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LINKAGES BETWEEN NEW ENGLAND DOLPHIN STRANDING FREQUENCY AND NORTH ATLANTIC OSCILLATION VARIABILITY

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BY

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ABSTRACT

The North Atlantic Oscillation (NAO) is a dominant climatic driver that influences hydrographic and ecological parameters at multiple spatial scales and several trophic levels. To date, linkages between NAO variability and dolphin strandings on a regional scale have not been investigated. Stranding records of short-beaked common dolphins (*Delphinus delphis*) and Atlantic white-sided dolphins (*Lagenorhynchus acutus*) during 1990–2014 between Maine and New York were correlated against the winter NAO index at several time lags in order to explore the link between stranding variability and NAO. The stranding frequencies of the two species were positively correlated to one another. When analyzed against the winter NAO index, the stranding time-series for both species yielded statistically significant inverse correlations at time lags of one and/or two years. Dolphin strandings were lower during the two years after winters when the NAO was positive and were higher during the two years after a negative NAO. Linear regression modeling confirmed a significant relationship between strandings and winter NAO at both 1- and 2-year lags for common dolphins, but not for white-sided dolphins. The hypothesized mechanism underlying the relationship is that NAO-linked hydrographic changes during winter in outer shelf and slope waters affect the abundance and/or availability of prey, leading to changes in the inshore-offshore distribution patterns of the dolphins. Increased occurrence and foraging closer to shore increases the dolphin's susceptibility to stranding caused by other

localized or short-term factors. This study represents the first attempt at linking NAO variability to dolphin mortality within New England waters.

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Being a part-time graduate student meant that I also had a full-time job during this entire thesis process. I am grateful to my employer, International Fund for Animal Welfare, for being so flexible regarding my work schedule so that I could attend classes, meet with my advisor, and take additional leave for thesis preparation and submission.

I would not have a thesis to submit if it were not for availability of stranding data to be analyzed. I would like to thank the NOAA Greater Atlantic Regional Fisheries Office, Marine Mammal Response Program, and the Greater Atlantic Region Stranding Response Network, especially Mendy Garron, for providing me access to the stranding data collected by stranding response staff and volunteers throughout the New England region.

Finally I would like to thank all my friends and family for the amazing amount of support and patience they provided throughout this entire thesis process. While this process was not always the smoothest sailing, they stood by me and knew that if I worked hard I could make it to the finish line.

PREFACE

This thesis has been prepared in manuscript format. It includes one manuscript, entitled “Linkages Between New England Dolphin Stranding Frequency and North Atlantic Oscillation Variability.” The manuscript has been formatted for submission to *Marine Ecology Progress Series*, but has not yet been submitted. The background section of the Introduction has been written, for purposes of the thesis, in much more detail than would be published in the journal. It will be shortened substantially prior to submission. There is also one Appendix containing the complete stranding dataset.

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INTRODUCTION

Objective of the Study

The majority of past and present literature on the causes of marine mammal strandings, especially strandings of dolphins in large groups, has focused mainly on evaluations of acute and chronic health issues as the main factors that underlie strandings. This approach has been quite logical, and the subsequent results have yielded a great deal of knowledge into wild dolphin anatomy, physiology, and ecology that otherwise would be very difficult to determine from simply observations of free-ranging animals within their natural habitat. However, what has been absent from the majority of the research into understanding the causes of dolphin strandings, specifically within New England waters, are any long-term analyses of how stranding frequency could be linked to broad-scale, multi-decadal oceanographic or climatological patterns. In fact, the need for such research was specifically outlined in Bradshaw et al. (2005)—"…in order to further our understanding of such relationship, there is an imperative need for more research into using oceanographic and climatological analyses with respect to their potential effects on marine mammal strandings."

The knowledge gap concerning the potential influence of climatological cycles on dolphin stranding frequencies on a regional scale, combined with the de facto "call to arms" by Bradshaw et al. (2005) on the value in undertaking such research, have formed the central foundation for initiating this study. In addition, as a marine mammal biologist whose professional career thus far has involved the participation in various aspects of response to live- and dead-stranded dolphins along the U.S. East Coast, I have a personal investment in furthering research on identifying additional factors that may influence dolphin stranding frequency, over and above individual health studies.

The main objective for this study was to conduct a detailed investigation of inter-annual variability in dolphin stranding frequency of two pelagic dolphin species, short-beaked common dolphins (*Delphinus delphis*) and Atlantic white-sided dolphins (*Lagenorhynchus acutus*)[*], within New England to develop an understanding of the potential linkages to variability of the North Atlantic Oscillation (NAO). The NAO was chosen because it is a dominant regional driver of environmental variability and influences ecological and biological parameters at varying spatial scales and at several trophic levels (Hurrell 1995, Drinkwater et al. 2003, MERCINA 2001, 2004). Studies have shown NAO effects on species as diverse as zooplankton, fish, and whales (see below). To date, NAO variability and its potential linkages to dolphin stranding frequency within the New England region have yet to be investigated. The hypothesis to be investigated is that NAO

[*] Most mentions in the text will use shorter common names—common dolphin and white-sided dolphin—for the sake of brevity. The other dolphin species with similar common names which could be confused with these two species—long-beaked common dolphin (*Delphinus capensis*), Indian Ocean common dolphin (*Delphinus tropicalis*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)—do not occur within the North Atlantic Ocean (Jefferson et al. 1993, Rice 1998). Therefore there is no risk of confusion about species identity from use of the shorter names.

variability influences stranding frequency, and therefore the two time-series of data will be correlated at some time lag.

Background

Dolphin strandings. Live and dead dolphin strandings have occurred along coastal beaches within the Northeast U.S. for centuries (McFee 1990, Wiley et al. 2001, Bogomolni et al. 2010). These animals have stranded as single individuals or in groups, which can sometimes be quite large. A wide range of factors has been determined or hypothesized to cause strandings or make them more likely, including acute and chronic disease (parasitic, viral, bacterial, and fungal), navigational and echolocation failures, social structure and cohesion, biotoxicity, and contaminant exposure (Geraci & St. Aubin 1979, Reynolds & Odell 1991, Geraci & Lounsbury 2005, Sundaram et al. 2006, Bogomolni et al. 2010). Post-mortem analysis from individual dolphins collected from stranding sites and dissected to determine cause of death and/or for evaluation of prior health status has revealed that the most common findings were infections from parasites and viral and/or bacterial presence (Geraci & St. Aubin 1979, Reynolds & Odell 1991, Bogomolni et al 2010). Bogomolni et al. (2010) also determined that the most common outcome from post-mortem analysis of mass-stranded pelagic dolphins observed on Cape Cod, Massachusetts showed no significant pathological findings indicating disease processes or other sign of compromised health. The majority of dolphins that stranded together in groups within a specific location and time period on Cape Cod were for the most part in adequate health. Other studies have hypothesized that vulnerability to unique environmental and bathymetric features combined with the close social cohesion of many pelagic dolphin species can contribute to influencing both individual and mass strandings (Brabyn & McLean 1992, Evans et al. 2005).

A stranding is legally defined under U.S. law and regulations as: 1) a dead marine mammal on shore or in the water; 2) a live marine mammal on shore and unable to return to the water; or 3) a live marine mammal in the water but unable to return to its natural habitat under its own power or without assistance. A mass stranding is defined as two or more animals of the same species, excluding a mother/calf pair, which are observed stranded and that are related in both time and geographic location (Wilkinson 1991).

Data collection during investigations of dolphin strandings that occur within the U.S. is performed by federally authorized individuals or groups (e.g., veterinarians; aquarium staff; university and other academic institutional staff; federal, state, county, and city officials; non-profit organizations; and other non-governmental groups) that participate in the Marine Mammal Health and Stranding Response Program (MMHSRP) (Gulland et al. 2001). The Marine Mammal Health and Stranding Response Act of 1992 amended the Marine Mammal Protection Act of 1972 (MMPA) to create the MMHSRP (Gulland et al. 2001). Prior to the MMHSRP, stranding response was more or less ad hoc and was conducted on an entirely voluntary basis. During the early years of stranding response in the U.S.

(1970s through mid-1990s), consistent funding from either federal or state governments in order to undertake the collection of necessary data for required detailed investigations into determining causes of strandings was fairly minimal (Gulland et al. 2001, Geraci & Lounsbury 2005). In 2000, the Congress, recognizing the potential high value of the critical baseline data that could be derived from more systematic investigation of strandings, established the Marine Mammal Rescue Assistance Act. The Act amended the MMPA to create the John H. Prescott Marine Mammal Rescue Assistance Grant Program (NMFS 2002). This competitive grant program allowed for the availability of federal matching funds to assist stranding response agencies on data collection from stranded marine mammals. With this assistance, responders were able to establish better standardized data collection protocols for both live and dead marine mammal strandings, as well as rescue triage procedures for live strandings (Gulland et al. 2001, Geraci & Lounsbury 2005). With the availability of the Prescott grants, the number of organizations participating has increased and stranding response effort has also increased in the breadth and consistency of data collected. These improvements have allowed for better functional analysis in investigating underlying factors that contribute to strandings.

Short-beaked common dolphins. The short-beaked common dolphin (*Delphinus delphis*) is distributed in temperate and tropical waters around the world (Jefferson et al. 1993, Evans 1994, Rice 1998, Perrin 2009). In the western North

Atlantic, common dolphins are widely distributed across the continental shelf and in slope waters ranging from Cape Hatteras, North Carolina through Georges Bank, mainly between the 100- and 2000-meter depth contours (CETAP 1982, Selzer & Payne 1988, Payne et al. 1989, Hamazaki 2003, Waring et al. 2014). The current population estimate derived from aerial and shipboard marine mammal surveys performed by National Marine Fisheries Service (NMFS) within this region shows abundance for short-beaked common dolphins at 173,486 (CV = 0.55) (Waring et al. 2014). Common dolphins in this region are subject to incidental takes from fishery operations; the total annual estimated average fishery-related mortality or serious injury to this stock during 2007–2011 was 170 (CV = 0.13) (Waring et al. 2014).

Short-beaked common dolphins perform seasonal north-to-south migratory movements in the northwestern Atlantic. They are widely distributed in outer continental shelf waters from Cape Hatteras, North Carolina northeast to the edge of Georges Bank during mid-January to May (CETAP 1982, Selzer & Payne 1988, Waring et al. 2014). Through mid-summer to autumn there appears to be a northward shift onto and across Georges Bank and into the Nova Scotian shelf region (CETAP 1982, Selzer & Payne 1988, Waring et al. 2014), where aggregations of more than 3,000 animals have been observed (Selzer & Payne 1988). Selzer & Payne (1988) found that the northern limit of common dolphin migratory habits is dictated by the species preferred sea-surface temperature range of 5.0 to 22.5 °C. Several studies have determined close associations between common dolphin aggregations and high-relief topography primarily linked to high prey abundance (Selzer & Payne 1988, Payne et al. 1989).

Short-beaked common dolphin diets exhibit seasonal variability and a wide variety of smaller prey species, including both mesopelagic and epipelagic fishes and squids (reviewed in Perrin 2009). Off the U.S. mid-Atlantic, the dolphins' distribution has been documented to coincide with several pelagic schooling species such as mackerel (*Scomber scrombrus*) and long-finned squid (*Loligo pealei*) (Overholtz & Waring 1991). It should be noted, however, that the stomachs analyzed by Overholtz & Waring were from dolphins taken incidentally in the mackerel and squid fisheries. An important class of prey for common dolphins in many areas of the world is the community of small mesopelagic fishes and squids that is referred to as the deep scattering layer (DSL) (reviewed in Evans 1994). The DSL was first recognized by naval sonar operators as a ubiquitous layer in deeper waters, detectable on sonar, that vertically migrated on a 24-hour cycle between about 400 meters during the day and near the surface at night. A variety of small fishes known as lanternfish (myctophids and their relatives) dominates the DSL, and they have been found in common dolphin stomachs in many locations (Evans 1994, Hassani et al. 1997, Ohizumi et al. 1998, De Pierrepont et al. 2005, Pusineri et al. 2007, Craddock et al. 2009, Perrin 2009). Evans (1994) described the results of a study he had conducted off California in 1971 that combined mid-water trawl sampling, sonar tracking of the DSL, and simultaneous tracking of a tagged common dolphin. The dolphin fed from dusk to dawn, with its dive depths closely tracking the DSL depth, and remained near the surface without feeding during the day when the DSL was deeper than about 50 m. Major (1986) observed common dolphins feeding at night on squids attracted to the surface by lights from a squid-fishing vessel. In areas of high prey concentrations common dolphin distribution may overlap with other cetacean species such as Atlantic white-sided dolphins and long-finned pilot whales (*Globicephala melas*) (Selzer & Payne 1988, Evans 1994).

Atlantic white-sided dolphins. The distribution of the Atlantic white-sided dolphin (*Lagenorhynchus acutus*[*]) is restricted to only the North Atlantic Ocean, The species occurs in temperate to subarctic waters on both sides of the basin, from Newfoundland, Greenland, Iceland, Svalbard, and Norway in the north to the U.S. mid-Atlantic and Bay of Biscay in the south (Rice 1998, Reeves et al. 1999, Cipriano 2009). In the western North Atlantic, white-sided dolphins exhibit some overlap with the distribution patterns of short-beaked common dolphins. They occur throughout the continental shelf, although mainly out only as far as the 100-meter depth contour, and occupy more inshore waters from Cape Cod, Massachusetts into the Gulf of Maine (CETAP 1982, Selzer & Payne 1988, Palka et al. 1997, Waring et al. 2014). The southern limit of spring distribution is generally near the western edge of Georges Bank, where they overlap spatially with common dolphins (Selzer

[*] The genus *Lagenorhynchus* has been recognized as polyphyletic (Cipriano 1997, LeDuc et al. 1999). May-Collado & Agnarsson (2006) recommended that the Atlantic white-sided dolphin be referred to as *Leucopleurus acutus*. This paper has used *Lagenorhynchus* to maintain consistency with other research and management activities in the U.S. Atlantic, while recognizing that it is likely to be a nomenclatural error.

& Payne 1988). During late fall through winter, shifts of distribution back into southern portions of the Gulf of Maine and offshore have been documented (Selzer & Payne 1988), although sampling effort offshore and winter is generally low. White-sided dolphins are commonly sighted in colder, more saline waters than common dolphins (Selzer & Payne 1988). The current regional abundance estimate derived from NMFS aerial and shipboard marine mammal surveys for Atlantic white-sided dolphins is 48,819 (CV = 0.61) (Waring et al. 2014). Atlantic white-sided dolphins are also subject to incidental takes from fishery operations, and the total annual estimated average fishery-related mortality or serious injury to this stock during 2007–2011 was 116 (CV = 0.16) (Waring et al. 2014).

Like common dolphins, white-sided dolphins feed on a wide variety of prey species, including both fishes and squids (reviewed by Reeves et al. 1999). The variety of fishes eaten includes clupeids (herring and similar species), gadids (cod-like species), mackerel, and sand lance. Prey choice is likely to depend on what appropriate prey species are most abundant at any particular time. During the 1970s sand lance (*Ammodytes* sp.) became the dominant forage fish species in the Gulf of Maine, and the distribution of white-sided dolphins large mirrored that of sand lance (Katona et al. 1978, CETAP 1982, Selzer & Payne 1988, Kenney et al. 1996). In fact, sand lance distribution was concluded to be a dominant driver of cetacean relative abundance patterns in the Gulf of Maine (CETAP 1982, Kenney & Winn 1986). Sergeant et al. (1980) noted that in a majority of white-sided dolphins observed stranded in Maine that the majority of prey items from stomach-content analysis included short-finned squid (*Illex illecebrosus*), smelt (*Osmerus mordax*), and silver hake (*Merluccius bilinearis*). In a more recent study, Craddock et al. (2009) compared stomach contents of white-sided dolphins taken as by-catch in commercial fisheries in deeper waters of the central Gulf of Maine (n = 27) or in the slope water offshore of Georges Bank (n = 1), or stranded on Cape Cod (n = 34). In the Gulf of Maine by-catch sample, the predominant prey species were silver hake (*Merluccius bilinearis*), spoonarm octopus (*Bathypolypus bairdii*), and haddock (*Melanogrammus aeglefinus*). Stranded animals had very little food in their stomachs, but sand lance otoliths were observed in a majority of those stomachs. The stomach of the single slope-water sample contained 7750 otoliths of the Madeira lanternfish (*Ceratoscopelus maderensis*).

North Atlantic Oscillation: atmospheric effects. The atmosphere and weather patterns in the North Atlantic region are dominated by two semi-permanent centers of barometric pressure—a subtropical high centered near the Azores and a subpolar low centered near Iceland and Greenland (Hurrell 1995, Stenseth et al. 2003). The two systems tend to intensify or weaken in synchrony; when barometric pressure in the Azorean High increases, it tends to decrease in the Iceland Low, and vice-versa. Since one is going up as the other is going down, the pattern has been called an atmospheric “see-saw” between the Subtropical Atlantic and the Arctic (Hurrell 1995).This characteristic “up and down” atmospheric pressure pattern is referred to the North Atlantic Oscillation (NAO). Branston &

Livezey (1987) have described the NAO as “the most significant and robust scheme of repetitive atmospheric behavior within the region over the North Atlantic.”

The NAO Index is a measure of the difference between the two pressure systems (Azorean High and Icelandic low), standardized as an anomaly compared to the long-term mean. When the two systems are intensified (i.e., higher Azorean High and lower Icelandic Low), the pressure difference is greater than average and the NAO index is positive. Conversely, when the two are weakened (i.e., lower Azorean High and higher Icelandic Low), the pressure difference is smaller than average and the NAO index is negative. The NAO index can be calculated as a daily value, but is more often summarized as a monthly or annual mean. Since the predominant regional impacts of the NAO occur in winter, the standard practice is to calculate the mean winter-time (December through March) NAO index (Hurrell 1995).

Different winter weather conditions predominate around the North Atlantic during positive or negative periods (Ottersen et al. 2001). During positive phases of the NAO the jet stream (which follows along the boundary between polar and subtropical air masses) is primarily oriented west-to-east spanning across North America. This position of the jet stream keeps cold air within Canada. The Labrador Sea region of northeastern Canada and Greenland tends to experience cold winters. Winters in both the continental U.S. and Europe tend to be warmer, with the main weather systems coming from the west following the jet stream. When the NAO is in a negative phase there is weakening of the westerly winds across North America and an increase in pronounced meanders in the jet stream. This results in cold air from the Canadian Artic penetrating deeper into the eastern United States, with resulting colder winters. The Labrador Sea region's weather is more likely to come from the southwest along the jet stream, and winters are typically warmer than normal. Conversely, European weather more often comes from the northwest, with colder winters.

NAO: oceanographic effects. In addition to being an important factor underlying winter weather conditions in both North America and Europe, the NAO is one of the main large-scale climatic drivers of inter-annual and inter-decadal variability in oceanographic patterns within the North Atlantic Ocean (MERCINA 2001). Because of its effects on regional-scale temperature regimes and atmospheric circulation, the NAO can have dynamic effects on the formation of water masses and their subsequent physical properties (Greene et al*.* 2003a, Greene & Pershing 2007). These variations in physical oceanography can lead to significant effects on shelf ecosystem biology and function (Marsh et al. 1999, Barton et al. 2003).

The formation of deep water masses in the North Atlantic occurs primarily in the waters around Greenland (Sverdrup et al. 1942). In general terms, when seawater freezes the water that is left behind is at the freezing point and saltier because the freezing process excludes most of the salt. The lower temperature and higher salinity makes the water more dense, and it sinks. The formation of bottom water drives the global oceanic circulation, but the effects on the Gulf of Maine region are mainly related to surface and intermediate water masses.

During positive NAO conditions, winters in the Labrador Sea region are colder, leading to increased ice formation. The colder, denser water sinks to intermediate depths and flows southward along the edge of the continent as Labrador Sea Intermediate Water (LSIW) (Loder et al. 2001, MERCINA 2001). During negative phases of the NAO index there are warmer winters in the Labrador Sea, which lead to decreased ice formation. The surface water there tends to be slightly fresher due to run-off into the Arctic Ocean from Canadian rivers. The rate of LSIW formation slows, and the cold, less-dense water flows toward the south at the surface as the Labrador Current (Loder et al. 2001, MERCINA 2001).

Within the western North Atlantic, the greater Gulf of Maine region lies in a unique transition zone that is influenced by the cold subpolar waters of the Labrador Current from the north and warmer waters of the Gulf Stream from the south (Loder et al. 2001). It is in this transition zone where variability in the NAO provides the mechanism to induce biological and physical interactions (Greene et al. 2003a). Physical effects on the Gulf of Maine region have been shown to be driven largely by the Coupled Slope Water System (CSWS), which shows different responses to positive and negative NAO phases (Pickart et al. 1999). A positive NAO enhances the CSWS with largely warm, more saline Atlantic Temperate Slope Water (ATSW) advancing northeastward along the continental shelf where it in essence blocks the colder, less saline Labrador Sub-Arctic Slope Water (LSSW) from penetrating into the deep-basins of the Gulf of Maine (Pickart et al. 1999). In contrast, negative NAO conditions weaken the northward surface flows of the ATSW, which allows for the cooler, fresher LSSW to displace the ATSW further offshore and advance along the shelf, penetrating in some years all the way to the Mid-Atlantic Bight (Pickart et al. 1999, MERCINA 2001, Greene et al. 2003a).

NAO: biological effects. Given these effects of NAO on circulation and slope-water movements along the northeastern U.S. continental shelf and within the Gulf of Maine, the ecological and biological responses can be more readily understood. The biological and ecological effects on the Gulf of Maine are usually time-lagged one to two years after changes in the NAO—fitting the time-scale for Labrador Current or LSIW transport from the Labrador Sea to the Gulf (Loder et al. 2001, MERCINA 2001).

Drinkwater et al. (2003) provided a robust and detailed description of marine ecosystem responses associated with the NAO through numerous trophic levels through changes in biomass, distribution, and growth. Annual variability in primary production that affected the strength of seasonal phytoplankton blooms was correlated to both positive and negative NAO conditions in the Northeast and Northwest Atlantic through temperature-mediated influences. Trans-Atlantic cod (*Gadus morhua*) and salmon (*Salmo salar*) recruitment and distribution were influenced by variations in slope water properties that resulted from changing NAO conditions. In the eastern Atlantic, bluefin tuna (*Thunnus thynnus*) spawning and growth rates during NAO positive conditions doubled compared to NAO negative conditions. This result was hypothesized to be related to increased storm activity during NAO positive conditions, which enhanced wind-driven vertical mixing and increased mixed layer depth, leading to greater food availability. McManus et al. (2014) explored linkages between NAO and primary production by modeling how the NAO, by its effects on westerly wind intensity, alters stratification and circulation patterns in Massachusetts Bay and the resulting levels of primary production.

Greene & Pershing (2000) demonstrated NAO linkages to inter-annual variability in abundance and “re-stocking” of the expatriate copepod species *Calanus finmarchicus* within the greater Gulf of Maine. *Calanus* is the primary zooplankton species in the Gulf of Maine marine food web (Mauchline 1998), but the abundance is mainly determined by advection of populations from outside the Gulf in slope water. Supplies of this zooplankton species can be blocked from entering the Gulf of Maine in years following NAO negative conditions when the influx of slope water can be blocked by LSSW intrusions (MERCINA 2001, MERCINA 2004).

Effects of NAO have also been observed on marine mammal populations. Fluctuations in western North Atlantic right whale (*Eubalaena glacialis*) calving rates were determined to be linked the NAO variability through the effects on the distribution and abundance of *Calanus finmarchicus*, which is the main prey for right whales in the Gulf of Maine (Greene et al. 2003b). Johnston et al. (2012)

examined the effects of the NAO on determining the extent of seasonal sea-ice in the Gulf of St. Lawrence, Canada, which is critical in providing adequate pupping habitat for harp seals (*Pagophilus groenlandicus*). In NAO positive conditions (i.e., colder winters), the sea ice extent was much more substantial, which contributed to a decrease of young-of-the-year seal mortality. In NAO negative conditions, a reduction of available sea ice contributed to an increase in seal mortality.

MATERIALS AND METHODS

Data sources

Dolphin stranding data. Common dolphin and Atlantic white-sided dolphin stranding records from the shores of New England from Maine to New York were compiled from the Marine Mammal Health and Stranding Response Program database. The MMHSRP data are accessible on-line via a password-protected data portal by stranding network participants. Other individuals can obtain the data for research purposes by formal written request to the National Marine Fisheries Service stranding network coordinator within a particular region. Since I am a current member of the Northeast Regional Stranding Network through my full-time occupation, I was able to gain access to the data through my official government log-in and password granted to me by the regional stranding coordinator.

Basic Level A data were compiled for the study period from 1989 through 2014, including species name, reporting date, carcass condition code, and location (latitude/longitude). Only records from animals classified as condition code 1, 2, or 3 were included (Table 1). Both live-stranded and dead animals were counted. Code 4 records were excluded from any further analysis because of uncertainty about the time span between the actual stranding date and the date when the incident was detected and reported.

Table 1. Marine mammal carcass condition classification utilized in Level A data collection (MMHSRP Definitions of Terms for Level A, Version 2007).

Condition Code	**Description**
Code 1 (Alive)	Alive at initial observation
Code 2 (Fresh Dead)	Normal appearance, usually with little scavenger damage, fresh smell, carcass not bloated
Code 3 (Moderate Decomposition)	Carcass intact, bloating evident, skin cracked and sloughing, possible scavenger damage, mild odor
Code 4 (Advanced Decomposition)	Carcass may be intact, but collapsed; skin sloughing, often severe scavenger damage, strong odor, blubber soft, often with pockets of gas and pooled oil
Code 5 (Mummified/Skeletal)	Skin may be draped over skeletal remains; any remaining tissues are desiccated
Code 6 (Unknown)	Dead at time of initial observation but information on condition of carcass is unavailable

The stranding dataset was assimilated into a Microsoft Office Excel spreadsheet (Microsoft Office Suite 2010) for further summation and exploratory analysis. Annual stranding totals for each species were calculated by summing the numbers of animals stranded for all months from November of the previous year through October. The temporal binning scheme was designed to match both the typical winter peak in dolphin stranding frequency in New England (Wiley et al. 2001, Sharp et al. 2014) and the December-March winter NAO averaging period (see below).

North Atlantic Oscillation index. Monthly mean values of the NAO index from January 1950 through March 2014 were obtained from an on-line database provided by the National Oceanic and Atmospheric Administration's Climate Prediction Center (CPC 2015a). The winter-time NAO index (WNAO) was computed as the mean of the four monthly values from December of the previous year through March, following the method of Hurrell (1995). For example, the 1998 WNAO value is the mean of four monthly mean values: December 1997, January 1998, February 1998, and March 1998. Additional WNAO variables were created as 1-year, 2-year, and 3-year lags from the base WNAO time-series: WNAO1, WNAO2, and WNAO3, respectively.

Data analysis

Mapping. The stranding location data (latitude/longitude) were imported into Geographic Information System software (ArcGIS version 10.1, ESRI, Redlands, CA) which was utilized to produce a map of stranding distribution.

Preliminary analyses. Graphs of the individual dolphin stranding time-series and of the WNAO time-series were constructed and overlaid to visually inspect for patterns and relationships. All preliminary graphs for exploring the data were prepared using Excel. Final versions of all graphs were prepared using SAS/GRAPH procedures (PC-SAS version 9.3, SAS Institute, Cary, NC).

Statistical analyses. The objective of the statistical analyses was to test for significant relationships between yearly stranding frequencies for both dolphin species and the various NAO time-series. All statistical testing was carried out using SAS/STAT procedures (PC-SAS version 9.3, SAS Institute, Cary, NC). The initial step was to correlate the common dolphin stranding time-series against the white-sided dolphin time-series. Visual inspection suggested that the two were relatively congruent—tending to increase or decrease together. If the stranding frequencies for the two species were positively correlated, there would be justification for combining the two as a way of increasing sample sizes. This and all subsequent correlations were done using PROC CORR in SAS/STAT, using the non-parametric

Spearman rank-order correlation test to avoid assumptions of normal distribution, homogeneous variance, or linear relationship.

Correlations of the common dolphin stranding time-series vs. WNAO, WNAO1, WNAO2, and WNAO3 were performed, and the process repeated for white-sided dolphin stranding time-series and for both species combined. Linear regressions of common dolphin, white-sided dolphin, and both species combined vs. WNAO1 and WNAO2 were performed using PROC GLM in SAS/STAT and plotted in SAS/GRAPH. Additional regressions utilizing log-transformed dolphin stranding data were initiated in an attempt to see if the fits were improved. One objective was to explore the feasibility of predicting seasons when stranding frequency might be expected to increase based on the previous years' NAO patterns.

RESULTS

Dolphin stranding data

From November 1989 through December 2014, there were 1,402 strandings of short-beaked common dolphins and Atlantic white-sided dolphins, totaling 1,875 individual dolphins, along the New England coastline from Maine through New York (Table 2; Fig. 1[*]). From this point on, "year" should be understood to refer to the 12-month period from 1 November of the previous calendar year through 31 October. Common dolphins (848 strandings, 1,152 individuals) were observed predominantly within the southern range of the study area from Long Island, New York through Cape Cod, Massachusetts, while white-sided dolphins (554 strandings, 723 individuals) occupied a more northern range from Cape Cod through coastal Maine (Table 3, Fig. 1). Within the study region, a substantial majority of strandings and individuals of both dolphin species occurred within the Cape Cod region of Massachusetts (Table 3, Fig. 2). For this purpose, the Cape Cod region was defined as the mainland east of the Cape Cod Canal, plus Martha's Vineyard, Nantucket, and all the smaller islands nearby. Outside of Cape Cod, common dolphins stranded in higher numbers south through Long Island (266, 23%) than north of Cape Cod (81,

[*] Locations of individual strandings on Fig. 1 not at the coastline (inland and/or offshore) were likely due to reporting errors in the latitude/longitude data in the MMHRSP database. Since stranding location data were not critical to the overall analyses, these errors do not significantly impact any subsequent results. No attempt was made to correct the errors.

Table 2. Annual counts of common dolphin (*Delphinus*) and white-sided dolphin (*Lagenorhynchus*) strandings and animals stranded, 1990–2014, from Maine through New York. Each year is defined from 1 November of the prior year through 31 October.

Year	*Delphinus*		*Lagenorhynchus*	
	Strandings	**Animals**	**Strandings**	**Animals**
1990	1	1	10	18
1991	2	4	2	4
1992	2	6	7	8
1993	6	13	17	20
1994	7	12	7	12
1995	3	9	8	9
1996	1	1	3	6
1997	5	13	11	15
1998	18	30	48	82
1999	5	9	54	67
2000	13	24	11	23
2001	6	11	9	15
2002	15	28	38	55
2003	22	36	42	50
2004	14	22	32	37
2005	19	34	47	53
2006	96	120	33	58
2007	77	92	17	21
2008	6	15	31	34
2009	30	47	19	22
2010	68	84	46	48
2011	81	94	40	43
2012	261	319	5	6
2013	40	58	9	9
2014	52	70	8	8

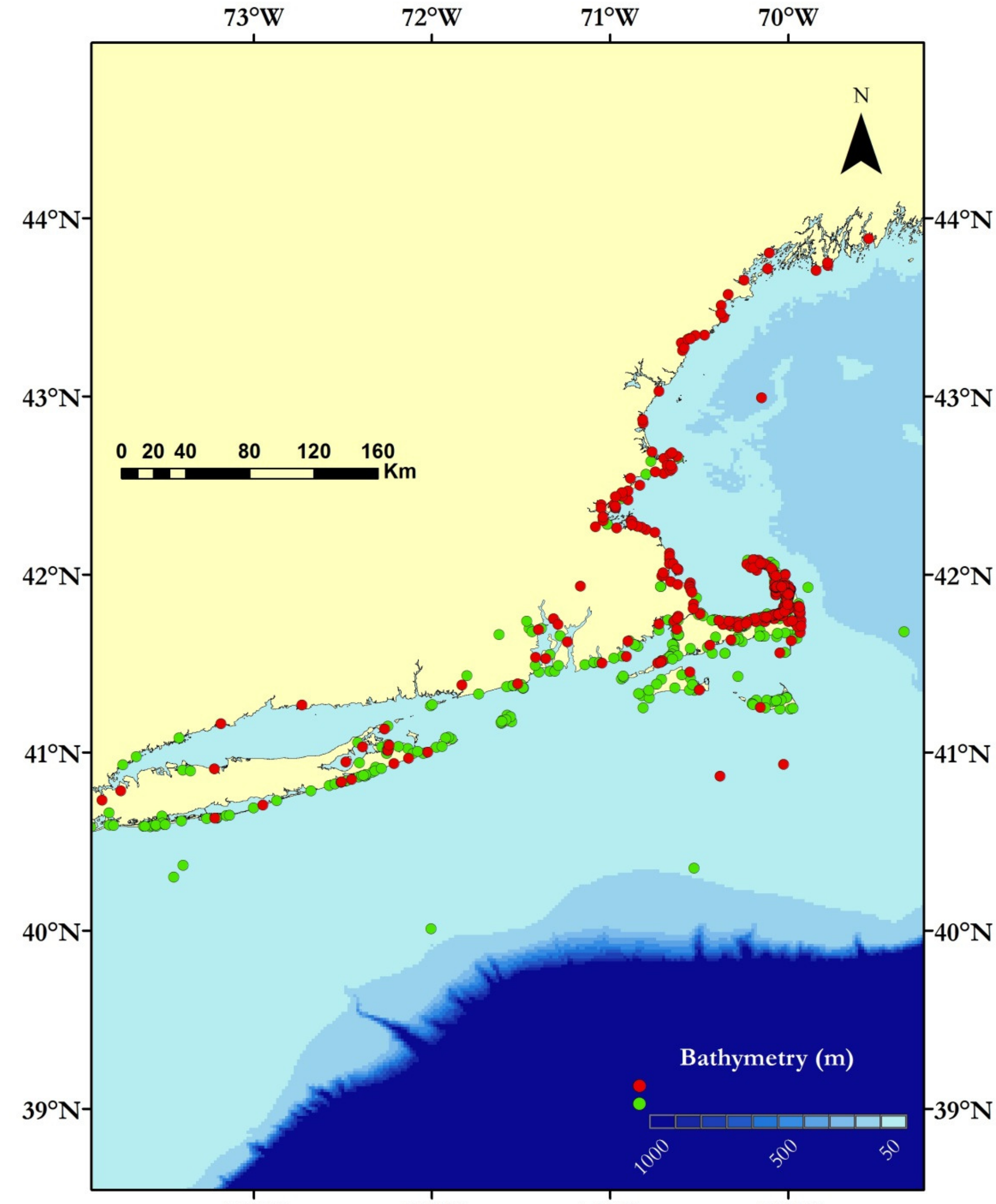

Fig. 1. Distribution of stranding locations of short-beaked common dolphins (*Delphinus delphis*, green dots) and Atlantic white-sided dolphins (*Lagenorhynchus acutus*, red dots) from New York to Maine, 1990 to 2014.

