NOAA Technical Memorandum NMFS-F/NEC-41

Calculation of Standing Stocks and Energetic Requirements of the Cetaceans of the Northeast United States Outer Continental Shelf

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
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Woods Hole, Massachusetts
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ABSTRACT

Based on an extensive review of the literature, the average body weight and the proportion of the diet made up of fish, squid, and zooplankton were estimated for each whale and dolphin species observed by CETAP aerial surveys in the continental shelf waters off the northeastern U.S. The resulting body weight data were then used to calculate minimum daily metabolic requirement and feeding rate per individual for each species. The body weight, feeding rate, and prey preference estimates could then be combined with population density and abundance estimates from the CETAP aerial survey data to calculate seasonal estimates of cetacean biomass densities, standing stocks, and prey consumption for the individual CETAP sampling areas and for the northeast shelf as a whole. The annual average standing stock of cetaceans off the northeastern U.S. is about 57,600 metric tons. Minimum estimated annual consumption is 185,000 mT of fish, 154,000 mT of squid, and 26,000 mT of zooplankton. Because of a number of negative biases, the actual consumption values are probably ten times these estimates. Whales and dolphins are therefore significant predators on the marine resources in the ecosystems of the region.

INTRODUCTION

Prior to 1979, little of the research on marine mammals off the northeast U.S. coast was of a quantitative nature. Wide reaching ship surveys provided insight into the distribution of various species, however it was impossible to determine even relative abundance from these qualitative surveys. At a more detailed level, site- and species-specific observations in localized areas have provided information on local movements and residence times of individuals. Finally, opportunistic sightings have been collected from mariners, particularly for the Gulf of Maine/Georges Bank region. While occasionally valuable, these data are often difficult to verify and impossible to quantify.

As part of a need for baseline information for input to the Outer Continental Shelf (OCS) decision-making process, a three-year field study was conducted by the University of Rhode Island, under contract to the Bureau of Land Management. Data were collected in the region between Cape Hatteras, North Carolina and Cape Sable, Nova Scotia (Figure 1). With minor exception, this area is identical to that in which the National Marine Fisheries Service, Northeast Fisheries Center (NMFS-NEFC) conducts extensive groundfish and ichthyo/zooplankton surveys. The University of Rhode Island study (CETAP - Cetacean and Turtle Assessment Program) consisted of four major elements:

- a random transect aerial survey program,
- a platforms of opportunity program,
- an opportunistic sighting program, and
- a special studies program, including both shipboard and aerial surveys.

While all of these data are valuable, the random transect aerial survey data are unique in their applicability to quantitative analyses. It is maintained that these are the only such data for the region, and possibly among the best of their kind for anywhere in the world. Since the beginning of the CETAP sampling in 1979, surveys in both Canada and the U.S. have been modelled after it. Details of the methods employed and the platform utilized can be found in the various CETAP reports (CETAP 1981; 1982a; 1982b) and in Scott and Gilbert (1982).

Until recently, little attention has been devoted to the role of marine mammals in the ecosystems of the northwest Atlantic. In general, it was considered that marine mammals in this region were not food limited, in spite of the work of Laevastu and Larkins (1981) in the North Pacific and Horwood (1981) in the Antarctic. However, it is possible that this position has been based on the absence of reliable abundance estimates for various regions, due to the absence of a quantitative data base.

A major component of the CETAP study was the generation, from the random transect aerial survey program, of a series of estimates of the population density and abundance of sampled cetacean species in each of the various sampling areas into which the northeast OCS was subdivided. The objective of the work which we report herein was to use the CETAP data to develop estimates of biomass density and energetic requirements of whales and dolphins in the NMFS-NEFC region of interest for use in the development and refinement of NMFS fisheries ecosystem management models.

METHODS

The methodology involved in this project can most easily be divided into six phases:

1. SUMMARY OF CETAP DENSITY DATA:

The population density estimates resulting from the CETAP aerial surveys over all three years of the program were used to generate a set of tables of seasonal average densities and abundances for each of the main survey blocks. These tables were submitted to NMFS-NEFC, and are included as Appendix A to this report.

2. REVIEW OF PERTINENT LITERATURE:

A detailed, extensive review of the scientific literature was made to collect all available data pertaining to body weights, prey preferences, and metabolism of the species of cetaceans observed off the northeastern U.S. Preliminary CETAP work in this area (Scott et al. 1983) used estimates of average weight and prey preference based upon only a brief survey of the more recent literature - primarily a few general review papers. The generation of more precise estimates required a more complete review of the primary literature. This was accomplished by the standard methods - using <u>Biological Abstracts</u> and <u>Zoological Record</u> to discover pertinent references. As individual papers were located, additional references were found within their bibliographies. In addition, all available volumes for certain specific journals, including the <u>Reports of the International Whaling Commission</u>, <u>Norsk Hvalfangst-Tidende</u> (<u>Norwegian Whaling Gazette</u>), and the <u>Scientific Reports of the Whales Research Institute</u> (Tokyo, Japan), were searched in their entirety to locate pertinent references which otherwise may have been missed. Most of this work was accomplished in the libraries of the University of Rhode Island, with one trip to Harvard University's Museum of Comparative Zoology library to locate a number of journals which were unavailable at URI. The Russian literature presented a particular problem with respect to both language and availability. Some works, however, are available in translation, while pertinent data from others could be obtained from Biological Abstracts or from citations in later papers, most notably in the Japanese literature. While not the method of preference, this did allow access to data not otherwise available.

3. SUMMARY AND SYNTHESIS OF WEIGHT DATA:

All body weight data found during the literature review for each species known to occur in the study area were organized by species. An average value of all measured or estimated body weights was calculated. In cases where a mean weight of "n" individuals was reported, it was included in the computations as "n" times the reported mean (i.e. the overall means were weighted). A final value for estimated average body weight of each species was then derived, using a degree of subjective judgement in many cases. Several factors were taken into consideration during this process:

(a) Southern Hemisphere whales are generally significantly larger than their Northern Hemisphere conspecifics.

(b) Fishery operations preferentially select the largest individuals available, with the resultant data not representative of the actual population size and age distribution.

(c) Weighing a large whale is a difficult procedure, nearly always done by weighing small pieces during processing and then totaling these weights. This results in loss of blood and other body fluids, variously estimated at 10-20% of the total body weight.

(d) Many reports, especially those written for more general readership, may tend to emphasize the largest individuals for dramatic effect.

(e) Average size within a population decreases with increased fishing pressure; older data therefore tend to be biased high relative to current populations.

(f) There may be differential distribution of size and age classes, so data from wide geographic ranges may not accurately represent the study area.

Also given some consideration was any subjective impression of relative or average size of individuals observed during the CETAP study. All factors were considered in deriving the final value which is reported herein. When any doubt existed, we considered it prudent to err toward conservative estimates, using lower values.

For the several unidentified species categories, the body weight values were calculated as averages of all species observed in the region which could be encompassed by the category, weighted by the number of sightings of each individual species.

4. SUMMARY AND SYNTHESIS OF PREY DATA:

In a manner similar to that described above, the prey data gathered from the literature were synthesized to derive an estimate of the feeding spectrum of each cetacean species. Cetaceans are apex predators, feeding on a wide variety of organisms. Their prey, however, can be broadly grouped into three categories: fish, squid (including other cephalopods), and zooplankton, with other prey items of relatively minor overall importance. An attempt was made to classify the diet of each species as to percentage comprised by each of the three prey classes. This proved to be a difficult task, again requiring a large measure of subjective judgement. Very few quantitative data are available; most reports cite simply the presence of specific items in stomach contents or, at best, the number of stomachs in which an item occurred. Other confounding factors include:

(a) Populations in different geographic regions often show very different prey preferences. Wherever possible, North Atlantic data were emphasized, with data from other regions given only secondary importance. Data from other geographic areas are included because they demonstrate other supporting prey items to which North Atlantic cetaceans may switch on the basis of local availability.

(b) It seems from the literature that often only unusual prey items found during stomach content analyses were deemed noteworthy enough to report.

(c) Since many reports state only which items occurred, and not in what quantities, it is possible that rare items were taken only incidentally while feeding on some common prey. A good example of this is the oft-repeated report of a humpback whale which had swallowed six cormorants. No doubt the whale accidentally ingested these while feeding on the same prey school as the birds.

(d) Along similar lines, food studies using hard remains, e.g. fish otoliths and bones, or squid beaks, pens, and eye lenses, cannot distinguish between items eaten by the cetacean and items eaten previously by the prey and still in the prey's gut when it was eaten in turn.

(e) Prey preferences may change with time as relative abundances of prey species vary. Human impacts on the Western North Atlantic have altered many aspects of the ecosystem, perhaps causing or influencing concurrent shifts in cetacean diets.

The feeding spectrum of each unidentified category was estimated, like the body weight, as a weighted average of the values for all possibly included species.

5. DENSITY CALCULATIONS:

The CETAP study area was comprised of 37 individual sampling areas (Figure 1). Blocks E through Q are each composed of two to three depth defined strata: x=0-20 fathoms (0-36.7 m), y=20-50 fathoms (36.7-91.4 m), and z=deeper than 50 fathoms. The outer boundary was defined as 5 nautical miles (9.3 km) past the 1000 fathom (1828.8 m) isobath. Blocks R and S are 50 nautical mile (92.6 km) extensions into slope water regions of blocks containing the two primary oil lease areas. Each sampling area contained a series of northwest-southeast transect lines at 2 nautical mile (3.7 km) spacing, with random selection of lines for each survey day. Further details of survey design can be found in CETAP (1981, 1982a, 1982b) and Scott and Gilbert (1982).

The CETAP population estimation effort was based on line transect census theory. General discussions of line transect census methods can be found in Seber (1973), Gates (1979), and Burnham et al. (1980). In general, the estimated density of a species (d) along a given transect is estimated as:

$$d = \frac{g\ n\ f(0)}{2\ L} \qquad (1)$$

where g is the mean pod size, n the number of pods sighted along the transect, L the length of the transect, and f(0) the estimated sighting probability density function evaluated at a right-angle distance of 0. Estimates of f(0) were calculated for each species during the CETAP study (CETAP 1982b).

All data were pooled across the three years of aerial surveys, 1979-1981, and partitioned by seasons. Seasons were defined as approximate calendar seasons, beginning on the 21st of March, June, September, and December. All transect lines flown within a sampling area and season were treated as replicate samples. Since transects were of unequal length, a weighted mean estimate of density (D) was calculated for each season/sampling area:

$$D = \frac{\sum (L\ d)}{\sum L} \qquad (2)$$

The variance of this term was estimated as in CETAP (1982b). Species abundance in any sampling area was calculated by multiplying density times the area of the sampling area, and the 95% confidence interval about the abundance was estimated using the standard Student's-t method. The species biomass density and standing stock for each season/sampling area were then calculated by multiplying the average body weight times the population density and abundance, respectively.

6. ENERGETICS AND CONSUMPTION ESTIMATES:

Because of their large size, it has thus far been impossible to directly measure metabolic rates of the larger cetaceans. Accordingly, much of the work in this area has been strictly theoretical, extrapolating from measurements made on smaller marine and terrestrial mammal species. Choosing a metabolic model to use for this project therefore was a difficult and, again, somewhat subjective procedure.

A good deal of the recently published work on metabolic rates of large cetaceans has been by Christine Lockyer of the British Antarctic Survey Sea Mammal Research Unit. Lockyer (1981) estimates the daily near-basal metabolic requirements of cetaceans (M, in kcal/day) as:

$$M = 110\,W^{0.783} \quad (3)$$

where W is body weight in kg. Near-basal metabolism is defined as the cost of slowly swimming and/or feeding. Brody (1968) derived an equation for the basal metabolic rate of terrestrial mammals:

$$M = 70.5\,W^{0.7325} \quad (4)$$

Because cetaceans must swim to maintain position and stability in the water, basal rates are probably not realistic, and certainly impossible to measure. Hinga (1979) reviewed published data on the metabolism of smaller cetaceans, and found close agreement with the Brody curve with a linear correction of 1.5 for conversion from basal to resting metabolism, with the resulting equation:

$$M = 105.75\,W^{0.7325} \quad (5)$$

Although the Lockyer equation (3) for near-basal metabolism appears very similar to the Brody-Hinga equation (5) for resting metabolism, the former results in substantially higher estimates. The difference increases with increasing body weight, averaging 25-30% higher across the range of typical body weights. This may be due to a lack of exact equivalence between near-basal and resting rates as defined. Because we can determine no valid reason for selecting either model over the other, we have chosen to calculate the consumption estimates using both models for comparative purposes.

Using either equation (3) or (5) and the body weights derived previously, a daily near-basal (or resting) metabolic requirement per individual was calculated for each species. To account for an assumed assimilation efficiency of 80% (Lockyer 1981), this value was then multiplied by 1.25, resulting in an estimate of minimum daily feeding rate (kcal/day) per individual for each species. The daily feeding rate (kcal/km^2/day) for each species/season/sampling area was then computed by multiplying species density times feeding rate. Total feeding (kcal) for each species/season/sampling area was computed by multiplying species abundance times feeding rate times number of days in the season. These values were then partitioned into the three primary feeding classes (ichthyophagous or fish-eating, teuthophagous or squid-eating, and planktonophagous or plankton-eating) using the prey spectra developed previously. In each case, daily and seasonal feeding rates were multiplied by the feeding spectrum percentages, and then converted from energy to biomass units of kg/km^2/day and metric tons (mT=1000 kg), respectively. The energy-biomass conversions used were 1 kcal per gram wet weight for fish and zooplankton (Clark and Prince 1980; Sissenwine et al. 1984) and 0.83 kcal per gram wet weight for squid (Croxall and Prince 1982).

The biomass density data for each species were also partitioned into the three feeding classes. The final step in the analysis was to sum the biomass density, daily consumption, and total seasonal consumption data across species within each feeding class to result in estimates for each feeding class/season/sampling area.

RESULTS AND DISCUSSION

INDIVIDUAL SPECIES SUMMARIES

The CETAP random transect aerial surveys resulted in 1,652 on-census sightings of 37 different taxonomic categories of cetaceans, including 20 "identified" categories and 17 "unidentified" categories. The identified categories included sightings which were identified to species or, in four cases, to groups of two to four species within one genus which are difficult or impossible to differentiate from aerial surveys. The unidentified categories include sightings identified only to broader taxonomic classifications. Table 1 lists the categories, along with the 2-letter CETAP identification codes and numbers of sightings. All scientific names used are based on Rice (1977b). In all other sections of this report we have used the term "species" for brevity; it should be understood to include all of the categories in Table 1.

The following sections show the estimated average body weight and prey preference spectrum we have derived for each species, and the sources of all data utilized. In many cases where appropriate, we have also included a brief narrative to justify the values utilized. For the unidentified categories, we have simply listed the derived weight and prey preference values, along with a list of the species and weighting percentages used in calculating the values.

Right whale (Balaena glacialis):

WEIGHT - 40,000 kg. (Freund 1932; Gihr and Pilleri 1979; Klumov 1962; Lockyer 1976; Nemoto 1970; Omura 1957, 1958; Omura et al. 1969)

The mean of 22 weights from the literature was 56,641 kg, almost entirely based on North Pacific animals ranging up to 17.4 m long. During the CETAP study, we had the opportunity to spend considerable time studying right whales at close range, and it is our impression that the whales in this population are considerably smaller, with adults probably in the 10-12 m range. We therefore chose to use the smaller weight value shown.

FOOD - 100% zooplankton. (Allen 1916; Coffey 1978; Freund 1932; Klumov 1962; Laws 1977; Matthews 1932, 1938b; Nemoto 1970; Nemoto and Kawamura 1977; Nishiwaki 1972a; Omura 1957, 1958; Omura et al. 1969; Tomilin 1957; Watkins and Schevill 1976, 1979)

In all oceans, right whales prefer calanoid copepods, with juvenile euphausiids an alternate prey. North Atlantic right whales appear to feed primarily on _Calanus finmarchicus_. CETAP observations in the Great South Channel indicate a correlation between right whale distribution and densest concentrations of _C. finmarchicus_ (CETAP 1982b).

Humpback whale (_Megaptera novaeangliae_):

WEIGHT - 25,000 kg. (Ash 1953, 1957; Coffey 1978; Freund 1932; Gihr and Pilleri 1979; Laws 1977; Lockyer 1976; Nishiwaki 1959; Ohno and Fujino 1952; Quiring 1943; Schultz 1938; Sergeant 1969; Tomilin 1957; Zenkovitch 1934, 1937)

The literature mean was 25,131 kg (n=1068.5), mostly from indirect estimates based on cooker fillings by Ash. We are assuming that a positive bias due to whaling data from the Antarctic is countered by a negative bias in the cooker data due to loss of fluids, viscera, etc.

FOOD - 95% fish, 5% zooplankton. (Allen 1916; Coffey 1978; Freund 1932; Hain et al. 1982; Ingebrigtsen 1929; Jurasz and Jurasz 1979; Laws 1977; Mackintosh 1946; Matthews 1932, 1938a; Mayo 1982; Mitchell 1973; Mizue 1951; Morch 1911; Nemoto 1970; Nemoto and Kawamura 1977; Nishiwaki 1959, 1972a; Ohno and Fujino 1952; Overholtz and Nicolas 1979; Pike 1950; Rice 1963, 1977a; Sergeant 1966; Sutcliffe and Brodie 1977; Tomilin 1957; Walker 1975; Watkins and Schevill 1979; Whitehead et al. 1980)

Like most baleen whales, Southern Ocean humpback whales feed heavily on euphausiids, but northern populations include a much higher percentage of fish in their diets. The principal prey species in the western North Atlantic are sand lance (Ammodytes americanus) in U.S. waters and capelin (Mallotus villosus) farther to the north. Other fish taken in the North Atlantic include herring, mackerel, and gadoids. Euphausiids are secondary prey, but may be taken only rarely in U.S. waters.

Sperm whale (Physeter macrocephalus):

WEIGHT - 20,000 kg. (Bjarnason and Lingaas 1954; Coffey 1978; Crile 1941; Freund 1932; Gambell 1970; Gihr and Pilleri 1979; Laws 1977; Lockyer 1976, 1978b; Ohno and Fujino 1952; Omura 1950; Quiring 1943; Schultz 1938; Sergeant 1969; Slijper 1962; Tomilin 1957; Walker 1975; Zenkovitch 1937)

The mean weight from the literature data was 30,516 kg (n=49). Sperm whales, however, are highly dimorphic, with fisheries concentrating on males. For example, Slijper gives average weights as 33 tons for males and 13 tons for females. The literature mean was therefore adjusted downward to counter the presumed bias toward males in the data.

