CAFF
Conservation of Arctic Flora and Fauna

CIRCUMPOLAR SEABIRD GROUP
CAFF

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CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

Circumpolar Seabird Monitoring Plan

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- Faroese Museum of Natural History, Tórshavn, Faroe Islands (Kingdom of Denmark)
- Finnish Ministry of the Environment, Helsinki, Finland
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- Ministry of Foreign Affairs, Greenland
- Russian Federation Ministry of Natural Resources, Moscow, Russia
- Swedish Environmental Protection Agency, Stockholm, Sweden
- United States Department of the Interior, Fish and Wildlife Service, Anchorage, Alaska

CAFF Permanent Participant Organizations:

- Aleut International Association (AIA)
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- Inuit Circumpolar Council (ICC)
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CAFF Designated Area

Conservation of Arctic Flora and Fauna

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1. Introduction

The Circumpolar Seabird Group (CBird) was initiated by the Conservation of Arctic Flora and Fauna Working Group (CAFF) of the Arctic Council (AC) in 1993. CBird has worked on several Arctic seabird issues; many related to the conservation and sustainable management of Arctic seabirds. The group has previously written a Framework for a Circumpolar Arctic Seabird Monitoring Network (Petersen et al. 2008) and is now working with the Circumpolar Biodiversity Monitoring Program (CBMP) (Barry et al. 2013) to put in place a Circumpolar Seabird Monitoring Plan.

Monitoring was identified early on in CAFF´s work as an important conservation tool in the Arctic (CAFF 2002a). There was a clear recommendation to "Build on national and international work to implement a program to monitor biodiversity at the circumpolar level that will allow for regional assessments, integration with other environmental monitoring programs, and comparison of the Arctic with other regions of the globe" (CAFF 2002b, p. 10).

The Circumpolar Seabird Monitoring Plan is a companion document to the earlier "Framework for a Circumpolar Seabird Monitoring Network" (Petersen et al. 2008). As such, this Plan is built on the shoulders of the Framework and is intended to establish a coordinated seabird monitoring program througout the circumpolar Arctic. The original Framework did not specify an actual monitoring plan, and this is the priority of this document

The primary vision of The Circumpolar Seabird Monitoring Network is to maintain current biodiversity of Arctic seabird populations and enhance it where possible. Monitoring information will be made available on the internet through the CAFF website (http://www.caff.is/). Bringing together information from the entire Arctic will help to detect changes in the status of seabird populations and habitats at the circumpolar scale if they are occurring, as well as help assess the impacts of global environmental processes including climate change and ocean acidification. The information gathered from circumpolar seabird monitoring will also allow us to better inform management decisions related to wind farms, offshore oil development, Arctic shipping traffic, contaminants, avian disease, oil spill response, and fisheries management. Information generated through seabird monitoring efforts may also help direct conservation measures at the scale of the circumpolar Arctic; something that is not feasible for countries working independently.

Seabirds are part of the Circumpolar Biodiversity Monitoring Program because they constitute important components of Arctic ecosystems. They nest on land but forage at sea and therefore form a link between the marine and terrestrial ecosystems. Birds are important providers of ecosystem services (Şekercioğlu et al. 2004, Şekercioğlu 2006, Arctic Biodiversity Trends 2010, Green & Elmberg 2014), and changes in their populations and diversity may thus hamper regional sustainability. One important ecosystem service provided by birds is that they function as bio--indicators of the ecological condition of their marine habitats, because they integrate the effects of abiotic stressors acting on species at lower trophic levels (O'Connell et al. 2000, DeLuca et al. 2004, Springer et al. 2007, Green & Elmberg 2014,). In this Plan, we consider 64 seabird species as Arctic seabirds; five tubenoses, six cormorants, four seaducks, four skuas and jaegers, 18 gulls, six terns, 20 auks, and the northern gannet Morus bassanus. Of these 64 species, about half (30) breed only within the CAFF boundaries of the Arctic.

2. Objectives of the Circumpolar Seabird Monitoring Network

- To monitor populations of selected Arctic seabird species, in one or more Arctic countries
- To monitor, as appropriate, survival, diets, breeding phenology, and productivity of seabirds in a manner that allows changes to be detected
- To provide circumpolar information on the status of seabirds to the management agencies of Arctic countries, in order to broaden their knowledge beyond the boundaries of their country thereby allowing management decisions to be made based on the best available information
- To inform the public through outreach mechanisms as appropriate.
- To provide information on changes in the marine ecosystem by using seabirds as indicators
- To quickly identify areas or issue in the Arctic ecosystem such as declining biodiversity or environmental pressures to target further research and plan management and conservation measures

3. Definition of Arctic Area for the Purposes of Monitoring Arctic Seabirds

Fig 1. Delineations of the Conservation of Arctic Flora and Fauna (CAFF).

Figure 1 shows the boundaries of the Arctic adopted by CAFF. The Circumpolar Biodiversity Monitoring Program's Marine Expert Monitoring Group (MEMG) divided the Arctic into eight Arctic Marine areas (Fig 2). To be considered an Arctic Marine Area (AMA), significant parts of the region must be seasonally ice--covered at present or must have been so in the recent past. They are often related to Large Ocean Management Areas (LOMAs), Large Marine Ecosystems (LMEs), Marine Protected Areas, National Wildlife Areas, Important Bird Areas, or other similar areas. Of note, these areas are experiencing, or are expected to experience, development pressures such as oil and gas exploration and extraction, commercial fisheries, and pollution from ships. These areas are also undergoing other changes; particularly due to climate variability and extremes.

The MEMG developed criteria to identify areas within the Arctic marine system where monitoring should be focused. These areas are physically and bio--geochemically distinct Arctic Marine Areas (AMAs), that encompass these important areas (Figure 2). The criteria are listed in the existing MEMG Monitoring Plan (Gill et al. 2011). For the purposes of this seabird monitoring plan, the Cbird Group used the MEMG's delineations as a starting point for dividing up the Arctic into monitoring regions. From there, CBird made the decision to have 22 ecoregions, rather than just eight, and to include geographic areas outside the MEMG--defined area (Figure 3). This Seabird Monitoring Plan therefore includes Alaska, Norway, and the Baltic Sea. The 22 ecoregions were carefully selected because they reflected known geographic differences in seabird ecology; particularly related to seabird habitat, migration, species composition, and population trends.

Figure 2. Eight Arctic Marine Areas derived by the Circumpolar Biodiversity Monitoring Program's Marine Expert Monitoring Group (MEMG) which will be adopted for the Circumpolar Seabird Monitoring Plan with slight modifications.
Fig 3. Twenty--two ecoregions derived by the Circumpolar Seabird Group for the purposes of the Circumpolar Seabird

Monitoring Plan. The 22 ecoregions were selected because they provide particular insight on seabirds based on historical information that showed differences in habitat, species composition, and population trends of seabirds.

4. Definition of Arctic Seabirds

Seabirds are usually thought of as birds that make their living from the sea and therefore spend much of their time at sea. It should be recognized that the he 64 species of Arctic seabirds considered in this monitoring plan are but a small subset of the world's roughly 350 seabird species. The list of Arctic seabirds contains 64 species; including tubenoses, cormorants, seaducks, skuas, jaegers, gulls, terns, auks, and the northern gannet. Of these 64 species, about half (30) breed only within the boundaries of the CAFF countries. The other half (34) breed partly within these boundaries but also in more temperate southern regions and in some cases, may contain the larger proportion of the population. The distribution of these species dictates to some extent the degree of responsibility placed on the each Arctic to implement this Monitoring Plan for the continued survival of these seabird populations. The CBird Group's list of Arctic seabirds was compiled by Wohl & Pagnan (1994). This was refined further by the CBird Group during the development of the present monitoring framework. The revised list is shown here in Appendix 1. The number of seabird species breeding varies between the Arctic countries (Table 1).

Table 1. Number of seabird species breeding in the Arctic regions of each Arctic Country

Country	Number of breeding seabird species
Canada	23
Faroes	20
Finland	18
Greenland	23
Iceland	23
Norway	29
Russia western	30
Russia eastern	39
Sweden	19
USA (Alaska)	41

5. Prioritized Circumpolar Species to be Monitored

The CBird Group organized species to monitor based on the trophic level at which birds foraged. We considered that it was important to include birds using different prey and foraging habitats to cover the different sectors of the marine environment; an approach in line with the concept of ecosystem-- based monitoring. Although we recognize that most seabird species use a variety of prey and may shift trophic levels throughout the year, we considered six trophic assemblages: Surface Piscivores, Surface Planktivores, Diving Piscivores, Diving Planktivores, Benthic Feeders and Omnivores (CAFF 2008b).

The list includes twenty three species, or one third of Arctic seabird species. Each country should consider which species on this list breeds or occurs within its boundaries, and seek to adjust its monitoring activities accordingly.

However, CBird advises that national monitoring programs should continue for species that may not be on a circumpolar priority list such as this, but already monitored as part of national efforts planned or underway in some countries. For example, a species in question that does not appear on our priority list may still provide valuable information, as well as being a priority species at the national level. This exercise is intended to be used by the Arctic countries to identify gaps in their national programs and to strengthen and justify the existing programs. As just one positive example, Iceland is currently revising their national marine bird monitoring plan which will include species of national importance addressing regional conservation issues of Iceland, as well as species and approaches identified by this International Seabird Monitoring Plan1. However, in this Circumpolar Plan we intentionally only concentrate on circumpolar relevance. A full gap analysis is a subject of its own and should be performed at a later stage by the CBird or others.

Table 2. Prioritized species for monitoring across the circumpolar scale by foraging guild. Note: This list was compiled after CBird evaluated the pros and cons of several aspects and ranks.

Omnivores	
Glaucous Gull	*Larus hyperboreus*
Glaucous-winged Gull	*Larus glaucescens*
Great Black-backed Gull	*Larus marinus*
Herring Gull	*Larus argentatus*
Ivory Gull	*Pagophila eburnea*
Diving Piscivores	
Common Murre	*Uria aalge*
Thick--billed Murre	*Uria lomvia*
Atlantic Puffin	*Fratercula arctica*
Tufted Puffin	*Fratercula cirrhata*
Surface Piscivores	
Black--legged Kittiwake	*Rissa tridactyla*

Northern Fulmar	*Fulmarus glacialis*
Arctic Tern	*Sterna paradisaea*
Benthic feeders	
Common Eider	*Somateria mollissima*
King Eider	*Somateria spectabilis*
Black Guillemot	*Cepphus grylle*
Pigeon Guillemot	*Cepphus columba*
Great Cormorant	*Phalacrocorax carbo*
Shag	*Phalacrocorax aristotelis*
Pelagic Cormorant	*Phalacrocorax pelagicus*
Diving Planktivores	
Least Auklet	*Aethia pusilla*
Dovekie	*Alle alle*
Surface Planktivores	
Leach´s Storm Petrel	*Oceanodroma leucorrhoa*
Fork--tailed Storm Petrel	*Pterodroma furcata*

6. Recommended Monitoring Parameters

Experience has shown that it is important to implement a variety of approaches when monitoring seabirds particularly given their often diverse distribution, behavior, and ecology. Much literature and indeed entire books, have been devoted to methods, approaches, and analysis associated with seabird monitoring and it is not our intention to review all of that work here. In general, seabirds can be monitored at different stages of their life cycle, at various times of year, and in specific areas of importance required to ensure their continued survival. We identify the following main components to include in the Circumpolar Seabird Monitoring Plan, although the focus is principally on colony monitoring:

- Colony monitoring, with three sub--components
  - colony registry
  - total colony counts
  - partial colony counts (plots, transects)
- Banding
- At--sea surveys
- At--sea tracking using computerized devices
- Harvest statistics
- National lists of breeders and non--breeders
- National endangered species lists

6.1. Colony Monitoring Parameters

Colony monitoring is approached in a variety of ways among the Arctic countries. An important first step is to select which population and demographic parameters should be prioritized at selected study colonies (see below). To understand the status and trends of seabirds at the scale of the Arctic and to enhance the comparability of results, the CBird Group recommends the following actions:

- Develop a standardized circumpolar seabird colony registry format
- Compile and analyze Arctic seabird colony data, including trend data, every 10 years

One priority of a monitoring plan is to confirm the locations of Arctic seabird colonies. Hence, we recommend that each country establish a colony registry, which can then be linked to the existing Circumpolar Seabird Colony Registry. Compilation and timely reporting of monitoring data also improves the effectiveness of a circumpolar monitoring program, creates data of use by many stakeholders, helps to identify problems and monitoring gaps, and justifies funds for continued monitoring work.

The following parameters were identified by the CBird Group to be included in a circumpolar seabird colony monitoring program:

- Numbers of birds
- Productivity (recruitment)
- Survival
- Diets
- Phenology

The basic monitoring unit is simply the numbers of birds present. Parameters affecting numbers over time include reproductive productivity and adult and juvenile survival. Other factors to include in a monitoring program depend on the specific aims. For example, diet is recognized as an important factor affecting seabird populations. Phenological data are also needed to assess changes in the life-cycles of birds due to factors such as climate change. Detailed methodologies in general are a subject which needs careful examination within each country and comparison between countries, but is not part of this plan per se.

CBird recognizes that a suite of other parameters, both physical and biotic, are needed for the interpretation of monitoring results. These include, but are not limited to, the following:

- Climate data (air temperature, winds, etc.)
- Oceanographic data (salinity, depth, sea temperature, currents, sea ice, etc.)
- Climate change models (including NAOs, sub--polar gyres, etc.)
- Plankton distributions and abundance
- Benthos data
- Fisheries and fish stock data
- Oil spill data (acute and chronic)
- Contaminants
- Development, disturbance, and shipping traffic

It is not recommended that compilation of these data be part of national seabird monitoring programs, rather that cooperation be forged with those who have the task of measuring and compiling these relevant data.

6.2. Banding

Banding is essential for certain aspects of monitoring. In well--structured programs banding can augment productivity information and increase the sample size using the large network of amateur banders. More importantly, banding is crucial for survival analyses, which may be more important to monitor for some species than for instance, productivity. Survival of adult breeding birds is one of the most important parameters for the population dynamics of seabirds, most of which are long-- lived. Survival can, however, vary according to life history traits of species.

6.3. At-sea surveys

Birds at sea represent important environmental indicators and are proxies for ecosystem health (Frederiksen et al. 2007, Piatt & Sydeman 2007). At--sea surveys address the full scale of seabird biodiversity present in a respective area at a given time of year. Surveys can, in theory, be carried out at any time of year. Seabird distribution at sea can change as water masses change so survey results need to be compared to physical characteristics of the water such as sea surface temperature (SST) and salinity, as well as biotic factors such as primary production and zooplankton data. At--sea monitoring allows population trends and especially changes in distribution throughout the range of a species to be determined for many species simultaneously.
Winter surveys of seabirds are inevitably carried out at sea but can sometimes be difficult to execute due to poor weather conditions, limited light conditions and few working research vessels. We suggest that monitoring transects should concentrate on areas of high seabird abundance; areas which are often coastal and in some locations, can be surveyed from small boats or from the shore. We also suggest aerial surveys, which we acknowledge are also weather--dependent but have shorter sampling times and much larger coverage than vessels.

Collaborative ventures with research and fisheries monitoring vessels can provide platforms of opportunity, especially during seasons which are difficult to survey from smaller vessels.

Recently the following ideas have been discussed by the CBird Group for at sea surveys:

- start with 10 to 15 pilot areas
- monitor every one to five years
- monitor selected coastal and open sea areas
- use local ferries and research vessels for permanent transects
- use vessels of opportunity for one--time transects
- use observers on vessels with continuous plankton recorders
- liaise with existing global monitoring programs

This plan is not intended to select the areas to be surveyed. That is for each country to decide as some countries have more active at--sea programs than others and circumpolar efforts must adapt to differing capacities and requirements. Again our ideal goal is to standardize seabird monitoring efforts throughout the circumpolar Arctic, without losing on--going programs.

