328	1230	1320	5735	5019	16611	4850	44772	8363
1977	16100	7554	0	0	12067	12740	16158	5964	55472	13664
1978	2526	1789	2018	2028	6033	3907	20386	5931	41376	6991
1979	5998	2262	1968	1980	0	0	11627	3444	34185	8016
1980	7577	3292	1193	1207	15499	15835	30050	8584	55927	11391
1981	18941	8271	13118	6007	8181	4818	35185	12109	43384	14440
1982	15574	7016	2624	1775	1636	1667	16007	4673	56818	17963
1983	12628	8092	0	0	894	900	14648	6707	35318	13626
1984	10102	3065	0	0	4909	3668	17970	6027	23424	5923
1985	2210	1515	1312	1302	7151	7276	14799	5475	40776	8407
1986	1263	802	0	0	2707	2748	8758	3645	44057	14612
1987	1263	1312	1574	1522	3575	2836	6040	1799	45529	12418
1988	9155	5324	6461	5152	13908	14296	18574	4685	32057	6685
1989	8208	4806	0	0	2454	2523	19933	7193	28390	5935
1990	13259	8977	3524	1703	2633	2798	16913	4976	61700	20037
1991	10102	7154	1543	1536	2609	2696	22047	8316	49613	24730
1992	1262	1191	1573	1521	91863	91185	19011	4192	24567	11200
1993	7255	5411	1829	1810	4728	4993	36516	15115	33078	11594
1994	9463	4379	0	0	0	0	72006	48706	47360	17198

Appendix J. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	6852	2388	11329	3650	3926	1944	68815	45662	97043	32456
1956	10041	4063	7369	4019	13969	9621	39519	12379	147021	65943
1957	12970	7972	2549	1084	2617	975	82134	50435	157118	65913
1958	8076	3204	7080	3679	8724	4482	61046	33802	40666	19979
1959	6363	3862	6797	3345	2617	2031	17955	16694	12015	5050
1960	4405	2920	1983	1469	2181	1342	32318	15694	43438	13050
1961	5139	2709	3399	1879	0	0	28727	14876	30037	23635
1962	2937	1191	11612	9626	1309	1286	58173	24349	63771	17235
1963	734	506	1133	561	0	0	36627	12552	19409	11025
1964	7342	4487	8780	6492	3926	2218	33037	12660	31424	11598
1965	5873	2099	13170	7916	436	429	22264	6746	32348	9379
1966	4520	1275	2462	1548	474	482	37984	7132	55453	13064
1967	4113	1494	9044	5896	489	497	34551	10039	28556	8642
1968	5063	3772	3750	3750	5573	3554	34633	7139	16828	7188
1969	3582	2640	2941	1432	1703	1129	52118	12241	38441	17165
1970	8084	3150	3511	2410	379	240	68807	25569	51285	30709
1971	4280	1580	3056	1151	1504	785	54435	18886	38486	16786
1972	7002	5408	2613	1411	3025	2084	42092	12223	28115	12344
1973	5804	1503	5879	1920	4264	1993	80651	41224	58657	27881
1974	20202	10462	1185	742	2241	1836	53036	12832	58279	20569
1975	6043	1961	1102	890	2298	1355	48832	16108	64898	16332
1976	3339	1417	2193	885	1777	541	64265	21448	64616	28762
1977	1027	548	3012	1170	5128	2288	87268	26534	62643	31102
1978	3917	1284	2450	1347	3475	640	38774	13888	25730	9915
1979	5509	2049	5538	3042	8230	5780	84134	35297	54544	15535
1980	1875	593	1649	974	2674	2079	125243	44301	69961	26974
1981	3201	2306	2599	899	234	238	49398	17670	21468	5580
1982	8243	4245	7412	4166	1306	807	17830	8758	33160	9270
1983	8660	2754	2962	1180	2744	673	62222	10329	45661	19735
1984	638	314	2245	1170	303	309	35126	14457	50206	24003
1985	8656	3476	3045	958	4114	2532	37018	9293	28484	11081
1986	5931	1274	5962	4580	3222	1015	37337	12737	27404	11292
1987	1337	180	3658	2127	2966	1939	86917	61710	33775	23177
1988	6390	6586	5995	1901	10327	5285	35965	14557	42408	12921
1989	3470	1159	3560	2257	1237	814	38425	12191	21688	6882
1990	11729	7432	2595	653	2104	880	18882	7132	23721	9413
1991	5979	3160	1558	1558	1263	1285	68057	33831	27893	11607
1992	3403	1907	4789	4789	0	0	33499	12344	26709	12696
1993	4572	1706	6033	5091	2173	1534	40969	23148	23297	11966
1994	8508	3470	5161	1784	2941	1905	31267	8337	23526	11132

Appendix J. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	56181	13414	2238	1440	27982	7991	13975	5551	0	3306
1956	100572	19006	25372	9404	56653	17060	28239	6548	0	3278
1957	38467	11756	1492	881	57949	17485	24883	9157	0	3255
1958	38467	18460	746	722	66482	19779	42266	14043	11608	3237
1959	10598	4257	5967	4445	28181	7321	6476	5757	0	3223
1960	13346	4738	2984	1762	17464	6067	8521	2299	2487	1820
1961	7729	2795	8578	4471	23418	9842	22497	21457	0	3202
1962	35916	18334	1492	1019	15281	6350	1023	975	0	3195
1963	23944	8360	746	722	6747	3209	3409	2098	0	3189
1964	22766	7158	0	0	11907	5124	8521	3291	0	3184
1965	43374	12514	2984	1686	21433	11802	4090	1970	0	3180
1966	42785	12828	2238	1076	22963	7838	6400	2016	0	3176
1967	44414	9826	4360	2083	18830	3362	6769	3597	0	3174
1968	28898	6911	3543	2436	11363	3728	4258	2558	0	3172
1969	54535	13329	3332	1021	10303	4194	3687	1156	0	3170
1970	66924	24671	5174	2343	36106	9376	10653	2366	3239	3239
1971	60031	24751	5647	2678	24444	11034	19049	8848	509	476
1972	27224	9253	2723	1387	26286	6128	8893	2680	896	341
1973	64531	34864	3422	2422	15281	6128	6384	4538	1239	1161
1974	36236	9671	1129	731	25215	9856	7924	2635	1442	954
1975	64877	14529	1891	1103	48691	7868	23695	4561	4999	2346
1976	78939	21071	5471	4531	51661	25203	18325	7490	7815	7360
1977	61639	13784	3479	2075	28372	8482	13060	5365	0	0
1978	35746	8156	738	443	21987	6839	6022	2041	570	534
1979	73837	18143	5557	1786	46451	17265	16408	5817	1563	1467
1980	67319	20759	4669	1733	28475	8656	11538	3598	2787	1395
1981	11641	3873	1120	1084	21320	9492	5152	3552	2159	2022
1982	45066	7937	5190	1987	34608	6750	16041	4907	1186	1109
1983	68185	13310	6915	5108	18438	4154	11280	2812	758	709
1984	35254	10795	1621	1085	30290	8014	5158	2269	322	301
1985	17964	6077	2083	1209	28466	7327	4737	1293	282	264
1986	25682	9604	1981	1307	26403	10187	8422	2699	1724	1614
1987	30777	20746	7352	5224	17845	6785	7490	4924	3139	2954
1988	17344	5750	507	491	20546	6500	2247	1471	1104	1031
1989	7369	1919	1867	1078	4504	795	7662	3629	627	226
1990	5800	1895	324	314	27782	8351	3190	1854	4701	3395
1991	9255	3618	4058	2111	18777	8240	2507	1091	1095	478
1992	14169	4671	0	0	12703	3223	8659	3959	1963	1835
1993	10982	3208	2710	2029	9136	3659	5932	2690	818	404
1994	35464	12087	7682	2214	11584	3663	8211	3080	1344	807

Appendix J. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	7163	2689	0	0	9930	3123	19570	7026	2854	3851
1956	10214	3813	496	378	20044	5045	29932	7817	2791	3799
1957	10233	3045	0	0	6032	1936	32240	10457	2757	3761
1958	41956	14825	0	0	19934	6905	44532	10817	2745	3733
1959	8187	4110	0	0	9194	4430	21963	8844	2751	3712
1960	40592	13659	0	0	15447	5113	17176	5418	2778	3696
1961	13303	3954	497	378	10077	3331	30973	10770	2826	3684
1962	13303	5074	0	0	12137	5696	16824	6443	2895	3675
1963	19443	11394	497	378	8827	2915	29143	7956	2985	3668
1964	34793	18412	0	0	20816	5569	20907	6240	3094	3662
1965	46049	26394	497	567	9194	3354	26890	8710	3080	1811
1966	31160	13169	0	0	7914	2032	26150	7320	542	381
1967	36129	13815	0	0	12008	3314	27111	6467	1598	741
1968	15980	5459	0	0	3369	1516	15829	4257	2131	1149
1969	42058	13138	0	0	4773	1452	14923	4442	5543	3556
1970	15735	6938	2775	2102	6002	2056	18878	5324	3168	2134
1971	25998	10738	0	0	15479	8987	27297	7432	4487	2072
1972	12039	4233	0	0	5139	1916	15050	4615	2640	1315
1973	16229	7620	0	0	6040	2064	11401	4971	4223	1964
1974	8329	3485	1285	992	9095	3513	14219	5198	1320	613
1975	29666	6289	928	702	15173	4844	26799	7405	2112	1991
1976	48001	29199	0	0	19851	7808	35111	15585	13066	7710
1977	30241	11186	0	0	8133	4566	19788	9132	3168	1877
1978	14045	4422	0	0	6977	2109	15691	4716	5939	3297
1979	17851	5289	435	337	9637	3695	19830	6936	8183	5473
1980	23041	4477	0	0	8975	3815	11032	2585	4771	1595
1981	30827	8611	1203	921	8438	2730	23248	7609	4520	2512
1982	14571	4739	0	0	9136	2495	24586	6632	12521	5778
1983	10562	3554	211	160	8312	2073	13539	4548	2946	1591
1984	12104	6038	0	0	13749	4197	12074	4176	2377	1725
1985	13453	4181	314	358	11972	6745	19555	4950	2089	998
1986	14821	5671	384	294	13940	3698	17494	5952	2376	1169
1987	7909	3544	291	329	11104	4963	14024	5525	528	383
1988	10380	3693	0	0	8757	2165	17223	3263	792	647
1989	8428	2761	0	0	11423	4349	13002	4240	2402	1132
1990	18949	5941	0	0	6791	2009	21156	4860	5411	2120
1991	15811	7254	1219	943	9418	4436	15746	4494	569	364
1992	26962	7971	1701	1289	11072	3126	19254	4512	4391	2935
1993	10441	3422	0	0	8758	2546	12960	4836	9341	6139
1994	10116	3427	599	280	9254	2364	6919	2072	6737	2981

Appendix J. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	7	2455	0	2948	0	1926	4614	13643	6937	6887
1956	0	2408	0	2847	0	1839	5921	13477	7057	6811
1957	0	2373	0	2775	0	1776	7121	13339	7150	6748
1958	0	2348	0	0	0	1729	14715	6662	15960	11503
1959	1	2329	0	0	0	0	0	0	6870	3864
1960	66	2314	0	0	0	0	11922	6415	1249	643
1961	151	2303	0	0	0	0	2433	901	625	677
1962	248	2295	0	0	0	0	973	668	1249	1277
1963	356	2288	138	2598	0	0	8945	3882	5621	1589
1964	471	2283	0	0	0	0	14111	6403	3123	1962
1965	0	0	380	2578	0	0	9245	3801	9368	3127
1966	0	0	516	2572	876	973	34305	8379	18735	3636
1967	0	0	0	0	0	0	16016	6026	10492	2760
1968	1356	1360	0	0	0	0	11509	5222	5829	2811
1969	0	0	0	0	0	0	37912	6862	18215	5305
1970	452	486	0	0	511	496	15571	5173	8468	3284
1971	1144	824	0	0	0	0	11171	3302	3539	1741
1972	4069	1897	1828	1389	5110	2543	19342	7448	9055	4477
1973	5425	2723	1828	1405	4088	2858	22849	9395	3824	1676
1974	0	0	914	935	0	0	46956	13151	15110	7025
1975	0	0	0	0	0	0	33367	6962	5919	1484
1976	3165	1986	5484	4208	2555	2479	5845	2494	3973	1454
1977	0	0	1828	1869	2044	1352	6937	2874	1517	777
1978	452	430	1371	1364	0	0	8722	2218	6928	2111
1979	2260	1577	10511	6161	1533	1523	23687	4935	8497	2958
1980	0	0	1652	1642	924	940	23501	8459	3385	1566
1981	837	624	0	0	0	0	25815	7014	6134	2420
1982	0	0	0	0	0	0	21887	6431	10523	4027
1983	2018	2049	1530	1564	0	0	7893	2432	2966	1066
1984	1131	1134	2515	1640	0	0	32869	8732	15492	8965
1985	0	0	0	0	1011	706	14946	8928	5170	3216
1986	452	486	0	0	0	0	26911	7444	9413	3065
1987	452	459	0	0	0	0	21528	7215	7165	2898
1988	1357	804	457	467	3067	2236	14372	5402	4419	1924
1989	2743	1954	1386	1379	517	501	27108	8157	10699	2970
1990	5425	4491	457	467	2044	1669	5655	2619	3974	2164
1991	457	458	0	0	1033	717	7098	3677	1455	837
1992	1187	964	1600	1000	447	435	14586	7398	1107	518
1993	0	0	2215	2203	0	0	9988	5601	6851	2875
1994	5769	4243	2916	2333	0	0	35157	12093	17988	6151

Appendix J. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	13	706	2015	5658	0	1597	0	0	6774	15227
1956	44	700	2331	5591	0	1582	0	0	7522	15059
1957	69	695	2602	5535	0	1569	0	0	9918	12059
1958	0	0	2836	5489	0	1559	32256	34738	12398	5602
1959	0	0	2801	1998	0	0	0	0	9918	3233
1960	0	0	1438	1452	0	0	121491	66941	0	0
1961	0	0	2801	1888	0	0	7266	7209	8679	10552
1962	0	0	2241	940	0	0	0	0	4959	1617
1963	0	0	2627	1444	0	0	1681	1804	8679	10552
1964	0	0	4977	2128	0	0	1850	1864	19837	15587
1965	0	0	1106	871	926	1331	0	0	0	0
1966	0	0	5254	1339	0	0	0	0	30995	6327
1967	0	0	2773	1881	731	615	1919	2127	12398	9742
1968	0	0	1849	1075	731	825	0	0	13638	10716
1969	2744	2657	17871	8691	0	0	0	0	14878	11690
1970	686	664	5546	3384	0	0	0	0	13638	4851
1971	0	0	2773	2094	0	0	5889	26242	8679	4476
1972	0	0	8628	4579	421	455	0	0	9918	7793
1973	0	0	6779	2766	2193	2165	0	0	29755	23380
1974	0	0	5964	3982	393	443	5633	26235	18597	12248
1975	0	0	2363	2008	3236	3345	5561	26236	32235	25329
1976	0	0	560	377	0	0	5486	26239	2480	1948
1977	0	0	281	280	666	550	5403	26243	1240	974
1978	0	0	10255	5220	2071	1963	5311	26249	0	0
1979	0	0	3594	2145	426	344	5210	26256	23556	5741
1980	0	0	6167	5760	914	754	5102	26265	6819	5358
1981	0	0	2136	1766	3800	2917	4996	26275	4959	3897
1982	0	0	1811	1005	430	485	4899	26287	1240	974
1983	0	0	399	386	1894	1039	4817	26302	13638	10716
1984	0	0	15287	8151	518	584	4748	26319	10502	2830
1985	0	0	2338	1785	1261	1039	4685	26340	0	0
1986	0	0	7191	4084	4265	1880	0	0	6199	4871
1987	0	0	4949	2017	719	648	0	0	0	0
1988	0	0	4112	2189	443	489	0	0	6199	4871
1989	0	0	4788	4014	0	0	0	0	16851	8043
1990	0	0	4779	2448	1308	790	0	0	32766	17124
1991	0	0	2769	1891	1460	563	0	0	4681	3250
1992	0	0	983	510	0	0	0	0	10708	2984
1993	779	754	5945	2410	2074	1084	0	0	10426	4258
1994	0	0	12801	7393	1822	1621	0	0	38566	29034

Appendix J. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	544	12778	7235	8746	583081	87790
1956	476	12659	6650	8650	693009	93270
1957	0	12564	0	0	621159	94680
1958	0	12488	28940	27834	742441	96089
1959	0	12427	0	0	484766	50494
1960	0	12378	3618	2828	602214	82382
1961	4355	12339	0	0	432169	65606
1962	0	12308	0	0	357531	43732
1963	0	12282	7235	5655	503882	74843
1964	0	12261	0	0	641616	126868
1965	0	12244	0	0	522120	52816
1966	0	12230	3618	3479	663114	78043
1967	0	0	2348	2504	502576	45359
1968	0	12209	7235	6959	563691	101260
1969	0	0	0	0	503530	53696
1970	0	0	5905	5579	580100	90426
1971	0	0	5354	5800	450674	55188
1972	0	0	4462	4217	425912	45959
1973	0	0	1785	1831	620451	89070
1974	0	0	1859	1775	512842	56820
1975	0	0	5577	5231	595098	56065
1976	0	0	0	0	614389	70064
1977	0	0	14723	8495	664042	74860
1978	3387	2661	4015	2801	373174	41492
1979	0	0	6829	3544	582004	59814
1980	0	0	10708	10258	734570	83764
1981	15242	11977	6146	3301	620843	59108
1982	0	0	12046	8343	513265	50928
1983	0	0	14723	8008	526612	58865
1984	17932	21004	1366	1387	530129	60150
1985	0	0	4015	2592	375929	42945
1986	1694	1331	2677	2499	438350	41537
1987	0	0	2677	2565	450109	77894
1988	0	0	1338	1450	435048	40221
1989	12061	6914	1366	1317	477439	48410
1990	4828	4580	2732	2634	539318	60326
1991	966	916	4097	3305	491151	66363
1992	3012	1275	5354	3956	481529	97303
1993	48618	41009	2677	1526	472055	67642
1994	4230	2777	1338	1361	525604	71113

Appendix K. Breeding population-size estimates and standard errors of the American black duck (*Anas rubripes*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	37	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	210
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	32	208
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	746	765
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	162	158	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	369	370
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	364	360
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	1179	1002	0	0	1499	1311	0	0	0	0
1960	524	536	0	0	3045	2511	0	0	0	0
1961	0	0	899	887	1480	1438	0	0	0	0
1962	0	0	4947	3922	5116	3803	549	403	0	0
1963	0	0	899	899	731	732	0	0	0	0
1964	943	906	5297	3464	7160	5164	183	195	0	0
1965	0	0	1869	1468	780	819	0	0	0	0
1966	0	0	0	0	1539	1617	366	288	0	0
1967	1048	826	851	856	5946	4466	1098	721	0	0
1968	1912	1607	795	779	3045	2295	915	772	0	0
1969	0	0	0	0	0	0	183	176	0	0
1970	382	384	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	476	497	0	0
1976	0	0	0	0	579	579	549	389	0	0
1977	382	384	1255	1200	4651	3607	915	638	0	0
1978	0	0	0	0	2193	1623	183	195	0	0
1979	0	0	0	0	680	658	0	0	0	0
1980	0	0	0	0	1073	1100	366	295	0	0
1981	0	0	0	0	991	809	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	541	544	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	382	392	0	0	0	0	183	176	0	0
1986	0	0	0	0	546	548	366	282	0	0
1987	0	0	0	0	541	533	366	351	0	0
1988	0	0	0	0	0	0	183	186	0	0
1989	0	0	0	0	496	484	183	176	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	527	514	366	250	0	0
1992	0	0	0	0	2926	2179	0	0	0	0
1993	0	0	0	0	2015	1382	0	0	0	0
1994	0	0	0	0	1060	1109	313	329	0	0

Appendix K. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	360	360	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	300	300	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	460	443
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	460	434
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	262	262	0	0	0	75
1956	0	0	0	0	0	0	0	0	0	74
1957	625	622	0	0	0	0	0	0	0	74
1958	0	0	0	0	0	0	0	0	0	74
1959	0	0	0	0	0	0	0	0	0	73
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	73
1962	0	0	0	0	0	0	0	0	0	73
1963	0	0	0	0	0	0	0	0	0	73
1964	0	0	0	0	0	0	0	0	0	73
1965	0	0	0	0	0	0	0	0	0	73
1966	0	0	0	0	0	0	0	0	0	73
1967	0	0	0	0	0	0	0	0	0	73
1968	0	0	0	0	0	0	0	0	0	73
1969	0	0	0	0	0	0	0	0	0	73
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	225	236	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	225	225	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	451	353	295	284
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	316	315	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	47	46	0	0
1956	677	626	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	2030	1977	0	0	0	0	93	93	0	0
1964	0	0	0	0	0	0	279	209	0	0
1965	0	0	0	0	0	0	93	93	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	677	659	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	169	163	0	0	0	0
1971	0	0	0	0	254	245	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	169	163	0	0	0	0
1979	397	424	0	0	0	0	211	208	0	0
1980	793	827	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	397	358	0	0	0	0	0	0	0	0
1986	397	424	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	211	208	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	1112	932	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix K. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	59	0	0	6846	4594	0	0
1956	0	0	0	59	0	0	18414	13840	0	0
1957	0	0	0	59	0	0	0	0	0	0
1958	0	0	0	58	0	0	9017	8769	0	0
1959	0	0	0	0	0	0	18628	16028	0	0
1960	0	0	0	0	0	0	10196	7261	0	0
1961	0	0	0	0	0	0	30368	23049	0	0
1962	0	0	0	0	0	0	59856	43514	0	0
1963	0	0	0	0	0	0	19351	13698	0	0
1964	0	0	0	0	0	0	29688	19939	0	0
1965	0	0	0	0	0	0	17449	11938	0	0
1966	0	0	0	0	0	0	7129	4696	0	0
1967	0	0	0	0	0	0	18601	16133	0	0
1968	0	0	0	0	0	0	45746	30476	0	0
1969	0	0	0	0	0	0	34232	24784	0	0
1970	0	0	0	0	0	0	15518	11411	0	0
1971	0	0	0	0	0	0	25929	20967	0	0
1972	0	0	0	0	0	0	46565	30381	0	0
1973	0	0	0	0	0	0	43816	28667	0	0
1974	0	0	0	0	0	0	25670	20966	0	0
1975	0	0	0	0	0	0	25560	20966	0	0
1976	0	0	0	0	0	0	25476	20966	0	0
1977	0	0	0	0	0	0	25425	20966	0	0
1978	0	0	0	0	0	0	25402	20966	0	0
1979	0	0	0	0	0	0	25403	20967	0	0
1980	0	0	0	0	0	0	25424	20968	0	0
1981	0	0	0	0	0	0	25459	20969	0	0
1982	0	0	0	0	0	0	25489	20971	0	0
1983	0	0	0	0	0	0	25507	20973	0	0
1984	0	0	0	0	0	0	25520	20976	0	0
1985	0	0	0	0	0	0	25551	20979	0	0
1986	0	0	0	0	0	0	10954	7671	0	0
1987	0	0	0	0	0	0	17344	11468	0	0
1988	0	0	0	0	0	0	24647	19207	0	0
1989	0	0	0	0	0	0	15518	10403	0	0
1990	0	0	245	240	0	0	18257	13761	0	0
1991	0	0	0	0	0	0	27385	14900	0	0
1992	0	0	0	0	0	0	24304	10720	0	0
1993	0	0	0	0	0	0	52154	20949	0	0
1994	0	0	0	0	0	0	49887	19067	0	0

Appendix K. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	599	811	7754	4674
1956	0	0	552	806	19643	13878
1957	0	0	0	0	625	629
1958	0	0	0	0	9017	8770
1959	0	0	3855	3006	25161	16392
1960	0	0	0	0	13765	7702
1961	0	0	0	0	32747	23111
1962	0	0	0	0	70468	43858
1963	0	0	0	0	23104	13889
1964	0	0	0	0	43582	20909
1965	0	0	0	0	20191	12056
1966	0	0	0	0	9034	4975
1967	0	0	0	0	27544	16798
1968	0	0	0	0	53090	30631
1969	0	0	0	0	34415	24785
1970	0	0	0	0	16815	11444
1971	0	0	0	0	26408	20970
1972	0	0	0	0	46565	30381
1973	0	0	0	0	43816	28667
1974	0	0	0	0	25670	20966
1975	0	0	0	0	26396	20975
1976	0	0	0	0	26766	20978
1977	0	0	0	0	32628	21321
1978	0	0	0	0	28316	21034
1979	0	0	0	0	26916	20984
1980	0	0	0	0	27656	21015
1981	0	0	0	0	26750	20987
1982	0	0	0	0	25489	20971
1983	0	0	0	0	26048	20980
1984	0	0	0	0	25520	20976
1985	0	0	0	0	26513	20987
1986	0	0	0	0	12263	7707
1987	0	0	0	0	19457	11503
1988	0	0	0	0	24830	19208
1989	0	0	0	0	16197	10416
1990	0	0	0	0	18713	13765
1991	0	0	0	0	29102	14922
1992	0	0	0	0	28657	10983
1993	0	0	0	0	54169	20994
1994	0	0	0	0	51259	19102

Appendix L. Breeding population-size estimates and standard errors of the ring-necked duck (*Aythya collaris*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	791	0	2278	110	4267	0	4530	0	672
1956	0	776	0	2209	105	4155	0	4425	0	656
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	624	641	0	0	0	0
1961	0	743	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	567	585	0	0	0	0
1980	0	0	0	0	567	585	0	0	0	0
1981	0	0	3320	1403	2268	1725	3260	2195	0	0
1982	0	0	1207	614	1134	788	1087	1137	0	0
1983	0	0	1207	661	284	293	1087	1020	0	0
1984	0	0	3320	2543	1985	1131	8149	4147	622	599
1985	221	189	905	690	4537	2532	7606	2941	622	599
1986	2656	2905	9960	3253	13893	4234	9236	4061	0	0
1987	1107	1085	5735	3677	9357	4359	18472	6726	311	331
1988	443	224	5735	1879	14460	6288	9236	3476	1555	1327
1989	0	0	1811	1017	14177	7060	3260	3410	0	0
1990	885	620	1509	872	12192	5342	9236	4214	311	299
1991	443	377	604	358	5671	2478	6520	4154	0	0
1992	884	867	2412	1383	4532	3398	17366	6529	2485	1476
1993	0	0	2412	825	11329	5508	14653	9339	2485	1147
1994	1327	1057	2714	1400	4815	2865	9769	5494	1243	640

Appendix L. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1446	0	1429	0	3196	0	1785	0	1168
1956	0	1403	0	1404	0	3107	0	1731	0	1137
1957	0	0	0	1386	0	0	0	0	0	0
1958	0	0	0	1374	0	0	0	0	0	0
1959	0	0	0	1364	0	0	0	0	0	0
1960	0	0	0	1357	0	0	0	0	0	0
1961	0	0	0	1352	0	0	0	0	0	0
1962	0	0	0	1348	0	0	0	0	0	0
1963	0	0	0	1346	0	0	0	0	0	0
1964	0	0	0	1344	0	0	0	0	0	0
1965	0	0	0	1342	0	0	0	0	0	0
1966	0	0	0	1341	0	0	0	0	0	0
1967	0	0	0	1340	0	0	0	0	0	0
1968	0	0	0	1340	0	0	0	0	0	0
1969	0	0	0	1339	0	0	0	0	0	0
1970	0	0	0	1339	0	0	0	0	0	0
1971	0	0	0	1339	0	0	0	0	0	0
1972	0	0	0	1339	0	0	412	393	0	0
1973	0	0	0	1338	0	0	0	0	0	0
1974	0	0	0	1338	0	0	0	0	0	0
1975	0	0	0	1338	0	0	0	0	0	0
1976	0	0	0	1338	0	0	0	0	0	0
1977	0	0	62	1338	0	0	0	0	0	0
1978	0	0	128	1338	0	0	0	0	0	0
1979	0	0	197	1338	0	0	0	0	0	0
1980	0	0	269	1338	0	0	0	0	0	0
1981	0	0	345	1338	433	416	0	0	0	0
1982	0	0	425	1338	0	0	0	0	0	0
1983	413	267	510	1339	0	0	0	0	0	0
1984	1856	719	0	0	3031	1782	4117	1639	1107	994
1985	206	208	0	0	433	456	0	0	1107	1337
1986	2269	1019	402	265	14291	9937	7411	4253	0	0
1987	619	624	483	298	866	872	0	0	0	0
1988	3713	1796	1127	594	2165	2181	412	429	4980	3732
1989	2475	774	1046	607	0	0	0	0	0	0
1990	5775	2361	1449	423	0	0	1235	909	0	0
1991	2269	725	1207	510	433	436	412	429	0	0
1992	1648	965	1688	937	0	0	2879	1754	0	0
1993	7417	2317	1045	554	0	0	0	0	0	0
1994	2678	1050	563	257	0	0	1645	977	0	0

Appendix L. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1454	0	1115	0	3271	659	10642	6794	10866
1956	0	1415	0	1083	0	0	0	0	0	10749
1957	0	0	0	0	0	0	0	0	0	10654
1958	0	0	0	0	0	0	0	0	0	10577
1959	0	0	0	0	0	0	0	0	45129	10515
1960	0	0	0	0	2758	2105	3587	3600	0	10464
1961	0	0	0	0	0	0	4484	4500	0	10423
1962	0	0	0	0	0	0	0	0	5014	10389
1963	0	0	0	0	0	0	0	0	15043	10362
1964	0	0	0	0	0	0	6277	3848	0	10339
1965	0	0	0	996	1103	1103	0	0	5014	10320
1966	0	0	0	0	0	0	19508	17920	5014	10305
1967	0	0	0	0	4413	3153	15245	8869	0	10292
1968	0	0	0	0	2207	1301	0	0	5014	10281
1969	0	0	0	0	2207	1301	897	887	0	10273
1970	0	0	0	0	5885	3033	8434	4203	4298	870
1971	0	0	0	0	6068	2246	0	0	12894	11094
1972	0	0	0	0	3678	1998	0	0	4298	3698
1973	0	0	0	0	552	552	1243	1110	2149	2450
1974	0	0	0	0	3862	2319	1996	2134	4298	4900
1975	0	0	0	0	2207	2207	3374	2923	4513	4955
1976	0	0	0	0	1103	1103	0	0	9402	3529
1977	0	0	0	0	3310	3310	18367	4257	18804	14217
1978	0	0	0	0	13240	4146	2624	1847	7848	6183
1979	0	0	0	0	1655	1072	0	0	7521	5687
1980	0	0	0	0	3862	2319	875	817	1880	1422
1981	0	0	0	0	3310	1192	0	0	15043	11374
1982	0	0	0	0	3310	1489	5060	4384	3761	4683
1983	0	0	0	0	0	0	0	0	7521	5687
1984	3588	2940	881	515	2207	1577	1749	1759	13163	6340
1985	0	0	661	460	4965	3217	41107	22228	0	0
1986	4934	3408	881	515	1103	1103	2624	2452	3761	4683
1987	897	961	440	416	0	0	0	0	0	0
1988	1346	902	5285	2827	1103	1103	14869	7414	7521	5687
1989	0	0	1982	1194	1655	1072	6997	4795	3761	2843
1990	449	439	1982	640	1655	1072	11370	5076	7521	5687
1991	449	480	661	398	4413	4413	27113	8139	7521	5687
1992	448	480	1320	453	1102	1102	6989	2958	0	0
1993	0	0	440	416	3858	1944	14852	5926	17173	6555
1994	3585	1432	660	323	5511	3367	16600	5281	1878	1420