FOOD - 80% squid, 20% fish. (Akimushkin 1954, 1955; Backus 1966; Berzin 1959; Betesheva and Akimushkin 1955; Caldwell et al. 1966; Clarke 1954, 1955, 1956a, 1956b, 1956c, 1962; Clarke and MacLeod 1974, 1980; Clarke et al. 1980; Coffey 1978; Fiscus and Rice 1974; Freund 1932; Gambell 1972; Gaskin and Cawthorn 1967; Kawamura 1971; Korabel'nikov 1959; Laws 1977; Matthews 1938c; Mikhalev et al. 1980; Mizue 1951; Nishiwaki 1972a; Norman and Fraser 1949; Pike 1950; Rice 1963; Robbins et al. 1938; Roe 1969; Sergeant 1966; Sleptsov

1955; Sutcliffe and Brodie 1977; Tomilin 1957; Walker 1975; Xampany Baro and Filella Cornado 1976; Yukhov 1971a, 1971b, 1972; Zenkovitch 1934)

Although the picture promoted by the popular literature is of a sperm whale locked in mortal combat with a giant squid, sperm whales actually take a wide variety of cephalopods, including giant squids (Architeuthis sp.). Cephalopods are the principal prey items, but sperm whales also feed on a surprisingly wide variety of fishes, with the majority of all prey being deep-water species. Fishes taken include sharks, rays, anglers, lumpfish, gadoids, rockfish, toothfish, and many others.

Fin whale (Balaenoptera physalus):

WEIGHT - 30,000 kg. (Anon 1948; Ash 1955; Bailey 1948; Bjarnason and Lingaas 1954; Coffey 1978; Crile 1941; Freund 1932; Gambell 1970; Gihr and Pilleri 1979; Laws 1977; Nemoto 1970; Nishiwaki 1950; Nishiwaki and Hayashi 1950; Nishiwaki and Oye 1951; Ohno and Fujino 1952; Quiring 1943; Rice 1963, 1977a; Schultz 1938; Sergeant 1969; Slijper 1962; Zenkovitch 1934, 1937, 1952)

The mean of the literature data was 49,573 kg (n=81). However, we have reliable data available on the size distribution of fin whales of the northeast U.S. OCS. Ratnaswamy (1982), using CETAP's vertical aerial photographs, photogrammetrically measured or estimated total body lengths of 109 fin whales. Using these length data in the generalized cetacean weight-length regression given by Gihr and Pilleri results in a mean value of 29,200 kg. Because this value is derived from data actually obtained from the study area population, and does not have the biases inherent in whaling industry data, we have selected an estimate much nearer to it than to the literature mean value.

FOOD - 90% fish, 10% zooplankton. (Allen 1916; Bannister and Baker 1967; Best 1967; Betesheva 1954, 1955; CETAP 1981, 1982a, 1982b; Coffey 1978; Freund 1932; Hjort and Ruud 1929; Ingebrigtsen 1929; Jonsgard 1966; Katona et al. 1978a; Kawamura 1971; Kazuhiro and Murata 1951; Laws 1977; Lockyer 1978a; Lockyer and Brown 1978; Mackintosh 1946; Mackintosh and Wheeler 1929; Mayo 1982; Mitchell 1975c; Mizue 1951; Morch 1911; Nemoto 1970; Nemoto and Kawamura 1977; Nishiwaki 1972a; Nishiwaki and Hayashi 1950; Overholtz and Nicolas 1979; Pervushin 1968; Pike 1950; Ponomareva 1949; Rice 1963, 1977a; Sergeant 1966; Sleptsov 1955; Sutcliffe and Brodie 1977; Tomilin 1957; Watkins and Schevill 1979)

There seems to be a great deal of geographic variability in fin whale diets. Data from the Canadian whaling station at Blandford, Nova Scotia show a predominance of euphausiids. In Newfoundland, however, capelin make up about 90% of the diet, while in the Gulf of Maine sand lance is apparently the primary prey. Smaller individuals are known to take some large copepods; squid and myctophids are reported to be taken occasionally.

Sei whale (Balaenoptera borealis):

WEIGHT - 13,000 kg. (Bjarnason and Lingaas 1954; Coffey 1978; Freund 1932; Fujino 1955; Gihr and Pilleri 1979; Laws 1977; Lockyer 1976; Mitchell 1975a; Nemoto 1970; Omura 1950; Sergeant 1969; Slijper 1962; Tomilin 1957)

Literature mean = 13,496 (n=57).

FOOD - 100% zooplankton. (Allen 1916; Best 1967; Betesheva 1954; Bottino 1978; Brown 1968; Budker 1950; Budylenko 1978; Coffey 1978; Freund 1932; Gambell 1968; Gill and Hughes 1971; Hjort and Ruud 1929; Ingebrigtsen 1929;

Jonsgard and Darling 1977; Kawamura 1970, 1971, 1973, 1974; Laws 1977; Lockyer and Brown 1978; Matthews 1932, 1938d; Mitchell 1975c; Mizue 1951; Morch 1911; Nemoto 1970; Nemoto and Kawamura 1977; Nemoto and Yoo 1970; Nishimoto et al. 1952; Nishiwaki 1972a; Pervushin 1968; Pike 1950; Rice 1963, 1977a; Sergeant 1966; Sleptsov 1955; Sutcliffe and Brodie 1977; Tomilin 1957; Watkins and Schevill 1979)

North Pacific sei whales are frequently reported to feed on fishes, including sauries, anchovies, and sardines, and occasionally on squid. In the North Atlantic, however, most reports are of feeding exclusively on copepods and euphausiids, with only a couple of reports of predation on fishes - either sand lance or capelin.

Minke whale (Balaenoptera acutorostrata):

WEIGHT - 4,500 kg. kg. (Arsen'ev 1961; Coffey 1978; Freund 1932; Fry 1935; Laws 1977; Lockyer 1976; Nishiwaki 1972a; Ohsumi 1979; Ohsumi et al. 1970; Scheffer and Slipp 1948; Sergeant 1963, 1969; Tomilin 1957; Williamson 1961; Zemsky and Tomorov 1964; Zenkovitch 1955)

The literature mean of 5,964 kg (n=28) was reduced to account for mainly Antarctic data.

FOOD - 95% fish, 5% zooplankton. (Allen 1916; Anon 1955; Betesheva 1954; Coffey 1978; Freund 1932; Jonsgard 1951; Katona et al. 1978a; Laws 1977; Mayo 1982; Mitchell 1974, 1975b; Nemoto 1970; Nishiwaki 1972a; Norris and Prescott 1961; Ohsumi 1979; Ohsumi et al. 1970; Omura and Sakiura 1956; Sergeant 1963; Sutcliffe and Brodie 1977; Tomilin 1957; Williamson 1961)

Most reports agree that minke whales probably take more fish than other baleen whale species, with some feeding on euphausiids. They also apparently take some squid on occasion. Primary prey species in the western North Atlantic are sand lance, capelin, herring, gadoids, and mackerel.

Goose-beaked whale (Ziphius cavirostris):

WEIGHT - 1,900 kg. (Backus and Schevill 1961; Coffey 1978; Filella Cornado 1971; Fordyce et al. 1979; Freund 1932; Kenyon 1961; Omura et al. 1955; Walker 1975)

Literature mean = 1,908 kg (n=4).

FOOD - 100% squid. (Coffey 1978; Filella Cornado 1971; Fordyce et al. 1979; Kenyon 1961; Mitchell 1975b; Mitchell and Houck 1967; Nicholson 1954; Nishiwaki 1972a, 1972b; Tomilin 1957; Walker 1975)

A few references indicate occasional feeding on fish, crabs, and echinoderms.

Beaked whales (Mesoplodon spp.):

Four species are included: True's beaked whale (M. mirus), Antillean beaked whale (M. europaeus), dense-beaked whale (M. densirostris), and North Sea beaked whale (M. bidens).

WEIGHT - 1,200 kg. (Brimley 1943; Coffey 1978; Freund 1932; Nishiwaki 1972a; Raven 1942)

Literature mean = 1,295 kg (n=4, 1 per species).

FOOD - 100% squid. (Mitchell 1975b; Tomilin 1957; Walker 1975)

Northern bottlenose whale (Hyperoodon ampullatus):

WEIGHT - 4,700 kg. (Benjaminsen and Christensen 1979; Clarke and Kristensen 1980; Coffey 1978; Freund 1932; Nishiwaki 1972a; Schultz 1938; Walker 1975)

Literature mean = 3,310 kg (n=878). Benjaminsen and Christensen reported an average weight of meat and blubber for 874 animals of 3,300 kg. Lockyer (1976) gives 33% and 34%, respectively, as the percentages of total body weight comprised of blubber and muscle in sperm whales, which are the nearest in body form to bottlenose whales of all the species she lists. Using 70% as the estimated proportion of weight in Hyperoodon made up of meat and blubber (weighing 3,300 kg) yields the total body weight estimate above.

FOOD - 95% squid, 5% fish. (Benjaminsen and Christensen 1979; Clarke and Kristensen 1980; Coffey 1978; Freund 1932; Gray 1882; Mitchell 1975b; Murray and Hjort 1912; Nishiwaki 1972a; Tomilin 1957; Walker 1975)

The preferred prey species is apparently Gonatus fabricii.

Pygmy/dwarf sperm whales (Kogia spp.):

Two very similar species are included: Pygmy sperm whale (K. breviceps) and dwarf sperm whale (K. simus).

WEIGHT - 300 kg. (Allen 1941; Benham 1901; Coffey 1978; Enders 1942; Nishiwaki 1972a; Smalley 1959; Walker 1975; Watson 1981)

Data are very scarce on these species, with older data perhaps unreliable because of some taxonomic confusion. Nishiwaki gives 300 kg as the separation point between the species, with breviceps larger and simus smaller; this seemed a logical value to use here.

FOOD - 100% squid. (Allen 1941; Benham 1901; Coffey 1978; Dell 1960; Enders 1942; Fitch and Brownell 1968; Jones 1981; Maigret and Robineau 1981; Mitchell 1975b; Nishiwaki 1972a; Ross 1979; Smalley 1959; Tomilin 1957; Walker 1975)

There are also reports of occasional fish in the diets of these species, and crabs seem to be taken rather more frequently.

Pilot whales (Globicephala spp.):

Two species are included: Long-finned pilot whale (G. melaena) and short-finned pilot whale (G. macrorhynchus).

WEIGHT - 850 kg. (Coffey 1978; Gihr and Pilleri 1979; Harrison et al. 1972; Sergeant 1962, 1969; Tomilin 1957)

Literature means: melaena = 844 kg (n=37); macrorhynchus = 602 kg (n=6). These data, the latter figure especially, are biased low by reliance upon captive specimens, which tend to be smaller individuals.

FOOD - 100% squid. (Anon 1955; Caldwell et al. 1971; Coffey 1978; Hall et al. 1971; L'Hardy 1969; Mercer 1975; Mitchell 1975b; Nishiwaki 1972a; Norris and Prescott 1961; Saemundsson 1939; Sergeant 1962; Sergeant and Fisher 1957; Tomilin 1957; Walker 1975)

Some references indicate occasional feeding on fishes, however detailed work in Newfoundland reported by Mercer and Sergeant indicate almost exclusive predation on squid (Illex), with the few stragglers remaining when the squid are absent feeding on cod.

Gray grampus (Grampus griseus):

WEIGHT - 340 kg. (Coffey 1978; Gihr and Pilleri 1979; Leatherwood et al. 1979, 1980; Orr 1966; Paul 1968; Pilleri and Gihr 1969b; Tomilin 1957)

Literature mean = 336 kg (n=7).

FOOD - 100% squid. (Guiguet and Pike 1965; Jones 1981; Mitchell 1975b; Nishiwaki 1972a; Orr 1966; Tomilin 1957; Walker 1975)

Bottlenose dolphin (Tursiops truncatus):

WEIGHT - 150 kg. (Asper and Odell 1980; Gihr and Pilleri 1979; Harrison et al. 1972; Pilleri and Gihr 1969a; Sergeant 1969; Spotte and Babus 1982; Tomilin 1957; Walker 1975)

Literature mean = 149 kg (n=66).

FOOD - 100% fish. (Gunter 1942, 1951; Hamilton and Nishimoto 1977; Hogan 1975; Hotta et al. 1969; Irvine et al. 1981; Leatherwood 1975; Leatherwood et al. 1978; Mermoz 1977; Mitchell 1975b; Nishiwaki 1972a; Norris and Prescott 1961; Saayman et al. 1973; Tomilin 1957; Walker 1975; Wursig and Wursig 1979)

There are reports of occasional predation on squid or shrimp, but fish predominate by far. A cautionary note is in order, however. Nearly all literature reports are of observations made close inshore. Off the northeast U.S., Tursiops is also found offshore, near the shelf break, which may or may not be a distinct sub-population (CETAP 1981, 1982a, 1982b). Is is possible that these offshore bottlenose dolphins have very different dietary preferences than inshore dolphins.

Atlantic white-sided dolphin (Lagenorhynchus acutus):

WEIGHT - 120 kg. (Jonsgard and Nordi 1952; Katona et al. 1978b; Schevill 1957; Sergeant et al. 1980)

Literature mean = 121 kg (n=122).

FOOD - 90% fish, 10% squid. (Coffey 1978; Geraci et al. 1978; Jonsgard and Nordi 1952; Katona et al. 1978b; Mayo 1982; Mitchell 1975b; Schevill 1957; Sergeant and Fisher 1957; Sergeant et al. 1980; Tomilin 1957; Walker 1975)

White-sided dolphins prey primarily on pelagic and bentho-pelagic fishes, including sand lance, capelin, herring, smelt, and cod. Squid are a secondary food item, with occasional feeding on shrimp.

Harbor porpoise (Phocoena phocoena):

WEIGHT - 45 kg. (Coffey 1978; Freund 1932; Gaskin et al. 1974; Gihr and Pilleri 1979; Jakuczun 1973; Mohl-Hansen 1954; Nishiwaki 1972a; Prescott and Fiorelli 1980; Scheffer 1953; Sergeant 1969; Spotte et al. 1980; Tomilin 1957; van Utrecht 1978; Walker 1975)

The literature mean was 35 kg (n=3555), however this included a report from Tomilin of a mean weight of 30.2 kg for 2611 porpoises taken from the Sea of Azov. The most complete work on growth in Phocoena was Mohl-Hansen's, which indicated an average weight of 25 kg at weaning and 38 kg at 6 months of age. Either Tomilin's Azov data were strongly biased toward very young animals, or Azov porpoises tend to be significantly smaller. Without the Tomilin data, the literature mean is 48 kg (n=944).

FOOD - 95% fish, 5% squid. (Coffey 1978; Fink 1959; Freund 1932; Gaskin et al. 1974; Jones 1981; Lindroth 1962; Mitchell 1975b; Nishiwaki 1972a; Prescott and Fiorelli 1980; Rae 1965, 1973; Scheffer 1953; Sergeant and Fisher 1957; Smith and Gaskin 1974; Spotte et al. 1980; Tomilin 1957; Walker 1975; Wilke and Kenyon 1952)

Primary prey items are non-spiny fishes less than about 30-35 cm in length, especially clupeoids, gadoids, and scombrids. Reports occasionally mention crustaceans or benthic invertebrates in stomach contents of harbor porpoises.

Saddleback dolphin (Delphinus delphis):

WEIGHT - 65 kg. (Busnel et al. 1968; Coffey 1978; Collett 1981; Fiscus and Niggol 1965; Gihr and Pilleri 1969, 1979; Harrison et al. 1972; Pilleri 1967; Sergeant 1958, 1969; Tomilin 1957; Walker 1975)

Literature mean = 64.7 kg (n=84).

FOOD - 85% fish, 15% squid. (Brown and Norris 1956; Coffey 1978; Collett 1981; Collett et al. 1981; Evans 1975; Fiscus and Niggol 1965; Fitch and Brownell 1968; Jones 1981; Mitchell 1975b; Nishiwaki 1972a; Norris and Prescott 1961; Sergeant 1958; Sergeant and Fisher 1957; Tomilin 1957; Walker 1975)

This species exhibits a highly variable diet, taking many types of fish, including engraulids, clupeids, gadids, scombrids, carangids, myctophids, merlucciids, and scomberesocids, along with various cephalopods. Most studies indicate feeding in the epipelagic zone.

Striped dolphin (Stenella coeruleoalba):

WEIGHT - 55 kg. (Busnel et al. 1968; Gihr and Pilleri 1969, 1979; Odell and Chapman 1976; Walker 1975)

FOOD - 60% squid, 40% fish. (Coffey 1978; Duguy et al. 1978; Hotta et al. 1969; Mitchell 1975b; Miyazaki et al. 1973; Nishiwaki 1972a; Odell and Chapman 1976; Walker 1975)

Dolphins in the genus Stenella consume a wide range of prey items, with all species feeding on fish, squid, and some shrimp. S. coeruleoalba appears to take more fish than the other species, however squid still appears to remain the major food. While all Stenella species prey upon mesopelagic fishes to some extent, spinner dolphins (S. longirostris) seem to feed most heavily in that depth range. Spotted dolphins show the shallowest feeding depths, preying mainly on epipelagic squids and fishes, with the latter including exocoetids, scombrids, and clupeids.

Spotted dolphin (Stenella spp.):

Two species are included: S. attenuata and S. plagiodon.

WEIGHT - 50 kg. (Harrison et al. 1972; Kasuya et al. 1974; Perrin 1975; Perrin and Roberts 1972; Perrin et al. 1976; Walker 1975)

FOOD - 80% squid, 20% fish. (Caldwell and Caldwell 1966; Coffey 1978; Fitch and Brownell 1968; Mitchell 1975b; Perrin et al. 1973; Walker 1975)

See striped dolphin.

Long-snouted spinner dolphin (Stenella longirostris):

WEIGHT - 50 kg. (Harrison et al. 1972; Mead et al. 1980; Norris and Dohl 1980; Perrin 1975; Perrin and Roberts 1972; Walker 1975)

FOOD - 80% squid, 20% fish. (Fitch and Brownell 1968; Mitchell 1975b; Norris and Dohl 1980; Perrin et al. 1973; Walker 1975)

See striped dolphin.

Pygmy killer whale (Feresa attenuata):

WEIGHT - 150 kg. (Nishiwaki et al. 1965; Perrin and Hubbs 1969; Pryor et al. 1965; Watson 1981; White 1976; Yamada 1954)

No actual data have been reported, only rough estimates based on length.

FOOD - 100% fish. (Nishiwaki et al. 1965)

No data are available on stomach contents. Nishiwaki et al. reported a captive specimen which fed on live sardines after refusing squid and some other fishes.

Unidentified whale:

WEIGHT - 22,700 kg.

FOOD - 64% fish, 21% squid, 15% zooplankton.

44.7% B. physalus, 22.5% P. macrocephalus, 13.1% B. acutorostrata, 7.2% M. novaeangliae, 5.6% B. borealis, 4.1% B. glacialis, 1.9% Mesoplodon spp., 0.6% Z. cavirostris, and 0.3% H. ampullatus.

Unidentified large whale:

WEIGHT - 26,300 kg.

FOOD - 61% fish, 22% squid, 17% zooplankton.

53.2% B. physalus, 26.8% P. macrocephalus, 8.6% M. novaeangliae, 6.7% B. borealis, and 4.8% B. glacialis.

Unidentified medium whale:

WEIGHT - 6,360 kg.

FOOD - 58% fish, 13% squid, 29% zooplankton.