6.3. At--sea tracking

With the advent of light--weight inexpensive tracking devices, we are now able to define areas used by seabirds at sea, both during the breeding season and the non--breeding season. This information is extremely important to help understand which parts of the oceans are most important to seabirds and when. Over time, tracking studies will demonstrate changes in areas used by seabirds in relation to changes in the ocean productivity that may ultimately be caused by overfishing, pollution or climate change.

6.4. Harvest statistics

Harvest data can provide a measure or index of the local abundance of species and potentially population trends over time. Special programs such as the collection of wing samples provide data on other population parameters, including sex ratio and age distribution. Typically, data are obtained from local or national government programs and which may include Traditional Knowledge for those countries with aboriginal seabird harvests. Harvest data can also help to interpret of possible effects of hunting on respective populations. For interpretation of harvest data some measure of effort should be taken, such as season length, number of harvesters, and total number of harvest days, to allow catch per unit effort (CPUE) to be calculated. Such data also need interpretation itself since many human--related factors can influence results, as harvest data are open to ambiguities such as differences in reporting by hunters, and distribution of humans.

Populations in countries and areas without seabird harvests could be used in comparison with hunted populations.

Each Country will determine how to use harvest data, as harvest varies greatly among the countries.

6.5. National Lists of Breeding and Non--breeding Seabirds

Species' ranges will change as climate changes (Huntley et al. 2008). Existing national lists of Arctic breeding seabirds allow us to detect changes in species composition over time. Extinct breeding species should be included in such a compilation. The species composition of non--breeders occurring in an area may also change. Hence simple lists of regular winter visitors, regular through--migrants, and vagrants are of monitoring value. Numbers of vagrants may indicate environmental changes and anticipate changes in breeding bird species composition. Species lists for countries are inexpensive indicators and are often compiled by bird enthusiasts through their volunteer efforts.
National lists of breeders and non--breeders should be updated by each country and reported on every five years.

6.6. National Endangered Species Lists

Lists of nationally endangered species are normally easy to access and available in all countries. Such lists can provide information on trends in numbers of rare species and thus is a measure of changes in bird fauna. These changes can be related to causal environmental factors, natural or anthropogenic, and indicate how well conservation actions are working.

National endangered species lists should be updated by each country's representative and reported on every five years.

7. Recommended Colony Sites and Frequency

There are a number of considerations to make when selecting specific colony sites to monitor: by ecosystem or ecological characteristics, by administrative criteria, or simply based on feasibility. The approach we have taken here is to build on existing national monitoring programs, recognizing that experts in each country can likely identify the best colonies to monitor.

Some countries have more comprehensive monitoring programs than others. The development of this monitoring plan included a gap analysis and it is included here. The gap analysis identified seabird colonies that the CBird Group recommends should be monitored, but currently are not. It should also be recognized that this is a middle-of-the-road approach and intentionally does not recommend a monitoring effort that could not be achieved (e.g. that every species be monitored in every location) because this cannot occur. Instead, this plan recognizes what degree of monitoring is feasible with existing, or marginally increased funding. Some of the recommended colonies are considered "Key Sites" which are those that are the most important sites to monitor from the perspective of circumpolar population monitoring. These sites each have two or more parameters per species recommended.

Appendix 2 lists all of the sites for all of the species that are recommended for monitoring, with a recommended frequency at which monitoring should occur. Figures 4 shows the locations of key sites recommended and the current degree of implementation. Figures 5--10 show these key sites and degree of implementation for each of the six seabird foraging guilds. Each site is rated as fully implemented, partially implemented or not implemented. Fully implemented means that at least population trends and productivity and ideally survival are being done at the recommended interval. Partially implemented means that data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity. Not implemented means that no data on population trends or productivity are being collected at that site. Appendix 3 shows just the key sites.

Figure 4. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation. Definitions for implementation: Red = fully implemented (half or more of the key species, with at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (more than half of the key species, population trends, or productivity are not being done at the recommended interval),, Green = not implemented (no data on population trends and productivity are being collected at that site for key species).

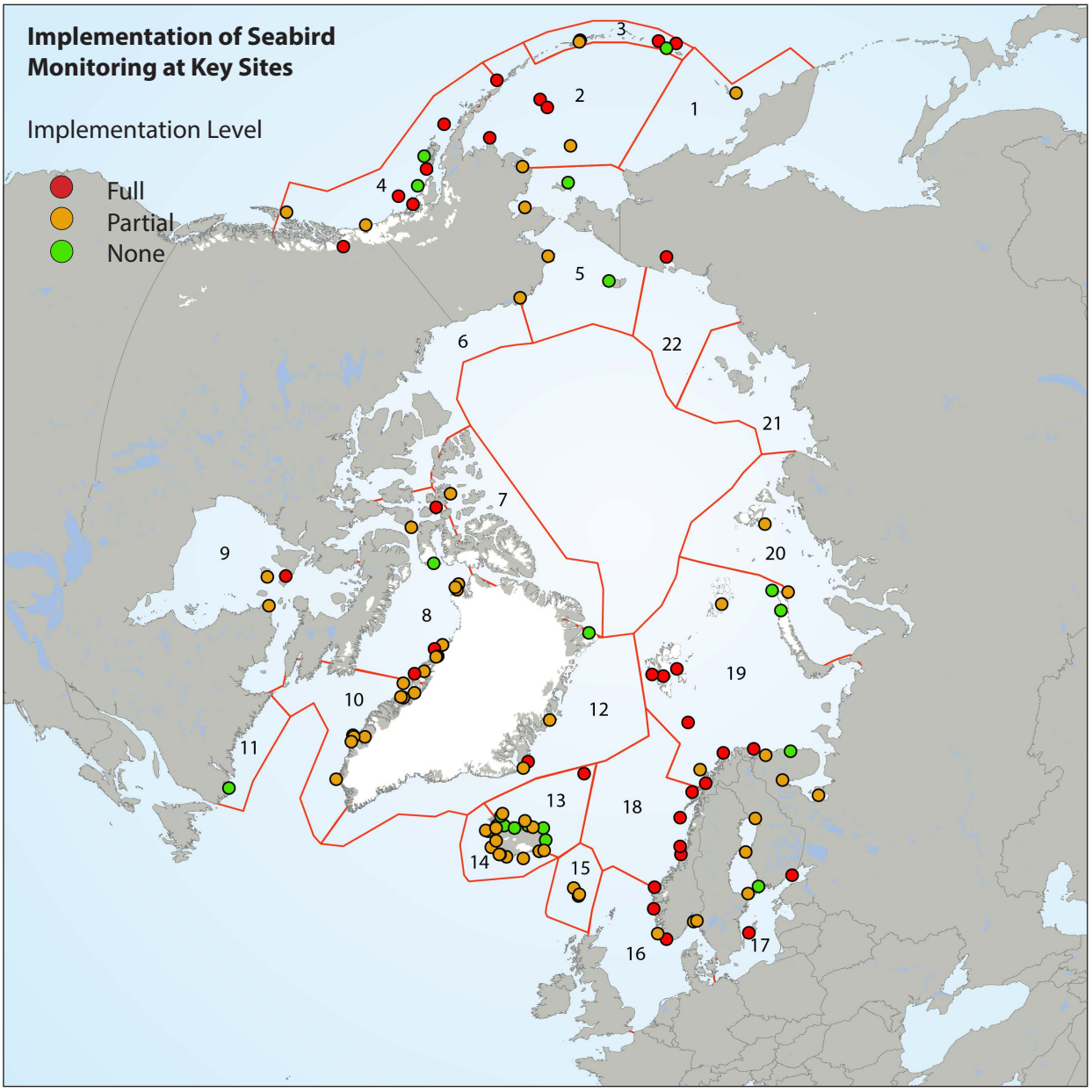


Figure 5. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of diving piscivores (Common Murre, Thick--billed Murre, Atlantic Puffin, Tufted Puffin). Definitions for implementation: Red = fully implemented (at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity), Green = not implemented (no data on population trends or productivity are being collected at the site). Gray ecoregions indicate that there are few or none of the species in this guild breeding there.

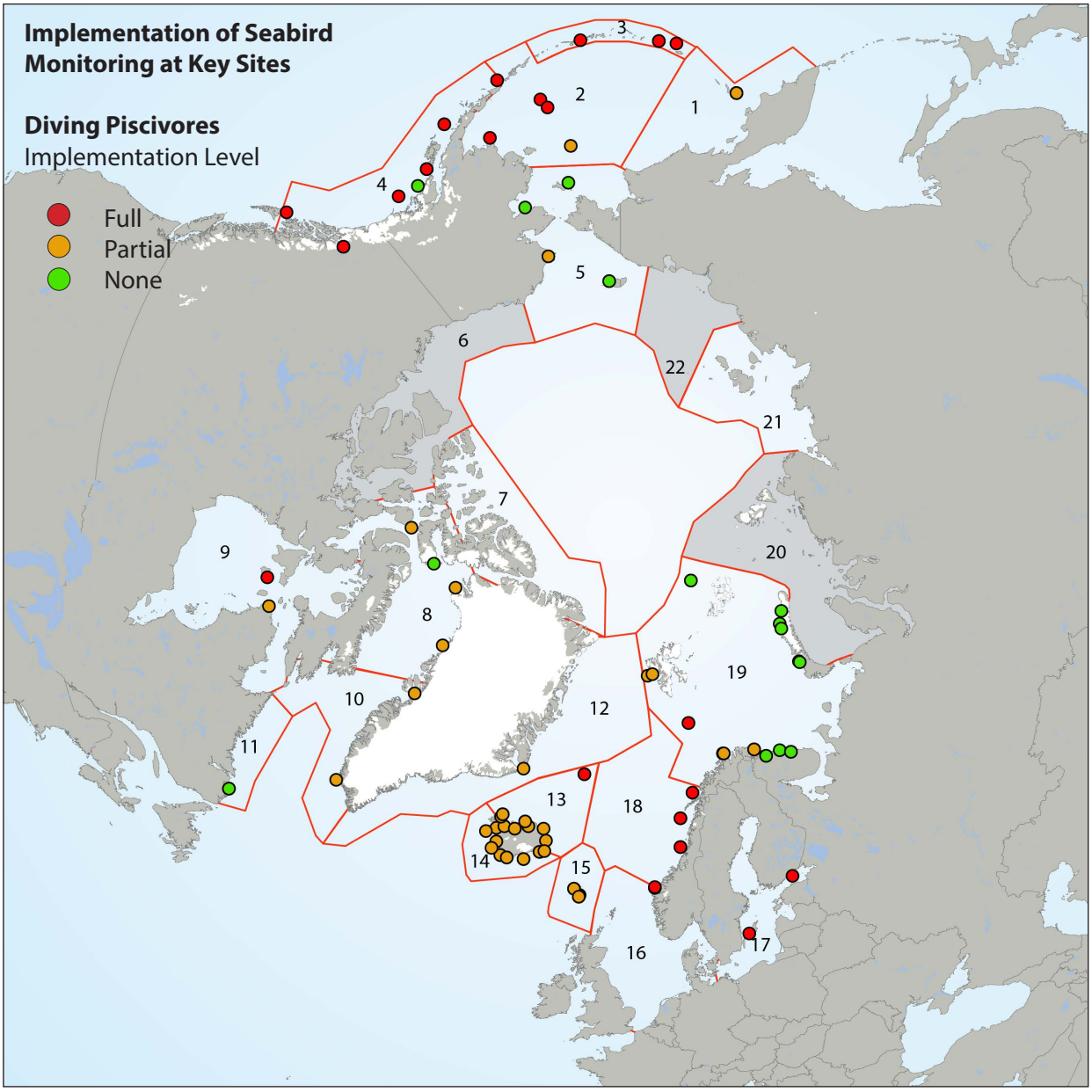


Figure 6. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of surface piscivores (Black--legged Kittiwake, Northern Fulmar, Arctic Tern). Definitions for implementation: Red = fully implemented (at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity), Green = not implemented (no data on population trends or productivity are being collected at that site).

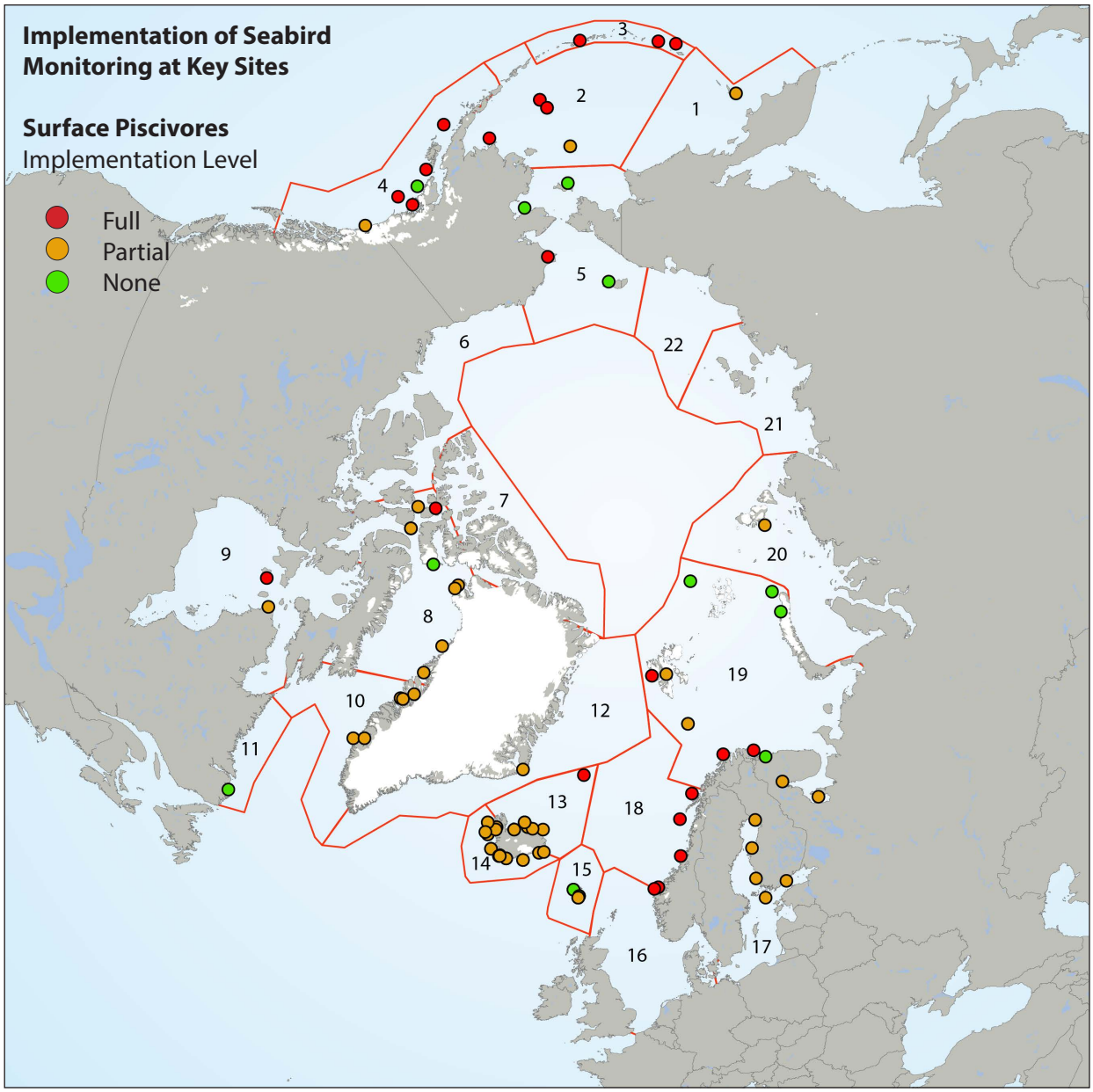


Figure 7. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of benthic feeders (Common Eider, King Eider, Black Guillemot, Pigeon Guillemot, Great Cormorant, Shag, Pelagic Cormorant). Definitions for implementation: Red = fully implemented (half or more of the key species, with at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (more than half of the key species, population trends, or productivity are not being done at the recommended interval), Green = not implemented (no data on population trends and productivity are being collected at the site for key species).