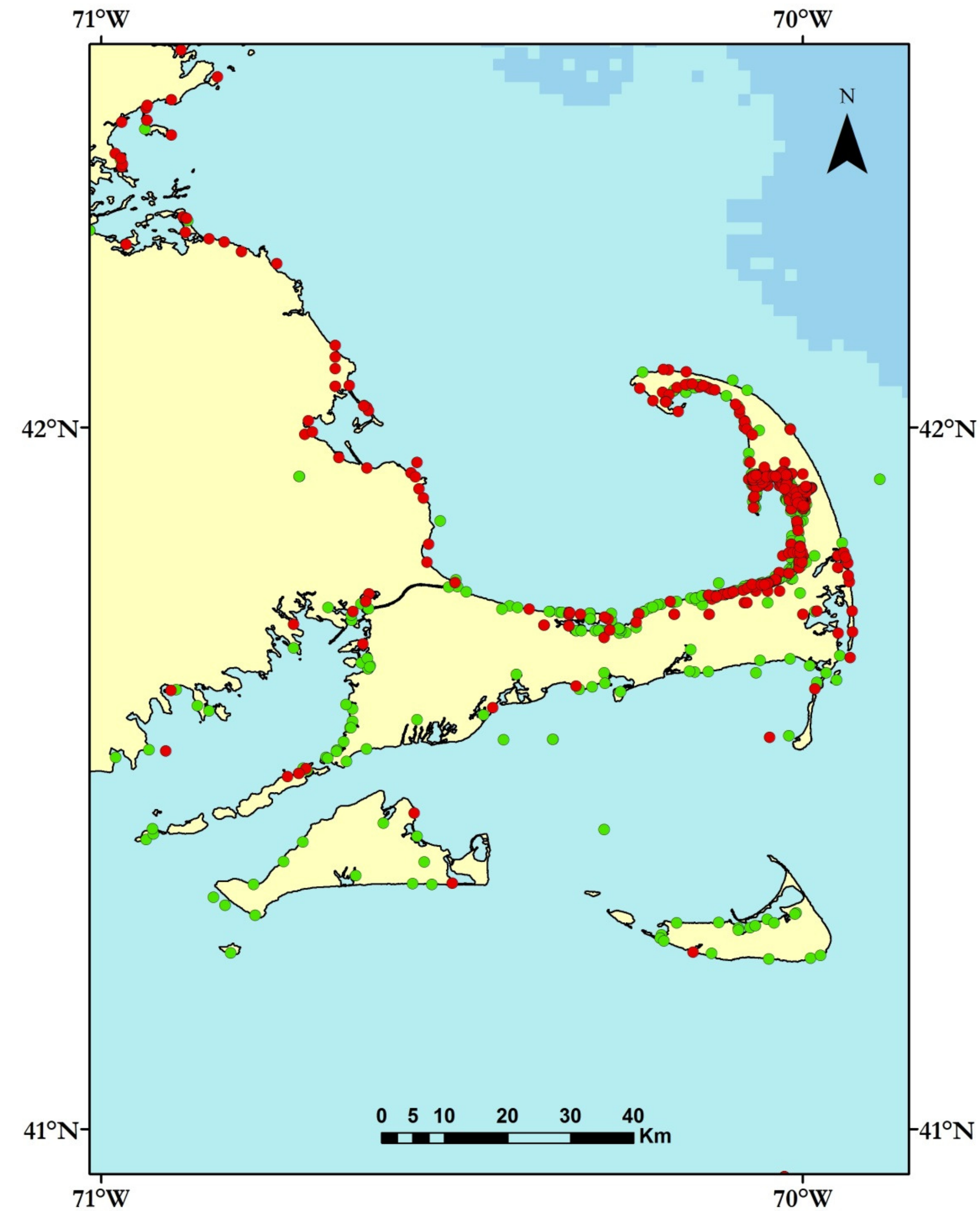

Fig. 2. Stranding locations of short-beaked common dolphins (*Delphinus delphis*, green) and Atlantic white-sided dolphins (*Lagenorhynchus acutus*, red), 1990 to 2014, focusing on only the Cape Cod region to show more detail.

Table 3. Counts and percentages of common dolphin (*Delphinus*) and white-sided dolphin (*Lagenorhynchus*) strandings and animals stranded, partitioned into three geographic regions within the Maine–New York study area.

Location	***Delphinus***		***Lagenorhynchus***	
	Strandings	**Animals**	**Strandings**	**Animals**
North of Cape Cod	27 3%	81 7%	54 10%	109 15%
Cape Cod	678 80%	805 70%	487 88%	570 79%
South of Cape Cod	143 17%	266 23%	14 2%	44 6%

7%). The stranding pattern was reversed for white-sided dolphins outside of the Cape, with higher numbers north (109, 15%) than south (44, 6%).

Regarding the overall temporal stranding patterns, both dolphin species were observed stranded throughout the entire year but occurred in higher percentages during the winter months (Dec. - Apr.) (Figs. 3 & 4.). Between the species however, common dolphins stranded in higher percentages earlier in the winter months (Jan. - Feb.) (Fig. 3) while white-sided dolphins stranded in higher percentages both in January and in the late winter and early spring months (Mar. - Apr.) (Fig. 4).

Stranding frequencies for both dolphin species exhibited substantial inter-annual variability (Table 2, Fig. 5). Common dolphin strandings varied from a minimum of 1 in 1990 and 1996 to highs of 96 in 2006 and 261 in 2012. The mean number of strandings per year was 33.9 (SD = 55.0, n = 25). In term of numbers of individual animals stranded, annual numbers ranged from 1 to 319, with a mean of 46.1 (SD = 65.9, n = 25). The minimum number of white-sided dolphin strandings was 2 in 1991, the maximum was 54 in 1999, and the mean number per year was 22.2 (SD = 16.9, n = 25). The number of individual animals stranded per year ranged from 4 to 82, with a mean of 28.9 (SD = 22.2, n = 25).

There were both similarities and differences between the stranding time-series of the two dolphin species (Table 2, Fig. 5). Stranding frequencies of both species were very low during most of the 1990s and began to increase about 1997 or 1998. At least some of that pattern may be due to lower reporting effort in the

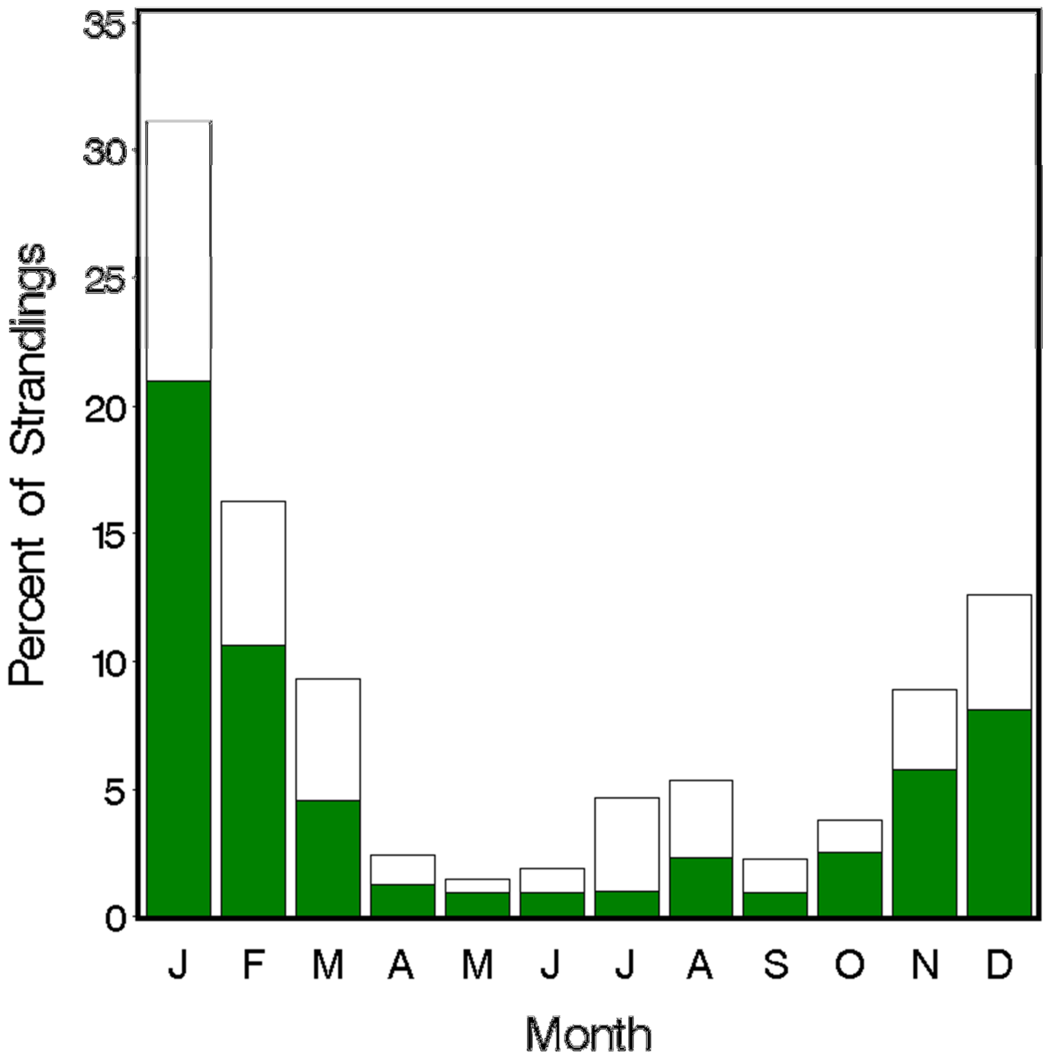

Fig. 3. Percent of total strandings per month for stranded short-beaked common dolphins from New York to Maine, 1990 to 2014. Solid bar = dead animals (code 2 & 3); open bar = live animals (code 1).

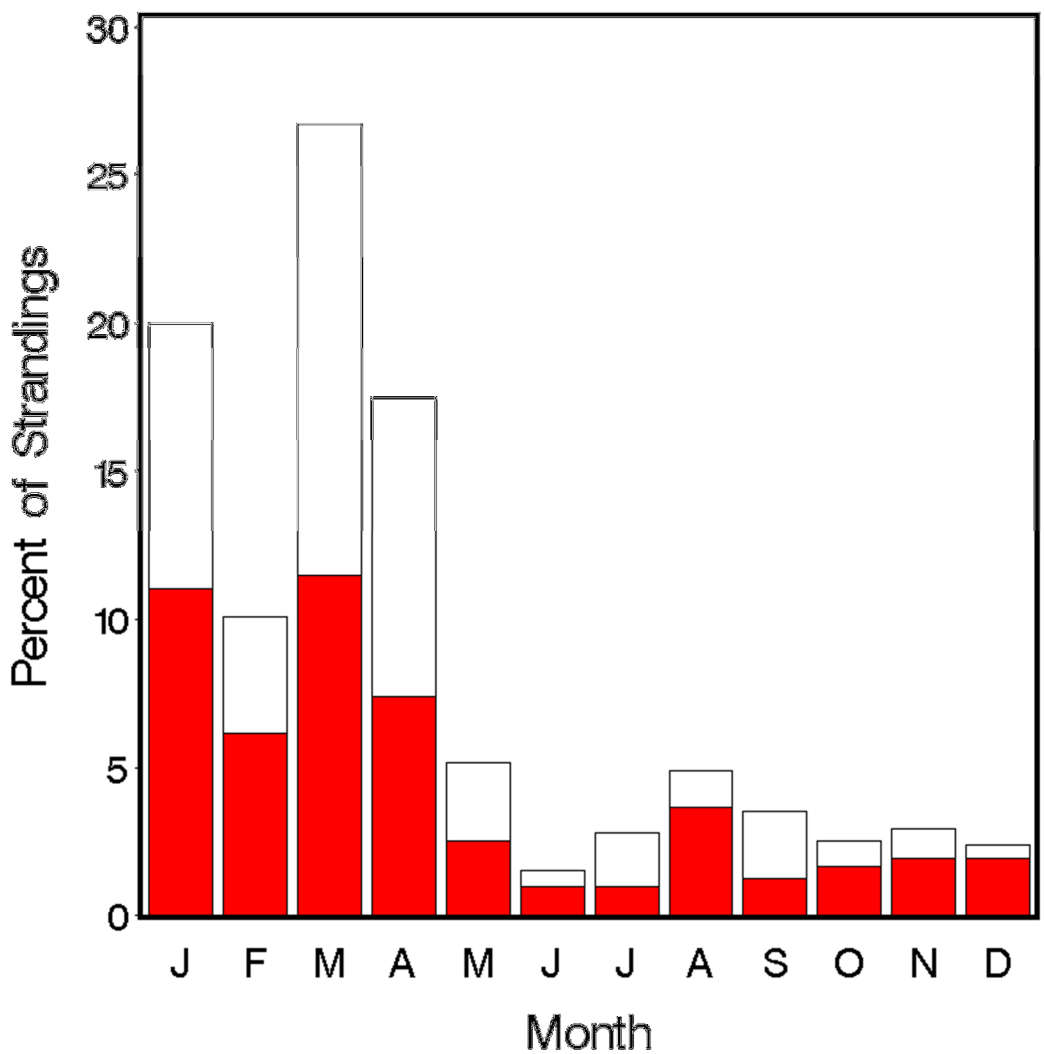

Fig. 4. Percent of total strandings per month for Atlantic white-sided dolphins from New York to Maine, 1990 to 2014. Solid bar = dead animals (code 2 & 3); open bar = live animals (code 1).

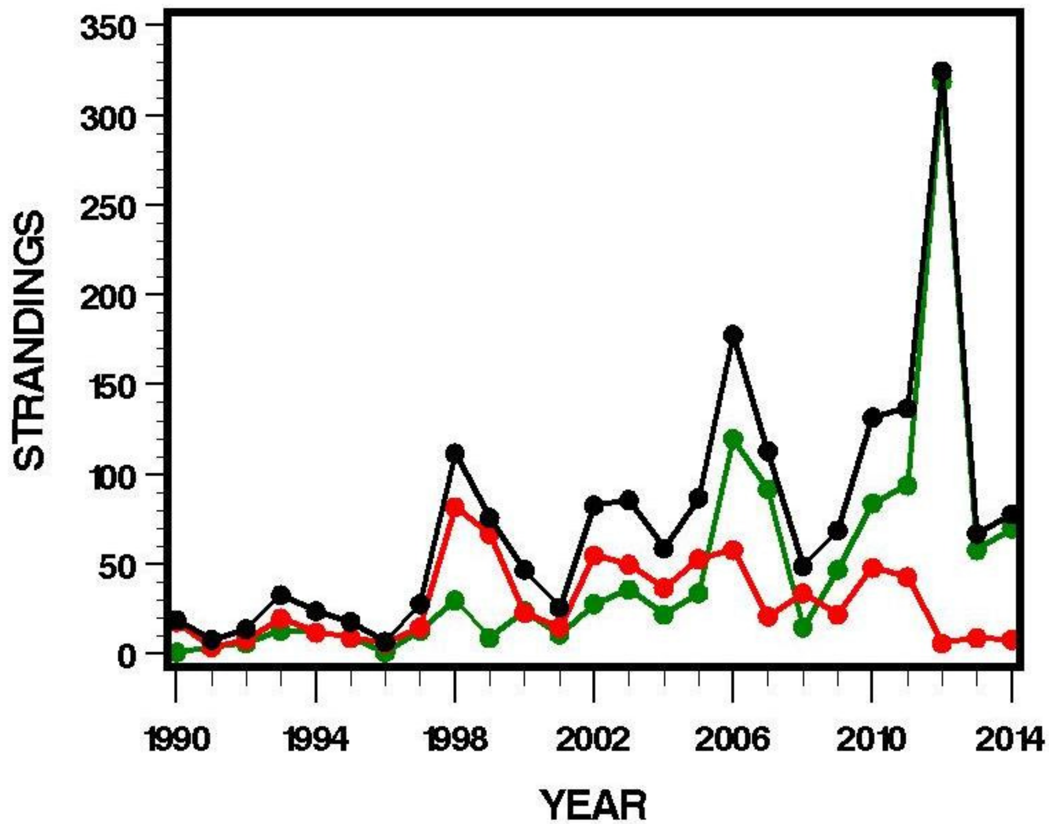

Fig. 5. Annual stranding frequencies (numbers of individuals) for short-beaked common dolphin (green), Atlantic white-sided dolphin (red), and both species combined (black).

early years of the MMHSRP, before the Prescott Grants were available. In most years from 1998 through 2005, white-sided dolphins outnumbered common dolphins in the stranding record for New England. Beginning in 2006, the pattern was reversed, with common dolphin stranding frequency higher in every year except 2008.

Visual inspection of the long-term trends (Fig. 5) suggested that stranding frequency may have increased with time for both dolphin species. The results of least-squares linear regressions on the 1990–2014 data confirmed that there was a significant increasing trend for common dolphins (slope = 5.429, $p = 0.001$, $R^2 = 0.368$) and for both species combined (slope = 5.909, $p < 0.001$, $R^2 = 0.400$), but there was not a significant trend with white-sided dolphins (slope = 0.480, $p = 0.447$, $R^2 = 0.025$). The linear regression tests for trends were repeated with the potentially under-sampled years (1990–1997) deleted, decreasing the sample sizes from 25 years to 17. For common dolphins, there was significant increasing trend at an even higher rate (slope = 7.718, $p = 0.028$, $R^2 = 0.281$). For white-sided dolphins, however, the pattern was reversed; there was a significant decreasing trend (slope = –2.721, $p = 0.009$, $R^2 = 0.376$). When the 1998–2014 time-series for both species were combined, the trend was positive but not statistically significant (slope = 4.997, $p = 0.148$, $R^2 = 0.135$)—perhaps to be expected when combining datasets trending in opposite directions.

The other pattern that seemed to be present from visual inspection of the stranding time-series for the two dolphin species (Fig. 5) was that they appeared to be congruent—increasing or decreasing similarly in most, but not all, years. The two time series were compared via a Spearman rank-order correlation. The results showed a positive correlation ($R = 0.333$), but it was not statistically significant ($p = 0.104$). This was a bit surprising, since the correlation had been significant when done during all of the preliminary analyses. The stranding numbers in just the last couple of years threw off the correlations. For both 1990–2012 and 1990–2013 there were significant positive correlations—$R = 0.487$ ($p = 0.019$) through 2012 and $R = 0.411$ ($p = 0.046$) through 2013. Because the two time-series were positively correlated for almost the entire study period, they have been combined together in some of the statistical analyses, recognizing that longer-term trends within each species may be reducing the value of the combined analyses.

North Atlantic Oscillation

The winter NAO index between 1950 and 2014 exhibited the sort of variability that characterizes these so-called “multi-decadal” cycles (Fig. 6). Before 1972 the index remained largely negative, with isolated positive years in 1950, 1961, and 1967. During 1972 through 1987 there was more short- to intermediate-term variability, with five positive years in succession, then four negative years, four positive years, and finally three single years of alternating negative-positive-negative. From 1988 to 2014, the index has been primarily positive with isolated negative values in single years, or two successive years in one instance.

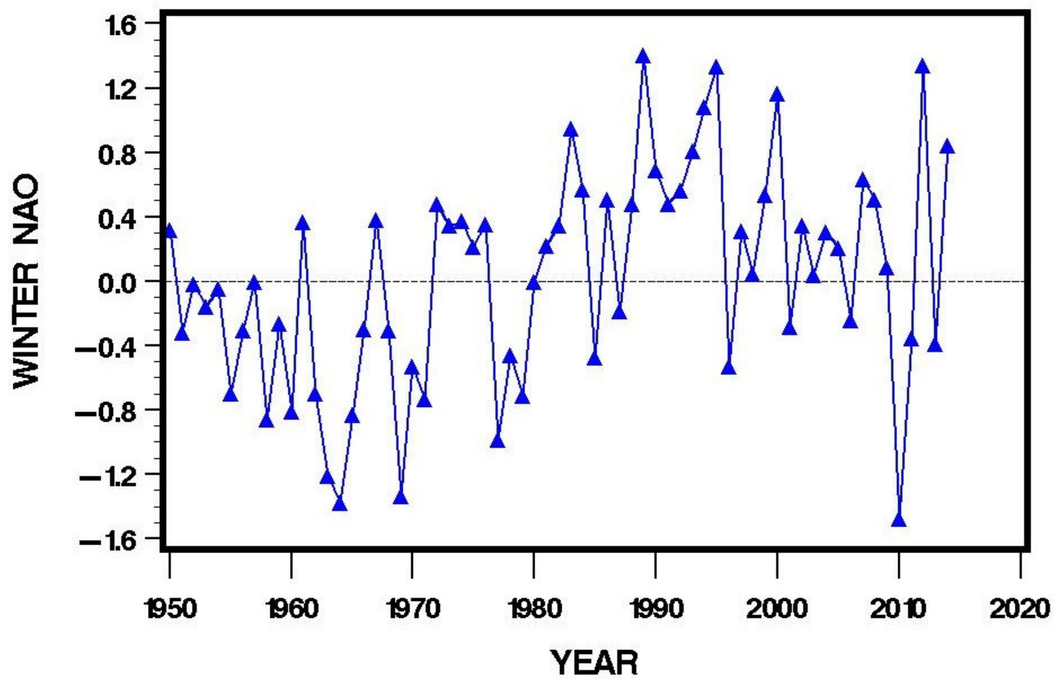

Fig. 6. Winter (December through March) mean North Atlantic Oscillation index from 1950 to 2014.

The 25-year period of this study fell entirely within that last stretch of largely positive WNAO, with only six years having negative index values (1996, 2001, 2006, 2010, 2011, and 2013). During the 1990–2014 study period, the winter NAO index ranged from a low of –1.475 in 2010 to a high of 1.345 in 2012 (Fig. 7). There may be a suggestion of an increasing frequency of negative NAO winters since 2010, which was the minimum value observed during the study, however more years of data will be needed to confirm that pattern. The drop from 1995 to 1996 was the largest single-year change within either the 25-year study period or the longer 65-year time-series since 1950. In fact, it has been referred to as the "drop of the century" in the NAO (MERCINA 2001). Similarly, 2010 was the lowest value of both time-series (Fig. 6, Fig. 7).

Statistical analysis

Correlation analysis. The final dataset with 25 years of stranding frequencies for the two dolphin species and the winter mean NAO index at time lags of 0, 1, 2, and 3 years (WNAO, WNAO1, WNAO2, and WNAO3, respectively) is shown in Table 4. Visual comparisons suggest that stranding frequency for both species is inverse to winter NAO (Fig. 8)—strandings appear to be higher after lower NAO years, and vice versa. Each of the three stranding datasets was correlated against each of the four WNAO datasets using the non-parametric Spearman rank-order correlation test (Table 5). For all twelve tests, the correlations were

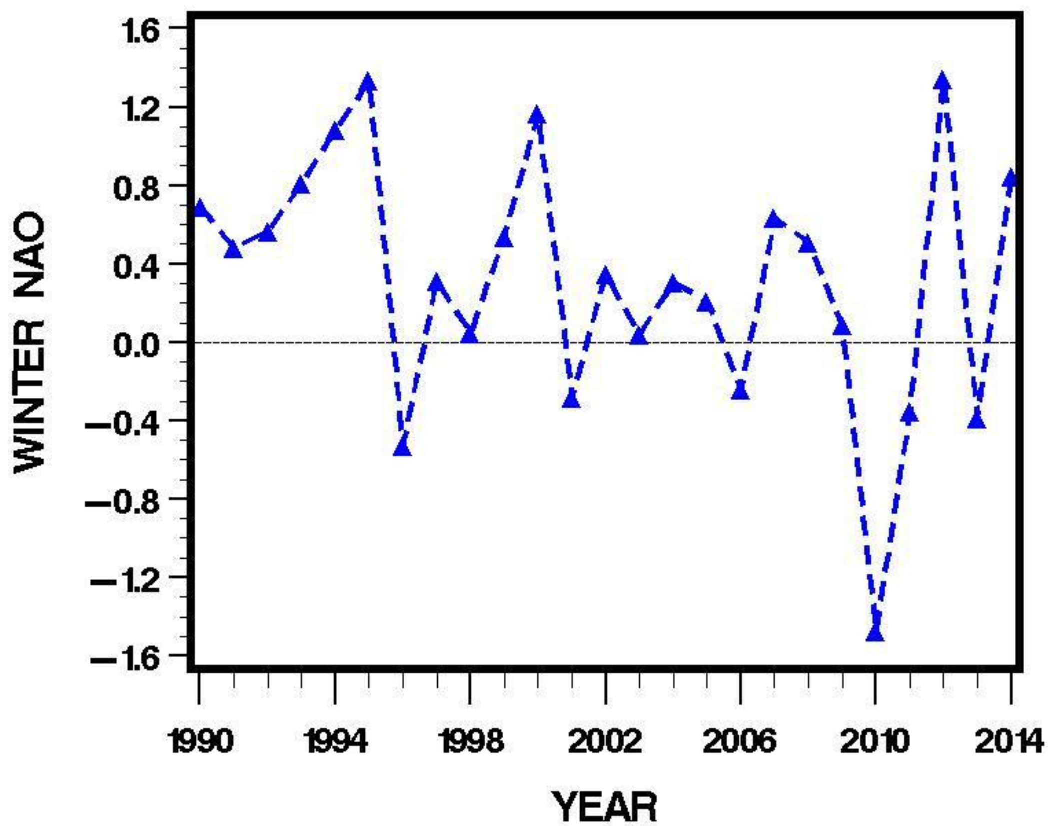

Fig. 7. Winter (December through March) mean NAO index from 1990 to 2014.

Table 4. Annual stranding frequencies for common dolphins (Dd), white-sided dolphins (La), and both species combined, mean winter NAO index (WNAO), and WNAO at 1-, 2-, and 3-year time lags.

YEAR	Dd	La	Both	WNAO	WNAO1	WNAO2	WNAO3
1990	1	18	19	0.69000	1.40750	0.48250	–0.18750
1991	4	4	8	0.48000	0.69000	1.40750	0.48250
1992	6	8	14	0.56750	0.48000	0.69000	1.40750
1993	13	20	33	0.81000	0.56750	0.48000	0.69000
1994	12	12	24	1.08000	0.81000	0.56750	0.48000
1995	9	9	18	1.33500	1.08000	0.81000	0.56750
1996	1	6	7	–0.52500	1.33500	1.08000	0.81000
1997	13	15	28	0.31500	–0.52500	1.33500	1.08000
1998	30	82	112	0.04750	0.31500	–0.52500	1.33500
1999	9	67	76	0.54000	0.04750	0.31500	–0.52500
2000	24	23	47	1.17000	0.54000	0.04750	0.31500
2001	11	15	26	–0.28500	1.17000	0.54000	0.04750
2002	28	55	83	0.35000	–0.28500	1.17000	0.54000
2003	36	50	86	0.04000	0.35000	–0.28500	1.17000
2004	22	37	59	0.30750	0.04000	0.35000	–0.28500
2005	34	53	87	0.21000	0.30750	0.04000	0.35000
2006	120	58	178	–0.24085	0.21000	0.30750	0.04000
2007	92	21	113	0.63293	–0.24085	0.21000	0.30750
2008	15	34	49	0.51110	0.63293	–0.24085	0.21000
2009	47	22	69	0.08620	0.51110	0.63293	–0.24085
2010	84	48	132	–1.47548	0.08620	0.51110	0.63293
2011	94	43	137	–0.35248	–1.47548	0.08620	0.51110
2012	319	6	325	1.34520	–0.35248	–1.47548	0.08620
2013	58	9	67	–0.38726	1.34520	–0.35248	–1.47548
2014	70	8	78	0.84235	–0.38726	1.34520	–0.35248

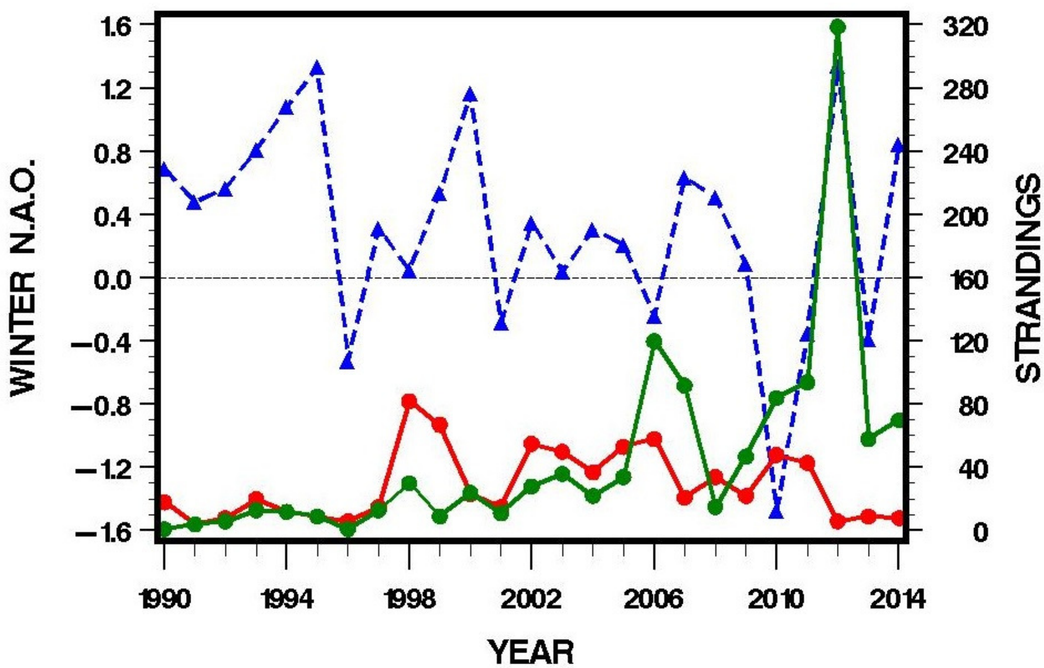

Fig. 8. Yearly stranding frequencies (numbers of individuals) for short-beaked common dolphins (green) and Atlantic white-sided dolphins (red) compared to mean winter NAO index (blue, dashed) from 1990 to 2014.

Table 5. Results of Spearman rank-order correlation tests: correlating annual stranding frequencies for common dolphin (Dd), white-sided dolphin (La), and both species combined against winter NAO index (WNAO) and WNAO at 1-, 2-, and 3-year time lags (n = 25 for each test).

NAO Index	**Species**		
	Dd	**La**	**Combined**
WNAO	R = –0.19588 p = 0.3480	R = –0.33064 p = 0.1065	R = –0.21846 p = 0.2941
WNAO1	R = –0.59958 p = 0.0015	R = –0.35065 p = 0.0857	R = –0.67923 p = 0.0002
WNAO2	R = –0.49721 p = 0.0114	R = –0.43457 p = 0.0299	R = –0.58077 p = 0.0023
WNAO3	R = –0.21589 p = 0.3000	R = –0.00269 p = 0.9898	R = –0.17077 p = 0.4144

inverse, i.e., $R < 0$. For short-beaked common dolphins, the correlations with WNAO (within the same year) and WNAO3 were not significant ($p = 0.348$ and $p = 0.300$, respectively). The correlation was statistically significant versus NAO at two time lags (Table 5). The strength of the correlation was highest for the 1-year lag ($R = –0.600$, $p = 0.002$), followed by the 2-year lag ($R = –0.497$, $p = 0.011$). For Atlantic white-sided dolphins, stranding frequency was significantly correlated with the winter NAO only at a 2-year time lag ($R = –0.435$, $p = 0.030$). The correlation approached significance at the 1-year lag ($R = –0.351$, $p = 0.086$), but was not significant at the 0- and 3-year lags. The annual stranding frequency of both dolphin species combined was significantly correlated with the winter NAO index for both 1-year and 2-year lags ($R = –0.679$, $p < 0.001$ and $R = –0.581$, $p = 0.002$, respectively). The correlations versus the WNAO data at 0- and 3-year lags were not significant.

Linear regressions. Least-squares linear regressions were used to test for functional relationships between stranding frequencies for the two dolphin species (individually and combined) and both WNAO1 and WNAO2 (i.e., the middle two rows of Table 5, with mostly significant correlations).

For common dolphin strandings versus WNAO1, the resulting linear relationship was:

$$\text{Dd strandings} = -43.280\ (\text{WNAO1}) + 61.071$$

The slope was significantly different from 0 ($p = 0.026$, $R^2 = 0.198$) (Fig. 9).

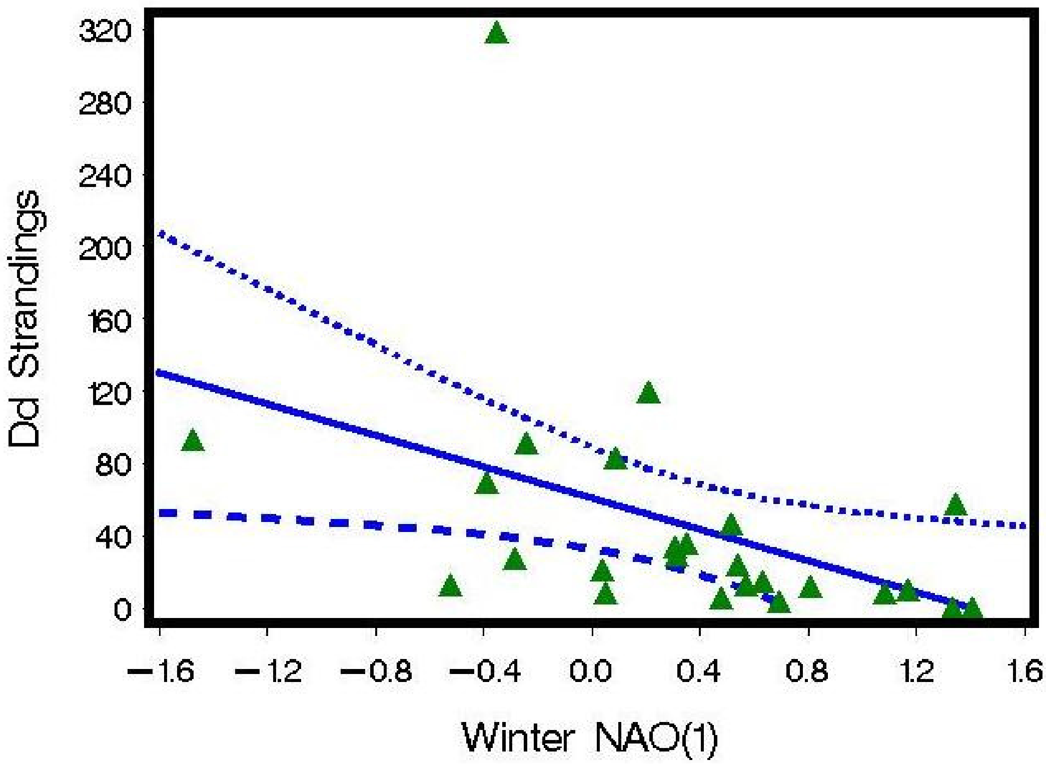

Fig. 9. Linear regression of common dolphin stranding frequency versus winter NAO at a 1-year time lag (n = 25). The triangles are the individual data points, the solid line is the computed linear relationship, and the dotted and dashed lines represent the upper and lower 95% confidence limits of the predicted regression line.

For common dolphin strandings versus WNAO2 the result was similar. The regression equation was:

$$\text{Dd strandings} = -60.176\ (\text{WNAO2}) + 69.017$$

The slope was again significantly different from 0 ($p = 0.001$, $R^2 = 0.363$) (Fig. 10).

The regression results for white-sided dolphins did not show statistically significant trends. For strandings versus WNAO1 the relationship was:

$$\text{La strandings} = -11.062\ (\text{WNAO1}) + 32.752$$

The slope did not differ from 0 ($p = 0.100$, $R^2 = 0.114$) (Fig. 11). A very similar result was obtained for the regression of white-sided dolphin strandings with WNAO2:

$$\text{La strandings} = -9.408\ (\text{WNAO2}) + 32.506$$

The slope again was not significantly different from 0 ($p = 0.176$, $R^2 = 0.078$) (Fig. 12).

Regressing the total strandings for both species combined against the NAO index with a 1-year lag resulted in the following model:

$$\text{All strandings} = -54.342\ (\text{WNAO1}) + 93.823$$

For this test the slope of the regression line was significantly different from 0 ($p = 0.006$, $R^2 = 0.286$) (Fig. 13). Regressing the combined stranding totals versus WNAO2 produced a similar equation:

$$\text{All strandings} = -69.584\ (\text{WNAO2}) + 101.523$$

The slope of this relationship was again significantly different from 0 ($p < 0.001$, $R^2 = 0.446$) (Fig. 14).