60.9% B. acutorostrata, 26.1% B. borealis, 8.7% Mesoplodon spp., 2.9% Z. cavirostris, and 1.4% H. ampullatus.

Unidentified dolphin:

WEIGHT - 136 kg.

FOOD - 72% fish, 28% squid.

24.6% T. truncatus, 22.6% P. phocoena, 17.8% G. griseus, 13.4% D. delphis, 12.4% L. acutus, 9.2% Stenella spp., and 0.1% Kogia spp.

If pilot whales are included, the average weight value becomes 242 kg, a significantly higher value. It was, however, assumed that pilot whales are easily identified and rarely missed to avoid biasing this value too high.

Unidentified rorqual:

WEIGHT - 23,400 kg.

FOOD - 84% fish, 16% zooplankton.

63.3% *B. physalus*, 18.6% *B. acutorostrata*, 10.2% *M. novaeangliae*, and 8.0% *B. borealis*.

Fin or sei whale:

WEIGHT - 28,100 kg.

FOOD - 80% fish, 20% zooplankton.

88.8% *B. physalus* and 11.2% *B. borealis*.

Unidentified beaked whale:

WEIGHT - 1,750 kg.

FOOD - 99% squid, 1% fish.

66.7% *Mesoplodon* spp., 22.2% *Z. cavirostris*, and 11.1% *H. ampullatus*.

Beaked or goose-beaked whale:

WEIGHT - 1,380 kg.

FOOD - 100% squid.

75.0% *Mesoplodon* spp. and 25.0% *Z. cavirostris*.

Sperm or unidentified beaked whale:

WEIGHT - 2,500 kg.

FOOD - 82% squid, 18% fish.

88.9% P. macrocephalus, 7.4% Mesoplodon spp., 2.5% Z. cavirostris, and 1.2% H. ampullatus.

The actual calculated average weight value was 18,000 kg, but it was assumed that any sperm whale which might be mistaken for a beaked whale would be a very small individual, so the smaller value shown was substituted.

Unidentified beaked dolphin:

WEIGHT - 110 kg.

FOOD - 85% fish, 15% squid.

41.3% T. truncatus, 22.5% D. delphis, 20.8% L. acutus, and 15.5% Stenella spp.

White-sided or saddleback dolphin:

WEIGHT - 91 kg.

FOOD - 87% fish, 13% squid.

51.9% D. delphis and 48.1% L. acutus.

Bottlenose dolphin or Stenella spp.:

WEIGHT - 124 kg.

FOOD - 83% fish, 17% squid.

72.7% T. truncatus and 27.3% Stenella spp.

Unidentified dolphin, not gray grampus:

WEIGHT - 92 kg.

FOOD - 88% fish, 12% squid.

29.9% _T. truncatus_, 27.5% _P. phocoena_, 16.3% _D. delphis_, 15.1% _L. acutus_, 11.2% _Stenella_ spp., and 0.1% _Kogia_ spp.

Weight would be 224 kg if pilot whales were included. See unidentified dolphin, above.

Saddleback dolphin or _Stenella_ spp.:

WEIGHT - 61 kg.

FOOD - 65% fish, 35% squid.

59.2% _D. delphis_, and 40.8% _Stenella_ spp.

Unidentified _Stenella_ spp.:

WEIGHT - 54 kg.

FOOD - 64% squid, 36% fish.

80.0% _S. coeruleoalba_, 13.3% _Stenella_ spp. (spotted dolphin), and 6.7% _S. longirostris_.

Unidentified _Stenella_ spp., not spinner dolphin:

WEIGHT - 54 kg.

FOOD - 63% squid, 37% fish.

85.7% _S. coeruleoalba_ and 14.3% _Stenella_ spp. (spotted dolphin).

The following three species were not observed from the CETAP random transect aerial surveys, and hence have no density estimates calculated. Nevertheless, they were sighted on one or more occasions in or near the study area (see CETAP 1982b for details), and are included here for this reason. No quantitative prey preferences will be given.

Blue whale (Balaenoptera musculus):

WEIGHT - literature mean = 87,227 kg (n=78). (Anon 1948; Ash 1955; Coffey 1978; Crile 1941; Freund 1932; Ichihara 1966; Krogh 1934; Laurie 1933; Laws 1977; Lockyer 1976; Nemoto 1970; Nishiwaki 1950; Nishiwaki and Hayashi 1950; Ohno and Fujino 1952; Schultz 1938; Sergeant 1969; Slijper 1962)

Antarctic and older data predominate in the literature; a value of around 70,000 kg is probably more realistic for North Atlantic blue whales.

FOOD - zooplankton. (Allen 1916; Betesheva 1954; Coffey 1978; Freund 1932; Hjort and Ruud 1929; Ingebrigtsen 1929; Laws 1977; Mackintosh 1946; Mackintosh and Wheeler 1929; Morch 1911; Nemoto 1970; Nemoto and Kawamura 1977; Nishiwaki 1972a; Nishiwaki and Hayashi 1950; Pervushin 1968; Pike 1950; Rice 1977a; Sleptsov 1955; Sutcliffe and Brodie 1977; Tomilin 1957)

Blue whales feed almost exclusively on euphausiids, with occasional reports of copepods, fish, or squid, which may be mainly incidental prey.

Killer whale (Orcinus orca):

WEIGHT - literature mean = 2,853 kg (n=12). (Caldwell and Brown 1964; Coffey 1978; Fiscus and Niggol 1965; Gihr and Pilleri 1979; Harrison et al. 1972; Newman and McGeer 1966; Sergeant 1969; Tomilin 1957; Walker 1975)

This value may be biased low by the predominance of captive specimens. A sexually dimorphic species, mature males may weigh over 8,000 kg.

FOOD - fish, squid, marine mammals, and birds. (Brown and Norris 1956; Budylenko 1981; Fiscus and Niggol 1965; Ingebrigtsen 1929; Ivanova 1961; Jonsgard and Lyshael 1970; Mitchell 1975b; Nishiwaki 1972a; Nishiwaki and Handa 1958; Norris and Prescott 1961; Pike and MacAskie 1969; Rice 1968; Sergeant and Fisher 1957; Sutcliffe and Brodie 1977; Tomilin 1957; Voisin 1972, 1976; Walker 1975)

Fish are the primary prey items, with only the large males apparently preying significantly on seals, dolphins, or whales.

White-beaked dolphin (Lagenorhynchus albirostris):

WEIGHT - 150 kg. (Coffey 1978; Walker 1975; Watson 1981).

No actual weight data were found; references give weight as, e.g. "up to 275 kg". Watson gives an average weight of 200 kg, but without data or references. The value shown above is an estimate only, based on similarities to its smaller conspecific L. acutus.

FOOD - squid and fish. (Coffey 1978; Mitchell 1975b; Nishiwaki 1972a; Tomilin 1957; Walker 1975)

This species is commonly called "squid hound" in Newfoundland, and squid may predominate in its diet, at least at times. It also tends to take more benthic and demersal fishes than L. acutus.

BIOMASS AND CONSUMPTION ESTIMATES

Table 2 lists the estimates of density, variance of the density, abundance, 95% confidence interval on the abundance, biomass density, and standing stock for each species/season/sampling area. Because of space limitations, species are identified by 2-letter codes; these codes are identified in Table 1. Table 3 summarizes the standing stock data as sums across all areas for each species and season. It also shows standing stock estimates for the ichthyophagous, teuthophagous, and planktonophagous components of the cetacean community, as well as for the cetacean community as a whole.

Fin whales are the dominant species, in terms of standing stock, in all seasons, comprising between 31% (fall) and 47% (winter) of the total cetacean standing stock. Other dominant species, those comprising over 5% of the total standing stock, listed in descending order for each season, are:

Winter - sperm whale, saddleback dolphin, sei whale, pilot whale.
Spring - pilot whale, sperm whale, sei whale, right whale, white-sided dolphin.
Summer - sperm whale, pilot whale, gray grampus, humpback whale.
Fall - pilot whale, white-sided dolphin, humpback whale.

In all seasons, the ichthyophagous cetaceans are the dominant feeding class, followed by the teuthophages and then the planktonophages. From the total standing stock values, the estimated annual average standing stock of whales and dolphins off the northeastern U.S. is about 57,600 mT.

The results of the energetics and consumption calculations are listed in Tables 4a and 4b, which show the estimated consumption of fish, squid, and zooplankton in each season/area, both as a daily rate per unit area and as a seasonal total. Table 4a shows the results obtained using the Lockyer metabolic model; Table 4b, those derived from the Brody-Hinga model. The tables also list the biomass densities of each of the three feeding classes for each season/area. The consumption data are summarized in Table 5, which shows the estimated total consumption of fish, squid, and zooplankton by cetaceans in the waters of the northeast OCS for each season and for the entire year. The annual consumption totals are about 276,000 mT of fish, 224,000 mT of squid, and 45,000 mT of zooplankton, based on the Lockyer model. Using the Brody-Hinga model, the totals are 185,000, 154,000, and 26,000 mT, respectively. Total estimated prey consumption by cetaceans from the two models are therefore approximately 545,000 and 365,000 mT/year, respectively.

These data must be considered to be only minimum estimates. Several factors exist with the potential to increase the estimates by an order of magnitude or more:

(1) The method used to calculate population density estimates results in a minimum estimate. Line transect theory assumes that the probability of sighting an animal located directly on the track line is 100% (Burnham et al. 1980). This assumption is violated for cetacean surveys since some proportion of individuals are missed because they are submerged below the surface and not visible when the airplane passes. CETAP collected quantitative dive time data during two cruises to attempt to correct for this, however sufficient data are available only for three species (CETAP 1982b). Dive data indicate that density estimates for right whales should be increased by a factor of 3.00, humpback whales by 3.65, and fin whales by 4.85. No similar data exist for other species. Since correcting for diving for only some species would bias the overall results, we have not used any dive corrections.

(2) Baleen whales are often highly migratory, and it is usually assumed that they feed very little, if at all, while migrating or while on their winter range. This probably varies between species and between life history

stages within species. Any such period of reduced feeding would increase the feeding rates required during time spent in the study area in order to maintain near-basal metabolic levels year-round. Scott et al. (1983) assumed a four-month fasting period and consequent increase in feeding rates by a factor of 1.5.

(3) The metabolic models used account only for near-basal or resting metabolism, but not for increased activity levels, reproduction, lactation, or growth. Hinga (1979) estimated that active metabolism of cetaceans is likely to be 1.5 to 3 times resting levels.

For some species, the combined effects of all three of the factors discussed might put the actual consumption values at more than 20 times the estimates presented. Hain et al. (In press) considered a reasonable upper bound of the likely range of estimated consumption by cetaceans to be 10 times estimates based on near-basal metabolism. Such an assumption in this case would increase the estimated total prey consumption by cetaceans off the northeastern U.S. to over five million metric tons annually. Our standing stock and consumption estimates are approximately one-third to one-half those calculated by Scott et al. (1983). The latter estimates were higher due to inclusion of corrections for diving in fin, humpback, and right whales and for winter fasting by all baleen whales, and to the use of somewhat higher average body weight estimates than in the present study. By either set of estimates, though, whales and dolphins are significant predators which need to be included in any discussion of the trophic dynamics of the marine ecosystems off the northeastern United States.

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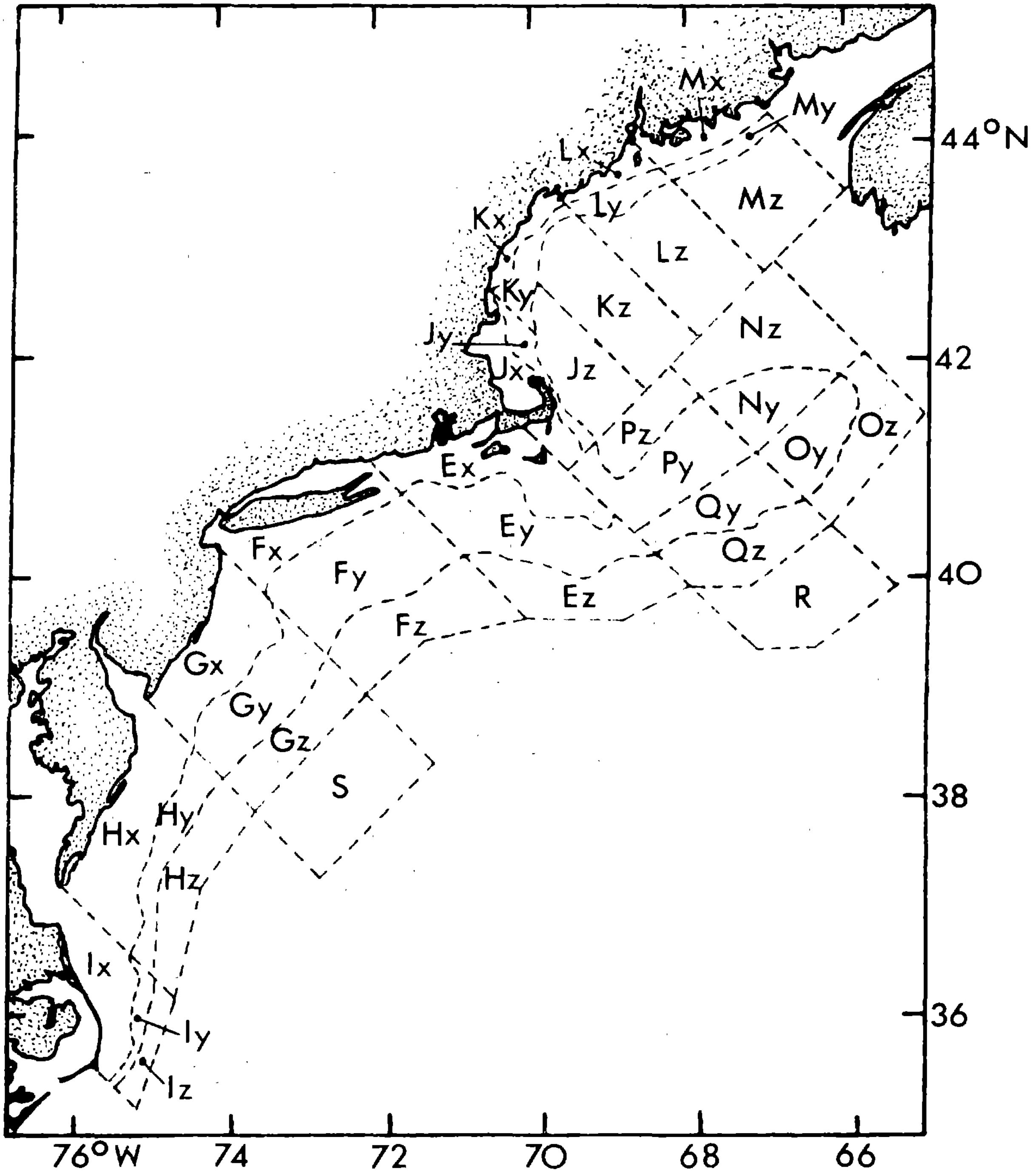

Figure 1. CETAP study area on the northeastern U.S. continental shelf, showing aerial survey sampling areas. Depth stratum definitions are: x = 0-20 fathoms; y = 20-50 fm; z = 50-1000+ fm.

Table 1. Species and species categories observed by CETAP random-transect aerial surveys off the northeastern U.S., 1979-1981, showing identification codes, numbers of sightings, and species/category names.

CODE	NO.	NAME
AA	6	Unidentified whale
AB	3	Unidentified large whale
AC	5	Unidentified medium whale
AD	54	Unidentified dolphin
BE	72	Sperm whale, *Physeter macrocephalus*
BF	13	Right whale, *Balaena glacialis*
BG	23	Humpback whale, *Megaptera novaeangliae*
CA	1	Unidentified rorqual
CD	1	Fin or sei whale
CF	143	Fin whale, *Balaenoptera physalus*
CG	18	Sei whale, *Balaenoptera borealis*
CI	42	Minke whale, *Balaenoptera acutorostrata*
DE	175	Pilot whale, *Globicephala* sp.
DI	1	Pygmy killer whale, *Feresa attenuata*
EA	10	Unidentified beaked whale
EB	1	Beaked or goosebeaked whale
EC	6	Beaked whale, *Mesoplodon* sp.
ED	2	Goosebeaked whale, *Ziphius cavirostris*
EE	1	Northern bottlenose whale, *Hyperoodon ampullatus*
EF	1	Unidentified beaked whale or sperm whale
FB	1	Pygmy/dwarf sperm whale, *Kogia* sp.
FC	228	Harbor porpoise, *Phocoena phocoena*
FD	180	Gray grampus, *Grampus griseus*
GA	25	Unidentified beaked dolphin
GB	1	White-sided or saddleback dolphin
GC	2	Bottlenose, striped, spotted, or spinner dolphin
GF	27	Unidentified dolphin, not gray grampus
HC	125	Atlantic white-sided dolphin, *Lagenorhynchus acutus*
HE	248	Bottlenose dolphin, *Tursiops truncatus*
IA	4	Unidentified long-beaked dolphin
JA	5	Saddleback, striped, spotted, or spinner dolphin
JC	50	Striped, spotted, or spinner dolphin
JD	28	Striped or spotted dolphin
JE	2	Spotted dolphin, *Stenella attenuata/plagiodon*
JF	12	Striped dolphin, *Stenella coeruleoalba*
JG	135	Saddleback dolphin, *Delphinus delphis*
KB	1	Spinner dolphin, *Stenella longirostris*

Table 2. Seasonal estimates of species density (individuals/1000 km^2), variance of the density, species abundance with 95% confidence interval, biomass density (kg/km^2), and standing stock (mT) for each CETAP aerial survey sampling area and for each cetacean taxonomic category observed. See Table 1 for species names.