Figure 8. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of omnivores (Glaucous Gull, Glaucous--winged Gull, Great Black--backed Gull, Herring Gull, Ivory Gull). Definitions for implementation: Red = fully implemented (at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity), Green = not implemented (that no data on population trends or productivity are being collected at that site).

Figure 9. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of diving planktivores (Least Auklet, Dovekie). Definitions for implementation: Red = fully implemented (at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity), Green = not implemented (no data on population trends or productivity are being collected at the site). Gray ecoregions indicate that there are few or none of the species in this guild breeding in the area.

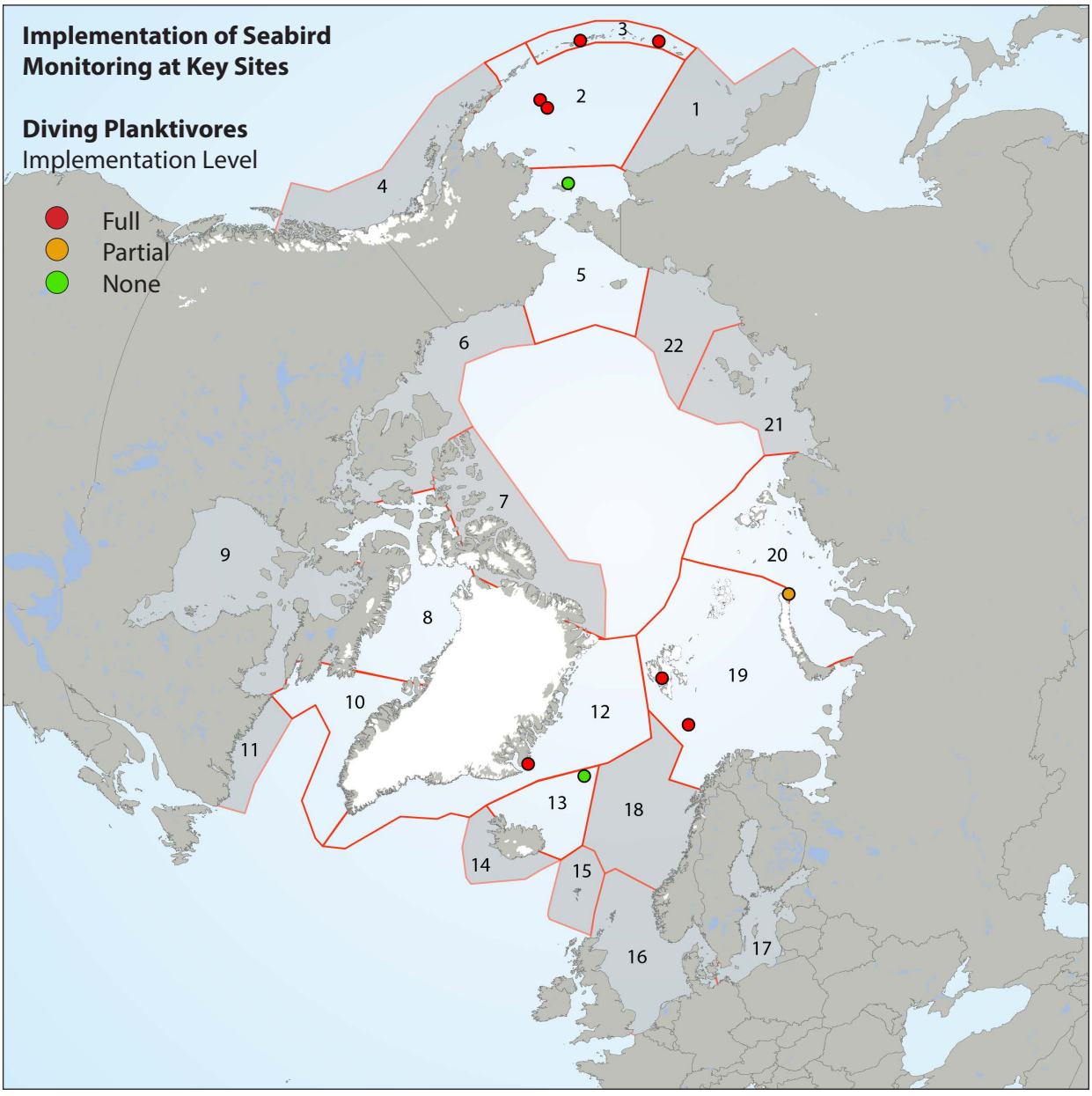
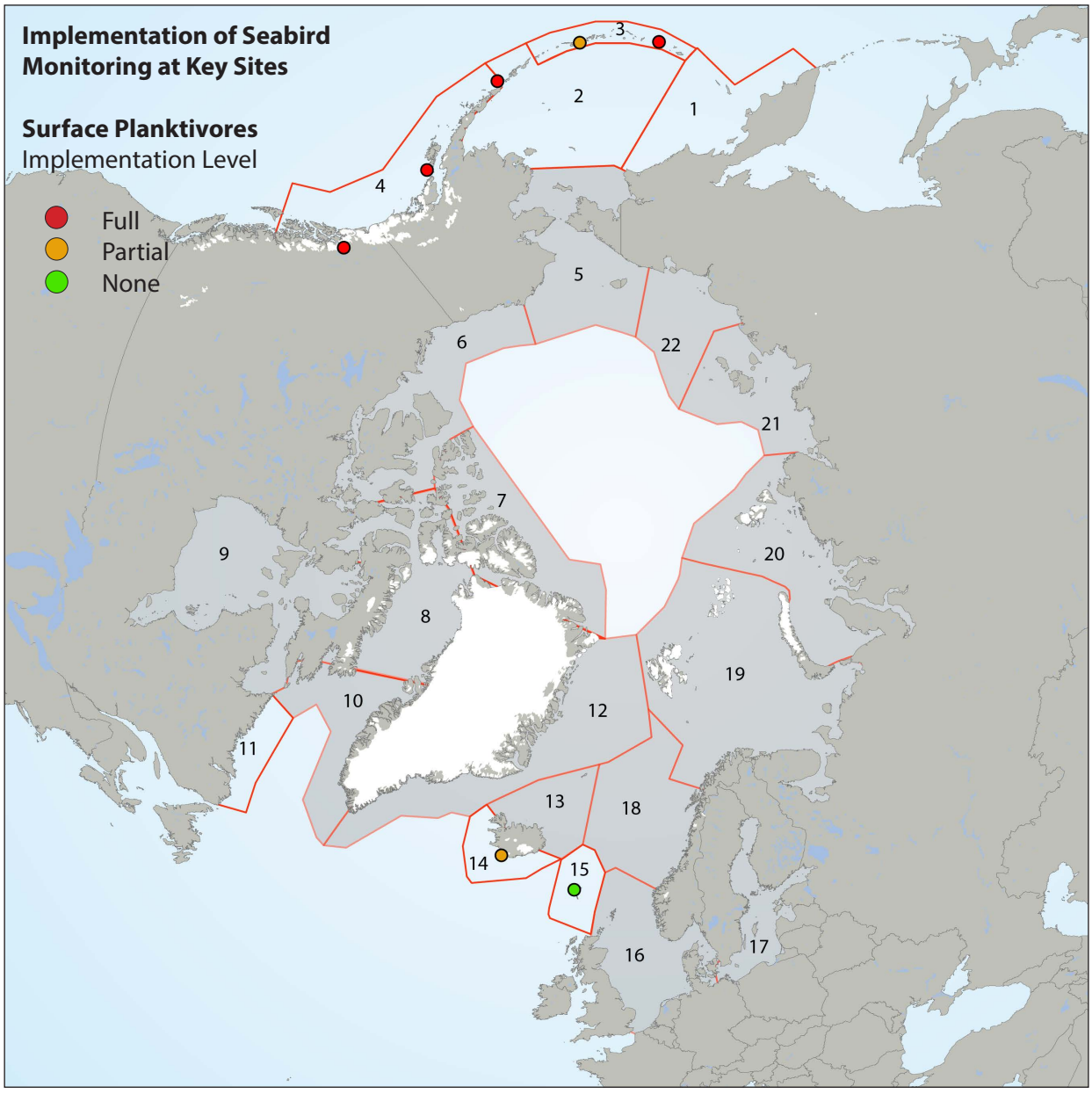


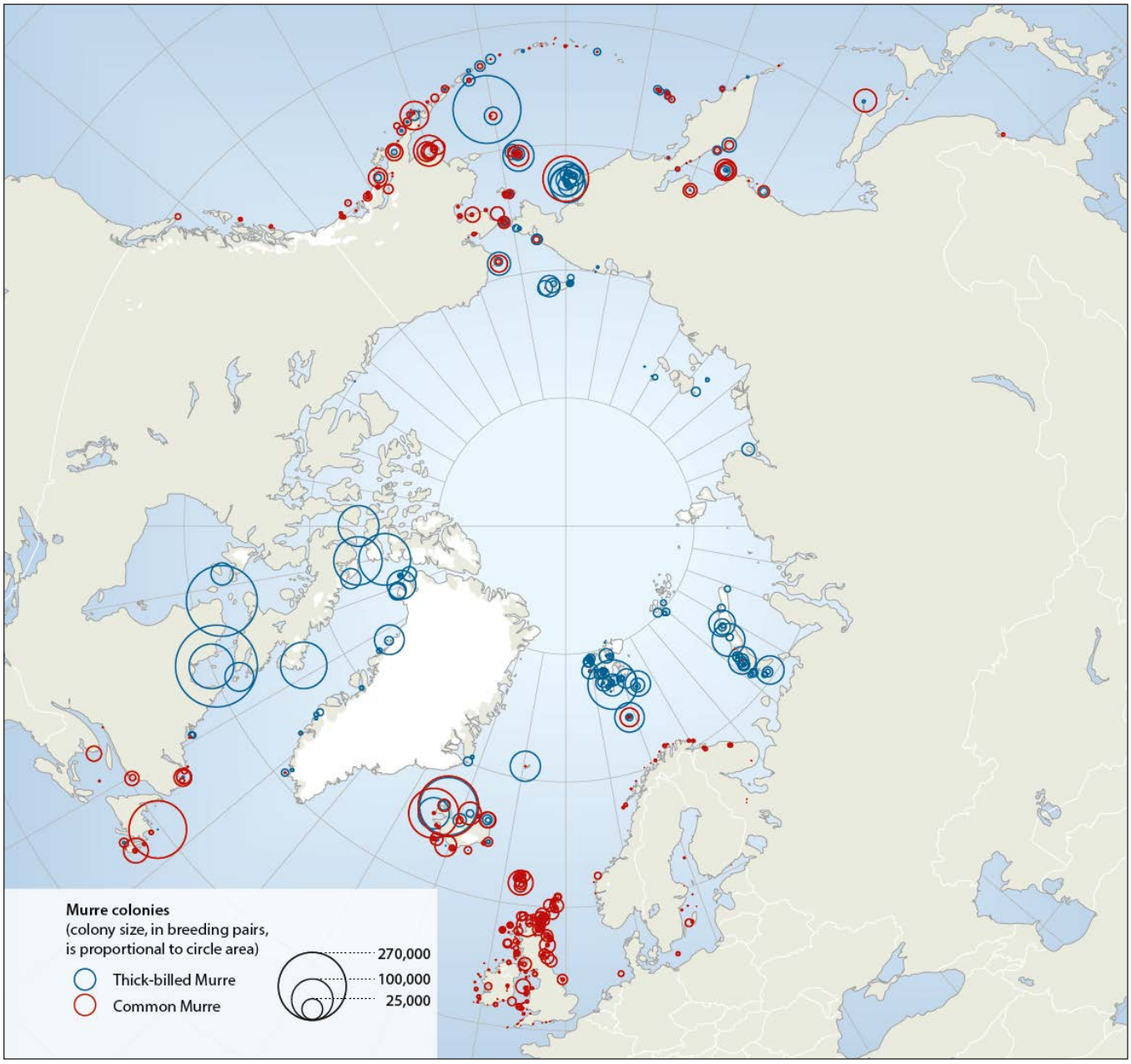
Figure 10. Locations of key sites to be monitored recommended by the Circumpolar Seabird Group for the Circumpolar Seabird Monitoring Plan and the level of current implementation for the foraging guild of surface planktivores (Leach´s Storm Petrel Fork--tailed Storm Petrel). Definitions for implementation: Red = fully implemented (at least population trends and productivity and ideally survival are being done at the recommended interval), Amber = partially implemented (data are not being collected at the recommended interval on at least one of the following parameters: population trends or productivity), Green = not implemented (no data on population trends or productivity are being collected at that site). Gray ecoregions indicate that there are few or none of the species in this guild breeding there.



8. Gap Analysis

This plan shows the key sites at which seabirds in the Arctic are recommended to be monitored (Figures 4-10). The sites, which are not fully implemented, represent gaps in current monitoring that we hope can be reconciled to provide solid information on the status of seabirds in the Arctic in the future. There are some general observations that can be made regarding the gaps in current monitoring efforts. The piscivorous seabirds are monitored much more than the others. Little monitoring is done on planktivorous seabirds, but from the maps (Figures 9 and 10) one can see that the ranges of these birds are more limited than the piscivores (Figures 4 and 5). In general, there is less monitoring done in some regions of the high Arctic than at lower latitudes. Note: however, by using murres as an example (Figure 11), it is clear that there are fewer birds nesting in these regions.

Figure 11. Map of Thick--billed Murre and Common Murre colonies in the northern hemisphere.



9. Data Management

A key objective of the Circumpolar Biodiversity Monitoring Program, of which the seabird monitoring plan is a part, is to create the Arctic Biodiversity Data Service (ABDS – www.abds.is). This is a publicly accessible platform for accessing information on the status of and trends of Arctic biodiversity. This objective will be instrumental to achieve the program's mandate to report on trends in a timely and compelling manner so as to enable effective policy responses. The CBird Group plans to develop data--management systems that facilitate improved access to existing data and integration of this data between disciplines, all while maintaining the data holders' ownership and control of the data. It is expected that each country would still be responsible for supporting data management (e.g., quality control of data and compilation of existing national datasets) and contributions from their individual monitoring networks (i.e., the data holders), whereas the CBird Group will focus its efforts on building the mechanisms to access and integrate this data across countries and networks, as well as promoting a common, standardized data--management approach among the countries. For this approach to be successful, it is imperative that national datasets are made available. The CBird Group has already made good progress on developing the Seabird Information System (SIN) (Irons et al. 200X. SIN is online (www.seabirds.net/seabirdinfonetwork.html) and currently has much of the colony locations and related population data in the Arctic. The CBird Group continues to update the productivity and population trend information of arctic seabirds through the Seabird Information System.

10. Reporting

As the CBird Group is part of the Marine Expert Monitoring Group within the Circumpolar Biodiversity Monitoring Program (Barry et al. 2013), we have adopted their reporting recommendations with some slight changes. The following was taken from the Arctic Marine Biodiversity Monitoring Plan and modified to fit this Plans's needs.