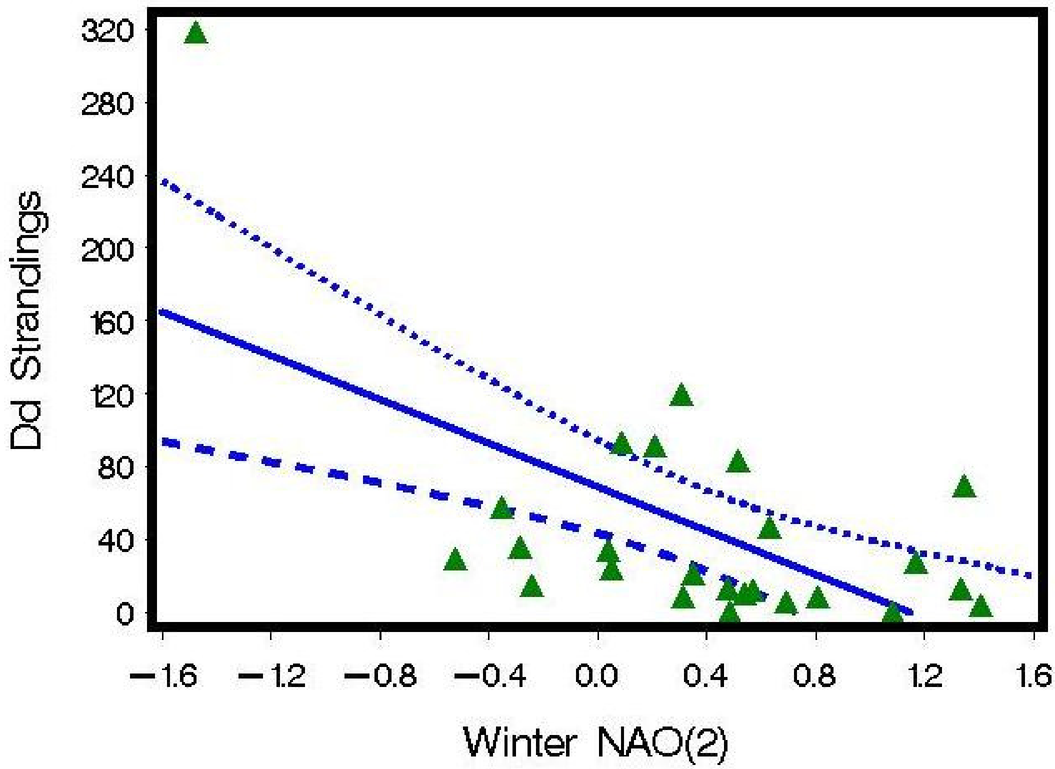

Fig. 10. Linear regression of common dolphin stranding frequency versus winter NAO at a 2-year time lag (n = 25). Format as in Fig. 9.

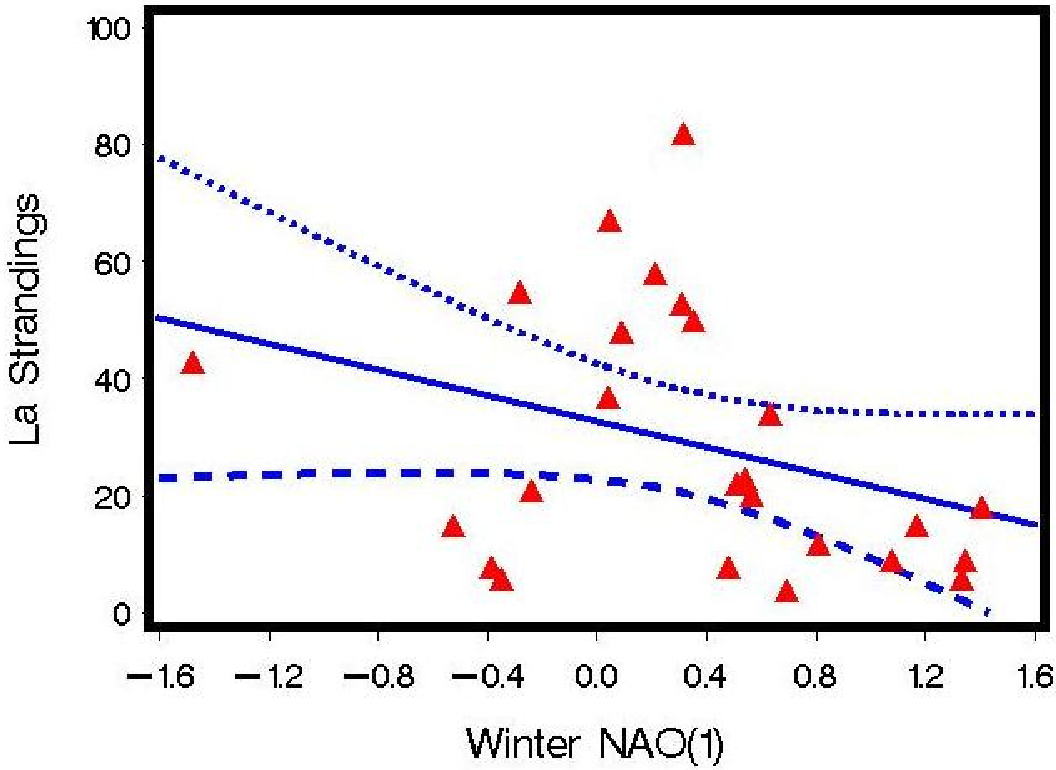

Fig. 11. Linear regression of white-sided dolphin stranding frequency versus winter NAO at a 1-year time lag (n = 25). Format as in Fig. 9.

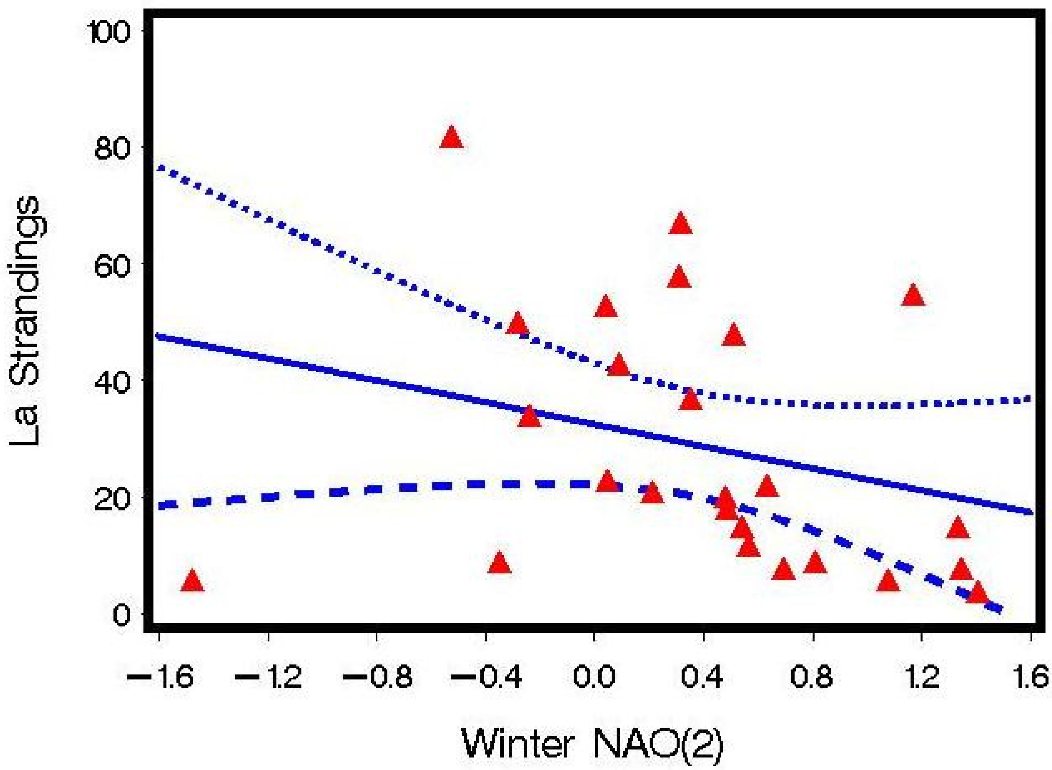

Fig. 12. Linear regression of white-sided dolphin stranding frequency versus winter NAO at a 2-year time lag (n = 25). Format as in Fig. 9.

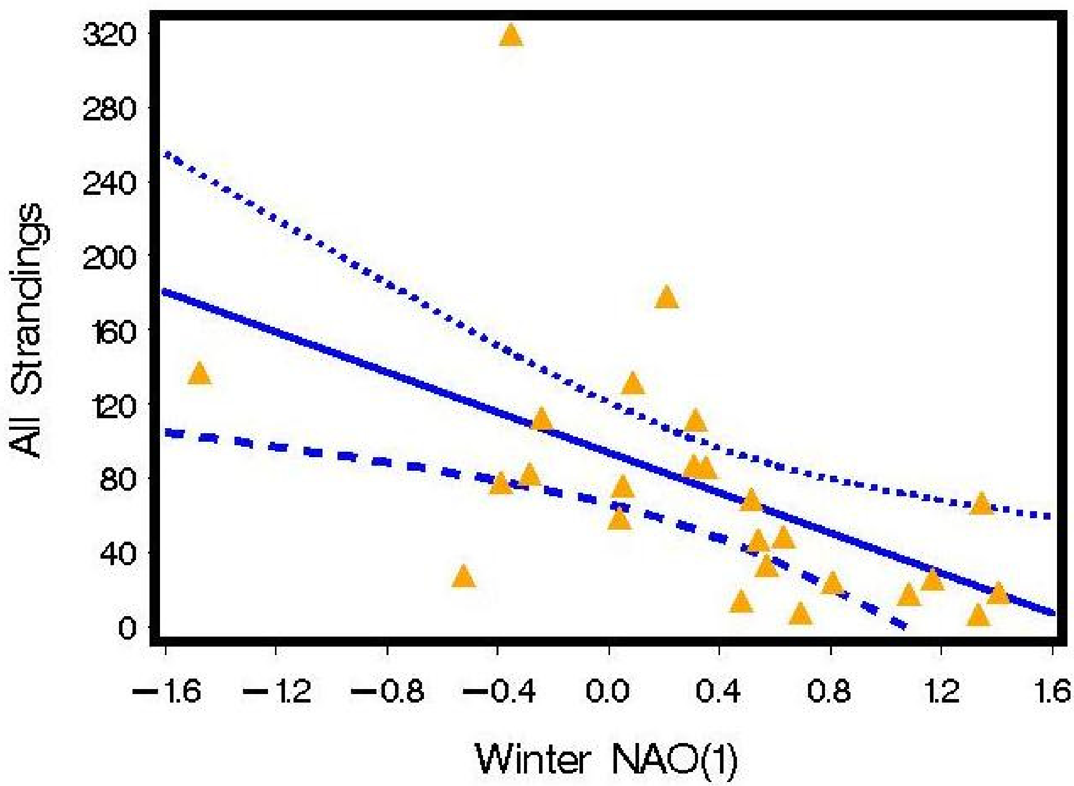

Fig. 13. Linear regression of combined stranding frequency versus winter NAO at a 1-year time lag (n = 25). Format as in Fig. 9.

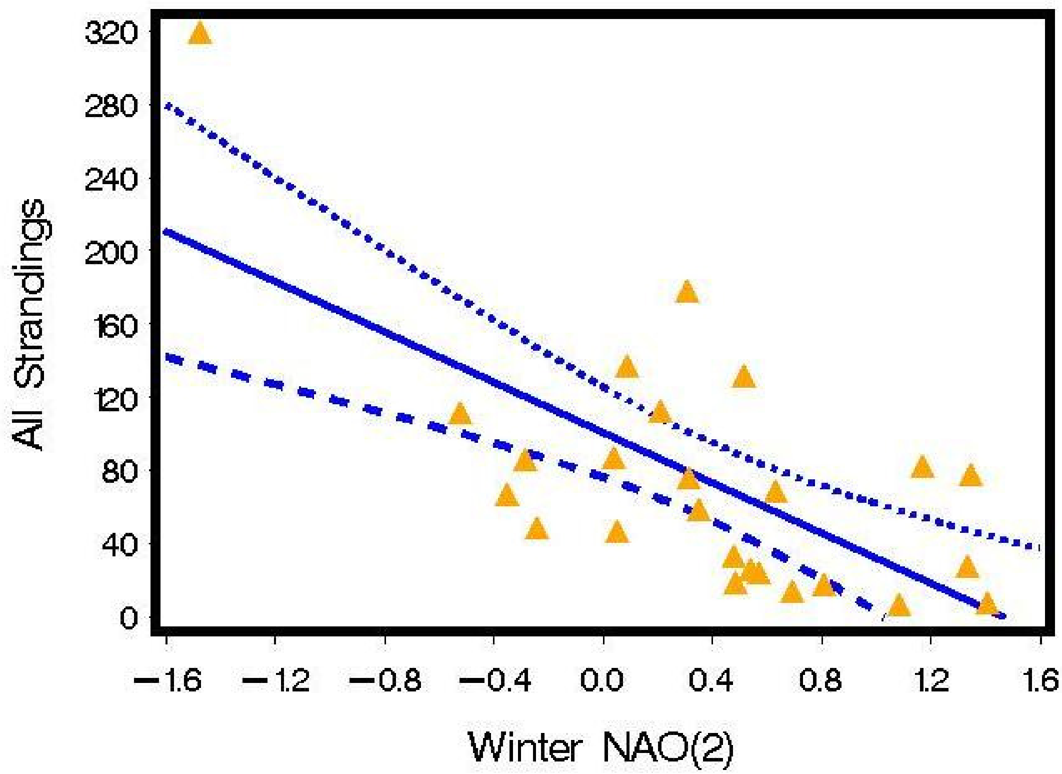

Fig. 14. Linear regression of combined stranding frequency versus winter NAO at a 2-year time lag (n = 25). Format as in Fig. 9.

To summarize the regression results, there were statistically significant linear relationships between winter NAO with both a 1-year and 2-year time lag and the frequency of short-beaked common dolphin strandings along New England shores. The trend is negative; when winter NAO is low, one can predict that there will be increased common dolphin stranding in the two following years. Based on the R^2 values from the two regression analyses, approximately 36% of the variability in common dolphin strandings in New England can be predicted from the winter NAO two years previously, and the NAO from the previous year can predict another 20% of the stranding rate. For Atlantic white-sided dolphins, there was no significant predictive relationship. For both species combined, the regression results were significant, however since the combined dataset is weighted more towards common dolphins (61% of the total animals stranded) it does not provide additional predictive power. Repeating the regression analyses using log-transformed stranding frequencies did not result in better linear fits.

DISCUSSION

The stranding of one or more dead dolphins, or occasionally live dolphins, on the beaches of New England is a relatively common event. For the 25 years from 1990 to 2014, there was not one in which there were no strandings of short-beaked common dolphins or Atlantic white-sided dolphins between Maine and New York. Over that time, nearly two thousand dolphins of those two species washed up on New England shores, averaging about 34 stranding events and 46 dolphins per year. These are not unusual or exceptionally high numbers. Strandings have been known since antiquity (McFee 1990). The current estimates of stock abundance for these two species in U.S. Atlantic waters are about 49,000 white-sided dolphins and 170,000 common dolphins (Waring et al. 2014). New England stranding mortality rates would constitute nearly trivial impacts on either of these populations. The 2007–2011 5-year averages of estimated annual mortality and serious injury (i.e., likely to lead to death) from fisheries by-catch and other human-related causes in the most recent U.S. marine mammal stock assessment (Waring et al. 2014) are 116 (CV = 0.16) Atlantic white-sided dolphins and 170 (CV = 0.13) short-beaked common dolphins. For both species, average annual bycatch mortality is substantially higher (about 5 times) than the average stranding mortality in New England—22 white-sided dolphins and 34 common dolphins.

Strandings of other dolphin species in other regions of the U.S., or in other regions of the world, are common and can be relatively frequent. For the years

2007–2012, an annual average of 295 bottlenose dolphins (*Tursiops truncatus*) stranded along the U.S. Atlantic coastline between New York and mid-Florida (Waring et al. 2014, NMFS/OPR 2015)—an order of magnitude more than the New England average for common or white-sided dolphins. There are similar bottlenose stranding numbers for the Gulf of Mexico (Waring et al. 2014). In years of anomalous increases in mortality (designated as “Unusual Mortality Events”) those numbers can be substantially higher. The numbers of stranded bottlenose dolphins in New York to Florida jumped in 2013 because of an epizootic of dolphin morbillivirus (DMV), with a total of 1,582 dead animals in 2013 and 2014 (NMFS/OPR 2015).

For the 25-year study period, the numbers of common dolphin and white-sided dolphin strandings along New England’s shores varied markedly between years. A primary objective of this study was to test whether that variability could be correlated with the North Atlantic Oscillation, an important driver of oceanographic patterns in the Gulf of Maine. The results of the study showed statistically significant inverse correlations with the NAO index at both 1-year and 2-year time lags for common dolphin stranding frequency. For white-sided dolphins, there was a significant inverse correlation only at the 2-year lag. For the NAO data lagged at 1 year, the inverse correlation was not quite significant ($p = 0.086$). Those results show quantitative support for the relationship that seemed apparent from a visual comparison of the data—dolphin strandings tend to be lower after high NAO years and higher after low NAO years. The results of the linear regression analyses were less clear-cut. There was a significant inverse linear relationship between common dolphin strandings and both 1-year and 2-year lagged winter NAO, but not for white-sided dolphins. In summary, there is a relationship between stranding frequency and NAO, but it is not entirely linear or predictable.

A number of factors likely influence the lack of a clear functional relationship between New England dolphin strandings and time-lagged NAO values. One is that the time from the direct impacts of NAO on the Labrador/Greenland region to when the downstream effects of those impacts are felt in the Gulf of Maine region is not precisely 1 year or 2 years. Both dolphin species showed inverse correlations to both WNAO1 and WNAO2, but the patterns are opposite. For common dolphins the stronger relationship was to WNAO1, while for white-sided dolphins it was to WNAO2, and the correlation to WNAO1 was not quite statistically significant (Table 5). MERCINA (2001) investigated hydrographic responses within the Gulf of Maine region to changes in Labrador Current and Labrador Subarctic Slope Water (LSSW) intensity after periods of positive or negative NAO. Through cross-correlation analysis at time lags of 0 to 4 years, they found a significant correlation of slope-water responses with changes in the NAO at a one-year lag, and an almost-significant relationship at a two-year lag. They concluded that the long-distance influences on the shelf-slope oceanographic regime off the northeastern U.S. from NAO effects in Labrador and Greenland waters were felt after approximately one to two years.

A second factor is that the study period, even though it was 25 years in duration, was inadequate to capture the full range of variability in the NAO. The 25 years of the study included sixteen years when the winter NAO index was clearly positive, three when it was slightly positive and close to 0, and only six when the index was negative (Fig. 7). Of course, if those few negative years had not been there, then attempting to show a statistically significant relationship to the time-lagged NAO index would have been much more difficult, if not impossible. In addition, it seems like the shorter-term variability in the NAO has increased in just the last few years, with an extreme negative value in 2010, a smaller negative value in 2011, a switch to extreme positive in 2012, back to negative in 2013, and a return to positive in 2014. If there are effects on Gulf of Maine oceanography at both 1-year and 2-year time lags, alternating positive and negative years would mean that the Gulf of Maine would be feeling the lagged effects of both extremes with the same seasons. Finally, the effects of NAO on other phenomena such as ocean temperatures, circulation patterns, and weather are not fully predictable. Given what the 2014–15 winter weather in the U.S. has been like so far, with extreme meanders in the jet stream and record cold and snow, one would predict that we were in a strongly negative NAO phase. However, the opposite is true. The monthly mean NAO indices for the first three months of the 2015 winter season have all been positive (December 2014—1.86; January 2015—1.79; February 2015—1.32) (CPC 2015b). The average of the three is 1.657, which would be the highest value of the entire time-series since 1950 (Fig. 6).

There are additional shorter-term factors that might contribute to inter-annual differences in the relationship between dolphin strandings and NAO. One possible factor could be variability in winter storm activity, which can directly affect the likelihood of strandings. Brabyn & McLean (1992) analyzed various oceanographic and bathymetric features of complex coastal areas of New Zealand where strandings of long-finned pilot whales (*Globicephala melas*) are common. They determined that increases in wind-driven onshore currents from storm activity characterized time periods of the year during which strandings typically occurred. Wiley et al. (2001) examined seasonal variability on annual dolphin stranding frequency on Cape Cod, Massachusetts. While strandings were documented throughout all seasons, higher stranding frequency and higher mortality rate were recorded during the winter months compared to other seasons. There may be shorter-term effects from changes in the effectiveness of stranding networks in detecting and identifying stranded individuals, which may have been partly responsible for the relatively low stranding numbers in the first several years of the study period.

Another short-term factor that would not be linked to NAO could be disease. There was an anomalous spike in common dolphin strandings in 2012, with 261 strandings of 319 animals, which was far higher than the next highest year in 1996 (96 strandings, 120 dolphins) (Table 2, Fig. 5). That very high mortality occurred one year before the DMV epizootic in Atlantic coast bottlenose dolphins. Perhaps common dolphins were subject to increased mortality from DMV before bottlenose dolphins. A similar viral disease event was observed earlier in Europe. In 1988 a serious epizootic of phocine distemper virus (PDV) occurred in the North Sea, killing about 18,000 harbor seals in Denmark, Sweden, Norway, the Netherlands, Great Britain, and Ireland (Dietz et al. 1989b, Heide-Jørgensen et al. 1992). PDV antibodies were positively identified in 12 of 40 samples from harp seals (*Pagophilus groenlandicus*), without clinical evidence of disease, collected in Greenland in 1985 (Dietz et al. 1989a). It was hypothesized that the virus was introduced to North Sea harbor seals from harp seals in a year when the harp seals dispersed unusually far southward (Heide-Jørgensen et al. 1992, Markussen & Have 1992). This does not appear to be the case with the 2012 common dolphin mortalities, however. Archived serum and tissue samples from 30 common dolphins stranded in Massachusetts in 2012 were screened for DMV, and only one tested positive (International Fund for Animal Welfare, unpublished data). The 2012 spike in *Delphinus* mortality appears unconnected with the 2013–14 DMV epizootic in *Tursiops*.

A final class of factors that can strongly affect dolphin stranding frequencies would be those characteristics intrinsic to the two dolphin populations themselves. This study has shown that, once the potentially under-sampled years had been removed, there were opposite trends shown by the two species. Common dolphin strandings were significantly increasing with time and white-sided dolphins were decreasing, and the predominant species in the New England stranding record switched from white-sided to common dolphin about 2005–2006. These trends are not likely to reflect actual changes in population abundance; there is no evidence of trends in the stock assessments for either species (Waring et al. 2014). A more likely cause would be shifting distribution patterns, changing the likelihood of animals being in locations where immediate factors increase the risk of stranding. Dolphins within near-shore waters closer to the New England coastline (e.g., Massachusetts Bay, Cape Cod Bay, Buzzards Bay, Nantucket/Vineyard Sound, Rhode Island Sound, and Long Island Sound) are obviously more at risk to stranding than dolphins in outer continental shelf or slope waters. There they become susceptible to the specific features that influence stranding probability within these regions (e.g., unique coastal morphology, extreme tidal range, navigational errors, acoustic dead zones, and social structure; McFee 1990, Wiley et al. 2001, Sundaram et al. 2006, Bogomolni et al. 2010).

There is some evidence for an earlier, substantial shift in the distribution of Atlantic white-sided dolphins off the northeastern U.S. (Kenney et al. 1996). Before the 1970s, the most frequently sighted dolphin with the Gulf of Maine was the white-beaked dolphin (*Lagenorhynchus albirostris*), a species that is morphologically and ecologically quite similar to the white-sided dolphin. At that time, white-sided dolphins were believed to inhabit mainly offshore waters of the outer shelf, where they are now found primarily in the winter season (CETAP 1982, Selzer & Payne 1988). That distribution would be very similar to the present distribution of common dolphins (CETAP 1982, Selzer & Payne 1988, Waring et al. 2014). During the 1970s, white-beaked dolphins shifted their distribution to the northeast to the Canadian Maritimes, and white-sided dolphins shifted theirs into the Gulf of Maine, where they have been the most abundant and frequently sighted dolphin species ever since. Kenney et al. (1996) hypothesized that these shifts were in response to changes in Gulf of Maine fish stocks. Herring populations crashed after heavy fishing pressure, and were replaced by an explosion of sand lance, and the dolphins responded because of different prey preferences. Warming water temperatures were also suggested as a contributing factor (Katona et al. 1983). Kenney et al. (1996) did not consider NAO, which really was not “on the radar” at that time. The 1970s were when the NAO was shifting from a predominantly negative phase into the mainly positive phase, where it remained for the next three decades. That phase change could very well have contributed to the white-beaked/white-sided dolphin distributional shift.

A more recent example of a possible distributional shift coincided with the impacts of the 1996 “drop of the century” in the NAO. In 1998 LSSW penetrated along the edge of the shelf as far south as the latitude of New Jersey (MERCINA 2001, Greene et al. 2003a). At that time, monthly aerial surveys were being flown by the University of North Carolina, Wilmington (UNCW) in two locations where a naval training range had been proposed—off Wallops Island, Virginia and Onslow Bay, North Carolina (McLellan et al. 2000). Hain & Kenney (2001) re-analyzed the survey data from the UNCW study and a variety of other projects to estimate densities of all the marine mammal species observed. They reported substantial differences in common dolphin relative abundance (sighting rates) in the Wallops

Island area between the CETAP surveys in 1979-1981 (CETAP 1982) and the UNCW 1998–1999 surveys. The ratios of UNCW to CETAP *Delphinus* sighting rates, by season, were 2.6 in winter, 0.32 in spring, 0.14 in summer, and 26 in fall. In the Onslow Bay area, common dolphins made up more than a third of all sightings in the UNCW data, but were less than 2% of all previous sightings. Hain & Kenney were unable to explain this difference, and even suggested that misidentification of dolphins by the observers might have been a factor. On the other hand, a distributional shift caused by downstream effects of the extremely low NAO in 1996 and the resulting effects on the slope-water region in 1998 could have been a significant factor.

A correlation between dolphin strandings and the NAO index is not evidence that the North Atlantic Oscillation has any direct effect on strandings (i.e., correlation does not equal causation). The effect is clearly something more indirect. Some oceanographic or ecological factor that is affected by NAO leads to changes in the distribution of the dolphins. Dolphins in particular locations are then at increased risk of stranding due to localized and short-term factors that are probably not linked at all to NAO. The working hypothesis of this study is that the linkage is through prey.

The distribution of a marine mammal population is a complex function of demographic, evolutionary, ecological, behavioral, oceanographic, and anthropogenic factors (Forcada 2009). Marine mammal distribution, density, and movements are strongly driven by the characteristics of their prey—distribution, abundance, accessibility, energy content, etc. (CETAP 1982, Whitehead & Carscadden 1985, Kenney & Winn 1986, Katona & Whitehead 1988, Kenney et al. 1996, Friedlaender et al. 2006, Forcada 2009, Heithaus & Dill 2009). Pelagic dolphins tend to exploit prey aggregations in areas often associated with increased vertical mixing, upwelling zones, and along steep bathymetric contours such as offshore banks and the shelf break (CETAP 1982, Selzer and Payne 1988, Baumgartner 1997). Analysis of common dolphin and white-sided dolphin prey items (mainly through stomach content examination of those incidentally by-caught in commercial fisheries throughout the continental shelf, to a lesser extent from stomach examinations of stranded individuals) have shown that they primarily feed on small, pelagic schooling fish and squid (Sergeant et al. 1980, Overholtz & Waring 1991, Palka et al. 1994, Craddock et al. 2009). Silver hake (*Merluccius bilinearis*), spoonarm octopus (*Bathypolypus bairdii*), and haddock (*Melanogrammus aeglefinus*) were the predominant prey items observed in stomachs of white-sided dolphins by-caught within the Gulf of Maine, and sand lance (*Ammodytes* sp.) were observed in a majority of stomachs analyzed from stranded white-sided dolphins on Cape Cod, Massachusetts (Craddock et al. 2009). Katona et al. (1978) also observed sand lance being in a major prey item for white-sided dolphins within the Gulf of Maine. Atlantic mackerel (*Scomber scombrus*) and long-finned squid (*Loligo pealei*) represented the majority of prey items observed from stomachs of by-caught common dolphins along the mid-Atlantic Bight (Overholtz & Waring 1991), however it should be noted that the dolphins had been taken in mackerel and squid fisheries.

Craddock et al. (2009) found large numbers of a mesopelagic myctophid fish species (Madeira lanternfish, *Ceratoscopelus maderensis*) in the one white-sided dolphin stomach collected far offshore in slope waters. Myctophids also have been reported as important prey for common dolphins (Evans 1994, Hassani et al. 1997; Perrin 2009).

In years when the lagged NAO index was positive, foraging activity by common and white-sided dolphins could have been focused primarily offshore along the Northeast US continental slope, where prey could be found in adequate abundance where they could be easily exploited. In years when WNAO1 and/or WNAO2 were negative, offshore prey availability, particularly in winter, could possibly be decreased or its distribution (in the horizontal or vertical dimension) altered. Changes to the hydrography of LSSW after NAO negative conditions contributes to colder, fresher waters pushing down between the shelf edge and slope water and extending into the Gulf of Maine (Greene & Pershing 2000, MERCINA 2001). Potential impacts of these oceanographic properties after NAO negative years could influence prey distributions, making it less favorable for dolphins to remain offshore and more advantageous for them to move inshore to forage. Potential scenarios causing dolphin distribution to shift from offshore to inshore due to changing prey could be: 1) mesopelagic fish populations are more dispersed, which would make dolphin foraging less energetically advantageous; 2) mesopelagic fish populations are displaced even farther offshore, making them more difficult to locate or less accessible, perhaps due to rougher sea conditions;

and 3) the changing oceanographic conditions within the slope waters could affect the diel vertical migration of prey species, making them less accessible to dolphins when they are hunting for prey at night.

Long-term climatological indices have been utilized for understanding changes in spatial distribution, recruitment, and abundance of various fish stocks within the greater Northeast U.S. continental shelf region. Nye et al. (2009) tested the relationship of two indices, the NAO and the Atlantic Multidecadal Oscillation (AMO), with 36 separate finfish stocks throughout the continental shelf in order to determine if any observed changes in distribution and abundance could be linked to long-term variability of the indices. Both indices were correlated with observed poleward shifts within the center of biomass of a majority of the finfish analyzed, as well as increases in depth distribution along the shelf. A temperature-driven mechanism was determined to be the underlying factor linking variability of these indices to finfish population dynamics. Hare & Able (2007) showed that annual NAO variability influenced Atlantic croaker (*Micropogonias undulatus*) population dynamics along the U.S. East Coast by altering summer and winter temperature regimes. The strength of recruitment for a successful year-class was determined to be linked to adequate larval supply, which was correlated to changes in the NAO. Nye et al. (2011) analyzed historic and recent shifts in the distribution of silver hake within the Northeast U.S. shelf region in order to determine which oceanographic factors influenced the center of biomass within the overall north-south distribution range. Changes in the Gulf Stream were found to be significantly correlated to changes in the center of biomass for silver hake along the continental shelf and into the Gulf of Maine. The effect was mainly through the changing position of the Gulf Stream relative to the continental slope, which influenced bottom temperatures in the slope water and affected silver hake distribution. Taylor et al. (1998) determined that approximately 60% of the variability in the north-south position of the Gulf Stream could be attributed to variability in the NAO. There is, therefore, evidence that variation in the NAO does affect fish distribution, which would impact the distribution of any predator exploiting those fish populations. The linkages hypothesized in this study are reasonable and consistent: changing NAO impacts fish stocks with a 1- to 2-year delay, dolphins shift distributions to optimize foraging opportunities, and some dolphin habitats (i.e., shallow coastal waters) pose an increased risk of stranding.

A systematic analysis of the distribution and abundance of the potential prey species of common and white-sided dolphins would be an ideal contribution towards more clearly linking prey availability with NAO variability. The National Marine Fisheries Service performs regular fisheries trawl surveys through the Northeast Fisheries Science Center, Ecosystem Surveys Branch in Woods Hole, Massachusetts. The surveys have been performed since 1963, utilizing consistent sampling design and methodology to assess commercial stocks for management (reviewed in Sosebee & Cabrin 2006). These trawl surveys are geared towards sampling commercially important groundfish stocks and are inadequate for quantitative analysis of some of the major prey species targeted by both common and white-sided dolphins, specifically sand lance and small mesopelagic species such as lanternfish. This sampling regime is less than ideal because of the following factors: 1) the trawl sampling does not extend into the slope waters that appear to be important dolphin habitat; the deepest sampling strata only go to the 200-m depth contour; 2) the sampling is performed via bottom trawl, which does not capture entirely pelagic fish species; 3) timing of the trawl-sampling is the one part of the methodology that has not been consistent; there have been spring and fall surveys with 370 sampling stations for all or most of the entire time span, but winter surveys (the critical season relative to dolphin strandings) were only conducted from 1992 to 2007 and only sampled 105–160 stations; 4) while some sand lance are collected, they are typically too small to be quantitatively retained in the net; 5) the NMFS reporting focuses on stock assessments of commercially important species; and 6) variability in fish stock abundance is a complex function of multiple variables, including physical factors, predation, fishing pressure, and random chance.

The variability of stranding rates of marine mammals in the context of shifting prey demographics and dynamics is poorly understood. Very little research has yielded clear results directly linking stranding frequency with prey availability. In one recent study, Vishnykova & Gol'din (2015) analyzed 15 years of harbor porpoise (*Phocoena phocoena*) stranding data and compared them to annual anchovy landings within the Sea of Azov. Interestingly, they determined that stranding rates were positively correlated to the shifting population dynamics of the anchovy stocks. During years of high anchovy catch, more fisherman were out on the water fishing which contributed towards increased harbor porpoise bycatch and thus increased strandings of discarded carcasses that then drifted to shore. They did not analyze other environmental or oceanographic factors that might have contributed to alternative mechanisms linking strandings and prey availability. For this study, detailed abundance and distribution data for some of the primary dolphin prey species were unavailable in order to test for correlations with the NAO index. Acknowledgment of these critical data gaps does create substantial limitations to this study and contributes to the difficulty of providing deeper insight into establishing a direct causal link for NAO variability influencing dolphin stranding frequency within New England waters.

The overarching goal for this study was to take a step back from traditional approaches of disease and health analyses when attempting to better understand causes of marine mammal strandings, and to look at more broad-scale, long-term factors that could affect stranding frequency by influencing marine mammal distribution in time and space. To date, very little research has been done into how long-term oceanographic variability influences marine mammal strandings. This study attempted to identify a novel method of including atmospheric variables when determining factors that can contribute to affecting dolphin stranding frequency within New England waters. The field of marine mammal stranding science is just now developing the adequate base-line data necessary to enable rigorous investigations into why dolphins repeatedly strand in particular regions, and what the full suite of underlying factors might be. For stranding responders tasked with aiding in rescue efforts when these animals strand, having deeper insight into environmental factors that would set up future conditions for influencing the likelihood of strandings would be a monumental benefit for preparation and management. The power of utilizing NAO variability to predict increased stranding frequency months or years in advance remains relatively low. Nevertheless the results of this study reveal that a long-term relationship does exist. Identifying those years that follow one and two years after strong negative NAO conditions as times when dolphin stranding frequency potentially could increase would prove extremely valuable to stranding responders and resource managers.

Given the uncertainty about how future climate change will affect the long-term variability of various atmospheric and oceanographic cycles like the NAO, it is critically important to undertake research such as this in order to better understand the biological impacts that these cycles can exert within the marine ecosystem. Changes to marine mammal distributions due to extreme NAO variability or extended periods of very low NAO conditions within New England waters could adversely affect the ability for pelagic dolphins to avoid situations leading to increased risk of stranding. Understanding how marine mammals are influenced by oceanographic and biological responses to long-term variability in NAO or other atmospheric patterns can increase our knowledge as to how these animals make a living in an ever-changing and dynamic environment.