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SPRING	E	X	BF	1.35	6.2	11	± 6	54.0	425.8
SPRING	E	X	CI	1.00	0.8	8	± 2	4.5	35.4
SPRING	E	X	GA	17.29	962.1	136	± 77	1.9	15.0
SPRING	E	X	HC	99.16	29656.7	782	± 426	11.9	93.9
SUMMER	E	X	CF	2.13	13.5	17	± 14	63.8	503.4
WINTER	E	Y	AD	31.15	6637.1	511	± 540	4.2	69.5
WINTER	E	Y	CF	1.52	6.2	25	± 16	45.7	749.6
WINTER	E	Y	CI	0.67	0.7	11	± 5	3.0	49.8
WINTER	E	Y	JG	691.03	1567584.9	11334	± 8296	44.9	736.7
SPRING	E	Y	AA	0.19	0.1	3	± 1	4.2	69.3
SPRING	E	Y	AD	14.07	1332.8	231	± 186	1.9	31.4
SPRING	E	Y	BE	0.75	1.3	12	± 6	15.0	246.5
SPRING	E	Y	BG	0.77	1.1	13	± 5	19.1	313.9
SPRING	E	Y	CF	5.68	73.8	93	± 44	170.3	2793.7
SPRING	E	Y	CI	1.83	2.3	30	± 8	8.2	135.0
SPRING	E	Y	DE	67.11	11534.1	1101	± 546	57.0	935.6
SPRING	E	Y	FC	6.97	62.8	114	± 40	0.3	5.1
SPRING	E	Y	HC	22.74	1388.8	373	± 189	2.7	44.8
SPRING	E	Y	HE	25.44	916.9	417	± 154	3.8	62.6
SPRING	E	Y	JG	93.65	28869.7	1536	± 864	6.1	99.8
SUMMER	E	Y	CF	7.27	123.8	119	± 94	218.2	3578.9
SUMMER	E	Y	FD	7.65	243.0	125	± 131	2.6	42.6
SUMMER	E	Y	GA	15.97	721.8	262	± 227	1.8	28.8
SUMMER	E	Y	GF	30.06	3490.0	493	± 498	2.8	45.4
SUMMER	E	Y	HE	7.32	108.6	120	± 88	1.1	18.0
FALL	E	Y	DE	31.35	4057.5	514	± 874	26.6	437.0
FALL	E	Y	JG	122.49	74711.6	2009	± 3749	8.0	130.6
WINTER	E	Z	BE	0.66	2.0	7	± 7	13.2	149.7
WINTER	E	Z	CF	1.82	9.4	21	± 15	54.5	617.1
WINTER	E	Z	DE	42.17	4951.7	478	± 353	35.8	405.9
WINTER	E	Z	GF	26.27	2940.6	298	± 272	2.4	27.4
WINTER	E	Z	HE	12.79	324.7	145	± 91	1.9	21.7
WINTER	E	Z	JC	70.24	6319.2	796	± 399	3.8	43.0
WINTER	E	Z	JD	41.30	3672.1	468	± 304	2.2	25.3
WINTER	E	Z	JG	428.39	631983.4	4852	± 3993	27.8	315.4
SPRING	E	Z	AC	1.05	3.2	12	± 7	6.7	76.0
SPRING	E	Z	BE	2.79	16.7	32	± 15	55.9	632.8
SPRING	E	Z	CF	1.54	6.1	17	± 9	46.1	521.7
SPRING	E	Z	CI	3.40	7.5	39	± 10	15.3	173.3
SPRING	E	Z	DE	85.55	18563.2	969	± 497	72.7	823.6
SPRING	E	Z	EA	2.07	5.9	23	± 9	3.6	40.9
SPRING	E	Z	FD	33.90	4097.6	384	± 234	11.5	130.5
SPRING	E	Z	GA	23.60	1503.3	267	± 142	2.6	29.4
SPRING	E	Z	GF	22.21	1665.6	251	± 149	2.0	23.1
SPRING	E	Z	HC	33.83	3555.4	383	± 218	4.1	46.0
SPRING	E	Z	HE	162.16	34762.4	1837	± 680	24.3	275.5
SPRING	E	Z	JC	59.38	5795.7	672	± 278	3.2	36.3
SPRING	E	Z	JD	34.91	1602.5	395	± 146	1.9	21.4

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SPRING	E	Z	JF	135.24	18891.0	1532	± 502	7.4	84.2
SPRING	E	Z	JG	306.41	299557.9	3470	± 1997	19.9	225.6
SUMMER	E	Z	AD	11.42	1034.8	129	± 124	1.6	17.6
SUMMER	E	Z	BE	4.27	38.7	48	± 24	85.3	966.6
SUMMER	E	Z	CF	4.19	40.4	47	± 25	125.6	1422.9
SUMMER	E	Z	DE	31.11	2986.8	352	± 211	26.4	299.5
SUMMER	E	Z	EA	2.25	8.7	26	± 11	3.9	44.7
SUMMER	E	Z	EC	4.18	16.5	47	± 16	5.0	56.9
SUMMER	E	Z	ED	2.90	11.9	33	± 13	5.5	62.3
SUMMER	E	Z	FD	240.38	198589.4	2723	± 1722	81.7	925.7
SUMMER	E	Z	GF	24.23	2048.6	274	± 175	2.2	25.2
SUMMER	E	Z	HE	153.33	32511.2	1737	± 697	23.0	260.5
SUMMER	E	Z	JD	38.09	2190.9	431	± 181	2.1	23.3
SUMMER	E	Z	JG	30.39	3910.0	344	± 242	2.0	22.4
SUMMER	E	Z	KB	9.44	71.4	107	± 33	0.5	5.3
FALL	E	Z	AC	2.77	14.7	31	± 25	17.6	199.5
FALL	E	Z	AD	54.95	20685.0	622	± 940	7.5	84.6
FALL	E	Z	DE	168.46	73220.3	1908	± 1769	143.2	1621.8
FALL	E	Z	HE	28.38	1475.5	321	± 251	4.3	48.2
FALL	E	Z	JC	77.95	10730.7	883	± 677	4.2	47.7
FALL	E	Z	JG	731.38	1697137.1	8284	± 8518	47.5	538.4
WINTER	F	Y	CF	2.89	24.9	48	± 69	86.7	1441.5
WINTER	F	Y	JC	111.71	19907.7	1858	± 1963	6.0	100.4
WINTER	F	Y	JG	104.81	45176.9	1744	± 2957	6.8	113.3
SPRING	F	Y	CF	3.10	23.4	52	± 36	92.9	1545.2
SPRING	F	Y	FC	8.71	75.5	145	± 64	0.4	6.5
SUMMER	F	Y	BE	1.03	3.0	17	± 16	20.5	341.7
SUMMER	F	Y	CF	2.82	21.1	47	± 42	84.7	1408.4
SUMMER	F	Y	FD	31.15	3665.5	518	± 558	10.6	176.2
SUMMER	F	Y	HE	9.94	219.8	165	± 137	1.5	24.8
FALL	F	Y	JG	103.05	41799.3	1714	± 2844	6.7	111.4
WINTER	F	Z	CF	3.59	43.2	44	± 68	107.6	1332.4
WINTER	F	Z	DE	33.30	3822.6	412	± 640	28.3	350.6
WINTER	F	Z	GF	103.73	40518.4	1285	± 2085	9.5	118.2
WINTER	F	Z	HE	50.50	5853.7	625	± 792	7.6	93.8
WINTER	F	Z	JF	126.35	27565.3	1565	± 1719	6.9	86.1
WINTER	F	Z	JG	260.24	280913.2	3223	± 5489	16.9	209.5
SPRING	F	Z	AD	44.13	14650.3	547	± 746	6.0	74.3
SPRING	F	Z	BE	1.18	3.7	15	± 12	23.6	291.9
SPRING	F	Z	DE	60.13	9461.6	745	± 599	51.1	633.1
SPRING	F	Z	FD	119.13	51114.7	1476	± 1393	40.5	501.7
SPRING	F	Z	GA	24.88	1994.0	308	± 275	2.7	33.9
SPRING	F	Z	HE	159.58	36495.4	1977	± 1177	23.9	296.5
SPRING	F	Z	JE	43.24	4024.4	536	± 391	2.2	26.8
SUMMER	F	Z	AA	0.74	1.0	9	± 6	16.9	208.8
SUMMER	F	Z	BE	1.50	6.6	19	± 17	30.0	371.1
SUMMER	F	Z	CF	10.29	243.4	127	± 103	308.7	3823.6
SUMMER	F	Z	DE	38.22	4199.1	473	± 428	32.5	402.4
SUMMER	F	Z	FD	272.62	256307.6	3377	± 3341	92.7	1148.1
SUMMER	F	Z	GC	56.95	7238.8	705	± 561	7.1	87.5
SUMMER	F	Z	HE	72.46	7836.2	897	± 584	10.9	134.6
SUMMER	F	Z	JD	374.41	127873.9	4637	± 2360	20.2	250.4

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SUMMER	F	Z	JG	74.68	21893.5	925	± 976	4.9	60.1
FALL	F	Z	CF	6.24	113.0	77	± 209	187.3	2319.9
WINTER	G	X	CF	3.03	28.9	28	± 34	91.0	851.0
WINTER	G	X	DE	28.18	2711.3	263	± 327	24.0	223.9
WINTER	G	X	JG	110.13	45521.5	1029	± 1340	7.2	66.9
FALL	G	X	CF	2.08	14.5	19	± 18	62.4	583.5
WINTER	G	Y	CF	7.37	143.2	84	± 83	221.1	2527.1
WINTER	G	Y	JG	89.13	33786.1	1019	± 1270	5.8	66.2
SPRING	G	Y	CF	0.50	1.2	6	± 6	15.1	173.1
SPRING	G	Y	CI	0.45	0.4	5	± 4	2.0	23.0
SPRING	G	Y	DE	4.69	132.2	54	± 63	4.0	45.5
SPRING	G	Y	GF	14.60	968.9	167	± 172	1.3	15.4
SPRING	G	Y	HE	21.32	1366.5	244	± 204	3.2	36.6
SPRING	G	Y	JG	18.31	2245.8	209	± 261	1.2	13.6
SUMMER	G	Y	CF	1.22	4.6	14	± 10	36.5	416.8
SUMMER	G	Y	FD	26.83	2662.7	307	± 238	9.1	104.3
FALL	G	Y	CD	0.50	0.6	6	± 4	13.9	159.1
FALL	G	Y	JF	45.96	4039.5	525	± 300	2.5	28.9
FALL	G	Y	JG	47.33	8643.2	541	± 439	3.1	35.2
WINTER	G	Z	GF	377.45	1256005.1	2812	± 8764	34.7	258.7
WINTER	G	Z	JG	473.49	897214.4	3527	± 7407	30.8	229.3
SPRING	G	Z	AD	113.63	84932.1	847	± 673	15.5	115.1
SPRING	G	Z	BE	4.55	42.8	34	± 15	91.0	678.1
SPRING	G	Z	CF	2.08	11.1	16	± 8	62.5	465.8
SPRING	G	Z	DE	67.74	11984.7	505	± 253	57.6	429.0
SPRING	G	Z	EA	8.41	76.4	63	± 20	14.7	109.6
SPRING	G	Z	EE	1.35	2.2	10	± 3	6.4	47.3
SPRING	G	Z	FD	168.71	99457.2	1257	± 728	57.4	427.3
SPRING	G	Z	GA	128.14	38679.6	955	± 454	14.1	105.0
SPRING	G	Z	GF	30.14	3225.3	225	± 131	2.8	20.7
SPRING	G	Z	HE	110.06	16559.1	820	± 297	16.5	123.0
SPRING	G	Z	JC	483.60	200185.0	3603	± 1033	26.1	194.6
SPRING	G	Z	JD	236.97	53146.1	1765	± 532	12.8	95.3
SPRING	G	Z	JE	27.83	1709.1	207	± 95	1.4	10.4
SPRING	G	Z	JF	36.72	2108.7	274	± 106	2.0	15.0
SPRING	G	Z	JG	605.01	1179973.3	4507	± 2508	39.3	293.0
SUMMER	G	Z	AC	1.93	8.2	14	± 7	12.3	91.4
SUMMER	G	Z	AD	19.13	2649.0	143	± 135	2.6	19.4
SUMMER	G	Z	BE	5.11	59.5	38	± 20	102.2	761.2
SUMMER	G	Z	DE	156.43	67044.9	1165	± 679	133.0	990.6
SUMMER	G	Z	EA	3.78	20.0	28	± 12	6.6	49.2
SUMMER	G	Z	FD	185.95	119676.3	1385	± 907	63.2	471.0
SUMMER	G	Z	HE	118.61	19624.2	884	± 367	17.8	132.5
SUMMER	G	Z	JA	138.73	35364.6	1034	± 493	8.5	63.0
SUMMER	G	Z	JD	127.69	22395.4	951	± 392	6.9	51.4
SUMMER	G	Z	JG	50.94	11234.8	379	± 278	3.3	24.7
FALL	G	Z	BE	3.31	30.2	25	± 29	66.1	492.7
FALL	G	Z	FD	234.04	196776.3	1744	± 2364	79.6	592.8
FALL	G	Z	HE	159.95	39416.9	1192	± 1058	24.0	178.7
FALL	G	Z	JA	898.00	1293567.6	6690	± 6061	54.8	408.1
SPRING	H	X	CF	5.79	109.6	72	± 94	173.6	2167.6
SUMMER	H	X	HE	8.41	190.9	105	± 71	1.3	15.8

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
FALL	H	X	CF	1.90	10.0	24	± 22	56.9	711.1
SPRING	H	Y	CF	5.61	92.8	34	± 42	168.3	1016.1
SPRING	H	Y	FD	41.29	7168.2	249	± 366	14.0	84.7
SPRING	H	Y	HE	39.50	3994.1	238	± 273	5.9	35.8
SPRING	H	Y	JG	203.58	164813.5	1229	± 1753	13.2	79.9
SUMMER	H	Y	CF	2.33	16.4	14	± 9	69.8	421.4
SUMMER	H	Y	CI	2.06	5.7	12	± 5	9.3	56.0
SUMMER	H	Y	FD	34.25	4376.6	207	± 152	11.6	70.3
SUMMER	H	Y	HE	65.53	6779.8	396	± 189	9.8	59.3
SUMMER	H	Y	JD	105.82	15062.5	639	± 282	5.7	34.5
FALL	H	Y	AB	3.30	63.6	20	± 27	86.9	524.5
FALL	H	Y	HE	29.45	1750.6	178	± 140	4.4	26.7
WINTER	H	Z	FD	80.75	23997.5	777	± 1145	27.5	264.1
SPRING	H	Z	BE	17.45	658.1	168	± 176	349.0	3356.7
SPRING	H	Z	CF	9.59	294.8	92	± 118	287.7	2767.0
SPRING	H	Z	DE	44.53	6408.1	428	± 551	37.8	364.0
SPRING	H	Z	FD	105.86	42458.2	1018	± 1418	36.0	346.2
SPRING	H	Z	GF	138.70	68030.2	1334	± 1794	12.8	122.7
SPRING	H	Z	HE	67.52	8273.0	649	± 626	10.1	97.4
SPRING	H	Z	IA	54.36	4415.3	523	± 457	5.8	55.9
SPRING	H	Z	JF	168.95	40269.8	1625	± 1381	9.3	89.4
SUMMER	H	Z	BE	4.41	48.5	42	± 37	88.2	848.0
SUMMER	H	Z	DE	140.61	52644.7	1352	± 1222	119.5	1149.5
SUMMER	H	Z	FD	111.43	44710.0	1072	± 1126	37.9	364.4
SUMMER	H	Z	HE	191.90	52916.1	1846	± 1225	28.8	276.9
SUMMER	H	Z	JD	550.90	353584.8	5299	± 3167	29.7	286.1
SUMMER	H	Z	JG	109.88	46220.1	1057	± 1145	7.1	68.7
FALL	H	Z	BE	2.94	22.4	28	± 33	58.8	565.5
FALL	H	Z	DE	487.66	666131.5	4690	± 5615	414.5	3986.7
FALL	H	Z	FD	89.18	31218.6	858	± 1216	30.3	291.6
FALL	H	Z	HE	85.33	12014.8	821	± 754	12.8	123.1
FALL	H	Z	JC	156.22	44798.8	1502	± 1456	8.4	81.1
SPRING	I	X	HE	65.36	6793.1	411	± 258	9.8	61.6
SUMMER	I	X	HE	96.61	15797.1	607	± 981	14.5	91.1
FALL	I	X	GA	50.12	11688.5	315	± 301	5.5	34.7
FALL	I	X	HE	34.44	2051.6	217	± 126	5.2	32.5
SPRING	I	Y	DE	72.70	19465.2	134	± 133	61.8	114.3
SPRING	I	Y	HE	110.25	18214.5	204	± 128	16.5	30.6
SUMMER	I	Y	HE	107.91	20915.8	200	± 332	16.2	29.9
FALL	I	Y	HE	70.05	13604.7	130	± 104	10.5	19.4
WINTER	I	Z	BE	30.82	2015.4	104	± 140	616.4	2084.7
WINTER	I	Z	GF	612.43	1202666.4	2071	± 3430	56.3	190.6
WINTER	I	Z	HE	149.08	50993.5	504	± 706	22.4	75.6
WINTER	I	Z	JF	373.00	153269.4	1261	± 1225	20.5	69.4
WINTER	I	Z	JG	384.13	589709.8	1299	± 2402	25.0	84.4
SPRING	I	Z	AD	58.89	23821.6	199	± 268	8.0	27.1
SPRING	I	Z	BE	12.58	323.8	43	± 31	251.6	850.8
SPRING	I	Z	DE	120.36	37959.5	407	± 339	102.3	346.0
SPRING	I	Z	ED	14.94	243.3	51	± 27	28.4	96.0
SPRING	I	Z	GF	124.97	60872.8	423	± 429	11.5	38.9
SPRING	I	Z	HE	182.52	54225.5	617	± 405	27.4	92.6
SPRING	I	Z	JG	156.77	87553.3	530	± 515	10.2	34.5