Appendix L. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	539	7845	30024	25994	56688	23936	4618	2700	70186	19825
1956	0	0	47438	14358	62889	13781	4770	2553	0	0
1957	0	0	0	0	52465	12867	2699	717	0	0
1958	0	0	0	0	5246	7824	1868	890	0	0
1959	5443	3915	94980	25857	73451	11839	8720	3647	0	30247
1960	0	0	9498	4812	36725	14026	2491	657	7771	7326
1961	2722	1957	11872	3629	36725	18932	2284	1234	3886	4109
1962	0	0	16621	7788	55088	28398	6851	1287	3886	4109
1963	0	0	16621	11377	47218	10365	2699	1484	40800	20639
1964	0	0	61737	11387	44595	6589	2076	614	26425	29818
1965	5443	6543	26119	8293	120669	42678	5398	1260	34972	14594
1966	19051	18594	28494	35933	23609	12171	4983	2318	56809	29953
1967	10886	12365	30868	5694	31479	6910	4360	2313	19517	5876
1968	8165	9814	18996	16919	26232	13523	0	0	39705	25946
1969	5443	6183	9498	4812	20986	6016	1246	733	42036	8346
1970	0	0	7717	5488	22735	11762	1246	530	95154	40160
1971	4925	6045	15181	7403	31479	5457	0	0	44038	21029
1972	0	0	12813	7210	8744	4102	2491	632	40827	8245
1973	0	0	8980	3864	5246	2705	2907	1281	27200	7932
1974	0	0	16621	8786	6995	5383	1246	936	25634	7784
1975	9850	1930	20579	4986	6995	4123	1246	855	14942	5292
1976	0	0	17773	4618	10493	5409	830	564	53933	15039
1977	12312	15114	61737	20454	29730	14711	208	200	42036	8398
1978	4925	5244	51447	10538	31479	17299	8720	4465	39246	9674
1979	9850	4506	26191	9885	26232	12306	830	564	17874	5087
1980	2462	1763	20579	6459	20986	9491	3322	1501	43917	14771
1981	0	0	12160	3107	3498	2691	2284	1214	76942	21761
1982	0	0	11225	3801	13991	10765	1038	314	41487	10909
1983	0	0	19644	7743	3498	4384	2907	1594	60313	14250
1984	2462	3023	27127	9551	13991	10765	830	799	57684	20861
1985	0	0	9354	3874	10493	8074	0	0	57800	15024
1986	0	0	14967	6884	0	0	830	549	33417	8392
1987	0	0	35546	8910	5246	5456	208	200	87366	29565
1988	0	0	45835	16083	27981	9606	2491	681	34864	13037
1989	0	0	27127	10106	8744	3719	1868	1100	26281	7567
1990	0	0	40129	19422	3498	2691	1868	844	38356	14041
1991	12312	8053	15902	3861	10493	6184	2076	734	67594	19248
1992	0	0	59801	26550	3494	2059	2281	641	125775	29422
1993	17218	7896	69145	28765	13975	3322	6429	1579	76290	21183
1994	2460	3019	13081	5849	10481	8065	2696	1601	29945	7980

Appendix L. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	6626	4368	20631	9420	15760	6963	25057	16052	1430	1438
1956	0	0	1827	1685	44458	47279	7520	3023	7036	3313
1957	0	0	0	0	0	0	0	0	1491	1467
1958	0	0	0	0	0	0	0	0	3834	3346
1959	2485	2895	0	0	0	0	2506	1930	8733	3542
1960	0	0	1860	1865	13477	10189	193	198	2343	963
1961	4418	3391	1896	1852	26515	13314	385	360	7668	5367
1962	25953	10728	18955	6703	41586	11182	13107	4242	2130	1465
1963	47489	23102	70135	32751	34655	10854	23322	10950	1491	1100
1964	3976	670	33488	17627	76697	37989	20046	5496	3408	2931
1965	39758	15223	22654	9819	74752	21095	22744	9997	7668	3846
1966	20431	6856	60114	17779	102141	25921	34502	6453	2556	1769
1967	18222	5424	49335	14876	97113	21218	43946	14820	19069	9451
1968	64473	29741	61115	22684	111666	32797	94061	18490	9191	5610
1969	21759	8840	42735	12007	135540	30739	28912	9378	7105	4710
1970	54399	13054	97820	38205	145621	43108	46067	12174	9010	3217
1971	71726	19072	77631	26500	145350	38758	72280	17787	17307	11559
1972	35057	11532	23256	6269	122467	26259	38549	16244	20356	9029
1973	26091	9240	44204	11221	41628	11983	18311	7769	2002	1966
1974	18536	5316	17674	8245	48836	14717	44139	12717	10345	4037
1975	17327	7093	80371	66324	94524	22731	43349	9397	11199	3176
1976	43922	13203	57296	18542	124438	23292	5204	1687	10181	4081
1977	25386	6316	46266	13202	73511	15300	5590	2156	16629	3565
1978	29416	6081	70840	19100	127069	28286	8481	2275	38687	13422
1979	26998	9800	47720	21592	74504	17102	10794	2946	16629	4687
1980	66890	12397	80675	26242	141305	28316	28527	9824	6448	2622
1981	87441	29775	114816	34044	166031	42480	28912	8038	21719	8926
1982	67920	14892	52743	17706	121130	32051	18889	5041	22398	5886
1983	37072	9541	57241	15113	129493	35229	17540	8245	11878	5351
1984	33042	10225	116818	32415	144625	40013	9445	3673	33597	13474
1985	30222	9651	93766	23373	159727	40968	26214	9211	12556	5518
1986	47549	12600	140121	83854	67367	24294	16576	6096	9163	3432
1987	65681	13657	114529	24073	177411	40481	26214	7662	16629	4658
1988	41504	10452	122956	55999	91891	19462	31225	9321	28167	8901
1989	31027	6838	41235	13035	82494	18853	18118	7301	31221	7196
1990	37072	9412	75723	29691	127139	27507	19275	7899	6904	3769
1991	54802	18141	66976	20946	143199	34631	28141	11339	9375	5306
1992	134643	68899	278402	95319	295702	71364	104706	33675	4769	3487
1993	56437	14147	95832	24306	144408	34021	46667	15238	8588	7636
1994	38297	10181	87024	21863	167822	54760	30362	9133	11466	9972

Appendix L. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	6816	3699	5321	3148
1956	1777	1333	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	296	296	342	331	0	0	1240	870	2128	2143
1959	0	0	685	702	0	0	8683	3462	10110	4356
1960	592	592	0	0	0	0	2894	2138	3193	2946
1961	888	419	0	0	1582	1046	413	437	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	171	165	0	0	827	812	4257	2878
1964	0	0	0	0	0	0	2481	971	2128	1137
1965	1183	888	1370	730	791	778	6616	3657	1596	1542
1966	1775	1460	0	0	0	0	3124	2241	7449	5117
1967	3328	2063	9758	3377	2637	1368	1562	928	3193	2002
1968	555	547	1301	1301	0	0	0	0	1064	982
1969	0	0	0	0	1582	1018	1172	763	1101	1099
1970	3051	2750	1626	424	527	536	2343	2343	7449	3143
1971	3328	1448	12686	4448	2900	2212	1562	1562	4257	4111
1972	3328	1109	3253	1503	3691	2195	2734	2259	1064	1154
1973	0	0	0	0	0	0	4686	3750	2128	2143
1974	0	0	1626	892	3164	2489	6639	3854	10642	5021
1975	3328	3279	3578	2694	7910	6507	7420	3523	14367	5949
1976	277	286	651	651	2373	2333	7810	3046	6984	2922
1977	277	286	6506	3007	527	519	8201	3788	14467	3809
1978	5825	1116	1626	424	4746	2839	7029	3151	5487	2641
1979	555	547	976	580	3164	3111	12887	8538	6984	2804
1980	0	0	651	651	1846	1815	10544	3586	10975	5698
1981	0	0	7807	4108	0	0	9372	3294	8480	4336
1982	0	0	1301	678	0	0	4686	3362	16961	5723
1983	277	273	0	0	527	314	1172	1172	1497	1028
1984	0	0	0	0	0	0	12496	5568	3991	1570
1985	4993	2092	651	651	527	519	5467	2568	7982	3589
1986	555	572	651	651	1318	805	7029	4222	998	978
1987	1664	819	0	0	264	268	6639	3854	15464	6420
1988	2774	2733	2277	1450	2109	1338	9372	4095	17460	7363
1989	4160	3090	5855	4942	5273	3575	6616	4017	998	1016
1990	2774	532	1952	1506	791	778	9924	3483	2494	1912
1991	3670	3165	227	227	1652	1187	6459	2015	5959	2901
1992	6189	4502	1383	1383	3082	2411	4673	2966	6846	3207
1993	0	0	971	889	0	0	6642	2718	2671	2157
1994	387	390	0	0	735	732	2792	1472	6062	3769

Appendix L. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10478	5573	0	0	3220	1611	1383	735	0	4171
1956	475	470	0	0	8688	3796	7738	2601	0	4110
1957	0	0	0	0	10947	4857	0	0	0	4065
1958	1808	1273	0	0	2898	1840	3595	2830	0	4031
1959	2260	1011	1718	1859	2576	1620	2212	1556	0	4006
1960	4068	1588	0	0	322	322	3318	3164	673	651
1961	1557	971	859	832	3864	3149	1659	1076	3139	3973
1962	0	0	0	0	0	0	0	0	0	3962
1963	3616	1583	859	832	11269	11269	0	0	0	3954
1964	2712	1524	1718	1024	322	322	277	264	0	3948
1965	13559	8808	859	832	0	0	553	527	0	3944
1966	2034	979	1718	1859	0	0	1659	1582	0	3940
1967	4746	1879	859	929	0	0	0	0	0	3938
1968	452	321	0	0	0	0	0	0	0	3936
1969	1808	1068	859	929	966	657	553	503	3139	3935
1970	1852	945	859	929	322	322	1106	710	0	0
1971	1356	736	0	0	0	0	0	0	0	0
1972	452	449	1288	1248	1610	1043	1383	1318	0	0
1973	0	0	0	0	322	322	1106	1055	2173	2032
1974	21243	6494	0	0	1827	1162	2212	1298	362	339
1975	24407	5911	1718	1024	1156	719	4701	1524	724	677
1976	12881	4655	1718	1024	4912	3387	8295	7280	362	339
1977	7684	3557	859	832	867	836	6913	6591	724	279
1978	8136	2907	1288	835	10402	5623	12719	6976	9054	4778
1979	5650	2416	859	832	6357	2152	14102	5970	5795	2902
1980	4972	1794	2147	2079	13581	7740	13272	9609	16298	7805
1981	5650	3125	0	0	8091	3939	9401	8384	7606	4039
1982	27570	9032	5583	3778	7802	5483	7189	6229	724	677
1983	5198	2305	0	0	8091	4030	5807	3330	5070	4741
1984	16271	6621	0	0	6935	2453	3042	2900	724	832
1985	5424	2517	0	0	578	557	1936	1846	4346	1786
1986	2034	841	0	0	2023	621	1659	1582	6519	4205
1987	0	0	0	0	6935	5988	277	264	724	677
1988	2034	1410	0	0	1816	1318	0	0	975	471
1989	0	0	0	0	1006	628	0	0	946	583
1990	1582	881	0	0	2231	992	3558	2924	311	291
1991	1869	906	0	0	3013	1063	2306	179	4028	2034
1992	1824	742	0	0	1854	602	887	356	775	458
1993	907	515	0	0	1478	857	314	217	1029	471
1994	2746	1184	0	0	3876	3241	218	209	2001	622

Appendix L. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	1790	981	343	175	434	2958
1956	9956	10995	0	0	5248	2871	2625	1065	539	2920
1957	830	917	0	0	1671	908	4454	1498	619	2891
1958	8301	7025	0	0	4654	3360	5413	2727	676	2868
1959	44826	16816	0	0	5131	3786	3198	1230	714	2850
1960	5227	5450	807	613	3461	2825	2627	1021	736	2836
1961	6641	4877	0	0	3699	1487	3883	1197	741	2824
1962	1660	1834	0	0	3580	2406	2855	2837	734	2816
1963	17432	14306	0	0	2387	1334	3084	1090	724	2809
1964	830	726	0	0	2506	1093	685	408	719	2803
1965	7471	3441	0	0	835	468	571	321	2335	1006
1966	0	0	0	0	1313	523	0	0	914	523
1967	1660	1452	807	613	3116	2432	4401	2784	7405	5620
1968	830	726	0	0	358	257	2056	909	2917	1848
1969	1660	1834	0	0	0	0	1827	737	222	211
1970	973	1080	0	0	3116	1847	3365	3257	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	4380	1422	0	0	3947	3209	518	551	0	0
1973	1946	1998	0	0	2493	1329	4918	1797	0	0
1974	4866	2739	403	306	2493	896	2330	1260	222	208
1975	9246	3685	0	0	5609	2189	777	484	0	0
1976	5353	4171	0	0	4155	2165	6731	2083	667	479
1977	2433	1975	807	613	2493	2350	2589	2756	222	208
1978	6813	2143	0	0	8102	5363	3365	788	0	0
1979	18491	4073	0	0	2493	756	6989	2364	0	0
1980	18491	6992	403	460	10594	4825	13979	5899	890	833
1981	14599	5497	807	613	18488	9066	17344	7958	890	504
1982	8272	6463	0	0	15788	8973	3883	2031	445	444
1983	13625	3859	0	0	7271	5511	6472	2672	12454	6325
1984	3893	1873	0	0	1870	819	1553	1523	2224	886
1985	7299	2973	0	0	2493	1477	2330	1734	3558	1943
1986	5353	2514	2824	1610	1662	1096	1553	746	3336	1859
1987	20925	9181	807	613	3947	2388	2848	1885	445	421
1988	10921	3386	1086	1239	7459	1969	5577	3209	445	322
1989	9317	2799	351	400	4158	1466	901	703	3781	1561
1990	11688	6525	3114	1524	11761	6440	3109	1752	0	0
1991	8118	1997	0	0	3321	1623	3779	1614	470	436
1992	3903	1628	0	0	1555	751	2907	1150	1782	849
1993	2766	1479	0	0	472	400	1619	988	4007	1549
1994	4992	2287	318	246	3852	1401	715	380	5041	3025

Appendix L. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2000	0	3078	0	2115	606	10904	0	8851
1956	0	1965	0	3016	0	2062	577	10558	0	8571
1957	0	1938	0	2967	0	2022	553	10289	0	8354
1958	0	1917	0	0	3	1991	0	0	0	0
1959	0	1900	0	0	0	0	0	0	0	0
1960	0	1887	0	0	0	0	2939	1878	0	0
1961	0	1877	0	0	0	0	0	0	0	0
1962	0	1869	0	0	0	0	0	0	0	0
1963	0	1862	0	2825	0	0	858	857	0	0
1964	0	1857	0	0	0	0	0	0	0	0
1965	921	868	29	2806	0	0	0	0	0	0
1966	0	0	60	2800	0	0	840	469	1617	815
1967	0	0	0	0	1117	1092	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	584	422	0	0
1970	0	0	0	0	0	0	876	575	731	548
1971	0	0	0	0	0	0	876	827	180	178
1972	0	0	0	0	0	0	315	332	359	363
1973	0	0	0	0	0	0	0	0	0	0
1974	1905	915	0	0	0	0	584	551	0	0
1975	0	0	0	0	0	0	1168	1102	0	0
1976	762	732	0	0	0	0	584	581	539	279
1977	0	0	0	0	431	416	292	276	1078	1068
1978	762	764	385	383	861	918	584	581	1258	1246
1979	0	0	0	0	0	0	0	0	539	391
1980	0	0	0	0	0	0	2921	1893	719	470
1981	0	0	0	0	0	0	0	0	0	0
1982	1905	915	5005	2692	2153	910	4090	2001	2515	1786
1983	3809	1950	3080	1978	5597	4066	55211	15407	44732	13655
1984	762	732	1155	774	3875	2000	9640	3806	1437	1424
1985	762	551	0	0	861	833	2921	902	539	386
1986	3809	2976	1155	1148	0	0	4382	1678	4850	1796
1987	0	0	0	0	2153	1592	1753	1135	1437	823
1988	762	825	6930	2798	3444	1160	2629	1263	898	612
1989	0	0	0	0	3444	1731	5550	3035	5389	1936
1990	381	387	2310	2368	1722	1284	2921	2538	3234	2003
1991	0	0	4195	1985	1706	1116	0	0	823	523
1992	2137	1585	1234	1227	7591	2828	5845	3811	3172	1752
1993	0	0	0	0	5172	3987	0	0	425	422
1994	0	0	11504	9267	3549	2573	3457	1616	709	715

Appendix L. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2017	0	7552	0	6440	40192	17287	20236	16692
1956	0	1976	23	7307	0	6230	1493	1420	19560	16512
1957	0	1944	76	7118	0	6067	0	0	9622	3855
1958	0	0	117	6972	0	5942	0	0	9622	7534
1959	0	0	0	0	0	0	0	0	61579	13178
1960	0	0	0	0	0	0	1868	1867	16357	2473
1961	0	0	0	0	0	0	1855	1824	15395	10189
1962	0	0	0	0	0	0	99243	31229	13470	8683
1963	0	0	955	927	0	0	67608	25270	16357	9092
1964	0	0	0	0	0	0	34233	18280	13470	10548
1965	0	0	0	0	0	0	35623	15698	6735	1684
1966	0	0	1432	643	0	0	162045	61899	12508	9795
1967	0	0	0	0	0	0	60025	21246	7697	6027
1968	0	0	0	0	0	0	1967	1958	3849	3014
1969	0	0	0	0	0	0	18275	6300	6735	5274
1970	1184	1147	1064	728	0	0	35589	10984	29827	7237
1971	0	0	532	531	0	0	46812	50599	23092	3565
1972	0	0	0	0	0	0	16851	3266	1924	1507
1973	0	0	0	0	0	0	32703	7730	0	0
1974	0	0	0	0	0	0	56234	50586	22130	6452
1975	0	0	0	0	0	0	59440	50589	43298	6319
1976	0	0	266	270	0	0	62661	50595	13470	12634
1977	0	0	0	0	0	0	65887	50605	23092	10688
1978	0	0	532	540	0	0	69107	50619	0	0
1979	7894	7457	0	0	631	510	72311	50636	962	753
1980	0	0	532	531	631	711	75489	50657	14433	11301
1981	0	0	266	266	2523	2039	78630	50682	23092	12512
1982	0	0	2127	1166	2838	2129	81728	50711	8660	6781
1983	0	0	26325	9826	27122	14116	84779	50745	34638	19687
1984	0	0	5850	2647	7569	6992	87788	50784	23432	8964
1985	0	0	532	531	0	0	90772	50830	7697	6027
1986	1184	1281	15157	10600	3154	2339	26932	8295	17319	13562
1987	0	0	10370	2636	1892	1095	6733	4891	25016	14014
1988	0	0	1595	1155	631	510	75987	22650	5773	4521
1989	0	0	13295	8835	946	572	64444	16462	15277	6764
1990	1184	1147	7711	3940	8200	7698	75025	23503	9166	4627
1991	0	0	3046	2089	722	603	81758	20723	3819	2048
1992	0	0	20032	11457	0	0	106811	45738	4215	3077
1993	0	0	629	454	0	0	161498	37771	13899	7929
1994	0	0	3846	1849	3733	1901	200593	65806	38645	14750

Appendix L. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	30194	14990	90567	40108	450701	72452
1956	28409	14827	85546	39642	348696	73371
1957	20278	14693	58956	18442	164661	34503
1958	23658	14583	84223	62134	159922	67228
1959	47316	14492	165639	36378	598094	62958
1960	37177	14416	109490	25807	277076	38415
1961	37177	14353	11230	1977	197437	33648
1962	13519	14301	39304	12294	363557	52452
1963	0	14257	30882	24946	460758	67451
1964	6759	14221	22459	12804	370025	61850
1965	3380	14190	61764	25486	512484	66180
1966	13519	14164	58956	18442	648175	93435
1967	0	0	36447	25916	493212	52247
1968	0	14124	33689	26239	489863	71556
1969	1314	1029	14579	6543	374740	41127
1970	21029	11394	58048	41583	673324	86795
1971	26287	20584	35318	17294	658064	83993
1972	21029	15332	27700	13183	408775	42638
1973	14458	11321	85870	75080	333316	79832
1974	0	0	7214	3560	346278	58404
1975	6572	8004	24526	10974	530420	90162
1976	1314	1029	22259	8588	499600	65618
1977	0	0	35318	9334	535615	67151
1978	1314	1029	33240	7353	626786	69231
1979	0	0	18019	5846	453221	63565
1980	5257	4117	47783	22286	688971	75516
1981	2629	2058	58297	24539	815754	91101
1982	0	0	22853	10944	600883	70818
1983	9200	3579	67519	15316	780082	77985
1984	22266	3598	27559	15007	729728	82253
1985	0	0	14543	5939	628713	77296
1986	6572	2905	41550	16149	566989	94197
1987	5257	3833	49860	14846	732528	64847
1988	9200	3579	64403	20125	737421	74608
1989	9462	4261	77376	33379	543824	50694
1990	11030	7759	48758	20232	632464	61284
1991	14182	7869	33918	11037	657626	58535
1992	11304	8612	33240	10644	1286570	155642
1993	11224	5960	41550	13554	867927	74451
1994	49557	16430	84139	26061	880088	98341

Appendix M. Breeding population-size estimates and standard errors of the bufflehead (*Bucephala albeola*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	185	635	1785	4190	16548	8448	3783	8812	0	1924
1956	276	621	2261	4088	16736	8321	4550	8573	0	1881
1957	205	181	2659	756	12762	4052	4016	2307	0	0
1958	341	302	1934	918	10887	4278	2008	895	0	0
1959	614	601	2900	1219	27521	8825	7926	3726	1975	1875
1960	0	0	1450	654	18587	5921	14558	4914	790	527
1961	501	588	3625	1407	12968	4080	5020	3061	0	0
1962	682	349	8701	3483	19020	6673	12048	4199	395	434
1963	292	265	4592	1326	19143	6677	10667	3986	0	0
1964	1023	608	5856	1780	14502	6107	3012	1294	575	344
1965	1636	1004	3347	948	15588	5001	11378	3324	3017	1010
1966	1432	924	7809	3703	13623	3727	13554	4440	4310	1945
1967	205	174	5159	2071	23003	8321	17318	6224	3448	1898
1968	409	349	6554	2554	14409	3838	6526	1999	2730	1468
1969	409	208	4044	1269	6156	2580	10542	3085	3448	2738
1970	0	0	3068	1320	14802	4568	14056	3996	4597	1851
1971	1329	561	4741	2823	19386	7854	10542	2915	287	277
1972	205	174	3904	1591	9955	2942	19577	5769	1437	629
1973	205	174	6972	2202	12837	4538	16063	4286	1437	474
1974	0	0	13805	4173	22399	7964	21585	5467	1580	626
1975	205	200	2510	1211	14802	5681	22589	8511	575	553
1976	205	224	8924	3439	21744	11731	37147	11394	4023	2601
1977	1023	608	6414	2115	22589	10527	15562	4285	862	560
1978	409	349	6972	3509	25150	8918	29115	6572	2011	825
1979	1227	815	15338	4377	22268	7797	29115	9028	2011	1084
1980	205	200	9342	2986	20434	7025	20581	7138	2011	1084
1981	409	287	5020	2284	16243	6501	10542	2407	2011	1937
1982	818	894	12550	4198	19124	6695	9538	2969	0	0
1983	409	349	5020	1482	19124	6406	11044	3185	1724	1386
1984	409	208	4462	1525	15457	5484	8032	2711	1724	1386
1985	205	200	3904	1926	14147	4061	10040	2911	0	0
1986	205	174	7111	3206	15195	5471	9538	2694	862	560
1987	205	174	8088	3188	17029	7346	18071	5020	4023	2230
1988	205	224	8088	3023	15457	5368	14056	4800	2011	1363
1989	0	0	10040	3643	22530	12323	14056	4088	287	277
1990	0	0	5578	1883	12837	5178	8534	2946	287	277
1991	409	251	8366	2979	12575	4335	15060	4178	575	344
1992	409	209	4464	1502	12318	4276	9542	2712	1725	780
1993	205	201	3627	1363	11794	4513	7031	2146	1725	1129
1994	0	0	5999	1753	14939	6086	8035	2193	2012	1364

Appendix M. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	900	1532	0	2174	0	1308	1343	1609	777	378
1956	1043	1502	0	2133	0	1281	1276	1572	650	369
1957	1143	877	0	2103	0	0	3956	4004	1789	1443
1958	544	367	0	2081	0	0	0	0	0	0
1959	817	556	149	2065	0	0	1009	1019	0	0
1960	1361	707	521	2053	0	0	0	0	0	0
1961	2382	1566	0	2045	0	0	989	1001	0	0
1962	2450	866	1041	2038	920	785	467	455	0	0
1963	1906	459	0	2034	0	0	412	426	0	0
1964	1906	623	0	2030	1400	734	1141	738	0	0
1965	1429	423	0	2028	800	806	3043	1457	0	0
1966	1525	654	47	2026	4401	3818	0	0	0	0
1967	1667	584	161	2024	800	554	1902	1082	0	0
1968	1715	606	265	2023	800	806	2853	1132	0	0
1969	2859	1209	356	2023	2401	1408	1902	1082	0	0
1970	1334	627	433	2022	1200	828	3804	1573	0	0
1971	1334	481	497	2021	0	0	1902	725	0	0
1972	1525	489	551	2021	1601	1228	380	363	0	0
1973	1334	601	597	2021	800	806	0	0	0	0
1974	2859	1151	637	2020	1601	1612	380	363	0	0
1975	1906	814	670	2020	0	0	761	506	0	0
1976	4192	997	696	2020	1200	622	761	767	0	0
1977	953	311	715	2020	800	554	1902	806	0	0
1978	3049	1367	729	2020	800	554	1522	1070	0	0
1979	5717	1342	739	2020	400	421	761	727	0	0
1980	4002	1744	749	2020	0	0	2283	1166	0	0
1981	3811	1001	758	2020	0	0	0	0	0	0
1982	3811	960	763	2021	0	0	761	486	0	0
1983	4574	2093	761	2021	0	0	1522	661	0	0
1984	4383	1466	0	0	0	0	2283	1006	0	0
1985	2859	846	892	368	800	806	2283	1021	0	0
1986	3430	1120	0	0	0	0	1902	1271	0	0
1987	4955	1281	223	151	400	384	1522	775	0	0
1988	3621	1182	74	79	800	806	761	454	0	0
1989	4192	1021	0	0	1601	1052	1141	876	0	0
1990	2859	1062	74	79	800	806	380	383	0	0
1991	2096	859	149	157	0	0	0	0	0	0
1992	3813	1310	0	0	0	0	0	0	0	0
1993	4004	1605	149	140	400	403	381	364	0	0
1994	4385	1669	149	140	0	0	761	486	0	0

Appendix M. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	99	1038	0	735	0	1213	0	7612	3394	15443
1956	76	1017	0	717	0	0	0	0	0	15258
1957	355	372	0	0	0	0	962	899	5513	15123
1958	0	0	0	0	0	0	0	0	0	15023
1959	383	373	0	0	0	0	0	0	11026	14949
1960	0	0	484	458	0	0	1972	1979	16539	14894
1961	0	0	0	0	0	0	0	0	0	14853
1962	414	405	0	0	0	0	1972	1409	16539	14822
1963	414	405	0	0	0	0	0	0	0	14799
1964	0	0	0	0	0	0	4930	4052	0	14782
1965	0	0	272	671	0	0	0	0	5513	14769
1966	0	0	1107	954	607	607	0	0	5513	14759
1967	0	0	484	543	0	0	0	0	0	14752
1968	414	405	484	199	0	0	0	0	11026	14747
1969	829	576	0	0	1213	723	2958	3129	11026	14744
1970	0	0	242	229	0	0	9273	4707	11813	5729
1971	3316	3100	1211	858	0	0	7888	4524	28352	11213
1972	1243	892	484	287	0	0	1947	1995	33078	23999
1973	0	0	242	229	0	0	0	0	28352	19929
1974	0	0	0	0	607	607	4388	3531	35440	17186
1975	0	0	0	0	0	0	0	0	22327	20172
1976	414	444	2421	2055	0	0	7693	3584	33078	10115
1977	0	0	242	229	0	0	15386	5359	31010	12071
1978	0	0	0	0	607	607	1923	1360	10786	8529
1979	414	405	968	643	607	607	10578	3884	28943	14224
1980	414	405	0	0	1213	1213	14424	4418	20674	15703
1981	1243	637	0	0	1213	1213	7789	4007	14471	3659
1982	829	811	0	0	0	0	0	0	8269	2529
1983	829	811	0	0	1820	1189	13462	4777	20674	8048
1984	829	576	242	229	0	0	10578	3215	39280	11211
1985	1658	899	0	0	1213	1213	21155	7277	22741	5456
1986	414	405	0	0	3033	2324	26925	8522	20674	3895
1987	1243	1216	0	0	607	607	7693	3197	26876	6046
1988	1658	899	0	0	607	607	12501	3172	18606	6535
1989	829	576	0	0	4852	2350	30771	12069	26876	16496
1990	414	405	0	0	1213	1213	8654	4088	16539	5058
1991	829	811	0	0	607	607	3846	2605	16539	8670
1992	0	0	0	0	606	606	8645	4109	15085	7861
1993	415	406	0	0	0	0	7685	3379	18882	11781
1994	829	517	1209	475	606	606	9606	3115	20652	8032