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APPENDIX 1

Table of raw stranding data (n = 1,875) utilized in this thesis, showing reporting date, species (Dd = short-beaked common dolphin, *Delphinus delphis*; La = Atlantic white-sided dolphin, *Lagenorhynchus acutus*), condition code (CC, see Table 1), specimen record numbers for both the stranding network member organization and the NOAA regional stranding system, and stranding location.

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1989-Nov-29	La	1	MH89-541La	NE13426	42.0333	70.1833
1990-Jan-04	La	3	MH90-400La	NE13130	42.0000	70.0833
1990-Feb-02	La	3	MH90-408La	NE13123	41.9333	70.0000
1990-Feb-02	La	1	MH90-407La	NE13125	41.9333	70.0000
1990-Feb-16	La	3	MH90-418La	NE13121	42.0833	70.6667
1990-Feb-18	La	3	MH90-419La	NE13119	42.1000	70.6667
1990-Feb-26	La	3	MH90-433La	NE13089	41.8833	70.0000
1990-Feb-26	La	1	MH90-424La	NE13115	41.8833	70.0000
1990-Feb-26	La	1	MH90-423La	NE13117	41.8833	70.0000
1990-Feb-28	La	3	MH90-434La	NE13082	41.7000	70.2833
1990-Feb-28	La	3	MH90-426La	NE13099	41.7167	70.3333
1990-Feb-28	La	3	MH90-425La	NE13113	41.7167	70.3333
1990-Feb-28	La	2	MH90-430La	NE13093	41.8833	70.0167
1990-Feb-28	La	2	MH90-429La	NE13095	41.8833	70.0167
1990-Mar-01	La	3	MH90-432La	NE13091	42.1167	70.6667
1990-Mar-19	Dd	3	MH90-448Dd	NE13067	41.7125	70.2625
1990-Mar-31	La	3	MH90-455La	NE13074	42.4167	70.9000
1990-Apr-01	La	2	MH90-457La	NE13072	42.1167	70.6667
1990-Aug-14	La	2	MH90-547La	NE13060	42.6583	70.6000
1990-Dec-12	Dd	1	SXDD9002	NE13228	41.4167	70.5500
1991-Jan-16	La	1	SXLA9102	NE12785	40.8667	72.3833
1991-Feb-08	Dd	1	NY72191	NE12949	40.5833	73.5833
1991-Feb-15	La	1	SXLA9104	NE12196	41.9000	70.0167
1991-Feb-15	La	1	SYLA9105	NE12198	41.9000	70.0167
1991-Apr-25	La	2	MH91-493La	NE12143	42.3000	70.8833

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1991-Jul-21	Dd	3	NY78791	NE12967	40.9167	72.3167
1991-Nov-18	La	3	MH91-714La	NE12095	41.9167	70.0667
1991-Nov-25	La	3	MH91-703La	NE12091	41.9500	70.5500
1991-Nov-29	La	3	MH91-707La	NE12079	41.9833	70.0667
1991-Nov-29	La	2	MH91-704La	NE12089	42.0348	70.1839
1991-Dec-02	Dd	2	SYDD9123	NE12314	41.4583	71.3150
1991-Dec-16	Dd	3	NY85891	NE12976	40.7708	72.7308
1991-Dec-16	La	3	MH91-724La	NE12072	41.9333	70.0417
1992-Jan-24	Dd	1	MH92423Dd	NE10651	41.7833	70.0167
1992-May-22	La	1	MH92506La	NE10693	41.9333	70.0167
1992-Jun-09	Dd	3	MH92531Dd	NE10699	41.6500	70.0667
1992-Aug-27	La	2	MH92569La	NE10711	41.9000	70.0167
1992-Aug-27	La	2	MH92570La	NE10715	41.9000	70.0167
1992-Dec-02	Dd	1	MH92586Dd	NE10970	41.8000	70.0167
1992-Dec-04	Dd	3	MH92589Dd	NE10721	41.7500	70.0500
1992-Dec-05	Dd	2	MH92588Dd	NE10725	41.8167	69.9833
1992-Dec-05	Dd	2	MH92587Dd	NE10723	41.9167	70.0500
1992-Dec-09	Dd	3	MH92592Dd	NE10727	41.9167	70.0333
1992-Dec-21	Dd	1	MH92599Dd	NE10734	41.9167	70.0167
1992-Dec-21	Dd	2	MH92626Dd	NE10736	41.9167	70.0167
1993-Jan-01	Dd	3	MH93404Dd	NE9679	41.8000	70.0167
1993-Jan-01	Dd	3	MH93402Dd	NE9674	41.9167	70.0667
1993-Jan-23	Dd	3	MH93411Dd	NE9685	41.9167	70.0333
1993-Mar-06	La	3	MH93480La	NE9695	41.7667	70.0667
1993-Mar-07	La	3	MH93481La	NE9697	41.7500	70.0833
1993-Mar-18	La	1	MH93445La	NE9703	41.7333	70.3333
1993-Mar-18	La	1	MH93446La	NE9705	41.7333	70.3333
1993-Apr-06	La	1	MH93463La	NE9741	41.9167	70.0500
1993-Apr-06	La	1	MH93464La	NE9743	41.9167	70.0500
1993-Apr-06	La	1	MH93465La	NE9745	41.9167	70.0500
1993-Apr-06	La	1	MH93466La	NE9748	41.9167	70.0500
1993-Apr-06	La	1	MH93467La	NE9751	41.9167	70.0500

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1993-Apr-06	La	1	MH93468La	NE9753	41.9167	70.0500
1993-Apr-06	La	1	MH93461La	NE9755	41.9167	70.0500
1993-Apr-06	La	1	MH93460La	NE9714	41.9222	70.0542
1993-Jul-29	La	2	MH93562La	NE9667	44.6500	67.2000
1993-Aug-20	Dd	3	MH93554Dd	NE9757	41.6500	70.2833
1993-Aug-20	La	3	MH93555La	NE9760	41.9333	70.0333
1993-Aug-21	La	2	MH93560La	NE9762	41.7333	70.3333
1993-Aug-22	La	3	MH93561La	NE9764	41.7333	70.3333
1993-Sep-15	Dd	2	MH93566Dd	NE9766	41.6500	69.9667
1993-Sep-16	La	3	MH93563La	NE9659	43.6500	70.2500
1993-Sep-18	La	1	MH93568La	NE9768	41.7667	70.0500
1993-Oct-14	La	3	MH93575La	NE9775	42.5667	70.7000
1993-Oct-20	La	1	MH93567La	NE9777	41.7333	70.0000
1993-Dec-08	Dd	2	MH94406Dd	NE9828	41.8000	70.0167
1993-Dec-19	Dd	1	MH94402Dd	NE9831	41.8667	70.0000
1993-Dec-26	Dd	3	MH94402Dd	NE41578	41.9333	70.0667
1994-Mar-03	Dd	2	MH94428DD	S199403MAC013	42.0500	70.1667
1994-Mar-03	Dd	2	MH94429DD	S199403MAC012	42.0667	70.1000
1994-Mar-05	Dd	1	MH-94-424-Dd	NE40600	41.5600	70.0200
1994-Mar-05	Dd	1	MH94432DD	S199403MAC011	41.7833	70.0167
1994-Mar-08	Dd	3	MH94440DD	S199403MAC009	41.7833	70.0167
1994-Mar-12	La	3	NY119894	S199403NYC003	40.6312	73.2183
1994-Mar-14	La	2	MH94441LA	S199403MAC003	41.8167	70.0000
1994-Mar-14	La	1	MH94442LA	S199403MAC004	41.8167	70.0000
1994-Mar-14	La	1	MH94443LA	S199403MAC005	41.8167	70.0000
1994-Mar-14	La	1	MH94444LA	S199403MAC006	41.8167	70.0000
1994-Mar-14	La	1	MH94445LA	S199403MAC007	41.8167	70.0000
1994-Mar-14	La	1	MH94446LA	S199403MAC008	41.8167	70.0000
1994-Apr-02	La	2	MH94458LA	S199404MAC002	42.2500	70.8000
1994-Sep-06	La	1	MH94548LA	S199409MAC001	41.9333	70.0333
1994-Oct-08	La	2	MH95423LA	S199410MAC001	42.0000	70.0833
1994-Oct-09	La	1	MH94560LA	S199410MAC003	41.7333	70.1333

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1994-Oct-09	La	1	MH94559LA	S199410MAC004	41.7333	70.1333
1994-Nov-09	Dd	3	NY138694	S199411NYC001	40.6437	73.8297
1994-Dec-26	Dd	2	MH94608DD	S199412MAC001	41.5833	70.5500
1995-Jan-03	La	1	MH95402LA	S199501MAC006	41.8833	70.0167
1995-Jan-03	La	1	MH95401LA	S199501MAC007	41.8833	70.0167
1995-Jan-13	La	3	NY141295	S199501NYC003	40.8312	72.5120
1995-Jan-15	Dd	3	NY141395	S199501NYC002	40.8128	72.5775
1995-Jan-22	Dd	2	MH95417DD	S199501MAC002	41.9167	70.0167
1995-Feb-06	Dd	1	MH95434DD	S199502MAC003	41.9167	70.0500
1995-Apr-06	La	3	MH95497LA	S199504MAC006	41.8333	70.5333
1995-May-08	La	1	MH95516LA	S199505MAC002	41.8333	70.0167
1995-May-08	La	1	MH95515LA	S199505MAC003	41.8333	70.0167
1995-May-17	La	3	NY152595	S199505NYC002	41.0013	72.0250
1995-Aug-07	La	1	MH95596LA	S199508MAC003	41.7333	70.3333
1995-Aug-11	Dd	1	MMASYDD9534	S199508NYC003	41.2600	72.0083
1995-Aug-17	Dd	2	MMASXDD9535	S199508NYC002	41.2680	71.9987
1996-Jan-20	La	1	MH96408LA	S199601MAC004	41.9335	70.0258
1996-Feb-26	Dd	3	MMASYDD9607	S199602RIC001	41.3603	71.4887
1996-Mar-22	La	2	MH97552LA	S199603MEC002	43.2558	70.5932
1996-Mar-29	La	1	MH96463LA	S199603MAC004	42.8500	70.8167
1996-Apr-05	La	1	MH96477LA	S199604MAC004	41.8833	70.0167
1996-Apr-13	La	2	MH97541LA	S199604MEC002	43.5717	70.3385
1996-Nov-02	La	3	MH96559LA	S199611MAC003	41.6667	70.3500
1996-Nov-16	La	3	MH96569LA	S199611MEC001	41.7333	70.3333
1996-Nov-27	La	2	MH96585LA	S199611MAC002	42.0500	70.2000
1996-Nov-28	Dd	1	MH97468DD	S199611MAC001	41.6500	69.9667
1996-Dec-05	Dd	2	MMASYDD9651	S199612RIC001	41.1783	71.6063
1997-Jan-06	Dd	3	NY191197	S199701NYC001	40.0088	72.0062
1997-Jan-13	Dd	2	NY191597	S199701NYC002	41.0755	71.8917
1997-Jan-16	La	1	MH97417LA	S199701MAC009	41.7167	70.3333
1997-Jan-22	La	2	NY191697	S199701NYC004	40.5817	73.8528
1997-Jan-26	Dd	1	MH97445DD	S199701MAC014	41.8333	70.0167

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1997-Jan-26	La	3	MH97424LA	S199701MAC013	42.4667	70.9000
1997-Feb-01	La	1	MH97425LA	S199702MAC001	41.7667	70.0333
1997-Feb-04	Dd	2	NY192097	S199702NYC001	40.6313	73.2072
1997-Feb-10	Dd	1	NY192497	S199702NYC003	40.6603	73.8130
1997-Feb-14	Dd	3	MMASYDD9704	S199702RIC002	41.1630	71.6117
1997-Feb-19	Dd	3	NY192897	S199702NYC005	40.5937	73.5022
1997-Feb-21	La	1	MMASXLA9707	S199702RIC001	41.3833	71.5183
1997-Mar-13	Dd	2	MH97471DD	S199703MAC004	41.7833	70.0167
1997-Mar-24	Dd	1	MH97481DD	S199703MAC005	41.9167	70.0333
1997-Apr-21	La	1	MH97486LA	S199704MAC001	42.6500	70.7000
1997-May-28	La	1	MH97507LA	S199705MAC005	42.0583	70.6667
1997-May-28	La	1	MH97506LA	S199705MAC006	42.0583	70.6667
1997-Jun-01	La	2	MH97511LA	S199706MAC002	42.2667	71.0833
1997-Jul-26	Dd	2	MH97558DD	S199707MAC002	41.2862	70.0922
1997-Jul-30	La	2	MH97528LA	S199707MAC003	42.2333	70.7500
1997-Aug-12	La	1	MH97534LA	S199708MAC002	41.9167	70.0667
1997-Aug-12	La	1	MH97533LA	S199708MAC003	41.9167	70.0667
1997-Oct-31	Dd	2	NY204197	S199710NYC002	40.8328	72.5078
1997-Nov-15	Dd	1	MH97600DD	S199711MAC005	41.6558	70.6195
1997-Nov-15	Dd	1	MH97599DD	S199711MAC006	41.6558	70.6195
1997-Nov-15	Dd	1	MH97598DD	S199711MAC007	41.6558	70.6195
1997-Nov-16	Dd	1	MH97604DD	S199711MAC002	41.6558	70.6195
1997-Nov-16	Dd	1	MH97603DD	S199711MAC003	41.6558	70.6195
1997-Nov-16	Dd	1	MH97602DD	S199711MAC004	41.6558	70.6195
1997-Nov-16	Dd	1	MH97597DD	S199711MAC008	41.6558	70.6195
1997-Nov-16	Dd	1	MH97596DD	S199711MAC009	41.6558	70.6195
1997-Nov-16	Dd	1	MH97594DD	S199711MAC010	41.6558	70.6195
1997-Nov-16	Dd	1	MH97595DD	S199711MAC011	41.6558	70.6195
1997-Dec-05	Dd	2	NY205297	S199712NYC001	40.8220	72.5445
1998-Jan-03	La	1	MH98401LA	S199801MAC002	41.8963	70.0165
1998-Jan-19	Dd	2	MMASYDD9803	S199801RIC001	41.4550	71.3397
1998-Jan-29	La	2	MH98414LA	S199801MAC078	41.7500	70.0800

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1998-Jan-29	La	2	MH98472LA	S199801MAC039	41.8000	69.9500
1998-Jan-29	La	1	MH98462LA	S199801MAC046	41.8167	69.9500
1998-Jan-29	La	1	MH98461LA	S199801MAC047	41.8167	69.9500
1998-Jan-29	La	1	MH98460LA	S199801MAC048	41.8167	69.9500
1998-Jan-29	La	1	MH98418LA	S199801MAC075	41.8167	69.9500
1998-Jan-29	La	1	MH98454LA	S199801MAC053	41.9167	70.0617
1998-Jan-29	La	2	MH98480LA	S199801MAC038	41.9333	70.0283
1998-Jan-29	La	1	MH98465LA	S199801MAC043	41.9333	70.0283
1998-Jan-29	La	1	MH98464LA	S199801MAC044	41.9333	70.0283
1998-Jan-29	La	1	MH98463LA	S199801MAC045	41.9333	70.0283
1998-Jan-29	La	1	MH98459LA	S199801MAC049	41.9333	70.0283
1998-Jan-29	La	2	MH98458LA	S199801MAC050	41.9333	70.0283
1998-Jan-29	La	1	MH98455LA	S199801MAC052	41.9333	70.0283
1998-Jan-29	La	1	MH98453LA	S199801MAC054	41.9333	70.0283
1998-Jan-29	La	1	MH98452LA	S199801MAC055	41.9333	70.0283
1998-Jan-29	La	1	MH98451LA	S199801MAC056	41.9333	70.0283
1998-Jan-29	La	2	MH98449LA	S199801MAC058	41.9333	70.0283
1998-Jan-29	La	1	MH98448LA	S199801MAC059	41.9333	70.0283
1998-Jan-29	La	1	MH98447LA	S199801MAC060	41.9333	70.0283
1998-Jan-29	La	2	MH98443LA	S199801MAC064	41.9333	70.0283
1998-Jan-29	La	1	MH98441LA	S199801MAC066	41.9333	70.0283
1998-Jan-29	La	1	MH98437LA	S199801MAC070	41.9333	70.0283
1998-Jan-29	La	2	MH98436LA	S199801MAC071	41.9333	70.0283
1998-Jan-29	La	2	MH98435LA	S199801MAC072	41.9333	70.0283
1998-Jan-29	La	2	MH98415LA	S199801MAC077	41.9333	70.0283
1998-Jan-29	La	2	MH98413LA	S199801MAC079	41.9333	70.0283
1998-Jan-30	La	1	MH98456LA	S199801MAC051	41.9333	70.0283
1998-Jan-30	La	2	MH98434LA	S199801MAC073	41.9333	70.0283
1998-Jan-31	La	1	MH98417LA	S199801MAC076	41.7500	70.0800
1998-Jan-31	Dd	2	MH98466DD	S199801MAC042	41.8167	69.9500
1998-Jan-31	La	2	MH98468LA	S199801MAC040	41.8167	69.9500
1998-Jan-31	La	2	MH98467LA	S199801MAC041	41.8167	69.9500

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1998-Jan-31	Dd	2	MH98516DD	S199801MAC008	41.9333	70.0283
1998-Jan-31	Dd	2	MH98511DD	S199801MAC013	41.9333	70.0283
1998-Jan-31	Dd	2	MH98510DD	S199801MAC014	41.9333	70.0283
1998-Jan-31	Dd	2	MH98509DD	S199801MAC015	41.9333	70.0283
1998-Jan-31	Dd	2	MH98508DD	S199801MAC016	41.9333	70.0283
1998-Jan-31	Dd	2	MH98507DD	S199801MAC017	41.9333	70.0283
1998-Jan-31	Dd	2	MH98506DD	S199801MAC018	41.9333	70.0283
1998-Jan-31	Dd	2	MH98505DD	S199801MAC019	41.9333	70.0283
1998-Jan-31	Dd	2	MH98504DD	S199801MAC020	41.9333	70.0283
1998-Jan-31	Dd	2	MH98503DD	S199801MAC021	41.9333	70.0283
1998-Jan-31	Dd	2	MH98433DD	S199801MAC074	41.9333	70.0283
1998-Jan-31	La	2	MH98520LA	S199801MAC004	41.9333	70.0283
1998-Jan-31	La	2	MH98519LA	S199801MAC005	41.9333	70.0283
1998-Jan-31	La	2	MH98518LA	S199801MAC006	41.9333	70.0283
1998-Jan-31	La	2	MH98517LA	S199801MAC007	41.9333	70.0283
1998-Jan-31	La	2	MH98515LA	S199801MAC009	41.9333	70.0283
1998-Jan-31	La	2	MH98514LA	S199801MAC010	41.9333	70.0283
1998-Jan-31	La	2	MH98513LA	S199801MAC011	41.9333	70.0283
1998-Jan-31	La	2	MH98512LA	S199801MAC012	41.9333	70.0283
1998-Jan-31	La	2	MH98502LA	S199801MAC022	41.9333	70.0283
1998-Jan-31	La	2	MH98501LA	S199801MAC023	41.9333	70.0283
1998-Jan-31	La	2	MH98500LA	S199801MAC024	41.9333	70.0283
1998-Jan-31	La	2	MH98499LA	S199801MAC025	41.9333	70.0283
1998-Jan-31	La	2	MH98498LA	S199801MAC026	41.9333	70.0283
1998-Jan-31	La	2	MH98497LA	S199801MAC027	41.9333	70.0283
1998-Jan-31	La	2	MH98496LA	S199801MAC028	41.9333	70.0283
1998-Jan-31	La	2	MH98495LA	S199801MAC029	41.9333	70.0283
1998-Jan-31	La	2	MH98494LA	S199801MAC030	41.9333	70.0283
1998-Jan-31	La	2	MH98493LA	S199801MAC031	41.9333	70.0283
1998-Jan-31	La	2	MH98492LA	S199801MAC032	41.9333	70.0283
1998-Jan-31	La	2	MH98491LA	S199801MAC033	41.9333	70.0283
1998-Jan-31	La	2	MH98490LA	S199801MAC034	41.9333	70.0283

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1998-Jan-31	La	2	MH98489LA	S199801MAC035	41.9333	70.0283
1998-Jan-31	La	2	MH98488LA	S199801MAC036	41.9333	70.0283
1998-Jan-31	La	2	MH98450LA	S199801MAC057	41.9333	70.0283
1998-Jan-31	La	1	MH98446LA	S199801MAC061	41.9333	70.0283
1998-Jan-31	La	2	MH98445LA	S199801MAC062	41.9333	70.0283
1998-Jan-31	La	2	MH98444LA	S199801MAC063	41.9333	70.0283
1998-Jan-31	La	2	MH98442LA	S199801MAC065	41.9333	70.0283
1998-Jan-31	La	2	MH98440LA	S199801MAC067	41.9333	70.0283
1998-Jan-31	La	2	MH98439LA	S199801MAC068	41.9333	70.0283
1998-Jan-31	La	2	MH98438LA	S199801MAC069	41.9333	70.0283
1998-Feb-01	La	2	MH98474LA	S199802MAC021	41.9333	70.0283
1998-Feb-01	La	2	MH98473LA	S199802MAC022	41.9333	70.0283
1998-Feb-01	La	2	MH98471LA	S199802MAC023	41.9333	70.0283
1998-Feb-01	La	2	MH98470LA	S199802MAC024	41.9333	70.0283
1998-Feb-01	La	2	MH98469LA	S199802MAC025	41.9333	70.0283
1998-Feb-03	Dd	2	MH98481DD	S199802MAC015	41.9333	70.0283
1998-Feb-03	Dd	2	MH98476LA	S199802MAC019	41.9333	70.0283
1998-Feb-03	La	2	MH98475LA	S199802MAC020	41.9333	70.0283
1998-Feb-04	Dd	2	MH98479DD	S199802MAC016	41.7333	70.1833
1998-Feb-04	Dd	2	MH98478DD	S199802MAC017	41.7333	70.1833
1998-Feb-04	Dd	1	MH98477DD	S199802MAC018	41.7333	70.1833
1998-Feb-05	La	3	MH98482LA	S199802MAC013	41.7333	70.1833
1998-Feb-07	La	2	MH98486LA	S199802MAC010	41.9333	70.0283
1998-Feb-07	La	2	MH98485LA	S199802MAC011	41.9333	70.0283
1998-Feb-07	La	2	MH98484LA	S199802MAC012	41.9333	70.0283
1998-Feb-07	La	2	MH98483LA	S199802MAC014	41.9333	70.0283
1998-Feb-07	La	2	MH98487LA	S199802MAC054	41.9333	70.0283
1998-Feb-09	La	2	MH98521LA	S199802MAC009	41.7333	70.3167
1998-Feb-18	La	2	MH98541LA	S199802MAC006	41.9333	70.0283
1998-Feb-18	La	2	MH98540LA	S199802MAC007	41.9333	70.0283
1998-Feb-18	La	2	MH98539LA	S199802MAC008	41.9333	70.0283
1998-Mar-22	Dd	2	MH98733DD	S199803MAC001	41.2505	70.8158

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1998-Apr-05	La	1	MH98600LA	S199804MAC006	41.9333	70.0283
1998-Apr-05	La	1	MH98599LA	S199804MAC007	41.9333	70.0283
1998-Nov-24	Dd	2	MH98793DD	S199811MAC012	41.5383	70.6600
1998-Nov-27	La	1	MH98802LA	S199811MAC002	41.9232	70.0337
1998-Nov-27	La	1	MH98801LA	S199811MAC004	41.9238	70.0252
1998-Nov-27	La	1	MH98800LA	S199811MAC005	41.9238	70.0252
1998-Nov-27	La	1	MH98803LA	S199811MAC003	41.9275	70.0703
1999-Jan-18	La	3	MH99416LA	S199901MAC011	41.8972	70.0080
1999-Mar-07	La	1	MH99488LA	S199903MAC018	41.9000	70.0200
1999-Mar-07	La	1	MH99491LA	S199903MAC013	41.9167	70.0333
1999-Mar-07	La	1	MH99490LA	S199903MAC014	41.9167	70.0333
1999-Mar-07	La	1	MH99489LA	S199903MAC015	41.9167	70.0333
1999-Mar-07	La	2	MH99487LA	S199903MAC016	41.9167	70.0333
1999-Mar-07	La	2	MH99486LA	S199903MAC017	41.9167	70.0333
1999-Mar-18	La	2	MH99562LA	S199903MAC046	41.7180	70.3687
1999-Mar-18	La	2	MH99561LA	S199903MAC047	41.7180	70.3687
1999-Mar-18	La	2	MH99560LA	S199903MAC048	41.7180	70.3687
1999-Mar-18	La	2	MH99559LA	S199903MAC049	41.7180	70.3687
1999-Mar-18	La	2	MH99558LA	S199903MAC050	41.7180	70.3687
1999-Mar-19	La	2	MH99574LA	S199903MAC037	41.7363	70.3327
1999-Mar-19	La	1	MH99539LA	S199903MAC064	41.8227	70.0042
1999-Mar-19	La	1	MH99576LA	S199903MAC036	41.8228	70.0042
1999-Mar-19	La	2	MH99540LA	S199903MAC063	41.9003	70.0027
1999-Mar-19	La	2	MH99517LA	S199903MAC084	41.9055	69.9992
1999-Mar-19	La	1	MH99516LA	S199903MAC085	41.9055	69.9992
1999-Mar-19	La	1	MH99514LA	S199903MAC089	41.9055	69.9992
1999-Mar-19	La	1	MH99529LA	S199903MAC073	41.9133	69.9887
1999-Mar-19	La	1	MH99528LA	S199903MAC074	41.9133	69.9887
1999-Mar-19	La	1	MH99527LA	S199903MAC075	41.9133	69.9887
1999-Mar-19	La	1	MH99526LA	S199903MAC076	41.9133	69.9887
1999-Mar-19	La	1	MH99525LA	S199903MAC077	41.9133	69.9887
1999-Mar-19	La	1	MH99524LA	S199903MAC078	41.9133	69.9887

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1999-Mar-19	La	1	MH99523LA	S199903MAC079	41.9133	69.9887
1999-Mar-19	La	1	MH99522LA	S199903MAC080	41.9133	69.9887
1999-Mar-19	La	1	MH99521LA	S199903MAC081	41.9133	69.9887
1999-Mar-19	La	1	MH99520LA	S199903MAC082	41.9133	69.9887
1999-Mar-19	La	2	MH99518LA	S199903MAC083	41.9133	69.9887
1999-Mar-19	La	2	MH99519LA	S199903MAC108	41.9133	69.9887
1999-Mar-19	La	1	MH99534LA	S199903MAC069	41.9333	70.0500
1999-Mar-19	La	1	MH99513LA	S199903MAC086	41.9338	70.0162
1999-Mar-19	La	1	MH99512LA	S199903MAC087	41.9338	70.0162
1999-Mar-19	La	1	MH99511LA	S199903MAC088	41.9338	70.0162
1999-Mar-19	La	1	MH99538LA	S199903MAC065	41.9388	70.0548
1999-Mar-19	La	2	MH99537LA	S199903MAC066	41.9388	70.0548
1999-Mar-19	La	2	MH99536LA	S199903MAC067	41.9388	70.0548
1999-Mar-19	La	1	MH99533LA	S199903MAC070	41.9388	70.0548
1999-Mar-19	La	1	MH99532LA	S199903MAC071	41.9388	70.0548
1999-Mar-19	La	1	MH99531LA	S199903MAC072	41.9388	70.0548
1999-Mar-20	La	1	MH99548LA	S199903MAC056	41.7552	70.1293
1999-Mar-20	La	2	MH99546LA	S199903MAC058	41.7617	70.1140
1999-Mar-20	La	2	MH99554LA	S199903MAC054	41.7652	70.1003
1999-Mar-20	La	2	MH99557LA	S199903MAC051	41.8107	70.0015
1999-Mar-20	La	1	MH99547LA	S199903MAC057	41.9128	69.9957
1999-Mar-20	La	1	MH99544LA	S199903MAC059	41.9162	70.0623
1999-Mar-20	La	1	MH99543LA	S199903MAC060	41.9162	70.0623
1999-Mar-20	La	1	MH99542LA	S199903MAC061	41.9162	70.0623
1999-Mar-20	La	1	MH99541LA	S199903MAC062	41.9162	70.0623
1999-Mar-20	La	1	MH99549LA	S199903MAC055	41.9257	70.0237
1999-Mar-20	La	2	MH99556LA	S199903MAC052	41.9260	70.0588
1999-Mar-20	La	2	MH99555LA	S199903MAC053	41.9260	70.0588
1999-Mar-21	La	2	MH99564LA	S199903MAC039	41.9162	70.0623
1999-Mar-21	La	2	MH99535LA	S199903MAC068	41.9338	70.0162
1999-Mar-22	La	3	MH99578LA	S199903MAC034	41.9162	70.0623
1999-Mar-22	La	1	MH99563LA	S199903MAC045	41.9393	70.0548

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
1999-Mar-24	La	2	MH99567LA	S199903MAC038	41.9295	70.0248
1999-Apr-03	La	2	MH99592LA	S199904MAC005	41.9300	70.0717
1999-Apr-04	La	1	MH99552LA	S199904MAC006	41.4500	70.5540
1999-Apr-21	La	1	MH99602LA	S199904MAC012	41.9350	70.5583
1999-Jun-01	Dd	2	MMASYDD9924	S199906RIC001	41.4917	71.1417
1999-Jun-10	Dd	3	NY231299	S199906NYC002	40.8647	72.3797
1999-Jul-06	Dd	1	NY231999	S199907NYC002	40.5792	73.9167
1999-Jul-13	Dd	1	NY232099	S199907NYC003	40.8695	72.3687
1999-Jul-30	La	1	MH99583LA	S199907MAC006	42.6122	70.6798
1999-Jul-31	Dd	1	NY233299	S199907NYC004	41.0270	71.9767
1999-Aug-09	Dd	2	MH99588DD	S199908MAC001	41.5717	70.6453
1999-Aug-21	Dd	1	MH99675DD	S199908MAC005	41.6600	69.9900
1999-Aug-27	La	2	MH99681LA	S199908MAC010	42.0200	70.0900
1999-Aug-29	Dd	1	MH99683DD	S199908MAC011	41.2433	69.9890
1999-Nov-01	Dd	3	MH99741DD	S199911MAC001	41.6747	69.9472
1999-Nov-02	Dd	1	MH99742DD	S199911MAC002	41.5985	70.6418
1999-Nov-03	La	1	MH99743LA	S199911MEC001	43.7337	69.7792
1999-Nov-04	Dd	3	MMASYDD9932	S199911RIC001	41.4547	71.3115
1999-Nov-05	Dd	1	MMASXDD9933	S199911RIC002	41.3283	71.7383
1999-Nov-20	Dd	3	MH99902DD	S199911MAC006	41.3482	70.5287
1999-Dec-06	Dd	2	MMASYDD9934	S199912RIC002	41.4517	71.4017
1999-Dec-15	Dd	1	MH99889DD	S199912MAC004	41.7627	70.1145
1999-Dec-15	Dd	1	MH99888DD	S199912MAC005	41.7627	70.1145
1999-Dec-15	Dd	1	MH99887DD	S199912MAC002	41.7648	70.1107
1999-Dec-17	Dd	3	MH99891DD	S199912MAC001	41.8645	70.0080
1999-Dec-31	Dd	3	MMASYDD9935	S199912RIC001	41.2083	71.5800
2000-Jan-09	Dd	3	MH00405DD	S200001MAC012	41.8667	70.5167
2000-Jan-10	Dd	3	MMASXDD0002	S200001CTC001	41.1100	73.3712
2000-Feb-02	Dd	3	MH00424DD	S200002MAC004	41.4355	70.5982
2000-Feb-15	Dd	3	MH00437DD	S200002MAC006	42.0302	70.0932
2000-Feb-20	Dd	3	MH00443DD	S200002MAC009	41.7098	70.2960
2000-Mar-20	La	3	MH00496LA	S200003MAC004	41.9968	70.0177

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2000-Mar-30	Dd	3	MMASYDD0013	S200003RIC003	41.3743	71.5362
2000-Apr-05	Dd	2	MMASXDD0017	S200004RIC001	41.3730	71.5528
2000-Apr-08	Dd	3	MH00525DD	S200004MAC003	41.7348	70.3033
2000-Apr-09	La	3	MH00538LA	S200004MAC011	41.9217	70.0595
2000-Apr-09	La	3	MH00530LA	S200004MAC005	41.9307	70.0697
2000-Apr-09	La	1	MH00527LA	S200004MAC013	41.9336	70.0282
2000-Apr-10	La	3	MH00533LA	S200004MAC008	41.9333	70.0242
2000-Apr-10	La	3	MH00534LA	S200004MAC009	41.9333	70.0242
2000-Apr-11	La	1	MH00531LA	S200004MAC006	41.9333	70.0242
2000-Apr-11	La	1	MH00532LA	S200004MAC007	41.9333	70.0242
2000-Jun-09	Dd	1	MMASXDD0027	S200006RIC003	41.1705	71.5530
2000-Jun-09	Dd	1	MMASXDD0028	S200006RIC004	41.1705	71.5530
2000-Jun-17	Dd	1	MH00598DD	S200006MAC004	42.6335	70.7713
2000-Jul-04	Dd	1	MH00619DD	S200007MAC011	41.5805	70.6418
2000-Jul-09	Dd	2	NY24492000	S200007NYC001	40.5867	73.5692
2000-Aug-14	La	1	MH00675LA	S200008MAC003	41.8068	70.0027
2000-Aug-14	La	1	MH00676LA	S200008MAC004	41.8068	70.0027
2000-Aug-24	La	2	MH00720LA	S200008MAC005	41.9313	70.0677
2000-Aug-26	La	2	MH00729LA	S200008MAC013	41.9282	70.0668
2000-Aug-26	La	2	MH00728LA	S200008MAC014	41.9282	70.0668
2000-Aug-26	La	2	MH00727LA	S200008MAC015	41.9282	70.0668
2000-Aug-26	La	2	MH00726LA	S200008MAC016	41.9282	70.0668
2000-Aug-26	La	2	MH00725LA	S200008MAC017	41.9282	70.0668
2000-Aug-26	La	2	MH00724LA	S200008MAC018	41.9282	70.0668
2000-Aug-27	La	3	MH00730LA	S200008MAC019	41.9290	70.0523
2000-Aug-27	La	3	MH00734LA	S200008MAC022	41.9300	70.0693
2000-Aug-27	La	3	MH00732LA	S200008MAC021	41.9312	70.0645
2000-Aug-27	La	3	MH00731LA	S200008MAC020	41.9315	70.0663
2000-Aug-28	La	3	MH00735LA	S200008MAC023	41.9313	70.0672
2000-Nov-12	Dd	3	MH00790DD	S200011MAC004	41.7647	70.1020
2000-Dec-17	Dd	1	MMASYDD0033	S200012RIC001	41.3183	71.8233
2000-Dec-19	Dd	3	MH00818DD	S200012MAC004	41.6257	70.8933