Type of Reporting	Timing/Frequency
State of Arctic Marine Biodiversity Report, including AMA status reports	Every 5 years, starting in 2017
Status of indicators	Bi--annually, starting in 2015
Scientific publications	Ongoing, starting in 2014
Performance reports and work plans	Annually, starting in 2014
Various summaries and other communications material	Ongoing, starting in 2014

10.1. State of Arctic Marine Biodiversity Report

The first State of Arctic Marine Biodiversity Report is targeted for production in 2017 It will describe:

- The baseline conditions for FECs and spatial comparisons, where possible, within and among the different AMAs;
- Temporal changes that have occurred since the baseline periods, in addition to historical trends, where data permits; and,
- Differences that have occurred spatially within and between AMAs. The results (e.g., trends, spatial differences, and changes in variability) will be described and interpreted, to the extent possible, both statistically and from a biophysical perspective. Emphasis will be placed on the implications of these changes for the Arctic marine ecosystem. It will be important to discuss the statistical significance, spatial representativeness, and confidence levels of the results. Subsequent reports are planned every five years, and will include an analysis of how changes in biodiversity may be linked to human stressor activities.

10.2. Status of indicators

Biodiversity indicators used to illustrate the status and trends in biodiversity will be updated every two years and published on the Arctic Biodiversity Data Service. This will allow users to see changes in biodiversity between State of Arctic Marine Biodiversity reports or scientific publications.

10.3. Scientific publications

It is anticipated that several types of scientific publications will be produced related to ongoing monitoring of Arctic seabirds. Scientific articles will be published by discipline (as is traditional), as well as along multidisciplinary lines. For the purposes of the CBMP--Marine Plan, the intention is for these publications to address the baseline status and changes to Arctic marine biodiversity in each Arctic Marine Area, as well as across the Arctic. The multidisciplinary publications, especially, are expected to provide insights into changes occurring in the broader ecosystem, factors driving these changes, as well as linkages between changes to biodiversity at different trophic levels. Their findings may also highlight possible challenges facing the sustainable management and conservation of seabirds.

10.4. Performance reports and work plans

A requirement of the program, once implementation begins, will be to develop and submit annual performance reports and work plans to the Arctic Council for approval. CAFF will deliver these reports and work plans to the Senior Arctic Officials on an annual basis. The performance reports will describe progress in implementing and managing the *Circumpolar Seabird Monitoring Plan*, while work plans will outline work anticipated for the following year, along with deliverables, and budget.

10.5. Various summaries and other communications material

A variety of other reporting materials will be developed for non--specialist and non--technical audiences, especially community residents, other northerners, and non--governmental organizations interested in Arctic marine biodiversity. The CBMP will also use its existing communications network and media (e.g., newsletter, media releases, and websites) to provide regular information on progress and results to these audiences.

11. Implementation

The implementation of this monitoring plan will involve a number of jurisdictions across the Arctic (national, sub--national, and local); many of which are already engaged in some level of seabird monitoring or even updating their own national monitoring plan (e.g. Iceland). Monitoring capacity is limited and opportunities for new monitoring efforts are also limited. Therefore, building on the existing structure of the Circumpolar Biodiversity Monitoring Program (CBMP), the CBird Group will ensure effective implementation, ongoing data integration, analysis and assessment, and regular review of the monitoring plan.

The governing structure for implementation of the monitoring program involves the following entities: the CAFF Secretariat, the CBMP office, a CBMP Marine Steering Group (CBMP--MSG), and CBird. Each CAFF representative will be responsible for ensuring that the monitoring program is implemented within their own nations to the best of their abilities and will, therefore, need to have close connections with the relevant agencies and experts within their countries. They will also play a key role in providing direction to the evolving monitoring program as a whole. Together with the CBMP, the CBird Group will be responsible for the overall coordination and implementation of this Circumpolar Seabird Monitoring Plan program. The CBird Group will meet annually to review program implementation, produce regular reports, publications and assessments, and adjust the monitoring approach, where necessary. Where possible and appropriate, CBird annual meetings will coincide with other meetings and may even form out of existing structures (e.g., World Seabird Conferences, International Council for the Exploration of the Sea). These collaborations are expected to result in multi-authored scientific publications that will advance the understanding of seabirds and their role in Arctic marine ecosystems. CAFF's CBMP will also be responsible for managing the overall output of the CBMP--Marine Plan by providing value--added services and integration through development of and access to data management (web portal and web-based data nodes), communications products, and reporting tools (regular assessments), and will work with the CBird Group to establish analysis outputs via Data Portals.

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Appendix 1: List of Arctic Seabirds

The following 64 seabird species have been identified by the CBird Group as constituting "Arctic Seabirds" for the purpose of this report:

Common Name	Scientific Name
Northern Fulmar	*Fulmarus glacialis*
Manx Shearwater	*Puffinus puffinus*
Fork-tailed Storm Petrel	*Pterodroma furcata*
Storm Petrel	*Hydrobates pelagicus*
Leach´s Storm Petrel	*Oceanodroma leucorrhoa*
Northern Gannet	*Morus bassanus*
Great Cormorant	*Phalacrocorax carbo*
Shag	*Phalacrocorax aristotelis*
Pelagic Cormorant	*Phalacrocorax pelagicus*
Brand t´s Cormorant	*Phalacrocorax penicillatus*
Double-crested Cormorant	*Phalacrocorax auritus*
Red-faced Cormorant	*Phalacrocorax urile*
Common Eider	*Somateria mollissima*
King Eider	*So materia spectabilis*
Spectacled Eider	*Somateria ficheri*
Steller's Eider	*Polystica stelleri*
Parasitic Jaeger	*Stercorarius parasiticus*
Long-tailed Jaeger	*Stercorarius longicaudus*
Pomarine Jaeger	*Stercorarius pomarinus*
Great Skua	*Stercorarius skua*
Thayer´s Gull	*Larus thayeri*
Iceland Gull	*Larus glaucoides*
Glaucous Gull	*Larus hyperboreus*
Glaucous-winged Gull	*Larus glaucescens*
Great Black-backed Gull	*Larus marinus*
Herring Gull	*Larus argentatus*
Lesser Black-backed Gull	*Larus fuscus*
West-Siberian Gull	*Larus heuglini*
Slaty-backed Gull	*Larus schistisagus*
Mew Gull	*Larus canus*
Bonaparte´s Gull	*Chroicocephalus philadelphia*
Black-headed Gull	*Chroicocephalus ridibundus*
Little Gull	*Hydrocoloeus minutus*
Sabine´s Gull	*Xema sabini*
Ivory Gull	*Pa gophila eburnea*
Black--legged Kittiwake	*Rissa tridactyla*

Appendix 2: List of key colony sites and other sites recommended to be monitored and level of implementation in the Circumpolar Seabird Monitoring Plan: see attached excel sheet

Colonies recommended for monitoring, including key sites which are shown in the figures.

Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic Feeders	Common Eider	Canada East	Hudson Complex	Hudson Bay	9	East Bay (Nunavut)	1	2	64	-81.72	1	1	1	1	1	1	1	1	1	1
Benthic Feeders	Common Eider	Canada East	Arctic Archipelago	Canadian Arctic Archipelago	8	Nasaruvaalik Island (Nunavut)	1	1	75,83	-96,3	1	1	1	1	1	1	1	1	1	1
Benthic feeders	Black Guillemot	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1	1	1	1
Benthic feeders	Black Guillemot	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1	1	1	1
Benthic feeders	Black Guillemot	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	0	61.46	-6.51						1	1	1	1	1
Benthic feeders	Common Eider	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1		1	1
Benthic feeders	Common Eider	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1		1	1
Benthic feeders	Common Eider	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	0	61.46	-6.51						1	1		1	1
Benthic feeders	Shag	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1			
Benthic feeders	Shag	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	0	61.46	-6.51						1	1			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär			60,15	26,25	1					1	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Eurajoki			61,15	21,24	2					2				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Jurmo - Utö			59,47	21,30	3					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E			60,02	24,38	3					3				

+ blank= not ongoing, number is frequency of years

A key site is an important site with at least population trends, and productivity, and ideally survival recommended to be monitored.

** no=blank, recommended =1*

*** full=2, partial=1, none=0*

Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Lågskär			59,50	19,56	5					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Luoto			63,45	22,45	3					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Norrskär			60,14	20,38	5					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Ourat SE	1	1	61,50	21,22	3					3	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Rauma			61,14	21,22	2					2				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Maalahti)			63,04	20,50	5					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari	1	0	60,39	21,08						3	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär	1	1	60,11	19,20	5					3	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Söderskär	1	1	60,07	25,25	3					3	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Suomenlahti National Park			66,83	35,00						3	3			
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Trollö			60,06	22,12	3					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Trunsö			59,49	21,48	3					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne			59,50	23,15	3					3				
Benthic feeders	Black Guillemot	Finland	Atlantic Arctic	Baltic Sea	18	Valassaaret	1	2	63,25	21,04	3	1				3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär			60,15	26,25	1	1				1	1			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Bänö	1	1	60,06	20,35	1					3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Eurajoki			61,15	21,24	2					2				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Hankoniemi			59,51	22,48	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Jurmo - Utö			59,47	21,30	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E	1	2	60,02	24,38	3	3				3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Lågskär			59,50	19,56	5					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Långören			66,72	34,24	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Luvia N			61,26	21,20	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Norrskär			60,14	20,38	5					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Ourat SE			61,50	21,22	3					3				

+ blank= not ongoing, number is frequency of years

A key site is an important site with at least population trends, and productivity, and ideally survival recommended to be monitored.

** no=blank, recommended =1*

*** full=2, partial=1, none=0*

Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Preiviikinlahti			61,32	21,27	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Rauma			61,14	21,22	2					2				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Maalahti)			63,04	20,50	5					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Porkkala)			59,56	24,24	1					1				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär			60,11	19,20	5					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Söderskär			60,07	25,25	3	3				3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Suomenlahti National Park			66,83	35,00						3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Trollö	1	1	60,06	22,12	3					3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Trunsö			59,49	21,48	3					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Tulliniemi			59,49	22,54	3	1				3	1			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Turku			60,24	22,06	1					3				
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne	1	2	59,50	23,15	3	3				3	3			
Benthic feeders	Common Eider	Finland	Atlantic Arctic	Baltic Sea	18	Valassaaret	1	1	63,25	21,04	3					3	3			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär	1	2	60,15	26,25	1					1	3			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E	1	2	60,02	24,38	1	1				1	1			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Krunnit	1	1	65,37	24,83	7					3	3			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Luvia N	1	1	61,26	21,20	3					3	3			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Rauma	1	1	61,14	21,22	2					2	3			
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Benthic feeders	Great Cormorant	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne			59,50	23,15	3					3				
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69024			69,79	-50,40	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69081			69,49	-50,63	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69117			69,47	-50,56	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69145			69,54	-51,03	1	1			1	1	1			1

+ blank= not ongoing, number is frequency of years

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** no=blank, recommended =1*

*** full=2, partial=1, none=0*

Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69146			69,88	-50,74	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69147			69,90	-50,67	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69148			69,91	-50,57	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	69149			69,89	-50,46	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	70009			70,40	-54,66	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	70024			70,39	-53,94	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	70031			70,69	-54,62	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72028			72,54	-55,57	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	72072			69,64	-54,87	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72102			72,67	-55,22	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72111			72,83	-55,33	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72112			72,82	-55,40	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72116			72,78	-55,00	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72119			72,76	-55,01	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72122			72,65	-54,90	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72123			72,64	-54,88	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72124			72,63	-54,96	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72125			72,60	-55,10	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72126			72,60	-55,18	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72127			72,49	-55,80	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72128			72,47	-55,79	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72129			72,54	-55,72	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72145			72,96	-54,91	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72146			72,95	-54,87	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72149			72,92	-54,76	1	1			1	1	1			1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72154			72,99	-56,60	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72157			73,00	-56,48	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72161			72,61	-55,25	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72162			72,76	-54,98	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72164			72,53	-56,05	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72165			72,60	-55,40	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72166			72,58	-55,38	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72167			72,65	-54,96	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73036			73,63	-56,54	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73038			73,56	-56,89	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73045			73,50	-56,53	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73072			73,72	-55,97	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73076			73,87	-57,42	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73082			73,09	-56,57	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73084			73,19	-56,33	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73085			73,18	-56,35	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73089			73,27	-56,46	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73096			73,62	-56,80	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73097			73,56	-56,67	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73098			73,69	-56,45	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73099			73,82	-56,85	5	5			5	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	74033			74,10	-56,71	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	74034			74,09	-56,70	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	74035			74,09	-56,66	1	1			1	1	1			1

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Benthic feeders	Common Eider	Greenland	Davis-Baffin	Disko Bay	10	70030 Nuussuutaata qeqertai	1	2	70,66	-54,63	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72109 Nunatarsuaq	1	2	72,93	-54,80	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	72114 Uilortusoq	1	1	72,80	-54,89	5	5			5	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73003 next to Kippaku	1	1	73,71	-56,67	5	5			5	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	73020 Kingittortallit	1	2	73,03	-56,90	1	1			1	1	1			1
Benthic feeders	Common Eider	Greenland	Atlantic Arctic	Greenland Sea	12	74508 (Daneborg)	1	1	74,30	-20,22	1					1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Booth Sund (76002-76006)	1	1	76,93	-70,73	10	10			10	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Conical Rock (76031)			76,08	-68,67	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Dalrymple Rock (76019)			76,47	-70,23	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Granville Fjord (76037)			76,89	-69,87	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Davis Strait	10	Kitsissut (64030 + subsites)	1	1	64,02	-52,17	1					1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Knorr Island (78002)			78,29	-72,70	1					10	10			10
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Littleton Island (78001)			78,35	-72,83	1					10	10			10
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Manson Islands (76001)	1	1	76,66	-69,19	10	10			10	1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Nuulliarsuit (76018)			76,57	-68,86	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Qeqertaaraq (76016)			76,97	-71,23	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Qeqertaarsuit (76021)			76,50	-70,08	10	10			10	5	5			5
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Davis Strait	10	Qimmit (63007 + subsites)	1	1	63,58	-51,54	1					1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Davis Strait	10	Satsissunnguit (64006 + subsites)	1	1	64,23	-52,21	1					1	1			1
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Sutherland Island (78003)			78,13	-72,92	1					10	10			10
Benthic feeders	Common Eider	Greenland	Davis-Baffin	Baffin Bay	8	Three Sisters Bees (76022)			76,77	-70,25	10	10			10	5	5			5
Benthic feeders	Great cormorant	Greenland	Davis-Baffin	Baffin Bay	10	Qeqertaq (69062)	1	1	69,54	-54,29	1					1	1		1	1
Benthic feeders	Black Guillemot	Iceland	Atlantic Arctic	Iceland	14	Flatey I. archipelago	1	2	65,22	-22,55	7	1	7	7	7	1	1	1	1	1
Benthic feeders	Common Eider	Iceland	Atlantic Arctic	Iceland	14	Rifstjörn	1	1	64,55	-23,49	7					1	1	1	1	