Appendix M. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10436	24499	25684	31467	8936	26989	5416	3916	11042	3467
1956	11956	9759	44335	20904	8643	2111	5016	2489	2595	2448
1957	17953	21538	10443	3037	14421	7560	4337	1720	0	0
1958	2992	3590	15664	5031	2884	4286	5706	2700	0	0
1959	11969	9770	60044	31422	31725	7169	9815	2723	5521	16091
1960	14961	14541	26106	15643	31725	11481	7304	3693	5196	5492
1961	5984	2537	23496	10747	20189	5620	9130	4075	2598	2746
1962	14961	13314	78319	34752	14421	7560	8902	2699	20786	16958
1963	0	0	13053	8997	8652	2118	3652	1857	7795	7352
1964	14961	9182	26106	12264	49030	17967	12326	4750	14255	15839
1965	0	0	39159	19425	31725	5942	4337	1101	18187	19223
1966	20946	16028	31328	13598	34609	18143	9587	4528	24735	10252
1967	8977	7742	67876	49654	11536	6048	13695	8572	16062	6570
1968	14961	14541	52213	25050	14421	10267	9130	3058	17856	7410
1969	14961	8879	52213	21203	74987	72200	6163	3177	21583	5714
1970	16243	9533	61513	32819	26918	13507	7761	3105	26291	7033
1971	54145	32068	83454	30013	71141	49930	6848	3401	16826	6730
1972	18951	8892	83245	29369	49991	26769	5022	2808	31593	6765
1973	37901	23970	38258	18052	24996	8636	5250	2243	16239	5194
1974	40609	22205	69182	20600	17305	5834	5478	2353	36258	7664
1975	35194	16526	76926	16579	30764	11200	6619	3449	22610	8721
1976	43316	21628	56049	16229	32686	6810	6733	2970	51438	12693
1977	10829	4086	65819	19879	23073	12531	7532	2394	28108	6907
1978	24365	6146	74561	23449	23073	7056	6391	2769	40012	10179
1979	18951	4010	90502	27540	38455	13505	3652	1312	43130	10523
1980	20304	13006	84845	22111	68257	23311	3652	2025	38587	11688
1981	29780	22143	47308	22935	48068	9542	4565	3030	52451	11351
1982	8122	7286	40109	15720	32686	6263	2283	1081	35551	10671
1983	56852	46549	76104	21873	76909	27728	7989	3452	43529	12945
1984	67681	20338	94615	25402	32686	7437	6391	3133	26750	6476
1985	18951	19369	47308	11836	19227	6752	2054	898	16826	4339
1986	29780	17870	87416	17206	24996	5630	7761	2525	16628	4182
1987	59559	51343	84331	22807	59605	19916	4793	2279	37045	9356
1988	21658	10182	105414	24852	49991	19324	4109	842	23066	7931
1989	43316	23636	75075	19288	38455	10008	4109	1874	29446	7861
1990	37901	31469	55432	12932	13459	4538	4337	3120	35620	8424
1991	37901	15310	56564	19330	28841	6803	3424	1678	27221	7642
1992	16227	10334	34930	13558	24970	10485	4104	1570	90856	21201
1993	27044	6629	65751	22129	15366	6679	4332	2510	51910	11907
1994	37862	13992	81161	21459	23049	12513	1824	940	39987	10636

Appendix M. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	5169	1831	14395	7184	15328	4476	3909	2513	20981	4295
1956	4426	2566	7321	6163	1349	1434	3905	2642	29532	7070
1957	5908	2944	12918	6958	0	0	1675	910	30647	7812
1958	5815	2887	9771	5733	11770	3356	1675	1295	34974	9286
1959	2492	1033	12595	6809	6338	3759	5026	3884	41103	9610
1960	29538	16722	26124	12623	63938	24999	2706	1712	30647	7956
1961	4431	3755	9506	4298	11472	6013	14821	5996	51920	13056
1962	11077	5828	11407	6360	11329	6890	2964	1927	21273	5927
1963	8123	3749	17744	7636	6179	2265	5413	1894	25599	7274
1964	11963	3018	3732	2969	0	0	4640	2638	23076	5989
1965	4431	4388	2634	1920	5493	4805	773	309	70308	44781
1966	4431	2717	6607	3575	6504	2274	5929	2631	30287	7798
1967	20677	11043	17993	7746	2793	1855	16497	10720	41155	11660
1968	21555	5472	71094	42720	39479	14692	15723	4222	28892	5599
1969	22094	7012	24063	8240	39233	12083	8764	2938	39905	11164
1970	17244	4274	71595	24257	7490	6833	13017	3587	38411	8850
1971	44726	13677	59542	18361	51594	17183	14692	5085	30733	11402
1972	27482	6476	53491	16540	36171	6981	18301	10469	49426	15064
1973	33230	7889	34931	11681	27463	10814	4897	2223	28808	5975
1974	19938	7457	44784	13140	27128	6702	5413	1661	23160	6451
1975	28560	8976	41052	12409	16929	4894	10053	2529	46530	7588
1976	35565	12818	70324	16784	46497	14240	18688	6650	45381	8170
1977	32871	7942	56569	11489	29960	10690	13532	4191	34754	6982
1978	31793	9266	94734	36469	23687	6893	10310	3551	56870	16522
1979	15627	4657	89007	24025	41674	13441	7733	3018	64338	18357
1980	32871	7818	49364	11997	27211	10611	6186	2451	31882	15203
1981	37721	11893	49582	19048	37704	13280	3609	991	53998	20988
1982	29354	9497	23511	7004	33515	9946	6186	1910	37913	9380
1983	47960	14027	69519	17110	60267	21954	5671	1890	55434	18285
1984	16705	6057	48429	13075	16757	5068	6444	2151	23552	6324
1985	28560	8514	32468	13513	24412	11199	9924	3278	15510	5437
1986	16705	5702	68059	33740	15400	4841	5413	2447	32456	11362
1987	16705	6647	29557	8802	20597	7489	3866	1407	21254	9068
1988	24788	7557	25065	7143	13964	4358	4124	1916	43658	11716
1989	17783	6164	53139	14344	31071	8834	3351	1282	31594	9239
1990	32871	9872	72188	20239	33705	8879	5413	2105	36522	12004
1991	33410	9749	75078	26583	35999	11951	10182	3328	74703	26016
1992	45487	14306	122132	35018	107290	26128	25749	6680	64643	32593
1993	60829	12801	112363	31968	61320	14629	9761	2979	74565	29051
1994	34452	8544	58922	23325	29710	8523	8759	5117	41964	14906

Appendix M. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1502	964	2318	939	1339	902	4773	3009	1626	1702
1956	3001	1543	2316	2055	1783	728	2957	1849	5436	5247
1957	2254	893	869	592	0	0	6075	4881	8130	4883
1958	2003	875	1159	751	1339	879	2527	1576	2439	1771
1959	1753	926	0	0	1785	728	6318	5638	2168	2093
1960	250	250	1159	751	893	878	5897	3791	4607	2700
1961	1002	749	290	303	0	0	2948	2034	2168	1554
1962	0	0	869	892	0	0	421	414	1084	1047
1963	501	321	0	0	446	439	6318	3981	4878	2979
1964	501	501	869	892	0	0	7792	7701	3252	2061
1965	250	250	580	560	0	0	7160	4504	11924	7325
1966	1252	988	1449	778	446	439	4773	3410	5420	2507
1967	469	462	5231	1219	1785	1254	4376	2598	8672	4455
1968	0	0	1101	1101	2455	2413	12729	10682	12195	5312
1969	2347	1777	551	551	1339	1316	14718	7747	16261	9656
1970	1408	199	551	551	0	0	6762	4100	7588	3160
1971	939	925	826	826	1339	879	6762	3618	3252	2163
1972	2347	1054	1101	566	446	439	19492	10669	7588	3640
1973	0	0	0	0	1785	1254	8751	5196	4336	2704
1974	939	455	551	551	1339	879	7956	4732	5420	3066
1975	939	925	3304	2540	5356	4418	19690	14859	8672	5323
1976	939	925	551	551	446	439	9149	5284	5081	1496
1977	0	0	0	0	446	439	15514	9496	9655	5342
1978	1878	1248	551	551	1339	459	20685	15343	7622	4540
1979	939	497	551	551	1339	855	21282	12858	13720	7485
1980	0	0	0	0	446	439	14718	7165	4065	2823
1981	469	484	551	551	446	439	12729	8933	7114	5138
1982	3756	2184	551	551	0	0	11138	5794	5590	2739
1983	939	497	551	551	446	439	19492	10625	8893	6506
1984	0	0	2202	1132	0	0	9547	7540	9655	4742
1985	0	0	551	551	893	878	13127	6133	5590	3133
1986	469	462	0	0	893	878	13724	6797	7114	4392
1987	1408	1452	0	0	0	0	9945	5236	8130	5561
1988	469	462	1101	1101	5579	4576	9149	5588	4573	2537
1989	469	462	0	0	446	439	10108	5132	4573	1512
1990	0	0	0	0	0	0	17690	9550	9147	4275
1991	1579	1556	0	0	3754	2312	29129	16016	8307	4748
1992	721	711	846	846	1371	1395	21465	9086	10675	6607
1993	2853	1924	836	836	1356	1334	31795	13851	10367	7717
1994	274	270	332	327	520	316	23537	13635	15381	9489

Appendix M. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	1242	798	2349	3841
1956	0	0	0	0	0	0	413	394	0	3800
1957	0	0	0	0	0	0	0	0	0	3769
1958	0	0	0	0	482	482	2070	1972	0	3745
1959	0	0	0	0	482	482	0	0	0	3727
1960	230	229	0	0	1446	975	1242	1183	0	0
1961	453	319	0	0	1446	975	2483	2366	0	3703
1962	0	0	0	0	482	482	0	0	0	3695
1963	0	0	0	0	0	0	0	0	0	3689
1964	0	0	0	0	482	482	1656	1578	0	3685
1965	0	0	0	0	482	482	3311	3155	2349	3681
1966	460	461	0	0	0	0	3725	3550	0	3678
1967	921	536	437	424	2410	1878	1242	1183	2349	3676
1968	1036	499	0	0	1446	1446	2070	1972	0	3675
1969	460	323	0	0	1928	1417	5795	5522	0	3674
1970	472	324	875	517	1928	1928	2897	2346	2114	2114
1971	460	315	0	0	482	482	1656	1156	4879	2848
1972	2072	937	437	424	482	482	1656	1578	2982	1252
1973	230	229	437	424	1446	1446	2690	1846	2711	1104
1974	1151	822	0	0	456	432	4139	3432	3795	1978
1975	5295	2055	437	474	1730	1223	7864	5976	4879	2942
1976	2762	1058	1312	845	1730	1667	3725	3550	2169	2025
1977	1611	831	0	0	3028	2917	8692	8282	4337	3218
1978	3913	1004	0	0	3893	3225	4553	4338	5693	4044
1979	691	499	0	0	2163	2084	4553	3886	1084	1013
1980	1381	571	0	0	433	417	3311	3155	7048	1345
1981	460	315	0	0	4325	2656	4553	4338	6506	1433
1982	0	0	0	0	3028	1457	4967	4299	4337	1664
1983	691	494	437	424	2595	2501	4139	3944	3253	3038
1984	691	494	437	424	1298	1250	6002	4481	2169	556
1985	230	230	0	0	1298	1250	6623	6310	9759	4560
1986	1151	666	0	0	3028	1170	8899	6995	2169	2025
1987	460	320	0	0	6921	4391	7450	5118	5693	4391
1988	0	0	0	0	1730	1223	4967	4733	3253	1520
1989	230	230	0	0	3244	1279	3725	3124	3253	2215
1990	691	385	437	424	1298	846	2483	2366	5422	4225
1991	289	287	0	0	4021	2325	2565	2444	7281	3024
1992	537	390	0	0	2352	1616	2532	2091	9582	2940
1993	235	235	0	0	756	775	724	691	948	888
1994	1876	735	509	493	386	372	369	352	16672	4613

Appendix M. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	8077	6522	0	0	536	518	1453	759	87	1070
1956	3103	1751	0	0	0	0	512	376	113	1062
1957	0	0	0	0	0	0	1197	1227	137	1056
1958	6213	6871	0	0	715	493	2290	1286	158	1051
1959	7456	3416	0	0	715	386	1539	924	178	1046
1960	4694	2303	0	0	357	221	1881	832	197	1043
1961	2485	2748	0	0	1161	587	4616	1536	213	1040
1962	4349	3610	0	0	0	0	513	510	229	1038
1963	12426	7258	0	0	179	173	2564	890	244	1036
1964	6213	4793	0	0	0	0	3419	1749	259	1034
1965	13669	10742	0	0	536	274	3932	1795	1318	589
1966	6213	4793	0	0	357	221	6668	2210	0	0
1967	22368	11090	0	0	1866	949	6006	3288	380	355
1968	2485	2748	0	0	0	0	7522	3417	760	462
1969	19261	11750	0	0	1250	589	5214	2202	753	422
1970	1457	684	0	0	933	546	3875	2432	376	352
1971	5463	4815	0	0	0	0	6200	3461	0	0
1972	4006	3613	0	0	777	732	2519	1610	376	356
1973	728	748	604	690	0	0	2325	1459	0	0
1974	13112	8574	0	0	0	0	5231	3441	1694	1290
1975	10927	6315	0	0	2177	1356	1550	670	376	352
1976	12748	3001	0	0	1866	831	7363	4764	0	0
1977	7649	5977	0	0	2488	1639	4456	3239	0	0
1978	18211	9391	0	0	2177	653	9494	6766	0	0
1979	4371	1830	0	0	933	546	6200	3892	376	352
1980	16026	6229	604	456	1244	840	1938	852	376	352
1981	13841	5528	0	0	1555	696	10075	6851	753	455
1982	10198	3968	0	0	2177	1176	7363	4764	1694	1080
1983	13112	4429	0	0	4976	3914	5813	3354	376	352
1984	12019	2306	0	0	1244	1171	4650	2932	1129	843
1985	13841	6384	0	0	2177	2050	6006	3279	376	413
1986	15297	4281	604	690	1244	1171	7169	4065	376	352
1987	14205	5619	0	0	3732	1296	12788	8482	0	0
1988	17483	10198	604	690	3421	2830	4263	2252	4141	1990
1989	14205	7434	604	690	3110	1474	9300	5382	376	399
1990	10198	3339	604	456	3110	2342	10850	5257	1506	1094
1991	21822	12898	0	0	1285	586	7606	3548	830	769
1992	19064	10190	411	316	2431	1533	10010	6070	478	477
1993	3183	1357	0	0	1903	1538	12193	8605	358	379
1994	11687	6998	0	0	3326	2214	8635	5671	337	315

Appendix M. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	220	1518	0	1125	0	1098	0	687	0	910
1956	238	1511	0	1112	0	1081	0	680	0	899
1957	257	1505	0	1101	0	1067	0	675	0	890
1958	279	1500	0	0	14	1056	0	0	0	0
1959	304	1496	0	0	0	0	0	0	0	0
1960	329	1493	0	0	0	0	0	0	0	0
1961	355	1491	0	0	0	0	0	0	0	0
1962	380	1488	0	0	0	0	0	0	0	0
1963	403	1487	75	1065	0	0	0	0	0	0
1964	425	1485	0	0	0	0	0	0	0	0
1965	0	0	122	1059	0	0	0	0	0	0
1966	1290	1294	144	1057	0	0	0	0	0	0
1967	0	0	0	0	945	889	0	0	0	0
1968	1290	1238	0	0	0	0	0	0	0	0
1969	661	640	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	494	466	309	306
1971	0	0	0	0	0	0	0	0	0	0
1972	1290	929	2607	1227	1458	1484	0	0	0	0
1973	645	699	0	0	0	0	494	483	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	645	656	652	648	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	1290	807	652	648	0	0	0	0	304	301
1979	3224	2206	1303	798	0	0	494	466	608	614
1980	645	609	0	0	0	0	494	516	912	643
1981	1612	1617	0	0	0	0	989	638	0	0
1982	3869	1852	652	668	729	705	0	0	0	0
1983	0	0	0	0	0	0	2472	1415	1216	941
1984	645	609	1955	808	1458	1409	1483	1450	3649	1903
1985	645	619	0	0	0	0	494	483	0	0
1986	0	0	0	0	0	0	494	466	304	301
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	1458	920	494	516	0	0
1989	1290	762	1303	1296	729	705	494	492	304	307
1990	4513	4333	0	0	0	0	494	516	0	0
1991	1332	1279	2693	2677	753	728	511	533	0	0
1992	818	821	1655	1048	2775	1823	1255	877	386	383
1993	0	0	0	0	0	0	466	487	2008	1419
1994	0	0	2333	1760	4565	1499	442	417	1905	1107

Appendix M. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	243	0	1469	0	1256	8269	5687	22350	30910
1956	0	241	0	1449	0	1244	15951	7973	24169	30601
1957	7	239	0	1433	0	1233	0	0	20100	8349
1958	0	0	0	1419	0	1224	16941	10399	29621	5839
1959	0	0	0	0	0	0	6058	3161	59243	16110
1960	0	0	0	0	0	0	16241	14017	23274	10373
1961	0	0	0	0	0	0	9303	4039	43374	11526
1962	0	0	0	0	0	0	17365	5459	15869	3355
1963	0	0	0	0	0	0	25832	10581	17984	4353
1964	0	0	0	0	0	0	0	0	20100	4646
1965	0	0	0	0	0	0	3073	1891	45490	38915
1966	0	0	404	409	0	0	4305	2662	33853	9606
1967	0	0	0	0	0	0	6553	2879	50780	11514
1968	0	0	0	0	0	0	51306	33529	37027	13463
1969	0	0	0	0	0	0	36016	10510	55011	35194
1970	1002	970	0	0	0	0	84895	42755	41258	14252
1971	0	0	0	0	0	0	21637	22470	58185	12674
1972	0	0	0	0	0	0	18558	5295	82517	24500
1973	0	0	0	0	0	0	28298	7800	33853	12880
1974	0	0	450	435	0	0	22588	22466	66648	13137
1975	0	0	0	0	0	0	23013	22465	57656	19991
1976	0	0	0	0	0	0	23526	22465	29621	6648
1977	0	0	0	0	0	0	24100	22465	41258	14847
1978	0	0	450	450	0	0	24703	22467	115312	33169
1979	0	0	450	450	1068	879	25300	22469	82517	21352
1980	0	0	0	0	1068	1178	25847	22473	58714	12786
1981	0	0	900	914	0	0	26295	22479	24332	19126
1982	0	0	1350	943	1068	897	26624	22485	44432	12082
1983	0	0	1800	1377	4271	4713	26832	22494	64532	36705
1984	0	0	1350	922	0	0	26947	22504	53767	21972
1985	0	0	0	0	0	0	27027	22517	17984	14137
1986	0	0	3151	2225	1601	661	12220	3701	16927	13305
1987	0	0	0	0	0	0	12863	5506	56069	20593
1988	0	0	900	602	534	430	28298	11193	29621	5366
1989	0	0	2701	1439	1601	661	15436	4752	46168	15549
1990	0	0	450	435	0	0	20581	8235	68759	28640
1991	0	0	465	472	0	0	23153	8235	73671	19617
1992	0	0	3999	2787	678	745	19274	10624	100585	27685
1993	0	0	0	0	0	0	34694	9788	36034	7232
1994	0	0	6041	2248	1433	1151	11565	4458	34703	11013

Appendix M. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	57628	30797	102246	41399	366125	81622
1956	55082	30483	103752	40767	364771	68695
1957	40876	30225	98777	37712	310342	58378
1958	40876	30014	104950	31015	321042	50422
1959	111481	29841	114211	22589	554638	60282
1960	44592	29699	111124	31272	512920	65203
1961	70605	29581	101864	31191	423797	52418
1962	37160	29484	74083	23824	412891	60913
1963	40876	29403	126558	42395	372921	58756
1964	22296	29336	126558	23503	388257	52150
1965	14864	29279	111124	37915	443254	84442
1966	48308	29232	138905	25263	486863	54303
1967	23122	7577	80148	37375	491468	72348
1968	0	29160	111124	27071	578055	80367
1969	26012	7381	114211	46426	653897	101734
1970	35405	6409	96575	22774	642280	69992
1971	40463	13791	102219	28687	769248	86244
1972	54915	30710	98983	28221	756168	74612
1973	28902	5679	102028	31911	541076	55980
1974	28902	7273	104693	30557	663601	59678
1975	38296	9325	122935	31781	696678	63025
1976	31070	25192	87406	26411	751937	63922
1977	24567	6383	105074	25636	653380	54690
1978	52024	10999	137053	43158	880666	82127
1979	43354	7904	136354	35830	885028	71830
1980	17341	3279	80519	23649	696621	60307
1981	36128	6587	90903	23942	672831	64542
1982	20232	8135	93653	24061	553100	47769
1983	46244	8465	152471	32666	946749	91157
1984	92573	31625	191711	46551	854269	76877
1985	33960	13837	116495	27525	554214	54228
1986	30348	5513	117637	30905	638721	59029
1987	37573	15471	142764	41190	748248	81694
1988	46244	13123	157611	36729	720175	58568
1989	40827	9347	135188	33348	744198	60953
1990	66451	33666	135188	38525	745490	76044
1991	82389	30069	116542	24673	834350	70283
1992	119714	45246	103932	32468	1030544	92010
1993	80660	19333	108500	23268	869405	67556
1994	56112	12818	135911	33063	765723	61532

Appendix N. Breeding population-size estimates and standard errors of the goldeneyes (*Bucephala* spp.), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	854	2823	1241	4548	9273	9492	0	10587	0	6595
1956	1035	2778	1383	4478	9527	9386	733	10416	0	6483
1957	793	529	469	457	16766	8012	974	904	766	729
1958	0	0	1406	786	5589	2261	5841	3033	766	729
1959	1983	1946	2812	1356	3912	1702	3074	1670	766	838
1960	992	777	2344	1438	17884	10269	2921	1761	3065	1754
1961	1707	2665	2344	1006	11177	5600	3894	2578	1532	877
1962	4131	1891	0	0	11736	5083	3894	2427	2299	1106
1963	2266	2065	4219	1605	14371	7399	6084	4005	6130	3502
1964	2181	1143	541	557	5138	3490	2921	2211	1114	780
1965	4759	2750	0	0	8637	3643	9086	4934	4458	2324
1966	1586	978	8924	4674	11685	6331	7788	4973	1114	780
1967	2776	1174	2163	1330	23353	9545	23851	10285	5294	2969
1968	3570	1705	1082	799	13718	7024	11682	5080	22011	10812
1969	397	341	1623	755	20322	10820	6815	4458	9473	6882
1970	397	432	1082	799	9907	4176	5841	3338	9473	3637
1971	3570	1853	2704	2568	14480	6605	10709	3968	1114	1075
1972	1190	725	4327	2634	14734	6139	16063	7834	2229	1617
1973	3768	1975	2163	1081	26419	15702	24338	13027	6408	2905
1974	2975	1593	5408	4089	12702	5927	11682	5265	10030	5421
1975	4759	2308	541	557	13718	5985	16550	6898	18946	6644
1976	6148	2801	3245	2340	27181	13757	13629	4995	5015	2253
1977	2776	1807	2163	1330	23256	10354	20444	8319	1672	1123
1978	4759	2277	1082	674	11177	4168	17523	10525	7244	4617
1979	6742	3799	4327	3110	14226	6708	34560	23574	11702	6343
1980	1190	1024	16766	11820	20322	8410	8762	2983	5572	4258
1981	2776	1015	7031	6162	20831	8786	14603	5292	1114	697
1982	1983	1300	8113	5221	12702	5357	10709	4768	2229	1394
1983	3570	1215	2163	1479	16766	6729	17523	6833	8916	5512
1984	1983	904	4868	2829	16766	6302	15576	7616	10587	4972
1985	1586	1047	2704	1545	11685	4846	32613	10212	6687	3201
1986	1983	1080	3245	1778	15750	6204	3894	2067	5572	3581
1987	9122	6114	4327	2266	15750	6506	6815	2637	13373	6741
1988	1983	996	2704	1919	18036	7347	5841	2774	6687	3493
1989	2181	1140	3786	1917	12448	6653	6815	3195	9473	4437
1990	793	432	1623	1541	7113	3111	2921	2077	6408	4302
1991	1983	802	4327	1983	9145	3590	9735	3900	6687	2891
1992	1986	1082	4603	2745	9665	3710	6823	2985	4463	3211
1993	3574	1930	1083	740	21873	9716	16570	6082	10042	5374
1994	3177	1905	6227	3800	14752	6137	16570	6434	7253	4504

Appendix N. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2875	0	2555	1756	7631	0	15170	1342	4369
1956	76	2829	0	2521	2286	7505	0	14943	1316	4317
1957	0	0	0	2495	0	0	0	0	2883	3111
1958	1056	984	0	2475	7139	5552	7673	4419	868	882
1959	528	573	721	2460	1190	1117	1957	1976	0	0
1960	1584	1220	3894	2448	1190	1204	2877	2910	868	937
1961	616	566	283	2439	4759	3405	3836	2932	3203	2520
1962	528	492	5336	2432	21417	12656	9953	5053	2603	2383
1963	0	0	1442	2427	0	0	14386	7223	534	567
1964	370	391	547	2423	4268	3367	6640	2962	0	0
1965	0	0	646	2420	6208	3670	1476	1011	0	0
1966	1109	829	742	2417	2328	1650	9591	6639	0	0
1967	4620	4365	833	2415	1552	1563	47954	30375	1157	1506
1968	1109	803	915	2413	9312	5096	33199	18541	4627	6022
1969	8131	7051	985	2412	19012	12198	22871	11945	2314	1280
1970	2957	1659	1042	2411	10864	7983	16600	7450	1157	1506
1971	370	353	1086	2410	6984	4342	39470	26991	0	0
1972	2957	1851	1120	2409	15520	7785	18444	10745	3470	4517
1973	1848	1281	1145	2409	1552	1053	18444	7095	6362	8281
1974	370	353	1166	2408	6984	4102	19551	9920	1157	1506
1975	370	353	1183	2408	17848	7704	14386	7730	0	0
1976	0	0	1200	2408	13192	8708	11435	6643	1157	640
1977	1109	829	1216	2408	12804	9010	23239	14104	0	0
1978	1109	829	1231	2408	6984	3453	11066	4921	1157	1506
1979	0	0	1245	2408	6984	3596	10329	2972	1983	2375
1980	3696	1440	1256	2409	1552	1053	23608	15208	10907	13062
1981	4065	2015	1267	2409	1552	1103	5902	2479	1983	2375
1982	5544	2734	1276	2410	3880	3048	14755	5732	2975	2173
1983	3326	1309	1284	2411	0	0	14755	6688	2975	3562
1984	2217	1121	577	283	4656	2043	18813	7737	1983	2375
1985	2217	1756	433	245	1552	1563	28035	15346	992	1187
1986	5913	2762	865	589	6208	3157	18444	7108	0	0
1987	2217	1070	144	136	5044	4539	8115	3098	0	0
1988	3326	1309	577	302	3880	2532	30986	15838	9915	6526
1989	1848	1005	288	273	1552	1053	8115	3923	0	0
1990	2587	2471	0	0	3104	1907	11066	5948	0	0
1991	3326	2059	144	136	3880	2335	7378	3678	0	0
1992	370	373	144	152	0	0	2955	2277	0	0
1993	6660	2953	289	197	777	782	4432	2174	0	0
1994	1480	840	0	0	0	0	4432	2913	993	1189

Appendix N. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1310	13073	9190	14113	11995	50777	28130	6179	18775
1956	0	1293	12559	9023	2969	1996	9415	4580	0	18288
1957	0	0	7498	3456	10874	7122	10971	7747	0	17927
1958	0	0	8681	4518	3954	3954	70703	32008	0	17659
1959	0	0	29596	13289	9885	5272	130158	63335	26955	17458
1960	0	0	8287	3379	51404	27201	24103	14667	0	17308
1961	0	0	7892	4787	13839	7676	46600	29881	0	17195
1962	0	0	7892	5115	17794	15474	19283	7397	80865	17110
1963	804	787	10655	6790	2966	1993	8034	5676	0	17046
1964	0	0	0	0	3954	2448	6428	3514	0	16998
1965	0	0	9171	8492	6920	3050	9641	6508	35940	16962
1966	0	0	902	459	0	0	5519	3812	0	16936
1967	804	787	8287	7285	0	0	0	0	0	16917
1968	804	787	28215	14595	0	0	0	0	0	16903
1969	0	0	2762	1592	1977	1977	0	0	0	16893
1970	0	0	3946	1903	1318	1318	0	0	0	0
1971	0	0	1184	1321	0	0	1607	1501	0	0
1972	804	787	11641	9959	1318	1318	0	0	3851	4362
1973	804	787	0	0	0	0	0	0	23104	20069
1974	0	0	12036	4784	0	0	5364	5717	3851	3345
1975	804	787	7498	3337	989	989	6045	3111	0	0
1976	2411	1670	3157	3524	0	0	4702	3286	0	0
1977	1607	1574	3354	2735	2966	2966	7836	3181	6739	5199
1978	3215	1715	1973	1871	0	0	0	0	3516	4228
1979	2411	2362	9471	4764	15817	9790	31344	14087	13477	10398
1980	804	787	18941	8445	16805	12239	39964	27511	10108	7798
1981	804	787	395	440	3954	2448	16321	6256	3369	2599
1982	1607	1041	10260	4991	6920	4622	6045	6218	0	0
1983	0	0	2368	1456	989	989	3134	1992	0	0
1984	1607	1574	5919	3462	13839	6295	17239	7133	26955	14911
1985	2411	1867	6116	4861	1977	1224	10971	5134	13477	4907
1986	804	858	5130	3761	1977	1977	12538	6196	26955	14911
1987	0	0	6906	3240	2966	1993	14105	9830	6739	5199
1988	2411	2362	3946	1525	3954	3954	12538	8255	3369	2599
1989	1607	1041	14995	5414	12851	7029	12538	6360	6739	2453
1990	0	0	11641	5516	1977	1224	4702	2600	0	0
1991	804	787	4341	1992	14828	6438	6269	3777	3369	2599
1992	0	0	3161	1432	7918	5144	7846	4501	3520	4233
1993	805	788	3161	1432	1979	1979	7846	4319	0	0
1994	805	788	3753	2483	13362	4229	7846	3839	10120	6319

Appendix N. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	8968	18196	30972	26101	5259	6438	31238	19645	8998	5319
1956	4883	5819	12780	9018	4706	2605	6704	5142	0	0
1957	0	0	29784	18569	0	0	26784	11958	0	0
1958	0	0	4255	3002	0	0	43153	19714	93160	72656
1959	39014	14582	93605	50050	14102	4468	42781	12731	17997	23934
1960	0	0	0	0	4701	2600	2232	1251	8469	2364
1961	14630	6039	46803	36519	9401	5201	93002	43539	16938	8550
1962	29260	16142	8510	6003	0	0	29016	15109	16938	17862
1963	4877	3596	4255	3002	0	0	7068	4660	16938	16018
1964	4877	3596	68077	30053	0	0	28644	10330	18488	23670
1965	14630	6848	0	0	0	0	31993	17658	8469	8931
1966	4877	5505	12764	6364	0	0	11532	5444	2879	2773
1967	9753	11010	21274	17338	0	0	14508	9069	3272	2239
1968	0	0	0	0	0	0	4092	3000	1532	1524
1969	0	0	0	0	0	0	23250	15176	57671	30932
1970	8825	6479	0	0	0	0	7440	4020	29138	12039
1971	0	0	3627	2199	3134	3888	3720	2750	18854	9876
1972	4412	3240	6262	3333	3134	3252	1860	1449	11998	7635
1973	0	0	4023	4296	0	0	2232	734	28054	12116
1974	0	0	2127	2113	0	0	4092	1585	9670	5090
1975	8825	4101	7375	7060	0	0	2604	1091	22282	7667
1976	0	0	5028	3231	6267	7777	4836	1502	44650	15538
1977	17649	17272	16761	11353	0	0	7626	2919	8414	3179
1978	8825	6479	20114	10413	6267	7777	24924	6989	13550	5718
1979	4412	3240	31846	10280	9401	7369	15810	6751	8469	3897
1980	13237	11646	25980	15618	15668	12282	11904	7697	5537	3861
1981	8825	7309	28494	9661	12535	4884	7068	3871	25359	9210
1982	8825	9843	35199	33114	0	0	7812	4105	18436	7650
1983	8825	4625	3352	2427	12535	13009	7068	3337	27126	10887
1984	30886	25969	30170	12707	3134	3888	20460	8733	10139	5485
1985	22061	20886	11733	4222	3134	3252	2604	2146	8570	5364
1986	66184	38865	25142	12223	3134	2456	7626	3986	12704	4572
1987	0	0	0	0	3134	3252	372	359	23222	8282
1988	4412	4683	15085	7089	3134	2456	1488	1018	7999	4066
1989	13237	10726	13409	7297	3134	2456	5208	1842	3870	2006
1990	0	0	5531	2819	0	0	1488	741	3870	2261
1991	0	0	1676	1842	0	0	3162	2223	8371	3646
1992	0	0	3356	2625	0	0	3725	1195	41850	13379
1993	4418	3244	6713	3404	3137	2460	2607	1240	23318	11366
1994	4418	4927	21816	9806	3137	2460	2607	924	30407	12213