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2001-Jan-18	Dd	3	MH01415DD	S200101MAC004	41.7728	70.4922
2001-Jan-22	La	1	MH01424LA	S200101MAC007	41.9275	70.0545
2001-Jan-28	La	3	MH01433LA	S200101MAC010	41.7377	69.9297
2001-Mar-06	La	2	MH01561LA	S200103MAC088	41.2520	70.1567
2001-Mar-07	La	3	MH01551LA	S200103MAC032	41.9063	69.9993
2001-Mar-07	La	3	MH01552LA	S200103MAC033	41.9065	70.0045
2001-Mar-23	La	1	MH01599LA	S200103MAC044	41.9270	70.0718
2001-Apr-07	La	2	MH01661LA	S200104MAC046	42.4545	70.9363
2001-Apr-13	La	1	MH01666LA	S200104MAC036	41.9000	70.0000
2001-Apr-13	La	1	MH01664LA	S200104MAC037	41.9000	70.0000
2001-Apr-13	La	1	MH01667LA	S200104MAC038	41.9000	70.0000
2001-Apr-13	La	1	MH01665LA	S200104MAC039	41.9000	70.0000
2001-Apr-13	La	1	MH01662LA	S200104MAC040	41.9000	70.0000
2001-Apr-13	La	1	MH01663LA	S200104MAC041	41.9000	70.0000
2001-May-23	Dd	1	MH01768DD	S200105MAC012	42.0608	70.1658
2001-May-27	La	3	MH01776LA	S200105MAC005	42.2833	70.8667
2001-Jun-13	Dd	1	MH01804DD	S200106MAC007	41.5293	70.6797
2001-Jul-16	Dd	2	NY26932001	S200107NYC007	40.8388	72.4858
2001-Jul-25	Dd	1	MH01891DD	S200107MAC019	41.2420	70.0487
2001-Aug-09	La	1	MH01907LA	S200108MAC003	41.9295	70.0227
2001-Aug-31	Dd	2	NY27122001	S200108NYC004	40.3000	73.4500
2001-Sep-20	Dd	1	MH01970DD	S200109MAC015	41.2833	70.0917
2001-Oct-24	Dd	3	NY27312001	S200110NYC002	40.7928	72.6483
2001-Nov-11	Dd	3	COA011111DD	S200111MEC005	44.2700	68.6773
2001-Nov-15	La	3	MH011026LA	S200111MEC004	43.3428	70.4707
2001-Dec-01	Dd	3	NY27362001	S200112NYC002	40.9000	73.4000
2001-Dec-20	Dd	3	NY27392001	S200112NYC003	40.6506	73.1225
2001-Dec-20	Dd	1	MH011085DD	S200112MAC009	41.5405	70.9320
2001-Dec-24	Dd	1	MH011080DD	S200112MAC010	41.7687	70.0842
2001-Dec-29	Dd	3	MH011090DD	S200112MAC011	41.8638	70.0037
2002-Jan-02	Dd	3	MH02401DD	S200201MAC018	41.6230	70.2600
2002-Jan-05	Dd	3	MH02403DD	S200201MAC019	41.7455	70.4180

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2002-Jan-09	Dd	3	MH02405DD	S200201MAC020	41.8070	70.0028
2002-Jan-22	Dd	3	MH02419DD	S200201MAC024	41.8723	70.0090
2002-Jan-24	Dd	3	MH02420DD	S200201MAC016	41.6828	70.1600
2002-Jan-27	Dd	2	MH02425DD	S200201MAC014	41.7752	70.0570
2002-Jan-27	Dd	2	MH02424Dd	S200201MAC015	41.7755	70.0560
2002-Jan-27	Dd	1	MH02426DD	S200201MAC007	41.9195	70.0317
2002-Jan-27	Dd	2	MH02423DD	S200201MAC008	41.9299	70.7182
2002-Jan-27	Dd	1	MH02427DD	S200201MAC009	41.9299	70.7182
2002-Jan-27	Dd	1	MH02428DD	S200201MAC010	41.9299	70.7182
2002-Jan-27	Dd	1	MH02430DD	S200201MAC011	41.9299	70.7182
2002-Jan-27	Dd	1	MH02431DD	S200201MAC012	41.9299	70.7182
2002-Jan-27	Dd	1	MH02432DD	S200201MAC013	41.9299	70.7182
2002-Feb-07	Dd	3	MH02451DD	S200202MAC014	41.7920	70.0202
2002-Feb-10	Dd	3	MH02473DD	S200202MAC021	42.5617	70.8008
2002-Feb-20	La	1	NY27652002	S200202NYC017	40.5653	73.8697
2002-Feb-20	Dd	3	MH02471DD	S200202MAC003	41.9217	70.0256
2002-Mar-05	La	1	MH02509LA	S200203MAC047	41.8997	70.0177
2002-Mar-05	La	1	MH02508LA	S200203MAC048	41.9232	70.0668
2002-Mar-05	La	1	MH02498LA	S200203MAC045	41.9257	70.0708
2002-Mar-05	La	1	MH02497LA	S200203MAC046	41.9257	70.0708
2002-Mar-05	La	1	MH02507LA	S200203MAC049	41.9257	70.0708
2002-Mar-05	La	1	MH02503LA	S200203MAC041	41.9257	70.0768
2002-Mar-05	La	1	MH02502LA	S200203MAC042	41.9257	70.0768
2002-Mar-05	La	1	MH02501LA	S200203MAC043	41.9257	70.0768
2002-Mar-05	La	1	MH02499LA	S200203MAC044	41.9275	70.0537
2002-Mar-05	La	1	MH02500LA	S200203MAC050	41.9278	70.0530
2002-Mar-05	La	1	MH02504LA	S200203MAC040	41.9300	70.0380
2002-Mar-06	La	2	MH02517LA	S200203MAC037	41.8647	70.0082
2002-Mar-06	Dd	3	MH02514DD	S200203MAC057	41.9232	70.0697
2002-Mar-06	La	3	MH02512LA	S200203MAC039	41.9300	70.0380
2002-Mar-06	La	2	MH02513LA	S200203MAC038	41.9300	70.0388
2002-Mar-11	La	3	MH02536LA	S200203MAC007	42.4995	70.8347

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2002-Mar-14	La	3	MH02566LA	S200203MAC068	41.7613	70.1142
2002-Mar-16	La	1	MH02548LA	S200203MAC030	41.9295	70.0477
2002-Mar-16	La	1	MH02551LA	S200203MAC034	41.9295	70.0477
2002-Mar-16	La	1	MH02586LA	S200203MAC035	41.9295	70.0477
2002-Mar-16	La	1	MH02549LA	S200203MAC036	41.9295	70.0477
2002-Mar-16	La	1	MH02547LA	S200203MAC031	41.9300	70.0257
2002-Mar-16	La	1	MH02546LA	S200203MAC033	41.9300	70.0257
2002-Mar-17	La	1	MH02545LA	S200203MAC032	41.7590	70.1257
2002-Mar-17	La	3	MH02562La	NE1512	41.9213	70.0583
2002-Mar-17	La	3	MH02563LA	S200203MAC067	41.9213	70.0583
2002-Mar-20	La	3	MH02560LA	S200203MAC010	42.5925	70.6503
2002-Mar-21	La	3	MH02564LA	S200203MAC018	42.6626	70.6235
2002-Mar-24	La	3	MH02579LA	S200203MAC079	41.9082	69.9949
2002-Mar-24	La	3	MH02576LA	S200203MAC073	41.9235	70.0327
2002-Mar-24	La	3	MH02578LA	S200203MAC075	41.9262	70.0235
2002-Mar-24	La	1	MH02571LA	S200203MAC099	42.0563	70.1793
2002-Mar-24	La	1	MH02582LA	S200203MEC013	43.8839	69.5497
2002-Apr-03	La	2	MH02609LA	S200204MAC028	41.7373	70.6415
2002-Apr-10	La	3	MH02623LA	S200204MAC033	42.5813	70.6628
2002-Apr-11	La	2	MH02625LA	S200204MAC009	42.3904	71.0517
2002-Apr-23	La	3	MH02642LA	S200204MAC014	41.9239	70.0634
2002-Apr-27	La	2	CCSN02139	S200204MAC043	41.7728	70.0710
2002-Apr-28	La	3	CCSN02147	S200204MAC035	41.8898	69.9998
2002-May-03	La	3	CCSN02152	S200205MAC003	41.9270	70.0220
2002-May-08	La	1	CCSN02141	S200205MAC004	41.8058	70.0055
2002-May-09	La	1	CCSN02143	S200205MAC006	41.7815	70.0397
2002-May-09	La	1	MAL02131LA	S200205MEC010	43.8045	70.1082
2002-May-22	La	3	CCSN02154LA	S200205MAC029	41.9193	70.0315
2002-May-24	La	1	MH02660LA	S200205MAC027	42.3712	70.9712
2002-May-24	La	1	MH02659LA	S200205MAC028	42.3712	70.9712
2002-Jul-15	Dd	1	CCSN02176	S200207MAC002	41.6600	70.6167
2002-Aug-11	La	1	CCSN02238	S200208MAC017	41.7265	70.2777

Date	SP	CC	Record number		Location	
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2002-Aug-15	Dd	2	CCSN02240	S200208MAC016	41.5957	70.8463
2002-Aug-31	La	1	CCSN02247	S200208MAC018	41.8970	70.0107
2002-Aug-31	La	2	CCSN02246	S200208MAC019	41.8970	70.0107
2002-Aug-31	La	2	CCSN02245	S200208MAC020	41.8970	70.0107
2002-Sep-10	La	1	MH02719LA	S200209MAC014	42.4377	70.9350
2002-Oct-07	Dd	1	NY28592002	S200210NYC003	40.8525	72.5067
2002-Oct-11	La	3	MAL02366LA	S200210MEC023	44.2000	69.0552
2002-Oct-14	La	3	COA021014LA	S200210MEC022	44.2082	69.0627
2002-Oct-18	Dd	3	CCSN02261	S200210MAC030	41.6398	69.9520
2002-Nov-12	Dd	3	NY28652002	S200211NYC003	40.6592	73.0856
2002-Nov-18	Dd	2	MH02774DD	S200211MAC007	41.2940	70.1200
2002-Nov-23	Dd	1	CCSN02279	S200211MAC006	41.8968	70.0102
2002-Nov-28	Dd	3	CCSN02283	S200211MAC002	41.7560	70.1598
2002-Nov-28	Dd	3	CCSN02284	S200211MAC003	41.7570	70.1500
2002-Nov-28	Dd	3	CCSN02285	S200211MAC004	41.7592	70.1295
2002-Dec-02	Dd	2	CCSN02278	S200212MAC006	41.7638	70.1038
2002-Dec-05	Dd	3	CCSN02288	S200212MAC005	41.7732	70.0718
2002-Dec-14	Dd	1	CCSN02291	S200212MAC004	41.7952	70.0158
2002-Dec-21	Dd	3	NY28802002	S200212NYC001	40.9517	72.1700
2002-Dec-22	Dd	2	SXDD0246	S200212RIC001	41.1717	71.5527
2002-Dec-30	La	3	CCSN02295	S200212MAC001	41.8948	70.0010
2003-Jan-02	La	1	CCSN03010	S200301MAC015	41.9235	70.0637
2003-Jan-02	La	1	CCSN03004	S200301MAC016	41.9235	70.0700
2003-Jan-02	La	1	CCSN03003	S200301MAC017	41.9235	70.0705
2003-Jan-02	La	1	CCSN03002	S200301MAC018	41.9235	70.0705
2003-Jan-05	Dd	2	SYDD0301	S200301RIC002	41.4602	71.3600
2003-Jan-10	Dd	2	CCSN03008	S200301MAC014	41.6640	70.6295
2003-Jan-13	Dd	1	NY2888-2003	NE1506	40.6422	73.5172
2003-Jan-31	Dd	3	NY2899-2003	NE1508	40.8617	72.4130
2003-Jan-31	Dd	2	MH03406DD	S200301MAC011	42.0308	70.6252
2003-Feb-04	Dd	1	CCSN03013	S200302MAC004	42.0610	70.1635
2003-Feb-08	La	1	CCSN03015	S200302MAC003	42.0605	70.1673

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2003-Feb-21	Dd	3	CCSN03016	S200302MAC008	42.0523	70.0793
2003-Feb-27	La	3	CCSN03019	S200302MAC006	41.8658	70.0085
2003-Mar-04	Dd	1	MH03417DD	S200303MAC039	42.6537	70.6198
2003-Mar-11	Dd	3	CCSN03028	S200303MAC034	41.7775	70.0508
2003-Mar-12	Dd	3	CCSN03033	S200303MAC031	41.7942	70.0187
2003-Mar-13	La	3	MH03420LA	S200303MAC038	42.6564	70.6856
2003-Mar-27	Dd	3	CCSN03043	S200303MAC020	41.8980	70.0245
2003-Mar-28	Dd	3	CCSN03042	S200303MAC018	41.8030	70.0072
2003-Apr-03	La	1	CCSN03048	S200304MAC066	41.8632	70.0080
2003-Apr-04	La	1	CCSN03047LA	S200304MAC065	41.9332	70.0263
2003-Apr-04	La	2	MH03433LA	S200304MAC028	41.9900	70.7100
2003-Apr-10	La	1	CCSN03055	S200304MAC059	42.0462	70.1908
2003-Apr-11	La	1	CCSN03056	S200304MAC058	41.7630	70.1070
2003-Apr-11	La	1	CCSN03057	S200304MAC057	41.9288	70.0695
2003-Apr-12	La	3	CCSN03059	S200304MAC055	41.9332	70.0255
2003-Apr-12	La	1	CCSN03058	S200304MAC056	41.9368	70.0283
2003-Apr-13	La	1	CCSN03061	S200304MAC053	41.7995	70.0057
2003-Apr-13	La	1	CCSN03060	S200304MAC054	41.7995	70.0057
2003-Apr-13	La	1	CCSN03064	S200304MAC050	41.8913	70.0022
2003-Apr-13	La	1	CCSN03063	S200304MAC051	41.8918	70.0018
2003-Apr-13	La	2	CCSN03065	S200304MAC049	41.8962	70.0192
2003-Apr-13	La	1	CCSN03062	S200304MAC052	41.9247	70.0238
2003-Apr-14	La	1	CCSN03066	S200304MAC048	41.9258	70.0235
2003-Apr-14	La	1	CCSN03069	S200304MAC045	41.9262	70.0618
2003-Apr-14	La	1	CCSN03076	S200304MAC040	41.9267	70.0622
2003-Apr-14	La	1	CCSN03078	S200304MAC038	41.9273	70.0688
2003-Apr-14	La	2	CCSN03077	S200304MAC039	41.9275	70.0685
2003-Apr-14	La	1	CCSN03079	S200304MAC037	41.9288	70.0683
2003-Apr-14	La	1	CCSN03068	S200304MAC046	41.9297	70.0682
2003-Apr-14	La	1	CCSN03067	S200304MAC047	41.9297	70.0683
2003-Apr-14	La	1	CCSN03073	S200304MAC042	41.9297	70.0688
2003-Apr-14	La	1	CCSN03072	S200304MAC043	41.9313	70.0650

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2003-Apr-15	La	1	CCSN03074	S200304MAC041	41.7762	70.0543
2003-Apr-15	La	1	CCSN03071	S200304MAC044	41.8947	69.9960
2003-Apr-15	La	1	MH03438LA	S200304MAC025	42.4588	70.9345
2003-Apr-16	La	3	CCSN03080	S200304MAC036	41.9308	70.0252
2003-Apr-18	La	1	MAL03059LA	S200304MEC001	43.3234	70.5523
2003-Apr-19	La	2	MH03443LA	S200304MAC023	41.9883	70.6993
2003-Apr-23	La	1	CCSN03086LA	S200304MAC033	41.9265	70.0227
2003-Apr-23	La	2	CCSN03087LA	S200304MAC032	41.9265	70.0248
2003-Apr-23	La	3	CCSN03088LA	S200304MAC031	41.9275	70.0252
2003-Apr-25	La	3	CCSN03096LA	S200304MAC030	42.0790	70.1663
2003-May-02	La	3	SYLA0320	S200305CTC001	41.2645	72.7313
2003-May-05	La	1	MH03471LA	S200305MAC079	42.6863	70.7663
2003-May-07	Dd	1	CCSN03105DD	S200305MAC014	41.6703	70.6207
2003-May-16	La	3	MH03477LA	S200305MAC012	42.0593	70.6463
2003-Jun-06	La	1	NY2961-2003	NE1830	40.7838	73.7465
2003-Jul-02	Dd	1	NY2964-2003	NE1827	40.6434	73.1558
2003-Jul-04	La	3	COA060921La	NE17293	44.0040	69.1211
2003-Jul-18	Dd	1	CCSN03138DD	S200307MAC013	41.5285	70.6777
2003-Jul-23	Dd	1	MH03562DD	S200307MAC012	41.3300	70.8400
2003-Jul-24	Dd	1	CCSN03140DD	S200307MAC011	41.6361	69.9800
2003-Aug-07	Dd	3	MH03571DD	S200308MAC005	41.3493	70.5563
2003-Aug-16	Dd	1	CCSN03149DD	S200308MAC004	41.5037	71.0932
2003-Sep-14	Dd	2	CCSN03153DD	S200309MAC007	41.7482	70.6298
2003-Sep-18	Dd	3	NY2999-2003	NE1821	40.8890	72.3356
2003-Oct-01	Dd	1	CCSN03159DD	S200310MAC010	41.8495	70.0063
2003-Oct-21	Dd	3	NY3009-2003	NE1824	40.6020	73.5138
2003-Oct-24	La	2	CCSN03164LA	S200310MAC008	41.8305	70.0040
2003-Oct-27	Dd	2	SXDD0333	S200310RIC001	41.4868	71.4207
2003-Oct-28	Dd	2	CCSN03172DD	S200310MAC009	41.6603	70.6243
2003-Nov-05	Dd	3	MH03628DD	S200311MAC019	41.2765	70.2015
2003-Nov-12	Dd	3	NY30142003	S200311NYC001	40.9889	72.0627
2003-Nov-28	La	3	CCSN03182LA	S200311MAC002	41.8943	70.0022

Date	SP	CC	Record number		Location	
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2003-Nov-28	La	3	CCSN03181LA	S200311MAC003	41.8953	70.0008
2003-Nov-28	La	3	CCSN03183LA	S200311MAC001	41.8988	69.9976
2003-Nov-28	La	3	CCSN03184LA	S200311MAC004	41.8988	69.9976
2003-Nov-29	Dd	2	NY30162003	S200311NYC003	41.2048	71.9750
2003-Dec-03	Dd	2	NY30172003	S200312NYC001	40.7114	72.9283
2003-Dec-05	Dd	3	MH03688DD	S200312MAC016	41.2867	70.0753
2003-Dec-21	Dd	3	CCSN03195DD	S200312MAC023	41.7782	70.4946
2003-Dec-24	Dd	2	NY30232003	S200312NYC005	40.5713	73.9858
2003-Dec-24	Dd	3	NY3021-2003	NE1818	40.5856	73.6199
2003-Dec-25	La	3	CCSN03199LA	S200312MAC025	41.7783	70.4955
2003-Dec-28	La	3	CCSN03201LA	S200312MAC027	41.9311	70.0682
2004-Jan-01	Dd	3	CCSN04-001Dd	NE2937	41.6853	70.7262
2004-Jan-14	Dd	3	CCSN04006DD	S200401MAC014	41.6050	70.6513
2004-Mar-03	La	3	CCSN04-039La	NE5936	42.0080	70.0825
2004-Mar-04	Dd	3	CCSN04-045Dd	NE5934	41.9333	70.0732
2004-Mar-14	Dd	3	MH04-439-Dd	NE3088	42.2940	70.8770
2004-Mar-14	La	3	MH04-437-La	NE5826	42.6737	70.6638
2004-Mar-16	La	3	CCSN04-107La	NE5485	41.9227	70.0540
2004-Mar-22	La	1	MH04-448-La	NE5812	43.7157	70.1176
2004-Mar-24	La	2	COA040324La	NE1593	44.1183	69.0882
2004-Mar-25	La	1	MH-04-458-La	NE5142	42.5738	70.7470
2004-Mar-27	La	3	MH04-467La	NE5791	43.2708	70.5847
2004-Mar-28	La	3	MH04-468La	NE5789	42.2640	70.8247
2004-Mar-29	Dd	3	CCSN04-084Dd	NE5846	41.8351	69.9439
2004-Mar-30	La	2	MH04-474La	NE5783	42.3833	70.9722
2004-Apr-03	La	3	MH-04-484-La	NE5149	42.2982	70.8797
2004-Apr-04	Dd	3	CCSN04-095Dd	NE6287	41.8123	69.9385
2004-Apr-06	La	3	CCSN04-099La	NE6284	41.6310	70.3232
2004-Apr-07	La	1	MH04-495-La	NE3096	42.3713	71.0505
2004-Apr-09	La	3	MARC-04-019-La	NE3398	43.3000	70.6000
2004-Apr-11	La	3	MH04-500-La	NE5711	42.3904	70.9799
2004-Apr-14	La	3	MH-04-499-La	NE5150	42.2605	70.9649

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2004-Apr-16	La	3	NY3115-2004	NE1814	40.8478	72.4528
2004-Apr-17	La	1	CCSN04-116La	NE4415	41.8067	69.9360
2004-Apr-19	La	1	MH04-503-La	NE4403	42.6122	70.6598
2004-Apr-20	Dd	3	MH04-505-Dd	NE5702	41.2937	70.1800
2004-Apr-20	La	3	MH04-506-La	NE4404	42.3010	71.0391
2004-May-24	Dd	1	CCSN04-146Dd	NE5568	41.5717	70.6443
2004-Jun-08	La	3	MH04-533-La	NE4887	42.0281	70.6215
2004-Jun-18	La	3	MH04-539-La	NE4852	42.3750	70.9701
2004-Jul-17	La	1	MARC-04-055La	NE3008	43.4407	70.3642
2004-Jul-20	Dd	1	CCSN04-177Dd	NE4967	41.5047	71.0926
2004-Jul-29	Dd	1	NY3172-2004	NE4646	40.6308	73.2120
2004-Aug-01	La	3	MARC-04-068La	NE3011	43.7500	69.7800
2004-Aug-01	La	2	MARC-04-068La-b	NE3012	43.7500	69.7800
2004-Aug-13	Dd	1	MH-04-624-Dd	NE4136	41.4089	70.7126
2004-Aug-18	Dd	3	NY3186-2004	NE4310	40.6474	73.1378
2004-Aug-19	Dd	1	NY3189-2004	NE3468	40.7291	72.8731
2004-Sep-05	Dd	1	SxDD0457	NE6467	41.6958	71.3858
2004-Sep-06	Dd	1	CCSN04-191Dd	NE3574	41.6265	70.3185
2004-Sep-14	La	1	CCSN04-195La	NE3579	41.9313	70.0652
2004-Sep-15	La	2	MH-04-651-La	NE3490	41.9291	70.5520
2004-Sep-15	La	1	COA040915La	NE4241	44.8581	66.9819
2004-Sep-23	La	1	MARC-04-073La	NE4158	43.9458	69.2958
2004-Oct-13	La	2	MH-04-671-La	NE3817	42.9900	70.1500
2004-Oct-23	La	2	MH-04-685-La	NE3869	42.2687	70.8466
2004-Nov-14	Dd	2	MH-04-699-Dd	NE4036	41.3061	70.0113
2004-Nov-14	Dd	2	MH-04-698-Dd	NE4033	41.3079	70.0095
2004-Nov-19	Dd	3	MH-04-706-Dd	NE4032	41.2983	70.0507
2004-Nov-29	Dd	2	CCSN04-216Dd	NE6455	41.8021	70.0085
2004-Nov-29	Dd	2	CCSN04-221Dd	NE5554	41.8083	70.0005
2004-Nov-30	Dd	2	CCSN04-217Dd	NE5546	41.8975	70.0000
2004-Nov-30	Dd	1	CCSN04-218Dd	NE5548	41.8975	70.0000
2004-Nov-30	Dd	1	CCSN04-219Dd	NE5550	41.9312	70.0660

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2004-Dec-06	La	3	MH-04-718-La	NE4134	42.2974	70.8787
2004-Dec-30	La	2	CCSN04-230La	NER05-052	41.8230	70.0044
2004-Dec-30	La	2	CCSN04-231La	NE4778	41.8230	70.0042
2005-Jan-04	Dd	3	CCSN05-001Dd	NER05-028	41.9112	69.9910
2005-Jan-07	La	1	MH-05-402-La	NER05-922	41.3500	70.5000
2005-Jan-09	Dd	3	MH-05-403-Dd	NER05-066	41.2470	69.9750
2005-Jan-15	Dd	2	CCSN05-007Dd	NER05-024	41.7626	70.1087
2005-Jan-15	Dd	2	CCSN05-011Dd	NER05-030	41.7712	70.0786
2005-Jan-15	Dd	2	CCSN05-008Dd	NER05-025	41.7763	70.0542
2005-Jan-15	Dd	2	CCSN05-009Dd	NER05-026	41.7765	70.0535
2005-Jan-15	Dd	2	CCSN05-010Dd	NER05-029	41.7782	70.0475
2005-Jan-15	Dd	2	CCSN05-012Dd	NER05-031	41.7795	70.0442
2005-Jan-15	Dd	2	CCSN05-005Dd	NER05-027	41.7832	70.0356
2005-Jan-19	Dd	2	CCSN05-015Dd	NER05-051	41.9322	70.0266
2005-Jan-19	Dd	1	CCSN05-014Dd	NER05-058	41.9333	70.0285
2005-Feb-15	La	1	CCSN05-037La	NER05-194	41.5578	70.0472
2005-Feb-15	La	2	CCSN05-038La	NER05-195	41.6004	70.4418
2005-Feb-15	Dd	3	CCSN05-044Dd	NER05-204	41.9293	70.0312
2005-Feb-15	La	1	CCSN05-036La	NER05-193	41.9296	70.0418
2005-Feb-15	La	1	CCSN05-034La	NER05-191	41.9296	70.0472
2005-Feb-15	La	1	CCSN05-035La	NER05-192	41.9296	70.0472
2005-Feb-15	La	2	CCSN05-039La	NER05-196	41.9296	70.0472
2005-Feb-15	La	2	CCSN05-040La	NER05-197	41.9296	70.0472
2005-Feb-15	La	2	CCSN05-041La	NER05-833	41.9296	70.0472
2005-Feb-18	La	1	CCSN05-051La	NER05-1260	41.9498	70.0753
2005-Feb-24	La	1	CCSN05-059La	NER05-218	42.0546	70.1313
2005-Mar-06	La	2	SYLA0516	NER05-169	41.5325	71.4187
2005-Mar-06	La	1	MH-05-443-La	NER05-591	41.9569	70.6612
2005-Mar-17	La	3	CCSN05-085La	NER05-491	42.0375	70.2135
2005-Mar-17	La	1	MH-05-454-La	NER05-576	42.5374	70.8863
2005-Mar-19	La	1	CCSN05-084La	NER05-304	41.9202	70.0294
2005-Mar-20	La	3	MH-05-463-La	NER05-595	42.2776	70.8802

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2005-Mar-23	La	3	MH-05-462-La	NER05-937	42.8680	70.8170
2005-Mar-25	Dd	1	CCSN05-093Dd	NER05-490	41.7138	70.2632
2005-Mar-26	La	3	MH-05-467-La	NER05-596	41.9419	70.6214
2005-Apr-04	La	1	CCSN05-106La	NER05-480	42.0364	70.1950
2005-Apr-04	La	3	CCSN05-108La	NER05-511	42.0556	70.2323
2005-Apr-05	La	3	COA050406La	NER05-1045	44.2910	68.5450
2005-Apr-10	La	3	CCSN05-116La	NER05-515	42.0225	70.1777
2005-Apr-17	La	1	CCSN05-120La	NER05-396	41.7928	70.0338
2005-Apr-17	La	1	CCSN05-121La	NER05-397	41.7928	70.0338
2005-Apr-17	La	1	CCSN05-122La	NER05-398	41.7928	70.0338
2005-Apr-17	La	1	CCSN05-123La	NER05-399	41.7928	70.0338
2005-Apr-17	La	1	CCSN05-124La	NER05-400	41.7928	70.0338
2005-Apr-17	La	1	CCSN05-125La	NER05-401	41.7928	70.0338
2005-May-02	Dd	1	CCSN05-142Dd	NER05-426	41.6586	70.6173
2005-May-05	La	3	MH-05-450-La	NER05-592	42.0092	70.7048
2005-May-07	La	1	CCSN05-147La	NER05-561	41.6908	70.6272
2005-May-07	La	2	CCSN05-153La	NER05-554	41.7192	70.7262
2005-May-07	La	1	CCSN05-146La	NER05-560	41.7518	70.6230
2005-May-08	La	1	CCSN05-152La	NER05-548	41.5018	70.7343
2005-May-08	La	1	CCSN05-149La	NER05-545	41.5064	70.7183
2005-May-08	La	2	CCSN05-150La	NER05-546	41.5064	70.7183
2005-May-08	La	2	CCSN05-151La	NER05-547	41.5064	70.7183
2005-May-08	La	1	CCSN05-148La	NER05-544	41.7518	70.6230
2005-May-08	La	1	CCSN05-155La	NER05-448	41.7627	70.6188
2005-May-08	La	1	CCSN05-156La	NER05-486	41.7627	70.6188
2005-Jul-07	La	3	SXLA0539	NER05-677	41.5267	71.3608
2005-Jul-11	La	2	CCSN05-197La	NER05-780	41.5135	70.7080
2005-Jul-15	Dd	3	CCSN05-204Dd	NER05-806	41.4123	70.9363
2005-Aug-05	La	1	MARC-05-065La	NER05-1691	43.2767	70.5811
2005-Aug-16	La	2	CCSN05-214La	NER05-868	41.8078	70.5355
2005-Aug-21	Dd	1	NY3402-2005	NER05-1044	40.6276	73.2649
2005-Sep-02	Dd	1	MH-05-611-Dd	NER05-1616	40.3494	70.5311

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2005-Sep-04	La	1	CCSN05-218La	NER05-1251	41.9063	70.0140
2005-Sep-11	La	3	CCSN05-223La	NER05-1294	41.8966	70.0100
2005-Sep-26	La	1	CCSN05-231La	NER05-1296	41.7293	70.2828
2005-Oct-04	La	1	CCSN05-232La	NER05-1314	41.8212	69.9419
2005-Oct-17	La	3	CCSN05-240La	NER05-1350	41.6717	69.9328
2005-Oct-19	Dd	1	CCSN05-239Dd	NER05-1346	41.7568	70.1523
2005-Oct-19	Dd	1	CCSN05-234Dd	NER05-1341	41.9268	70.0234
2005-Oct-19	Dd	1	CCSN05-235Dd	NER05-1342	41.9268	70.0234
2005-Oct-19	Dd	1	CCSN05-236Dd	NER05-1343	41.9268	70.0234
2005-Oct-19	Dd	2	CCSN05-237Dd	NER05-1344	41.9268	70.0234
2005-Oct-19	Dd	2	CCSN05-238Dd	NER05-1345	41.9268	70.0234
2005-Nov-11	Dd	2	NY3427-2005	NER05-1480	40.8673	72.3947
2005-Nov-16	Dd	3	CCSN05-255Dd	NER05-1486	41.8945	70.0022
2005-Nov-16	La	1	CCSN05-254La	NER05-1487	42.0533	70.1255
2005-Nov-21	Dd	3	CCSN05-257Dd	NER05-1534	41.9046	70.0055
2005-Nov-27	Dd	3	CCSN05-259Dd	NER05-1593	41.9235	70.0193
2005-Dec-04	La	2	MARC-05-109-La	NER05-1859	43.8976	69.5607
2005-Dec-10	Dd	1	CCSN05-264Dd	NER05-1553	41.4263	70.2830
2005-Dec-10	Dd	1	CCSN05-276Dd	NER05-1661	41.7097	70.2835
2005-Dec-10	Dd	1	CCSN05-266Dd	NER05-1556	41.7098	70.3225
2005-Dec-10	Dd	1	CCSN05-265Dd	NER05-1555	41.7100	70.3232
2005-Dec-10	Dd	1	CCSN05-275Dd	NER05-1659	41.7102	70.2880
2005-Dec-10	Dd	2	CCSN05-296Dd	NER05-1680	41.7102	70.2890
2005-Dec-10	Dd	2	CCSN05-297Dd	NER05-1681	41.7102	70.2890
2005-Dec-10	Dd	1	CCSN05-268Dd	NER05-1571	41.7110	70.2752
2005-Dec-10	Dd	2	CCSN05-277Dd	NER05-1660	41.7110	70.2755
2005-Dec-10	Dd	1	CCSN05-267Dd	NER05-1570	41.7113	70.2747
2005-Dec-10	Dd	2	CCSN05-278Dd	NER05-1662	41.7113	70.2747
2005-Dec-10	Dd	1	CCSN05-269Dd	NER05-1572	41.7342	70.2345
2005-Dec-10	Dd	2	CCSN05-282Dd	NER05-1666	41.7374	70.2268
2005-Dec-10	Dd	2	CCSN05-289Dd	NER05-1673	41.7419	70.2186
2005-Dec-10	Dd	2	CCSN05-288Dd	NER05-1672	41.7424	70.2177

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2005-Dec-10	Dd	2	CCSN05-286Dd	NER05-1670	41.7438	70.2137
2005-Dec-10	Dd	2	CCSN05-291Dd	NER05-1675	41.7476	70.2019
2005-Dec-10	Dd	2	CCSN05-290Dd	NER05-1674	41.7476	70.2019
2005-Dec-10	Dd	2	CCSN05-281Dd	NER05-1665	41.7564	70.1530
2005-Dec-10	Dd	2	CCSN05-263Dd	NER05-1552	41.7565	70.1525
2005-Dec-10	Dd	1	CCSN05-292Dd	NER05-1676	41.9303	70.0687
2005-Dec-10	La	2	CCSN05-299La	NER05-1683	42.0565	70.1361
2005-Dec-12	Dd	2	CCSN05-298Dd	NER05-1682	41.7075	70.2523
2005-Dec-13	La	2	CCSN05-300La	NER05-1684	42.0529	70.1262
2005-Dec-15	Dd	2	CCSN05-304Dd	NER05-1688	41.7147	70.2373
2005-Dec-16	Dd	3	CCSN05-306Dd	NER05-1690	41.7373	70.3601
2005-Dec-16	Dd	2	CCSN05-305Dd	NER05-1689	41.7603	70.1342
2005-Dec-21	Dd	2	CCSN05-308Dd	NER05-1693	41.9260	69.8903
2005-Dec-27	Dd	3	CCSN05-309Dd	NER05-1694	41.7603	70.1342
2005-Dec-30	Dd	1	CCSN05-312Dd	NER05-1557	41.9300	70.0392
2005-Dec-30	Dd	1	CCSN05-313Dd	NER05-1558	41.9300	70.0392
2005-Dec-30	Dd	1	CCSN05-314Dd	NER05-1559	41.9300	70.0392
2005-Dec-30	Dd	1	CCSN05-315Dd	NER05-1560	41.9300	70.0392
2005-Dec-31	Dd	1	CCSN05-316Dd	NER05-1697	41.8945	70.0022
2006-Jan-06	La	3	MH-06-402-La	NER06-024	41.9124	70.5473
2006-Jan-14	Dd	1	CCSN06-010Dd	NER06-098	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-011Dd	NER06-099	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-013Dd	NER06-100	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-012Dd	NER06-101	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-014Dd	NER06-102	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-015Dd	NER06-103	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-016Dd	NER06-105	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-017Dd	NER06-106	41.7961	70.0160
2006-Jan-14	Dd	1	CCSN06-008Dd	NER06-096	41.7990	70.0120
2006-Jan-14	Dd	1	CCSN06-009Dd	NER06-097	41.7990	70.0120
2006-Jan-16	Dd	3	CCSN06-018Dd	NER06-237	41.7102	70.2913
2006-Jan-17	La	1	CCSN06-019La	NER06-107	41.7822	70.0382