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SUMMER	I	Z	AD	327.51	772589.3	1108	± 3690	44.5	150.6
SUMMER	I	Z	GF	695.03	1889467.4	2351	± 5771	63.9	216.3
FALL	I	Z	AD	55.33	23082.1	187	± 264	7.5	25.4
FALL	I	Z	CF	4.06	44.4	14	± 12	121.8	411.8
FALL	I	Z	DE	527.73	707401.8	1785	± 1463	448.6	1517.1
FALL	I	Z	FD	29.87	4205.7	101	± 113	10.2	34.3
FALL	I	Z	HE	628.78	535744.2	2127	± 1273	94.3	319.0
WINTER	J	X	GA	43.36	5581.0	278	± 401	4.8	30.6
SPRING	J	X	CF	13.67	567.7	88	± 109	410.0	2632.3
SUMMER	J	X	CF	43.43	4260.2	279	± 1041	1303.0	8366.6
FALL	J	X	BG	2.02	10.2	13	± 19	50.5	324.1
FALL	J	X	CI	7.24	31.8	46	± 33	32.6	209.1
FALL	J	X	FC	9.19	92.5	59	± 57	0.4	2.7
FALL	J	X	HC	119.98	43425.5	770	± 1238	14.4	92.5
WINTER	J	Y	AD	98.61	70422.7	209	± 698	13.4	28.4
WINTER	J	Y	HC	318.78	275931.5	676	± 1383	38.3	81.1
SPRING	J	Y	BG	28.05	1124.2	59	± 66	701.3	1486.8
SPRING	J	Y	CF	63.05	9010.1	134	± 186	1891.6	4010.1
SPRING	J	Y	HC	555.69	706782.7	1178	± 1648	66.7	141.4
SUMMER	J	Y	CF	18.12	1136.1	38	± 178	543.5	1152.2
SUMMER	J	Y	CI	16.05	161.1	34	± 67	72.2	153.1
FALL	J	Y	AA	2.78	11.1	6	± 9	63.1	133.9
FALL	J	Y	CF	23.13	1334.9	49	± 96	694.0	1471.2
FALL	J	Y	HC	1698.9	7797607.5	3602	± 7349	203.9	432.2
WINTER	J	Z	AD	52.22	18661.8	568	± 1063	7.1	77.3
WINTER	J	Z	HC	168.83	81505.1	1837	± 2222	20.3	220.4
WINTER	J	Z	JG	69.51	19533.2	756	± 1088	4.5	49.2
SPRING	J	Z	BG	1.51	7.5	16	± 23	37.8	411.0
SPRING	J	Z	CF	4.08	45.3	44	± 56	122.3	1330.1
SPRING	J	Z	FC	10.32	139.2	112	± 99	0.5	5.1
SPRING	J	Z	GF	117.88	42251.5	1283	± 1719	10.8	118.0
SPRING	J	Z	HC	628.49	878378.5	6838	± 7838	75.4	820.6
SUMMER	J	Z	AA	3.58	162.1	39	± 220	81.2	883.1
SUMMER	J	Z	BG	14.70	1057.5	160	± 563	367.4	3997.8
SUMMER	J	Z	CF	9.91	483.0	108	± 380	297.3	3234.7
SUMMER	J	Z	GF	286.67	453309.6	3119	± 11655	26.4	286.9
SUMMER	J	Z	HC	873.40	1853188.3	9503	± 23565	104.8	1140.3
FALL	J	Z	HC	1006.1	2130172.2	10946	± 16667	120.7	1313.6
SUMMER	K	X	FC	21.40	929.8	35	± 35	1.0	1.6
WINTER	K	Y	AD	95.49	67554.3	473	± 920	13.0	64.3
WINTER	K	Y	FC	11.82	212.1	59	± 52	0.5	2.6
WINTER	K	Y	GA	107.68	31346.0	533	± 627	11.8	58.6
SUMMER	K	Y	AA	2.97	11.8	15	± 12	67.3	333.3
SUMMER	K	Y	CF	16.45	730.1	81	± 96	493.4	2441.7
FALL	K	Y	CF	21.83	1584.3	108	± 313	654.8	3240.7
FALL	K	Y	CI	9.67	105.0	48	± 81	43.5	215.3
WINTER	K	Z	GA	32.17	2932.6	337	± 474	3.5	37.1
SPRING	K	Z	CI	2.00	5.0	21	± 29	9.0	94.4
SPRING	K	Z	HC	99.58	28866.3	1043	± 2210	11.9	125.2
SUMMER	K	Z	BF	1.76	11.7	18	± 28	70.5	739.1
SUMMER	K	Z	CF	2.94	26.4	31	± 41	88.2	924.4
SUMMER	K	Z	HC	323.95	224578.4	3395	± 3817	38.9	407.4

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
FALL	K	Z	CF	5.78	104.9	61	± 964	173.4	1816.6
FALL	K	Z	HC	254.64	187652.8	2668	± 40784	30.6	320.2
SPRING	L	X	FC	26.41	947.0	40	± 39	1.2	1.8
SUMMER	L	X	FC	31.37	1303.8	48	± 69	1.4	2.2
SPRING	L	Y	CF	19.59	1271.8	37	± 35	587.6	1096.5
SPRING	L	Y	FC	49.58	1932.3	93	± 44	2.2	4.2
SPRING	L	Z	BF	5.57	95.5	78	± 105	222.8	3100.5
SPRING	L	Z	CG	3.48	49.3	48	± 75	45.3	630.2
SPRING	L	Z	DE	28.76	2362.1	400	± 520	24.4	340.1
SPRING	L	Z	FC	31.35	708.0	436	± 285	1.4	19.6
SPRING	L	Z	HC	68.22	13066.6	949	± 1223	8.2	113.9
SUMMER	L	Z	AD	44.06	14015.6	613	± 2045	6.0	83.4
SUMMER	L	Z	HC	427.31	407502.3	5946	± 11028	51.3	713.6
FALL	L	Z	DE	16.20	877.4	225	± 345	13.8	191.6
FALL	L	Z	HC	538.06	575754.9	7488	± 8829	64.6	898.5
SUMMER	M	X	FC	88.75	5731.5	157	± 77	4.0	7.1
SPRING	M	Y	FC	76.24	5646.3	101	± 159	3.4	4.6
SUMMER	M	Y	CF	9.00	230.3	12	± 13	270.0	359.4
SUMMER	M	Y	FC	106.32	19546.9	142	± 118	4.8	6.4
WINTER	M	Z	FC	7.00	79.8	106	± 168	0.3	4.8
WINTER	M	Z	HC	182.74	97844.4	2772	± 5891	21.9	332.7
SPRING	M	Z	CF	4.43	58.4	67	± 185	132.8	2015.4
SPRING	M	Z	CI	3.92	16.9	60	± 99	17.7	267.9
SPRING	M	Z	FC	149.47	16612.3	2268	± 3111	6.7	102.0
SUMMER	M	Z	AD	15.42	1760.8	234	± 339	2.1	31.8
SUMMER	M	Z	BF	4.07	56.6	62	± 61	162.8	2469.3
SUMMER	M	Z	BG	0.84	1.7	13	± 11	21.0	318.1
SUMMER	M	Z	CF	6.79	110.1	103	± 85	203.6	3088.6
SUMMER	M	Z	CI	4.01	7.6	61	± 22	18.0	273.6
SUMMER	M	Z	FC	101.17	6544.7	1535	± 654	4.6	69.1
SUMMER	M	Z	HC	299.04	186318.2	4537	± 3489	35.9	544.4
WINTER	N	Y	AD	80.88	46322.5	477	± 1061	11.0	64.9
SPRING	N	Y	CF	3.29	30.2	19	± 21	98.8	582.7
SPRING	N	Y	CI	11.67	113.8	69	± 40	52.5	309.7
SPRING	N	Y	DE	183.55	89004.9	1082	± 1118	156.0	919.9
SPRING	N	Y	FC	38.92	1324.3	229	± 136	1.8	10.3
SPRING	N	Y	HC	290.32	211852.0	1712	± 1724	34.8	205.4
FALL	N	Y	HC	521.22	681653.1	3073	± 12093	62.5	368.8
FALL	N	Y	JG	429.22	741249.6	2531	± 12611	27.9	164.5
WINTER	N	Z	AD	154.75	176185.7	2046	± 3527	21.0	278.3
WINTER	N	Z	CF	2.84	24.1	38	± 41	85.1	1125.9
WINTER	N	Z	CG	12.77	570.6	169	± 201	166.0	2195.4
WINTER	N	Z	FC	4.79	33.6	63	± 49	0.2	2.9
WINTER	N	Z	GA	43.63	5699.2	577	± 634	4.8	63.5
WINTER	N	Z	GB	42.77	2678.5	566	± 435	3.9	51.5
WINTER	N	Z	HC	250.13	142339.2	3307	± 3170	30.0	396.9
SPRING	N	Z	CA	0.56	0.3	7	± 4	13.1	172.6
SPRING	N	Z	CG	4.13	58.1	55	± 54	53.7	710.5
SPRING	N	Z	FC	18.60	262.5	246	± 114	0.8	11.1
SPRING	N	Z	GF	53.14	11399.6	703	± 752	4.9	64.6
SPRING	N	Z	HC	566.62	724482.5	7492	± 5996	68.0	899.1
SUMMER	N	Z	BE	3.30	24.9	44	± 55	65.9	871.7

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SUMMER	N	Z	DE	168.21	104946.3	2224	± 3582	143.0	1890.6
SUMMER	N	Z	HC	199.54	90473.9	2639	± 3326	23.9	316.6
FALL	N	Z	AB	3.23	52.6	43	± 101	85.0	1124.3
FALL	N	Z	AD	167.36	184950.4	2213	± 5969	22.8	301.0
FALL	N	Z	BG	3.03	26.3	40	± 71	75.9	1003.3
FALL	N	Z	CG	9.21	352.7	122	± 261	119.7	1582.9
FALL	N	Z	DE	38.01	5682.9	503	± 1046	32.3	427.2
FALL	N	Z	GA	62.91	11031.5	832	± 1458	6.9	91.5
FALL	N	Z	HC	901.73	1914281.8	11924	± 19203	108.2	1430.8
FALL	N	Z	JG	594.05	1136825.7	7855	± 14798	38.6	510.6
SPRING	O	Y	BG	4.56	35.7	33	± 27	114.1	820.2
SPRING	O	Y	CI	2.73	10.5	20	± 15	12.3	88.2
SPRING	O	Y	DE	85.73	19902.9	616	± 644	72.9	523.9
SPRING	O	Y	FC	36.35	1333.7	261	± 167	1.6	11.8
SPRING	O	Y	FD	22.65	2158.7	163	± 212	7.7	55.4
SPRING	O	Y	GF	89.02	45598.0	640	± 975	8.2	58.9
SPRING	O	Y	HC	406.81	370195.9	2925	± 2779	48.8	350.9
SPRING	O	Y	HE	21.67	1060.2	156	± 149	3.3	23.4
SPRING	O	Y	JG	111.67	48066.3	803	± 1001	7.3	52.2
SUMMER	O	Y	DE	111.25	43080.3	800	± 1067	94.6	679.8
SUMMER	O	Y	FD	29.39	3559.4	211	± 307	10.0	71.8
SUMMER	O	Y	HE	28.12	2427.2	202	± 253	4.2	30.3
WINTER	O	Z	AD	45.19	14232.9	397	± 633	6.1	54.0
WINTER	O	Z	BE	2.41	13.8	21	± 20	48.3	423.9
WINTER	O	Z	CF	6.63	115.5	58	± 57	198.9	1747.3
WINTER	O	Z	DE	30.79	3777.3	270	± 326	26.2	229.9
WINTER	O	Z	FC	5.60	34.2	49	± 31	0.3	2.2
WINTER	O	Z	HE	23.34	1182.3	205	± 183	3.5	30.8
WINTER	O	Z	JG	240.61	205611.8	2114	± 2407	15.6	137.4
SPRING	O	Z	AD	40.79	11377.0	358	± 499	5.5	48.7
SPRING	O	Z	CF	11.97	359.1	105	± 89	359.1	3154.3
SPRING	O	Z	CG	40.40	4813.5	355	± 325	525.2	4613.1
SPRING	O	Z	DE	222.33	136095.4	1953	± 1726	189.0	1660.0
SPRING	O	Z	FC	5.05	24.2	44	± 23	0.2	2.0
SPRING	O	Z	GF	86.56	27944.1	760	± 782	8.0	70.0
SPRING	O	Z	HC	131.87	39945.4	1158	± 935	15.8	139.0
SPRING	O	Z	HE	105.36	17095.6	925	± 612	15.8	138.8
SPRING	O	Z	JG	108.59	56324.3	954	± 1111	7.1	62.0
SUMMER	O	Z	BE	6.82	112.7	60	± 46	136.5	1198.7
SUMMER	O	Z	CF	2.34	16.1	21	± 18	70.3	617.6
SUMMER	O	Z	DE	130.58	43261.9	1147	± 909	111.0	975.0
SUMMER	O	Z	EC	11.71	159.4	103	± 55	14.1	123.4
SUMMER	O	Z	FD	34.49	4875.1	303	± 305	11.7	103.0
SUMMER	O	Z	HE	165.02	44745.8	1450	± 924	24.8	217.4
SUMMER	O	Z	JC	90.64	12721.9	796	± 493	4.9	43.0
SUMMER	O	Z	JD	106.59	27893.3	936	± 730	5.8	50.6
SPRING	P	Y	AC	0.86	1.8	10	± 5	5.5	64.6
SPRING	P	Y	AD	8.52	613.5	101	± 86	1.2	13.7
SPRING	P	Y	BG	0.46	0.7	5	± 3	11.6	137.1
SPRING	P	Y	CF	5.00	59.2	59	± 27	150.0	1774.6
SPRING	P	Y	CI	1.66	1.9	20	± 5	7.5	88.4
SPRING	P	Y	DE	11.61	386.0	137	± 68	9.9	116.7

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SPRING	P	Y	FC	55.91	1982.9	661	± 154	2.5	29.8
SPRING	P	Y	HC	413.13	350328.3	4887	± 2046	49.6	586.5
SUMMER	P	Y	AD	14.70	1697.4	174	± 201	2.0	23.6
SUMMER	P	Y	CI	0.96	1.6	11	± 6	4.3	50.9
SUMMER	P	Y	HC	95.04	21822.6	1124	± 721	11.4	134.9
SPRING	P	Z	BF	7.82	201.4	43	± 25	312.7	1726.8
SPRING	P	Z	BG	0.97	2.0	5	± 3	24.2	133.5
SPRING	P	Z	CF	11.73	309.5	65	± 31	352.0	1943.8
SPRING	P	Z	CI	2.31	3.9	13	± 4	10.4	57.4
SPRING	P	Z	FC	24.20	537.6	134	± 41	1.1	6.0
SPRING	P	Z	GF	37.71	5057.1	208	± 127	3.5	19.2
SPRING	P	Z	HC	919.20	1760026.9	5076	± 2361	110.3	609.1
SUMMER	P	Z	BG	1.93	7.8	11	± 7	48.2	266.3
SUMMER	P	Z	CF	15.61	624.6	86	± 65	468.3	2585.9
SUMMER	P	Z	GF	75.26	20288.6	416	± 368	6.9	38.2
SUMMER	P	Z	HC	1146.4	2776630.7	6331	± 4306	137.6	759.7
FALL	P	Z	BG	4.42	46.5	24	± 31	110.6	610.6
FALL	P	Z	CF	5.96	109.2	33	± 48	178.9	988.1
WINTER	Q	Y	CF	3.58	36.9	27	± 25	107.5	797.1
WINTER	Q	Y	JG	390.25	564988.3	2893	± 3086	25.4	188.0
SPRING	Q	Y	AD	16.21	1925.3	120	± 106	2.2	16.3
SPRING	Q	Y	CG	2.68	25.1	20	± 12	34.8	257.8
SPRING	Q	Y	CI	5.27	17.3	39	± 10	23.7	175.7
SPRING	Q	Y	DE	55.22	8478.9	409	± 223	46.9	347.9
SPRING	Q	Y	EC	2.97	10.6	22	± 8	3.6	26.4
SPRING	Q	Y	FC	16.06	192.5	119	± 34	0.7	5.4
SPRING	Q	Y	HC	52.40	7689.8	388	± 212	6.3	46.6
SPRING	Q	Y	HE	33.49	1889.9	248	± 105	5.0	37.2
SUMMER	Q	Y	GF	62.45	15522.1	463	± 459	5.7	42.6
SUMMER	Q	Y	JG	78.34	24758.4	581	± 580	5.1	37.7
FALL	Q	Y	JG	260.53	233338.8	1931	± 2405	16.9	125.5
WINTER	Q	Z	AD	35.64	9177.0	326	± 530	4.8	44.3
WINTER	Q	Z	BE	1.90	11.3	17	± 19	38.1	348.1
WINTER	Q	Z	DE	48.56	6512.4	444	± 446	41.3	377.6
WINTER	Q	Z	GA	40.18	5626.6	368	± 415	4.4	40.4
WINTER	Q	Z	GF	151.25	79140.1	1384	± 1555	13.9	127.3
WINTER	Q	Z	HE	92.04	14266.1	842	± 660	13.8	126.3
WINTER	Q	Z	JG	284.60	269934.2	2604	± 2872	18.5	169.2
SPRING	Q	Z	AD	52.46	18518.9	480	± 438	7.1	65.3
SPRING	Q	Z	BE	3.73	31.5	34	± 18	74.7	683.3
SPRING	Q	Z	CF	3.85	38.7	35	± 20	115.4	1056.1
SPRING	Q	Z	CG	11.54	408.0	106	± 65	150.1	1373.0
SPRING	Q	Z	CI	1.14	1.7	10	± 4	5.1	46.8
SPRING	Q	Z	DE	166.78	69913.8	1526	± 851	141.8	1296.8
SPRING	Q	Z	EA	6.90	55.7	63	± 24	12.1	110.5
SPRING	Q	Z	EC	3.20	12.9	29	± 12	3.8	35.2
SPRING	Q	Z	FC	17.32	213.9	158	± 47	0.8	7.1
SPRING	Q	Z	FD	18.88	1401.6	173	± 121	6.4	58.7
SPRING	Q	Z	GF	37.11	5455.5	339	± 238	3.4	31.2
SPRING	Q	Z	HC	113.05	29468.0	1034	± 553	13.6	124.1
SPRING	Q	Z	HE	90.32	12039.5	826	± 353	13.5	123.9
SPRING	Q	Z	IA	43.63	2477.7	399	± 160	4.7	42.7

SEASON	BLOCK	STRATUM	TAXON CODE	DENSITY	VARIANCE	NUMBER	95% CI	BIOMASS DENSITY	STANDING STOCK
SPRING	Q	Z	JA	126.78	31795.5	1160	± 574	7.7	70.7
SPRING	Q	Z	JD	116.69	15171.0	1067	± 397	6.3	57.6
SPRING	Q	Z	JG	232.74	180999.7	2129	± 1370	15.1	138.4
SUMMER	Q	Z	AD	103.11	75912.2	943	± 1601	14.0	128.3
SUMMER	Q	Z	CF	7.56	143.2	69	± 70	226.9	2076.0
SUMMER	Q	Z	CG	8.51	299.2	78	± 101	110.6	1012.0
SUMMER	Q	Z	DE	35.12	3986.0	321	± 367	29.9	273.1
SUMMER	Q	Z	EF	3.27	15.9	30	± 23	8.2	74.8
SUMMER	Q	Z	FD	139.17	74098.0	1273	± 1582	47.3	432.9
SUMMER	Q	Z	HE	186.42	48093.6	1705	± 1275	28.0	255.8
SUMMER	Q	Z	JC	146.27	33048.9	1338	± 1057	7.9	72.3
FALL	Q	Z	AD	96.53	62419.2	883	± 1635	13.1	120.1
FALL	Q	Z	EB	6.12	26.3	56	± 34	8.5	77.3
FALL	Q	Z	FD	312.70	368125.6	2861	± 3970	106.3	972.6
FALL	Q	Z	GC	97.98	20000.0	896	± 925	12.1	111.1
FALL	Q	Z	HE	49.86	4920.9	456	± 459	7.5	68.4
FALL	Q	Z	JC	136.94	27104.9	1253	± 1077	7.4	67.6
FALL	Q	Z	JD	322.09	111408.2	2946	± 2184	17.4	159.1
FALL	Q	Z	JF	124.76	21720.8	1141	± 964	6.9	62.8
FALL	Q	Z	JG	256.97	235470.0	2351	± 3175	16.7	152.8
SUMMER	R	Z	BE	11.29	276.3	163	± 251	225.8	3253.1
SUMMER	R	Z	DE	144.06	62834.8	2075	± 3790	122.5	1764.0
SUMMER	R	Z	DI	6.71	43.5	97	± 100	1.0	14.5
SUMMER	R	Z	EA	20.87	737.7	301	± 411	36.5	526.0
SUMMER	R	Z	FD	57.08	12591.9	822	± 1697	19.4	279.6
SUMMER	R	Z	GA	59.61	10905.1	859	± 1579	6.6	94.5
SUMMER	R	Z	HE	136.54	30494.3	1967	± 2640	20.5	295.0
SUMMER	R	Z	JC	1499.8	1894982.6	21607	± 20815	81.0	1166.8
SUMMER	R	Z	JF	136.65	31931.5	1969	± 2702	7.5	108.3
SUMMER	R	Z	JG	281.45	274209.1	4055	± 7918	18.3	263.5
SPRING	S	Z	AA	1.05	1.7	17	± 18	23.8	391.1
SPRING	S	Z	AD	79.08	46058.0	1302	± 2954	10.8	177.1
SPRING	S	Z	BE	6.33	96.9	104	± 136	126.7	2085.7
SPRING	S	Z	FB	2.51	6.1	41	± 34	0.8	12.4
SPRING	S	Z	FD	170.78	103301.7	2812	± 4425	58.1	956.0
SPRING	S	Z	GA	44.59	6180.5	734	± 1082	4.9	80.8
SPRING	S	Z	JC	2019.3	3395420.6	33246	± 25367	109.0	1795.3
SPRING	S	Z	JG	631.57	1265219.4	10398	± 15485	41.1	675.9
SUMMER	S	Z	BE	19.10	810.1	315	± 492	382.1	6290.1
SUMMER	S	Z	FD	96.57	36903.9	1590	± 3320	32.8	540.6
SUMMER	S	Z	GA	67.24	13499.4	1107	± 2008	7.4	121.8
SUMMER	S	Z	HE	30.80	1975.7	507	± 768	4.6	76.1
SUMMER	S	Z	JD	397.89	232699.3	6551	± 8336	21.5	353.7

Table 3. Seasonal estimates of northeast U.S. continental shelf standing stocks of cetacean species observed by CETAP aerial surveys, 1979-1981. Also shown are estimated standing stocks of the entire cetacean community, and of the ichthyophagous, teuthophagous, and planktonophagous components.