Appendix N. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	8425	4139	27371	15545	12491	7156	5461	4965	15016	5829
1956	1205	1137	0	0	0	0	0	0	12205	5929
1957	0	0	4211	4199	2201	2334	0	0	9759	3996
1958	34526	28623	21896	14349	41563	18108	6371	6613	6099	2767
1959	27079	11481	232649	95160	211748	164256	46421	14605	5489	2888
1960	26478	11688	14192	6071	170646	97156	11763	8812	7319	3489
1961	13239	10829	41314	16576	65440	32439	11763	8736	7319	4373
1962	18655	16642	55774	21721	35248	16758	15544	7274	7929	4591
1963	1204	1136	20657	9905	23499	9924	10082	4155	2440	1500
1964	6499	2436	6082	5951	8221	5651	4201	3528	4880	4237
1965	3611	3578	23614	9759	26856	11310	5461	1871	610	614
1966	12035	5882	28717	12461	22969	9895	5461	3157	4880	2567
1967	6018	3576	0	0	4552	2607	1260	891	0	0
1968	7026	2608	23721	16241	6994	3978	2941	1536	5639	2882
1969	2635	1829	14707	10059	66500	25184	10502	8887	7398	3174
1970	30739	10150	86433	45014	67139	61513	9662	3540	2867	2871
1971	18443	7347	32347	10745	37807	17882	6301	2510	16520	9069
1972	15809	5587	22302	7198	39301	14100	10502	3351	10511	6151
1973	10832	4519	52551	21660	64115	22673	14703	4572	12900	10940
1974	20200	7552	60823	29995	13100	5967	22685	8369	17678	11489
1975	12296	4832	17031	6814	29431	11172	9830	3456	14577	12242
1976	34252	12512	59873	24318	103701	42385	11973	4043	25266	14328
1977	27226	11764	31692	14770	115205	95470	10082	6329	3887	2217
1978	13174	5499	33687	14707	25177	10107	35708	14620	27210	14084
1979	12296	4163	21896	15236	23421	9303	21425	9661	6802	3844
1980	7904	2468	8294	4590	27102	10887	20585	7941	25752	16474
1981	60599	24997	80808	31854	165004	61527	56923	27492	2915	2062
1982	23469	7477	32845	13911	35277	11990	12813	6427	6802	4835
1983	36008	11698	43284	15425	57193	25449	20585	8224	6802	6662
1984	22835	9362	50922	18272	21621	11763	6722	3438	972	988
1985	16687	5714	23721	8759	17407	5563	43060	37775	13119	7235
1986	6148	3530	25930	8510	192006	157874	2521	1678	29153	12528
1987	19322	8318	68974	25658	34191	17412	4201	2009	21865	10902
1988	12296	4311	14707	9633	4552	1860	10923	6706	30125	15525
1989	7026	3732	3268	3307	26742	16129	5041	2513	14577	4755
1990	12296	5458	14707	8749	26245	15627	6722	2746	17793	8729
1991	18443	6393	55814	22149	21775	8425	1680	973	6826	3247
1992	55837	16904	99750	36559	131242	43606	10936	5531	8415	2883
1993	47483	14172	53533	22924	54037	21045	20032	7826	7641	2530
1994	20224	6847	48124	20019	13866	9955	6132	2886	15063	7633

Appendix N. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	980	668	0	0	9759	8793	0	0
1956	1695	959	4905	3073	2266	1525	10661	7368	9147	4028
1957	0	0	1961	1478	3775	3716	8539	6505	9142	5658
1958	0	0	1471	1005	1510	1535	8288	5601	1524	1644
1959	0	0	980	719	2265	2302	3552	3742	7618	5997
1960	847	847	2451	1765	755	767	4736	2357	15999	8885
1961	0	0	3922	4016	0	0	5920	4621	3047	2950
1962	0	0	0	0	0	0	4736	3121	3047	2950
1963	0	0	0	0	0	0	2368	2495	1524	1475
1964	0	0	980	1004	0	0	1184	1247	0	0.
1965	847	847	0	0	0	0	1184	1247	7618	6754
1966	0	0	0	0	0	0	2236	1407	7618	5044
1967	0	0	0	0	0	0	6709	5468	7618	4492
1968	0	0	0	0	0	0	7269	7269	15237	9367
1969	0	0	0	0	1510	1486	3355	3355	4729	3138
1970	0	0	0	0	755	743	6709	5468	6095	3894
1971	2383	1553	0	0	1510	912	4473	4473	9142	8850
1972	794	783	2794	2794	1510	951	2236	2236	1524	1414
1973	6751	5905	0	0	0	0	14537	8500	6095	4441
1974	0	0	0	0	0	0	7828	4999	6095	5900
1975	0	0	931	931	0	0	10064	10064	3047	2279
1976	0	0	0	0	3020	1901	13419	12116	0	0
1977	0	0	0	0	0	0	50880	49540	10713	6287
1978	794	817	3726	2608	1510	1535	11182	7245	2857	2804
1979	0	0	0	0	755	743	20687	9532	11428	7960
1980	794	817	0	0	3020	2202	15096	10631	14285	8850
1981	794	817	931	931	0	0	12301	8164	7142	7010
1982	0	0	0	0	0	0	4473	4473	14285	10397
1983	0	0	0	0	0	0	0	0	11428	9784
1984	0	0	0	0	755	743	4473	2813	9999	8341
1985	794	817	0	0	2265	1560	17333	11904	5714	3349
1986	0	0	0	0	755	743	7828	6568	11428	6868
1987	794	817	0	0	1510	951	21246	13615	0	0
1988	0	0	0	0	1510	1535	0	0	2857	2804
1989	0	0	0	0	1510	1486	9472	6793	9999	5882
1990	0	0	0	0	1510	912	0	0	5714	4328
1991	783	772	0	0	2979	1399	4672	3332	12681	10941
1992	1127	1110	0	0	536	527	27297	18151	15199	9054
1993	1417	824	0	0	449	442	25343	16092	9342	5235
1994	0	0	0	0	0	0	26763	21082	7995	5997

Appendix N. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	652	653	0	0	0	0	1400	1281	3974	7984
1956	680	689	0	0	0	0	701	670	0	7888
1957	0	0	0	0	0	0	0	0	0	7814
1958	0	0	0	0	0	0	0	0	0	7757
1959	0	0	0	0	0	0	2101	2009	3974	7713
1960	0	0	0	0	0	0	700	670	23846	11140
1961	0	0	0	0	1631	1631	0	0	0	7652
1962	0	0	0	0	0	0	0	0	0	7631
1963	0	0	0	0	0	0	0	0	3974	7614
1964	0	0	0	0	0	0	1400	1339	0	7602
1965	0	0	0	0	0	0	0	0	0	7592
1966	647	648	0	0	0	0	0	0	0	7584
1967	0	0	0	0	0	0	0	0	0	7578
1968	0	0	0	0	0	0	0	0	0	7573
1969	647	643	0	0	0	0	0	0	0	7570
1970	1988	1495	0	0	0	0	700	670	5962	3862
1971	647	648	0	0	0	0	0	0	8254	5297
1972	0	0	0	0	815	815	0	0	5503	2806
1973	0	0	0	0	0	0	0	0	917	1046
1974	0	0	0	0	0	0	0	0	2751	932
1975	1294	1286	1230	1193	732	707	0	0	12840	6211
1976	1294	942	1230	1193	0	0	0	0	917	861
1977	3236	3189	0	0	0	0	0	0	1834	824
1978	0	0	0	0	0	0	0	0	16967	5529
1979	647	643	0	0	2195	1564	700	670	7337	4534
1980	0	0	0	0	0	0	0	0	4586	2195
1981	0	0	0	0	0	0	700	670	18343	7983
1982	1294	942	0	0	0	0	700	670	12382	5929
1983	1294	949	0	0	0	0	3501	3349	11006	4024
1984	0	0	0	0	732	707	0	0	0	0
1985	1941	1929	0	0	732	707	1400	1339	8713	4945
1986	647	643	0	0	0	0	0	0	4586	2072
1987	0	0	0	0	732	750	700	670	5503	2868
1988	0	0	0	0	732	750	700	670	13757	6559
1989	0	0	0	0	0	0	700	670	7337	2712
1990	0	0	0	0	0	0	0	0	17426	5401
1991	638	644	0	0	0	0	0	0	1809	1698
1992	0	0	872	845	0	0	993	947	9434	8164
1993	0	0	0	0	0	0	0	0	545	625
1994	0	0	0	0	0	0	0	0	0	0

Appendix N. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	6306	3393	0	0	1209	664	868	646	370	1054
1956	6310	4578	0	0	605	396	6366	4244	391	1048
1957	10511	4756	0	0	0	0	6941	3397	409	1044
1958	27328	18728	0	0	0	0	894	686	424	1040
1959	33634	26999	0	0	2267	1475	1446	1057	438	1037
1960	14559	6958	0	0	0	0	3760	1917	449	1034
1961	10511	8314	0	0	1209	902	1880	1399	459	1032
1962	12613	10314	0	0	0	0	868	888	468	1031
1963	0	0	0	0	0	0	2314	1069	475	1029
1964	4204	3261	0	0	0	0	2169	1364	480	1028
1965	10511	11543	0	0	302	293	578	400	0	0
1966	2102	2309	0	0	0	0	0	0	1309	933
1967	8409	5179	0	0	789	747	9178	8285	0	0
1968	6306	6926	0	0	0	0	289	287	0	0
1969	6306	5567	0	0	0	0	723	719	637	606
1970	8010	5911	0	0	0	0	0	0	0	0
1971	24646	10224	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	4458	2293
1973	0	0	0	0	0	0	0	0	1274	828
1974	8626	5665	0	0	0	0	656	695	0	0
1975	14788	13816	0	0	0	0	6228	4118	0	0
1976	26494	19498	0	0	526	498	2622	2781	0	0
1977	2465	1485	0	0	0	0	0	0	637	606
1978	20949	15526	0	0	0	0	4589	3297	0	0
1979	9858	5666	0	0	0	0	1311	1391	0	0
1980	7394	5439	0	0	0	0	656	695	1592	1498
1981	7394	7579	0	0	0	0	3278	3476	0	0
1982	16020	13862	0	0	0	0	656	695	0	0
1983	9858	8506	0	0	0	0	1311	870	0	0
1984	0	0	0	0	0	0	656	644	637	599
1985	11091	5440	0	0	526	498	3278	2754	1274	1211
1986	12323	7707	0	0	2104	1788	1311	1391	2547	1929
1987	12323	7372	0	0	1578	1238	10161	8579	0	0
1988	9858	6138	0	0	0	0	0	0	0	0
1989	4929	2377	0	0	526	498	3278	2754	0	0
1990	8626	3655	0	0	0	0	7867	7573	637	694
1991	9724	6934	0	0	519	491	1293	1373	670	625
1992	10927	4265	0	0	3172	2314	1628	1125	0	0
1993	733	812	0	0	3440	2867	0	0	1515	1037
1994	0	0	0	0	322	359	0	0	0	0

Appendix N. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	17	968	0	333	0	1030	0	669	0	270
1956	44	963	0	329	0	1019	0	644	0	260
1957	70	959	0	326	0	1009	0	625	0	253
1958	94	956	0	0	0	1002	0	0	0	0
1959	116	953	0	0	0	0	0	0	0	0
1960	135	951	0	0	0	0	0	0	0	0
1961	151	949	0	0	0	0	0	0	0	0
1962	164	947	0	0	0	0	0	0	0	0
1963	173	946	32	316	0	0	0	0	0	0
1964	181	945	0	0	0	0	0	0	0	0
1965	0	0	36	315	0	0	0	0	0	0
1966	0	0	37	314	0	0	1202	1148	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	4363	3350	1103	1096	1233	1254	0	0	0	0
1973	1091	1108	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	1091	1094	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	1233	1195	0	0	0	0
1983	0	0	0	0	0	0	2509	1337	0	0
1984	0	0	0	0	0	0	836	832	514	510
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	1029	715
1988	0	0	0	0	0	0	0	0	0	0
1989	1091	1036	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	3648	3878	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	676	672	756	732	0	0	0	0

Appendix N. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	493	0	335	13477	11207	45154	31072
1956	0	0	0	473	0	320	39084	23932	41767	30625
1957	0	0	0	457	0	309	0	0	51842	26327
1958	0	0	0	446	0	301	41417	21487	8640	7231
1959	0	0	0	0	0	0	227069	63763	93316	44627
1960	0	0	0	0	0	0	42758	21558	12097	9637
1961	0	0	0	0	0	0	71764	22331	25921	11799
1962	0	0	0	0	0	0	190024	55736	15553	12390
1963	0	0	0	0	0	0	123965	48402	0	0
1964	0	0	0	0	0	0	77186	26773	8640	6883
1965	0	0	0	0	0	0	5009	3346	72579	37794
1966	0	0	0	0	0	0	70169	21686	5184	4130
1967	0	0	0	0	0	0	53399	25064	0	0
1968	0	0	0	0	0	0	347335	98076	0	0
1969	0	0	0	0	0	0	102724	41510	1728	1377
1970	0	0	0	0	0	0	64988	19720	8640	7231
1971	0	0	0	0	0	0	100974	76884	3456	1202
1972	0	0	0	0	0	0	153389	48138	39746	38327
1973	0	0	0	0	0	0	181339	87110	0	0
1974	0	0	0	0	0	0	102176	76866	19873	6432
1975	0	0	0	0	0	0	102519	76870	1728	1377
1976	0	0	0	0	0	0	102832	76880	17281	7866
1977	0	0	0	0	0	0	103114	76895	17281	17636
1978	0	0	0	0	953	779	103359	76914	0	0
1979	0	0	0	0	0	0	103564	76940	5184	6257
1980	0	0	0	0	0	0	103722	76970	7776	3280
1981	0	0	0	0	0	0	103828	77006	0	0
1982	0	0	0	0	0	0	103877	77049	6912	5162
1983	0	0	1523	1033	903	743	103863	77097	15553	12390
1984	0	0	761	738	0	0	103782	77153	66785	66337
1985	0	0	761	772	0	0	103633	77217	3456	2753
1986	0	0	761	761	0	0	79663	34303	3456	2753
1987	0	0	0	0	0	0	128929	45145	1728	2086
1988	0	0	0	0	0	0	111109	34416	1728	2086
1989	0	0	0	0	0	0	136266	45844	21420	7769
1990	0	0	0	0	0	0	77567	39149	47430	28967
1991	0	0	0	0	0	0	36687	11197	35190	27227
1992	0	0	0	0	0	0	38831	12050	17727	8794
1993	0	0	0	0	0	0	183825	62021	29673	12493
1994	0	0	0	0	0	0	104003	27805	52814	32337

Appendix N. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	170460	65339	55303	43674	562735	105994
1956	154271	63818	52113	42451	414790	93709
1957	0	62615	10084	2937	228008	76581
1958	321714	61662	20169	8852	798173	115645
1959	273153	60907	136140	62667	1732491	242802
1960	0	60305	40338	17268	530643	125997
1961	84981	59826	40338	11749	673265	103885
1962	115331	59443	45380	12571	792788	99659
1963	0	59136	5042	4858	302778	83501
1964	24280	58890	15127	14575	319902	80998
1965	12140	58691	20169	19433	343159	81620
1966	0	58532	0	0	247907	69727
1967	4721	3761	14729	15660	288833	55871
1968	6070	58299	20169	28899	584864	124558
1969	0	0	9819	3720	411523	68499
1970	9442	7522	0	0	420117	83132
1971	4721	3761	18656	14394	402894	88877
1972	2361	1881	12437	4883	458025	68678
1973	0	0	9950	5358	527719	100087
1974	2361	2849	20729	21440	414745	89665
1975	2361	1881	7773	4181	393424	83982
1976	4721	1641	26652	14435	589326	100948
1977	0	0	14925	9520	554807	138956
1978	7082	5642	48506	20841	503146	89514
1979	9442	11396	47592	30425	542187	95040
1980	4721	3761	50372	20223	556230	96777
1981	0	0	27604	14014	716811	114251
1982	2361	2849	9328	3323	443997	91083
1983	18885	10018	33581	24376	515761	93012
1984	24994	12273	156103	96979	712473	148490
1985	0	0	27984	11797	476447	94424
1986	14164	17094	5597	2789	626996	170083
1987	2361	1881	14925	7567	474423	63000
1988	7082	5642	9328	4550	373535	48047
1989	7076	4216	9518	8293	403870	55431
1990	3156	2430	17133	14264	329654	57164
1991	4208	2987	10470	9296	319935	43945
1992	7480	6083	17723	8760	561508	68601
1993	9752	5730	24253	7874	592296	77426
1994	2873	1320	33581	12424	486347	59612

Appendix O. Breeding population-size estimates and standard errors of the oldsquaw (*Clangula hyemalis*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	430	320	1335	1914	4959	0	25586	222	1855
1956	0	419	346	1304	1604	4843	0	24799	156	1812
1957	0	0	259	253	7497	5215	2151	1190	0	0
1958	0	0	0	0	0	0	0	0	423	404
1959	0	0	1812	888	309	307	0	0	846	808
1960	0	0	0	0	1080	1041	538	528	0	0
1961	25	394	0	0	617	435	0	0	0	0
1962	0	0	1942	1063	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	299	285	0	0	1076	1120	0	0
1965	0	0	0	0	1403	800	4302	1945	616	443
1966	0	0	598	569	842	535	538	535	0	0
1967	0	0	896	650	1985	1252	3764	2555	308	298
1968	438	254	1793	909	7157	5099	64262	37411	0	0
1969	0	0	1793	1045	11507	7607	3764	1780	0	0
1970	219	190	299	285	7016	3952	9680	3870	0	0
1971	876	762	598	389	1965	1129	0	0	308	298
1972	438	291	1494	1183	6455	3451	16402	8055	6464	5934
1973	767	530	1793	1000	1403	1020	2689	2800	0	0
1974	0	0	896	538	1965	1545	12368	6046	1847	1176
1975	0	0	3436	1893	842	626	7529	5987	923	893
1976	0	0	299	285	3648	2293	3495	2585	0	0
1977	0	0	3884	1911	8664	5579	65607	39600	616	652
1978	0	0	1195	911	3087	2338	10486	5605	2770	2107
1979	0	0	299	285	4490	2415	30652	16691	2155	1530
1980	0	0	299	307	3929	2683	91688	36655	923	681
1981	0	0	2091	1501	561	423	3764	2816	1539	753
1982	0	0	896	500	2806	2065	2151	1222	308	298
1983	0	0	1494	1058	842	677	4302	3593	616	402
1984	548	476	598	569	5613	3347	7529	3567	308	298
1985	219	190	896	538	13331	8832	16402	8002	616	595
1986	0	0	1195	769	6595	4796	30921	15834	0	0
1987	0	0	2091	1390	2806	1506	538	508	1231	1024
1988	0	0	896	538	6876	6563	6453	4275	0	0
1989	657	431	2091	1501	842	535	3764	1935	0	0
1990	0	0	1195	769	561	412	3764	2164	0	0
1991	1095	952	896	619	1123	719	0	0	308	326
1992	0	0	0	0	841	509	4298	2022	923	641
1993	0	0	597	569	2243	1459	7522	3699	3075	1834
1994	0	0	299	284	280	288	537	508	0	0

Appendix O. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	546	1169	0	664	17384	12992	63306	31821	4959	9596
1956	597	1147	0	651	16529	12636	65183	30974	5925	9440
1957	0	0	0	642	12432	6375	82483	33210	5579	2634
1958	1167	688	0	635	30502	13107	64075	14140	6290	1361
1959	0	0	0	630	17870	8691	55245	10946	11060	6410
1960	1604	908	0	626	9243	5356	73512	16934	10896	3432
1961	340	315	0	624	4622	1550	56376	11853	8433	2640
1962	1458	1137	0	622	12478	5439	59979	13151	14378	3389
1963	0	0	0	620	14173	4892	122727	26724	10645	3191
1964	1225	710	0	619	11654	5070	73550	13312	12880	9337
1965	817	537	0	618	2009	1166	76607	14554	10784	2371
1966	1429	1151	27	618	25720	8401	84057	14620	20369	8870
1967	255	258	53	617	7435	2708	100678	21656	17973	10984
1968	0	0	75	617	31748	10766	83293	19208	9885	6434
1969	817	537	93	617	11855	3357	68010	15894	17374	8987
1970	612	441	107	617	12257	5448	76798	18824	15876	4319
1971	204	206	120	617	9042	2707	111758	21457	23365	12047
1972	1021	499	132	616	19290	5968	98194	18877	17374	3994
1973	408	283	143	616	10449	3205	65526	11164	17374	4188
1974	1429	869	156	616	35968	10595	108319	20099	32351	6492
1975	612	468	168	616	22505	7193	85203	22400	14378	9639
1976	0	0	179	616	8238	2502	71449	15141	30554	19760
1977	1021	608	189	616	20094	7291	126850	22955	20968	6403
1978	408	430	198	616	47019	16349	123602	25551	36844	18488
1979	408	310	204	616	21701	8008	70493	16377	26959	5285
1980	408	283	206	616	30543	8436	151685	28270	32351	8344
1981	1225	1113	204	616	23510	13062	82720	20397	23621	6029
1982	204	206	196	616	16477	5183	84439	20047	21054	6992
1983	2041	1431	184	616	26926	8886	125322	22669	25675	5281
1984	1123	713	80	76	18687	5181	57885	9624	19000	3892
1985	1021	592	80	84	20094	5482	63616	14849	18230	4206
1986	1633	788	0	0	29538	11155	67819	16175	16946	3380
1987	612	372	0	0	8841	3086	74505	16694	13865	4611
1988	408	430	0	0	8439	2291	44321	8357	14892	2900
1989	408	310	0	0	5626	1737	45849	12552	16946	5698
1990	817	567	0	0	8841	3750	60368	12790	13351	2887
1991	3573	3422	0	0	13262	5046	44894	11384	17459	4081
1992	408	430	0	0	14086	3769	38072	8232	12085	7087
1993	1428	1201	0	0	14086	5835	46681	8530	10285	4073
1994	612	493	0	0	8452	2316	57012	11737	12342	2860

Appendix O. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	5621	6445	7041	10408	2608	5831	271249	124159	43440	43156
1956	5946	6287	8180	10182	2728	2728	197214	77224	59508	42565
1957	3322	1979	5014	1942	9283	8085	157560	66867	34743	42091
1958	3389	1542	7193	2620	0	0	245874	96627	14890	41709
1959	5956	3163	10027	3970	2730	1612	368367	145664	104228	41400
1960	9812	2986	11117	5288	546	546	316884	149424	14890	41150
1961	12131	2810	13515	5516	0	0	292031	118571	44669	40948
1962	6660	2457	21144	11323	0	0	214807	105827	29779	40783
1963	13736	4302	7629	3144	3276	2695	121606	51586	9926	40648
1964	6452	3060	12861	6169	2184	2184	266289	103619	19853	40538
1965	4995	2209	11551	9596	3822	3232	191728	77370	24816	40447
1966	3330	2162	16068	6231	1092	1092	185978	75064	24816	40373
1967	6660	3056	15150	8506	4915	3206	141133	54452	153860	40312
1968	4995	1309	10681	6392	2730	2730	88103	33641	19853	40262
1969	3746	1433	7956	4081	3276	3276	164656	64375	163786	40221
1970	5828	2891	15586	7409	5097	5097	142750	58836	12763	7730
1971	7493	2290	8501	4163	0	0	101190	38587	43605	24358
1972	12488	4794	5014	2489	1456	856	64864	34814	4254	4789
1973	12488	4247	8392	3452	1638	1138	109490	44142	14890	5316
1974	8117	2057	11880	5517	7099	7099	120987	54197	27652	10019
1975	9990	3103	12970	7382	8191	7004	136072	59755	11167	5068
1976	16234	8446	11335	5598	5188	4584	107781	39362	28849	10680
1977	25391	11133	17656	7624	546	546	74451	32303	49322	35719
1978	15818	5556	21580	9706	8737	7498	63197	23651	41756	27634
1979	8741	4150	33133	12100	3003	2204	336763	130292	74448	39750
1980	9574	3952	15259	5873	12286	8333	205607	98416	16751	6710
1981	15401	3493	18964	9462	6826	4574	118207	46087	5584	6818
1982	14153	4736	35095	15829	1092	706	102680	46753	30710	11018
1983	8741	1915	28119	11354	546	546	105617	52447	3722	4545
1984	7076	3213	17220	6806	8737	4249	425932	199849	48391	19747
1985	7076	2663	8392	3394	546	546	258416	141537	1861	1463
1986	14777	4848	20272	7638	7645	4101	101721	44849	1861	1463
1987	3330	1602	9591	3510	15017	14391	139380	68361	41877	36457
1988	10406	4577	15913	6760	4368	2946	155829	67317	18612	7940
1989	8325	2613	10463	4070	546	546	127260	49909	73518	26994
1990	10823	4909	14605	6031	0	0	22509	11303	9306	5132
1991	5411	1681	19836	7238	7372	4472	56271	26903	0	0
1992	9171	2334	6861	3311	2182	2182	24219	11373	9702	8178
1993	9588	2764	11543	4332	0	0	33734	17238	2125	1863
1994	10421	3738	8821	4520	0	0	40654	15536	3719	1586

Appendix O. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	86881	58011	28506	30464	9153	10980	0	489	0	0
1956	80747	34896	0	0	0	0	0	0	0	0
1957	70040	32304	44656	29200	41544	24423	0	0	0	0
1958	185876	79943	2350	1705	2597	1526	0	0	0	0
1959	37714	14818	89312	55320	2597	1526	0	0	0	208
1960	35020	23427	0	0	0	0	0	0	0	0
1961	78122	36303	9401	6820	2597	1526	0	0	0	0
1962	24245	12608	7051	5115	0	0	0	0	0	0
1963	21551	9983	7051	5115	0	0	0	0	0	0
1964	131999	65215	96363	69908	0	0	0	0	16	205
1965	48489	19872	49356	37605	2597	1526	0	0	0	0
1966	167019	108720	68159	34550	10386	6106	0	0	0	0
1967	86203	42268	0	0	0	0	0	0	0	0
1968	21551	24177	32904	20702	0	0	0	0	0	0
1969	67346	58720	35255	25576	25965	15264	0	0	0	0
1970	95054	38615	22916	18927	1731	1793	0	0	0	0
1971	64588	27827	9016	5534	5193	4143	0	0	0	0
1972	31685	13487	2306	2103	0	0	0	0	0	0
1973	41434	23579	12222	9488	1731	1793	0	0	0	0
1974	51183	32657	3525	3192	6924	3098	0	0	0	0
1975	38997	28026	0	0	1731	1793	0	0	0	0
1976	23154	10726	5555	3780	3462	2762	0	0	0	0
1977	51183	21083	12962	8859	5193	5379	0	0	1033	722
1978	37778	23586	20832	12851	7790	4129	0	0	0	0
1979	166955	77455	27776	24078	16445	12149	0	0	0	0
1980	65807	28174	18055	7885	3462	2762	0	0	0	0
1981	17061	7951	9259	5510	1731	1381	0	0	0	0
1982	41434	33673	14351	10383	3462	2762	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	93836	44200	13888	8703	0	0	0	0	0	0
1985	0	0	0	0	6924	5524	0	0	0	0
1986	2437	1833	0	0	0	0	0	0	0	0
1987	45090	16456	2778	1220	5193	4143	2363	1648	0	0
1988	35341	23441	2778	2728	12117	7795	0	0	0	0
1989	56058	26281	1852	1818	19041	15191	0	0	0	0
1990	9749	4342	2037	1875	0	0	0	0	0	0
1991	4875	5873	6481	3755	0	0	205	199	0	0
1992	7306	4721	1850	1073	1730	1791	0	0	0	0
1993	23135	17394	1850	1332	1730	1380	0	0	0	0
1994	21917	10099	11101	7382	1730	1380	0	0	0	0

Appendix O. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	734	712	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	404	394
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix O. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	649	640	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix O. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	136
1956	0	0	0	0	0	0	0	0	0	134
1957	0	0	0	0	0	0	0	0	0	134
1958	0	0	0	0	0	0	0	0	0	133
1959	0	0	0	0	0	0	0	0	0	132
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	131
1962	0	0	0	0	0	0	0	0	0	131
1963	0	0	0	0	0	0	0	0	0	131
1964	0	0	0	0	0	0	0	0	0	130
1965	0	0	0	0	0	0	0	0	0	130
1966	0	0	0	0	0	0	0	0	0	130
1967	0	0	0	0	0	0	0	0	0	130
1968	0	0	0	0	0	0	0	0	0	130
1969	0	0	0	0	0	0	0	0	0	130
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	286	274	0	0
1994	0	0	0	0	597	578	0	0	748	360

Appendix O. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	118	121	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	503	534	0	0	0	0	0	0	0	0
1994	503	515	0	0	0	0	0	0	0	0