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Great Cormorant	Iceland	Atlantic Arctic	Iceland	13-14	all Icelandic GRCO colonies (46)	1	2	64,54	-22,43	20	20	1	20		1	1	1	1	
Benthic feeders	Shag	Iceland	Atlantic Arctic	Iceland	13-14	all Icelandic SHAG colonies (129)	1	1	64,54	-22,43	21		1			1	1	1	1	
Benthic feeders	Shag	Iceland	Atlantic Arctic	Iceland	14	Flatey I. archipelago	1	1	65,23	-22,54	7		7			1	1	1	1	
Benthic feeders	Black guillemot	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1	1	1	1	1	1	1	1
Benthic feeders	Black guillemot	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1	1	1		1	1	1	1	1
Benthic feeders	Common eider	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Estern Varanger (Finnmark)	1	1	70,23	31,09	1					1				
Benthic feeders	Common eider	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Grindøya (Troms)	1	2	69,38	18,49	1	1		1	1	1	1		1	1
Benthic feeders	Common eider	Norway	Atlantic Arctic	North Sea	16	Hordaland county (several localities)			60,32	4,57	1					1				
Benthic feeders	Common eider	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Kongsfjorden (Svalbard)			78,55	12,27	1	1		1		1	1		1	1
Benthic feeders	Common eider	Norway	Atlantic Arctic	North Sea	16	Rauna (and other localities in Vest-Agder county)	1	2	58,03	6,4	1	1				1	1			
Benthic feeders	Common eider	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1				1	1			
Benthic feeders	Common eider	Norway	Atlantic Arctic	Norwegian Sea	18	Runde (Møre & Romsdal)			62,24	5,37	1					1				
Benthic feeders	Common eider	Norway	Atlantic Arctic	North Sea	16	Skagerrak coast (Østfold to Vest-Agder counties)			58,49	10,12	1					1				
Benthic feeders	Common eider	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1				1	1			
Benthic feeders	Common eider	Norway	Atlantic Arctic	Norwegian Sea	18	Sør-Trøndelag county and Helgeland			65,04	11,33	1					1				
Benthic feeders	Common eider	Norway	Atlantic Arctic	Norwegian Sea	18	Trondheimsfjorden (Sør- & Nord-Trøndelag)			63,35	10,4	1					1				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Norwegian Sea	18	Helgeland coast (Nordland)			65,19	11,37	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)			71,04	24,44	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Kongsfjord (Finnmark)			70,44	29,28	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Kvitvær (Troms)			70,05	19,58	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Norwegian Sea	18	Lofoten Islands (Nordland)			68,43	14,4	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	North Sea	16	Øra (Østfold)	1	2	59,1	11	1		1	1		1		1	1	
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	North Sea	16	Rauna (and other localities in Vest-Agder county)	1	2	58,03	6,4	1	1	1			1	1	1		
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1			1	1	1		1
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)			65,12	10,59	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Norwegian Sea	18	Sør-Trøndelag county and Helgeland			65,04	11,33	1					1				
Benthic feeders	Great cormorant	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	West Finnmark (Finnmark)			70,48	18,18	1					1				
Benthic feeders	Shag	Norway	Atlantic Arctic	Norwegian Sea	18	Anda (Nordland)			69,04	15,1		1					1			
Benthic feeders	Shag	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1		1		1	1	1	1	1
Benthic feeders	Shag	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1	1	1	1	1	1	1	1
Benthic feeders	Shag	Norway	Atlantic Arctic	Norwegian Sea	18	Runde (Møre & Romsdal)	1	2	62,24	5,37	1	1	1	1		1	1	1	1	
Benthic feeders	Shag	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1	1	1	1	1	1	1	1	1
Benthic feeders	Shag	Norway	Atlantic Arctic	North Sea	16	Storekjør (and other localities in Roagaland)	1	2	58,53	5,26	1	1		1		1	1	1	1	

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Shag	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	West Finnmark (Finnmark)	1	1	70,48	18,18	1					1	1			1
Benthic feeders	Pelagic Cormorant	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1	1				1	1			1
Benthic feeders	Pelagic Cormorant	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	2	55,25	165,04	1	1				1	1			1
Benthic feeders	Pigeon Guillemot	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Benthic feeders	Pigeon Guillemot	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Benthic feeders	Common eider	Russia, West	Atlantic Arctic	White Sea	19	Kandalaksha Bay	1	1	67,00	32,60	1					1	1			1
Benthic feeders	Common eider	Russia, West	Atlantic Arctic	White Sea	19	Onega Bay	1	1	64,40	36,50	1					1	1			
Benthic feeders	Common eider	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Tikhaya Bay (Franz-Josef Land)	1	0	83,31	52,80						1	1			
Benthic feeders	Great cormorant	Russia, West	Atlantic Arctic	White Sea	19	Onega Bay	1	1	64,40	36,50	1					1	1			
Benthic feeders	Common Eider	US, Alaska	Pacific-Arctic	Beaufort Sea	5,6	North Slope	1	1	70,80	-156,40	1					1	1			1
Benthic feeders	Common Eider	US, Alaska	Pacific-Arctic	East Bering Sea	2	Yukon Delta	1	1	61,20	-164,80	1					1	1			1
Benthic feeders	King Eider	US, Alaska	Pacific-Arctic	Beaufort Sea	5,6	North Slope	1	1	70,80	-156,40	1					1	1			1
Benthic feeders	King Eider	US, Alaska	Pacific-Arctic	East Bering Sea	2	Yukon Delta	1	1	61,20	-164,80	1					1	1			1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	East Bering Sea	3	Aiktak I. (SW)	1	2	54,11	-164.50	3	1				1	1			1
Benthic Feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	East Bering Sea	5	Bluff (NW)	1	0	65,34	-163.44						3	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55	3	1				3	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	East Bering Sea	2	Cape Pierce (W)	1	2	58,33	-161.44	3	1			1	3	1			1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chiniak Bay, Kodiak Is. (S)	1	0	57,61	-152,13						3	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)	1	1	56,02	-156.42		1				3	1	1	1	1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Gull I. (S)			59,35	-151.20						3	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	3	1				3	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Middleton I. (S)	1	2	59,26	-146.19	3	1				3	1			1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	West Bering Sea	3	Shemya (SW)	1	0	52,72	174,48						3				3

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1	1			1	1	1		1
Benthic feeders	Pelagic Cormorant	US, Alaska	Pacific-Arctic	West Bering Sea	3	Ulak (SW)	1	0	52,23	-175,11						3				3
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	1	54,11	-164.50	1					1	1	1		1
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	1	52,20	175,55	1					1	1	1		1
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	East Bering Sea	2	Hall I. (W)	1	1	60,36	-172.56						3	1	1		1
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	1					1	1	1		1
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Prince William sound (S)	1	2	60,40	-147.30	1					1	1	1	1	1
Benthic feeders	Pigeon Guillemot	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	1	59,59	-135.42	1					1	1	1		1
Diving Piscivores	Atlantic Puffin	Canada East	Davis-Baffin	Labrador	11	Gannet I. (Lab)b	1	0	53,56	-56,32	10					10	10	10		
Diving Piscivores	Atlantic Puffin	Canada East	Davis-Baffin	Labrador	11	Herring I. (Lab)d			54,33	-57,10	10					10				
Diving Piscivores	Common Murre	Canada East	Davis-Baffin	Labrador	11	Gannet I. (Lab)b	1	0	53,56	-56,32	10					10	10	10		
Diving Piscivores	Common Murre	Canada East	Davis-Baffin	Labrador	11	Herring I. (Lab)d			54,33	-57,10	10					10				
Diving Piscivores	Thick-billed Murre	Canada East	Hudson Complex	Hudson Bay	9	Akpatok I. (Nunavut)			60,25	-68.08						7				
Diving Piscivores	Thick-billed Murre	Canada East	Davis-Baffin	Baffin Bay	8	Cap. Hay/Bylot I. (Nunavut)			73,45	-80.23	10					7				
Diving Piscivores	Thick-billed Murre	Canada East	Beaufort		6	Cape Parry (Nunavut)			70,00	-124.30						5	5			5
Diving Piscivores	Thick-billed Murre	Canada East	Hudson Complex	Hudson Bay	9	Coats I. (Nunavut)	1	2	62,57	-82.00	1	1	1	1	1	3	3	3	3	3
Diving Piscivores	Thick-billed Murre	Canada East	Davis-Baffin	Baffin Bay	8	Coburg I. (Nunavut)	1	0	75,48	-79.23	20					10	10	10		10
Diving Piscivores	Thick-billed Murre	Canada East	Hudson Complex	Hudson Bay	9	Digges I. (Nunavut)	1	1	62,33	-77.37	5	5	5	5	5	5	5	5	5	5

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed Murre	Canada East	Davis-Baffin	Labrador	11	Gannet I. (Lab)b	1	0	53,56	-56.32	10	10				10	10	10		
Diving Piscivores	Thick-billed Murre	Canada East	Davis-Baffin	Hudson Bay	10	Hantzsch I. (Nunavut)			61,93	-65						7				
Diving Piscivores	Thick-billed Murre	Canada East	Arctic Archipelago	Baffin Bay	8	Prince Leopold I. (Nunavut)	1	1	74,02	-90.00	1	1			1	2	2	2	2	2
Diving Piscivores	Atlantic Puffin	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	1	62.06	-7.40		1				1	1	1	1	1
Diving Piscivores	Atlantic Puffin	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1	1	1	1
Diving Piscivores	Atlantic Puffin	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51		1	1			1	1	1	1	1
Diving Piscivores	Common Murre	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	1	62.06	-7.40	10					1	1			1
Diving Piscivores	Common Murre	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	1	1				1	1	1		1
Diving Piscivores	Common Murre	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär	1	2	60,15	26,25	1					1				
Diving Piscivores	Common Murre	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Diving Piscivores	Common Murre	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär			60,11	19,20	5					3				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Apparsuit (Upernavik)			73,79	-56,82	6					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Appat Appai (Thule)			76,09	-68,37	10					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Appatsiaat (Uper.)			72,69	-55,77	3					3				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	S. Greenland/ Labrador Sea	10	Arsuk Fjord (Paamiut)			61,33	-48,00	3					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Carey Islands (Thule)			76,72	-73,09	10					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Hakluyt Island (Thule)			77,44	-72,68	10				10	5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Davis Strait	10	Innarsuaq (Man.)			65,46	-52,14	5					5				
Diving Piscivores	Thick-billed Murre	Greenland	Atlantic Arctic	Greenland Sea	12	Kap Brewster (70508, East)	1	1	70,15	-22,07	5				5	5		5		5
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Kingittoq (Uper.)			72,66	-55,88	3				3	3				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Kippaku (73003, Uper.)	1	1	73,72	-56,63	6	1	1	1	6	1	1	3	1	1
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Davis Strait	10	Nunngarussuit (Nuuk)			63,76	-51,73	1					1				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Parker Snow Bay (Thule)			76,16	-68,68	10					5				
Diving Piscivores	Thick-billed Murre	Greenland	Atlantic Arctic	Greenland Sea	12	Raffles Island (East)			70,60	-21,51	5					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Disko Bay	10	Ritenbenk (69049, Ilulissat)	1	1	69,80	-51,22	3				3	1	1	3	1	1
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Sandersons Hope (Uper.)			72,69	-56,16	3					3				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Saunders Island (76014, Thule)	1	1	76,58	-70,04	10					1	1	3	1	1
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Davis Strait	10	Sermilinnguaq, 65013 (Man.)			65,67	-52,60	5					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Davis Strait	10	Sermilinnguaq, 65015 (Man.)			65,66	-52,65	5					5				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Davis Strait	10	Taateraat (Maniitsoq)			66,00	-52,55	5					5				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Timmiakulussuit (Uper.)			72,66	-55,76	3					3				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	Baffin Bay	8	Toqqussaaq (Uper.)			73,44	-56,60	6					6				
Diving Piscivores	Thick-billed Murre	Greenland	Davis-Baffin	S. Greenland/ Labrador Sea	10	Ydre Kitsissut (60012, Qaqortoq)	1	1	60,76	-48,45	3				3	1	1	3		1
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Akurey I.	1	1	64,10	-21,58	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Akurey I.	1	1	64,10	-21,58	5		4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Drangey I.	1	1	65,57	-19,41	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Dyrhólaey	1	1	63,24	-19,07	4	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Elliðaey I.	1	1	65,09	-22,48	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Grímsey I.	1	1	66,33	-18.00	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Grímsey I., Steingrímsfj.	1	1	65,42	-21,24	5		4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Hafnarhólmi, Borgarfirði eystra	1	1	65,33	-13,45	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Ingólfshöfði	1	1	63,48	-16,38	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Lundey, Skjálfanda	1	1	66,07	-17,22	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Papey I.	1	1	64,35	-14,10	5	1	4			1	1	1		
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	13	Vigur I.	1	1	66,03	-22,50	5	1	4			1	1	1		

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Atlantic Puffin	Iceland	Atlantic Arctic	Iceland	14	Westman archipelago	1	2	63,24	-20,22	8	1	8	1		1	1	1	1	1
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13-14	all Icelandic COMU colonies (59)	1	1			7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Drangey I.	1	1	65,57	-19,41	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	14	Dyrhólaey	1	1	63,24	-19,07	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Grimsey I.	1	1	66,33	-18.00	1					1	1	1		
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	14	Ingólfshöfði	1	1	63,48	-16,38	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	14	Krisuvikurberg	1	1	63,50	-22,03	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Latrabjarg	1	1	66,28	-22,34	7					1	1		1	1
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Papey	1	1	64,35	-14,10	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Skoruvíkurbjarg	1	1	66,22	-14.36	1					1	1	1		
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	13	Skrúður	1	1	64,54	-13,37	7					1				
Diving Piscivores	Common Murre	Iceland	Atlantic Arctic	Iceland	14	Snaefellsnes	1	1	64,52	-24,02	7					1	1		1	
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13-14	all Icelandic TBM colonies (c20)			64,49	-18,36	7									
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13	Drangey I.			65,57	-19,41										
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	14	Dyrhólaey			63,24	-19,07	7									

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13	Grimsey I.	1		66,33	-18.00	1						1	1		
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	14	Ingólfshöfði			63,48	-16,38	7									
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	14	Krísuvikurberg	1		63,50	-22,03	3									
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13	Latrabjarg	1	1	66,28	-22,34	7					1	1		1	1
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13	Papey I.			64,35	-14,10	7									
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	13	Skoruvíkurbjarg	1		66,22	-14.36	1						1	1		
Diving Piscivores	Thick-billed Murre	Iceland	Atlantic Arctic	Iceland	14	Snaefellsnes			64,52	-24,02	7									
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Norwegian Sea	18	Anda (Nordland)	1	2	69,04	15,1	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	2	71,04	24,44	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Norwegian Sea	18	Runde (Møre & Romsdal)	1	2	62,24	5,37	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Atlantic puffin	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	2	74,23	19,08	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	2	71,09	24,44	1	1	1	1	1	1	1	1	1	1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	High Arctic Norwegian Sea	13	Jan Mayen	1	2	70,98	-8,44	1	1	1	1		1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1			1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Norwegian Sea	18	Runde (Møre & Romsdal)	1	2	62,25	5,37	1	1				1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1	1	1		1	1	1	1	1
Diving Piscivores	Common murre	Norway	Atlantic Arctic	Norwegian Sea	16	Veststeinen (Sogn & Fjordane)			61,54	4,52	1					1				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Alkhornet (Svalbard)			78,12	13,5	1					1				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Amsterdamøya (Svalbard)			79,48	10,43	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	2	74,23	19,08	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Diabasodden (Svalbard)			78,22	16,08	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Fuglehuken (Svalbard)	1	1	78,53	10,29	1					1				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Grumant (Svalbard)			78,11	15,09	1					1				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	1	71,04	24,44	1	1				1	1			
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	Lower Arctic Barents Sea	18	Hornøya (Finnmark)	1	1	70,23	31,09	1	1				1	1	1	1	1
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Ingeborgfjellet (Svalbard)			77,46	14,23	2-5					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Norwegian Sea	13	Jan Mayen	1	2	70,98	-8,44	1	1	1	1	1	1	1	1	1	1
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Kovalskifjellet (Svalbard)			77,03	17,17	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Kvalpynten (Svalbard)			77,28	20,51	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Midterhuken (Svalbard)			77,39	14,49	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Negerpynten (Svalbard)			77,15	22,4	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Ossian Sars (Svalbard)	1	1	78,56	12,29	1					1				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Sofiekammen (Svalbard)			77,01	15,53	2-5					3				
Diving Piscivores	Thick-billed murre	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Tschermackfjellet (Svalbard)			78,31	15,2	1					1				
Diving Piscivores	Common Murre	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Diving Piscivores	Common Murre	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Diving Piscivores	Thick-billed Murre	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Diving Piscivores	Thick-billed Murre	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1					1				1
Diving Piscivores	Thick-billed Murre	Russia, East	Pacific-Arctic	Chukchi Sea	5	Wrangel I. (Arctic)	1	0	71,12	-177.25						1	1			1
Diving Piscivores	Thick-billed Murre	Russia, East	Pacific-Arctic	Chukchi Sea	5	Wrangel I. (Arctic)	1	0	71,12	-177.25						1	1			1
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Gorodetskiy Cape (W. Kola Peninsula)	1	0	69,34	32,51						2		2		