SPECIES	STANDING STOCK (METRIC TONS)			
	WINTER	SPRING	SUMMER	FALL
Right whale	0.0	5253.1	3208.4	0.0
Humpback whale	0.0	3302.5	4582.2	1938.0
Sperm whale	3006.5	8825.7	14902.1	1058.3
Fin whale	11189.2	31046.1	36422.2	11542.9
Sei whale	2195.4	7584.5	1012.0	1582.9
Minke whale	49.8	1495.3	533.6	424.5
Beaked whale	0.0	61.6	180.3	0.0
Goosebeaked whale	0.0	62.3	96.0	0.0
Northern bottlenose whale	0.0	47.3	0.0	0.0
Pygmy/dwarf sperm whale	0.0	12.4	0.0	0.0
Pilot whale	1587.9	8896.4	8424.7	8181.4
Gray grampus	264.1	2560.6	4730.5	1891.4
Pygmy killer whale	0.0	0.0	14.5	0.0
Bottlenose dolphin	348.2	1435.5	1918.1	816.0
Atlantic white-sided dolphin	1031.1	4346.4	4016.9	4856.5
Saddleback dolphin	2365.6	1674.8	477.2	1769.0
Striped dolphin	155.5	188.7	108.3	91.7
Spotted dolphin	0.0	37.1	0.0	0.0
Spinner dolphin	0.0	0.0	5.3	0.0
Harbor porpoise	12.5	232.4	86.2	2.7
Unidentified whale	0.0	460.5	1425.1	133.9
Unidentified large whale	0.0	0.0	0.0	1648.8
Unidentified rorqual	0.0	172.6	0.0	0.0
Fin or sei whale	0.0	0.0	0.0	159.1
Unidentified medium whale	0.0	140.6	91.4	199.5
Unidentified beaked whale	0.0	261.1	619.9	0.0
Unidentified beaked or sperm whale	0.0	0.0	74.8	0.0
Beaked or goosebeaked whale	0.0	0.0	0.0	77.3
Unidentified dolphin	680.9	569.1	454.7	531.2
Unidentified dolphin, not gray grampus	722.1	582.6	654.6	0.0
Unidentified beaked dolphin	230.2	264.1	245.0	126.2
Unidentified long-beaked dolphin	0.0	98.6	0.0	0.0
White-sided or saddleback dolphin	51.5	0.0	0.0	0.0
Bottlenose/striped/spotted/spinner dolphin	0.0	0.0	87.5	111.1
Saddleback/striped/spotted/spinner dolphin	0.0	70.7	63.0	408.1
Striped, spotted, or spinner dolphin	143.3	2026.2	1282.0	196.5
Striped or spotted dolphin	25.3	174.3	1050.0	159.1
Ichthyophagous cetaceans	15507.0	43933.9	49760.1	21885.7
Teuthophagous cetaceans	5235.3	21629.6	28647.7	12775.1
Planktonophagous cetaceans	3316.8	16319.6	8358.7	3245.4
Total cetacean community	24059.1	81883.1	86766.5	37906.1

Table 4a. Estimates of the density (kg/km^2) of cetaceans in the three main feeding classes off the northeast U.S., and estimates of the daily and total consumption of fish, squid, and zooplankton. Consumption estimates are based on the Lockyer metabolic model. *IC=ichthyophagous, TE=teuthophagous, PL=planktonophagous.

						PREY CONSUMPTION (LOCKYER MODEL)					
			CETACEAN DENSITY*			DAILY (mg/m^2/day)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	E	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	E	X	16.6	1.5	54.2	0.7	0.1	0.7	502	63	558
SUMMER	E	X	57.4	0.0	6.4	0.8	0.0	0.1	615	0	68
FALL	E	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	E	Y	85.2	7.9	4.7	2.9	0.5	0.1	4394	778	106
SPRING	E	Y	198.0	71.6	19.0	3.5	2.5	0.3	5188	3805	425
SUMMER	E	Y	201.5	3.2	21.8	3.1	0.2	0.3	4682	236	479
FALL	E	Y	6.8	27.8	0.0	0.4	1.1	0.0	563	1651	0
WINTER	E	Z	81.5	54.6	5.4	2.4	2.1	0.1	2498	2206	84
SPRING	E	Z	124.8	145.1	7.3	3.9	5.1	0.1	4044	5315	128
SUMMER	E	Z	158.8	193.4	12.6	3.3	6.8	0.2	3393	7048	189
FALL	E	Z	61.8	157.4	5.1	3.0	6.3	0.1	3095	6552	107
WINTER	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	F	Y	86.0	4.9	8.7	1.6	0.3	0.1	2417	513	193
SPRING	F	Y	84.0	0.0	9.3	1.3	0.0	0.1	1916	2	209
SUMMER	F	Y	81.8	27.0	8.5	1.3	0.8	0.1	1906	1233	189
FALL	F	Y	5.7	1.0	0.0	0.3	0.1	0.0	481	102	0
WINTER	F	Z	129.9	36.1	10.8	3.2	1.6	0.2	3564	1828	177
SPRING	F	Z	35.7	114.3	0.0	1.5	4.5	0.0	1734	5062	0
SUMMER	F	Z	323.1	167.4	33.4	5.8	7.1	0.5	6533	8066	554
FALL	F	Z	168.6	0.0	18.7	2.5	0.0	0.3	2787	0	310
WINTER	G	X	88.0	25.1	9.1	1.5	1.0	0.1	1302	845	113
SPRING	G	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	G	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	G	X	56.2	0.0	6.2	0.8	0.0	0.1	688	0	76
WINTER	G	Y	203.9	0.9	22.1	3.2	0.1	0.3	3326	61	338
SPRING	G	Y	20.9	4.3	1.6	0.5	0.2	0.0	538	184	26
SUMMER	G	Y	32.8	9.1	3.6	0.5	0.4	0.1	507	446	56
FALL	G	Y	14.8	2.0	2.8	0.4	0.1	0.0	396	142	46
WINTER	G	Z	56.7	8.8	0.0	3.0	0.6	0.0	2060	387	0
SPRING	G	Z	165.6	248.2	6.2	5.9	9.6	0.1	4018	6550	64
SUMMER	G	Z	58.2	294.6	3.6	2.0	10.5	0.1	1360	7121	48
FALL	G	Z	72.8	151.7	0.0	3.3	6.1	0.0	2268	4127	0
WINTER	H	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	H	X	156.2	0.0	17.4	2.3	0.0	0.3	2606	0	290
SUMMER	H	X	1.3	0.0	0.0	0.1	0.0	0.0	67	0	0
FALL	H	X	51.2	0.0	5.7	0.8	0.0	0.1	869	0	97
WINTER	H	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	H	Y	168.6	16.0	16.8	3.1	0.8	0.2	1726	435	137
SUMMER	H	Y	83.6	15.2	7.4	1.7	0.8	0.1	929	439	62
FALL	H	Y	57.4	19.1	14.8	1.0	0.3	0.2	556	193	123

						PREY CONSUMPTION (LOCKYER MODEL)					
			CETACEAN DENSITY*			DAILY (mg/m2/day)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	H	Z	0.0	27.5	0.0	0.0	1.3	0.0	0	1129	0
SPRING	H	Z	358.6	361.1	28.8	6.4	9.1	0.4	5634	7976	370
SUMMER	H	Z	63.5	247.7	0.0	2.6	9.1	0.0	2274	7982	0
FALL	H	Z	27.6	497.2	0.0	1.0	18.6	0.0	839	16335	0
WINTER	I	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	I	X	9.8	0.0	0.0	0.5	0.0	0.0	261	0	0
SUMMER	I	X	14.5	0.0	0.0	0.7	0.0	0.0	385	0	0
FALL	I	X	9.9	0.8	0.0	0.5	0.0	0.0	271	28	0
WINTER	I	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	I	Y	16.5	61.8	0.0	0.8	2.4	0.0	130	399	0
SUMMER	I	Y	16.2	0.0	0.0	0.8	0.0	0.0	127	0	0
FALL	I	Y	10.5	0.0	0.0	0.5	0.0	0.0	83	0	0
WINTER	I	Z	224.7	515.9	0.0	7.2	11.1	0.0	2228	3409	0
SPRING	I	Z	102.3	337.1	0.0	3.4	9.0	0.0	1038	2809	0
SUMMER	I	Z	88.3	20.1	0.0	4.4	1.2	0.0	1365	367	0
FALL	I	Z	209.3	460.9	12.2	6.2	17.8	0.2	1936	5500	56
WINTER	J	X	4.1	0.7	0.0	0.2	0.0	0.0	118	25	0
SPRING	J	X	369.0	0.0	41.0	5.4	0.0	0.6	3185	0	354
SUMMER	J	X	1173	0.0	130.3	17.2	0.0	1.9	10099	0	1122
FALL	J	X	92.3	1.5	4.2	2.1	0.1	0.1	1212	50	44
WINTER	J	Y	44.1	7.6	0.0	2.1	0.4	0.0	413	85	0
SPRING	J	Y	2429	6.7	224.2	38.1	0.4	3.3	7370	76	642
SUMMER	J	Y	557.7	0.0	58.0	8.7	0.0	0.9	1670	0	168
FALL	J	Y	848.5	33.6	78.9	18.7	1.4	1.2	3626	281	226
WINTER	J	Z	27.2	4.7	0.0	1.3	0.3	0.0	1334	276	0
SPRING	J	Z	223.8	8.9	14.1	6.0	0.5	0.2	5919	522	205
SUMMER	J	Z	786.1	30.7	60.3	15.9	1.1	0.9	15764	1126	902
FALL	J	Z	108.6	12.1	0.0	5.3	0.7	0.0	5252	704	0
WINTER	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	K	X	0.9	0.0	0.0	0.1	0.0	0.0	8	1	0
FALL	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	K	Y	19.9	5.4	0.0	1.0	0.3	0.0	440	143	0
SPRING	K	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	K	Y	487.1	14.1	59.4	7.2	0.3	0.9	3242	123	399
FALL	K	Y	630.6	0.0	67.7	9.6	0.0	1.0	4324	0	456
WINTER	K	Z	3.0	0.5	0.0	0.1	0.0	0.0	143	30	0
SPRING	K	Z	19.3	1.2	0.4	0.7	0.1	0.0	682	67	10
SUMMER	K	Z	114.4	3.9	79.3	2.9	0.2	1.1	2751	218	1031
FALL	K	Z	183.6	3.1	17.3	3.6	0.2	0.3	3488	172	245
WINTER	L	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	X	1.1	0.1	0.0	0.1	0.0	0.0	9	1	0
SUMMER	L	X	1.3	0.1	0.0	0.1	0.0	0.0	11	1	0
FALL	L	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	Y	530.9	0.1	58.8	7.9	0.0	0.9	1361	1	149
SUMMER	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0

						PREY CONSUMPTION (LOCKYER MODEL)					
			CETACEAN DENSITY*			DAILY (mg/m2/day)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	L	Z	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	Z	8.7	25.3	268.1	0.4	1.0	3.9	558	1259	4933
SUMMER	L	Z	50.5	6.8	0.0	2.4	0.4	0.0	3113	504	0
FALL	L	Z	58.1	20.3	0.0	2.8	0.9	0.0	3593	1151	0
WINTER	M	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	M	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	M	X	3.8	0.2	0.0	0.2	0.0	0.0	37	2	0
WINTER	M	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	M	Y	3.2	0.2	0.0	0.2	0.0	0.0	24	2	0
SUMMER	M	Y	247.6	0.2	27.0	3.8	0.0	0.4	468	2	48
WINTER	M	Z	20.0	2.2	0.0	1.0	0.1	0.0	1355	180	0
SPRING	M	Z	142.7	0.3	14.2	2.5	0.0	0.2	3477	34	297
SUMMER	M	Z	258.5	4.4	185.1	5.3	0.3	2.6	7323	361	3588
WINTER	N	Y	7.9	3.1	0.0	0.4	0.2	0.0	202	95	0
SPRING	N	Y	171.8	159.6	12.5	4.0	6.2	0.2	2160	3336	108
SUMMER	N	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	N	Y	80.0	10.4	0.0	4.1	0.6	0.0	2184	349	0
WINTER	N	Z	126.4	10.1	174.5	3.5	0.6	3.0	4299	710	3684
SPRING	N	Z	77.3	7.4	55.8	3.4	0.4	1.0	4115	529	1186
SUMMER	N	Z	34.7	198.1	0.0	1.3	6.6	0.0	1524	8035	0
FALL	N	Z	276.4	75.0	137.9	9.5	3.0	2.4	11489	3662	2884
WINTER	O	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	O	Y	182.2	87.6	6.3	5.0	3.6	0.1	3299	2351	67
SUMMER	O	Y	4.2	104.6	0.0	0.2	4.1	0.0	128	2689	0
WINTER	O	Z	210.1	68.9	19.9	3.9	2.0	0.3	3125	1603	233
SPRING	O	Z	370.4	194.2	561.1	7.1	7.6	9.8	5662	6067	7840
SUMMER	O	Z	119.3	252.8	7.0	2.7	7.9	0.1	2213	6331	84
WINTER	P	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	P	Y	204.2	16.0	17.5	4.7	0.7	0.3	5086	771	290
SUMMER	P	Y	15.8	1.7	0.2	0.7	0.1	0.0	708	107	5
FALL	P	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	P	Z	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	P	Z	453.1	11.5	349.6	10.3	0.7	4.9	5177	341	2442
SUMMER	P	Z	597.2	14.6	49.2	13.2	0.9	0.7	6673	433	365
FALL	P	Z	266.1	0.0	23.4	4.0	0.0	0.3	1989	0	175
WINTER	Q	Y	118.3	3.8	10.7	2.6	0.3	0.2	1788	173	109
SPRING	Q	Y	35.4	51.8	36.0	1.1	2.0	0.6	760	1354	436
SUMMER	Q	Y	9.4	1.4	0.0	0.5	0.1	0.0	339	64	0
FALL	Q	Y	14.4	2.5	0.0	0.8	0.2	0.0	541	115	0
WINTER	Q	Z	56.6	78.2	0.0	2.6	2.6	0.0	2185	2142	0
SPRING	Q	Z	182.4	237.3	161.9	4.9	8.3	2.8	4053	6933	2360
SUMMER	Q	Z	246.6	92.9	133.3	5.0	4.1	2.3	4148	3458	1907
FALL	Q	Z	53.0	142.9	0.0	2.8	7.1	0.0	2301	5971	0
SUMMER	R	Z	120.3	418.7	0.0	4.7	14.5	0.0	6226	19030	0
SPRING	S	Z	126.7	244.9	3.6	5.4	10.3	0.1	8153	15483	82
SUMMER	S	Z	95.3	353.1	0.0	2.2	8.5	0.0	3327	12728	0

Table 4b. Estimates of the density (kg/km^2) of cetaceans in the three main feeding classes off the northeast U.S., and estimates of the daily and total consumption of fish, squid, and zooplankton. Consumption estimates are based on the Brody-Hinga metabolic model. *IC=ichthyophagous, TE=teuthophagous, PL=planktonophagous.