Appendix O. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix O. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	542	3130
1956	0	0	0	0	0	0	0	0	478	3080
1957	0	0	0	0	0	0	0	0	1905	2279
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	4737	3551	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	305	997	0	0
1972	0	0	0	0	0	0	1193	1196	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	312	997	0	0
1975	0	0	0	0	0	0	314	997	0	0
1976	0	0	0	0	0	0	316	997	0	0
1977	0	0	0	0	0	0	318	998	0	0
1978	0	0	0	0	0	0	320	998	0	0
1979	0	0	0	0	0	0	321	998	0	0
1980	0	0	0	0	0	0	323	998	0	0
1981	0	0	0	0	0	0	323	998	0	0
1982	0	0	0	0	0	0	323	999	0	0
1983	0	0	0	0	0	0	323	999	0	0
1984	0	0	0	0	0	0	322	999	0	0
1985	0	0	0	0	0	0	320	1000	0	0
1986	0	0	0	0	0	0	0	0	16194	6450
1987	0	0	0	0	0	0	1158	1131	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	1122	1150	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix O. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	10478	6268	8179	7699	562347	154739
1956	9242	6156	7587	7604	461971	105368
1957	36807	6065	22236	17919	537511	101741
1958	0	5992	0	0	564626	133762
1959	0	5932	2779	2240	710852	162853
1960	0	5884	0	0	485142	158023
1961	0	5844	5559	4480	528438	131703
1962	0	5812	2779	2240	396700	115921
1963	0	5785	0	0	332320	72505
1964	0	5763	5559	4480	642260	148048
1965	0	5745	0	0	433892	98985
1966	0	5731	2779	2240	613207	144096
1967	0	0	16238	8433	557506	84533
1968	0	5708	0	0	384323	76251
1969	0	0	0	0	587199	102635
1970	0	0	3025	1901	427614	76817
1971	0	0	1028	1001	389155	59534
1972	0	0	1143	1044	291666	44449
1973	0	0	0	0	302837	53106
1974	0	0	1428	1475	434406	69371
1975	0	0	0	0	355028	72020
1976	0	0	2099	2037	322569	50676
1977	0	0	0	0	485949	72666
1978	0	0	0	0	443417	59569
1979	0	0	1049	1004	825996	161557
1980	0	0	0	0	659156	114047
1981	0	0	13118	14069	345708	56773
1982	0	0	0	0	372481	65693
1983	0	0	3085	2969	337555	59597
1984	0	0	10494	6498	737267	206486
1985	0	0	0	0	418040	143166
1986	0	0	0	0	319554	53194
1987	6506	5267	18511	11395	395284	83609
1988	2603	2107	2057	1934	342308	73764
1989	0	0	1049	1126	374295	66098
1990	0	0	0	0	157926	20705
1991	0	0	1049	992	184514	32157
1992	0	0	0	0	133734	19524
1993	0	0	2057	1934	173589	27982
1994	0	0	0	0	179745	24277

Appendix P. Breeding population-size estimates and standard errors of the mergansers (*Lophodytes cucullatus, Mergus merganser, M. serrator*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1087	0	519	236	800	0	1960	0	596
1956	0	1076	0	512	247	789	0	1930	0	587
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	439	307	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	31	1048	0	0	0	0	0	0	0	0
1962	0	0	0	0	1777	816	688	708	0	0
1963	0	0	0	0	423	419	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	280	241	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	700	381	0	0	1375	978	344	359	1279	946
1968	0	0	191	197	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	538	326	0	0	787	646
1971	280	202	191	181	0	0	344	359	0	0
1972	0	0	1337	934	538	425	1719	910	197	190
1973	0	0	0	0	0	0	860	622	197	190
1974	0	0	0	0	0	0	0	0	0	0
1975	280	275	0	0	538	405	344	342	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	1331	1022	0	0	382	271	344	342	0	0
1978	420	412	573	445	718	597	0	0	0	0
1979	560	305	573	425	897	440	688	718	394	302
1980	0	0	382	261	718	438	0	0	197	190
1981	280	179	382	363	1794	834	1032	972	0	0
1982	140	137	0	0	897	763	344	324	197	209
1983	700	687	0	0	359	256	688	718	0	0
1984	280	275	0	0	2153	1034	8596	3947	1968	954
1985	2241	1938	0	0	1077	602	344	359	197	190
1986	1261	761	0	0	1256	769	1032	733	590	450
1987	981	463	573	445	897	724	0	0	1181	1139
1988	560	550	382	261	1615	1073	1719	768	984	689
1989	841	575	191	197	538	398	344	342	197	190
1990	280	179	382	363	897	497	688	502	197	190
1991	140	153	0	0	0	0	1719	1090	0	0
1992	140	137	0	0	358	256	2743	1560	0	0
1993	3283	3221	1905	1181	0	0	4972	3996	0	0
1994	2864	2638	857	583	895	577	343	323	196	189

Appendix P. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	9	204	0	768	0	1623	0	3559	99	3053
1956	12	202	0	764	0	1605	0	3515	100	3024
1957	0	0	0	761	0	0	0	0	0	0
1958	0	0	0	758	0	0	339	313	306	311
1959	0	0	0	756	0	0	0	0	0	0
1960	0	0	0	755	0	0	0	0	0	0
1961	0	0	7	753	0	0	0	0	0	0
1962	186	174	509	752	1261	685	959	463	1226	858
1963	0	0	102	752	0	0	0	0	0	0
1964	0	0	49	751	548	389	0	0	0	0
1965	0	0	65	750	0	0	0	0	613	900
1966	131	125	82	750	1919	1194	0	0	0	0
1967	0	0	100	750	2330	1279	1303	619	0	0
1968	0	0	118	749	0	0	0	0	0	0
1969	0	0	137	749	822	454	0	0	0	0
1970	0	0	156	749	274	276	0	0	613	798
1971	0	0	176	749	274	264	521	499	0	0
1972	131	132	198	749	822	863	0	0	409	226
1973	0	0	221	749	822	616	1042	526	613	798
1974	131	125	244	748	1096	652	912	948	409	532
1975	0	0	268	748	1096	673	2345	1209	0	0
1976	0	0	293	748	0	0	521	542	817	451
1977	0	0	318	748	2741	1661	2736	1274	0	0
1978	0	0	343	748	4659	2133	782	582	2451	1921
1979	0	0	370	748	548	389	521	344	700	839
1980	131	132	397	749	1370	958	912	873	700	633
1981	0	0	424	749	1919	1329	261	250	350	420
1982	392	374	453	749	1370	1076	2345	1021	2101	1899
1983	131	132	484	749	1096	901	2085	969	1401	751
1984	653	432	51	54	2193	855	3909	1595	0	0
1985	261	175	1834	1001	548	389	7296	3744	1051	767
1986	0	0	815	528	2467	883	4951	2014	11207	12404
1987	392	283	204	143	3974	2554	10293	4709	1401	751
1988	0	0	611	360	2467	1407	9511	6474	2451	1022
1989	0	0	51	54	1919	1222	2085	1147	700	633
1990	0	0	229	190	3700	2029	2085	1484	0	0
1991	261	249	790	590	4385	2956	2085	942	3502	1923
1992	0	0	76	72	1913	934	13643	9891	349	418
1993	0	0	1270	978	1503	817	3638	1574	1397	880
1994	260	164	813	508	5057	1961	3638	2977	4715	4788

Appendix P. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	2394	888	1310	1906	2502	22517	12376	24230	12730
1956	0	2366	867	1289	348	348	12144	6222	3165	12410
1957	0	0	418	124	1746	1113	17160	8941	6347	12174
1958	0	0	279	171	3142	1626	28378	12665	53949	11998
1959	0	0	139	132	1047	703	19864	7681	28561	11867
1960	0	0	1115	1057	4190	2409	28945	12972	28561	11769
1961	0	0	418	263	4888	2706	27243	9401	19041	11695
1962	0	0	1115	685	1746	1357	10784	7503	6347	11639
1963	0	0	4181	1547	5237	3249	31783	16125	9520	11598
1964	0	0	0	0	2444	2041	18162	6687	12694	11566
1965	568	556	528	1218	1746	969	15892	6487	9520	11543
1966	0	0	0	0	1746	1357	15595	7418	3173	11525
1967	284	303	0	0	2095	1295	10216	5305	0	11513
1968	0	0	0	0	0	0	2874	1598	0	11504
1969	0	0	0	0	1746	798	6811	5639	0	11497
1970	0	0	0	0	6517	1977	6405	2186	2720	3082
1971	0	0	0	0	1047	703	1135	773	1360	1181
1972	426	417	279	126	466	466	4484	4590	1360	1541
1973	0	0	0	0	1397	1023	10226	5269	1360	1181
1974	284	278	279	264	1746	969	3789	3411	1360	1541
1975	284	278	0	0	1397	666	5338	5336	2856	2592
1976	568	405	0	0	3317	2546	13562	4872	9520	3446
1977	0	0	0	0	2095	1036	27400	11638	24991	9436
1978	1419	942	139	132	2444	1073	25740	9329	21732	7809
1979	284	278	0	0	3841	1817	12731	5174	14876	9358
1980	284	278	139	132	4015	2263	18544	6883	18446	7276
1981	0	0	279	264	2444	922	10248	5027	4760	1723
1982	284	278	139	132	2793	2386	16013	6523	7140	5505
1983	284	278	0	0	2444	1325	21865	9972	4760	1723
1984	0	0	418	222	2095	1698	26293	9236	5950	4588
1985	9936	9731	279	311	0	0	2768	2269	7140	2584
1986	852	465	279	126	1397	666	4152	2767	1190	1468
1987	0	0	1673	923	1047	703	9410	3986	19041	14681
1988	1703	930	2091	1051	0	0	5535	2110	0	0
1989	1136	651	418	396	0	0	554	519	5950	1634
1990	568	405	1115	891	698	698	10794	8994	0	0
1991	284	278	976	455	1047	1047	5259	4871	1190	1468
1992	0	0	0	0	6616	2674	27877	12279	8669	5873
1993	283	277	4795	3024	1393	1393	14353	7497	6782	2884
1994	566	404	834	375	5745	2190	12972	7367	5934	4573

Appendix P. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	33848	27868	2568	10855	1426	4408	2110	3180	18010	10589
1956	22330	7150	0	0	1656	912	1048	851	8949	5763
1957	32727	9300	6011	6414	1660	917	3810	2093	0	0
1958	29282	12452	3006	2118	1660	917	2496	1305	20939	19800
1959	20669	9016	6011	6414	0	0	4993	3297	15891	19622
1960	60286	17513	3006	2118	0	0	0	0	1496	1577
1961	44784	27031	10520	5238	0	0	263	184	2991	3155
1962	17225	5893	1503	1059	4981	2750	0	0	2991	3155
1963	44784	12841	0	0	0	0	3153	2902	7478	4389
1964	39617	12300	4508	3956	0	0	3285	1840	14438	19459
1965	58564	20045	9017	6713	1660	917	526	359	11965	7204
1966	13780	6669	7514	2652	0	0	7095	4249	2034	1091
1967	20669	17324	9017	6355	0	0	1183	622	9824	4100
1968	1722	2053	7514	10322	0	0	2234	1688	24750	9014
1969	13780	11364	4508	3178	1660	2439	1708	1195	12135	4133
1970	9350	3450	10989	5741	1107	1374	3022	1682	33598	13645
1971	0	0	2562	1329	3320	3446	5387	4535	16345	5436
1972	10909	7352	1474	927	1107	1149	2102	735	26132	10182
1973	14026	10578	1421	1307	0	0	2759	827	14956	5477
1974	4675	4963	2254	1447	4427	4595	1051	528	16698	7698
1975	17143	9312	0	0	0	0	5978	3095	45403	18383
1976	34285	12431	5624	2743	9961	4280	1971	1096	23978	8210
1977	49090	14302	10656	4266	4427	4595	1577	1208	40450	14137
1978	79479	29179	22200	10452	11068	8130	0	0	41579	15402
1979	67012	19434	15688	8048	1107	1149	1183	566	30361	11302
1980	81038	34616	7104	2835	4981	5169	788	634	33389	13217
1981	14805	5588	7400	2964	5534	4065	394	243	31782	15393
1982	10130	5366	4440	2355	11068	8130	526	294	32557	11126
1983	20259	13556	3552	1342	2214	858	394	278	31874	12073
1984	53765	18244	4144	2972	4427	4595	1183	597	61774	26616
1985	22597	8265	7104	2183	2214	2298	4467	1872	76732	47696
1986	11688	4676	5328	2466	0	0	4862	3782	50403	20854
1987	14026	11246	0	0	5534	5744	2956	1152	29117	10578
1988	22597	9053	592	591	1107	1149	2562	2472	53112	27172
1989	12467	9825	16576	17269	3320	3446	1577	882	29390	10927
1990	12467	4366	3256	2013	0	0	4599	3287	43470	18750
1991	15584	6895	13320	7219	1107	867	2759	1054	56469	22476
1992	39630	21914	23911	21183	4415	4583	2555	915	40351	20216
1993	9325	4308	4723	2876	3311	3437	11072	5298	26475	10902
1994	6217	6083	40441	28287	1104	864	2752	1567	47939	23514

Appendix P. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	15941	5361	68361	29511	57906	25542	13985	10527	0	0
1956	4663	2550	26994	14503	10855	7861	2565	941	0	0
1957	3401	1624	23796	11023	8552	5170	643	571	0	0
1958	1913	1018	33748	15528	32747	15439	964	845	5940	5876
1959	4304	2659	31419	16372	25538	10553	1607	1333	3960	3917
1960	9139	8053	11458	5478	52862	18720	4080	1652	1188	1175
1961	425	440	8390	4801	28817	14082	1558	1217	396	392
1962	7226	2871	18970	7926	70548	29367	4748	2234	0	0
1963	2976	1458	43776	23961	71438	39554	8680	3331	0	0
1964	6121	2494	27928	10845	25166	10795	9645	3443	1584	1567
1965	26780	9302	47010	15007	53119	24346	6084	2431	1782	1348
1966	13178	7308	31062	12504	21842	10983	18473	8176	5148	3468
1967	26355	14376	58004	24769	65112	28274	6974	2966	0	0
1968	27297	14208	19335	6533	47180	16921	12241	4718	610	589
1969	12098	5507	81378	33717	47879	15612	14244	4788	1201	939
1970	14269	5499	53424	19319	43116	17333	8383	3102	3102	2396
1971	15975	6541	36033	14040	32232	13382	6825	2146	1262	956
1972	24195	9251	40817	14371	27762	7943	10980	3814	620	605
1973	14347	5819	45630	15717	50846	20392	5490	2800	0	0
1974	30244	14300	40817	13945	41065	17344	10461	3635	0	0
1975	28538	13511	33513	12832	154626	60117	21700	12952	4416	3499
1976	16130	5854	33835	12631	40384	13727	7716	4645	0	0
1977	19387	8961	50880	22835	70602	37520	6009	2245	2839	2282
1978	28693	14443	96177	27800	129833	50874	16099	4520	16088	10972
1979	20008	8652	26102	12916	75829	24137	15654	9264	5678	5229
1980	39085	14813	43942	14818	165561	75619	9348	2838	8202	6799
1981	24971	11132	41431	17366	165594	60992	4674	3252	8202	8297
1982	21998	7224	48336	17469	44614	14017	4303	2442	12303	8556
1983	26677	11055	88130	36260	155896	49066	10090	5029	11041	8862
1984	27142	14361	52608	18285	131430	58685	3264	1502	4416	3094
1985	27918	10288	51237	17823	84535	37128	9645	4099	6309	4210
1986	55681	25625	103796	47145	36346	12186	16025	8846	5678	3804
1987	45754	20528	90099	28488	122301	59487	9348	3237	9464	6149
1988	30399	16375	73875	30060	66720	32729	16767	7068	13249	10116
1989	15510	6335	55118	18935	76165	25071	5935	2208	5047	3871
1990	28383	13508	54252	17303	46996	17305	13577	5855	4492	3145
1991	41412	22224	88332	29684	130959	70216	12464	4906	2905	2243
1992	17169	6441	72113	24410	50675	16687	11172	6024	7743	6654
1993	26913	9752	63674	29978	69317	22972	14382	4702	4789	3498
1994	46866	23572	60196	25466	168782	94185	19919	7505	5573	3817

Appendix P. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	8840	9177	0	0
1961	0	0	0	0	0	0	1537	1191	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	5381	4972	2968	2364
1964	0	0	0	0	0	0	0	0	1978	1576
1965	0	0	1114	914	6372	6302	1537	1140	989	967
1966	0	0	637	622	1961	1939	0	0	0	0
1967	0	0	1814	1814	0	0	0	0	0	0
1968	0	0	0	0	490	485	0	0	989	967
1969	0	0	0	0	490	485	0	0	1023	1022
1970	0	0	2419	1742	3922	2737	1452	1098	1978	1508
1971	0	0	1814	1814	980	970	0	0	0	0
1972	773	766	1814	1814	980	970	0	0	0	0
1973	516	526	605	605	980	992	2178	1715	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	1031	750	3628	3628	7353	5089	6534	6534	989	967
1976	0	0	0	0	0	0	2541	2541	2782	2157
1977	0	0	0	0	1961	1590	0	0	927	915
1978	0	0	0	0	0	0	4719	4719	927	961
1979	0	0	0	0	0	0	0	0	4637	3982
1980	2063	1624	1814	1086	5882	3716	5082	4100	927	915
1981	0	0	0	0	5392	4214	2178	1715	6492	4790
1982	0	0	1209	1209	1961	1484	2178	1715	0	0
1983	0	0	605	605	3676	2686	0	0	5101	4179
1984	0	0	0	0	490	485	5808	4692	6956	5383
1985	0	0	605	605	1961	1455	0	0	1855	1922
1986	516	511	0	0	2451	1674	0	0	0	0
1987	0	0	605	605	0	0	2904	2197	1855	1922
1988	0	0	6350	5325	1961	1983	3630	3094	927	939
1989	0	0	605	605	2941	2065	1537	1140	0	0
1990	0	0	0	0	490	485	3844	2519	927	961
1991	1400	1432	7390	7390	3550	2442	1392	980	2519	2552
1992	0	0	540	540	438	444	687	678	0	0
1993	0	0	0	0	1506	1156	2024	1447	0	0
1994	0	0	0	0	1370	743	716	706	0	0

Appendix P. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	455	441	0	13113
1956	0	0	0	0	0	0	0	0	0	12981
1957	0	0	0	0	0	0	0	0	0	12884
1958	0	0	0	0	0	0	0	0	0	12812
1959	420	425	0	0	0	0	0	0	0	12758
1960	2521	2550	0	0	0	0	0	0	553	579
1961	0	0	0	0	1059	1059	0	0	0	12687
1962	0	0	0	0	0	0	0	0	0	12665
1963	1050	1051	0	0	0	0	0	0	0	12648
1964	0	0	0	0	0	0	455	441	0	12635
1965	420	420	0	0	0	0	2273	2203	0	12626
1966	0	0	0	0	0	0	0	0	0	12619
1967	0	0	0	0	0	0	0	0	0	12614
1968	0	0	0	0	0	0	0	0	0	12610
1969	420	425	0	0	0	0	0	0	0	12608
1970	5379	4069	0	0	0	0	0	0	0	0
1971	1260	1061	0	0	0	0	0	0	595	570
1972	0	0	0	0	0	0	0	0	3573	2184
1973	0	0	0	0	0	0	0	0	3870	2935
1974	0	0	0	0	0	0	455	466	3573	2487
1975	0	0	0	0	0	0	0	0	7145	4368
1976	0	0	0	0	0	0	0	0	4764	4106
1977	840	850	1597	1564	0	0	0	0	6550	5077
1978	840	850	0	0	0	0	0	0	3573	2729
1979	5042	3668	2395	2345	0	0	909	677	12504	8184
1980	840	683	0	0	0	0	0	0	17566	10598
1981	5882	4921	0	0	0	0	0	0	40788	27180
1982	0	0	798	842	0	0	455	441	5359	3515
1983	840	675	0	0	0	0	0	0	40490	27057
1984	3361	2304	1597	1564	0	0	0	0	18459	17177
1985	0	0	0	0	0	0	0	0	13100	8791
1986	0	0	0	0	0	0	0	0	8336	5135
1987	840	683	798	782	475	483	0	0	3275	2224
1988	1260	1255	0	0	0	0	0	0	7145	4916
1989	840	836	798	782	475	483	0	0	11611	9618
1990	840	836	0	0	1425	1450	909	881	19650	13017
1991	1902	1247	0	0	645	478	0	0	6468	4648
1992	1877	1588	0	0	849	610	406	418	10909	6542
1993	1106	881	0	0	417	426	0	0	2614	1472
1994	1566	1180	0	0	0	0	0	0	2774	2624

Appendix P. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	196	192	0	0	80	1464
1956	0	0	0	0	0	0	0	0	115	1448
1957	0	0	0	0	0	0	0	0	148	1435
1958	0	0	0	0	0	0	193	196	179	1425
1959	0	0	0	0	0	0	0	0	207	1417
1960	0	0	0	0	392	384	0	0	231	1411
1961	0	0	0	0	0	0	376	374	251	1407
1962	0	0	0	0	0	0	0	0	271	1403
1963	0	0	0	0	0	0	0	0	290	1400
1964	8189	5643	0	0	0	0	1502	1148	309	1398
1965	8189	6152	0	0	392	303	376	298	1447	1050
1966	4094	3339	0	0	0	0	376	374	0	0
1967	0	0	0	0	0	0	0	0	1669	1733
1968	0	0	0	0	0	0	188	187	0	0
1969	0	0	0	0	196	192	563	408	0	0
1970	2000	1789	0	0	342	368	426	420	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	1600	1307	0	0	0	0	426	444	0	0
1973	3600	2986	0	0	0	0	0	0	827	880
1974	11201	8866	0	0	342	329	1702	1406	0	0
1975	8000	7538	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	827	793
1977	2400	1823	0	0	0	0	0	0	1240	978
1978	5200	4584	0	0	0	0	851	840	1240	995
1979	14001	13503	0	0	0	0	851	840	1240	1062
1980	28002	26291	0	0	0	0	0	0	0	0
1981	6400	4481	0	0	0	0	0	0	4961	3654
1982	5600	5700	0	0	683	548	0	0	413	440
1983	20001	13951	0	0	0	0	0	0	0	0
1984	3200	2348	0	0	0	0	0	0	0	0
1985	11201	7316	0	0	0	0	1702	1406	0	0
1986	3200	3257	0	0	0	0	426	444	2067	1331
1987	3200	2266	0	0	2220	1880	5533	4462	1240	833
1988	4000	3222	0	0	342	329	0	0	0	0
1989	6400	4481	0	0	342	329	851	888	0	0
1990	9601	6722	0	0	683	657	4256	3013	0	0
1991	3621	2988	0	0	618	480	385	404	3593	2331
1992	2860	1704	0	0	1526	939	761	800	0	0
1993	6672	3764	0	0	0	0	1121	868	363	363
1994	2236	1531	0	0	0	0	1189	833	770	832

Appendix P. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	334	1995	0	1376	0	1268	0	817	0	337
1956	384	1980	0	1350	0	1242	0	792	0	326
1957	434	1969	0	1330	0	1222	0	774	0	318
1958	482	1960	0	0	0	1207	0	0	0	0
1959	525	1953	0	0	0	0	0	0	0	0
1960	565	1948	0	0	0	0	0	0	0	0
1961	599	1944	0	0	0	0	0	0	0	0
1962	630	1940	0	0	0	0	0	0	0	0
1963	657	1938	172	1273	0	0	0	0	0	0
1964	683	1936	0	0	0	0	0	0	0	0
1965	0	0	218	1266	0	0	0	0	0	0
1966	0	0	233	1263	0	0	0	0	0	0
1967	6019	6087	0	0	0	0	0	0	0	0
1968	708	748	0	0	0	0	0	0	0	0
1969	0	0	2863	2911	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	708	683	1432	1455	0	0	0	0	0	0
1973	0	0	716	713	800	797	0	0	0	0
1974	3541	3739	716	713	0	0	0	0	0	0
1975	1416	1172	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	1416	1379	0	0	0	0	0	0	0	0
1978	708	716	0	0	0	0	0	0	0	0
1979	2833	2347	0	0	0	0	0	0	0	0
1980	0	0	0	0	800	783	0	0	0	0
1981	3541	2648	0	0	0	0	0	0	0	0
1982	1416	1091	0	0	1601	1566	0	0	334	336
1983	0	0	0	0	0	0	2715	1921	1336	973
1984	1416	1099	1790	1819	2401	1895	543	541	334	336
1985	708	690	0	0	0	0	543	523	0	0
1986	708	710	0	0	0	0	0	0	0	0
1987	708	690	0	0	0	0	543	523	0	0
1988	1416	1379	0	0	1601	1212	0	0	0	0
1989	2124	1546	716	713	2401	1994	0	0	0	0
1990	0	0	2147	1474	2401	1621	2172	1811	0	0
1991	641	643	3240	3226	1449	1442	0	0	0	0
1992	1266	919	0	0	0	0	0	0	0	0
1993	622	630	0	0	2108	2221	0	0	293	291
1994	0	0	0	0	3728	2714	506	496	0	0

Appendix P. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	568	0	1810	0	955	94011	25748	14476	10014
1956	0	553	0	1744	0	921	71613	20938	13567	9909
1957	0	541	0	1696	0	895	68046	26616	10335	8224
1958	0	0	21	1660	0	876	165788	98366	4864	3870
1959	0	0	0	0	0	0	53467	15045	37084	13432
1960	0	0	0	0	0	0	160728	48414	4256	3386
1961	0	0	0	0	0	0	85324	31910	2432	1935
1962	0	0	0	0	0	0	108886	40641	11551	9192
1963	0	0	0	0	0	0	109461	40470	0	0
1964	0	0	0	0	0	0	89056	32481	14591	11611
1965	0	0	0	0	0	0	62807	20503	12159	9676
1966	0	0	1331	1343	0	0	144571	42062	11551	9192
1967	0	0	0	0	0	0	157957	44340	0	0
1968	0	0	0	0	0	0	118893	36650	5471	3275
1969	0	0	0	0	0	0	171414	64269	0	0
1970	0	0	0	0	0	0	115510	36987	3648	3273
1971	0	0	0	0	0	0	124964	62385	608	484
1972	0	0	0	0	0	0	147270	47589	608	734
1973	0	0	0	0	0	0	104403	28771	608	484
1974	0	0	0	0	0	0	130382	62374	0	0
1975	0	0	0	0	0	0	132314	62376	0	0
1976	0	0	0	0	0	0	134304	62380	1216	417
1977	0	0	0	0	0	0	136342	62386	17022	19416
1978	0	0	0	0	0	0	138421	62395	2432	2937
1979	0	0	494	499	2052	2193	140535	62406	2432	1813
1980	0	0	0	0	0	0	142680	62420	2736	1144
1981	0	0	0	0	0	0	144855	62436	3040	2542
1982	0	0	5438	5155	0	0	147060	62454	1824	2203
1983	2201	2156	3955	2933	1759	1146	149300	62477	5775	6975
1984	0	0	1977	1935	1759	1331	151570	62503	5793	3830
1985	0	0	0	0	0	0	153850	62535	608	484
1986	0	0	0	0	0	0	101071	31226	2432	1935
1987	0	0	0	0	0	0	126987	52882	4256	3386
1988	0	0	494	484	0	0	156605	52696	21886	17416
1989	0	0	494	499	586	515	138094	49049	6635	3782
1990	0	0	0	0	0	0	105514	30084	1206	877
1991	0	0	448	452	2123	1850	111067	33384	1809	1484
1992	0	0	0	0	0	0	180912	55487	2636	2201
1993	0	0	0	0	0	0	209780	48390	3294	2650
1994	0	0	0	0	0	0	305861	91304	1906	1316

Appendix P. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	35925	15521	12410	10128	421929	65979
1956	33172	15315	11785	9870	226580	40592
1957	2135	15147	5322	5127	192691	41541
1958	44845	15011	5322	2432	441219	107121
1959	61928	14901	14191	6023	331825	44234
1960	34167	14810	12417	9159	430995	61911
1961	14948	14736	24834	7661	281132	51892
1962	32032	14675	10643	3035	318802	57585
1963	10677	14625	0	0	364188	69304
1964	2135	14584	1774	1709	286861	50928
1965	0	14550	0	0	344012	50646
1966	14948	14521	3548	2809	326022	54058
1967	10381	8261	5182	3232	400185	66336
1968	0	14478	0	0	272806	51070
1969	0	0	0	0	377076	77868
1970	0	0	4826	2570	340272	48933
1971	1246	991	1313	1229	258049	66273
1972	830	1003	7292	2825	325771	53348
1973	0	0	875	845	286191	41642
1974	0	0	1823	1744	315677	69518
1975	0	0	912	943	495385	93092
1976	830	1003	5358	5191	355104	68147
1977	0	0	5907	4902	494457	83834
1978	830	661	2625	2458	665003	95379
1979	830	661	4688	3402	491048	76396
1980	0	0	1313	1334	649377	111657
1981	0	0	4688	3655	557177	96525
1982	0	0	6563	2112	407775	70258
1983	2491	1983	14767	10053	641437	97041
1984	6155	3948	6697	3813	619018	97588
1985	4983	2516	23628	7346	542473	91820
1986	0	0	3282	1829	445744	69236
1987	830	661	12142	10055	548077	91168
1988	0	0	8532	4156	526758	80358
1989	0	0	27458	16143	440937	66260
1990	38262	37167	20426	10268	447878	62740
1991	622	598	2009	1094	543841	90699
1992	3399	2798	6235	5563	547419	76316
1993	6010	4817	10829	7325	528314	65591
1994	1417	1416	31504	15662	801020	142370

Appendix Q. Breeding population-size estimates and standard errors of the scoters (*Melanitta fusca, M. nigra, M. perspicillata*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	158	1768	7116	5708	25985	12844	44086	48344	3110	5142
1956	348	1720	7873	5557	25786	12638	43651	46785	3641	5045
1957	0	0	5348	1056	25168	13467	82422	25590	2185	1056
1958	1092	382	4151	2388	23770	12009	35073	12481	6211	2668
1959	119	130	7529	1970	22987	7962	16614	6381	1035	614
1960	198	110	12806	3790	18708	6468	3800	1279	2530	1313
1961	860	1610	12384	3218	35151	13045	77307	21508	4371	1151
1962	2084	1198	16746	5435	27685	9739	20459	5508	4831	1902
1963	510	267	10203	2330	17168	7469	12056	5236	19060	15511
1964	4287	2399	15588	5357	29390	11367	128016	73311	7528	3825
1965	238	233	10798	2798	13118	6450	15003	7493	2426	1024
1966	774	524	5846	1755	20516	8091	23090	8049	2844	1224
1967	357	304	4871	939	19685	7960	62401	13997	4433	2060
1968	2858	1737	6089	1426	35312	17477	98058	32377	4015	1738
1969	1429	1427	13234	3856	15330	6285	25282	8908	5353	1902
1970	1131	382	10230	2723	13881	4943	13445	6463	4266	2099
1971	0	0	5927	1480	12584	5420	33904	11554	6023	2578
1972	1250	866	7145	2482	22804	9832	89875	28758	5604	3523
1973	714	700	10636	3314	17389	6709	6284	1602	2342	1282
1974	893	320	6414	1811	20745	9231	107265	35222	4182	2752
1975	2739	1666	13315	5373	15330	7552	11399	4818	2677	1692
1976	1667	474	8849	3585	28676	12307	23674	5985	3430	1757
1977	4942	2103	11853	3240	30770	10859	27035	15748	3681	1074
1978	1667	1017	6495	2371	29897	10733	28351	6744	6274	2438
1979	1191	601	22245	5617	22728	10259	14906	4973	7361	3110
1980	238	203	9255	2133	28524	10517	21774	6392	5855	2803
1981	357	275	5846	1279	22346	8200	64885	19568	5019	3225
1982	953	388	15913	5168	38667	13246	27035	7641	8281	3003
1983	1072	770	8931	4054	31346	14360	140438	33380	9369	7377
1984	2858	727	9743	3367	20592	6366	38726	11573	3513	1922
1985	2739	1327	9580	3138	22956	8439	43549	10867	2426	1301
1986	1191	792	12503	4050	33481	13455	54071	17029	5186	2475
1987	1429	559	9580	2871	17389	5332	14321	3802	4015	1857
1988	4823	2175	9337	3658	36456	11212	97181	22558	4015	2369
1989	1667	476	10554	5434	21355	10284	54509	14781	5019	3016
1990	357	257	3085	1148	14948	5950	23382	7351	7863	6444
1991	1786	792	5196	1822	14414	5865	11837	7508	5688	3266
1992	713	378	2268	864	23740	11704	93166	29959	2754	1457
1993	1544	898	3078	1173	19175	9035	59632	21814	3338	2483
1994	1544	1194	5508	1808	15827	6029	8602	4901	2837	1567