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2006-Jan-17	La	1	CCSN06-020La	NER06-108	41.7822	70.0382
2006-Jan-17	La	1	CCSN06-021La	NER06-109	41.7822	70.0382
2006-Jan-17	La	1	CCSN06-022La	NER06-110	41.9190	70.0281
2006-Jan-19	La	1	CCSN06-028La	NER06-151	41.7110	70.2755
2006-Jan-19	La	2	CCSN06-039La	NER06-184	41.7341	70.2335
2006-Jan-19	La	1	CCSN06-025La	NER06-148	41.7786	70.0474
2006-Jan-19	La	1	CCSN06-026La	NER06-149	41.7786	70.0474
2006-Jan-19	La	1	CCSN06-027La	NER06-150	41.7786	70.0474
2006-Jan-19	Dd	1	CCSN06-024Dd	NER06-147	41.7990	70.0120
2006-Jan-19	La	2	CCSN06-038La	NER06-183	41.8093	70.0049
2006-Jan-19	Dd	2	CCSN06-029Dd	NER06-152	41.8738	70.0091
2006-Jan-19	Dd	1	CCSN06-030Dd	NER06-153	41.8738	70.0091
2006-Jan-19	Dd	3	CCSN06-056Dd	NER06-248	41.9064	70.0000
2006-Jan-19	La	1	CCSN06-031La	NER06-155	41.9129	69.9910
2006-Jan-19	Dd	1	CCSN06-032Dd	NER06-156	41.9190	70.0281
2006-Jan-19	Dd	2	CCSN06-033Dd	NER06-157	41.9190	70.0281
2006-Jan-19	Dd	2	CCSN06-034Dd	NER06-158	41.9190	70.0281
2006-Jan-19	La	1	CCSN06-035La	NER06-159	41.9190	70.0281
2006-Jan-19	La	1	CCSN06-036La	NER06-160	41.9190	70.0281
2006-Jan-19	La	1	CCSN06-037La	NER06-161	41.9190	70.0281
2006-Jan-20	Dd	3	CCSN06-057Dd	NER06-249	41.7098	70.3158
2006-Jan-20	Dd	3	CCSN06-054Dd	NER06-242	41.7274	70.3030
2006-Jan-21	Dd	3	MH-06-411-Dd	NER06-179	41.3500	70.5000
2006-Jan-21	Dd	3	CCSN06-040Dd	NER06-185	41.9142	70.0660
2006-Jan-21	Dd	3	CCSN06-043Dd	NER06-189	41.9142	70.0660
2006-Jan-21	Dd	3	CCSN06-044Dd	NER06-197	41.9142	70.0660
2006-Jan-21	Dd	3	CCSN06-046Dd	NER06-199	41.9142	70.0660
2006-Jan-21	Dd	3	CCSN06-047Dd	NER06-200	41.9142	70.0660
2006-Jan-21	Dd	1	CCSN06-042Dd	NER06-187	41.9282	70.0540
2006-Jan-23	Dd	3	CCSN06-049Dd	NER06-202	41.9142	70.0660
2006-Jan-23	Dd	3	CCSN06-050Dd	NER06-238	41.9142	70.0660
2006-Jan-23	La	3	CCSN06-051La	NER06-239	41.9142	70.0660

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2006-Jan-23	Dd	3	CCSN06-052Dd	NER06-240	41.9248	70.0730
2006-Jan-24	Dd	3	CCSN06-055Dd	NER06-243	41.8985	70.0030
2006-Jan-26	Dd	1	CCSN06-058Dd	NER06-250	41.9269	70.0604
2006-Jan-26	Dd	1	CCSN06-059Dd	NER06-251	41.9269	70.0604
2006-Jan-26	Dd	1	CCSN06-060Dd	NER06-252	41.9269	70.0604
2006-Jan-26	Dd	1	CCSN06-061Dd	NER06-253	41.9269	70.0604
2006-Jan-27	Dd	1	CCSN06-078Dd	NER06-266	41.8809	69.9975
2006-Jan-27	Dd	1	CCSN06-079Dd	NER06-267	41.8809	69.9975
2006-Jan-27	Dd	1	CCSN06-073Dd	NER06-261	41.9111	70.0102
2006-Jan-27	Dd	1	CCSN06-074Dd	NER06-262	41.9111	70.0102
2006-Jan-27	Dd	1	CCSN06-075Dd	NER06-263	41.9111	70.0102
2006-Jan-27	Dd	1	CCSN06-076Dd	NER06-264	41.9111	70.0102
2006-Jan-27	Dd	1	CCSN06-077Dd	NER06-265	41.9111	70.0102
2006-Jan-27	Dd	1	CCSN06-064Dd	NER06-256	41.9269	70.0604
2006-Jan-27	Dd	1	CCSN06-065Dd	NER06-257	41.9269	70.0604
2006-Jan-27	Dd	1	CCSN06-066Dd	NER06-258	41.9269	70.0604
2006-Jan-27	Dd	1	CCSN06-067Dd	NER06-259	41.9269	70.0604
2006-Jan-27	Dd	1	CCSN06-068Dd	NER06-385	41.9269	70.0604
2006-Jan-27	Dd	2	CCSN06-069Dd	NER06-386	41.9269	70.0604
2006-Jan-27	Dd	2	CCSN06-070Dd	NER06-398	41.9269	70.0604
2006-Jan-27	La	1	CCSN06-072La	NER06-260	41.9286	70.0659
2006-Jan-27	La	2	CCSN06-071La	NER06-409	41.9286	70.0659
2006-Jan-27	Dd	3	CCSN06-063Dd	NER06-408	41.9287	70.0708
2006-Jan-27	La	1	CCSN06-062La	NER06-254	41.9287	70.0708
2006-Jan-27	Dd	3	MH-06-413-Dd	NER06-162	42.4250	70.9380
2006-Jan-28	La	1	CCSN06-085La	NER06-272	42.0571	70.1471
2006-Jan-28	La	1	CCSN06-086La	NER06-273	42.0571	70.1471
2006-Jan-28	La	1	CCSN06-087La	NER06-274	42.0571	70.1471
2006-Jan-28	La	1	CCSN06-088La	NER06-275	42.0571	70.1471
2006-Jan-28	La	1	CCSN06-089La	NER06-276	42.0571	70.1471
2006-Jan-29	Dd	3	CCSN06-090Dd	NER06-302	41.8958	70.0060
2006-Jan-29	Dd	3	CCSN06-091Dd	NER06-278	41.8962	70.0061

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2006-Jan-29	La	2	CCSN06-083La	NER06-271	41.9368	70.0277
2006-Feb-01	Dd	3	CCSN06-098Dd	NER06-285	41.8945	70.0201
2006-Feb-01	Dd	3	CCSN06-094Dd	NER06-281	41.8956	70.0074
2006-Feb-01	Dd	1	CCSN06-096Dd	NER06-283	41.9051	70.0043
2006-Feb-01	Dd	3	CCSN06-099Dd	NER06-286	41.9119	69.9995
2006-Feb-01	Dd	3	CCSN06-100Dd	NER06-287	41.9119	69.9995
2006-Feb-01	Dd	3	CCSN06-101Dd	NER06-288	41.9119	69.9995
2006-Feb-01	Dd	3	CCSN06-102Dd	NER06-289	41.9119	69.9995
2006-Feb-01	Dd	3	CCSN06-103Dd	NER06-290	41.9119	69.9995
2006-Feb-01	La	3	CCSN06-097La	NER06-284	41.9206	70.0228
2006-Feb-03	La	2	MARC06-007La	NER06-376	43.3200	70.5640
2006-Feb-04	Dd	3	CCSN06-111Dd	NER06-144	41.8851	70.0703
2006-Feb-04	La	3	CCSN06-110La	NER06-145	41.8851	70.0703
2006-Feb-04	Dd	3	CCSN06-107Dd	NER06-294	41.8958	70.0005
2006-Feb-04	Dd	3	CCSN06-108Dd	NER06-295	41.9176	70.0727
2006-Feb-04	La	3	CCSN06-109La	NER06-296	41.9232	70.0618
2006-Feb-04	La	3	CCSN06-114La	NER06-141	41.9236	70.0715
2006-Feb-04	La	3	CCSN06-113La	NER06-142	41.9236	70.0715
2006-Feb-06	Dd	3	CCSN06-106Dd	NER06-293	41.9119	69.9995
2006-Feb-08	Dd	3	CCSN06-116Dd	NER06-138	41.7765	70.0535
2006-Feb-09	La	1	CCSN06-119La	NER06-133	41.8174	70.0032
2006-Feb-10	La	1	SXLa0606	NER06-058	41.6186	71.2405
2006-Feb-12	La	1	MARC06-012La	NER06-377	43.3410	70.5230
2006-Feb-14	La	3	CCSN06-125La	NER06-130	41.6245	70.9005
2006-Feb-15	Dd	3	CCSN06-126Dd	NER06-299	41.8748	70.0092
2006-Feb-16	Dd	3	CCSN06-130Dd	NER06-300	41.7765	70.0535
2006-Feb-16	Dd	3	CCSN06-129Dd	NER06-128	41.9131	69.9911
2006-Feb-17	La	3	NY3472-2006	NER06-161	40.8328	72.5083
2006-Feb-23	Dd	1	CCSN06-137Dd	NER06-318	41.9328	70.0284
2006-Feb-23	Dd	1	CCSN06-138Dd	NER06-319	41.9328	70.0284
2006-Feb-26	La	3	SULa0608	NER06-118	41.6875	71.4028
2006-Feb-26	Dd	3	CCSN06-139Pp	NER06-320	41.8163	70.0037

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2006-Mar-01	Dd	3	NY3479-2006	NER06-351	41.0218	72.1356
2006-Mar-09	Dd	1	CCSN06-144Dd	NER06-331	41.9126	69.9898
2006-Mar-09	Dd	1	CCSN06-145Dd	NER06-333	41.9126	69.9898
2006-Mar-09	Dd	1	CCSN06-146Dd	NER06-334	41.9126	69.9898
2006-Mar-10	Dd	3	CCSN06-147Dd	NER06-423	41.9300	70.0688
2006-Mar-12	Dd	2	CCSN06-152Dd	NER06-433	41.6699	70.0181
2006-Mar-14	Dd	1	CCSN06-156Dd	NER06-401	41.7115	70.2602
2006-Mar-15	Dd	3	CCSN06-166Dd	NER06-553	41.8076	69.9954
2006-Mar-20	La	3	CCSN06-159La	NER06-405	41.7357	70.3325
2006-Mar-28	La	2	SYLa0618	NER06-344	41.7498	71.3195
2006-Apr-02	La	2	MARC06-020La	NER06-504	43.5100	70.3760
2006-Apr-19	La	1	SYLa0622	NER06-416	41.3776	71.8318
2006-Apr-22	La	3	MH-06-444-La	NER06-602	42.3205	71.0409
2006-Apr-26	Dd	3	CCSN06-151Dd	NER06-552	41.7612	70.1151
2006-Apr-27	La	3	NY3522-2006	NER06-509	40.9661	72.1310
2006-May-20	Dd	2	CCSN06-181Dd	NER06-551	41.5516	70.6545
2006-Jun-08	La	1	CCSN06-200La	NER06-686	41.7406	70.3902
2006-Jul-02	La	2	NY3539-2006	NER06-161	41.1313	72.2660
2006-Jul-17	La	1	CCSN06-214La	NER06-903	41.8205	70.0199
2006-Jul-17	La	1	CCSN06-215La	NER06-904	41.8205	70.0199
2006-Jul-18	La	1	CCSN06-216La	NER06-905	41.8210	70.0137
2006-Jul-18	La	1	CCSN06-217La	NER06-906	41.8210	70.0137
2006-Jul-18	La	1	CCSN06-218La	NER06-907	41.8210	70.0137
2006-Jul-18	La	1	CCSN06-219La	NER06-908	41.8210	70.0137
2006-Jul-18	La	1	CCSN06-220La	NER06-909	41.8210	70.0137
2006-Jul-19	La	2	CCSN06-221La	NER06-910	41.8525	70.0066
2006-Aug-15	Dd	1	NY3554-2006	NER06-932	41.0302	72.2827
2006-Aug-18	La	3	CCSN06-239La	NER06-954	41.9246	70.0335
2006-Oct-29	Dd	1	NY3574-2006	NER06-209	40.8949	72.3204
2006-Nov-03	Dd	3	SYDd0647	NER06-162	41.3614	71.4880
2006-Dec-01	Dd	1	SYDd0648	NER06-200	41.1670	71.6140
2006-Dec-11	Dd	1	CCSN06-263Dd	NER06-205	41.8073	70.0029

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2006-Dec-11	Dd	1	CCSN06-264Dd	NER06-205	41.8073	70.0029
2006-Dec-20	La	3	CCSN06-273La	NER06-226	41.7605	70.1343
2006-Dec-20	Dd	3	CCSN06-265Dd	NER06-207	41.7684	70.0842
2006-Dec-29	Dd	3	CCSN06-266Dd	NER06-207	41.7531	70.1520
2006-Dec-30	Dd	1	CCSN06-267Dd	NER06-207	41.7766	70.0548
2006-Dec-30	Dd	1	CCSN06-268Dd	NER06-207	41.7766	70.0548
2006-Dec-30	Dd	1	CCSN06-269Dd	NER06-207	41.7766	70.0548
2006-Dec-31	Dd	1	CCSN06-270Dd	NER06-207	41.7124	70.2720
2006-Dec-31	Dd	2	CCSN06-271Dd	NER06-207	41.7124	70.2720
2007-Jan-01	Dd	1	CCSN07-001Dd	NE18827	41.7801	70.0472
2007-Jan-01	Dd	1	CCSN07-002Dd	NE18829	41.7801	70.0472
2007-Jan-01	Dd	1	CCSN07-003Dd	NE18833	41.7801	70.0472
2007-Jan-01	Dd	2	CCSN07-004Dd	NE18835	41.7801	70.0472
2007-Jan-01	Dd	1	CCSN06-269Dd	NER07-0683	41.7801	70.0472
2007-Jan-01	Dd	1	CCSN07-005Dd	NE18837	41.7874	70.0386
2007-Jan-01	Dd	1	CCSN07-006Dd	NE18839	41.7874	70.0386
2007-Jan-01	Dd	1	CCSN07-007Dd	NE18841	41.7874	70.0386
2007-Jan-01	Dd	2	CCSN07-008Dd	NE18843	41.7874	70.0386
2007-Jan-02	Dd	2	CCSN07-009Dd	NE18845	41.7876	70.0211
2007-Jan-02	Dd	1	CCSN07-003Dd	NER07-0682	41.8378	70.0046
2007-Jan-03	Dd	2	CCSN07-010Dd	NE18984	41.7806	70.0423
2007-Jan-03	Dd	2	CCSN07-011Dd	NE18847	41.7878	69.9352
2007-Jan-03	Dd	2	CCSN07-012Dd	NE18849	41.8010	70.0050
2007-Jan-04	Dd	2	CCSN07-013Dd	NE18882	41.7776	70.0504
2007-Jan-04	Dd	1	CCSN07-015Dd	NE18885	41.8920	70.0117
2007-Jan-04	Dd	2	CCSN07-014Dd	NE18864	41.8920	70.0117
2007-Jan-04	Dd	2	CCSN07-016Dd	NE18986	41.8920	70.0117
2007-Jan-04	Dd	2	CCSN07-017Dd	NE18988	41.8920	70.0117
2007-Jan-04	Dd	1	CCSN07-018Dd	NE18990	41.8920	70.0117
2007-Jan-06	Dd	3	CCSN07-020Dd	NE18994	41.9247	70.0306
2007-Jan-07	La	1	CCSN07-023La	NE19069	41.8871	70.0022
2007-Jan-07	Dd	2	CCSN07-021Dd	NE18996	42.0049	70.0819

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2007-Jan-09	Dd	1	NY3586-2007	NE18809	40.9403	72.4073
2007-Jan-09	La	1	CCSN07-031La	NE19180	41.9280	70.0701
2007-Jan-09	La	1	CCSN07-048La	NE19416	41.9280	70.0701
2007-Jan-09	La	1	CCSN07-032La	NE19182	41.9290	70.0693
2007-Jan-09	La	2	CCSN07-029La	NE19170	41.9292	70.0282
2007-Jan-09	La	1	CCSN07-028La	NE19150	41.9311	70.0660
2007-Jan-09	La	1	CCSN07-027La	NE19454	41.9311	70.0660
2007-Jan-09	La	1	CCSN07-024La	NE19072	41.9311	70.0660
2007-Jan-09	La	1	CCSN07-025La	NE19075	41.9311	70.0660
2007-Jan-09	La	1	CCSN07-026La	NE19078	41.9311	70.0660
2007-Jan-10	Dd	3	MH-07-420-Dd	NE19209	41.2500	70.1300
2007-Jan-10	Dd	3	CCSN07-033Dd	NE19184	41.8905	70.0007
2007-Jan-10	Dd	3	CCSN07-030Dd	NE19172	41.9187	70.0269
2007-Jan-11	Dd	1	CCSN07-036Dd	NE19396	41.7431	70.6767
2007-Jan-11	Dd	3	CCSN07-037Dd	NE19398	41.7969	70.0142
2007-Jan-13	Dd	2	NY3588-2007	NE18804	41.0082	72.2511
2007-Jan-13	Dd	1	NY3590-2007	NE18812	41.0088	72.2489
2007-Jan-13	Dd	2	NY3587-2007	NE18807	41.0116	72.2486
2007-Jan-13	Dd	2	NY3589-2007	NE18815	41.0431	72.2467
2007-Jan-13	Dd	3	CCSN07-044Dd	NE19410	41.9079	69.9967
2007-Jan-13	Dd	3	CCSN07-042Dd	NE19406	41.9206	70.0231
2007-Jan-13	La	3	CCSN07-043La	NE19408	41.9232	70.0246
2007-Jan-14	Dd	3	CCSN07-058Dd	NE19458	41.9072	69.9967
2007-Jan-14	La	3	CCSN07-057La	NE19456	41.9072	69.9967
2007-Jan-14	Dd	3	CCSN07-046Dd	NE19412	41.9328	70.0241
2007-Jan-14	Dd	2	MH-07-413-Dd	NE18708	42.2806	71.0168
2007-Jan-14	Dd	2	MH-07-414-Dd	NE18709	42.2806	71.0168
2007-Jan-14	Dd	2	MH-07-415-Dd	NE18710	42.2806	71.0168
2007-Jan-14	Dd	2	MH-07-416-Dd	NE18711	42.2806	71.0168
2007-Jan-14	Dd	2	MH-07-417-Dd	NE18712	42.2806	71.0168
2007-Jan-14	Dd	2	MH-07-412-Dd	NE19207	42.2806	71.0168
2007-Jan-15	Dd	3	CCSN07-045Dd	NE21356	41.7988	70.0115

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2007-Jan-16	Dd	2	NY3591-2007	NE18740	41.0114	72.2484
2007-Jan-17	Dd	3	CCSN07-050Dd	NE19420	41.7998	70.0096
2007-Jan-18	Dd	2	NY3592-2007	NE18735	41.0098	72.2512
2007-Jan-18	Dd	2	NY3593-2007	NE18974	41.1475	72.2490
2007-Jan-19	Dd	2	NY3595-2007	NE19236	40.9933	72.2550
2007-Jan-19	Dd	2	NY3594-2007	NE19241	40.9933	72.2550
2007-Jan-19	Dd	2	NY3596-2007	NE18972	41.0117	72.2519
2007-Jan-20	Dd	2	NY3598-2007	NE18961	41.0118	72.2518
2007-Jan-21	Dd	2	NY3600-2007	NE18976	41.0115	72.2478
2007-Jan-21	Dd	2	NY3599-2007	NE18817	41.0117	72.2520
2007-Jan-27	Dd	2	NY3601-2007	NE18948	41.0797	71.9242
2007-Jan-30	Dd	3	CCSN07-062Dd	NE19468	42.0093	70.0835
2007-Feb-02	Dd	3	CCSN07-070Dd	NE19898	41.7586	70.1457
2007-Feb-03	Dd	3	CCSN07-065Dd	NE19474	41.7364	70.3464
2007-Feb-03	Dd	3	CCSN07-064Dd	NE19472	41.7432	70.4065
2007-Feb-05	Dd	3	CCSN07-067Dd	NE19537	41.7246	70.2732
2007-Feb-05	Dd	2	CCSN07-068Dd	NE19539	42.0544	70.1818
2007-Feb-11	Dd	3	CCSN07-073Dd	NE19668	41.7357	70.3359
2007-Feb-11	Dd	1	CCSN07-074Dd	NE19670	41.7374	70.3617
2007-Feb-14	Dd	3	CCSN07-077Dd	NE21236	42.0515	70.1843
2007-Feb-19	La	3	CCSN07-079La	NE19677	41.7711	70.0785
2007-Mar-03	Dd	3	CCSN07-090Dd	NE19900	41.7370	70.2275
2007-Mar-10	Dd	3	CCSN07-096Dd	NE19946	41.8896	69.9945
2007-Mar-19	Dd	3	CCSN07-106Dd	NE20099	41.7622	70.1112
2007-Mar-25	Dd	1	CCSN07-109Dd	NE20104	41.9325	70.0283
2007-Mar-26	Dd	1	CCSN07-115Dd	NE20235	41.7065	70.2613
2007-Apr-08	La	3	MARC07-017La	NE20442	43.3230	70.5511
2007-Apr-24	Dd	3	NY3682-2007	NER07-0301	41.0113	72.2474
2007-May-01	La	3	CCSN07-144La	NE20652	41.7067	69.9499
2007-May-11	Dd	3	NY3698-2007	NER07-0319	41.0115	72.2481
2007-May-17	La	3	NY3701-2007	NER07-0313	41.0302	72.3906
2007-Jun-06	La	3	NY3706-2007	NER07-0076	40.7036	72.9503

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2007-Jul-05	Dd	1	NY3714-2007	NER07-0111	40.8404	72.4784
2007-Jul-05	Dd	1	NY3716-2007	NER07-0113	41.0315	71.9441
2007-Jul-06	Dd	1	NY3717-2007	NER07-0114	40.8753	72.3733
2007-Jul-20	Dd	1	CCSN07-189Dd	NE22227	41.4205	70.9259
2007-Jul-23	Dd	2	COA070723Dd	NER07-0034	44.2548	68.3901
2007-Jul-24	Dd	1	CCSN07-190Dd	NE22239	41.6513	70.1543
2007-Aug-25	Dd	3	NY3752-2007	NER07-0337	40.5856	73.5476
2007-Sep-15	La	3	NY3756-2007	NER07-0321	41.0097	72.2483
2007-Sep-17	La	3	NY3758-2007	NER07-0320	41.0097	72.2483
2007-Sep-20	La	3	NY3763-2007	NER07-0333	41.0385	72.2407
2007-Oct-13	Dd	1	CCSN07-215Dd	NER07-0146	41.8962	70.0018
2007-Oct-13	Dd	1	CCSN07-216Dd	NER07-0147	41.8962	70.0018
2007-Oct-24	Dd	3	CCSN07-218Dd	NER07-0149	41.6351	70.2821
2007-Oct-28	Dd	2	SXDd0731	NER07-0170	41.6962	71.4544
2007-Nov-02	Dd	2	CCSN07-220Dd	NER07-0207	41.5065	71.0592
2007-Nov-05	La	2	CCSN07-221La	NER07-0281	42.0816	70.1911
2007-Nov-16	Dd	3	SUDd0733	NER07-0177	41.3753	71.5123
2007-Dec-19	Dd	2	NY3799-2007	NER07-0339	41.0843	71.9079
2007-Dec-19	La	3	CCSN07-227La	NER07-0363	41.7796	69.9339
2008-Jan-15	La	2	CCSN08-016La	NER08-0033	41.8949	70.0021
2008-Jan-15	La	2	CCSN08-012La	NER08-0027	41.8955	70.0012
2008-Jan-15	La	2	CCSN08-013La	NER08-0029	41.8957	70.0011
2008-Jan-15	La	2	CCSN08-010La	NER08-0025	41.8958	70.0006
2008-Jan-15	La	2	CCSN08-014La	NER08-0031	41.8958	70.0014
2008-Jan-15	La	2	CCSN08-009La	NER08-0024	41.8959	70.0005
2008-Jan-15	La	2	CCSN08-008La	NER08-0021	41.8960	70.0004
2008-Jan-15	La	2	CCSN08-015La	NER08-0032	41.8964	70.0018
2008-Jan-15	La	2	CCSN08-011La	NER08-0026	41.8966	70.0009
2008-Jan-15	La	1	CCSN08-004La	NER08-0018	41.8994	69.9989
2008-Jan-15	La	2	CCSN08-017La	NER08-0034	41.9210	70.0581
2008-Jan-15	La	2	CCSN08-018La	NER08-0035	41.9215	70.0557
2008-Jan-15	La	2	CCSN08-020La	NER08-0037	41.9225	70.0543

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2008-Jan-15	La	2	CCSN08-021La	NER08-0038	41.9225	70.0543
2008-Jan-15	La	2	CCSN08-019La	NER08-0036	41.9228	70.0545
2008-Jan-15	La	1	CCSN08-005La	NER08-0019	41.9263	70.0653
2008-Jan-15	La	1	CCSN08-006La	NER08-0020	41.9272	70.0657
2008-Jan-22	La	3	CCSN08-023La	NER08-0040	41.8943	70.0025
2008-Jan-25	Dd	1	CCSN08-024Dd	NER08-0041	41.9223	70.0605
2008-Jan-29	La	3	CCSN08-033La	NER08-0085	41.7655	70.0991
2008-Jan-31	La	3	CCSN08-030La	NER08-0067	41.9196	70.0290
2008-Feb-01	La	1	CCSN08-031La	NER08-0083	41.8220	70.0011
2008-Feb-01	La	1	CCSN08-032La	NER08-0084	41.8220	70.0071
2008-Feb-16	Dd	1	CCSN08-044Dd	NER08-0174	41.7737	70.0615
2008-Feb-18	La	1	CCSN08-048La	NER08-0179	41.9200	70.0245
2008-Feb-18	La	1	CCSN08-049La	NER08-0181	41.9200	70.0245
2008-Feb-18	La	1	CCSN08-050La	NER08-0182	41.9200	70.0245
2008-Feb-21	La	1	CCSN08-056La	NER08-0191	41.9299	70.0416
2008-Feb-23	Dd	3	CCSN08-059Dd	NER08-0196	41.9233	70.0613
2008-Feb-25	Dd	1	MH-08-025-Dd	NER08-1407	41.2720	70.2030
2008-Feb-25	Dd	1	MH-08-026-Dd	NER08-1408	41.2720	70.2030
2008-Mar-09	Dd	3	NY3833-2008	NER08-0676	40.9938	72.0486
2008-Mar-09	La	1	SXLa0806	NER08-0117	41.1610	73.1854
2008-Mar-18	La	2	NY3843-2008	NER08-0679	40.9061	73.2218
2008-Apr-26	Dd	2	SYDd0818	NER08-0592	41.3746	71.5151
2008-Apr-30	La	3	CCSN08-098La	NER08-0877	42.0821	70.1990
2008-May-01	La	3	CCSN08-103La	NER08-0942	42.0257	70.0903
2008-Jun-05	Dd	2	NY3909-08	NER08-3434	40.8706	72.3857
2008-Jun-09	La	3	CCSN08-122La	NER08-1854	41.5014	71.0460
2008-Jun-24	Dd	1	NY3914-2008	NER08-1015	40.9988	72.0341
2008-Jul-02	Dd	3	MH-08-019-Dd	NER08-1390	41.3606	70.6376
2008-Jul-17	Dd	1	CCSN08-144Dd	NER08-2034	41.5398	70.6645
2008-Sep-18	Dd	3	NY3971-08	NER08-3440	40.7833	72.6812
2008-Oct-13	La	2	COA081013La	NER08-2432	44.4150	68.2501
2008-Nov-30	Dd	1	NY3990-08	NER08-3442	40.5906	73.5515

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2008-Nov-30	Dd	1	NY3989-08	NER08-3444	40.5906	73.5515
2008-Dec-03	Dd	2	NY3993-08	NER08-3443	40.6873	73.0014
2008-Dec-08	Dd	3	CCSN08-195Dd	NER08-2884	41.7822	70.0382
2008-Dec-13	Dd	3	CCSN08-198Dd	NER08-2885	41.9296	70.0653
2008-Dec-15	Dd	3	CCSN08-200Dd	NER08-2886	41.7931	70.0189
2008-Dec-22	Dd	3	CCSN08-203Dd	NER08-2946	41.7844	70.0149
2008-Dec-25	Dd	1	CCSN08-205Dd	NER08-2948	41.7840	70.0332
2008-Dec-25	Dd	2	CCSN08-206Dd	NER08-2949	41.7840	70.0332
2008-Dec-25	Dd	1	CCSN08-208Dd	NER08-2951	41.7840	70.0332
2008-Dec-25	Dd	1	CCSN08-209Dd	NER08-2952	41.7840	70.0332
2008-Dec-25	Dd	2	CCSN08-207Dd	NER08-2950	41.7840	70.0332
2008-Dec-26	Dd	3	CCSN08-215Dd	NER08-2967	41.5902	70.4553
2008-Dec-28	Dd	1	SYDd0836	NER08-2876	41.7360	71.4690
2008-Dec-29	Dd	2	NY4007-2008	NER08-3374	41.0161	72.2457
2009-Jan-01	La	3	DMR-09-001La	NER09-0971	43.7065	69.8453
2009-Jan-11	Dd	3	NY4010-2009	NER09-1992	40.9747	73.6603
2009-Jan-22	Dd	3	SUDd0902	NER09-0068	41.1836	71.5858
2009-Feb-03	Dd	1	IFAW09-012Dd	NER09-0250	41.9243	70.0250
2009-Feb-03	Dd	1	IFAW09-013Dd	NER09-0251	41.9243	70.0250
2009-Feb-03	Dd	1	IFAW09-014Dd	NER09-0252	41.9243	70.0250
2009-Feb-03	Dd	1	IFAW09-015Dd	NER09-0253	41.9323	70.0287
2009-Feb-04	Dd	3	IFAW09-016Dd	NER09-0411	41.7840	70.0328
2009-Feb-06	Dd	2	IFAW09-019Dd	NER09-0429	41.7505	70.1851
2009-Feb-08	Dd	3	MH-09-010-Dd	NER09-1404	41.3800	70.5400
2009-Mar-04	La	1	MH-09-024-La	NER09-2855	42.0236	70.6192
2009-Mar-05	La	1	IFAW09-045La	NER09-0470	42.0597	70.1424
2009-Mar-06	Dd	1	IFAW09-046Dd	NER09-0512	41.7697	70.0812
2009-Mar-07	Dd	3	IFAW09-059Dd	NER09-0574	41.9361	70.0255
2009-Mar-08	Dd	1	IFAW09-062Dd	NER09-0611	41.5380	70.6650
2009-Mar-08	Dd	1	IFAW09-049Dd	NER09-0518	41.9180	70.0265
2009-Mar-08	Dd	1	IFAW09-050Dd	NER09-0529	41.9180	70.0265
2009-Mar-08	Dd	1	IFAW09-051Dd	NER09-0530	41.9180	70.0265

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2009-Mar-08	Dd	2	IFAW09-052Dd	NER09-0531	41.9180	70.0265
2009-Mar-08	Dd	2	IFAW09-056Dd	NER09-0571	41.9228	70.0693
2009-Mar-08	Dd	2	IFAW09-055Dd	NER09-0570	41.9232	70.0628
2009-Mar-08	La	3	IFAW09-057La	NER09-0572	41.9277	70.0702
2009-Mar-08	Dd	2	IFAW09-054Dd	NER09-0569	41.9287	70.0652
2009-Mar-08	Dd	1	IFAW09-053Dd	NER09-0532	41.9310	70.0660
2009-Mar-09	Dd	3	IFAW09-063Dd	NER09-0577	41.9271	70.0223
2009-Mar-10	La	1	IFAW09-064La	NER09-0612	41.6271	69.9830
2009-Mar-10	La	3	SYLa0913	NER09-0596	41.7186	71.2939
2009-Apr-02	Dd	2	IFAW09-083Dd	NER09-0655	41.7601	70.1200
2009-Apr-04	Dd	3	IFAW09-085Dd	NER09-0673	41.7597	70.1393
2009-Apr-05	Dd	3	IFAW09-086Dd	NER09-0675	41.7469	70.1433
2009-Apr-12	Dd	2	SUDd0926	NER09-1472	41.2000	71.5617
2009-Apr-15	La	2	NY4073-2009	NER09-3177	40.9465	72.4842
2009-Apr-21	La	1	IFAW09-097La	NER09-1052	41.8851	69.9984
2009-Apr-21	La	1	IFAW09-098La	NER09-1053	41.8851	69.9984
2009-Apr-21	La	1	IFAW09-099La	NER09-1054	41.8851	69.9984
2009-Jun-25	La	2	NER06252009La	NER09-2952	41.5383	70.9083
2009-Jul-05	Dd	1	SXDd0946	NER09-3112	41.3610	71.4890
2009-Jul-19	Dd	2	IFAW09-142Dd	NER09-1792	41.6777	69.3508
2009-Jul-26	Dd	1	SYDd0949	NER09-2652	41.3690	71.5820
2009-Aug-02	Dd	1	IFAW09-153Dd	NER09-2355	41.6475	70.4086
2009-Aug-16	Dd	3	IFAW09-158Dd	NER09-2375	41.7724	70.5051
2009-Aug-24	La	3	MH-09-117-La	NER09-2925	42.6825	70.6528
2009-Sep-01	La	1	IFAW09-165La	NER09-2378	41.9209	70.0578
2009-Sep-02	La	1	IFAW09-166La	NER09-2512	41.9260	70.0603
2009-Sep-07	La	1	IFAW09-169La	NER09-2515	41.9288	70.0357
2009-Sep-07	La	1	IFAW09-170La	NER09-2516	41.9288	70.0357
2009-Sep-15	La	2	MH-09-138-La	NER09-3564	43.0278	70.7275
2009-Sep-16	La	1	IFAW09-179La	NER09-2692	41.7763	70.0551
2009-Sep-16	La	1	IFAW09-180La	NER09-2693	41.7763	70.0551
2009-Sep-16	La	1	IFAW09-181La	NER09-2694	41.7763	70.0551

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2009-Sep-16	La	1	IFAW09-182La	NER09-2695	41.7763	70.0551
2009-Sep-22	La	3	MH-09-144-La	NER09-3570	42.0305	70.6260
2009-Oct-09	Dd	1	IFAW09-176Dd	NER09-2732	41.5414	70.6222
2009-Oct-12	Dd	3	IFAW09-177Dd	NER09-3642	41.5293	70.9797
2009-Nov-14	Dd	2	NY4146-2009	NER09-3214	40.9087	72.2839
2009-Nov-28	Dd	2	IFAW09-188Dd	NER09-3313	41.9136	70.0272
2009-Nov-28	Dd	3	IFAW09-189Dd	NER09-2992	41.9296	70.0649
2009-Nov-29	Dd	2	NY4151-2009	NER09-3215	40.3648	73.3982
2009-Nov-29	Dd	3	IFAW09-190Dd	NER09-2993	41.9297	70.0654
2009-Dec-02	Dd	3	NY4152-2009	NER09-3216	40.5921	73.8104
2009-Dec-02	Dd	2	SYDd0953	NER09-3243	41.3800	71.4990
2009-Dec-03	Dd	3	SXDd0954	NER09-3113	41.4870	71.2900
2009-Dec-03	Dd	1	IFAW09-191Dd	NER09-3331	41.8000	70.0138
2009-Dec-03	Dd	1	IFAW09-192Dd	NER09-3332	41.8000	70.0138
2009-Dec-05	Dd	3	IFAW09-193Dd	NER09-3371	41.8955	70.0098
2009-Dec-07	Dd	2	IFAW09-194Dd	NER09-3392	41.7758	70.0553
2009-Dec-07	Dd	2	IFAW09-195Dd	NER09-3393	41.7758	70.0553
2009-Dec-07	Dd	1	IFAW09-196Dd	NER09-3394	41.7923	70.0197
2009-Dec-10	Dd	2	IFAW09-198Dd	NER09-3662	41.7597	70.1313
2009-Dec-11	Dd	1	IFAW09-199Dd	NER09-3412	41.8816	70.0062
2009-Dec-12	Dd	1	IFAW09-200Dd	NER09-3413	41.7993	70.0111
2009-Dec-12	Dd	1	IFAW09-201Dd	NER09-3414	41.8501	70.0062
2009-Dec-12	Dd	3	IFAW09-206Dd	NER09-3432	41.9021	70.0057
2009-Dec-12	Dd	3	IFAW09-207Dd	NER09-3433	41.9036	70.0060
2009-Dec-12	Dd	1	IFAW09-202Dd	NER09-3415	41.9040	70.0055
2009-Dec-12	Dd	3	IFAW09-205Dd	NER10-0284	41.9632	70.0771
2009-Dec-16	Dd	3	NY4162-2009	NER09-3219	40.9928	72.1064
2009-Dec-16	Dd	1	IFAW09-209Dd	NER09-3435	41.6678	70.0608
2009-Dec-18	Dd	1	NY4167-2009	NER09-3218	40.8960	73.3568
2009-Dec-23	Dd	3	IFAW09-212Dd	NER09-3438	42.0087	70.0832
2009-Dec-25	Dd	3	IFAW09-213Dd	NER09-3442	41.7877	70.0231
2009-Dec-25	Dd	3	IFAW09-211Dd	NER09-3437	41.9290	70.0505