						PREY CONSUMPTION (BRODY-HINGA MODEL)					
			CETACEAN DENSITY*			DAILY (mg/m^2/day)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	E	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	E	X	16.6	1.5	54.2	0.5	0.1	0.4	370	47	314
SUMMER	E	X	57.4	0.0	6.4	0.5	0.0	0.1	351	0	39
FALL	E	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	E	Y	85.2	7.9	4.7	2.1	0.4	0.0	3213	603	61
SPRING	E	Y	198.0	71.6	19.0	2.1	1.7	0.2	3174	2579	244
SUMMER	E	Y	201.5	3.2	21.8	1.8	0.1	0.2	2745	172	273
FALL	E	Y	6.8	27.8	0.0	0.3	0.8	0.0	439	1140	0
WINTER	E	Z	81.5	54.6	5.4	1.7	1.5	0.0	1776	1546	48
SPRING	E	Z	124.8	145.1	7.3	2.8	3.5	0.1	2877	3638	76
SUMMER	E	Z	158.8	193.4	12.6	2.1	4.7	0.1	2196	4818	108
FALL	E	Z	61.8	157.4	5.1	2.3	4.4	0.1	2362	4552	66
WINTER	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	F	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	F	Y	86.0	4.9	8.7	1.0	0.3	0.1	1523	403	110
SPRING	F	Y	84.0	0.0	9.3	0.7	0.0	0.1	1102	2	119
SUMMER	F	Y	81.8	27.0	8.5	0.7	0.5	0.1	1108	819	108
FALL	F	Y	5.7	1.0	0.0	0.2	0.1	0.0	374	80	0
WINTER	F	Z	129.9	36.1	10.8	2.2	1.2	0.1	2426	1308	101
SPRING	F	Z	35.7	114.3	0.0	1.1	3.1	0.0	1283	3513	0
SUMMER	F	Z	323.1	167.4	33.4	3.6	5.1	0.3	4052	5726	317
FALL	F	Z	168.6	0.0	18.7	1.4	0.0	0.2	1592	0	177
WINTER	G	X	88.0	25.1	9.1	0.9	0.7	0.1	804	583	64
SPRING	G	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	G	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	G	X	56.2	0.0	6.2	0.5	0.0	0.1	393	0	44
WINTER	G	Y	203.9	0.9	22.1	1.9	0.0	0.2	1959	47	193
SPRING	G	Y	20.9	4.3	1.6	0.3	0.1	0.0	361	128	15
SUMMER	G	Y	32.8	9.1	3.6	0.3	0.3	0.0	289	320	32
FALL	G	Y	14.8	2.0	2.8	0.3	0.1	0.0	271	111	26
WINTER	G	Z	56.7	8.8	0.0	2.3	0.4	0.0	1590	299	0
SPRING	G	Z	165.6	248.2	6.2	4.3	6.8	0.1	2936	4603	37
SUMMER	G	Z	58.2	294.6	3.6	1.4	7.1	0.0	981	4860	30
FALL	G	Z	72.8	151.7	0.0	2.5	4.3	0.0	1716	2919	0
WINTER	H	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	H	X	156.2	0.0	17.4	1.3	0.0	0.1	1489	0	165
SUMMER	H	X	1.3	0.0	0.0	0.0	0.0	0.0	50	0	0
FALL	H	X	51.2	0.0	5.7	0.4	0.0	0.0	496	0	55
WINTER	H	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	H	Y	168.6	16.0	16.8	2.0	0.6	0.1	1084	316	78
SUMMER	H	Y	83.6	15.2	7.4	1.1	0.6	0.1	595	324	36
FALL	H	Y	57.4	19.1	14.8	0.6	0.2	0.1	339	111	71

						PREY CONSUMPTION (BRODY-HINGA MODEL)					
			CETACEAN DENSITY*			DAILY ($mg/m^2/day$)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	H	Z	0.0	27.5	0.0	0.0	0.9	0.0	0	809	0
SPRING	H	Z	358.6	361.1	28.8	4.0	5.8	0.2	3481	5069	211
SUMMER	H	Z	63.5	247.7	0.0	1.9	6.3	0.0	1689	5513	0
FALL	H	Z	27.6	497.2	0.0	0.7	12.7	0.0	606	11165	0
WINTER	I	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	I	X	9.8	0.0	0.0	0.3	0.0	0.0	195	0	0
SUMMER	I	X	14.5	0.0	0.0	0.5	0.0	0.0	288	0	0
FALL	I	X	9.9	0.8	0.0	0.4	0.0	0.0	204	22	0
WINTER	I	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	I	Y	16.5	61.8	0.0	0.6	1.6	0.0	97	273	0
SUMMER	I	Y	16.2	0.0	0.0	0.6	0.0	0.0	95	0	0
FALL	I	Y	10.5	0.0	0.0	0.4	0.0	0.0	62	0	0
WINTER	I	Z	224.7	515.9	0.0	5.2	6.7	0.0	1596	2080	0
SPRING	I	Z	102.3	337.1	0.0	2.4	5.8	0.0	741	1799	0
SUMMER	I	Z	88.3	20.1	0.0	3.4	0.9	0.0	1037	278	0
FALL	I	Z	209.3	460.9	12.2	4.4	12.2	0.1	1357	3768	32
WINTER	J	X	4.1	0.7	0.0	0.2	0.0	0.0	89	19	0
SPRING	J	X	369.0	0.0	41.0	3.1	0.0	0.3	1819	0	202
SUMMER	J	X	1173	0.0	130.3	9.8	0.0	1.1	5768	0	641
FALL	J	X	92.3	1.5	4.2	1.3	0.1	0.0	788	38	26
WINTER	J	Y	44.1	7.6	0.0	1.6	0.3	0.0	311	64	0
SPRING	J	Y	2429	6.7	224.2	22.3	0.3	1.9	4324	57	367
SUMMER	J	Y	557.7	0.0	58.0	5.1	0.0	0.5	971	0	97
FALL	J	Y	848.5	33.6	78.9	12.3	1.0	0.7	2390	203	129
WINTER	J	Z	27.2	4.7	0.0	1.0	0.2	0.0	1011	209	0
SPRING	J	Z	223.8	8.9	14.1	4.1	0.4	0.1	4087	395	117
SUMMER	J	Z	786.1	30.7	60.3	10.2	0.8	0.5	10107	796	518
FALL	J	Z	108.6	12.1	0.0	4.0	0.5	0.0	3965	531	0
WINTER	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	K	X	0.9	0.0	0.0	0.0	0.0	0.0	7	0	0
FALL	K	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	K	Y	19.9	5.4	0.0	0.7	0.2	0.0	332	108	0
SPRING	K	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	K	Y	487.1	14.1	59.4	4.1	0.2	0.5	1855	71	228
FALL	K	Y	630.6	0.0	67.7	5.5	0.0	0.6	2494	0	262
WINTER	K	Z	3.0	0.5	0.0	0.1	0.0	0.0	108	23	0
SPRING	K	Z	19.3	1.2	0.4	0.5	0.1	0.0	492	51	6
SUMMER	K	Z	114.4	3.9	79.3	2.0	0.2	0.6	1871	165	582
FALL	K	Z	183.6	3.1	17.3	2.3	0.1	0.1	2228	129	140
WINTER	L	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	X	1.1	0.1	0.0	0.1	0.0	0.0	7	0	0
SUMMER	L	X	1.3	0.1	0.0	0.1	0.0	0.0	9	1	0
FALL	L	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	Y	530.9	0.1	58.8	4.5	0.0	0.5	782	1	85
SUMMER	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	L	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0

						PREY CONSUMPTION (BRODY-HINGA MODEL)					
			CETACEAN DENSITY*			DAILY (mg/m^2/day)			TOTAL (mT)		
SEASON	BLOCK	STRATUM	IC	TE	PL	FISH	SQUID	ZOOPL	FISH	SQUID	ZOOPL
WINTER	L	Z	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	L	Z	8.7	25.3	268.1	0.3	0.7	2.2	425	866	2810
SUMMER	L	Z	50.5	6.8	0.0	1.8	0.3	0.0	2348	380	0
FALL	L	Z	58.1	20.3	0.0	2.1	0.6	0.0	2712	822	0
WINTER	M	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	M	X	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SUMMER	M	X	3.8	0.2	0.0	0.2	0.0	0.0	29	2	0
WINTER	M	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	M	Y	3.2	0.2	0.0	0.2	0.0	0.0	19	1	0
SUMMER	M	Y	247.6	0.2	27.0	2.3	0.0	0.2	275	2	28
WINTER	M	Z	20.0	2.2	0.0	0.7	0.1	0.0	1024	136	0
SPRING	M	Z	142.7	0.3	14.2	1.5	0.0	0.1	2134	27	171
SUMMER	M	Z	258.5	4.4	185.1	3.4	0.2	1.5	4713	273	2026
WINTER	N	Y	7.9	3.1	0.0	0.3	0.1	0.0	151	71	0
SPRING	N	Y	171.8	159.6	12.5	2.7	4.3	0.1	1431	2289	63
SUMMER	N	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
FALL	N	Y	80.0	10.4	0.0	3.1	0.5	0.0	1666	267	0
WINTER	N	Z	126.4	10.1	174.5	2.5	0.4	1.8	2992	535	2191
SPRING	N	Z	77.3	7.4	55.8	2.6	0.3	0.6	3077	400	706
SUMMER	N	Z	34.7	198.1	0.0	0.9	4.5	0.0	1106	5382	0
FALL	N	Z	276.4	75.0	137.9	6.9	2.1	1.4	8315	2593	1712
WINTER	O	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	O	Y	182.2	87.6	6.3	3.5	2.5	0.1	2283	1637	39
SUMMER	O	Y	4.2	104.6	0.0	0.1	2.8	0.0	96	1849	0
WINTER	O	Z	210.1	68.9	19.9	2.5	1.3	0.2	1965	1054	133
SPRING	O	Z	370.4	194.2	561.1	4.5	5.2	5.8	3580	4168	4661
SUMMER	O	Z	119.3	252.8	7.0	1.8	5.2	0.1	1468	4207	48
WINTER	P	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	P	Y	204.2	16.0	17.5	3.1	0.5	0.2	3392	551	168
SUMMER	P	Y	15.8	1.7	0.2	0.5	0.1	0.0	522	80	3
FALL	P	Y	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
WINTER	P	Z	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SPRING	P	Z	453.1	11.5	349.6	6.8	0.5	2.7	3434	258	1378
SUMMER	P	Z	597.2	14.6	49.2	8.7	0.6	0.4	4403	327	209
FALL	P	Z	266.1	0.0	23.4	2.3	0.0	0.2	1141	0	100
WINTER	Q	Y	118.3	3.8	10.7	1.7	0.2	0.1	1190	134	62
SPRING	Q	Y	35.4	51.8	36.0	0.8	1.4	0.4	530	929	260
SUMMER	Q	Y	9.4	1.4	0.0	0.4	0.1	0.0	262	49	0
FALL	Q	Y	14.4	2.5	0.0	0.6	0.1	0.0	422	90	0
WINTER	Q	Z	56.6	78.2	0.0	2.0	1.7	0.0	1651	1445	0
SPRING	Q	Z	182.4	237.3	161.9	3.4	5.6	1.7	2803	4710	1403
SUMMER	Q	Z	246.6	92.9	133.3	3.2	2.9	1.4	2662	2461	1130
FALL	Q	Z	53.0	142.9	0.0	2.1	5.2	0.0	1766	4363	0
SUMMER	R	Z	120.3	418.7	0.0	3.5	10.0	0.0	4627	13106	0
SPRING	S	Z	126.7	244.9	3.6	4.1	7.5	0.0	6162	11240	48
SUMMER	S	Z	95.3	353.1	0.0	1.5	5.3	0.0	2214	8034	0

Table 5. Seasonal estimates of total consumption of fish, squid, and zooplankton by whales and dolphins off the northeast U.S., with annual totals.

	CONSUMPTION (METRIC TONS)		
SEASON	FISH	SQUID	ZOOPLANKTON
(LOCKYER METABOLIC MODEL)			
WINTER	37192	16617	5037
SPRING	90384	71728	23606
SUMMER	93914	88152	11267
FALL	54833	47084	4846
	-----	-----	-----
ANNUAL TOTAL	276323	223581	44756
(BRODY-HINGA METABOLIC MODEL)			
WINTER	25712	11474	2964
SPRING	59974	49546	13744
SUMMER	60789	60014	6452
FALL	38096	32903	2841
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ANNUAL TOTAL	184571	153937	26001

APPENDIX A

Tables summarizing the CETAP population density and abundance estimates for whales and dolphins observed in the waters of the northeastern United States outer continental shelf, 1979-1981. The categories "unidentified whale" "unidentified dolphin" and "unidentified beaked whale" are pooled categories containing all unidentified sightings.

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR MEGAPTERA NOVAEANGLIAE

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
SPRING	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0007	0.0000	0.0000	0.0000	0.0000	0.0208	0.0115	0.0000	0.0000	0.0028	0.0028	0.0003	0.0000
		4E-06	0E+00	0E+00	0E+00	0E+00	8E-04	2E-04	0E+00	0E+00	3E-05	3E-05	2E-06	0E+00
		11	0	0	0	0	44	57	0	0	17	20	4	0
		± 27	± 0	± 0	± 0	± 0	± 94	± 104	± 0	± 0	± 80	± 98	± 15	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	0.0011	0.0000	0.0000	0.0000	0.0000	0.0012	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	1E-05	1E-05	0E+00	0E+00	0E+00	0E+00	2E-05	0E+00
		0	0	0	0	0	11	11	0	0	0	0	7	0
		± 0	± 0	± 0	± 0	± 0	± 59	± 57	± 0	± 0	± 0	± 0	± 22	± 0
SUMMER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0053	0.0035	0.0000	0.0005	0.0000	0.0000	0.0015	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	3E-04	2E-04	0E+00	2E-06	0E+00	0E+00	2E-05	0E+00
		0	0	0	0	0	58	37	0	8	0	0	8	0
		± 0	± 0	± 0	± 0	± 0	± 1579	± 343	± 0	± 36	± 0	± 0	± 31	± 0
FALL	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0018	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	1E-05	1E-05	0E+00	0E+00				
		0	0	0	0	0	12	3	0	0				
		± 0	± 0	± 0	± 0	± 0	± 203	± 51	± 0	± .				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	.	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± .	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0027	.	0.0032	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-05	.	5E-05	0E+00
		0	0	0	0	0	0	0	0	0	36	.	18	0
		± 0	± .	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± 334	± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR EUBALAENA GLACIALIS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0008 2E-05 6 ± 27	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0038 7E-05 53 ± 292	0.0019 2E-05 29 ± 657	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0068 5E-04 37 ± 117	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0010 1E-05 11 ± 88	0.0000 0E+00 0 ± 0	0.0023 6E-05 35 ± 193	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR PHYSETER CATODON

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0004	0.0000	0.0000	0.0000	0.0207	0.0000	0.0000	0.0000	0.0000	0.0000	0.0013	0.0000	0.0009
		3E-06	0E+00	0E+00	0E+00	2E-03	0E+00	0E+00	0E+00	0E+00	0E+00	7E-06	0E+00	9E-06
		4	0	0	0	70	0	0	0	0	0	12	0	8
		± 19	± 0	± 0	± 0	± 1219	± 0	± 0	± 0	± 0	± 0	± 216	± 0	± 44
SPRING	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		4E-06	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		10	0	0	0	0	0	0	0	0	0	0	0	0
		± 28	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0025	0.0007	0.0023	0.0150	0.0096	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036
		4E-05	3E-06	3E-05	8E-04	3E-04	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	8E-05
		28	8	17	144	32	0	0	0	0	0	0	0	33
		± 79	± 55	± 49	± 2519	± 91	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 101
SUMMER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	1E-05	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	21	0	0	0	0	0	0	0	0	0	0	0
		± 0	± 143	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0039	0.0014	0.0033	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0020	0.0052	0.0000	0.0000
		7E-05	2E-05	6E-05	1E-04	0E+00	0E+00	0E+00	0E+00	0E+00	2E-05	1E-04	0E+00	0E+00
		44	17	24	38	0	0	0	0	0	26	46	0	0
		± 116	± 92	± 88	± 241	± 0	± 0	± 0	± 0	± 0	± 512	± 240	± 0	± 0
FALL	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± .				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	.	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± .	± 0
	Z	0.0000	0.0000	0.0034	0.0029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.0000
		0E+00	0E+00	6E-05	4E-05	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+00
		0	0	26	28	0	0	0	0	0	0	.	0	0
		± 0	± .	± 510	± 538	± 0	± 0	± 0	± 0	± .	± .	± .	± 0	± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR BALAENOPTERA PHYSALUS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0016 3E-05 15 ± 77	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0026 3E-05 43 ± 68	0.0028 3E-05 46 ± 884	0.0040 1E-04 46 ± 206	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0014 2E-05 10 ± 51
	Z	0.0009 1E-05 10 ± 35	0.0032 6E-05 40 ± 847	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0017 1E-05 23 ± 455	0.0033 4E-05 29 ± 521	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0045 1E-04 56 ± 1161	0.0000 0E+00 0 ± 0	0.0078 5E-04 50 ± 220	0.0020 4E-05 3 ± 16	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0044 9E-05 73 ± 130	0.0028 3E-05 46 ± 140	0.0005 3E-06 6 ± 26	0.0046 10E-05 28 ± 542	0.0000 0E+00 0 ± 0	0.0563 2E-03 119 ± 160	0.0442 9E-04 219 ± 236	0.0111 9E-04 21 ± 139	0.0000 0E+00 0 ± 0	0.0021 3E-05 12 ± 79	0.0000 0E+00 0 ± 0	0.0041 1E-04 49 ± 116	0.0000 0E+00 0 ± 0
	Z	0.0009 6E-06 10 ± 28	0.0000 0E+00 0 ± 0	0.0024 5E-05 18 ± 66	0.0071 2E-04 69 ± 1210	0.0000 0E+00 0 ± 0	0.0024 3E-05 26 ± 99	0.0014 2E-05 14 ± 80	0.0009 7E-06 13 ± 88	0.0014 10E-06 21 ± 427	0.0000 0E+00 0 ± 0	0.0261 2E-03 229 ± 1084	0.0094 4E-04 52 ± 108	0.0041 1E-04 38 ± 134
SUMMER	X	0.0019 4E-05 15 ± 76	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0147 7E-04 94 ± 1553	0.0098 5E-04 16 ± 89	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0063 1E-04 103 ± 280	0.0026 3E-05 44 ± 222	0.0017 3E-05 20 ± 100	0.0013 2E-05 8 ± 38	0.0000 0E+00 0 ± 0	0.0061 2E-04 13 ± 256	0.0136 7E-04 67 ± 332	0.0000 0E+00 0 ± 0	0.0066 4E-04 9 ± 40	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0048 9E-05 54 ± 130	0.0060 1E-04 74 ± 233	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0035 1E-04 38 ± 992	0.0041 9E-05 43 ± 251	0.0000 0E+00 0 ± 0	0.0039 7E-05 59 ± 198	0.0000 0E+00 0 ± 0	0.0028 5E-05 25 ± 160	0.0117 1E-03 64 ± 218	0.0042 9E-05 39 ± 139
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0023 6E-05 22 ± 112	0.0017 2E-05 21 ± 132	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0144 8E-04 31 ± 535	0.0142 1E-03 71 ± 1444	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0056 7E-05 69 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0025 5E-05 8 ± 39	0.0000 0E+00 0 ± 0	0.0026 3E-05 27 ± 549	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0042 9E-05 23 ± 463	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR BALAENOPTERA BOREALIS

SEASON	STRATUM	BLOCK												
		E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0067 1E-04 89 ± 1421	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0012 1E-05 9 ± 30
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0022 3E-05 30 ± 184	0.0000 0E+00 0 ± 0	0.0024 2E-05 32 ± 154	0.0159 7E-04 139 ± 598	0.0000 0E+00 0 ± 0	0.0115 6E-04 105 ± 270
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0104 8E-04 96 ± 421
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0069 8E-05 92 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR BALAENOPTERA ACUTOROSTRATA

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0005 3E-06 8 ± 23	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0007 5E-06 5 ± 13	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0016 1E-05 26 ± 45	0.0000 0E+00 0 ± 0	0.0001 6E-07 1 ± 11	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0080 9E-05 47 ± 137	0.0080 9E-05 57 ± 167	0.0014 7E-06 17 ± 30	0.0047 6E-05 35 ± 60
	Z	0.0022 2E-05 25 ± 49	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0014 4E-06 15 ± 35	0.0014 4E-06 14 ± 34	0.0009 3E-06 13 ± 62	0.0014 5E-06 21 ± 300	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0018 2E-05 10 ± 21	0.0009 5E-06 8 ± 26
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0013 9E-06 8 ± 28	0.0000 0E+00 0 ± 0	0.0060 4E-05 13 ± 123	0.0040 3E-05 20 ± 65	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0006 3E-06 7 ± 27	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0018 8E-06 26 ± 346	0.0029 1E-05 43 ± 81	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0072 6E-05 46 ± 450	0.0023 9E-06 4 ± 43	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0070 10E-05 35 ± 445	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR ZIPHIUS CAVIROSTRIS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0056 2E-04 19 ± 67	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0015 1E-05 17 ± 51	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR MESOPLODON SPP.