Appendix Q. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	14770	9472	0	3042	68555	29396	176910	46305	15326	11162
1956	15208	9310	0	2982	69392	28804	168553	44837	15537	10935
1957	5992	4903	0	2939	47109	19354	130210	26442	13044	5144
1958	13077	9663	0	2908	78735	18376	236946	33738	18458	14155
1959	9907	7608	0	2885	78350	16463	85502	13389	7515	3437
1960	14266	9598	87	2869	63142	15148	223912	36127	16423	4487
1961	26537	22948	503	2856	93750	26308	116689	18447	29283	12330
1962	24727	18357	2988	2847	93269	28372	121356	23913	19371	8428
1963	29034	25159	0	2841	61409	14347	108361	17483	7861	5037
1964	7323	2255	699	2836	36534	12759	80212	12752	12727	3447
1965	5215	1251	772	2832	81606	16996	95132	15404	34531	7781
1966	4216	1751	847	2830	89264	18199	114230	17094	7486	1196
1967	7212	2889	918	2828	53985	8956	116617	19909	9732	3951
1968	3773	1090	982	2826	66540	19203	114349	17868	6925	844
1969	7822	1941	1038	2825	60137	18546	132015	23810	20775	6461
1970	1886	858	1085	2824	70055	17293	120675	17012	20400	10286
1971	6546	3559	1122	2824	65410	15367	85941	13917	11978	4091
1972	4105	1190	1147	2823	73571	20157	100742	15415	23582	5779
1973	4549	1250	1157	2823	65536	14100	107426	15210	18341	8094
1974	8433	3416	1150	2823	73068	17034	104800	15407	9732	8374
1975	5936	2033	1121	2822	71436	16953	99429	12602	7112	6681
1976	6546	1960	1073	2822	68047	26146	122227	17044	8422	3085
1977	7711	2418	1011	2822	105836	28054	120556	21759	16283	4628
1978	10042	3001	947	2822	112365	26542	134641	19162	22833	19625
1979	3994	1192	889	2822	86000	19506	158275	23432	23101	11055
1980	5437	1491	841	2822	117387	30060	210555	32802	15400	4555
1981	6657	2437	800	2822	78467	20808	98116	16952	11871	6451
1982	8544	2378	757	2823	97425	22416	149800	24478	23422	4988
1983	8877	2863	704	2823	119897	29503	179760	25707	25026	5797
1984	5104	1536	0	0	99308	23262	117691	17560	20053	10010
1985	7434	2467	0	0	83112	19325	95729	14497	13155	8196
1986	8821	2624	87	49	122911	28608	123063	18153	16363	4218
1987	7767	2617	0	0	82736	19133	116617	13127	23742	5535
1988	5437	1791	87	92	70055	12169	104323	19770	21176	7545
1989	4327	1077	0	0	94914	17580	89761	13646	15400	8645
1990	6214	1806	0	0	78216	14703	115543	19018	13636	5263
1991	2774	833	0	0	81606	20151	87970	14653	13155	6529
1992	6365	2697	0	0	103617	26521	138732	17450	30727	6160
1993	4982	1633	0	0	56026	14893	73975	9677	17375	8335
1994	3321	1043	0	0	63581	11963	113715	17200	17535	8914

Appendix Q. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	22153	10392	60034	26954	39310	24382	762095	215558	185325	107520
1956	21856	10084	61463	26234	26660	10902	706098	154215	128286	105631
1957	14958	4201	36535	8217	36923	17643	711791	165951	221353	104241
1958	18168	6530	44845	10321	38887	22765	539536	132193	149949	103214
1959	9003	2984	66954	25233	26710	10903	680007	164762	299898	102451
1960	27754	9020	98001	19738	69525	31917	954564	307081	103536	101881
1961	27085	10235	104900	22170	49100	24852	750243	195066	32132	101453
1962	40832	12359	74951	17810	23568	10611	415667	107285	32132	101132
1963	11053	3921	45472	13746	25532	14661	429075	113135	99966	100891
1964	11183	3902	28224	8143	36530	22016	727257	193125	157090	100710
1965	16255	4995	58145	24345	27889	9590	492926	150163	174941	100575
1966	7802	1566	59047	13873	12177	6104	414501	108203	42843	100476
1967	7022	1908	46335	11770	26710	16256	265618	57752	64264	100403
1968	7282	2105	69698	16889	16890	5867	319788	75221	57123	100350
1969	6632	951	51666	18301	32995	20101	536663	131302	42843	100313
1970	2731	974	59349	15948	45565	12111	681566	171069	157600	45886
1971	9363	2581	69933	15334	16498	8431	309036	77212	136943	81605
1972	14044	4280	41709	10160	23568	8195	449563	144812	168310	88049
1973	15084	2827	17483	5494	11391	5046	420791	93985	158365	56560
1974	9623	4031	35751	8124	32602	17231	594290	164308	142299	74190
1975	13654	4238	51352	11095	8642	6223	371108	84791	155840	77801
1976	19506	4307	52293	15630	11195	6213	318842	82493	83008	23309
1977	23017	8182	39827	8107	14534	4804	521233	131666	127189	37701
1978	20936	4874	46178	13146	19247	6221	455534	113497	303857	135132
1979	9883	2993	84202	17591	32209	18133	693420	172456	242998	76271
1980	15865	6964	64916	19269	44386	17506	708366	160385	99743	29046
1981	13914	3297	86084	20955	44975	24270	528198	125103	145933	59157
1982	26788	5249	68992	17573	37512	24952	482200	109971	93718	19257
1983	14954	5646	65464	16195	16890	4494	536801	119039	151288	37340
1984	28999	7309	65464	14903	89558	37408	823572	216048	124511	48501
1985	9103	2269	34731	7937	16498	7696	585375	156156	194800	39089
1986	16515	3267	42336	11260	54010	16575	496323	107028	103090	74084
1987	13264	2930	68836	13953	34763	12834	552370	122682	304584	152215
1988	14174	3180	55900	13173	21015	11259	368662	86834	72297	20875
1989	9623	3447	48452	13301	28085	7662	513760	122604	223585	133303
1990	23537	5665	69228	17212	5892	1764	314483	111971	18744	5922
1991	8062	1050	82556	16758	14926	4531	404469	106989	47529	11259
1992	17083	5860	50630	10405	8037	1700	312026	85346	103186	68914
1993	14736	2718	67689	15407	15290	5125	358954	94521	83997	18518
1994	17344	3740	74497	18321	16466	6541	245829	68836	26726	17854

Appendix Q. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	154512	77346	111114	72680	32527	34354	732	1893	9626	6344
1956	137323	33770	87749	55398	11185	5928	1328	1092	0	0
1957	153085	46671	72698	21157	39223	17415	1774	1342	55208	32813
1958	112391	50212	45648	31584	50430	26678	296	159	11891	11219
1959	93013	27899	314463	84434	72843	38536	1478	387	25268	17733
1960	222845	139507	82842	21973	5603	2964	0	0	0	0
1961	187965	105078	131871	50285	16810	8893	2513	2259	0	0
1962	89138	35303	76080	39392	44826	23714	591	570	9343	3552
1963	133707	77328	33813	10594	3736	1976	0	0	6795	6411
1964	164711	76900	131871	54978	11207	5929	1626	1054	14532	17441
1965	93013	56930	87914	28749	57901	20876	1330	597	0	0
1966	75573	45875	43957	27723	1868	988	887	339	9241	7788
1967	94951	55440	131871	72767	76578	37147	6061	4731	6563	3049
1968	35849	29204	115810	37356	24281	18049	2956	912	24270	9763
1969	94951	50367	88760	53367	31752	13478	4878	1914	18705	6049
1970	119220	50267	98904	71943	26149	9052	148	142	20971	12774
1971	75389	24881	54046	20432	14942	7905	3030	2409	24065	12524
1972	148148	61055	170438	57486	88407	33306	739	414	18049	8291
1973	143765	37097	82320	27016	37355	12931	148	142	14651	6750
1974	138505	41008	65090	26379	77823	29395	739	540	15301	5964
1975	117466	26490	38829	33359	64127	20962	1330	434	13064	7694
1976	208634	57566	20980	8759	64127	26445	443	197	12428	5198
1977	133246	34888	45622	16593	69107	22665	1626	1274	23252	7096
1978	163050	50031	142528	55117	69730	23355	4287	1724	36862	12162
1979	225290	49701	108228	70540	79069	25753	443	266	29218	7399
1980	115713	47157	68933	27885	41713	21368	0	0	19040	5754
1981	133246	53434	97905	46351	59146	19597	1922	1189	11157	3357
1982	17532	5837	83585	39724	107708	58545	296	159	17785	6212
1983	47337	28645	204134	73954	65372	22030	0	0	77008	33302
1984	128862	46035	45955	11685	17432	5783	296	203	13829	4581
1985	105194	27748	50617	27876	37355	19762	148	142	20283	5796
1986	129739	56261	57277	20030	49184	16751	148	142	6455	2768
1987	177076	81479	46954	13023	29884	9676	1183	635	8073	2784
1988	138505	57739	64604	20790	44826	14781	1035	997	9626	3086
1989	163050	44513	97239	32612	19923	15286	813	601	7297	3596
1990	42078	25942	30770	10277	6226	2761	148	142	6987	2377
1991	108700	27755	31969	10734	19923	7213	296	159	13432	5199
1992	69997	17961	40550	19435	8700	5190	0	0	9650	3075
1993	112870	60564	50190	17249	3728	1976	295	284	10005	5272
1994	26249	10877	25261	10019	14914	7904	885	339	13570	6232

Appendix Q. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	2505	2052	3286	2766	0	0
1956	2420	2510	0	0	4426	4703	6589	4315	26335	14065
1957	0	0	13091	12900	3532	1282	0	0	20440	6567
1958	0	0	13575	11359	1283	1039	0	0	19763	8462
1959	0	0	5490	3003	69750	20445	2191	1696	26667	18917
1960	483	501	0	0	5050	4014	0	0	18410	9457
1961	7242	7512	0	0	37161	17769	169	173	24907	18893
1962	2414	1534	3315	1838	18853	13720	506	473	24095	18368
1963	0	0	0	0	7070	4072	0	0	16379	9586
1964	0	0	19520	15556	5497	2942	1685	1457	16785	13885
1965	0	0	1722	1671	15442	9565	1180	773	16447	13553
1966	483	478	5760	3322	24098	12732	4129	1934	19290	12098
1967	0	0	12940	8530	13695	13726	1432	902	22217	9742
1968	1057	1098	9150	6236	46572	20296	9016	3950	16062	11413
1969	352	355	10160	6786	97473	37114	1348	529	20010	17858
1970	0	0	2312	2163	12242	6569	5056	2560	23222	17604
1971	1057	718	4991	2779	16212	5360	6067	2459	11430	9239
1972	705	483	1627	1083	71931	31183	1685	643	12512	10239
1973	10501	5771	3514	2525	31301	12686	4550	2854	15269	13595
1974	1762	1107	5693	4722	14452	7177	16263	9523	7847	5193
1975	0	0	4880	3055	34681	13871	10516	6421	5284	3415
1976	0	0	24018	16105	42133	23883	4045	1132	22861	19535
1977	1409	1091	16181	10779	48357	15801	3539	1333	13479	6554
1978	8279	6158	13514	4195	29627	8254	3370	3123	25988	10426
1979	2819	1807	14274	11407	32570	11399	8510	5246	35262	16232
1980	6342	3473	8651	3337	74870	28448	843	400	20381	18385
1981	9512	6379	5228	4147	60486	27599	1011	993	7656	3935
1982	14484	11314	5856	4280	81028	45737	843	934	8627	5667
1983	1762	908	2043	2022	117210	44050	4550	3086	5607	3178
1984	352	355	3064	2046	46791	21353	1517	673	16391	11628
1985	1938	1264	3660	2255	21946	17160	2865	1751	18116	16806
1986	2114	1179	3467	2336	9565	4666	337	346	16499	12207
1987	2995	2445	16250	16848	24938	10960	1601	1161	1078	688
1988	2114	1497	6555	5798	6847	4989	3370	2730	7225	6463
1989	1409	805	6555	4923	4565	2777	169	187	5607	4228
1990	4404	4439	1967	1362	9794	4015	337	331	9763	9401
1991	1057	547	12056	9545	17470	6318	1770	1565	15467	15432
1992	0	0	881	948	7072	2962	4139	2236	4376	4440
1993	1060	768	0	0	23028	11343	3038	1265	772	533
1994	1236	1246	7517	6980	24227	7625	1478	731	5198	4661

Appendix Q. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	5415	4995	0	0
1956	750	436	543	147	334	329	13108	9078	337	340
1957	846	465	326	241	0	0	812	853	0	0
1958	188	188	653	299	0	0	8409	6852	338	326
1959	282	195	0	0	0	0	4204	2684	676	653
1960	376	281	109	105	0	0	5518	3803	0	0
1961	94	94	435	420	168	165	2102	1309	507	490
1962	0	0	1088	1116	0	0	0	0	0	0
1963	0	0	0	0	0	0	3679	2706	0	0
1964	94	94	218	141	0	0	3547	2311	2367	2032
1965	423	292	0	0	0	0	7358	4634	1014	771
1966	235	235	435	420	0	0	1613	1073	1014	1021
1967	793	818	620	365	0	0	1985	1168	0	0
1968	353	187	413	212	670	422	4219	3192	2029	2043
1969	176	174	827	827	586	577	2978	2126	700	382
1970	0	0	0	0	0	0	496	496	0	0
1971	441	242	207	207	0	0	3474	2196	1691	1834
1972	176	174	517	280	0	0	2482	2482	0	0
1973	705	727	0	0	0	0	3723	3109	1014	979
1974	176	182	0	0	0	0	745	745	1184	1192
1975	176	174	207	207	1676	1647	7197	4870	0	0
1976	0	0	827	554	419	426	1117	1117	0	0
1977	0	0	0	0	0	0	3599	2387	317	311
1978	0	0	0	0	0	0	2482	1892	0	0
1979	969	756	0	0	0	0	9927	9290	2378	1971
1980	0	0	0	0	0	0	1737	1432	0	0
1981	0	0	0	0	0	0	496	292	0	0
1982	0	0	2274	1978	922	549	2978	2126	317	323
1983	0	0	413	413	335	341	1613	954	951	932
1984	529	545	413	413	0	0	2730	2134	317	311
1985	176	182	0	0	335	329	2482	2482	0	0
1986	705	695	0	0	0	0	1737	1186	0	0
1987	0	0	0	0	0	0	993	993	1268	1291
1988	0	0	0	0	0	0	1861	1301	317	311
1989	0	0	0	0	0	0	1051	724	1268	914
1990	176	174	0	0	0	0	4336	2475	0	0
1991	0	0	0	0	0	0	3511	3450	1271	1246
1992	0	0	0	0	0	0	1387	991	372	379
1993	0	0	0	0	0	0	925	908	0	0
1994	0	0	0	0	0	0	3237	1833	0	0

Appendix Q. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	680
1956	0	0	0	0	0	0	0	0	0	676
1957	0	0	0	0	0	0	0	0	0	673
1958	144	143	0	0	905	905	155	148	0	670
1959	0	0	0	0	0	0	0	0	0	668
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	665
1962	0	0	0	0	0	0	0	0	0	664
1963	144	143	0	0	0	0	0	0	0	663
1964	0	0	0	0	0	0	0	0	0	662
1965	0	0	0	0	0	0	0	0	0	661
1966	0	0	0	0	0	0	0	0	0	661
1967	0	0	0	0	0	0	0	0	0	660
1968	0	0	0	0	0	0	0	0	0	660
1969	0	0	0	0	0	0	0	0	0	659
1970	0	0	0	0	0	0	0	0	265	265
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	1018	645
1974	0	0	0	0	342	324	0	0	611	440
1975	0	0	0	0	0	0	0	0	1628	922
1976	0	0	0	0	0	0	0	0	2035	1586
1977	359	356	0	0	0	0	0	0	611	285
1978	144	143	0	0	0	0	0	0	204	190
1979	287	193	0	0	0	0	0	0	204	190
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	407	380
1983	0	0	0	0	0	0	0	0	1425	1082
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	162	156	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	384	267	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	337	335	0	0	0	0	0	0	0	0

Appendix Q. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	128	88	0	176
1956	931	891	0	0	0	0	0	0	0	175
1957	933	1032	0	0	0	0	0	0	0	174
1958	6998	4623	0	0	872	752	2414	1955	0	173
1959	6998	6694	0	0	0	0	867	889	0	172
1960	0	0	0	0	0	0	0	0	0	172
1961	1400	1339	0	0	0	0	0	0	0	171
1962	0	0	0	0	0	0	0	0	0	171
1963	1400	925	0	0	0	0	0	0	0	170
1964	467	516	0	0	0	0	64	66	0	170
1965	467	516	0	0	0	0	513	527	0	0
1966	1400	697	0	0	0	0	193	144	0	0
1967	1400	809	0	0	0	0	145	155	143	156
1968	0	0	0	0	0	0	128	132	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	547	257	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	547	257	0	0	0	0	0	0	0	0
1979	273	281	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	291	285	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	700	783	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	642	687	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix Q. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	180	0	123	0	386	0	0	0	0
1956	0	179	0	122	0	383	0	0	0	0
1957	0	178	0	122	0	380	0	0	0	0
1958	0	177	0	0	0	378	0	0	0	0
1959	0	176	0	0	0	0	0	0	0	0
1960	0	176	0	0	0	0	0	0	0	0
1961	0	175	0	0	0	0	0	0	0	0
1962	0	175	0	0	0	0	0	0	0	0
1963	0	174	0	119	0	0	0	0	0	0
1964	0	174	0	0	0	0	0	0	0	0
1965	0	0	0	118	0	0	0	0	0	0
1966	0	0	0	118	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	242	243	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	489	486	0	0	0	0	0	0
1992	0	0	0	0	1605	1551	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix Q. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	15768	14067	16524	11537
1956	0	0	0	0	0	0	12428	6545	16151	11457
1957	0	0	0	0	0	0	1368	1339	5476	4316
1958	0	0	0	0	0	0	0	0	8214	6474
1959	0	0	0	0	0	0	0	0	36965	13085
1960	0	0	0	0	0	0	6126	4624	7530	5218
1961	0	0	0	0	0	0	2027	1364	31488	23525
1962	0	0	0	0	0	0	0	0	13691	10790
1963	0	0	0	0	0	0	2815	1944	14375	11330
1964	0	0	0	0	0	0	0	0	19851	13073
1965	0	0	0	0	0	0	0	0	2738	929
1966	0	0	0	0	0	0	2815	1749	4107	1972
1967	0	0	0	0	0	0	0	0	12664	2732
1968	0	0	0	0	0	0	68377	27828	18140	5261
1969	0	0	0	0	0	0	8410	3206	0	0
1970	0	0	0	0	0	0	10512	6695	20536	6443
1971	0	0	0	0	0	0	16900	23161	6503	3845
1972	0	0	0	0	0	0	26433	10512	8214	2787
1973	0	0	0	0	0	0	11774	3888	7530	5935
1974	0	0	0	0	0	0	17389	23155	10610	4014
1975	0	0	0	0	0	0	17233	23154	14375	7515
1976	0	0	0	0	0	0	17046	23154	14375	13501
1977	0	0	0	0	0	0	16867	23155	19509	17762
1978	0	0	0	0	0	0	16701	23158	8899	10802
1979	0	0	0	0	0	0	16527	23162	15060	10579
1980	0	0	0	0	0	0	16303	23168	5476	2429
1981	0	0	0	0	0	0	15985	23176	0	0
1982	0	0	0	0	0	0	15543	23185	11637	2498
1983	0	0	0	0	0	0	14957	23198	8214	2443
1984	0	0	0	0	0	0	14218	23212	23556	15691
1985	0	0	0	0	0	0	13321	23231	4107	1222
1986	0	0	0	0	0	0	2943	3024	6161	3577
1987	0	0	0	0	0	0	1682	1066	6503	3986
1988	0	0	0	0	0	0	18922	8567	8557	2084
1989	0	0	0	0	0	0	1682	1684	7326	2227
1990	0	0	0	0	0	0	2523	2458	4829	2507
1991	0	0	0	0	0	0	0	0	4163	1566
1992	0	0	0	0	0	0	2529	1631	3549	2062
1993	0	0	0	0	0	0	8861	4931	1094	551
1994	0	0	0	0	0	0	11445	6268	2736	1979

Appendix Q. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	97671	33983	130622	42816	2005363	284774
1956	89905	33522	120629	42012	1826824	221245
1957	2404	33138	85885	67340	1790140	225052
1958	156292	32820	105858	66811	1755615	202736
1959	156292	32555	113848	60391	2243424	233390
1960	98584	32334	167776	105647	2230503	374449
1961	74539	32149	81890	16950	1963584	261127
1962	72135	31993	39947	13307	1316687	171746
1963	16831	31863	33955	14014	1151459	180285
1964	28854	31753	59920	40485	1765404	257798
1965	0	31661	29960	23491	1346417	201090
1966	7213	31582	19973	9298	1029767	164800
1967	0	0	46674	18610	1120892	158397
1968	0	31458	33955	26623	1222989	154583
1969	0	0	22689	9300	1357969	191309
1970	1870	2270	43471	32665	1589239	204998
1971	1870	556	30669	8210	1044192	124860
1972	935	737	44341	16459	1624358	200567
1973	2805	3405	51238	22615	1280670	126329
1974	0	0	46701	18378	1573027	197982
1975	935	737	12317	5036	1177011	131354
1976	3273	3973	17721	9028	1213936	122467
1977	4675	3685	9607	5092	1466841	154783
1978	12156	9581	44341	19400	1781972	201566
1979	4675	3685	19229	11347	2008614	216883
1980	0	0	22909	13781	1751454	186719
1981	5610	5014	13574	9017	1536402	168248
1982	0	0	24018	15480	1476138	151576
1983	11221	7380	55795	36649	1931006	175060
1984	8911	3769	65229	27349	1840084	237286
1985	5610	6810	55426	25462	1465629	175215
1986	0	0	19214	8269	1395496	152142
1987	7013	3787	42124	18414	1621028	216597
1988	2805	1629	37690	15153	1239796	118154
1989	1650	1224	82573	28698	1523189	195345
1990	6526	6191	14328	12941	840320	121604
1991	8416	6186	19606	7255	1041948	118697
1992	7169	6789	6651	2857	1062314	122904
1993	2288	2167	8499	4894	1006442	121178
1994	7322	3513	16258	5936	775204	81127

Appendix R. Breeding population estimates and standard errors of the eiders (*Polysticta stelleri, Somateria spectabilis, S. fischeri, S. mollissima*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	2333	3884	67666	33282	6533	5468
1956	0	0	0	0	2266	3834	64982	33218	6198	5416
1957	0	0	0	0	0	0	80944	80944	3938	3938
1958	0	0	0	0	0	0	46662	46662	2154	2154
1959	0	0	0	0	1181	1181	53930	53930	12458	12458
1960	0	0	0	0	1181	1181	54756	54756	3015	3015
1961	0	0	0	0	14768	14768	47614	47614	7687	7687
1962	0	0	0	0	0	0	39978	39978	2584	2584
1963	0	0	0	0	1181	1181	28568	28568	5301	5301
1964	0	0	0	0	0	0	63363	63363	1149	1149
1965	0	0	0	0	0	0	58602	58602	8614	8614
1966	0	0	0	0	770	770	44684	44684	0	0
1967	0	0	0	0	0	0	38824	38824	1723	1723
1968	0	0	0	0	0	0	30766	30766	0	0
1969	0	0	0	0	770	770	30033	30033	1149	1149
1970	0	0	0	0	1541	1541	26737	26737	4594	4594
1971	0	0	0	0	0	0	24173	24173	0	0
1972	0	0	0	0	0	0	13918	13918	0	0
1973	0	0	0	0	2311	2311	28935	28935	3446	3446
1974	0	0	0	0	0	0	23074	23074	0	0
1975	0	0	0	0	0	0	19046	19046	1149	1149
1976	0	0	0	0	770	770	17214	17214	0	0
1977	0	0	0	0	0	0	20144	20144	2297	2297
1978	0	0	0	0	0	0	12453	12453	1149	1149
1979	0	0	0	0	0	0	23441	23441	0	0
1980	0	0	0	0	0	0	13552	13552	2954	2954
1981	0	0	0	0	770	770	17581	17581	2954	2954
1982	0	0	0	0	0	0	17581	17581	3938	3938
1983	0	0	0	0	770	770	8790	8790	9845	9845
1984	0	0	0	0	770	770	14650	14650	0	0
1985	0	0	0	0	5393	5393	12453	12453	5907	5907
1986	0	0	0	0	1541	1541	10255	10255	7876	7876
1987	0	0	0	0	0	0	3663	3663	2954	2954
1988	0	0	0	0	0	0	20511	20511	1969	1969
1989	0	0	0	0	0	0	6593	6593	0	0
1990	0	0	0	0	770	770	3663	3663	0	0
1991	0	0	0	0	1541	1541	6593	6593	1969	1969
1992	0	0	0	0	0	0	6593	6593	5907	5907
1993	0	0	0	0	0	0	3663	3663	3938	3938
1994	0	0	0	0	770	770	5860	5860	1969	1969

Appendix R. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	1998	0	0	0	1911	0	2376	0	0
1956	0	1971	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	1596	1596	0	0	0	0	0	0	0	0
1972	798	798	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	1556	1556	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	3001	3001	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	7980	7980	0	0	6871	6871	9337	9337	0	0
1986	798	798	0	0	2945	2945	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	1963	1963	0	0	0	0
1989	0	0	0	0	2945	2945	1556	1556	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	404	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	1664	1664	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix R. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	76532	34149
1956	0	0	0	0	73446	33931
1957	0	0	0	0	84882	81040
1958	0	0	0	0	48816	46712
1959	0	0	0	0	67569	55363
1960	0	0	0	0	58952	54852
1961	0	0	0	0	70069	50441
1962	0	0	0	0	42562	40061
1963	0	0	0	0	35050	29080
1964	0	0	0	0	64512	63373
1965	0	0	0	0	67216	59232
1966	0	0	0	0	45454	44691
1967	0	0	0	0	40547	38862
1968	0	0	0	0	30766	30766
1969	0	0	0	0	31952	30065
1970	0	0	0	0	32872	27173
1971	0	0	0	0	25769	24226
1972	0	0	0	0	14716	13941
1973	0	0	0	0	34692	29231
1974	0	0	0	0	23074	23074
1975	0	0	0	0	20195	19081
1976	0	0	0	0	17984	17231
1977	0	0	0	0	22441	20275
1978	0	0	0	0	13602	12506
1979	0	0	0	0	26661	23551
1980	0	0	0	0	16506	13870
1981	0	0	0	0	21305	17844
1982	0	0	0	0	24520	18265
1983	0	0	0	0	19405	13220
1984	0	0	0	0	15420	14670
1985	0	0	0	0	47941	20424
1986	0	0	0	0	23415	13375
1987	0	0	0	0	6617	4706
1988	0	0	0	0	24443	20699
1989	0	0	0	0	11094	7387
1990	0	0	0	0	4433	3743
1991	0	0	0	0	10103	7051
1992	0	0	0	0	12500	8852
1993	0	0	0	0	7601	5378
1994	0	0	0	0	8600	6230

Appendix S. Breeding population-size estimates and standard errors of the ruddy duck (*Oxyura jamaicensis*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	169	0	0	0	207	0	0	0	0
1956	0	167	0	0	0	204	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	161	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	836	863	0	0	0	0
1990	653	715	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix S. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	6	115	0	0	0	292	0	0
1956	0	0	6	114	0	0	0	288	0	0
1957	0	0	6	114	0	0	0	0	0	0
1958	0	0	0	113	0	0	0	0	0	0
1959	0	0	0	113	0	0	0	0	0	0
1960	0	0	0	113	0	0	0	0	0	0
1961	0	0	6	113	0	0	0	0	0	0
1962	0	0	0	112	0	0	0	0	0	0
1963	0	0	0	112	0	0	0	0	0	0
1964	0	0	7	112	0	0	0	0	0	0
1965	0	0	7	112	0	0	0	0	0	0
1966	0	0	8	112	0	0	0	0	0	0
1967	0	0	8	112	0	0	0	0	0	0
1968	0	0	9	112	0	0	0	0	0	0
1969	0	0	9	112	0	0	0	0	0	0
1970	0	0	10	112	0	0	0	0	0	0
1971	0	0	11	112	0	0	0	0	0	0
1972	0	0	13	112	0	0	0	0	0	0
1973	0	0	14	112	0	0	0	0	0	0
1974	0	0	15	112	0	0	0	0	0	0
1975	0	0	16	112	0	0	0	0	0	0
1976	0	0	17	112	0	0	0	0	0	0
1977	0	0	18	112	0	0	0	0	0	0
1978	0	0	19	112	0	0	0	0	0	0
1979	0	0	20	112	0	0	0	0	0	0
1980	0	0	20	112	0	0	0	0	0	0
1981	0	0	21	112	0	0	0	0	0	0
1982	0	0	22	112	0	0	0	0	0	0
1983	0	0	23	112	0	0	0	0	0	0
1984	0	0	237	251	0	0	1214	1159	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	119	126	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix S. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	269	0	1941	0	3610
1956	0	0	0	0	0	0	0	0	0	3561
1957	0	0	0	0	0	0	0	0	0	3524
1958	0	0	0	0	0	0	0	0	0	3496
1959	0	0	0	0	0	0	0	0	0	3474
1960	0	0	0	0	0	0	0	0	0	3457
1961	0	0	0	0	0	0	0	0	0	3445
1962	0	0	0	0	0	0	0	0	0	3435
1963	0	0	0	0	0	0	0	0	0	3427
1964	0	0	0	0	0	0	0	0	0	3421
1965	0	0	0	0	0	0	0	0	0	3417
1966	0	0	0	0	0	0	0	0	0	3413
1967	0	0	0	0	0	0	0	0	0	3410
1968	0	0	0	0	0	0	0	0	0	3408
1969	0	0	0	0	0	0	0	0	0	3407
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	2488	2487	0	0
1983	0	0	0	0	0	0	0	0	5547	4166
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	814	814	6450	4038	8320	10393
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	2580	2595	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	6450	3431	0	0
1991	0	0	0	0	814	814	0	0	5547	4166
1992	0	0	0	0	0	0	2582	2561	0	0
1993	0	0	0	0	0	0	0	0	12688	1966
1994	0	0	0	0	0	0	0	0	0	0