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Gorodetskiy Cape (W. Kola Peninsula)	1	0	69,34	32,51						2		2		
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Gribovaya Bay (Novaya Zemlya)			73,00	53,20										
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Gribovaya Bay (Novaya Zemlya)		0	73,00	53,20										
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Krutik Cape (E. Kola Peninsula)			69,09	35,57						1				
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Krutik Cape (E. Kola Peninsula)		0	69,09	35,57						1				
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Seven Island (Kola Peninsulae)	1	0	68,45	37,25						7	7	7	7	7
Diving Piscivores	Common Murre & Thick-billed Murre	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Seven Island (Kola Peninsulae)	1	0	68,45	37,25						7	7	7	7	7
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Arkhangelskaya Bay (Novaya Zemlya)			75,83	58,76										
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Arkhangelskaya Bay (Novaya Zemlya)		0	75,83	58,76										
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Bezymyannaya Bay (Novaya Zemlya)			72,90	53,10										
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Bezymyannaya Bay (Novaya Zemlya)	1	0	72,90	53,10						5				
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Oranskie Islands (Novaya Zemlya)			77	67,75						1	1			1
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Rubini Rock (Franz Josef Land)	1	0	83,31	52,81										
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Rubini Rock (Franz Josef Land)	1	0	83,31	52,81						1				1
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Russkaya Gavan (Novaya Zemlya)	1	0	76,21	62,5						1	1			1

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Vilkitski Bay (Novaya Zemlya)			75,55	57,98										
Diving Piscivores	Thick-billed Murre	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Vilkitski Bay (Novaya Zemlya)		0	75,55	57,98										
Diving Piscivores	Common Murre	Sweden	Atlantic Arctic	Baltic Sea	17	Stora Karlsö	1	2	57,17	17,58	1	1				1		1	1	
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	East Bering Sea	5	Bluff (NW)	1	0	64,34	-163.44						3	1	1		1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	Cape Newenham (W)			58,39	-162.10						3	1			1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	Cape Pierce (W)	1	2	58,33	-161.44	3	1				3	1			1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chisik I. (S)			60,08	-152.34						3	1	1		1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chiswell I. (S)	1	0	59,37	-149.36						3				3
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Forrester I. (Se)	1	2	54,48	-133.31	3	1				3				
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Gull I. (S)			59,35	-151.20						3	1	1		1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Middleton I. (S)	1	2	59,26	-146.19	3	1				3	1			1
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	Nunivak I. (W)			60,13	-167.27						3				
Diving Piscivores	Common Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1			1	1	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	West Bering Sea	3	Agattu I. (SW)	1	2	52,24	173,41	3	3				3	3	3		3
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	2	54,11	-164.50	1	1			1	1	1			1

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	West Bering Sea	3	Bogoslof I. (SW)			53,56	-168.02						3				3
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55	2	1				2	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Cape Lisburne (NW)	1	1	68,52	-165.13	1					1	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Cape Thompson (NW)			68,09	-165.58						3				3
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)	1	2	56,02	-156.42	1	1			1	1	1			1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	East Amatuli I. (S)	1	2	58,55	-151.59	1	1	1		1	3	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	Hall I. (W)	1	1	60,36	-172.56	5					3	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	3	3				3	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Little Diomede I. (NW)			65,45	-168.56						3				3
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	4	Midun I. (S)			54,50	-162.10						3				3
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Puale Bay (S)			57,45	-155.37						3	1			1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. George I. (W)	1	2	56,35	-169.36	3	1				3	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	5	St. Lawrence I. (W)	1	0	63,20	-171.33						3	1	1		1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1			1	3	1			1
Diving Piscivores	Common Murre & Thick-billed Murre	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. Paul I. (W)	1	2	57,11	-170.17	3	1				3	1	1		1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Piscivores	Tufted Puffin	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	2	54,11	-164.50	1	1			1	1	1	1		1
Diving Piscivores	Tufted Puffin	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55			1		1	3	1	1	1	1
Diving Piscivores	Tufted Puffin	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)	1	2	56,02	-156.42	3	1			1	3	1	1		1
Diving Piscivores	Tufted Puffin	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	East Amatuli I. (S)	1	2	58,55	-151.59	1		1			1	1	1		1
Diving Piscivores	Tufted Puffin	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1				1	1	1		1
Diving Planktivores	Dovekie	Greenland	Davis-Baffin	Baffin Bay	8	Hakluyt Island (77002)			77,44	-72,68	1		1		1	5	5	5		5
Diving Planktivores	Dovekie	Greenland	Atlantic Arctic	Greenland Sea	12	Kap Høegh	1	2	70,73	-21,55	1	1	1	1	1	1	1	1	1	1
Diving Planktivores	Dovekie	Greenland	Davis-Baffin	Baffin Bay	8	Lille Fladø (72040)			72,31	-55,92						5		5		5
Diving Planktivores	Dovekie	Greenland	Davis-Baffin	Baffin Bay	8	Paakitsoq	1	1	76,27	68,97	1	1	1		1	1	1	1	1	1
Diving Planktivores	Dovekie	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørndalen (Svalbard)	1	2	78,22	15,34		1	1	1	1		1	1	1	1
Diving Planktivores	Dovekie	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	2	74,23	19,08		1	1	1	1		1	1	1	1
Diving Planktivores	Dovekie	Norway	Atlantic Arctic	High Arctic Norwegian Sea	13	Jan Mayen	1	0	70,98	-8,44							1	1	1	1
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55		1	1		1	3	1	1		1
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	1	1			1	3	1	1		1
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Little Diomede I. (NW)			65,45	-168.56						3				3

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. George I. (W)	1	2	56,35	-169.36	1	1	1	1	1	1	1	1	1	1
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	East Bering Sea	5	St. Lawrence I. (W)	1	0	63,20	-171.33						3	1	1		1
Diving Planktivores	Least Auklet	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. Paul I. (W)	1	2	57,11	-170.17			1	1		3	1	1	1	1
Omnivores	Herring Gull	Canada East	Hudson Complex	Hudson Bay	9	East Bay (Nunavut)	1	2	64	-81.72	1	1	1	1	1	1	1	1	1	1
Omnivores	Ivory Gull	Canada East	Arctic Archipelago	Canadian Arctic Archipelago	8	Seymour Island (Nunavut)	1	1	76,8	-101.25	5				5	2	2	2	2	2
Omnivores	Great Black-backed Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1			1
Omnivores	Great Black-backed Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1			1
Omnivores	Great Black-backed Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	10					1	1			1
Omnivores	Herring Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1			1
Omnivores	Herring Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1			1
Omnivores	Herring Gull	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	10					1	1			1
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär	1	2	60,15	26,25	1	1				1	1			
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Eurajoki			61,15	21,24	2					2				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Hankoniemi			59,51	22,48	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Jurmo - Utö			59,47	21,30	3					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E			60,02	24,38	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Krunnit	1	1	65,37	24,83	7					3	3			
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Lågskär			59,50	19,56	5					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Långören			66,72	34,24	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Luvia N			61,26	21,20	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Norrskär			60,14	20,38	5					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Ourat SE			61,50	21,22	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Preiviikinlahti			61,32	21,27	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Rauma			61,14	21,22	2					2				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Maalahti)			63,04	20,50	5					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Porkkala)	1	1	59,56	24,24	1					1				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär			60,11	19,20	5					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Söderskär			60,07	25,25	3					3	3			
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Trollö			60,06	22,12	3					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Trunsö	1	1	59,49	21,48	3					3	3			
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Tulliniemi			59,49	22,54	3					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Turku			60,24	22,06	1					3				
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne			59,50	23,15	3					3	3			
Omnivores	Great Black-backed Gull	Finland	Atlantic Arctic	Baltic Sea	18	Valassaaret	1	0	63,25	21,04	3					3	3			
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär	1	2	60,15	26,25	1	1				1	1			
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Eurajoki			61,15	21,24	2					2				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E			60,02	24,38	3					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Krunnit	1	1	65,37	24,83	7					3	3			
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Lågskär			59,50	19,56	5					3				
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Långören			66,72	34,24	3					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Luoto			63,45	22,45	3					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Luvia N			61,26	21,20	3					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Norrskär			60,14	20,38	5					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Ourat SE			61,50	21,22	3					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Preiviikinlahti			61,32	21,27	3					3				
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Rauma			61,14	21,22	2					2				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Maalahti)			63,04	20,50	5					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Porkkala)	1	1	59,56	24,24	1					1	3			
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär			60,11	19,20	5					3				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Söderskär			60,07	25,25	3					3	3			

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Tankar			63,57	22,51	1					1				
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Torsö	1	1	63,37	22,26	3					3	3			
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Trollö			60,06	22,12	3					3				
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Turku	1	1	60,24	22,06	1					3	3			
Omnivores	Herring Gull	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne			59,50	23,15	3					3	3			
Omnivores	Herring gull	Finland	Atlantic Arctic	Baltic Sea	18	Valassaaret			63,25	21,04	3					3				
Omnivores	Ivory Gull	Greenland	Atlantic Arctic	Greenland Sea	12	Prinsesse Margrethe Island (81517)			81,95	-17,56						5	5	5		
Omnivores	Ivory Gull	Greenland	Atlantic Arctic	Greenland Sea	12	Station Nord (81507)	1	0	81,61	-16,66						1	1	1		
Omnivores	Great Black-backed Gull	Iceland	Atlantic Arctic	Iceland	14	Surtsey	1	1	63,19	-20,36	7									
Omnivores	Glaucous gull	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	2	74,23	19,08	1	1		1	1	1	1	1	1	1
Omnivores	Glaucous gull	Norway	Atlantic Arctic	High Arctic Norwegian Sea	13	Jan Mayen	1	2	70,98	-8,44	1	1				1	1	1	1	1
Omnivores	Glaucous gull	Norway	Davis-Baffin	High Arctic Barents Sea	19	Kongsfjorden (Svalbard)	1	2	78,55	12,27	1	1		1	1	1	1	1	1	1
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	Norwegian Sea	18	Helgeland coast (Nordland)			65,19	11,37	1					1				
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	2	71,04	24,44	1	1			1	1	1			1
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1		1	1	1	1		1	1
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	North Sea	16	Rauna (and other localities in Vest-Agder county)	1	2	58,03	6,4	1	1				1	1			
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1			1	1	1			1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1				1	1			
Omnivores	Great black-backed gull	Norway	Atlantic Arctic	North Sea	16	Telemark county			58,49	10,12	1					1				
Omnivores	Herring gull	Norway	Atlantic Arctic	Norwegian Sea	18	Helgeland coast (Nordland)			65,19	11,37	1					1				
Omnivores	Herring gull	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	2	71,04	24,44	1	1				1	1			1
Omnivores	Herring gull	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1		1	1	1	1		1	1
Omnivores	Herring gull	Norway	Atlantic Arctic	North Sea	16	Northern Hordaland county (several localities)	1	2	60,5	5	1	1		1		1	1		1	1
Omnivores	Herring gull	Norway	Atlantic Arctic	North Sea	16	Rauna (and other localities in Vest-Agder county)	1	2	58,03	6,4	1	1		1	1	1	1		1	1
Omnivores	Herring gull	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1			1	1	1			1
Omnivores	Herring gull	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59	1	1				1	1		1	
Omnivores	Herring gull	Norway	Atlantic Arctic	North Sea	16	Telemark county			58,49	10,12	1					1				
Omnivores	Herring gull	Norway	Atlantic Arctic	Skagerrak	16	Vestfold county (several localities)	1	2	59,1	10,5	1	1				1	1		1	1
Omnivores	Ivory gull	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Barentsøya (Svalbard	1	2	78,38	21,61	1	1	1	1	1	1	1	1	1	1
Omnivores	Glaucous Gull	Russia, East	Pacific-Arctic	Chukchi Sea	5	Wrangel I. (Arctic)	1	0	71,12	-177.25						1	1			1
Omnivores	Glaucous Gull	Russia, East	Pacific-Arctic	Chukchi Sea	5	Wrangel I. (Arctic)	1	0	71,12	-177.25						1	1			1
Omnivores	Glaucous-winged Gull	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1	1				1	1			1
Omnivores	Glaucous-winged Gull	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1	1				1	1			1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Glaucous gull	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Oranskie Islands (Novaya Zemlya)			77	67,75						1	1			1
Omnivores	Glaucous gull	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Rubini Rock (Franz Josef Land)	1	1	83,31	52,81						1				1
Omnivores	Glaucous gull	Russia, West	Atlantic Arctic	Kara Sea	20	Sedov archipelago (Severnaya Zemlya)	1	1	79,00	91,30	1					1	1			1
Omnivores	Greater black-backed gull	Russia, West	Atlantic Arctic	White Sea	19	Kandalaksha Bay	1	1	67,00	32,60	1					1	1	1		1
Omnivores	Greater black-backed gull	Russia, West	Atlantic Arctic	White Sea	19	Onega Bay	1	1	64,40	36,50	1					1	1			
Omnivores	Herring Gull	Russia, West	Atlantic Arctic	White Sea	19	Kandalaksha Bay	1	1	67,00	32,60	1					1	1	1		1
Omnivores	Herring Gull	Russia, West	Atlantic Arctic	White Sea	19	Onega Bay	1	1	64,40	36,50	1					1	1			
Omnivores	Ivory gull	Russia, West	Atlantic Arctic	Kara Sea	20	Sedov archipelago (Severnaya Zemlya)	1	1	79,00	91,30						5	5			
Omnivores	Glaucous Gull	US, Alaska	Pacific-Arctic	Beaufort Sea	5	Barrow (N)	1	1	64,34	-163.44	1					3	1	1		1
Omnivores	Glaucous Gull	US, Alaska	Pacific-Arctic	East Bering Sea	5	Hall I. (W)	1	1	60,36	-172.56	1					3	1	1		1
Omnivores	Glaucous Gull	US, Alaska	Pacific-Arctic	East Bering Sea	5	St. Lawrence I. (W)	1	0	63,20	-171.33						3	1	1		1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	2	54,11	-164.50	1	1	1		1	1	1	1		1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55		1	1		1	1	1	1		1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)	1	2	56,02	-156.42	1	1	1		1	1	1	1		1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	0	52,11	-175.31						1	1	1		1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Middleton I. (S)	1	1	59,26	-146.19						1	1			1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Prince William sound (S)	1	1	60,40	-147.30	1					1	1	1		1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Puale Bay (S)			57,45	-155.37						3	1			1
Omnivores	Glaucous-winged Gull	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1			1	1	1			1
Surface Piscivores	Arctic Tern	Canada East	Arctic Archipelago	Canadian Arctic Archipelago	8	Nasaruvaalik Island (Nunavut)	1	2	75,83	-96.3	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged Kittiwake	Canada East	Arctic Archipelago	Baffin Bay	8	Browne Island (nunavut)		1	74,49	-96,22	2	2			2	3	3			
Surface Piscivores	Black-legged Kittiwake	Canada East	Davis-Baffin	Baffin Bay	8	Coburg I. (Nunavut)	1	0	75,48	-79.23	20					10	10	10		10
Surface Piscivores	Black-legged Kittiwake	Canada East	Davis-Baffin	Labrador	11	Gannet I. (Lab)b	1	0	53,56	-56.32	10	10				10	10	10		
Surface Piscivores	Black-legged Kittiwake	Canada East	Davis-Baffin	Hudson Bay	10	Hantzsch I. (Nunavut)			61,93	-65						7				
Surface Piscivores	Black-legged Kittiwake	Canada East	Davis-Baffin	Hudson Bay	10	Hantzsch I. (Nunavut)			61,93	-65						7				
Surface Piscivores	Black-legged Kittiwake	Canada East	Davis-Baffin	Labrador	11	Herring I. (Lab)d			54,33	-57,10	10	10				10				
Surface Piscivores	Black-legged Kittiwake	Canada East	Arctic Archipelago	Baffin Bay	8	Prince Leopold I. (Nunavut)	1	1	74,02	-90.00	1	1			1	2	2	2	2	2
Surface Piscivores	Glaucous Gull	Canada East	Hudson Complex	Hudson Bay	9	Coats I. (Nunavut)	1	2	62,57	-82.00	1	1			1	3	3	3	3	3
Surface Piscivores	Glaucous Gull	Canada East	Hudson Complex	Hudson Bay	9	Digges I. (Nunavut)	1	1	62,33	-77.37	5	5			5	5	5	5	5	5
Surface Piscivores	Glaucous Gull	Canada East	Arctic Archipelago	Baffin Bay	8	Prince Leopold I. (Nunavut)	1	1	74,02	-90.00	1	1			1	2	2	2	2	2
Surface Piscivores	Northern Fulmar	Canada East	Arctic Archipelago	Baffin Bay	8	Prince Leopold I. (Nunavut)	1	1	74,02	-90.00	1	1			1	2	2	2	2	2
Surface Piscivores	Arctic Tern	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	1	62.06	-7.40	1	1				1	1	1		1