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2009-Dec-30	Dd	3	IFAW09-215Dd	NER09-3482	42.0604	70.1475
2009-Dec-31	Dd	2	IFAW09-216Dd	NER09-3439	41.9916	70.0734
2010-Jan-03	Dd	3	IFAW10-001Dd	NER10-0142	41.8215	70.0042
2010-Jan-05	La	3	NEAQ-10-001-La	NER10-1815	41.8988	70.5406
2010-Jan-08	Dd	3	IFAW10-004Dd	NER10-0144	42.0443	70.1093
2010-Jan-11	Dd	3	IFAW10-022Dd	NER10-0286	41.7572	70.1237
2010-Jan-15	Dd	3	NEAQ-10-003-Dd	NER10-1813	41.3810	70.7400
2010-Jan-26	Dd	2	IFAW10-014Dd	NER10-0228	42.0612	70.1631
2010-Jan-29	Dd	1	IFAW10-018Dd	NER10-0413	41.8417	70.0073
2010-Jan-30	Dd	2	IFAW10-019Dd	NER10-0264	41.7362	70.3435
2010-Jan-31	Dd	3	IFAW10-021Dd	NER10-0266	41.7563	70.1532
2010-Feb-01	Dd	2	SYDd1002	NER10-0555	41.3742	71.5448
2010-Feb-01	Dd	3	IFAW10-025Dd	NER10-0269	41.7599	70.1420
2010-Feb-02	Dd	3	NEAQ-10-014-Dd	NER10-1818	41.2680	70.1980
2010-Feb-02	Dd	3	NEAQ-10-013-Dd	NER10-3011	41.3044	70.7810
2010-Feb-07	Dd	3	NY4190-2010	NER10-0304	40.5883	73.7884
2010-Feb-14	Dd	3	IFAW10-032Dd	NER10-0412	41.7813	70.0402
2010-Feb-16	Dd	3	IFAW10-035Dd	NER10-0432	41.8217	70.0046
2010-Feb-16	Dd	3	IFAW10-036Dd	NER10-0433	41.8283	70.0040
2010-Feb-16	Dd	3	IFAW10-034Dd	NER10-0699	41.9230	70.0326
2010-Feb-18	La	1	NY4196-2010	NER10-0451	40.9359	72.2137
2010-Feb-20	Dd	3	IFAW10-043Dd	NER10-0603	41.8902	69.9992
2010-Feb-20	Dd	3	IFAW10-042Dd	NER10-0602	41.8904	69.9996
2010-Feb-20	Dd	3	IFAW10-041Dd	NER10-0601	41.8912	70.0002
2010-Feb-20	Dd	3	IFAW10-040Dd	NER10-0600	41.8913	70.0003
2010-Feb-20	Dd	3	IFAW10-039Dd	NER10-0599	41.8915	70.0005
2010-Feb-21	Dd	3	IFAW10-046Dd	NER10-0538	41.8164	70.0016
2010-Feb-21	Dd	3	IFAW10-047Dd	NER10-0539	41.8170	70.0010
2010-Feb-23	Dd	3	IFAW10-051Dd	NER10-0968	41.8159	70.0040
2010-Feb-25	Dd	3	IFAW10-057Dd	NER10-1192	42.0367	70.1961
2010-Feb-26	Dd	3	NEAQ-10-028-Dd	NER10-3014	41.2935	70.0408
2010-Feb-26	Dd	1	IFAW10-063Dd	NER10-1132	41.9286	70.0512

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2010-Feb-26	Dd	1	IFAW10-065Dd	NER10-1924	41.9286	70.0512
2010-Feb-26	Dd	1	IFAW10-064Dd	NER10-2235	41.9286	70.0512
2010-Feb-26	Dd	1	IFAW10-058Dd	NER10-1252	41.9289	70.0226
2010-Feb-26	Dd	1	IFAW10-060Dd	NER10-1131	41.9299	70.0332
2010-Feb-26	Dd	1	IFAW10-059Dd	NER10-1253	41.9299	70.0332
2010-Feb-26	Dd	2	IFAW10-061Dd	NER10-2495	41.9302	70.0346
2010-Feb-26	Dd	1	IFAW10-062Dd	NER10-1254	41.9957	70.0623
2010-Feb-27	Dd	1	IFAW10-066Dd	NER10-0619	41.9307	70.0279
2010-Mar-01	Dd	3	NY4205-2010	NER10-0679	41.0556	72.4164
2010-Mar-02	Dd	1	NY4207-2010	NER10-0659	40.7044	73.9688
2010-Mar-04	Dd	3	IFAW10-068Dd	NER10-1218	41.9069	70.0174
2010-Mar-05	Dd	3	NEAQ-10-035-Dd	NER10-3016	41.2896	70.0679
2010-Mar-05	Dd	3	NEAQ-10-036-Dd	NER10-3017	41.2896	70.0679
2010-Mar-05	Dd	2	IFAW10-070Dd	NER10-1133	41.7510	70.1876
2010-Mar-05	Dd	1	IFAW10-069Dd	NER10-1219	41.7512	70.1878
2010-Mar-07	La	3	IFAW10-075La	NER10-1212	41.9072	70.0093
2010-Mar-07	La	1	IFAW10-073La	NER10-1195	41.9076	69.9956
2010-Mar-07	La	2	IFAW10-074La	NER10-1196	41.9116	70.0138
2010-Mar-08	Dd	2	SYDd1009	NER10-1027	41.0805	73.4214
2010-Mar-11	La	1	IFAW10-085La	NER10-1257	41.9000	70.0087
2010-Mar-11	La	1	IFAW10-084La	NER10-1293	41.9001	70.0087
2010-Mar-11	La	1	IFAW10-086La	NER10-1294	41.9001	70.0087
2010-Mar-11	La	1	IFAW10-087La	NER10-1295	41.9001	70.0087
2010-Mar-11	La	1	IFAW10-088La	NER10-1297	41.9001	70.0087
2010-Mar-11	La	1	IFAW10-089La	NER10-1298	41.9001	70.0087
2010-Mar-11	La	1	IFAW10-092La	NER10-1260	41.9122	69.9994
2010-Mar-11	La	1	IFAW10-093La	NER10-1199	41.9151	69.9953
2010-Mar-11	La	1	IFAW10-091La	NER10-1259	41.9154	69.9955
2010-Mar-11	La	1	IFAW10-082La	NER10-1255	41.9154	69.9955
2010-Mar-11	La	1	IFAW10-083La	NER10-1256	41.9154	69.9955
2010-Mar-11	La	1	IFAW10-090La	NER10-1258	41.9154	69.9955
2010-Mar-11	La	1	IFAW10-104La	NER10-2254	41.9156	69.9960

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2010-Mar-11	La	1	IFAW10-105La	NER10-2255	41.9156	69.9960
2010-Mar-11	La	1	IFAW10-106La	NER10-2274	41.9156	69.9960
2010-Mar-11	La	1	IFAW10-107La	NER10-2275	41.9156	69.9960
2010-Mar-13	La	1	IFAW10-094La	NER10-1198	41.7766	70.0540
2010-Mar-17	Dd	3	NEAQ-10-050-Dd	NER10-1842	42.3810	70.9725
2010-Mar-18	Dd	1	NY4218-2010	NER10-0881	40.9308	73.7360
2010-Mar-18	La	3	IFAW10-153La	NER10-3835	41.9368	70.0289
2010-Mar-20	La	3	IFAW10-140La	NER10-1606	41.7082	69.9293
2010-Mar-26	La	1	IFAW10-114La	NER10-1600	40.9317	70.0264
2010-Mar-26	La	1	IFAW10-117La	NER10-1603	41.9312	70.0259
2010-Mar-26	La	1	IFAW10-115La	NER10-1601	41.9315	70.0253
2010-Mar-26	La	1	IFAW10-116La	NER10-1602	41.9315	70.0253
2010-Mar-26	La	2	IFAW10-111La	NER10-1597	41.9317	70.0264
2010-Mar-26	La	1	IFAW10-112La	NER10-1598	41.9317	70.0264
2010-Mar-26	La	1	IFAW10-113La	NER10-1599	41.9317	70.0264
2010-Mar-27	La	1	IFAW10-120La	NER10-1347	41.9015	70.0691
2010-Mar-27	La	1	IFAW10-118La	NER10-1335	41.9191	70.0234
2010-Mar-27	La	2	IFAW10-119La	NER10-1787	41.9247	70.0713
2010-Mar-31	Dd	3	IFAW10-142Dd	NER10-1608	41.9308	70.0642
2010-Apr-06	La	1	NEAQ-10-072-La	NER10-2955	42.4346	70.9707
2010-Apr-10	La	1	IFAW10-135La	NER10-1604	41.7761	70.0722
2010-Apr-10	La	1	IFAW10-136La	NER10-1605	41.9292	70.0446
2010-Apr-11	La	3	IFAW10-137La	NER10-1272	41.9290	70.0525
2010-May-26	Dd	2	NY4267-2010	NER10-1657	40.5947	73.4977
2010-May-30	Dd	1	IFAW10-158Dd	NER10-1732	41.4279	70.9267
2010-Jun-03	Dd	1	NY4269-2010	NER10-1726	40.6143	73.4075
2010-Jun-16	La	1	IFAW10-161La	NER10-2295	41.7830	70.0393
2010-Jun-19	Dd	3	NEAQ-10-098-Dd	NER10-2977	41.3482	70.7832
2010-Jun-21	La	1	IFAW10-163La	NER10-2237	41.9195	70.0242
2010-Jun-22	Dd	1	SUDd1032	NER10-4521	41.6778	71.4392
2010-Jun-27	Dd	1	SUDd1034	NER10-4601	41.5500	71.3400
2010-Jul-23	La	1	DMR-10-168La	NER10-4630	43.4634	70.3797

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2010-Jul-25	La	1	IFAW10-175La	NER10-2636	41.9293	70.0668
2010-Jul-25	La	1	IFAW10-176La	NER10-2656	41.9293	70.0668
2010-Jul-30	Dd	2	SYDd1036	NER10-4604	41.6542	71.2809
2010-Jul-31	La	1	IFAW10-174La	NER10-3123	41.8997	70.0701
2010-Oct-02	La	2	IFAW10-193La	NER10-3956	41.7778	70.0489
2010-Oct-02	La	1	IFAW10-192La	NER10-4036	41.9123	70.0260
2010-Oct-03	La	3	IFAW10-194La	NER10-3979	41.9301	70.0716
2010-Oct-10	La	1	IFAW10-198La	NER10-3983	41.7756	70.0595
2010-Oct-27	Dd	3	NEAQ-10-172-Dd	NER10-5291	41.2481	70.1396
2010-Oct-28	Dd	3	NEAQ-10-173-Dd	NER10-5285	41.3515	70.7957
2010-Oct-30	Dd	3	NEAQ-10-174-Dd	NER10-5286	41.3850	70.0400
2010-Nov-03	Dd	2	NY4305-2010	NER10-4361	41.0058	72.0804
2010-Nov-12	Dd	2	IFAW10-221Dd	NER10-4547	41.7818	70.0394
2010-Nov-12	Dd	1	IFAW10-218Dd	NER10-4610	41.8895	70.0000
2010-Nov-12	Dd	3	IFAW10-223Dd	NER10-4546	41.8969	70.0105
2010-Nov-12	Dd	1	IFAW10-220Dd	NER10-4627	41.9330	70.0254
2010-Nov-16	Dd	3	IFAW10-224Dd	NER10-4844	41.9338	70.0282
2010-Nov-24	Dd	2	NY4313-10	NER10-4501	40.5858	73.6132
2010-Nov-29	Dd	1	IFAW10-230Dd	NER10-4684	41.7742	70.0785
2010-Nov-29	Dd	3	IFAW10-235Dd	NER10-4688	41.8954	70.0227
2010-Nov-29	Dd	3	IFAW10-234Dd	NER10-4687	41.8962	70.0234
2010-Nov-29	Dd	3	IFAW10-233Dd	NER10-4686	41.8971	70.0241
2010-Dec-01	La	3	IFAW10-232La	NER10-4692	42.0362	70.1954
2010-Dec-02	Dd	2	SYDd1042	NER10-4824	41.4309	71.8054
2010-Dec-02	Dd	1	IFAW10-237Dd	NER10-4689	41.7895	70.0225
2010-Dec-03	Dd	1	IFAW10-238Dd	NER10-4690	41.7854	70.0312
2010-Dec-07	Dd	2	NY4322-2010	NER10-4705	41.0335	72.1883
2010-Dec-18	Dd	3	SUDd1044	NER10-4905	41.1736	71.6077
2011-Jan-01	Dd	2	NY4345-2011	NER11-0002	40.9642	72.1343
2011-Jan-15	Dd	2	4349-2011	NER11-0006	40.8524	72.4382
2011-Jan-16	La	3	IFAW11-002La	NER11-0012	41.9226	70.0245
2011-Jan-22	Dd	1	NEAQ-11-002-Dd	NER11-1867	41.2479	70.1359

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2011-Jan-29	La	3	IFAW11-005La	NER11-0025	41.7774	70.0527
2011-Jan-31	La	1	IFAW11-006La	NER11-0023	41.7847	70.0328
2011-Feb-02	Dd	3	IFAW11-007Dd	NER11-0059	41.7353	70.3112
2011-Feb-02	Dd	2	IFAW11-009Dd	NER11-0060	41.7795	69.9350
2011-Feb-04	Dd	3	NY4356-2011	NER11-0019	40.8956	72.3171
2011-Feb-04	La	3	IFAW11-011La	NER11-0038	42.0101	70.0834
2011-Feb-09	La	1	IFAW11-015La	NER11-0261	41.8174	70.0044
2011-Feb-10	La	3	IFAW11-017La	NER11-0046	41.9197	70.0238
2011-Feb-14	Dd	2	NY4362-2011	NER11-0040	40.5944	73.4997
2011-Feb-14	Dd	3	NEAQ-11-009-Dd	NER11-1875	41.2746	70.2090
2011-Feb-14	Dd	1	IFAW11-024Dd	NER11-0264	41.7770	70.1199
2011-Feb-14	Dd	1	IFAW11-022Dd	NER11-0086	41.7777	70.1199
2011-Feb-14	Dd	1	IFAW11-023Dd	NER11-0263	41.7777	70.1199
2011-Feb-14	Dd	3	IFAW11-025Dd	NER11-0076	41.9312	70.0662
2011-Feb-15	Dd	3	NY4363-2011	NER11-2597	41.0082	72.2660
2011-Feb-15	Dd	2	IFAW11-028Dd	NER11-0092	41.7413	70.6191
2011-Feb-16	Dd	3	IFAW11-032Dd	NER11-0095	41.8081	70.0026
2011-Feb-16	Dd	3	IFAW11-029Dd	NER11-0093	41.8167	70.0015
2011-Feb-19	Dd	1	IFAW11-026Dd	NER11-0090	41.9312	70.0662
2011-Feb-20	Dd	3	IFAW11-037Dd	NER11-0073	41.8209	70.0042
2011-Feb-22	Dd	1	IFAW11-041Dd	NER11-0321	41.9113	70.0144
2011-Feb-25	La	2	IFAW11-045La	NER11-0324	41.8214	70.0040
2011-Feb-26	La	1	IFAW11-051La	NER11-0402	41.8076	70.0009
2011-Feb-26	La	3	IFAW11-049La	NER11-0383	41.9322	70.0241
2011-Mar-01	La	1	IFAW11-057La	NER11-0408	41.9970	70.0799
2011-Mar-05	La	2	IFAW11-067La	NER11-0428	41.8513	70.0100
2011-Mar-05	Dd	3	NEAQ-11-017-Dd	NER11-1883	41.9467	70.6320
2011-Mar-06	La	3	IFAW11-093La	NER11-2907	41.9309	70.0653
2011-Mar-09	La	1	IFAW11-081La	NER11-2908	41.9288	70.0652
2011-Mar-09	La	1	IFAW11-079La	NER11-2911	41.9288	70.0652
2011-Mar-09	La	1	IFAW11-080La	NER11-2912	41.9288	70.0652
2011-Mar-09	La	1	IFAW11-078La	NER11-2914	41.9288	70.0652

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2011-Mar-09	Dd	1	IFAW11-082Dd	NER11-2890	41.9320	70.0239
2011-Mar-09	Dd	1	IFAW11-083Dd	NER11-2895	41.9320	70.0239
2011-Mar-10	Dd	3	NEAQ-11-024-Dd	NER11-1890	41.9465	70.6306
2011-Mar-11	Dd	1	IFAW11-085Dd	NER11-1132	41.7945	70.0198
2011-Mar-12	Dd	3	IFAW11-092Dd	NER11-2894	41.9507	70.0769
2011-Mar-12	La	3	COA110314La	NER11-1095	44.3966	67.9677
2011-Mar-19	La	2	IFAW11-114La	NER11-2889	41.9279	70.0715
2011-Mar-19	La	3	IFAW11-112La	NER11-2888	41.9287	70.0648
2011-Mar-19	La	1	IFAW11-106La	NER11-2886	41.9297	70.0664
2011-Mar-20	La	1	IFAW11-107La	NER11-1133	41.9225	70.0701
2011-Mar-21	La	2	IFAW11-115La	NER11-1902	41.9292	70.0521
2011-Mar-31	La	1	IFAW11-130La	NER11-2909	41.9300	70.0710
2011-Mar-31	La	1	IFAW11-131La	NER11-2910	41.9309	70.0703
2011-Apr-01	La	1	IFAW11-132La	NER11-4490	41.8930	70.0031
2011-Apr-01	La	2	IFAW11-133La	NER11-1968	41.9302	70.0394
2011-Apr-01	La	1	NEAQ-11-057-La	NER11-3100	42.5735	70.7505
2011-Apr-02	La	3	IFAW11-139La	NER11-1974	41.7218	70.2373
2011-Apr-04	La	1	IFAW11-143La	NER11-1282	41.9336	70.0284
2011-Apr-05	La	3	IFAW11-145La	NER11-1979	41.9315	70.0669
2011-Apr-05	La	3	IFAW11-147La	NER11-1985	42.0327	70.0957
2011-Apr-08	Dd	1	IFAW11-150Dd	NER11-1987	41.8938	70.0034
2011-Apr-08	Dd	1	IFAW11-149Dd	NER11-2891	41.8938	70.0034
2011-Apr-08	Dd	1	IFAW11-151Dd	NER11-2892	41.8938	70.0034
2011-Apr-08	Dd	1	IFAW11-152Dd	NER11-2893	41.8938	70.0034
2011-Apr-09	La	2	SXLa1121	NER11-2495	41.3267	71.8460
2011-Apr-11	Dd	3	SUDd1125	NER11-2498	41.2291	71.5757
2011-Apr-16	La	3	IFAW11-162La	NER11-1997	41.7381	69.9799
2011-Apr-18	La	3	NEAQ-11-066-La	NER11-2868	42.5965	70.6543
2011-Apr-24	La	3	IFAW11-173La	NER11-2004	41.7583	70.1233
2011-Apr-24	La	1	NEAQ-11-073-La	NER11-2875	42.0203	70.6785
2011-Apr-27	La	1	NEAQ-11-078-La	NER11-2880	42.2881	71.0219
2011-May-02	La	3	IFAW11-181La	NER11-2968	41.7775	70.0503

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2011-May-14	Dd	3	NY4479-2011	NER11-1435	40.5850	73.6277
2011-May-22	Dd	3	NEAQ-11-110-Dd	NER11-3096	42.6915	70.7950
2011-May-26	Dd	1	NY4488-2011	NER11-1275	40.6029	73.5719
2011-May-26	Dd	3	SUDd1147	NER11-1778	41.2247	71.5650
2011-May-29	Dd	2	NY4490-2011	NER11-1295	40.6775	73.0223
2011-Jun-02	Dd	2	NY4494-2011	NER11-1355	40.8997	72.3072
2011-Jun-14	Dd	3	NY4497-2011	NER11-1804	40.9690	72.1250
2011-Jun-15	La	2	IFAW11-210La	NER11-2092	41.7754	70.0549
2011-Jun-28	Dd	2	NY4504-2011	NER11-1803	40.6402	73.1740
2011-Jun-30	Dd	2	NEAQ-11-160-Dd	NER11-3090	41.2730	70.2100
2011-Jul-06	Dd	1	NY4507-2011	NER11-1841	40.9711	72.1181
2011-Jul-30	Dd	1	NY4519-2011	NER11-2677	40.6215	73.6594
2011-Jul-31	Dd	1	NEAQ-11-208-Dd	NER11-3157	42.3810	70.9923
2011-Aug-14	Dd	1	NY4527-2011	NER11-2676	40.6562	73.0982
2011-Aug-31	Dd	1	IFAW11-245Dd	NER11-2996	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-246Dd	NER11-2997	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-247Dd	NER11-2998	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-248Dd	NER11-2999	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-249Dd	NER11-3000	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-250Dd	NER11-3001	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-251Dd	NER11-3002	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-252Dd	NER11-3003	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-253Dd	NER11-3004	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-254Dd	NER11-3005	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-255Dd	NER11-3006	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-256Dd	NER11-3007	41.8205	70.0055
2011-Aug-31	Dd	1	IFAW11-257Dd	NER11-3008	41.8205	70.0055
2011-Sep-26	Dd	2	SYDd1163	NER11-3221	41.6316	71.3389
2011-Oct-01	Dd	1	NY4540-2011	NER11-3218	40.6490	73.2532
2011-Oct-24	Dd	3	NY4545-2011	NER11-3775	40.7081	72.9374
2011-Nov-01	Dd	3	SXDd1164	NER11-3774	41.4221	71.4553
2011-Nov-08	Dd	3	NEAQ-11-344-Dd	NER11-3907	41.3566	70.8100

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2011-Nov-16	Dd	1	IFAW11-282Dd	NER11-4168	41.9304	70.0243
2011-Nov-21	Dd	1	IFAW11-284Dd	NER11-4171	42.0606	70.1487
2011-Nov-22	Dd	3	IFAW11-286Dd	NER11-4169	41.9289	70.0301
2011-Nov-23	Dd	3	IFAW11-287Dd	NER11-4170	41.9359	70.0276
2011-Nov-24	Dd	3	SYDd1168	NER11-4235	41.4801	71.2455
2011-Nov-28	Dd	2	IFAW11-290Dd	NER11-4474	41.7732	70.0835
2011-Nov-29	Dd	2	IFAW11-295Dd	NER11-4453	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-291Dd	NER11-4454	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-292Dd	NER11-4455	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-294Dd	NER11-4456	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-293Dd	NER11-4471	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-296Dd	NER11-4476	41.7691	70.0868
2011-Nov-29	Dd	2	IFAW11-297Dd	NER11-4473	41.7737	70.0624
2011-Nov-30	Dd	1	NY4549-2011	NER11-3995	40.8288	72.5198
2011-Dec-08	Dd	3	IFAW11-300Dd	NER11-4472	41.7737	70.0624
2011-Dec-20	Dd	3	NEAQ-11-353-Dd	NER11-4374	41.3880	70.4830
2011-Dec-26	Dd	3	IFAW11-305Dd	NER11-4470	41.7348	70.3038
2011-Dec-29	Dd	1	IFAW11-306Dd	NER11-4459	41.7954	70.0163
2011-Dec-29	Dd	1	IFAW11-308Dd	NER11-4465	41.9230	70.0544
2011-Dec-29	Dd	2	IFAW11-309Dd	NER11-4468	41.9230	70.0544
2012-Jan-02	Dd	3	NEAQ-12-003-Dd	NER12-1816	41.3499	70.7911
2012-Jan-12	Dd	1	IFAW12-003Dd	NER12-1212	41.9298	70.0488
2012-Jan-12	Dd	1	IFAW12-003Dd	NER12-2726	41.9298	70.0488
2012-Jan-13	Dd	1	IFAW12-004Dd	NER12-1213	41.9314	70.0653
2012-Jan-13	Dd	1	IFAW12-005Dd	NER12-1214	41.9314	70.0653
2012-Jan-13	Dd	1	IFAW12-006Dd	NER12-1215	41.9314	70.0653
2012-Jan-13	Dd	1	IFAW12-004Dd	NER12-2727	41.9314	70.0653
2012-Jan-13	Dd	1	IFAW12-005Dd	NER12-2728	41.9314	70.0653
2012-Jan-13	Dd	1	IFAW12-006Dd	NER12-2729	41.9314	70.0653
2012-Jan-13	Dd	2	IFAW12-007Dd	NER12-1216	41.9333	70.0243
2012-Jan-13	Dd	2	IFAW12-007Dd	NER12-2730	41.9333	70.0243
2012-Jan-14	Dd	3	IFAW12-026Dd	NER12-2752	41.7505	70.1864

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jan-14	Dd	1	IFAW12-021Dd	NER12-1229	41.7644	70.1024
2012-Jan-14	Dd	1	IFAW12-021Dd	NER12-2789	41.7644	70.1024
2012-Jan-14	Dd	1	IFAW12-022Dd	NER12-1230	41.7770	70.0518
2012-Jan-14	Dd	1	IFAW12-022Dd	NER12-2748	41.7770	70.0518
2012-Jan-14	Dd	3	IFAW12-040Dd	NER12-1247	41.7797	70.0439
2012-Jan-14	Dd	3	IFAW12-040Dd	NER12-2736	41.7797	70.0439
2012-Jan-14	Dd	3	IFAW12-039Dd	NER12-1246	41.7799	70.0434
2012-Jan-14	Dd	3	IFAW12-039Dd	NER12-2735	41.7799	70.0434
2012-Jan-14	Dd	2	IFAW12-009Dd	NER12-1219	41.7816	70.0393
2012-Jan-14	Dd	2	IFAW12-009Dd	NER12-2762	41.7816	70.0393
2012-Jan-14	Dd	1	IFAW12-011Dd	NER12-1220	41.7821	70.0383
2012-Jan-14	Dd	1	IFAW12-011Dd	NER12-2764	41.7821	70.0383
2012-Jan-14	Dd	2	IFAW12-010Dd	NER12-1217	41.7841	70.0340
2012-Jan-14	Dd	2	IFAW12-010Dd	NER12-2763	41.7841	70.0340
2012-Jan-14	Dd	1	IFAW12-008Dd	NER12-1218	41.7866	70.0299
2012-Jan-14	Dd	1	IFAW12-008Dd	NER12-2731	41.7866	70.0299
2012-Jan-14	Dd	3	IFAW12-083Dd	NER12-2804	41.7924	70.0203
2012-Jan-14	Dd	1	IFAW12-012Dd	NER12-1221	41.8020	70.0026
2012-Jan-14	Dd	1	IFAW12-012Dd	NER12-2765	41.8020	70.0026
2012-Jan-14	Dd	1	IFAW12-013Dd	NER12-1222	41.8294	70.0041
2012-Jan-14	Dd	1	IFAW12-013Dd	NER12-2766	41.8294	70.0041
2012-Jan-14	Dd	1	IFAW12-014Dd	NER12-1223	41.8727	70.0091
2012-Jan-14	Dd	1	IFAW12-014Dd	NER12-2767	41.8727	70.0091
2012-Jan-14	Dd	3	IFAW12-041Dd	NER12-1248	41.8831	69.9991
2012-Jan-14	Dd	3	IFAW12-041Dd	NER12-2737	41.8831	69.9991
2012-Jan-14	Dd	1	IFAW12-020Dd	NER12-1228	41.8920	70.0016
2012-Jan-14	Dd	1	IFAW12-020Dd	NER12-2788	41.8920	70.0016
2012-Jan-14	Dd	1	IFAW12-015Dd	NER12-1224	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-016Dd	NER12-1225	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-017Dd	NER12-1226	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-018Dd	NER12-1227	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-015Dd	NER12-2768	41.9298	70.0480

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jan-14	Dd	1	IFAW12-016Dd	NER12-2784	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-017Dd	NER12-2785	41.9298	70.0480
2012-Jan-14	Dd	1	IFAW12-018Dd	NER12-2786	41.9298	70.0480
2012-Jan-14	Dd	2	IFAW12-023Dd	NER12-1231	41.9302	70.0457
2012-Jan-14	Dd	2	IFAW12-023Dd	NER12-2749	41.9302	70.0457
2012-Jan-14	Dd	2	IFAW12-024Dd	NER12-1232	41.9303	70.0439
2012-Jan-14	Dd	2	IFAW12-024Dd	NER12-2750	41.9303	70.0439
2012-Jan-14	Dd	1	IFAW12-019Dd	NER12-1272	41.9334	70.0249
2012-Jan-14	Dd	1	IFAW12-019Dd	NER12-2787	41.9334	70.0249
2012-Jan-15	Dd	1	IFAW12-027Dd	NER12-1234	41.7760	70.0547
2012-Jan-15	Dd	1	IFAW12-027Dd	NER12-2753	41.7760	70.0547
2012-Jan-15	Dd	3	IFAW12-084Dd	NER12-2805	41.7797	70.0439
2012-Jan-15	Dd	3	IFAW12-025Dd	NER12-1233	41.8003	70.0089
2012-Jan-15	Dd	3	IFAW12-025Dd	NER12-2751	41.8003	70.0089
2012-Jan-15	Dd	1	IFAW12-029Dd	NER12-1236	41.8926	70.0028
2012-Jan-15	Dd	1	IFAW12-029Dd	NER12-2755	41.8926	70.0028
2012-Jan-15	Dd	3	IFAW12-053Dd	NER12-1192	41.9141	69.9876
2012-Jan-15	Dd	3	IFAW12-053Dd	NER12-2778	41.9141	69.9876
2012-Jan-15	Dd	3	IFAW12-044Dd	NER12-1251	41.9142	70.0650
2012-Jan-15	Dd	3	IFAW12-044Dd	NER12-2769	41.9142	70.0650
2012-Jan-15	Dd	3	IFAW12-045Dd	NER12-1252	41.9150	70.0642
2012-Jan-15	Dd	3	IFAW12-045Dd	NER12-2770	41.9150	70.0642
2012-Jan-15	Dd	3	IFAW12-046Dd	NER12-1253	41.9156	70.0725
2012-Jan-15	Dd	3	IFAW12-046Dd	NER12-2771	41.9156	70.0725
2012-Jan-15	Dd	3	IFAW12-043Dd	NER12-1250	41.9231	70.0695
2012-Jan-15	Dd	3	IFAW12-043Dd	NER12-2739	41.9231	70.0695
2012-Jan-15	Dd	3	IFAW12-047Dd	NER12-1254	41.9234	70.0658
2012-Jan-15	Dd	3	IFAW12-047Dd	NER12-2772	41.9234	70.0658
2012-Jan-15	Dd	3	IFAW12-075Dd	NER12-2796	41.9267	70.0229
2012-Jan-15	Dd	3	IFAW12-049Dd	NER12-1256	41.9286	70.0708
2012-Jan-15	Dd	3	IFAW12-049Dd	NER12-2774	41.9286	70.0708
2012-Jan-15	Dd	3	IFAW12-030Dd	NER12-1237	41.9292	70.0515

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jan-15	Dd	3	IFAW12-030Dd	NER12-2756	41.9292	70.0515
2012-Jan-15	Dd	3	IFAW12-028Dd	NER12-1235	41.9305	70.0394
2012-Jan-15	Dd	3	IFAW12-028Dd	NER12-2754	41.9305	70.0394
2012-Jan-15	Dd	3	IFAW12-048Dd	NER12-1255	41.9311	70.0681
2012-Jan-15	Dd	3	IFAW12-048Dd	NER12-2773	41.9311	70.0681
2012-Jan-15	Dd	3	IFAW12-074Dd	NER12-2795	41.9319	70.0255
2012-Jan-16	Dd	2	IFAW12-042Dd	NER12-1249	41.7661	70.0978
2012-Jan-16	Dd	2	IFAW12-042Dd	NER12-2738	41.7661	70.0978
2012-Jan-16	Dd	3	IFAW12-051Dd	NER12-1190	41.8592	70.0073
2012-Jan-16	Dd	3	IFAW12-051Dd	NER12-2776	41.8592	70.0073
2012-Jan-16	Dd	3	IFAW12-052Dd	NER12-1191	41.8593	70.0073
2012-Jan-16	Dd	3	IFAW12-052Dd	NER12-2777	41.8593	70.0073
2012-Jan-16	Dd	3	IFAW12-076Dd	NER12-2797	41.8931	70.0200
2012-Jan-16	Dd	3	IFAW12-054Dd	NER12-1193	41.9060	70.0151
2012-Jan-16	Dd	3	IFAW12-054Dd	NER12-2779	41.9060	70.0151
2012-Jan-16	Dd	3	IFAW12-055Dd	NER12-1194	41.9063	70.0140
2012-Jan-16	Dd	3	IFAW12-055Dd	NER12-2780	41.9063	70.0140
2012-Jan-16	Dd	3	IFAW12-088Dd	NER12-2809	41.9075	70.0180
2012-Jan-16	Dd	3	IFAW12-057Dd	NER12-1196	41.9077	70.0190
2012-Jan-16	Dd	3	IFAW12-057Dd	NER12-2782	41.9077	70.0190
2012-Jan-16	Dd	1	IFAW12-034Dd	NER12-1240	41.9170	70.0312
2012-Jan-16	Dd	1	IFAW12-035Dd	NER12-1241	41.9170	70.0312
2012-Jan-16	Dd	1	IFAW12-036Dd	NER12-1244	41.9170	70.0312
2012-Jan-16	Dd	1	IFAW12-036Dd	NER12-2732	41.9170	70.0312
2012-Jan-16	Dd	1	IFAW12-034Dd	NER12-2760	41.9170	70.0312
2012-Jan-16	Dd	1	IFAW12-035Dd	NER12-2761	41.9170	70.0312
2012-Jan-16	Dd	3	IFAW12-037Dd	NER12-1245	41.9189	70.0250
2012-Jan-16	Dd	3	IFAW12-037Dd	NER12-2733	41.9189	70.0250
2012-Jan-16	Dd	3	IFAW12-038Dd	NER12-2734	41.9208	70.0291
2012-Jan-16	Dd	3	IFAW12-050Dd	NER12-1257	41.9246	70.0334
2012-Jan-16	Dd	3	IFAW12-050Dd	NER12-2775	41.9246	70.0334
2012-Jan-16	Dd	1	IFAW12-031Dd	NER12-1238	41.9294	70.0362