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0027 6E-05 20 ± 59
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0029 5E-05 26 ± 81
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0038 7E-05 43 ± 115	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0078 2E-04 69 ± 321	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR HYPEROODON AMPULLATUS

SEASON	STRATUM	BLOCK E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0009 0E+00 7 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR GLOBICEPHALA SPP.

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0181 6E-03 170 ± 1105	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0661 3E-02 749 ± 1845	0.0377 1E-02 468 ± 11829	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0190 3E-03 167 ± 4575	0.0000 0E+00 0 ± 0	0.0780 5E-02 714 ± 3137
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0650 4E-02 1066 ± 2739	0.0000 0E+00 0 ± 0	0.0197 8E-03 225 ± 1231	0.0000 0E+00 0 ± 0	0.0735 10E-02 136 ± 925	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1730 2E-01 1020 ± 5686	0.0976 6E-02 702 ± 4355	0.0169 4E-03 200 ± 690	0.0569 3E-02 422 ± 1397
	Z	0.0879 5E-02 996 ± 2589	0.0383 1E-02 475 ± 3588	0.1354 1E-01 1009 ± 3462	0.0417 1E-02 402 ± 10114	0.0855 5E-02 289 ± 1198	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0216 5E-03 301 ± 2336	0.0324 7E-03 492 ± 11281	0.0000 0E+00 0 ± 0	0.1853 2E-01 1628 ± 9612	0.0000 0E+00 0 ± 0	0.1718 1E-01 1571 ± 3941
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1280 1E-01 755 ± 17768	0.0640 6E-02 460 ± 2713	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0749 9E-02 849 ± 4148	0.0405 2E-02 502 ± 2864	0.1972 4E-01 1469 ± 7524	0.0940 8E-02 904 ± 6898	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.3962 1E+00 5239 ±119456	0.1612 1E-01 1416 ± 7312	0.0000 0E+00 0 ± 0	0.0203 7E-03 186 ± 1211
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0670 3E-02 1099 ± 27113	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.1325 1E-01 1501 ± 33441	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.5450 1E+00 5242 ± 92524	0.5667 1E+00 1917 ± 6412	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0203 3E-03 283 ± 6933	0.0000 0E+00 0 ± .	0.0412 7E-03 545 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR GRAMPUS GRISEUS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0440 2E-02 423 ± 3054	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0392 1E-02 237 ± 5451	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0162 3E-03 116 ± 927	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0221 5E-03 250 ± 805	0.1140 6E-02 1412 ± 7666	0.1480 1E-01 1103 ± 3118	0.0950 5E-02 914 ± 19610	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0224 5E-03 205 ± 783
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0062 5E-04 101 ± 584	0.0279 4E-03 464 ± 2549	0.0245 6E-03 280 ± 1464	0.0219 5E-03 132 ± 699	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0310 5E-03 183 ± 3875	0.0155 3E-03 111 ± 592	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.2424 2E-01 2745 ± 5687	0.2012 2E-01 2493 ± 8151	0.2125 2E-01 1583 ± 4623	0.0683 4E-02 657 ± 4596	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0207 4E-03 182 ± 1386	0.0000 0E+00 0 ± 0	0.1040 8E-02 951 ± 4071
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.2320 3E-01 1728 ± 35323	0.0915 5E-02 880 ± 19235	0.0335 2E-02 113 ± 707	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. : . ± .	0.0000 0E+00 0 ± 0	0.2665 2E-01 2438 ± 40930

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR TURSIOPS TRUNCATUS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0070 5E-04 79 ± 226	0.0497 10E-03 616 ± 10931	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0990 5E-02 335 ± 6513	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0125 6E-04 110 ± 1933	0.0000 0E+00 0 ± 0	0.0657 1E-02 601 ± 1647
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0350 6E-03 220 ± 783	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0211 2E-03 347 ± 537	0.0000 0E+00 0 ± 0	0.0789 3E-02 903 ± 2533	0.0355 6E-03 214 ± 4219	0.0797 2E-02 147 ± 405	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0147 1E-03 106 ± 659	0.0000 0E+00 0 ± 0	0.0294 5E-03 218 ± 540
	Z	0.1483 4E-02 1680 ± 2331	0.0880 2E-02 1090 ± 4839	0.0928 2E-02 692 ± 1279	0.0562 7E-03 541 ± 7173	0.1247 8E-02 422 ± 1476	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0780 2E-02 685 ± 2941	0.0000 0E+00 0 ± 0	0.0864 2E-02 790 ± 1637
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0120 1E-03 150 ± 708	0.0595 9E-03 374 ± 5284	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0056 2E-04 92 ± 384	0.0067 3E-04 111 ± 666	0.0000 0E+00 0 ± 0	0.0397 8E-03 240 ± 833	0.0770 2E-02 142 ± 2065	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0281 5E-03 166 ± 3893	0.0140 3E-03 101 ± 594	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.1526 4E-02 1728 ± 2872	0.0533 6E-03 660 ± 1547	0.1108 2E-02 826 ± 1703	0.1180 3E-02 1135 ± 4423	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0937 3E-02 823 ± 3938	0.0000 0E+00 0 ± 0	0.1112 3E-02 1018 ± 2496
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0384 6E-03 242 ± 778	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0322 5E-03 194 ± 1035	0.0511 2E-02 94 ± 427	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0194 1E-03 220 ± 3398	0.0000 0E+00 0 ± .	0.1555 4E-02 1158 ± 12918	0.0830 2E-02 798 ± 11133	0.5605 5E-01 1896 ± 3659	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0315 4E-03 288 ± 5009

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR LAGENORHYNCHUS ACUTUS

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1492 2E-01 316 ± 1532	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1062 1E-01 1156 ± 5864	0.0000 0E+00 0 ± 0	0.0393 1E-02 547 ± 3977	0.0393 1E-02 597 ± 4336	0.1275 6E-02 1686 ± 30171	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0559 8E-02 441 ± 1751	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0191 7E-03 314 ± 1158	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.4402 2E-01 933 ± 1411	0.4402 2E-01 2179 ± 3294	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.2150 2E-01 1268 ± 6518	0.2017 1E-01 1450 ± 6917	0.2901 5E-01 3432 ± 7860	0.0318 2E-02 236 ± 966
	Z	0.0147 4E-03 167 ± 731	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.7330 3E-01 7975 ± 9439	0.7285 3E-01 7634 ± 9007	0.0343 8E-03 478 ± 3168	0.0515 1E-02 781 ± 15300	0.3410 5E-01 4509 ± 22556	0.0500 2E-02 439 ± 2743	0.4423 2E+00 2442 ± 7084	0.0564 2E-02 516 ± 1608
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0480 2E-02 568 ± 1840	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.3310 3E-01 3601 ± 52001	0.2863 2E-01 3000 ± 12293	0.2325 2E-01 3235 ± 54425	0.2375 2E-01 3603 ± 9646	0.0915 4E-02 1210 ± 23082	0.0000 0E+00 0 ± 0	0.9060 4E+00 5003 ± 12873	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0875 4E-02 562 ± 10892	0.0875 4E-02 142 ± 2752	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.8950 4E+00 1897 ± 38256	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.3940 3E-01 2323 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.5700 1E+00 6202 ± 104598	0.0965 5E-02 1011 ± 20594	0.4055 3E-01 5643 ± 68364	0.4230 3E-01 6417 ± .	0.6560 9E-01 8674 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR PHOCOENA PHOCOENA

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-04	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	38	0	0	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 220	± 0	± 0	± 0	± 0	± 0	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0020	0.0020	0.0032	0.0030	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-05	2E-05	2E-05	2E-05	0E+00	0E+00
		0	0	0	0	0	0	0	27	30	42	27	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 159	± 173	± 585	± 353	± 0	± 0
SPRING	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0160	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-03	0E+00				
		0	0	0	0	0	0	0	24	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 124	± 0				
	Y	0.0057	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0473	0.0555	0.0296	0.0357	0.0497	0.0137
		4E-04	1E-04	0E+00	0E+00	0E+00	0E+00	0E+00	3E-03	4E-03	1E-03	2E-03	5E-03	5E-04
		94	103	0	0	0	0	0	88	74	175	256	588	101
		± 258	± 318	± 0	± 0	± 0	± 0	± 0	± 260	± 765	± 521	± 878	± 736	± 166
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0051	0.0051	0.0562	0.0720	0.0193	0.0025	0.0264	0.0108
		0E+00	0E+00	0E+00	0E+00	0E+00	2E-04	2E-04	4E-03	6E-03	7E-04	2E-05	3E-03	2E-04
		0	0	0	0	0	55	53	782	1092	255	22	146	99
		± 0	± 0	± 0	± 0	± 0	± 235	± 227	± 2236	± 10602	± 841	± 96	± 287	± 174
SUMMER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0223	0.0423	0.0685				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-03	3E-03	6E-03				
		0	0	0	0	0	0	36	65	121				
		± 0	± 0	± 0	± 0	± 0	± 0	± 202	± 701	± 218				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1170	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-02	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	0	156	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 545	± 0	± 0	± 0	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0241	0.0680	0.0000	0.0000	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-03	7E-03	0E+00	0E+00	0E+00	0E+00
		0	0	0	0	0	0	0	336	1032	0	0	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 4930	± 2046	± 0	± 0	± 0	± 0
FALL	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0044	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	2E-04	4E-05	0E+00	0E+00				
		0	0	0	0	0	58	7	0	0				
		± 0	± 0	± 0	± 0	± 0	± 721	± 92	± 0	± .				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	.	0	0
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± .	± 0
	Z	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.0000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+00
		0	0	0	0	0	0	0	0	0	0	.	0	0
		± 0	± .	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± 0	± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR DELPHINUS DELPHIS

		BLOCK												
EASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
INTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0665 8E-02 622 ± 4160	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.3469 2E+00 5690 ± 18672	0.1185 1E-01 1971 ± 53577	0.0570 6E-02 652 ± 4619	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1750 5E-01 1297 ± 8706
	Z	0.4029 1E+00 4563 ± 12577	0.2760 7E-01 3418 ± 94424	0.2840 1E+00 2116 ± 21291	0.0000 0E+00 0 ± 0	0.2740 7E-01 927 ± 25961	0.0447 4E-02 487 ± 3330	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1390 2E-01 1221 ± 31618	0.0000 0E+00 0 ± 0	0.1435 3E-01 1313 ± 8169
PRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0922 2E-01 1513 ± 5563	0.0000 0E+00 0 ± 0	0.0228 1E-02 261 ± 1586	0.2180 4E-01 1316 ± 35525	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0813 9E-02 585 ± 5378	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.3027 8E-01 3428 ± 10868	0.0000 0E+00 0 ± 0	0.5398 2E+00 4021 ± 12757	0.0000 0E+00 0 ± 0	0.1947 6E-01 659 ± 4150	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0573 5E-02 504 ± 5102	0.0000 0E+00 0 ± 0	0.2284 6E-01 2089 ± 9014
UMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0477 4E-02 354 ± 2410
	Z	0.0216 1E-02 245 ± 1508	0.0737 9E-02 913 ± 6034	0.0585 7E-02 436 ± 3028	0.0687 6E-02 660 ± 5981	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
ALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.2460 5E-01 4035 ±109290	0.0985 9E-02 1639 ± 44589	0.0450 4E-02 514 ± 3427	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.4530 9E-01 2671 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.2340 4E-01 1734 ± 43695
	Z	0.6985 2E+00 7911 ±142278	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.6030 1E+00 7973 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.4690 2E+00 4290 ±106528

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR STENELLA COERULEOALBA

SEASON	STRATUM	BLOCK E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0950 2E-02 1177 ± 17524	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1885 6E-02 638 ± 7474	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.2017 10E-02 2284 ± 3682	0.0000 0E+00 0 ± 0	0.0670 2E-02 499 ± 1359	0.1090 3E-02 1048 ± 14433	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0450 1E-02 514 ± 2029	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0600 9E-03 549 ± 7883

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR STENELLA SPP. (SPOTTED)

SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0114 4E-04 141 ± 597	0.0103 7E-04 77 ± 253	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR STENELLA SPP.

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.1020 3E-02 1697 ± 25714	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.1075 7E-03 1218 ± 877	0.1190 5E-02 1474 ± 24431	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.2360 1E-01 798 ± 11040	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.3801 5E-01 4305 ± 8678	0.0783 3E-02 970 ± 5273	0.5020 4E-01 3740 ± 6014	0.1370 6E-02 1318 ± 20448	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0560 1E-02 512 ± 1265
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0475 1E-02 287 ± 1027	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0381 5E-03 431 ± 1020	0.2502 1E-01 3100 ± 7323	0.1007 5E-02 751 ± 2637	0.2370 2E-01 2279 ± 10369	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.1493 6E-02 1312 ± 5323	0.0000 0E+00 0 ± 0	0.0917 5E-02 839 ± 3222
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0562 2E-02 643 ± 2800	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.1150 5E-02 1302 ± 21694	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.1325 6E-02 1274 ± 21603	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.3010 2E-01 2753 ± 33737

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL, BY SEASON, BLOCK, AND STRATUM, FOR UNIDENTIFIED WHALE

SEASON	STRATUM	BLOCK E	 F	 G	 H	 I	 J	 K	 L	 M	 N	 O	 P	 Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0001 2E-07 2 ± 6	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0001 3E-07 2 ± 6	0.0000 0E+00 0 ± 0
	Z	0.0001 3E-07 2 ± 6	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0004 8E-07 6 ± 30	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0017 2E-05 9 ± 49	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0003 10E-07 4 ± 19	0.0002 4E-07 2 ± 8	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0012 4E-05 14 ± 612	0.0008 3E-05 9 ± 133	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0006 2E-06 6 ± 28	0.0015 1E-05 9 ± 57	0.0000 0E+00 0 ± 0	0.0017 1E-05 4 ± 63	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0005 6E-07 5 ± 79	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0013 2E-06 17 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR UNIDENTIFIED DOLPHIN

		BLOCK												
SEASON	STRATUM	E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0092	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	2E-03	0E+00	0E+00	0E+00				
		0	0	0	0	0	59	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 448	± 0	± 0	± 0				
	Y	0.0042	0.0000	0.0000	0.0000	0.0000	0.0198	0.0403	0.0000	0.0000	0.0170	0.0000	0.0000	0.000
		9E-04	0E+00	0E+00	0E+00	0E+00	9E-03	3E-02	0E+00	0E+00	3E-03	0E+00	0E+00	0E+
		69	0	0	0	0	42	200	0	0	100	0	0	
		± 375	± 0	± 0	± 0	± 0	± 322	± 2003	± 0	± 0	± 3096	± 0	± 0	±
	Z	0.0067	0.0159	0.1747	0.0000	0.1191	0.0122	0.0052	0.0000	0.0000	0.0505	0.0080	0.0000	0.037
		2E-03	3E-03	7E-01	0E+00	1E-01	2E-03	5E-04	0E+00	0E+00	3E-02	7E-04	0E+00	2E-0
		76	197	1301	0	403	133	55	0	0	668	70	0	33
		± 444	± 6176	± 15337	± 0	± 9611	± 744	± 572	± 0	± 0	± 20126	± 2132	± 0	± 202
SPRING	X	0.0182	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		2E-02	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		144	0	0	0	0	0	0	0	0				
		± 767	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0036	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0091	0.0091	0.0027	0.004
		3E-04	0E+00	2E-05	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-03	2E-03	3E-04	6E-0
		60	0	7	0	0	0	0	0	0	54	65	32	3
		± 242	± 0	± 69	± 0	± 0	± 0	± 0	± 0	± 0	± 644	± 785	± 203	± 19
	Z	0.0078	0.0121	0.0458	0.0359	0.0319	0.0090	0.0090	0.0000	0.0000	0.0101	0.0217	0.0078	0.035
		8E-04	2E-03	2E-02	8E-03	1E-02	2E-03	2E-03	0E+00	0E+00	2E-03	5E-03	2E-03	1E-
		89	149	342	345	108	98	94	0	0	134	191	43	32
		± 335	± 1534	± 1389	± 7568	± 644	± 722	± 695	± 0	± 0	± 1424	± 1544	± 252	± 132
SUMMER	X	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	0	0	0	0	0				
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0				
	Y	0.0089	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031	0.022
		10E-04	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-04	1E-
		147	0	0	0	0	0	0	0	0	0	0	36	17
		± 822	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 257	± 135
	Z	0.0078	0.0085	0.0122	0.0000	0.1185	0.0170	0.0114	0.0077	0.0071	0.0000	0.0000	0.0144	0.017
		1E-03	2E-03	2E-03	0E+00	2E-01	5E-03	3E-03	7E-04	6E-04	0E+00	0E+00	6E-03	7E-0
		89	106	91	0	401	186	119	107	107	0	0	80	15
		± 453	± 836	± 550	± 0	± 11885	± 6590	± 1433	± 3296	± 591	± 0	± 0	± 537	± 122
FALL	X	0.0000	0.0000	0.0000	0.0000	0.0114	0.0000	0.0000	0.0000	0.0000				
		0E+00	0E+00	0E+00	0E+00	4E-03	0E+00	0E+00	0E+00	0E+00				
		0	0	0	0	72	0	0	0	0				
		± 0	± 0	± 0	± 0	± 633	± 0	± 0	± 0	± .				
	Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	.	0.0000	0.000
		0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	.	0E+00	0E+
		0	0	0	0	0	0	0	0	0	0	.	0	
		± 0	± 0	± 0	± 0	± 0	± 0	± 0	± 0	± .	± .	± .	± .	±
	Z	0.0124	0.0000	0.0420	0.0000	0.0224	0.0000	0.0000	0.0000	0.0000	0.0695	.	0.0000	0.030
		2E-03	0E+00	2E-02	0E+00	1E-02	0E+00	0E+00	0E+00	0E+00	3E-02	.	0E+00	10E-0
		141	0	313	0	76	0	0	0	0	919	.	0	27
		± 4189	± .	± 9407	± 0	± 591	± 0	± 0	± 0	± .	± .	± .	± 0	± 807

AVERAGE DENSITY, VARIANCE OF THE DENSITY, ESTIMATED ABUNDANCE, AND 95% CONFIDENCE INTERVAL,
BY SEASON, BLOCK, AND STRATUM, FOR UNIDENTIFIED BEAKED WHALE

SEASON	STRATUM	BLOCK E	F	G	H	I	J	K	L	M	N	O	P	Q
WINTER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.000 0E+0 ±
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.000 0E+0 ±
SPRING	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.000 0E+0 ±
	Z	0.0009 6E-06 10 ± 30	0.0000 0E+00 0 ± 0	0.0028 3E-05 21 ± 47	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.006 1E-0 6 ± 13
SUMMER	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.000 0E+0 ±
	Z	0.0010 8E-06 12 ± 40	0.0000 0E+00 0 ± 0	0.0014 9E-06 10 ± 35	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0107 8E-04 98 ± 410
FALL	X	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .				
	Y	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0
	Z	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± 0	0.0000 0E+00 0 ± .	0.0000 0E+00 0 ± .	. . . ± .	0.0000 0E+00 0 ± 0	0.0039 0E+00 36 ± 0