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Arctic Tern	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	1	61.58	-6.39	1	1				1	1	1		1
Surface Piscivores	Arctic Tern	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	1	1				1	1	1		1
Surface Piscivores	Black-legged Kittiwake	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	1	62.06	-7.40	10					1	1			1
Surface Piscivores	Black-legged Kittiwake	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	1	61.58	-6.39	10					1	1			1
Surface Piscivores	Black-legged Kittiwake	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	1	1				1	1			1
Surface Piscivores	Northern Fulmar	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1			1
Surface Piscivores	Northern Fulmar	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Nólsoy	1	0	61.58	-6.39						1	1			1
Surface Piscivores	Northern Fulmar	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Skúvoy	1	1	61.46	-6.51	1	1				1	1			1
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Aspskär			60,15	26,25	1	1				1	1			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Eurajoki	1	1	61,15	21,24	2					2	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Hankoniemi			59,51	22,48	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Jurmo - Utö			59,47	21,30	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Kirkkonummi E			60,02	24,38	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Krunnit	1	1	65,37	24,83	7					3	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Lågskär			59,50	19,56	5					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Långören			66,72	34,24	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Luoto	1	1	63,45	22,45	3					3	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Luvia N			61,26	21,20	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Norrskär			60,14	20,38	5					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Ourat SE			61,50	21,22	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Preiviikinlahti			61,32	21,27	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Rauma			61,14	21,22	2					2				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Maalahti)			63,04	20,50	5					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Rönnskär (Porkkala)			59,56	24,24	1					1				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Seksmiilari			60,39	21,08						3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Signilskär			60,11	19,20	5					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Söderskär	1	1	60,07	25,25	3					3	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Suomenlahti National Park			66,83	35,00						3	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Tankar			63,57	22,51	1	1				1	1			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Torsö			63,37	22,26	3					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Trollö			60,06	22,12	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Trunsö	1	1	59,49	21,48	3					3	3			
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Tulliniemi			59,49	22,54	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Tvärminne			59,50	23,15	3					3				
Surface Piscivores	Arctic Tern	Finland	Atlantic Arctic	Baltic Sea	18	Valassaaret			63,25	21,04	3					3				
Surface Piscivores	Arctic Tern	Greenland	Davis-Baffin	Davis Strait	10	Aasiaat to Akunaq (68188 + more)	1	1	68,76	-52,39	1					3	3	3		3
Surface Piscivores	Arctic Tern	Greenland	Davis-Baffin	Baffin Bay	8	Booth Sund (76002-76006)	1	1	76,93	-70,73	1					3	3	3		3
Surface Piscivores	Arctic Tern	Greenland	Davis-Baffin	Baffin Bay	10	Grønne Ejland (68029, 68247 + more)	1	1	68,84	-51,89	1					3	3	3		3
Surface Piscivores	Arctic Tern	Greenland	Davis-Baffin	Davis Strait	10	NE of Ravneøerne (63042 + more)	1	1	63,99	-51,85	1					3	3	3		3
Surface Piscivores	Arctic Tern	Greenland	Davis-Baffin	Baffin Bay	8	Schades Islands (71044)	1	1	71,40	-53,83	1					3	3	3		3
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Alleruusat (Nuuk)			64,66	-50,55	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Apparsuit (Upernavik)			73,79	-56,82	6					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Appat Appai (Thule)			76,09	-68,37	10					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Appatsiaat (Uper.)			72,69	-55,77	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	S. Greenland/ Labrador Sea	10	Arsuk Fjord (Paamiut)			61,33	-48,00	3					3				

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											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Hakluyt Island (Thule)			77,44	-72,68	10	10			10	5	5			
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Innaarsunnguaq (Nuuk)			64,46	-51,36	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Innajuattoq (Nuuk)			64,73	-50,69	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Innarsuaq (Man.)			65,46	-52,14	5					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Kangiusaq (Nuuk)	1	1	64,64	-50,63	3					1	1			1
Surface Piscivores	Black-legged Kittiwake	Greenland	Atlantic Arctic	Greenland Sea	12	Kap Brewster (70508, East)	1	1	70,15	-22,07	5					5	5			5
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Kingittoq (Uper.)			72,66	-55,88	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Kippaku (73003, Uper.)	1	1	73,72	-56,63	6	6			6	1	1	3	1	1
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Parker Snow Bay (Thule)			76,16	-68,68	10					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Qeqertannguit (Nuuk)			64,50	-51,33	1					1				
Surface Piscivores	Black-legged Kittiwake	Greenland	Atlantic Arctic	Greenland Sea	12	Raffles Island (East)			70,60	-21,51	5					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Disko Bay	10	Ritenbenk (69049, Ilulissat)	1	1	69,80	-51,22	3	3			3	1	1	3	1	1
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Sandersons Hope (Uper.)			72,69	-56,16	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Saunders Island (76014, Thule)	1	1	76,58	-70,04	10					1	1	3	1	1

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** no=blank, recommended =1*

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Sermilinnguaq, 65013 (Man.)			65,67	-52,60	5					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Sermilinnguaq, 65015 (Man.)			65,66	-52,65	5					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Davis Strait	10	Taateraat (Maniitsoq)			66,00	-52,55	5					5				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Timmiakulussuit (Uper.)			72,66	-55,76	3					3				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	Baffin Bay	8	Toqqussaaq (Uper.)			73,44	-56,60	6					6				
Surface Piscivores	Black-legged Kittiwake	Greenland	Davis-Baffin	S. Greenland/ Labrador Sea	10	Ydre Kitsissut (60012, Qaqortoq)			60,76	-48,45	3					3				
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	13	Drangey I.	1	1	65,57	-19,41	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Dyrhólaey	1	1	63,24	-19,07	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Dyrhólaey	1	1	63,24	-19,07						1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Elliðaey I.	1	1	65,09	-22,48	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Flatey archipelago	1	1	65,22	-22,55	1	1				1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	13	Grímsey I.	1	1	66,33	-18.00	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Hvítabjarnarey	1	1	65,05	-22,41	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Ingólfshöfði	1	1	63,48	-16,38	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Krísuvíkurberg	1	1	63,50	-22,03	7					1	1			

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Látrabjarg	1	1	65,30	-24,25	7					1	1		1	
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	13	Papey I.	1	1	64,35	-14,10	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	13	Skoruvíkurbjarg	1	1	66,22	-14.36	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Snaefellsnes	1	1	64,46	-23,37	9					1				
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Snaefellsnes	1	1	64,44	-23,46	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Þórishólmi I.	1	1	65,06	-22,42	7					1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	13	Tjörnes	1	1	66.03	-17,22	1	1				1	1			
Surface Piscivores	Black-legged Kittiwake	Iceland	Atlantic Arctic	Iceland	14	Westman archipelago	1	1	63,27	-20,17	7					1	1			
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Ásbyrgi	1	1	66,01	-16,30	1									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Drangey I.	1	1	65,57	-19,41	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Dyrholaey-Myrdalur	1	1	63,24	-19,07	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Grimsey I.	1	1	66,33	-18.00	1						1			
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Ingólfshöfði	1	1	63,48	-16,38	4									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Krísuvíkurberg	1	1	63,50	-22,03	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Látrabjarg	1	1	65,30	-24,25	7									

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Papey I,	1	1	64,35	-14,10	4									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Skagi	1	1	63,19	-20,36	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Skoruvíkurbjarg	1	1												
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	13	Skrúður I.	1	1	64,54	-13,37	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Snaefellsnes	1	1	64,52	-24,02	7									
Surface Piscivores	Northern Fulmar	Iceland	Atlantic Arctic	Iceland	14	Westman archipelago	1	1	63,24	-20,22	4									
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Norwegian Sea	18	Ålesund (Møre & Romsdal)	1	2	62,28	6,09	1	1	1	1		1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Norwegian Sea	18	Anda (Nordland)	1	2	69,04	15,1	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	2	74,23	19,08	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Grumant (Svalbard)			78,11	15,09	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)	1	2	71,04	24,44	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hornøya (Finnmark)	1	2	70,23	31,09	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Kongsfjorden (Svalbard)	1	2	78,55	12,27	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)	1	2	67,28	11,56	1	1	1	1	1	1	1	1	1	1
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Norwegian Sea	18	Runde (Møre & Romsdal)	1	2	62,24	5,37	1	1				1	1			

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged kittiwake	Norway	Atlantic Arctic	Norwegian Sea	18	Sør-Gjeslingan (Nord-Trøndelag)	1	2	64,44	10,47	1	1		1		1	1	1	1	1
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Bjørnøya (Svalbard)	1	1	74,23	19,08	1					1	1		1	1
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	Lower Arctic Barents Sea	19	Hjelmsøya (Finnmark)			71,04	24,44	1					1				
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	High Arctic Norwegian Sea	13	Jan Mayen	1	2	70,98	-8,44	1	1				1	1		1	
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	High Arctic Barents Sea	19	Nøisdalen (Svalbard)	1	1	78,35	17,55	1					1	1		1	1
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	North Sea	16	Rauna (and other localities in Vest-Agder county)			58,03	6,4	1					1				
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	North Sea	16	Rogaland county			58,48	5,24										
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	Norwegian Sea	18	Røst archipelago (Nordland)			67,28	11,56	1					1				
Surface Piscivores	Northern fulmar	Norway	Atlantic Arctic	Norwegian Sea	18	Sklinna (Nord-Trøndelag)			65,12	10,59	1					1				
Surface Piscivores	Black-legged Kittiwake	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1	1				1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, East	Pacific-Arctic	West Bering Sea	1	Commander I.	1	1	55,25	165,04	1	1				1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, East	Pacific-Arctic	Chukchi Sea	5	Wrangel I. (Arctic)	1	0	71,12	-177.25						1	1			1
Surface Piscivores	Arctic tern	Russia, West	Atlantic Arctic	White Sea	19	Kandalaksha Bay	1	1	67,00	32,60						1				1
Surface Piscivores	Arctic tern	Russia, West	Atlantic Arctic	White Sea	19	Onega Bay	1	1	64,40	36,50	1					1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Bezymannaya Bay (Novaya Zemlya)	1	0	77,45	67,45						5				

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	Lower Arctic Barents Sea	19	Gorodetskiy Cape (W. Kola Peninsula)	1	0	69,34	32,51						2	1	2		
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Oranskie Islands (Novaya Zemlya)			77	67,75						1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	high Arctic Barents Sea	19	Rubini Rock (Franz Josef Land)	1	0	83,31	52,81						1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	High Arctic Barents Sea	19	Russkaya Gavan (Novaya Zemlya)	1	0	76,21	62,5						1	1			1
Surface Piscivores	Black-legged Kittiwake	Russia, West	Atlantic Arctic	Kara Sea	20	Sedov archipelago (Severnaya Zemlya)		1	79,00	91,30						5	5			
Surface Piscivores	Arctic Tern	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Yakatat	1	1	59,55	-139,85	1					1	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4		1	2	60,40	-147.30	1	1				3	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	West Bering Sea	3	Agattu I. (SW)	1	2	52,24	173,41	3	3				3	3	3		3
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	5	Bluff (NW)	1	0	64,34	-163.44						3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	West Bering Sea	3	Bogoslof I. (SW)			53,56	-168.02						3	3			3
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55	2	1			1	3	1	1	1	1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Cape Lisburne (NW)	1	2	68,52	-165,13	1	1				1	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	2	Cape Pierce (W)	1	2	58,33	-161.44	1	1			1	3	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Cape Thompson (NW)			68,09	-165.58						3				3
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chiniak Bay, Kodiak Island			57,61	-152,13						1	1			1

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chisik I. (S)			60,08	-152.34						3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chiswell I. (S)	1	0	59,37	-149.36						3				3
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)			56,02	-156.42	1	1			1	1	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	East Amatuli I. (S)	1	2	58,55	-151.59	1	1			1	3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Gull I. (S)			59,35	-151.20						3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	2	Hall I. (W)	1	2	60,36	-172.56	3	3				3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	West Bering Sea	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	5	5				3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Chukchi Sea	5	Little Diomede I. (NW)			65,45	-168.56						3				3
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Middleton I. (S)	1	2	59,26	-146.19						3	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Puale Bay (S)			57,45	-155.37						3	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	2	Round Island			58,00	-162.10	1	1				3	1			1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. George I. (W)	1	2	56,35	-169.36	3	1	1	1	1	3	1	1	1	1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	5	St. Lawrence I. (W)	1	0	63,20	-171.33						3	1	1		1
Surface Piscivores	Black-legged Kittiwake	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. Paul I. (W)	1	2	57,11	-170.17	3	1	1	1	1	3	1	1	1	1
Surface Piscivores	Northern Fulmar	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	Chowiet I. (S)	1	2	56,02	-156.42	1				1	1	1			1