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jan-16	Dd	1	IFAW12-033Dd	NER12-1239	41.9294	70.0362
2012-Jan-16	Dd	1	IFAW12-031Dd	NER12-2757	41.9294	70.0362
2012-Jan-16	Dd	1	IFAW12-032Dd	NER12-2758	41.9294	70.0362
2012-Jan-16	Dd	1	IFAW12-033Dd	NER12-2759	41.9294	70.0362
2012-Jan-17	Dd	3	IFAW12-056Dd	NER12-1195	41.9062	70.0123
2012-Jan-17	Dd	3	IFAW12-056Dd	NER12-2781	41.9062	70.0123
2012-Jan-17	Dd	3	IFAW12-058Dd	NER12-1197	41.9080	70.0202
2012-Jan-17	Dd	3	IFAW12-059Dd	NER12-1201	41.9080	70.0202
2012-Jan-17	Dd	3	IFAW12-060Dd	NER12-1202	41.9080	70.0202
2012-Jan-17	Dd	3	IFAW12-058Dd	NER12-2740	41.9080	70.0202
2012-Jan-17	Dd	3	IFAW12-059Dd	NER12-2741	41.9080	70.0202
2012-Jan-17	Dd	3	IFAW12-060Dd	NER12-2742	41.9080	70.0202
2012-Jan-17	Dd	2	IFAW12-064Dd	NER12-1198	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-065Dd	NER12-1199	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-062Dd	NER12-1204	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-063Dd	NER12-1205	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-062Dd	NER12-2744	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-064Dd	NER12-2745	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-065Dd	NER12-2746	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-063Dd	NER12-2783	41.9151	70.0287
2012-Jan-17	Dd	2	IFAW12-061Dd	NER12-1203	41.9172	70.0304
2012-Jan-17	Dd	2	IFAW12-061Dd	NER12-2743	41.9172	70.0304
2012-Jan-17	Dd	3	IFAW12-071Dd	NER12-1209	41.9223	70.0547
2012-Jan-17	Dd	3	IFAW12-071Dd	NER12-2792	41.9223	70.0547
2012-Jan-17	Dd	3	IFAW12-072Dd	NER12-2793	41.9225	70.0501
2012-Jan-17	Dd	3	IFAW12-070Dd	NER12-1208	41.9242	70.0622
2012-Jan-17	Dd	3	IFAW12-070Dd	NER12-2791	41.9242	70.0622
2012-Jan-18	Dd	3	IFAW12-092Dd	NER12-2813	41.8852	70.0673
2012-Jan-18	Dd	3	IFAW12-091Dd	NER12-2812	41.8875	70.0692
2012-Jan-18	Dd	3	IFAW12-093Dd	NER12-2814	41.8879	70.0685
2012-Jan-18	Dd	2	IFAW12-066Dd	NER12-1200	41.8919	70.0016
2012-Jan-18	Dd	2	IFAW12-066Dd	NER12-2747	41.8919	70.0016

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jan-18	Dd	2	IFAW12-067Dd	NER12-1211	41.8928	70.0026
2012-Jan-18	Dd	2	IFAW12-067Dd	NER12-2828	41.8928	70.0026
2012-Jan-18	Dd	3	IFAW12-069Dd	NER12-1207	41.8931	70.0183
2012-Jan-18	Dd	3	IFAW12-069Dd	NER12-2790	41.8931	70.0183
2012-Jan-18	Dd	3	IFAW12-068Dd	NER12-1206	41.8931	70.0190
2012-Jan-18	Dd	3	IFAW12-068Dd	NER12-2829	41.8931	70.0190
2012-Jan-18	Dd	3	IFAW12-094Dd	NER12-2815	41.8932	70.0706
2012-Jan-18	Dd	3	IFAW12-090Dd	NER12-2811	41.8938	70.0701
2012-Jan-18	Dd	3	IFAW12-097Dd	NER12-2818	41.9007	70.0675
2012-Jan-18	Dd	3	IFAW12-095Dd	NER12-2816	41.9011	70.0669
2012-Jan-18	Dd	3	IFAW12-096Dd	NER12-2817	41.9011	70.0670
2012-Jan-18	Dd	3	IFAW12-098Dd	NER12-2819	41.9011	70.0672
2012-Jan-18	Dd	3	IFAW12-099Dd	NER12-2820	41.9062	70.0662
2012-Jan-18	Dd	3	IFAW12-100Dd	NER12-2821	41.9070	70.0660
2012-Jan-18	Dd	3	IFAW12-089Dd	NER12-2810	41.9200	70.0727
2012-Jan-18	Dd	2	IFAW12-073Dd	NER12-2794	41.9295	70.0391
2012-Jan-19	Dd	1	IFAW12-080Dd	NER12-2801	41.9280	70.0699
2012-Jan-19	Dd	1	IFAW12-081Dd	NER12-2802	41.9280	70.0699
2012-Jan-19	Dd	1	IFAW12-082Dd	NER12-2803	41.9280	70.0700
2012-Jan-19	Dd	1	IFAW12-077Dd	NER12-2798	41.9280	70.0700
2012-Jan-19	Dd	1	IFAW12-078Dd	NER12-2799	41.9280	70.0700
2012-Jan-19	Dd	1	IFAW12-079Dd	NER12-2800	41.9280	70.0700
2012-Jan-20	Dd	2	NMFSNER012012-01	NER12-1090	43.2801	70.5792
2012-Jan-22	Dd	3	IFAW12-085Dd	NER12-2806	41.7753	70.0569
2012-Jan-23	Dd	1	IFAW12-086Dd	NER12-2807	41.8020	70.0049
2012-Jan-23	Dd	1	IFAW12-087Dd	NER12-2808	41.8021	70.0049
2012-Jan-28	Dd	3	IFAW12-101Dd	NER12-2822	41.8145	70.0177
2012-Jan-29	Dd	3	IFAW12-102Dd	NER12-2823	41.8770	70.0087
2012-Jan-29	Dd	3	IFAW12-103Dd	NER12-2824	41.8817	70.0060
2012-Jan-30	Dd	1	IFAW12-105Dd	NER12-2826	41.9292	70.0501
2012-Feb-01	Dd	1	IFAW12-109Dd	NER12-3027	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-107Dd	NER12-3025	41.7772	70.0602

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Feb-01	Dd	1	IFAW12-108Dd	NER12-3026	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-110Dd	NER12-3028	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-113Dd	NER12-3062	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-114Dd	NER12-3063	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-115Dd	NER12-3064	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-111Dd	NER12-3082	41.7772	70.0602
2012-Feb-01	Dd	1	IFAW12-112Dd	NER12-3083	41.7772	70.0602
2012-Feb-03	Dd	3	IFAW12-116Dd	NER12-3065	41.7729	70.0643
2012-Feb-03	Dd	1	IFAW12-118Dd	NER12-3120	41.9056	69.9981
2012-Feb-03	Dd	1	IFAW12-121Dd	NER12-3085	41.9089	70.0003
2012-Feb-03	Dd	1	IFAW12-119Dd	NER12-3121	41.9089	70.0003
2012-Feb-03	Dd	1	IFAW12-120Dd	NER12-3084	41.9308	70.0295
2012-Feb-03	Dd	2	IFAW12-117Dd	NER12-3066	41.9338	70.0269
2012-Feb-04	Dd	2	IFAW12-122Dd	NER12-3086	41.7655	70.1002
2012-Feb-04	Dd	1	IFAW12-123Dd	NER12-3087	41.9254	70.0261
2012-Feb-04	Dd	1	IFAW12-124Dd	NER12-3088	41.9285	70.0245
2012-Feb-05	Dd	3	IFAW12-132Dd	NER12-3052	41.9285	70.0245
2012-Feb-05	Dd	1	IFAW12-125Dd	NER12-3029	41.9286	70.0666
2012-Feb-05	Dd	1	IFAW12-126Dd	NER12-3030	41.9286	70.0666
2012-Feb-05	Dd	1	IFAW12-127Dd	NER12-3047	41.9286	70.0666
2012-Feb-05	Dd	1	IFAW12-128Dd	NER12-3048	41.9286	70.0666
2012-Feb-05	Dd	2	IFAW12-129Dd	NER12-3049	41.9286	70.0666
2012-Feb-05	Dd	2	IFAW12-130Dd	NER12-3050	41.9286	70.0666
2012-Feb-05	Dd	3	IFAW12-131Dd	NER12-3051	41.9286	70.0666
2012-Feb-06	Dd	1	SXDd1206	NER12-0162	41.3301	71.7493
2012-Feb-06	Dd	3	IFAW12-153Dd	NER12-3072	41.8917	70.0119
2012-Feb-06	Dd	3	IFAW12-137Dd	NER12-3057	41.9252	70.0346
2012-Feb-06	Dd	3	IFAW12-134Dd	NER12-3054	41.9266	70.0226
2012-Feb-07	Dd	2	IFAW12-138Dd	NER12-3058	41.7735	70.0628
2012-Feb-07	Dd	2	IFAW12-142Dd	NER12-3031	41.7735	70.0655
2012-Feb-07	Dd	2	IFAW12-141Dd	NER12-3061	41.7738	70.0661
2012-Feb-07	Dd	2	IFAW12-140Dd	NER12-3060	41.7750	70.0682

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Feb-07	Dd	2	IFAW12-150Dd	NER12-3069	41.7755	70.0562
2012-Feb-07	Dd	2	IFAW12-139Dd	NER12-3059	41.7755	70.0564
2012-Feb-07	Dd	2	IFAW12-144Dd	NER12-3033	41.7765	70.0604
2012-Feb-07	Dd	2	IFAW12-149Dd	NER12-3068	41.7768	70.0522
2012-Feb-07	Dd	2	IFAW12-145Dd	NER12-3034	41.7769	70.0523
2012-Feb-07	Dd	2	IFAW12-146Dd	NER12-3035	41.7769	70.0523
2012-Feb-07	Dd	2	IFAW12-147Dd	NER12-3036	41.7769	70.0523
2012-Feb-07	Dd	2	IFAW12-148Dd	NER12-3067	41.7769	70.0523
2012-Feb-07	Dd	2	IFAW12-143Dd	NER12-3032	41.7787	70.0569
2012-Feb-07	Dd	3	IFAW12-151Dd	NER12-3070	41.9309	70.0635
2012-Feb-08	Dd	3	NEAQ-12-020-Dd	NER12-0463	41.2663	70.1929
2012-Feb-08	Dd	1	IFAW12-152Dd	NER12-3071	41.9292	70.0713
2012-Feb-09	Dd	2	IFAW12-163Dd	NER12-3037	41.7272	70.3031
2012-Feb-09	Dd	1	IFAW12-159Dd	NER12-3078	41.7272	70.3031
2012-Feb-09	Dd	1	IFAW12-160Dd	NER12-3079	41.7272	70.3031
2012-Feb-09	Dd	2	IFAW12-161Dd	NER12-3080	41.7272	70.3031
2012-Feb-09	Dd	2	IFAW12-162Dd	NER12-3081	41.7272	70.3031
2012-Feb-09	Dd	3	IFAW12-164Dd	NER12-3038	41.8923	70.0087
2012-Feb-10	Dd	2	IFAW12-167Dd	NER12-3041	41.7102	70.2590
2012-Feb-11	Dd	2	IFAW12-169Dd	NER12-3043	41.7125	70.2607
2012-Feb-11	Dd	2	IFAW12-170Dd	NER12-3044	41.7129	70.2621
2012-Feb-12	La	1	IFAW12-171La	NER12-3045	41.9305	70.0421
2012-Feb-13	Dd	3	NY4575-2012	NER12-0163	41.0112	72.0383
2012-Feb-13	Dd	1	IFAW12-172Dd	NER12-3046	41.9295	70.0661
2012-Feb-13	Dd	1	IFAW12-173Dd	NER12-3097	41.9295	70.0661
2012-Feb-13	Dd	1	IFAW12-174Dd	NER12-3098	41.9295	70.0661
2012-Feb-14	Dd	1	IFAW12-179Dd	NER12-3103	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-180Dd	NER12-3104	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-181Dd	NER12-3105	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-182Dd	NER12-3106	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-183Dd	NER12-3107	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-184Dd	NER12-3108	41.9283	70.0692

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Feb-14	Dd	1	IFAW12-185Dd	NER12-3109	41.9283	70.0692
2012-Feb-14	Dd	1	IFAW12-175Dd	NER12-3099	41.9295	70.0661
2012-Feb-14	Dd	1	IFAW12-176Dd	NER12-3100	41.9295	70.0661
2012-Feb-14	Dd	1	IFAW12-177Dd	NER12-3101	41.9295	70.0661
2012-Feb-14	Dd	1	IFAW12-178Dd	NER12-3102	41.9295	70.0661
2012-Feb-15	Dd	3	IFAW12-186Dd	NER12-3110	41.8908	69.9999
2012-Feb-16	Dd	3	IFAW12-187Dd	NER12-3111	41.8812	70.0012
2012-Feb-19	Dd	3	NY4577-2012	NER12-0845	40.5608	72.1160
2012-Feb-25	Dd	3	IFAW12-190Dd	NER12-3114	41.4836	71.0386
2012-Mar-01	Dd	2	IFAW12-191Dd	NER12-3115	41.8056	70.0077
2012-Mar-01	Dd	2	IFAW12-193Dd	NER12-3117	41.8066	70.0024
2012-Mar-01	Dd	1	IFAW12-194Dd	NER12-3118	41.8066	70.0024
2012-Mar-01	Dd	1	IFAW12-195Dd	NER12-3119	41.8066	70.0024
2012-Mar-01	Dd	1	IFAW12-196Dd	NER12-3142	41.8066	70.0024
2012-Mar-01	Dd	1	IFAW12-192Dd	NER12-3116	41.8071	70.0070
2012-Mar-04	Dd	1	NY4579-2012	NER12-0544	41.0327	72.2394
2012-Mar-04	Dd	3	IFAW12-236Dd	NER12-3096	41.7601	70.1411
2012-Mar-06	Dd	1	IFAW12-199Dd	NER12-3122	41.9274	70.0486
2012-Mar-06	Dd	1	IFAW12-197Dd	NER12-3143	41.9274	70.0486
2012-Mar-06	Dd	1	IFAW12-198Dd	NER12-3145	41.9274	70.0486
2012-Mar-07	Dd	1	IFAW12-200Dd	NER12-3123	41.7468	70.2066
2012-Mar-08	La	3	SYLa1212	NER12-0504	41.6959	71.4501
2012-Mar-08	Dd	1	IFAW12-201Dd	NER12-3124	41.7971	70.0193
2012-Mar-09	Dd	1	IFAW12-202Dd	NER12-3125	41.9208	70.0223
2012-Mar-10	Dd	1	IFAW12-203Dd	NER12-3126	41.9304	70.0294
2012-Mar-11	Dd	1	IFAW12-204Dd	NER12-3127	41.9257	70.0235
2012-Mar-11	Dd	1	IFAW12-205Dd	NER12-3128	41.9264	70.0213
2012-Mar-12	Dd	3	IFAW12-211Dd	NER12-3134	41.8921	70.0071
2012-Mar-12	La	3	IFAW12-212La	NER12-3135	41.8921	70.0071
2012-Mar-12	Dd	3	IFAW12-209Dd	NER12-3132	41.9319	70.0649
2012-Mar-12	Dd	3	IFAW12-210Dd	NER12-3133	41.9319	70.0649
2012-Mar-17	La	3	IFAW12-213La	NER12-3136	41.9890	70.0717

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Mar-21	La	3	NEAQ-12-052-La	NER12-0755	43.0170	70.7330
2012-Mar-26	Dd	1	IFAW12-215Dd	NER12-3138	41.7632	70.1069
2012-Mar-26	Dd	1	IFAW12-216Dd	NER12-3139	41.7632	70.1069
2012-Mar-26	Dd	1	IFAW12-217Dd	NER12-3140	41.7632	70.1069
2012-Mar-26	Dd	1	IFAW12-214Dd	NER12-3137	41.9309	70.0239
2012-Mar-27	Dd	1	IFAW12-219Dd	NER12-3089	41.7667	70.0962
2012-Mar-27	Dd	1	IFAW12-220Dd	NER12-3090	41.7667	70.0962
2012-Mar-27	Dd	1	IFAW12-218Dd	NER12-3141	41.7667	70.0962
2012-Mar-27	Dd	1	IFAW12-223Dd	NER12-3093	41.7918	70.0200
2012-Mar-27	Dd	1	IFAW12-221Dd	NER12-3091	41.9140	69.9881
2012-Mar-27	Dd	1	IFAW12-222Dd	NER12-3092	41.9140	69.9881
2012-Apr-01	Dd	1	IFAW12-226Dd	NER12-3504	41.9346	70.0266
2012-Apr-03	Dd	1	IFAW12-229Dd	NER12-3514	41.9105	70.0013
2012-Apr-03	Dd	1	IFAW12-227Dd	NER12-3505	41.9105	70.0013
2012-Apr-03	Dd	1	IFAW12-228Dd	NER12-3506	41.9105	70.0013
2012-Apr-03	Dd	2	IFAW12-230Dd	NER12-3515	41.9327	70.0238
2012-Apr-05	Dd	1	COA120405Dd	NER12-0745	44.6528	67.7247
2012-May-03	La	2	NY4602-2012	NER12-3307	40.9110	72.2771
2012-May-05	La	1	NY4616-2012	NER12-3312	41.0034	73.4026
2012-May-07	Dd	3	NY4606-2012	NER12-1775	40.9834	72.0789
2012-Jul-22	Dd	1	IFAW12-296Dd	NER12-3426	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-297Dd	NER12-3427	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-292Dd	NER12-3483	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-293Dd	NER12-3484	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-294Dd	NER12-3485	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-295Dd	NER12-3486	41.9250	70.0676
2012-Jul-22	Dd	1	IFAW12-289Dd	NER12-3418	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-290Dd	NER12-3419	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-285Dd	NER12-3481	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-291Dd	NER12-3482	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-286Dd	NER12-3487	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-287Dd	NER12-3488	41.9275	70.0696

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Jul-22	Dd	1	IFAW12-288Dd	NER12-3489	41.9275	70.0696
2012-Jul-22	Dd	1	IFAW12-298Dd	NER12-3448	41.9286	70.0692
2012-Jul-22	Dd	2	IFAW12-299Dd	NER12-3449	41.9298	70.0675
2012-Jul-22	Dd	1	IFAW12-283Dd	NER12-3446	41.9328	70.0611
2012-Jul-24	Dd	3	NY4645-2012	NER12-3311	40.5717	73.8516
2012-Aug-04	Dd	3	SYDd1240	NER12-2511	41.6383	71.2419
2012-Aug-17	Dd	1	IFAW12-310Dd	NER12-3499	41.8169	70.0165
2012-Aug-17	Dd	1	IFAW12-311Dd	NER12-3428	41.8380	70.0159
2012-Aug-17	Dd	1	IFAW12-312Dd	NER12-3429	41.8380	70.0159
2012-Aug-17	Dd	1	IFAW12-313Dd	NER12-3430	41.8380	70.0159
2012-Aug-17	Dd	1	IFAW12-317Dd	NER12-3434	41.8380	70.0159
2012-Aug-17	Dd	1	IFAW12-314Dd	NER12-3431	41.8450	70.0152
2012-Aug-17	Dd	1	IFAW12-315Dd	NER12-3432	41.8450	70.0152
2012-Aug-17	Dd	1	IFAW12-316Dd	NER12-3433	41.8450	70.0152
2012-Aug-19	Dd	2	IFAW12-323Dd	NER12-3470	41.9278	70.0682
2012-Aug-19	Dd	2	IFAW12-322Dd	NER12-3469	41.9278	70.0687
2012-Aug-19	Dd	1	IFAW12-318Dd	NER12-3465	41.9278	70.0687
2012-Aug-19	Dd	1	IFAW12-319Dd	NER12-3466	41.9278	70.0687
2012-Aug-19	Dd	1	IFAW12-320Dd	NER12-3467	41.9278	70.0687
2012-Aug-19	Dd	1	IFAW12-321Dd	NER12-3468	41.9278	70.0687
2012-Aug-27	Dd	3	NEAQ-12-162-Dd	NER12-2965	41.3394	70.7248
2012-Aug-27	Dd	3	IFAW12-328Dd	NER12-3510	41.7376	69.9827
2012-Sep-08	Dd	1	IFAW12-334Dd	NER12-3422	41.7346	70.2730
2012-Sep-09	Dd	3	NY4670-2012	NER12-2115	40.8286	72.5223
2012-Sep-19	La	2	COA120919La	NER12-2237	44.4531	67.8806
2012-Sep-28	Dd	1	NY4675-2012	NER12-3314	40.5909	73.7526
2012-Oct-10	Dd	2	IFAW12-339Dd	NER12-3436	41.5238	70.6505
2012-Oct-11	Dd	1	IFAW12-340Dd	NER12-3437	41.7838	70.0347
2012-Oct-16	Dd	3	NY4679-2012	NER12-3325	40.7666	72.7333
2012-Oct-16	Dd	1	IFAW12-341Dd	NER12-3438	42.0601	70.1627
2012-Oct-19	Dd	3	SUDd1247	NER12-3246	41.4413	71.4423
2012-Oct-20	Dd	3	SXDd1248	NER12-3245	41.3178	71.8266

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2012-Oct-30	Dd	3	NEAQ-12-201-Dd	NER12-2858	41.4144	70.5460
2012-Oct-30	Dd	2	IFAW12-344Dd	NER12-3441	41.7592	70.1296
2012-Nov-09	Dd	1	IFAW12-348Dd	NER12-3523	41.7655	70.4796
2012-Nov-09	Dd	1	IFAW12-349Dd	NER12-3524	42.0785	70.2283
2012-Nov-13	Dd	3	NY4689-2012	NER12-3320	40.8081	72.5922
2012-Nov-22	Dd	1	IFAW12-356Dd	NER12-3530	41.9294	70.0702
2012-Nov-22	Dd	1	IFAW12-357Dd	NER12-3531	41.9294	70.0702
2012-Nov-22	Dd	1	IFAW12-358Dd	NER12-3532	41.9294	70.0702
2012-Nov-22	Dd	1	IFAW12-359Dd	NER12-3533	41.9294	70.0702
2012-Nov-23	Dd	3	IFAW12-361Dd	NER12-3534	41.9266	70.0611
2012-Nov-24	Dd	3	IFAW12-362Dd	NER12-3535	41.9249	70.0315
2012-Nov-25	Dd	1	IFAW12-364Dd	NER12-3537	41.9259	70.0656
2012-Nov-28	Dd	3	IFAW12-366Dd	NER12-3539	41.7617	70.1142
2012-Dec-03	Dd	3	IFAW12-367Dd	NER12-3540	41.9244	70.0660
2012-Dec-03	Dd	3	IFAW12-371Dd	NER12-3544	41.9268	70.0614
2012-Dec-03	La	3	NEAQ-12-210-La	NER12-2884	42.9350	70.7960
2012-Dec-05	Dd	3	SYDd1255	NER12-2566	41.1631	71.6100
2012-Dec-11	Dd	3	NY4714-2012	NER12-3331	40.8233	72.5397
2012-Dec-17	Dd	2	NY4718-2012	NER12-3329	40.8174	72.5600
2012-Dec-17	Dd	2	NY4719-2012	NER12-3328	40.8654	72.4008
2012-Dec-18	Dd	3	NEAQ-12-213-Dd	NER12-2887	42.4380	70.9370
2012-Dec-27	Dd	1	IFAW12-375Dd	NER12-3548	41.9283	70.0668
2013-Jan-02	Dd	3	IFAW13-003Dd	NER13-0933	41.7435	70.2141
2013-Jan-13	Dd	3	IFAW13-008Dd	NER13-0938	41.9233	70.0699
2013-Jan-25	Dd	1	NY4743-2013	NER13-1520	40.6794	73.9885
2013-Jan-29	Dd	3	IFAW13-010Dd	NER13-0940	41.7602	70.1330
2013-Feb-01	Dd	2	NY4747-2013	NER13-1522	40.6449	73.1505
2013-Feb-01	Dd	3	IFAW13-012Dd	NER13-0942	41.9979	70.0185
2013-Feb-05	Dd	2	NEAQ-13-008-Dd	NER13-0058	41.3183	70.0149
2013-Feb-05	Dd	3	IFAW13-015Dd	NER13-0945	41.8008	70.0089
2013-Feb-11	Dd	2	IFAW13-019Dd	NER13-0949	41.8030	70.0085
2013-Feb-15	Dd	3	SYDd1304	NER13-0049	41.1812	71.5761

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2013-Feb-16	Dd	3	IFAW13-022Dd	NER13-0991	41.9057	69.9987
2013-Feb-20	Dd	3	IFAW13-027Dd	NER13-0996	41.9278	70.0222
2013-Feb-21	Dd	2	IFAW13-025Dd	NER13-0994	41.7594	70.1272
2013-Feb-23	Dd	3	IFAW13-026Dd	NER13-0995	41.7661	70.0977
2013-Feb-25	Dd	3	NY4754-2013	NER13-1525	41.0172	71.9854
2013-Mar-02	La	3	IFAW13-033La	NER13-1016	41.8151	69.9391
2013-Mar-03	Dd	3	NEAQ-13-021-Dd	NER13-0131	41.3867	70.4691
2013-Mar-05	Dd	3	NEAQ-13-023-Dd	NER13-0133	41.3890	70.7380
2013-Mar-05	Dd	3	IFAW13-039Dd	NER13-1030	41.9309	70.0706
2013-Mar-06	Dd	3	NEAQ-13-024-Dd	NER13-0134	41.2890	70.0724
2013-Mar-12	La	1	IFAW13-044La	NER13-1050	41.8291	70.0038
2013-Mar-13	Dd	1	NY4768-2013	NER13-1526	40.9008	73.3804
2013-Mar-13	Dd	3	IFAW13-046Dd	NER13-1052	41.7604	70.1234
2013-Mar-13	Dd	1	IFAW13-045Dd	NER13-1051	41.7740	70.0616
2013-Mar-25	Dd	1	IFAW13-052Dd	NER13-1066	41.7512	70.1866
2013-Mar-29	La	1	NY4778-2013	NER13-1530	40.6187	73.3900
2013-Apr-13	Dd	3	NY4788-2013	NER13-1533	40.8922	72.3281
2013-Apr-18	La	1	IFAW13-066La	NER13-0989	41.8878	69.9977
2013-Apr-18	La	2	IFAW13-067La	NER13-0990	41.8880	70.0000
2013-Apr-19	Dd	3	NEAQ-13-054-Dd	NER13-0199	42.4614	70.9298
2013-Apr-26	Dd	1	IFAW13-077Dd	NER13-1007	41.7771	70.0581
2013-Apr-26	Dd	1	IFAW13-074Dd	NER13-1045	41.7771	70.0581
2013-Apr-26	Dd	1	IFAW13-075Dd	NER13-1005	41.7771	70.0581
2013-Apr-26	Dd	1	IFAW13-076Dd	NER13-1006	41.7771	70.0581
2013-Apr-27	La	3	SULa1320	NER13-0170	41.8168	71.4029
2013-May-07	Dd	3	NY4812-2013	NER13-0260	40.9046	72.2937
2013-May-07	La	2	NY4811-2013	NER13-1537	40.9261	72.2411
2013-May-20	La	3	NEAQ-13-062-La	NER13-0321	42.5627	70.7758
2013-May-26	La	3	NEAQ-13-083-La	NER13-0314	41.8715	70.5320
2013-Jun-09	Dd	2	NY4827-13	NER13-1546	40.6582	73.0882
2013-Jun-09	Dd	2	IFAW13-104Dd	NER13-0954	41.7324	70.6438
2013-Jul-01	Dd	1	NY4838-13	NER13-1551	41.0014	72.0261

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2013-Jul-07	Dd	1	IFAW13-124Dd	NER13-0975	41.9298	70.0232
2013-Aug-04	Dd	3	NY4870-13	NER13-1569	40.6416	73.1665
2013-Aug-04	Dd	3	NY4870-2013	NER13-1570	40.6416	73.1665
2013-Aug-08	Dd	3	NY4879-2013	NER13-1584	40.6606	73.0798
2013-Aug-10	Dd	2	NY48852013	NER13-1578	40.5835	73.6722
2013-Aug-19	Dd	3	NEAQ-13-135-Dd	NER13-1219	41.4780	70.6125
2013-Sep-04	Dd	1	NY4905-2013	NER13-1590	40.8521	72.5184
2013-Sep-08	Dd	2	IFAW13-148Dd	NER13-1458	41.9322	70.0270
2013-Sep-08	Dd	1	IFAW13-149Dd	NER13-1459	41.9332	70.0243
2013-Sep-08	Dd	1	IFAW13-150Dd	NER13-1460	41.9332	70.0243
2013-Sep-09	Dd	3	NY4906-2013	NER13-1592	40.7739	72.7508
2013-Sep-10	Dd	2	NEAQ-13-147-Dd	NER13-1213	41.9725	70.6473
2013-Sep-20	Dd	3	SXDd1340	NER13-1273	41.4783	71.2883
2013-Oct-22	Dd	2	SYDd1344	NER13-1381	41.4246	71.4557
2013-Oct-23	Dd	3	SUDd1345	NER13-1495	41.2292	71.5760
2013-Oct-25	Dd	3	IFAW13-165Dd	NER13-1475	41.6031	70.8630
2013-Oct-28	Dd	3	IFAW13-166Dd	NER13-1476	41.5140	70.7120
2013-Nov-02	Dd	3	NY4931-13	NER13-1579	40.6145	73.3228
2013-Nov-08	Dd	3	NY4932-2013	NER13-1591	40.5830	73.6640
2013-Nov-14	Dd	1	IFAW13-169Dd	NER13-1479	42.0559	70.1544
2013-Nov-14	Dd	1	IFAW13-170Dd	NER13-1480	42.0589	70.1435
2013-Nov-15	Dd	2	NY4936-2013	NER13-1593	40.5831	73.9828
2013-Nov-15	Dd	2	NY4934-2013	NER13-1595	40.5854	73.5852
2013-Nov-15	Dd	2	NY4937-2013	NER13-1616	40.5854	73.5852
2013-Nov-24	Dd	2	IFAW13-172Dd	NER13-1482	41.7731	70.0639
2013-Nov-25	Dd	1	IFAW13-173Dd	NER13-1483	42.0359	70.1940
2013-Nov-26	Dd	3	IFAW13-174Dd	NER13-1484	41.7619	70.1136
2013-Nov-28	Dd	1	NY4952-2013	NER13-1560	40.6225	73.3094
2013-Nov-28	Dd	2	NY4949-2013	NER13-1563	40.9257	73.3865
2013-Dec-02	Dd	3	SUDd1348	NER13-1498	41.2213	71.5599
2013-Dec-07	Dd	3	NY4960-2013	NER13-1644	40.7425	72.8330
2013-Dec-14	La	1	IFAW13-178La	NER13-1449	41.9299	70.0389

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2013-Dec-14	La	1	IFAW13-179La	NER13-1450	41.9299	70.0389
2013-Dec-14	La	1	IFAW13-180La	NER13-1451	41.9299	70.0389
2013-Dec-15	Dd	1	NY4968-2013	NER13-1385	40.7800	72.6952
2013-Dec-15	Dd	1	NY4968-2013	NER13-1545	40.7800	72.6952
2013-Dec-22	Dd	3	SYDd1353	NER13-1501	41.3767	71.5312
2013-Dec-23	Dd	3	NY4973-2013	NER13-1404	40.6208	73.2904
2014-Jan-01	Dd	1	IFAW14-002Dd	NER14-00139	41.9224	70.0547
2014-Jan-01	Dd	1	IFAW14-001Dd	NER14-00138	41.9312	70.0682
2014-Jan-03	Dd	1	NY4977-2014	NER14-00010	41.0517	72.4152
2014-Jan-07	Dd	3	IFAW14-004Dd	NER14-00141	41.7940	70.0179
2014-Jan-07	Dd	3	IFAW14-005Dd	NER14-00142	41.9292	70.0317
2014-Jan-14	Dd	2	NY4983-2014	NER14-00009	40.6209	73.2931
2014-Jan-20	Dd	2	IFAW14-007Dd	NER14-00153	41.6518	70.1348
2014-Jan-25	Dd	3	IFAW14-008Dd	NER14-00154	41.7604	70.1349
2014-Feb-17	Dd	3	IFAW14-022Dd	NER14-00176	41.7636	70.1043
2014-Mar-06	Dd	1	IFAW14-040Dd	NER14-00185	42.0600	70.1644
2014-Mar-06	Dd	1	IFAW14-041Dd	NER14-00186	42.0600	70.1644
2014-Mar-06	Dd	1	IFAW14-042Dd	NER14-00187	42.0600	70.1644
2014-Mar-06	Dd	1	IFAW14-043Dd	NER14-00188	42.0600	70.1644
2014-Mar-06	Dd	2	IFAW14-044Dd	NER14-00189	42.0600	70.1644
2014-Mar-14	Dd	3	SUDd1408	NER14-00083	41.1730	71.6080
2014-Mar-21	Dd	1	NY5019-2014	NER14-00269	41.0087	72.3142
2014-Mar-23	La	3	IFAW14-061La	NER14-00247	41.7917	70.0202
2014-Apr-17	La	1	IFAW14-072La	NER14-00254	42.0617	70.1574
2014-May-08	Dd	3	IFAW14-080Dd	NER14-00400	42.0530	70.1833
2014-May-14	Dd	3	NEAQ-14-020-Dd	NER14-00598	41.8556	70.5278
2014-Jun-11	Dd	1	NY5061-2014	NER14-00363	40.8411	72.4847
2014-Jun-17	Dd	1	NY5065-2014	NER14-00376	40.8727	72.4220
2014-Jun-25	Dd	1	SUDd1452	NER14-00901	41.4940	71.1369
2014-Jul-03	Dd	1	IFAW14-116Dd	NER14-00544	41.7250	70.6429
2014-Jul-15	Dd	3	NY5084-2014	NER14-00525	40.9010	72.3035
2014-Jul-20	Dd	1	NY5091-2014	NER14-00462	40.8062	72.5991

Date	SP	CC	Record number		Location	
			Field	NMFS	Lat. (N)	Lon. (W)
2014-Aug-18	Dd	2	IFAW14-134Dd	NER14-00907	41.7717	70.0772
2014-Aug-18	Dd	2	IFAW14-133Dd	NER14-00906	41.7755	70.0565
2014-Aug-19	Dd	3	IFAW14-136Dd	NER14-00909	41.7634	70.1059
2014-Aug-20	Dd	3	IFAW14-143Dd	NER14-00916	41.8808	70.0168
2014-Aug-21	Dd	3	SUDd1458	NER14-00743	41.4657	71.3898
2014-Aug-21	Dd	3	IFAW14-137Dd	NER14-00910	41.8921	70.0180
2014-Aug-22	Dd	3	IFAW14-138Dd	NER14-00911	41.7596	70.1438
2014-Aug-23	Dd	3	IFAW14-139Dd	NER14-00912	41.7513	70.1801
2014-Sep-05	Dd	2	IFAW14-145Dd	NER14-00920	41.6520	70.1617
2014-Sep-14	Dd	1	IFAW14-150Dd	NER14-00925	41.5547	70.4266
2014-Sep-14	Dd	1	IFAW14-149Dd	NER14-00924	41.5551	70.3562
2014-Sep-14	Dd	1	IFAW14-146Dd	NER14-00921	41.5551	70.3562
2014-Sep-14	Dd	1	IFAW14-147Dd	NER14-00922	41.5551	70.3562
2014-Sep-14	Dd	1	IFAW14-148Dd	NER14-00923	41.5551	70.3562
2014-Sep-18	Dd	1	IFAW14-151Dd	NER14-00934	41.6301	70.3005
2014-Oct-07	Dd	1	IFAW14-157Dd	NER14-00931	41.7408	70.4290
2014-Oct-08	Dd	3	SYDd1465	NER14-00748	41.3558	71.6410
2014-Oct-14	Dd	3	SXDd1468	NER14-00749	41.4519	71.3095
2014-Oct-16	La	3	COA141016La	NER14-00726	44.2071	68.7130
2014-Oct-18	Dd	1	IFAW14-163Dd	NER14-00938	41.9286	70.0739
2014-Oct-19	Dd	2	IFAW14-164Dd	NER14-00939	41.5112	70.7068
2014-Oct-20	Dd	3	SUDd1473	NER14-00750	41.5817	71.3211
2014-Nov-15	La	2	MME-14-232La	NER14-00730	43.1630	70.6185
2014-Nov-20	Dd	1	NY5163-2014	NER14-00710	41.0392	71.9177
2014-Nov-25	Dd	3	NY5175-2014	NER14-00712	41.0765	71.9393
2014-Dec-26	Dd	2	NY5197-2014	NER14-00776	40.7319	72.8657