Appendix S. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	4208	2163	13301	0	2501	3353	3797	0	0
1956	0	0	0	0	0	0	1839	1769	0	0
1957	0	0	0	0	0	0	2756	2651	0	0
1958	0	0	0	0	0	0	4593	2926	0	0
1959	0	0	10506	14684	0	0	5205	2450	0	1051
1960	0	0	0	0	0	0	2756	1300	0	0
1961	0	0	0	0	0	0	919	704	0	0
1962	0	0	0	0	0	0	1225	801	0	0
1963	0	0	21012	29368	0	0	1225	534	0	0
1964	0	0	0	0	0	0	2143	1734	78	1041
1965	0	0	0	0	0	0	2143	1327	0	0
1966	0	0	0	0	0	0	919	624	0	0
1967	0	0	0	0	0	0	306	295	0	0
1968	0	0	0	0	0	0	612	589	0	0
1969	0	0	0	0	0	0	919	532	0	0
1970	0	0	0	0	0	0	1837	1370	0	0
1971	0	0	0	0	0	0	2450	1952	0	0
1972	0	0	0	0	0	0	1531	821	2469	1676
1973	0	0	11589	8041	0	0	3368	3240	0	0
1974	0	0	0	0	0	0	2450	1252	0	0
1975	0	0	0	0	0	0	1837	1767	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	7263	5155	8278	6314	5159	5368	3062	2537	0	0
1978	0	0	0	0	0	0	8267	3232	0	0
1979	0	0	4139	3633	0	0	2143	1230	0	0
1980	0	0	5518	4844	5159	3945	2143	1503	651	646
1981	0	0	0	0	0	0	2143	1327	1347	1331
1982	0	0	5518	3797	0	0	1225	1178	0	0
1983	0	0	22073	19376	7738	5918	12248	11782	0	0
1984	0	0	41388	29494	0	0	2450	1770	0	0
1985	7263	8942	2759	1889	0	0	0	0	0	0
1986	18158	9001	27592	8763	0	0	8573	4764	0	0
1987	0	0	0	0	0	0	3980	3829	0	0
1988	0	0	6898	2713	0	0	612	313	0	0
1989	0	0	23453	18271	2579	1973	1225	1178	637	633
1990	0	0	15175	6696	0	0	2143	1124	3823	3799
1991	0	0	8278	5628	0	0	3368	845	0	0
1992	0	0	13807	9204	2581	3246	1532	822	0	0
1993	0	0	20710	6423	2581	3246	3677	3399	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix S. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	40050	14917
1956	0	0	0	0	0	0	0	0	46287	14050
1957	0	0	0	0	0	0	0	0	38736	10184
1958	0	0	0	0	0	0	0	0	41263	10960
1959	0	0	0	0	0	0	4495	3895	40842	14070
1960	0	0	0	0	0	0	2075	1456	59368	20786
1961	0	0	0	0	0	0	2420	2184	39158	13016
1962	23774	16084	0	0	0	0	5532	3004	21895	13262
1963	9906	7250	0	0	0	0	7953	3693	26947	11617
1964	0	0	0	0	0	0	6224	3882	51368	21267
1965	7925	7847	0	0	0	0	10719	3166	74105	45638
1966	4953	2639	0	0	0	0	6570	3515	29052	8664
1967	8915	8828	1609	1557	1873	1669	7607	3029	41463	10414
1968	9397	4649	15019	9794	12664	6631	43222	10971	20763	9031
1969	0	0	1345	1327	0	0	19363	14264	33195	9018
1970	0	0	0	0	10047	9138	4841	4516	51452	14834
1971	0	0	0	0	0	0	6916	1467	54337	19531
1972	1446	1411	0	0	0	0	8644	2955	54750	22962
1973	0	0	0	0	996	1019	5878	3902	25066	12243
1974	0	0	0	0	0	0	7261	3611	71241	22666
1975	0	0	0	0	0	0	2697	1506	79828	26294
1976	4337	2033	0	0	0	0	346	323	23479	11144
1977	723	705	0	0	0	0	5532	2671	81840	31980
1978	2169	1544	0	0	2763	2954	5187	1499	40957	17508
1979	1446	1503	0	0	2570	2776	1037	705	23479	8691
1980	723	681	0	0	2028	1967	24204	11815	25896	12145
1981	723	752	12873	12657	12176	8388	25242	14415	40920	10434
1982	1486	1537	0	0	0	0	15560	6804	63557	19474
1983	10843	6829	6287	6221	0	0	5532	2456	65411	42104
1984	0	0	0	0	0	0	7261	6180	50354	14402
1985	723	752	0	0	0	0	5187	3358	40095	13816
1986	0	0	0	0	5165	5192	1383	1024	27629	11128
1987	5060	3214	0	0	0	0	1037	1065	34290	12011
1988	0	0	0	0	2810	2891	10719	6052	53580	13973
1989	5060	2598	0	0	0	0	6570	4549	61549	22797
1990	20963	20455	0	0	4019	3824	3804	1591	129916	41956
1991	1446	1503	5301	5032	3983	4119	11756	8727	103800	59766
1992	0	0	7215	7941	0	0	2422	1460	79672	33875
1993	0	0	0	0	0	0	51796	41028	20688	12120
1994	0	0	0	0	0	0	673	393	58346	32246

Appendix S. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	4386	1911	21320	14113	10424	8925	17113	7791	48375	22706
1956	18995	10795	7779	3844	5209	5299	6117	6009	55105	37897
1957	2339	1695	2369	1764	0	0	9908	7987	36000	17324
1958	5556	1973	3723	1526	1042	1025	13987	6984	16875	12229
1959	1170	1170	20982	14333	16157	12248	53327	37756	176626	94926
1960	7018	4525	5415	3591	26060	15870	23604	24961	59625	31352
1961	3217	2086	1692	1146	5733	5637	0	0	56250	54309
1962	0	0	0	0	0	0	42836	25588	4500	4345
1963	0	0	4738	2741	5733	3258	6119	3500	9000	6064
1964	1462	969	32826	33671	7297	4823	17484	12028	10125	4205
1965	2339	1215	3384	3471	13551	9787	12239	6250	12375	6002
1966	2924	2314	14552	11171	36484	26835	14862	9173	12375	7331
1967	10417	6816	25076	12894	34921	18702	13210	6148	9000	3917
1968	3838	3781	14789	8157	57332	49086	57795	36692	18000	15339
1969	4386	2928	7716	7716	2606	1347	18164	6639	20948	14952
1970	2193	1426	12217	6914	1042	618	13210	5540	6750	4497
1971	1097	1080	1286	1286	0	0	11559	6425	24750	8749
1972	26317	22499	16718	11336	4170	4100	18164	5781	16875	8131
1973	13158	11995	0	0	0	0	27246	12147	47250	34992
1974	13707	8399	5787	2122	2606	1587	8256	4084	36000	26856
1975	2741	1423	32792	23682	69320	18875	13210	6148	12375	10683
1976	2741	1979	5787	4072	1564	1537	3303	1951	9492	2920
1977	3290	2633	14789	8589	1564	1591	7431	4439	53789	32391
1978	9430	3986	12164	9188	12998	7827	11559	6956	10547	6836
1979	548	565	7073	3373	10945	9476	28913	16193	1642	1035
1980	3456	3405	2533	2533	2053	1218	15081	6391	15595	8148
1981	17545	13586	4501	4501	0	0	11678	5825	0	0
1982	1839	1237	6469	3876	44137	40160	21434	17938	14603	8378
1983	869	857	6626	3828	0	0	24337	10768	31089	11260
1984	904	454	8486	5759	2580	2624	31482	20507	25853	9728
1985	1385	796	541	541	1755	1245	42137	18616	37486	16128
1986	1411	1454	3862	3862	0	0	24019	10136	16300	5883
1987	966	952	567	567	0	0	17120	5263	20876	16481
1988	7663	7551	0	0	16652	16938	13679	7512	24026	8524
1989	2367	1589	0	0	1688	1149	21511	13786	34210	26517
1990	0	0	0	0	0	0	22724	7499	12565	6720
1991	1150	1133	84989	45687	3827	3764	21635	11650	21562	13965
1992	1778	902	2085	2085	1690	1663	64613	39574	24747	12256
1993	6018	5235	27896	21584	2452	2228	11362	5344	54829	29479
1994	3825	3770	1547	1522	1818	1229	24245	9426	51854	22923

Appendix S. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	32748	12841	7264	3729	17266	6298	5931	2438	0	2263
1956	72689	29078	1815	1758	84226	47297	11858	7530	0	2241
1957	42524	31455	9079	8791	26244	11905	2372	1517	0	2224
1958	32012	23885	0	0	2763	2763	593	565	0	2211
1959	23890	15151	908	879	1381	1381	0	0	0	2201
1960	21501	7992	0	0	9669	4395	2372	2155	0	0
1961	8467	7296	0	0	5525	2711	1186	1131	0	2187
1962	6689	5011	0	0	5525	3625	0	0	0	2182
1963	23412	21144	0	0	0	0	0	0	0	2178
1964	4778	2349	0	0	691	691	1186	1078	0	2175
1965	13856	7655	0	0	4144	3373	0	0	0	2173
1966	15290	8443	31778	30769	2763	1731	0	0	0	2171
1967	18634	9027	0	0	4834	2197	13048	12439	0	2169
1968	5734	2841	1816	1758	0	0	0	0	0	2168
1969	11945	6254	2724	1758	0	0	1186	1131	0	2167
1970	13213	4458	0	0	4144	1451	4745	3240	5050	5050
1971	9556	3545	0	0	8978	3328	5338	3246	1554	1452
1972	1911	1296	0	0	24863	16481	5338	4366	0	0
1973	6211	3367	0	0	18647	18647	16607	15831	0	0
1974	23412	8186	0	0	18946	6107	11862	7578	0	0
1975	21023	7453	0	0	25412	12396	8303	6492	0	0
1976	5734	2313	0	0	29750	20421	10083	3788	0	0
1977	22934	10670	0	0	11156	4006	6524	6219	0	0
1978	10512	3676	0	0	17354	15598	0	0	0	0
1979	40901	13887	0	0	15495	4313	4152	3460	0	0
1980	17454	6404	0	0	7438	4393	2372	1264	0	0
1981	13516	6926	1605	1555	22313	22140	593	565	0	0
1982	37212	14791	0	0	30370	19881	78289	74632	2331	1107
1983	22368	7529	5510	5336	21073	15094	4152	3308	0	0
1984	9977	5885	1649	1596	9917	3650	0	0	0	0
1985	28303	11789	0	0	17974	6408	2372	1592	2331	2178
1986	27799	13832	0	0	23301	11282	28771	23948	7537	3343
1987	37378	20102	0	0	20637	9224	9555	7782	0	0
1988	2968	2460	3761	3642	15696	12727	1113	1011	0	0
1989	12291	6246	0	0	12110	12428	0	0	2760	2581
1990	11385	10259	0	0	9558	4560	0	0	0	0
1991	4627	1945	0	0	9578	4050	1078	981	2825	2642
1992	4484	2350	0	0	5445	2214	16857	12445	1204	1129
1993	6774	5149	1073	1039	1042	718	2991	2450	3047	1232
1994	16263	8307	0	0	9849	5240	0	0	0	0

Appendix S. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	3561	1560	0	0	2560	847	22783	14450	4395	11576
1956	3560	1560	0	0	7165	5649	17877	6669	4358	11537
1957	7122	5780	0	0	3840	1961	13963	3801	4321	11505
1958	5342	3937	0	0	2560	1417	16658	11241	4293	11479
1959	44515	38540	0	0	22526	13287	9799	5413	4279	11458
1960	14575	9447	0	0	23294	14993	22538	10594	4281	11440
1961	39173	37490	0	0	29181	11157	24497	15091	4297	11426
1962	16025	7009	0	0	3840	2635	29642	11095	4327	11415
1963	53418	43301	0	0	768	515	44095	16710	4368	11405
1964	3561	1560	0	0	16639	5688	48505	16563	4418	11398
1965	28490	14009	0	0	12543	7116	24497	9343	0	0
1966	51637	25908	0	0	6143	2644	37971	16718	2715	2431
1967	33831	19202	0	0	16041	9839	24987	9585	1666	1154
1968	65882	55081	0	0	1536	957	20578	7798	333	350
1969	19587	14991	0	0	4096	3311	14943	5496	22292	21075
1970	36533	23040	0	0	3119	2705	19990	7491	330	330
1971	12526	5819	0	0	13813	6580	24987	9331	1321	734
1972	14613	5790	0	0	1782	990	9440	3625	0	0
1973	0	0	0	0	0	0	43867	32653	0	0
1974	22964	11422	0	0	16487	4892	16103	4124	1816	1055
1975	27139	5762	0	0	11140	5497	11661	4776	2312	1498
1976	22964	12281	0	0	6238	3112	16103	7684	165	156
1977	10438	4241	0	0	891	996	23321	16184	1156	617
1978	25051	16929	0	0	16041	13037	9995	6203	3963	2232
1979	9394	3469	0	0	4010	2744	8884	2682	5284	3070
1980	54277	39859	0	0	17378	13070	8884	4500	660	742
1981	42796	30369	865	656	14259	11545	33872	25569	7761	6100
1982	36533	14363	0	0	55699	41311	51640	23940	10403	8186
1983	16701	4403	0	0	11140	8221	27208	11891	9082	5261
1984	17745	12183	0	0	2228	1124	11661	6541	11228	9541
1985	12526	8663	0	0	17824	13447	6663	5821	7431	5580
1986	13924	7314	0	0	22156	12847	24916	7071	4623	3782
1987	45965	36290	0	0	11965	6511	22067	7225	330	312
1988	25454	11760	0	0	18389	11536	13541	4189	25099	25081
1989	27810	10062	769	584	17017	14646	2959	1238	5779	4825
1990	24146	14112	0	0	27105	27467	17602	5995	4954	4890
1991	30364	14732	3146	3589	18228	19356	14134	4095	36283	38017
1992	33982	21498	0	0	5987	2760	17217	7521	9239	7277
1993	8188	6012	0	0	3745	1145	7778	3119	1817	1251
1994	5741	4020	529	404	4085	1698	4072	1766	3303	3313

Appendix S. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	5149	0	8078	0	1948	8023	56686	3140	51257
1956	0	5106	0	7968	0	1919	6636	54569	4636	49277
1957	0	5071	0	7877	0	1895	5741	53012	5803	47819
1958	0	5043	0	0	0	1877	1579	1491	0	0
1959	38	5020	0	0	0	0	9046	7130	14777	9413
1960	153	5001	0	0	0	0	41120	18400	3166	1670
1961	281	4986	0	0	0	0	3290	3136	20054	20503
1962	413	4973	0	0	0	0	14803	7474	12666	3650
1963	545	4963	57	7576	0	0	3360	2760	14777	4462
1964	671	4954	0	0	0	0	3290	2538	2111	2283
1965	0	0	247	7529	0	0	2467	1847	6333	3462
1966	0	0	333	7512	0	0	2467	1534	30609	14740
1967	0	0	0	0	0	0	21993	11725	19843	5824
1968	1131	917	0	0	3318	3547	2861	1599	12666	4601
1969	0	0	572	584	0	0	17735	6241	25684	8035
1970	283	287	0	0	2877	2470	77807	58261	8229	3319
1971	0	0	0	0	0	0	29750	17613	17240	7990
1972	5656	5672	0	0	0	0	40709	16863	14425	4740
1973	3111	1969	858	853	0	0	32038	18716	7755	3830
1974	0	0	0	0	1279	1242	104696	39973	62274	36993
1975	283	273	0	0	1879	1313	80053	24971	45083	26314
1976	1697	1639	0	0	0	0	17789	6983	5049	2302
1977	0	0	0	0	0	0	16819	5867	4310	3442
1978	10181	7863	0	0	5754	3842	78042	29314	45225	12640
1979	7070	6829	17152	17065	2557	2485	46090	15875	34744	11691
1980	0	0	0	0	639	649	72402	33388	38960	16913
1981	9333	8547	0	0	0	0	199425	101403	38155	32903
1982	7353	5023	1429	1422	2877	2922	139284	44621	216395	114548
1983	0	0	2287	2275	0	0	80060	25644	102409	31958
1984	566	546	572	584	0	0	152651	44000	98600	32651
1985	566	539	0	0	0	0	87551	26861	24381	7452
1986	0	0	2287	2275	0	0	108975	41897	58821	18926
1987	283	284	0	0	1918	2029	85835	34289	28015	10146
1988	0	0	0	0	0	0	5161	2446	7478	3749
1989	0	0	858	853	0	0	34400	14310	20012	11071
1990	4242	4304	0	0	0	0	32610	20394	29906	20306
1991	1697	1722	0	0	0	0	2645	1927	11386	5714
1992	0	0	0	0	308	301	22681	12399	6792	3799
1993	0	0	0	0	0	0	13111	10854	20817	12352
1994	1414	1434	30882	22057	0	0	44228	16096	30496	13283

Appendix S. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	314	1215	59236	424	16952	0	0	6826	18447
1956	0	305	478	57022	353	16364	0	0	6916	18334
1957	0	299	0	55410	320	15937	0	0	0	0
1958	0	0	0	54234	327	15626	0	0	9952	4925
1959	0	0	0	0	0	0	0	0	35543	23593
1960	0	0	10693	6027	0	0	0	0	0	0
1961	0	0	473	473	3129	1203	24958	15204	0	0
1962	0	0	11836	5703	0	0	9983	6459	0	0
1963	0	0	5608	2343	0	0	0	0	0	0
1964	0	0	1402	1051	0	0	0	0	5687	1308
1965	0	0	1869	1291	0	0	0	0	4265	3321
1966	0	0	5608	2551	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	4265	3321
1968	0	0	3125	3123	2471	2776	3529	3478	7109	5536
1969	1160	1252	5728	3198	1235	1007	0	0	35543	27678
1970	0	0	36454	21276	0	0	3451	3359	8530	3819
1971	0	0	27080	16807	618	694	1835	5271	4265	3321
1972	0	0	26559	14081	3556	3341	0	0	28434	22142
1973	0	0	16144	7869	2471	2014	3451	2048	0	0
1974	0	0	21872	15031	0	0	1779	5270	2843	3473
1975	0	0	207853	205228	0	0	1756	5270	15639	16268
1976	0	0	6228	5033	0	0	1730	5271	0	0
1977	0	0	1276	1275	4539	3962	1702	5272	15639	6534
1978	0	0	10929	7679	11972	8177	1671	5273	0	0
1979	0	0	5413	3118	8025	8839	1637	5274	2843	2214
1980	0	0	9611	9605	11399	7069	1600	5276	0	0
1981	0	0	51097	49586	15948	17566	1559	5278	18482	14392
1982	0	0	36701	21899	44847	44619	1514	5281	2843	3473
1983	0	0	48584	24502	40335	16614	1464	5283	39808	30999
1984	0	0	39326	20884	9328	5462	1409	5287	3011	2129
1985	0	0	9774	4811	13375	15075	1350	5291	2843	2214
1986	0	0	59232	40669	10157	8703	0	0	4265	3321
1987	0	0	26626	11608	0	0	0	0	4265	3321
1988	0	0	717	646	2456	1718	0	0	0	0
1989	0	0	22427	13633	21580	17570	0	0	37706	12965
1990	0	0	5728	2827	28411	31234	0	0	14441	10530
1991	0	0	1605	1297	8567	9327	0	0	3209	2047
1992	0	0	3590	2385	0	0	0	0	45774	40164
1993	0	0	18661	11252	2831	2075	0	0	3511	3419
1994	0	0	30906	12129	5788	2362	0	0	3136	2184

Appendix S. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	8307	18717	14084	17542	285716	112339
1956	7616	18613	13222	17156	384741	123288
1957	0	18525	4148	3213	217591	103725
1958	0	18452	4148	3213	167266	69262
1959	19976	18389	29038	15362	545026	120815
1960	0	18336	20741	16063	360025	63095
1961	49939	18291	16593	7621	340439	78797
1962	0	18253	0	0	215511	44536
1963	0	18221	0	0	243041	65774
1964	0	18192	0	0	221953	51228
1965	0	18168	0	0	237499	56356
1966	0	18146	16593	13065	326606	62181
1967	0	0	10771	9035	324318	43551
1968	0	18112	0	0	385528	89355
1969	0	0	0	0	273081	47717
1970	0	0	0	0	328355	70494
1971	5826	4537	0	0	267094	37756
1972	1942	2372	13643	12283	343968	53176
1973	3884	3025	0	0	289609	62305
1974	0	0	4264	4421	457920	70223
1975	1942	2372	2132	2033	678425	214117
1976	0	0	1566	1453	176162	30527
1977	0	0	3070	1697	316512	53582
1978	0	0	0	0	362750	50923
1979	0	0	1566	1488	299172	39757
1980	0	0	6139	3525	354274	62337
1981	5826	4537	26625	14655	633200	133244
1982	0	0	13814	12867	947872	170392
1983	13595	8869	70604	38147	715003	91389
1984	4113	3390	7831	4041	554021	74421
1985	9710	11861	6139	4223	390445	51213
1986	15537	4410	23023	5661	585000	75557
1987	17479	17479	4605	4406	400819	64698
1988	0	0	7674	3842	268845	43196
1989	27032	11754	17228	8675	424424	59411
1990	29791	19117	10963	2261	473077	76298
1991	2483	2354	20361	15354	449671	92978
1992	17050	8170	23023	8454	418358	75569
1993	57165	57100	19953	9544	387202	84511
1994	1749	1747	7674	4454	342424	53912

Appendix T. Breeding population-size estimates and standard errors of the American coot (*Fulica americana*), 1955–1994.

	Strata									
	1		2		3		4		5	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	81	1587	0	0
1956	0	0	0	0	0	0	233	1552	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	6353	6353	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix T. *Continued.*

	Strata									
	6		7		8		9		10	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	4	30	0	0	0	0	0	0
1956	0	0	4	30	0	0	0	0	0	0
1957	0	0	5	30	0	0	0	0	0	0
1958	0	0	0	30	0	0	0	0	0	0
1959	0	0	0	30	0	0	0	0	0	0
1960	0	0	0	30	0	0	0	0	0	0
1961	0	0	5	30	0	0	0	0	0	0
1962	0	0	0	30	0	0	0	0	0	0
1963	0	0	0	30	0	0	0	0	0	0
1964	0	0	6	30	0	0	0	0	0	0
1965	0	0	6	30	0	0	0	0	0	0
1966	0	0	6	30	0	0	0	0	0	0
1967	0	0	6	30	0	0	0	0	0	0
1968	0	0	6	30	0	0	0	0	0	0
1969	0	0	6	30	0	0	0	0	0	0
1970	0	0	7	30	0	0	0	0	0	0
1971	0	0	7	30	0	0	0	0	0	0
1972	0	0	7	30	0	0	0	0	0	0
1973	0	0	7	30	0	0	0	0	0	0
1974	0	0	7	30	0	0	0	0	0	0
1975	0	0	7	30	0	0	0	0	0	0
1976	0	0	7	30	0	0	0	0	0	0
1977	0	0	7	30	0	0	0	0	0	0
1978	0	0	7	30	0	0	0	0	0	0
1979	0	0	7	30	0	0	0	0	0	0
1980	0	0	7	30	0	0	0	0	0	0
1981	0	0	7	30	0	0	0	0	0	0
1982	0	0	7	30	0	0	0	0	0	0
1983	0	0	7	30	0	0	0	0	0	0
1984	0	0	94	94	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix T. *Continued.*

	Strata									
	11		12		13		14		15	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	0	7091
1956	0	0	0	0	0	0	0	0	0	7023
1957	0	0	0	0	0	0	0	0	0	6971
1958	0	0	0	0	0	0	0	0	0	6930
1959	0	0	0	0	0	0	0	0	0	6898
1960	0	0	0	0	0	0	0	0	0	6874
1961	0	0	0	0	0	0	0	0	0	6855
1962	0	0	0	0	0	0	0	0	0	6839
1963	0	0	0	0	0	0	0	0	0	6828
1964	0	0	0	0	0	0	0	0	0	6818
1965	0	0	0	0	0	0	0	0	0	6811
1966	0	0	0	0	0	0	0	0	0	6805
1967	0	0	0	0	0	0	0	0	0	6800
1968	0	0	0	0	0	0	0	0	0	6797
1969	0	0	0	0	0	0	0	0	0	6794
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	26387	26387
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	2199	2199
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0

Appendix T. *Continued.*

	Strata									
	16		17		18		20		21	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	1030	14792	0	1891	24534	61230	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	11107	7748	0	0	145668	41166	0	18954
1960	0	0	0	0	0	0	3884	1955	0	0
1961	0	0	0	0	0	0	9226	4134	0	0
1962	0	0	0	0	0	0	12625	3719	0	0
1963	0	0	0	0	0	0	8740	3858	0	0
1964	0	0	0	0	0	0	7526	2336	2024	18662
1965	0	0	0	0	0	0	3399	2120	0	0
1966	0	0	0	0	0	0	9226	3375	0	0
1967	0	0	0	0	0	0	971	971	2135	2135
1968	0	0	16661	11623	0	0	23792	7167	7997	4194
1969	0	0	0	0	0	0	1214	622	4805	3421
1970	0	0	0	0	0	0	2185	1175	0	0
1971	0	0	0	0	0	0	728	509	2237	1573
1972	0	0	0	0	0	0	6798	6523	1305	1305
1973	0	0	1313	1313	0	0	19180	11759	4836	4836
1974	0	0	6942	6942	0	0	10925	4662	0	0
1975	0	0	4813	4813	0	0	3642	1549	0	0
1976	0	0	0	0	0	0	0	0	7731	6094
1977	0	0	35004	14345	6135	6135	175287	55088	6101	2728
1978	0	0	2188	2188	0	0	24764	6547	0	0
1979	0	0	1094	1094	0	0	243	243	0	0
1980	0	0	50319	38612	4090	4090	175773	126148	80022	39602
1981	0	0	1094	1094	2045	2045	71135	31839	25092	15665
1982	0	0	12033	6452	0	0	34232	22160	3438	2563
1983	0	0	28441	22402	0	0	68950	34202	2724	1665
1984	0	0	9845	6079	0	0	12382	7818	43672	30215
1985	0	0	16408	7465	0	0	17966	10675	1119	791
1986	0	0	7657	4759	0	0	7283	3771	3869	2978
1987	0	0	7657	3613	0	0	42972	13442	14145	12723
1988	0	0	36098	16981	2045	2045	161692	76984	46980	28490
1989	0	0	8751	3770	2045	2045	78661	30514	29300	17135
1990	0	0	4813	3397	0	0	6312	2256	3031	1754
1991	0	0	10939	5559	0	0	27677	11035	1639	947
1992	0	0	12042	5842	0	0	9719	2726	1517	1507
1993	0	0	13137	8097	0	0	2187	622	6223	4717
1994	0	0	0	0	0	0	2187	622	2204	1509

Appendix T. *Continued.*

	Strata									
	22		23		24		25		26	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	0	0	0	0	0	0	0	63382	10723
1956	0	0	0	0	0	0	0	0	55481	12985
1957	0	0	0	0	0	0	0	0	42221	6856
1958	0	0	0	0	0	0	0	0	58280	9193
1959	15022	7316	7443	6126	0	0	115835	50497	57330	11731
1960	7855	4606	0	0	0	0	33997	12936	50164	10240
1961	0	0	0	0	0	0	114327	75993	55220	12940
1962	5498	3538	0	0	0	0	19192	7031	12422	8134
1963	17280	10673	0	0	0	0	68816	22601	68888	14379
1964	4241	3088	0	0	0	0	79782	23663	25769	7842
1965	14138	9742	1401	1401	0	0	74847	26083	48586	10269
1966	7069	6313	1171	1171	0	0	42222	16869	24635	4932
1967	25920	14409	1276	1276	0	0	76218	22649	54237	13605
1968	57890	30713	66687	50449	61161	29682	387397	100374	67135	21939
1969	8598	4388	2133	2133	5008	5008	18643	6837	83223	15994
1970	14329	6532	5641	5641	27883	21196	15079	8252	108930	23155
1971	9171	3755	1624	1624	4254	3072	27142	8024	80879	23385
1972	4585	4045	1323	1323	6412	4536	13160	4892	87052	24141
1973	25331	9552	2858	2858	8684	5195	57849	20227	98468	24757
1974	4585	2386	0	0	3206	1852	12063	5526	222901	45877
1975	12610	7326	0	0	8403	6463	29583	10589	360468	112016
1976	19488	12745	5582	4020	17353	8628	15079	5155	37448	7980
1977	177109	90543	9401	7727	35850	19344	87459	34339	271184	97171
1978	37256	23973	10992	9318	7668	4244	16724	5986	88034	26746
1979	3439	1778	0	0	9171	7421	13434	3875	133023	33716
1980	212072	84515	0	0	32159	18403	169161	59538	383500	91241
1981	326705	132350	62945	31159	111399	73622	246750	79671	290755	83967
1982	20029	10152	2382	2382	7427	5366	85814	26541	231240	101245
1983	16049	13913	0	0	5680	2940	11241	3980	173543	111090
1984	41841	23876	3323	2337	5941	2376	17272	7925	275831	78143
1985	13756	6210	1191	1191	4057	3348	44963	14074	215043	90231
1986	4012	2469	0	0	9009	9009	5483	3352	167917	72664
1987	133548	60883	10003	10003	11360	9810	86088	29435	107782	34854
1988	43561	18154	9598	5927	58670	30286	182046	54059	110879	70458
1989	47573	23450	42657	42657	10397	7660	69638	30838	248198	96553
1990	20634	9404	0	0	9560	5425	28513	9643	325457	98022
1991	5732	3766	1401	1401	86844	61757	47979	19308	170179	59704
1992	12046	5609	1430	1382	2088	1422	50487	21349	228094	67496
1993	12620	12724	1663	1646	5159	3412	141346	57707	198232	85969
1994	19503	17083	1744	1655	0	0	8801	2654	154522	56901