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Trophic Level	Species	Nation	Closest Arctic Marine Areas (CBMP regions)	Oceanic Region	Ecoregion (see Figure 4)	Colony (Region)	Country Key Sites*	Key Site Implementation**	Latitude	Longitude	Ongoing Data Collection+					Recommended Data Collection+				
											Population Trend	Productivity	Diets	Survival	Phenology	Population Trend	Productivity	Diets	Survival	Phenology
Surface Piscivores	Northern Fulmar	US, Alaska	Pacific-Arctic	East Bering Sea	2	Hall I. (W)	1	1	60,36	-172.56	5					3	1	1		1
Surface Piscivores	Northern Fulmar	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. George I. (W)	1	2	56,35	-169.36	3					3	1	1		1
Surface Piscivores	Northern Fulmar	US, Alaska	Pacific-Arctic	East Bering Sea	2	St. Paul I. (W)	1	2	57,11	-170.17	3					3	1	1		1
Surface Planktivores	Leach's Storm Petrel	Faroe Islands	Atlantic Arctic	North Atlantic / Norwegian Sea	15	Mykines	1	0	62.06	-7.40						1	1			
Surface Planktivores	Leach's Storm Petrel	Iceland	Atlantic Arctic	Iceland	14	Westman archipelago	1	1	63,28	-20,10	1					1	1	1		
Surface Planktivores	Fork-tailed Storm Petrel	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	2	54,11	-164.50	1	1			1	1	1	1		1
Surface Planktivores	Fork-tailed Storm Petrel	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55		1	1			1	1	1		1
Surface Planktivores	Fork-tailed Storm Petrel	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	East Amatuli I. (S)	1	2	58,55	-151.59	1	1	1			1	1	1		1
Surface Planktivores	Fork-tailed Storm Petrel	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1	1		1	1	1	1		1
Surface Planktivores	Fork-tailed Storm Petrel	US, Alaska	Pacific-Arctic	West Bering Sea	3	Ulak (SW)	1	2	52,23	-175,11	1	1				1	1			1
Surface Planktivores	Leach's Storm Petrel	US, Alaska	Pacific-Arctic	East Bering Sea	4	Aiktak I. (SW)	1	2	54,11	-164.50	1	1			1	1	1	1		1
Surface Planktivores	Leach's Storm Petrel	US, Alaska	Pacific-Arctic	West Bering Sea	3	Buldir I. (SW)	1	2	52,20	175,55		1	1			1	1	1		1
Surface Planktivores	Leach's Storm Petrel	US, Alaska	Pacific-Arctic	Gulf of Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42	1	1	1		1	1	1	1		1
Surface Planktivores	Leach's Storm Petrel	US, Alaska	Pacific-Arctic	West Bering Sea	3	Ulak (SW)	1	1	52,23	-175,11		1				1	1			1

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Appendix 3: List of key colony sites recommended to be monitored by ecoregion and level of implementation in the Circumpolar Seabird Monitoring Plan: see attached excel sheet

							Species Included																							
Nation	Ecoregion (see Figure 4)	Colony (Region)	Country Key Site*	Key Site Implementation**	Latitude	Longitude	Black-legged Kittiwake	Northern Fulmar	Arctic Tern	Leach's Storm Petrel	Fork-tailed Storm Petrel	Common Murre	Thick-billed Murre	Atlantic Puffin	Tufted Puffin	Least Auklet	Dovekie	Common Eider	King Eider	Black Guillemot	Pigeon Guillemot	Shag	Pelagic Cormornat	Great Cormorant	Glaucous Gull	Glaucous-winged Gull	Herring Gull	Great Black-backed Gull	Ivory Gull
Greenland	12	Station Nord (81507)	1	0	81,61	-16,66																							*
Greenland	8	Booth Sund (76002-76006)	1	1	76,93	-70,73			*									*											
Greenland	8	Manson Islands (76001)	1	1	76,66	-69,19												*											
Greenland	8	Saunders Island (76014, Thule)	1	1	76,58	-70,04	*						*																
Greenland	8	Paakitsoq	1	1	76,27	68,97											*												
Greenland	12	74508 (Daneborg)	1	1	74,30	-20,22												*											
Greenland	8	Kippaku (73003, Uper.)	1	1	73,72	-56,63	*						*																
Greenland	8	73003 next to Kippaku	1	1	73,71	-56,67												*											
Greenland	8	73020 Kingittortallit	1	2	73,03	-56,90												*											
Greenland	8	72109 Nunatarsuaq	1	2	72,93	-54,80												*											
Greenland	8	72114 Uilortusoq	1	1	72,80	-54,89												*											
Greenland	8	Schades Islands (71044)	1	1	71,40	-53,83			*																				
Greenland	12	Kap Høegh	1	2	70,73	-21,55											*												
Greenland	10	70030 Nuussuutaata qeqertai	1	2	70,66	-54,63												*											
Greenland	12	Kap Brewster (70508, East)	1	1	70,15	-22,07	*						*																
Greenland	10	Ritenbenk (69049, Ilulissat)	1	1	69,80	-51,22	*						*																
Greenland	10	Qeqertaq (69062)	1	1	69,54	-54,29																		*					
Greenland	10	Grønne Ejland (68029, 68247 + more)	1	1	68,84	-51,89			*																				

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Nation	Ecoregion (see Figure 4)	Colony (Region)	Country Key Site*	Key Site Implementation**	Latitude	Longitude	Species Included																						
							Black-legged Kittiwake	Northern Fulmar	Arctic Tern	Leach's Storm Petrel	Fork-tailed Storm Petrel	Common Murre	Thick-billed Murre	Atlantic Puffin	Tufted Puffin	Least Auklet	Dovekie	Common Eider	King Eider	Black Guillemot	Pigeon Guillemot	Shag	Pelagic Cormornat	Great Cormorant	Glaucous Gull	Glaucous-winged Gull	Herring Gull	Great Black-backed Gull	Ivory Gull
Greenland	10	Aasiaat to Akunaq (68188 + more)	1	1	68,76	-52,39			*																				
Greenland	10	Kangiusaq (Nuuk)	1	1	64,64	-50,63	*																						
Greenland	10	Kitsissut (64030 + subsites)	1	1	64,02	-52,17												*											
Greenland	10	NE of Ravneøerne (63042 + more)	1	1	63,99	-51,85			*																				
Greenland	10	Qimmit (63007 + subsites)	1	1	63,58	-51,54												*											
Greenland	10	Ydre Kitsissut (60012, Qaqortoq)	1	1	60,76	-48,45							*																
Faroe Islands	15	Mykines	1	1	62.06	-7.40	*	*	*	*		*		*				*		*		*					*	*	
Faroe Islands	15	Skúvoy	1	1	61.46	-6.51	*	*	*			*		*				*		*		*					*	*	
Faroe Islands	15	Nólsoy	1	1	61.58	-6.39	*	*	*					*				*		*							*	*	
Finland	17	Aspskär	1	2	60,15	26,25			*			*						*		*							*	*	
Finland	17	Krunnit	1	1	65,37	24,83			*			*						*						*			*	*	
Finland	17	Seksmiilari	1	0	60,39	21,08			*			*						*						*			*	*	
Finland	17	Signilskär	1	1	60,11	19,20			*			*						*									*	*	
Finland	17	Valassaaret	1	1	63,25	21,04			*			*						*									*	*	
Canada East	11	Gannet I. (Lab)b	1	0	53,56	-56,32	*					*	*	*															
Canada East	9	Digges I. (Nunavut)	1	1	62,33	-77.37							*												*				
Canada East	9	Coats I. (Nunavut)	1	1	62,57	-82.00							*												*				
Canada East	9	East Bay (Nunavut)	1	2	64	-81.72												*									*		
Canada East	8	Prince Leopold I. (Nunavut)	1	1	74,02	-90.00	*	*					*												*				
Canada East	8	Coburg I. (Nunavut)	1	0	75,48	-79.23	*						*																
Canada East	8	Nasaruvaalik Island (Nunavut)	1	2	75,83	-96,3			*									*											
Canada East	8	Seymour Island (Nunavut)	1	1	76,8	-101.25																							*

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Norway	16	Rauna (and other localities in Vest-Agder county)	1	2	58,03	6,40												*						*			*	*	
Norway	16	Storekjør (and other localities in Roagaland)	1	1	58,53	5,26																*							
Norway	16	Vestfold county (several localities)	1	1	59,10	10,50																					*		
Norway	16	Øra (Østfold)	1	1	59,10	11,00																		*					
Norway	16	Northern Hordaland county (several localities)	1	2	60,50	5,00																					*		
Norway	18	Runde (Møre & Romsdal)	1	2	62,24	5,37	*					*		*								*							
Norway	18	Sør-Gjeslingan (Nord-Trøndelag)	1	2	64,44	10,47	*																						
Norway	18	Sklinna (Nord-Trøndelag)	1	2	65,12	10,59						*		*				*		*		*					*	*	
Norway	18	Røst archipelago (Nordland)	1	2	67,28	11,56	*					*						*				*		*			*	*	
Norway	18	Anda (Nordland)	1	2	69,04	15,10	*							*															
Norway	19	Grindøya (Troms)	1	2	69,38	18,49												*											
Norway	19	Hornøya (Finnmark)	1	2	70,23	31,09	*					*	*	*				*				*					*	*	
Norway	19	West Finnmark (Finnmark)	1	1	70,48	18,18																*							
Norway	13	Jan Mayen	1	2	70,98	-8,44		*				*	*				*								*				
Norway	19	Hjelmsøya (Finnmark)	1	2	71,04	24,44	*					*	*	*													*	*	
Norway	19	Bjørnøya (Svalbard)	1	2	74,23	19,08	*	*				*	*	*			*												
Norway	19	Isfjorden (Svalbard)	1	2	78,22	16,08	*	*					*				*												
Norway	19	Kongsfjorden (Svalbard)	1	2	78,55	12,27	*						*					*							*				
Norway	19	Barentsøya (Svalbard)	1	2	78,38	21,61																							*
Iceland	14	Dyrhólaey-Myrdalur	1	1	63,24	-19,07	*	*				*		*															
Iceland	14	Ingólfshöfði	1	1	63,48	-16,38	*	*				*		*															

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Nation	Ecoregion (see Figure 4)	Colony (Region)	Country Key Site*	Key Site Implementation**	Latitude	Longitude	Species Included																							
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Iceland	14	Westman archipelago	1	1	63,24	-20,17	*	*		*		*		*																
Iceland	14	Krísuvikurberg	1	1	63,50	-22,03	*					*																		
Iceland	14	Akurey I.	1	1	64,10	-21,58								*																
Iceland	13	Papey I.	1	1	64,35	-14,10	*	*				*		*																
Iceland	13-14	all Icelandic GRCO colonies (c70)	1	2																				*						
Iceland	13-14	all Icelandic SHAG colonies (129)	1	1																		*								
Iceland	13-14	all Icelandic MURR colonies	1	1								*	*																	
Iceland	14	Elliðaey I.	1	0	65,09	-22,48								*																
Iceland	14	Flatey archipelago	1	0	65,22	-22,55	*											*		*		*								
Iceland	13	Hafnarhólmi, Borgarfjörður eystri	1	0	65,33	-13,45								*																
Iceland	13	Grímsey I., Steingrímsfirði	1	0	65,42	-21,24								*																
Iceland	13	Drangey I.	1	0	65,57	-19,41	*	*				*		*																
Iceland	13	Vigur I.	1	0	66,03	-22,50								*																
Iceland	13	Lundey I., Skjálfandi	1	0	66,07	-17,22								*																
Iceland	13	Skoruvíkurbjarg	1	0	66,22	-14.36	*	*				*	*																	
Iceland	13	Tjörnes	1	0	66.03	-17,22	*	*				*	*	*																
Iceland	13	Ásbyrgi	1	1	66,01	-16,30		*																						
Iceland	14	Rifstjorn	1	1	64,55	-23,49												*												
Iceland	14	Latrabjarg	1	1	66,28	-22,34	*	*				*	*																	
Iceland	14	Snaefellsnes	1	1	64,52	-24,02	*	*				*	*																	
Iceland	13	Skrudur	1	1	64,54	-13,37	*	*				*	*																	
Iceland	14	Surtsey	1	1	63,19	-20,36														*										

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Iceland	13	Grimsey I.	1	1	66,33	-18.00	*	*				*	*	*															
Iceland	14	Þórishólmi I.	1	1	65,06	-22,42	*																						
Iceland	14	Hvítabjarnarey	1	1	65,05	-22,41	*																						
Iceland	13	Skagi	1	1	63,19	-20,36	*	*																					
Russia East	1	Commander I.	1	1	55,25	165,04	*					*	*								*		*		*				
Russia East	5	Wrangel I. (Arctic)	1	0	71,12	-177.25	*						*												*				
Russia East	22	Chaun Delta	1	2	69	170,4																	*		*				
Russia, West	19	Seven Island (Kola Peninsulae)	1	0	68,45	37,25	*					*	*														*	*	
Russia, West	19	Gorodetskiy Cape (W. Kola Peninsula)	1	1	69,34	32,51	*					*	*																
Russia, West	19	Rubini Rock / Tikhaya Bay (Franz Josef Land)	1	1	80,31	52,81	*						*					*							*				
Russia, West	19	Kandalaksha Bay	1	1	67,00	32,60			*									*									*	*	
Russia, West	19	Onega Bay	1	1	64,40	36,50			*									*						*			*	*	
Russia, West	20	Sedov Islands (Severnaya Zemlya)	1	1	79,00	91,30	*																		*				*
Russia, West	19	Bezymannaya Bay (Novaya Zemlya)	1	0	77,45	67,45	*						*																
Russia, West	19	Russkaya Gavan (Novaya Zemlya)	1	0	76,21	62,5	*						*																
Sweden	17	Stora Karlsö	1	2	57,17	17,58						*																	
US, Alaska	3	Kasatochi/Koniuji I. (SW)	1	2	52,11	-175.31	*					*	*			*					*		*			*			
US, Alaska	3	Buldir I. (SW)	1	2	52,20	175,55	*				*	*	*		*	*					*		*			*			
US, Alaska	3	Ulak (SW)	1	1	52,23	-175,11				*	*												*						
US, Alaska	3	Agattu I. (SW)	1	2	52,24	173,41	*					*	*																
US, Alaska	3	Shemya (SW)	1	0	52,72	174,48																	*						
US, Alaska	3	Aiktak I. (SW)	1	2	54,11	-164.50				*	*	*	*		*						*		*			*			

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US, Alaska	4	Forrester I. (Se)	1	1	54,48	-133.31						*																	
US, Alaska	4	Chowiet I. (S)	1	2	56,02	-156.42	*	*				*	*		*								*			*			
US, Alaska	2	St. George I. (W)	1	2	56,35	-169.36	*	*				*	*			*							*						
US, Alaska	2	St. Paul I. (W)	1	2	57,11	-170.17	*	*				*	*			*													
US, Alaska	4	Chiniak Bay, Kodiak Is. (S)	1	0	57,61	-152,13	*																*						
US, Alaska	2	Cape Pierce (W)	1	2	58,33	-161.44	*					*											*						
US, Alaska	4	East Amatuli I. (S)	1	2	58,55	-151.59	*				*	*	*		*														
US, Alaska	4	Middleton I. (S)	1	2	59,26	-146.19	*					*											*			*			
US, Alaska	4	Prince William Sound (S)	1	2	60,40	-147.30	*														*					*			
US, Alaska	4	Chiswell I. (S)	1	0	59,37	-149.36	*					*																	
US, Alaska	4	Yakatat	1	1	59,55	-139,85			*																				
US, Alaska	4	St. Lazaria I. (S.)	1	2	59,59	-135.42				*	*	*	*								*		*			*			
US, Alaska	2	Hall I. (W)	1	1	60,36	-172.56	*	*				*	*								*				*				
US, Alaska	2	Yukon Delta	1	1	61,20	-164,80												*	*										
US, Alaska	5	St. Lawrence I. (W)	1	0	63,20	-171.33	*					*	*			*									*				
US, Alaska	5	Bluff (NW)	1	0	64,34	-163.44	*					*											*						
US, Alaska	5	Barrow (N)	1	1	64,34	-163.44																			*				
US, Alaska	5	Cape Lisburne (NW)	1	1	68,52	-165.13	*					*	*																
US, Alaska	5,6	North Slope	1	1	70,80	-156,40												*	*										

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