Appendix T. *Continued.*

	Strata									
	27		28		29		30		31	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	24225	4950	27897	6787	25758	13170	23751	6309	164454	64213
1956	24209	7785	18308	6712	10040	3758	63757	24420	220082	87790
1957	6176	1746	4788	2049	3420	2138	98878	35396	197345	46339
1958	18348	4444	13532	3626	7909	3329	22050	5050	55463	17122
1959	3238	1025	49340	16028	59852	23447	27313	10402	89644	31758
1960	12472	3590	22276	5575	35163	18527	28315	8199	50626	11840
1961	4127	2110	22490	8992	11035	5046	11626	4804	20198	13968
1962	81	68	4500	3483	2743	2156	4650	3822	46380	33829
1963	8063	2959	5226	2860	0	0	6110	2865	6244	3634
1964	2590	1390	6631	3211	4967	2705	15668	8652	7512	3385
1965	8279	3151	6039	2440	2232	1020	17173	4599	13070	4441
1966	8690	2168	11126	2733	3679	1357	14237	6056	19399	9832
1967	23824	8241	60136	21258	64345	20900	25885	7644	60522	17893
1968	20250	12951	5076	3120	6319	2888	61974	23574	99692	37869
1969	18878	5332	19435	8224	23289	8426	46370	13136	36673	11367
1970	21484	7909	34868	23368	4559	2837	67120	25594	81549	31174
1971	9590	3297	5021	2671	4233	2433	50583	12625	155948	45742
1972	3943	2360	12869	9530	18744	9447	47274	16232	82819	18073
1973	11429	5235	9335	4091	26193	21566	131888	53154	167376	71672
1974	29533	6639	7744	4546	6801	3774	70153	27093	207264	71844
1975	38381	13477	18702	7297	65778	31844	49651	12382	127208	32838
1976	7927	4338	20142	13168	18002	8686	122974	45068	266181	115927
1977	0	0	4683	2984	9491	6341	55235	18179	50752	15091
1978	22746	9994	17420	8743	40157	14710	49646	14434	50914	14295
1979	18824	7615	14868	5994	251264	87862	46123	9218	113344	40258
1980	31454	22503	64068	28813	22033	9408	269320	72163	163694	51837
1981	25480	10419	32930	23588	55859	32265	259652	108841	80680	34198
1982	11097	7058	30501	17307	98898	61412	17756	6792	24744	9688
1983	27861	24014	32179	22395	19664	15731	74583	23721	86613	27643
1984	66674	51203	49548	32827	150613	91785	209367	82730	155518	63005
1985	22471	11507	4706	2710	85066	49018	143982	58691	139530	59539
1986	15155	9778	37522	22506	61631	44450	67926	17040	53342	15442
1987	7029	4309	19508	15793	3564	3356	55152	25088	91685	46976
1988	11857	9481	35360	25974	8051	6134	227092	135873	380827	230001
1989	16657	8870	698	510	83979	72863	187180	64036	23642	10619
1990	37132	27183	88319	64949	34801	23419	87567	35467	71514	23694
1991	17132	9832	56104	32853	36260	21235	90881	35315	138497	72617
1992	32671	14100	33525	28659	13103	8577	57938	23197	130839	79005
1993	25864	12660	29534	23185	28470	22196	20755	11100	64576	39264
1994	36755	13220	6081	2240	37323	19717	50882	25329	18055	9039

Appendix T. *Continued.*

	Strata									
	32		33		34		35		36	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	80752	17525	18477	8315	48942	10791	24338	7182	0	21723
1956	219445	44360	3635	2439	56417	9642	41362	9523	0	21501
1957	96139	24443	781	781	37438	7711	8262	2275	510	21336
1958	17941	4309	5205	3731	13595	3034	13292	3955	0	21214
1959	22871	16231	520	360	4706	1853	269	199	0	21122
1960	20816	7038	520	360	8262	2476	3413	1035	3058	2945
1961	21738	13192	9962	9962	3980	3849	3023	2705	0	21001
1962	14615	9852	3622	3622	8889	6904	795	464	0	20962
1963	9625	5364	4479	4319	385	200	528	218	0	20933
1964	10914	4320	4786	4177	4540	2538	7064	4034	0	20911
1965	15441	4238	192	192	13991	6071	3697	1437	0	20895
1966	35648	15463	8430	4279	1931	767	3711	1397	0	20883
1967	54983	12341	10675	5394	22198	8357	4720	2000	0	20874
1968	36612	12879	8992	6117	6488	2758	567	269	0	20868
1969	68846	16296	19151	7993	17819	4573	14930	5627	1059	20864
1970	188302	64485	13532	9565	29890	6522	69948	15274	5737	4382
1971	165285	39505	10675	4980	77659	27704	21367	7815	5089	5089
1972	51051	13869	3713	1761	66307	15873	33735	7861	1567	1274
1973	93284	38772	11849	7565	32216	15008	29306	13031	3221	2095
1974	98956	30131	5563	3027	97633	17388	64742	10665	447	447
1975	198095	33022	2692	1173	254813	53935	167323	32923	6608	6608
1976	426331	140478	10017	7193	371952	58234	315511	66408	2666	2288
1977	109912	58166	11189	11189	30690	19759	11579	8044	37368	36026
1978	139199	39671	3076	3076	57845	18452	17168	5519	4203	2809
1979	263069	54075	23211	11675	171291	32297	170121	40063	4880	2363
1980	90915	49620	9554	9554	70279	31855	30468	15651	11680	10295
1981	28428	11717	1543	1119	21185	11858	3585	1790	29469	19343
1982	68814	20437	7692	4479	34181	7019	22181	4543	3678	2078
1983	218683	51401	23860	16321	89514	23797	53428	12698	567	567
1984	101865	38671	5116	4377	33681	8019	1859	864	541	541
1985	102796	40975	35792	26113	98361	30492	10111	5251	4334	3039
1986	46719	11567	1225	851	98154	26095	47683	20360	808	592
1987	35852	16014	9139	7378	27404	8307	22446	10269	873	468
1988	127365	80354	7701	6417	172711	133651	14991	11114	77559	68947
1989	37671	16049	8422	8422	5372	3608	13881	13146	7744	5346
1990	28716	8394	10494	8087	58430	15096	4741	1735	2740	1840
1991	80606	32425	4140	4140	42980	11458	9475	3273	3667	3387
1992	88909	27377	0	0	91122	36614	73799	17764	2589	2055
1993	10149	5415	2836	1627	11047	5241	2454	987	247	231
1994	252738	68140	7771	5846	47773	15120	6095	2340	1089	543

Appendix T. *Continued.*

	Strata									
	37		38		39		40		41	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	7549	4461	262	262	3876	1039	7085	1835	17333	42833
1956	15892	9988	1047	612	17813	6969	10932	3194	17570	42019
1957	7280	3651	131	131	4923	1948	14986	3594	17872	41421
1958	27501	24447	1179	714	28101	14527	20179	4717	18219	40977
1959	133463	97402	1834	1576	23295	8085	12204	5038	18602	40644
1960	43119	22468	655	457	29497	8327	11203	2803	19042	40393
1961	79320	64436	959	666	30408	14230	14713	7146	19526	40201
1962	22917	20515	580	580	5834	2589	3449	1197	20132	40055
1963	24588	13530	193	131	9578	2928	9276	2491	20968	39943
1964	6786	4913	330	272	14756	7275	15522	7778	22100	39857
1965	17690	13498	843	538	9723	2359	17943	5452	12665	6550
1966	3082	1497	461	278	8655	2599	8120	2512	19440	14815
1967	29433	18002	1324	1098	9684	3814	33655	13582	21281	8954
1968	27501	19498	0	0	8722	5880	10181	2846	34738	23420
1969	35297	17572	1634	1188	60731	14020	21968	5768	26053	15111
1970	38963	15457	3745	1504	76054	19197	44609	10908	12717	5757
1971	23360	12825	4723	3871	36484	13205	51224	20822	5273	3557
1972	33685	11761	7330	4520	56622	14629	60479	19424	11166	4522
1973	9738	5489	1196	1196	35105	19654	20146	9132	14578	6667
1974	77895	32557	12948	6710	88219	18317	50813	11264	19540	9356
1975	39954	17637	2453	1405	189826	54026	44083	15216	8995	4344
1976	111565	50133	16122	8466	225461	53973	114616	26872	55208	23991
1977	41052	28956	15670	14025	58374	39414	27495	18960	14267	6018
1978	38967	14220	468	322	36283	18130	31394	12252	38460	14425
1979	53906	19227	18117	10997	51311	16670	54641	14171	151048	53662
1980	204672	103580	2710	1633	64204	30600	47309	21311	61722	42888
1981	72880	34516	6132	3097	19596	8444	29396	12693	155700	67927
1982	41753	11612	819	632	31851	10371	33777	12865	31016	12152
1983	43017	24039	947	688	32827	11172	46578	16585	35979	19211
1984	27270	13022	0	0	4501	2455	5996	3680	69476	37796
1985	8088	4984	1878	1622	9668	4978	9810	3532	41561	27915
1986	26405	12127	5398	2803	128470	44772	51376	15603	31016	15785
1987	32072	11397	324	324	19869	5114	23927	9593	13957	5843
1988	141144	95614	37728	35210	189770	132129	145609	101844	30706	16434
1989	39357	20710	750	522	6759	2814	5535	3174	42492	19217
1990	91286	51660	7934	6676	6495	2421	43340	14557	123134	68492
1991	21980	9601	4713	3485	9383	3501	41328	13262	33090	19719
1992	59914	16088	2564	1488	64520	26133	85954	14383	846	646
1993	9302	5255	1377	593	9077	3217	12195	3396	44212	27977
1994	15116	4742	404	310	8534	3678	10635	3711	44897	24828

Appendix T. *Continued.*

	Strata									
	42		43		44		45		46	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	1725	47668	0	49192	9397	23081	20930	157086	20217	141639
1956	1793	47013	0	47629	7355	22238	20849	150342	23546	135259
1957	2012	46535	0	46526	5890	21625	21223	145349	26696	130526
1958	2394	46181	3490	2619	4890	21178	34505	22297	21019	6674
1959	2917	45916	0	0	16896	10960	28444	10009	65047	39044
1960	3545	45716	0	0	1988	1988	69042	18342	12943	5200
1961	4217	45564	1163	1163	1988	1432	17066	7163	32855	15509
1962	4997	45448	0	0	0	0	57664	17676	44471	17511
1963	6006	45360	5650	43793	1029	1029	15204	6837	26573	12765
1964	7295	45292	0	0	0	0	8505	3527	5695	3112
1965	1284	1284	10532	43490	0	0	43142	16103	40115	19186
1966	0	0	13180	43386	0	0	52384	16307	84951	28681
1967	2125	1364	10471	5912	3116	2253	92011	19786	97588	18007
1968	23374	19128	5235	3719	6232	3653	65197	13918	57094	12466
1969	4902	2593	3222	1945	9607	9058	65734	17670	56322	14282
1970	9562	4901	31144	23835	7206	4671	105850	28142	50331	14598
1971	4303	3462	8055	4324	1201	1201	112181	39897	27416	10568
1972	6375	2780	33829	18051	15612	6423	92086	17735	48533	8896
1973	23374	14667	34366	14723	16813	7454	69199	26232	21159	9113
1974	2656	1827	27385	23461	9007	6385	266297	73308	64852	17062
1975	4781	2423	45105	30216	5294	3409	319088	64802	142235	34448
1976	4250	2629	25775	16996	25219	24096	56039	11401	22413	5366
1977	2125	1710	30070	29563	67852	66153	36447	13365	8302	3704
1978	44623	30104	63899	39923	12009	6235	109640	26712	213577	59059
1979	168398	159966	190624	116820	18014	9869	666883	175738	482139	120964
1980	42498	30062	12887	11912	11409	5626	181609	78820	201471	87073
1981	41967	24578	22016	11925	8406	3818	302972	125984	49669	24178
1982	22311	12274	10739	8382	4804	2444	343178	93778	202505	42207
1983	6906	4423	56919	37691	17413	7771	180868	62220	172125	61834
1984	33998	23207	59604	44104	55243	42731	391561	93328	440659	92120
1985	103589	77911	75713	51649	2402	1533	140315	54254	91792	30718
1986	1062	1062	7518	7518	0	0	191030	53817	114648	28382
1987	13281	5703	9665	5133	10808	7615	325429	97594	195233	55136
1988	64809	38531	21479	16845	7806	6723	150722	70993	251843	88877
1989	23374	19072	38662	29462	6005	4942	106906	29632	100595	24286
1990	30280	20260	35977	21199	6005	3381	70506	42033	55242	25382
1991	19858	12909	41772	28155	18806	15776	6378	4250	9977	8060
1992	14491	12803	2197	2185	2457	2156	70170	26315	10686	5690
1993	14088	8839	18309	18219	3697	2560	49520	26776	46076	18711
1994	11948	4627	15793	10406	4502	2541	213417	42912	378050	58537

Appendix T. *Continued.*

	Strata									
	47		48		49		50		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	0	5443	4995	104586	7390	80988	0	0	0	41589
1956	0	5264	6823	99455	7431	76767	0	0	0	40987
1957	0	5132	9455	95672	7379	73645	0	0	0	0
1958	0	0	12705	92884	7345	71338	0	0	0	0
1959	911	911	13248	5697	984	984	0	0	0	0
1960	0	0	26592	6460	11807	8359	0	0	0	0
1961	0	0	22924	8623	4428	2038	0	0	0	0
1962	1823	1060	40787	9357	20171	11161	0	0	4509	1344
1963	0	0	15753	7097	4232	2553	0	0	10146	5716
1964	0	0	32993	16090	20403	11877	0	0	11273	1293
1965	0	0	18888	9727	419	419	0	0	2255	2750
1966	0	0	31846	10903	1931	1589	0	0	0	0
1967	3246	3246	23116	6741	1729	1123	0	0	5637	4402
1968	0	0	59473	19786	9947	7654	0	0	38329	10396
1969	5988	4354	73281	20640	8239	3763	0	0	2255	1761
1970	4977	4427	78969	27091	5596	4295	0	0	5637	4402
1971	0	0	26277	11353	7495	4026	905	18579	15782	12326
1972	4388	2805	77157	16311	18168	6906	0	0	23674	18489
1973	0	0	86658	47624	22638	10841	0	0	129642	99032
1974	10387	4525	16686	6910	2128	1386	1943	18572	1127	880
1975	6511	3297	61099	23566	9274	5167	2262	18573	24801	17155
1976	0	0	31391	12652	9994	6621	2579	18576	27056	8064
1977	0	0	19660	13325	3886	2989	2896	18580	110477	53248
1978	2483	2483	138829	41309	81665	28880	3213	18586	1127	880
1979	18479	14001	217285	89524	120798	46025	3526	18593	1127	880
1980	0	0	46460	30532	19222	9405	3830	18602	75530	36960
1981	0	0	112250	61660	56144	34466	4119	18613	57493	44901
1982	4872	2897	117174	50575	80729	38076	4386	18625	12400	7475
1983	1088	764	83296	41003	162816	101238	4621	18640	4509	3522
1984	7102	5926	232300	59011	316176	91635	4811	18657	42971	30525
1985	1909	1909	142296	48856	51849	23006	4946	18678	16910	13206
1986	0	0	310065	81964	177481	56297	0	0	2255	1761
1987	0	0	348899	99464	67629	29486	0	0	13528	4032
1988	5036	4210	281932	110347	146625	64383	0	0	3382	2641
1989	621	621	259872	75733	18850	12866	0	0	14863	8335
1990	0	0	124348	69176	61114	40399	0	0	79812	49413
1991	0	0	30165	13853	28441	16872	0	0	13162	10648
1992	1006	977	99425	41137	30909	15526	0	0	54801	36428
1993	0	0	126740	43943	36798	16599	0	0	8269	6867
1994	728	705	260329	82551	46158	22254	0	0	24609	15114

Appendix T. *Continued.*

	Strata					
	76		77		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1955	2572	22319	2612	26092	633568	286042
1956	2449	22075	3025	25593	849499	278735
1957	0	21882	0	0	613809	253800
1958	0	21730	0	0	407143	144332
1959	0	21609	0	0	928003	152198
1960	0	21513	0	0	510254	79058
1961	23759	21437	29604	9913	569887	126892
1962	0	21375	6579	6322	369925	85978
1963	3960	21326	0	0	363893	89337
1964	0	21286	0	0	329677	79294
1965	0	21254	0	0	397989	69426
1966	0	21228	26314	38354	441544	80623
1967	0	0	0	0	822466	66513
1968	0	21190	3289	4794	1284008	144019
1969	1540	1203	8541	9116	775394	60164
1970	0	0	1790	2128	1168192	105330
1971	1540	1203	2434	2641	960145	92423
1972	1540	1203	0	0	933308	64654
1973	10780	2521	6491	6762	1236505	160600
1974	0	0	11832	8060	1513180	133857
1975	0	0	3381	3226	2257919	177288
1976	0	0	0	0	2392079	228376
1977	23099	18040	52333	12236	1664828	203411
1978	4620	3608	32860	13527	1444124	122329
1979	1540	1203	3726	3543	3458968	340342
1980	3080	2405	104666	37774	2956046	290830
1981	12319	5944	54643	23318	2682441	291796
1982	1540	1203	8519	5425	1668518	179479
1983	0	0	36511	35397	1820007	211207
1984	1631	1347	24838	18675	2903119	262578
1985	4620	2603	13387	7668	1682385	195961
1986	0	0	17039	11479	1699157	161849
1987	0	0	19473	7376	1780301	183678
1988	1540	1203	27992	17772	3223206	433012
1989	11545	8895	42224	19134	1640877	184515
1990	78894	58499	27321	15316	1664462	202372
1991	8485	3506	32289	17416	1151959	142015
1992	9166	8570	29209	14043	1380235	144760
1993	54298	51760	14605	10762	1025062	145828
1994	15066	8959	8519	8259	1712227	153308

Appendix U. Estimated number (and standard errors) of ponds in Canadian prairie and in the north-central United States, 1955–1994.

	Strata									
	26		27		28		29		30	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1961	358196	74458	105836	15086	81952	18004	49751	16983	142170	45642
1962	395508	59134	84878	13194	73218	8013	52549	9859	160311	25255
1963	543023	70647	127949	29954	49067	4536	57578	12147	144989	30612
1964	366657	44749	97113	27902	62074	7569	118608	28804	196851	23483
1965	601686	81215	197469	40374	95495	9624	104179	27388	327925	60012
1966	490191	58540	162580	24581	134933	19863	76200	13470	350761	54275
1967	377493	82303	155856	25372	215824	43657	169890	39083	282303	84319
1968	266132	42321	43628	4072	47294	4705	80902	24641	231448	29298
1969	483245	85885	156377	26303	125330	23767	94544	27644	386743	80334
1970	531228	92724	187139	40639	86500	12867	77844	28889	278096	43210
1971	585392	94027	196601	36421	121414	11619	78039	23439	294264	69717
1972	517134	80922	92732	19625	60060	6747	61204	14544	349128	36113
1973	683871	99134	136385	19444	121316	20636	83588	22316	266781	43820
1974	947344	132848	259125	53080	124084	17639	64073	10929	427648	64056
1975	428156	76557	205809	40527	178280	27376	145626	29053	395299	58819
1976	459595	59869	144151	16140	104144	9207	123706	30997	201874	41579
1977	433788	68438	53011	11347	45431	4230	55778	9787	176065	23570
1978	295812	29131	89800	16604	88634	8239	145626	36419	274088	42993
1979	617173	83649	124870	26600	100739	9570	153665	32590	433416	53870
1980	281191	48779	68122	7090	59124	10919	52135	14686	265432	28500
1981	365159	50738	80505	16650	58943	7950	64692	21526	145930	23746
1982	374594	56144	86406	10284	66784	10432	103313	28899	283612	38455
1983	318745	38524	56044	4416	58022	5672	64305	12824	384934	48420
1984	386351	64264	69838	8705	42892	4212	38815	5862	283066	82297
1985	493458	98055	170249	41310	89250	15910	75313	19225	622251	73084
1986	514467	84651	70722	16279	46371	3425	95957	33052	343774	28491
1987	325047	75447	151517	58133	58119	15879	72083	27181	223794	21038
1988	229287	36955	61562	11147	52705	5121	74322	17873	217588	47594
1989	273985	41025	111181	26778	57836	7414	105858	38627	208088	33589
1990	467916	66911	116410	33327	66153	6822	121656	31499	212982	32277
1991	445659	42620	83147	17297	73487	8193	93444	21395	194812	30215
1992	328103	39325	78342	16827	47976	3375	48799	9861	247891	26361
1993	344031	39970	139138	10445	90746	10823	115923	26510	167698	28919
1994	406094	51218	122543	19501	69750	5665	121988	31002	407268	70841

Appendix U. *Continued.*

	Strata									
	31		32		33		34		35	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1961	219363	60715	252231	32517	80336	8780	58913	17025	41837	10067
1962	383369	122423	311113	44800	45186	5082	269424	62244	59938	10703
1963	198501	50024	268896	30204	43277	11533	239079	49873	129744	21722
1964	357343	70218	322555	42832	64668	22877	481798	116116	393969	37679
1965	439897	126646	610148	66555	112182	15507	435059	75916	332170	29062
1966	587304	165704	595118	71520	132956	15084	569686	84373	388506	28624
1967	642054	184032	688814	63621	194890	22085	545139	67190	298965	31630
1968	329573	72191	404228	53038	65120	17469	123577	18010	58512	10554
1969	469731	141663	781769	78682	140011	16661	267136	53448	179628	29031
1970	603695	168458	733388	60771	102559	17785	721304	87454	518056	67382
1971	406953	107966	495343	46975	120441	16981	608658	80586	391727	36672
1972	646164	203078	357204	44445	63142	9055	545974	82841	302777	23454
1973	466551	129079	326802	29737	85656	24516	227611	79120	117041	26755
1974	836676	176396	755035	58771	122930	7521	943095	151578	460946	35243
1975	806149	180010	785676	52986	192745	26695	763930	112712	480885	81057
1976	398981	98895	553390	49870	96831	12196	656617	86548	670848	74378
1977	254673	63264	265677	32081	44546	14914	338738	47694	170320	23098
1978	393614	89860	566432	41101	161583	34081	545474	75953	280655	28749
1979	697459	177092	660383	52285	130155	17569	667777	96887	480873	34610
1980	311330	65029	358224	33315	48114	9353	273319	42844	137210	17810
1981	160516	29102	126223	11610	28420	5708	97262	18396	52607	8387
1982	629722	134981	704505	71640	119019	25858	247506	25804	210367	28707
1983	715446	175579	711918	52146	95962	21524	464631	45391	323346	33137
1984	548332	142806	266938	32861	35218	9659	260341	58018	131871	22574
1985	737129	148484	722930	96171	108016	22205	560424	96225	207783	20642
1986	402474	64960	615206	74046	112817	18851	529120	66085	346258	46935
1987	260876	44577	347497	34286	150913	35804	251539	32101	184291	14677
1988	378725	84045	149146	15141	37148	7683	213804	45756	63390	13036
1989	220599	33846	222911	30289	71109	10795	63931	9058	73088	13794
1990	284859	59029	277138	25999	56782	9483	453632	67551	97383	17572
1991	213222	41324	437338	52331	157120	41884	257812	32277	144762	27187
1992	376385	97848	349776	51596	34489	7310	378313	55152	229072	32647
1993	189633	39345	337279	31238	93982	17127	202973	21842	96326	13835
1994	564677	113107	742871	62906	178041	27629	472266	48114	287995	25883

Appendix U. *Continued.*

	Strata									
	36		37		38		39		40	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1961	33134	43338	289760	104497	36339	9672	117745	19247	109629	20345
1962	25166	42463	313547	80683	31865	5946	74842	12192	88175	9929
1963	47754	41839	247712	26447	53192	6619	162511	17312	168754	20621
1964	77402	41392	289576	20280	38578	6964	253221	28589	250304	23024
1965	141807	41070	443785	38138	72625	10187	245962	25955	218425	33660
1966	115818	40838	433194	39882	62849	7139	242044	24247	212375	19559
1967	128954	40670	503289	96840	70061	12504	182714	24719	234940	18442
1968	39765	40550	153852	23972	27446	5992	46307	5785	67895	10067
1969	59610	40463	153143	26486	36814	6025	126267	21649	87263	18116
1970	79444	21726	368228	52077	63095	10580	262215	30513	262248	34255
1971	69920	21271	239925	33955	60509	11414	200724	15677	183497	21856
1972	103819	27956	431494	40180	48055	6200	180364	19915	249992	30270
1973	82621	20199	137602	16471	33592	6377	97662	5559	82407	11263
1974	141671	69301	559526	44555	67189	9182	324561	41790	356195	51127
1975	59721	18989	264223	44663	53291	12101	296181	27480	264139	51038
1976	75452	33883	444044	60269	61715	3806	376404	41353	231046	16981
1977	35568	10698	208171	23262	39203	9246	66971	12349	89978	11883
1978	129904	32545	312549	34639	31702	2651	114911	10887	191271	26078
1979	67575	27724	268512	34042	42125	7859	202495	38300	211724	57397
1980	32444	10862	103244	11418	31621	7361	58521	8432	60873	7889
1981	30420	6843	107755	11277	23103	5155	47454	7086	54028	6960
1982	27028	6325	131121	14333	25310	5501	88215	7918	87362	19308
1983	89234	5083	271728	34842	34252	6164	163286	21341	153856	19758
1984	69312	12668	159056	37336	36519	10150	86326	18981	58192	11939
1985	45424	13794	234600	21129	29034	2316	83659	10385	103567	9942
1986	94302	26649	383751	45026	70170	9331	197072	33138	202212	22865
1987	42082	6766	165172	24756	37646	3116	119356	12114	133814	11900
1988	108225	27783	318522	51503	43372	10155	48774	6795	113578	15378
1989	36639	4993	99091	13322	38177	8822	63452	10449	46800	4800
1990	80723	21535	348462	40936	35651	8091	52375	4723	145170	10093
1991	28783	10178	147119	17481	32391	3196	70804	11491	114002	7884
1992	61938	12384	261941	17531	54005	3764	150259	19664	136624	13000
1993	48325	9211	216768	40761	55712	2051	63417	13427	99187	7072
1994	45760	8200	157912	15632	37030	9371	89396	17728	65555	5250

Appendix U. *Continued.*

	Strata									
	41		42		43		44		45	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1963									194139	40924
1964									250656	78990
1965									390944	99248
1966									279861	53591
1967									472215	844759
1968									190267	33744
1969									387920	52373
1970									563946	90936
1971									437183	74458
1972									374207	59812
1973									161406	23023
1974	142362	24512	66863	9464	64733	11235	68021	9407	950890	192323
1975	150571	35877	128848	19152	104938	16694	151049	19071	703416	92091
1976	109278	12209	126253	11323	83960	11309	92886	13839	505099	88586
1977	70391	16819	88166	22187	88189	21274	84678	20594	179186	26427
1978	145669	26799	156213	30948	123674	23705	212322	42382	304209	24786
1979	134971	25144	106189	15198	86951	14640	82034	10173	447428	40407
1980	77930	10787	74395	7020	65370	7420	66779	6252	179548	21396
1981	103299	17022	72979	10279	70290	10216	64273	9874	208371	20794
1982	147050	29024	126468	18561	140467	21660	148066	22989	443160	63740
1983	85205	12470	88651	11392	79960	8429	104317	12956	398146	51033
1984	88644	16420	117541	21959	113861	23379	142826	29983	554579	58271
1985	127318	18321	160026	22310	114955	21860	116731	13208	355475	49293
1986	190396	25354	206263	27049	120031	20673	216729	32680	381156	37382
1987	102197	10577	127141	13724	134457	16537	194898	23109	281189	22727
1988	78290	9932	91972	11267	94705	16345	92544	12630	135420	21430
1989	160463	13823	177332	15876	116411	16154	195390	24973	198556	17176
1990	121671	23075	124294	26343	72836	12829	123953	22269	64885	7010
1991	111568	10739	130063	15234	72432	11348	106517	11205	59142	8472
1992	95557	9210	139956	12592	119566	9686	107482	8192	146723	18089
1993	94288	7793	100536	11841	106424	14030	141080	14607	167251	26236
1994	227408	26160	251113	35488	203228	29533	281084	34165	412006	35224

Appendix U. *Continued.*

	Strata									
	46		47		48		49		75	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1963	142094	29670	16363	2063	133880	13246	100684	29849		
1964	96879	31467	24374	9501	185340	41896	132653	33127		
1965	203428	45605	27255	4636	196626	32427	103893	16366		
1966	192764	64135	38471	7438	151361	17845	84046	15111		
1967	255754	43356	45284	10215	200535	41383	100688	16803		
1968	148146	12467	15815	5040	196763	28973	82363	9374		
1969	202062	15607	37618	10750	313380	33729	132772	22456		
1970	181716	21247	34813	6773	218514	30047	70198	12610		
1971	104590	18681	20375	4438	158733	24345	102103	14622		
1972	163736	21332	39105	13780	291933	41935	119609	20503		
1973	52055	4604	11396	2961	121632	7363	79449	8965		
1974	179262	18734	57308	10350	185981	19540	125368	11912		
1975	285953	29434	41445	12508	236351	35890	108264	20009		
1976	221770	25398	37384	12522	121831	19986	93077	14305		
1977	60127	7919	12809	2106	114547	11220	73044	8456		
1978	195207	20890	14212	7196	307350	33655	131536	20256		
1979	268503	30086	32870	13532	214634	26998	148606	19838		
1980	89437	10179	11134	3096	108431	14681	88335	15435		
1981	55160	6114	9666	1613	58772	6543	40001	6813		
1982	183407	18300	18976	5221	176662	27244	73702	10713		
1983	147520	20545	23305	5440	189418	26430	142628	20951		
1984	269246	30913	27731	7150	262387	33252	189387	23064		
1985	126586	25425	17608	3002	183817	23799	124413	18323		
1986	201734	17580	25840	6479	260511	26084	132164	15203		
1987	170431	12533	15061	3333	216448	16765	105929	10910		
1988	74764	10830	8748	3177	99859	12839	114356	12205		
1989	117511	16518	15492	4139	222019	39679	86733	17928	160406	31102
1990	39496	4586	8031	3056	79351	9211	56680	7721	174436	27710
1991	36067	4906	7680	3153	113068	16626	69540	11954	166099	28431
1992	47878	3327	9441	3282	96760	9577	61600	10214	137176	12004
1993	162997	16261	18395	7287	334664	32550	224953	24259	156212	17002
1994	275532	20381	27912	8923	356488	41781	180851	20583	147212	28863

Appendix U. *Continued.*

	Strata			
	76		Total	
Year	$\hat{N}$	$\hat{SE}$	$\hat{N}$	$\hat{SE}$
1961			1977192	165394
1962			2369089	184593
1963			3069186	142635
1964			4060619	200259
1965			5300960	241474
1966			5301018	245273
1967			5765662	291858
1968			2619033	129218
1969			4621363	232385
1970			5944226	270040
1971			4876391	216521
1972			4997833	263352
1973			3375424	199360
1974			8230886	365994
1975			7230945	295135
1976			5990336	220684
1977			3049055	131124
1978			5212447	177854
1979			6381127	261771
1980			2902263	113473
1981			2125828	82602
1982			4642822	198416
1983			5164859	219214
1984			4239269	216496
1985			5610016	255112
1986			5759497	189605
1987			3871497	139086
1988			2900806	138127
1989	251462	16039	3394519	113898
1990	315508	26350	3998433	150641
1991	252129	20154	3618207	120374
1992	282039	21251	4028092	146990
1993	245279	12208	4013216	111949
1994	238152	29124	6370134	199561

U.S. Department of the Interior
National Biological Service

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This responsibility includes fostering the sound use of our lands and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities.