

Seabirds in Norway 2009



Results



from the **SEAPOP** programme

The 2009 breeding season

After one of the worst breeding seasons for many years in 2008, 2009 showed signs of a slight improvement. However, many of our commonest species still did badly, with continued declines in numbers and poor breeding success. As in 2008, the problems were greatest for pelagic species such as common guillemots, Atlantic puffins and black-legged kittiwakes.



Kittiwake © T. Anker-Nilssen

Breeding success

Kittiwakes again had a bad season with low or very low chick production along the whole coast (**Table 1a**). On Bjørnøya and Spitsbergen (Grumant) it was a little better with 0.9 and 0.5 chicks/nest respectively. As in previous seasons, kittiwakes on Anda had a better year than on most mainland colonies producing 0.7 chicks/nest, probably a result of access to a local supply of

sandeels and Myctophids. There was, however, a significant predation of eggs by crows and ravens on Anda such that by the end of the incubation period, the clutch size was reduced to 0.9 eggs/nest. Another positive note was the good production of common guillemot chicks on colonies from Bjørnøya in the north to Sklinna in the south. Only on Runde was guillemot chick production poor. This is, however, small consolation for the steep decline of the species and its position as critically threatened on the Norwegian Red List.

Along a north-south axis, the pelagic species had a generally poor year in 2009, both on the mainland and Svalbard. The situation was slightly better on Bjørnøya and Hornøya although there the kittiwakes had another poor year, albeit a little better than in 2008. Along the rest of the mainland, chick production was moderate to poor for northern fulmars and auks. There was a total breeding failure of puffins in the monitoring plots on Hjelmsøya due to heavy predation of eggs and chicks by American mink. On Røst, puffins also failed for the third year running. The problem seemed again to arise during the incubation and early fledging periods. On Sklinna, puffins produced 0.3 chicks/nest, a poor result but the best since monitoring started in 2007.

Cover photo:
Colour-ringed common
guillemot carrying a young
saike © H. Eggen

Site/area

cf. map at right

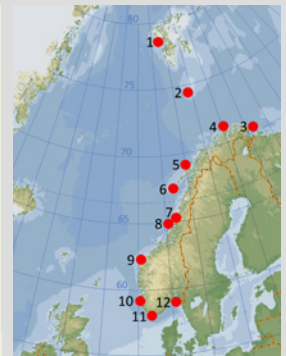
- 1 Spitsbergen
- 2 Bjørnøya
- 3 Hornøya
- 4 Hjelmsøya
- 5 Anda
- 6 Røst
- 7 S Helgeland
- 8 Sklinna
- 9 Runde
- 10 Rogaland
- 11 Vest-Agder
- 12 N Skagerrak

Fulmar
Gannet
Kittiwake
Razorbill
Common guillemot
Brünnich's guillemot
Little auk
Puffin

Pelagic species

Great cormorant
Shag
Common eider
Great skua
Glaucous gull
Great black-backed gull
Herring gull
Lesser black-backed gull
Black guillemot

Coastal species



Breeding success 2009

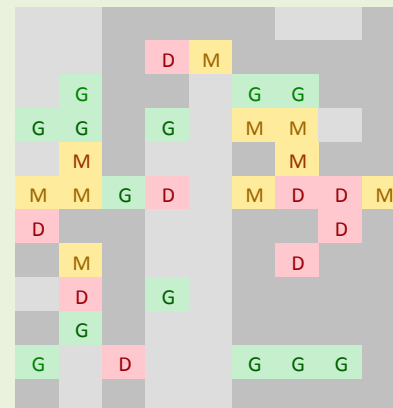
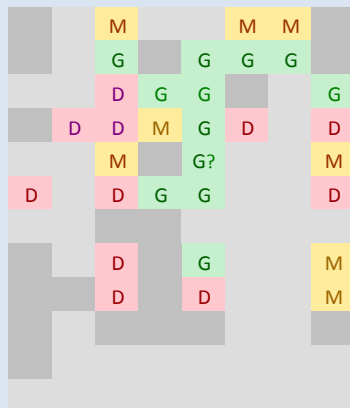


Table 1a

Symbols

- G Good
- M Moderate
- D Poor
- Unknown
- Do not breed
- ? Data exist

Population change (%) 2008-2009

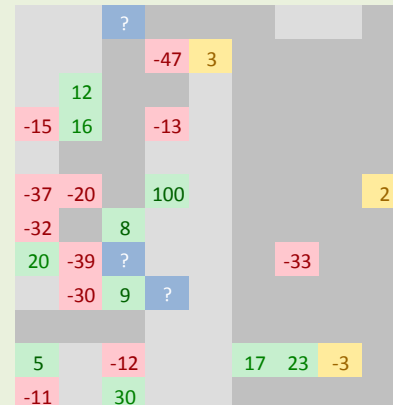
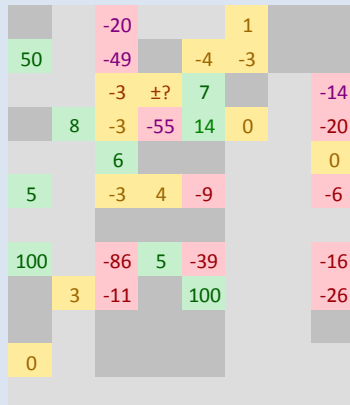


Table 1b

Symbols

- + ≥ 5% increase
- ± Stable (< ±5%)
- ≥ 5% decrease
- Unknown
- Do not breed
- ? Data exist

Annual change (%) in population size 2000-2009

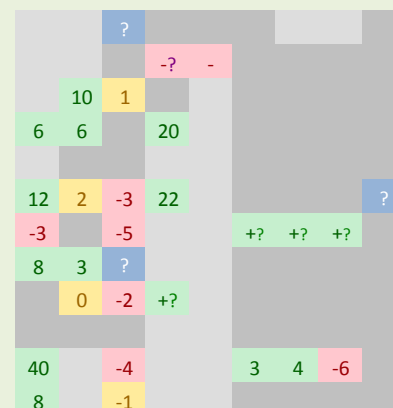
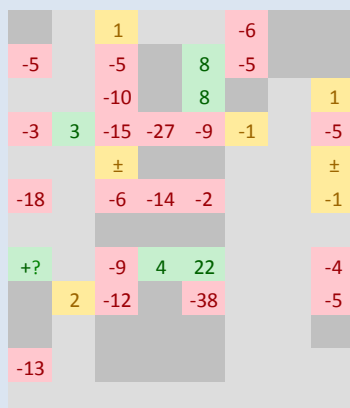


Table 1c

Symbols

- + ≥ 2% p.a. increase
- ± Stable (< ±2% p.a.)
- ≥ 2% p.a. decrease
- Unknown
- Do not breed
- ? Data exist



Great black-backed gull © T. Anker-Nilssen

Among the coastal species, especially European shags, great cormorants, gulls and black guillemots, breeding success was generally better than that of the pelagic species, although unevenly spread. On Bjørnøya, the great skua and glaucous gull had a moderate-poor season, whereas on Hornøya and Hjelmsøya breeding success was better for the shags, cormorants, great skua and large gulls. Production was worse further south with high predation rates and low breeding success of shags and herring gulls on Sklinna. In the western parts of S Norway, 2009 was a catastrophe with zero production of gulls, terns, eider and shags. Further south, however, the gulls, shag and cormorant had a good season.

Population changes

Because they have declined over many years, the common guillemot, puffin and kittiwake are all on the Norwegian Red List, and there were few signs of alleviation in 2009 (**Table 1b**). This was especially true for the puffin where counts in five of the six monitored colonies showed declines of 6-28% since 2008. There was no change on Anda, but

there the population seems to have declined by 20% since 1981.

The kittiwake population also declined steeply in the southernmost mainland colonies (with only three pairs left on Sklinna compared to 22 in 2008), and there were reports of a 90% decline in Sogn & Fjordane. At the two key sites on Spitsbergen, numbers declined by 9% and 34% respectively. Between Røst and Bjørnøya there were small changes, and on Anda there was once again a small (6%) increase, again probably due to a good local food source.

Large declines in common guillemots were recorded on Sklinna and Røst and, although numbers increased on both Runde and Hjelmsøya, these populations

Puffin burrow in use © T. Anker-Nilssen



are so small that there is no need to reconsider the overall classification of common guillemots as being critically threatened. Only on Hornøya and Bjørnøya can the populations be described as viable. There were disquieting declines in numbers of Brünnich's guillemots in three Spitsbergen colonies (5, 40 and 58%). With a similar decline in a fourth colony registered in 2008 and an annual decline of 5% on Bjørnøya since 2000, the population in the western Barents Sea seems to be in a general decline.

Between 2000 and 2009 there has been an increase in great cormorant numbers

at five of six key sites north to Hjelmsøya (**Table 1c**). The exception was in Sør-Helgeland where numbers declined at 3% p.a. However, between 2008 and 2009, numbers dropped severely at four sites, while there was an increase on Sklinna and in Vest-Agder. There was a corresponding decline among shags at Røst, Sklinna and Runde. Common for both species was probably a food shortage early in the breeding season such that many pairs did not breed. Only a long-term monitoring can reveal the true population changes.



Puffin bringing home a mixture of fish larvae © T. Anker-Nilssen

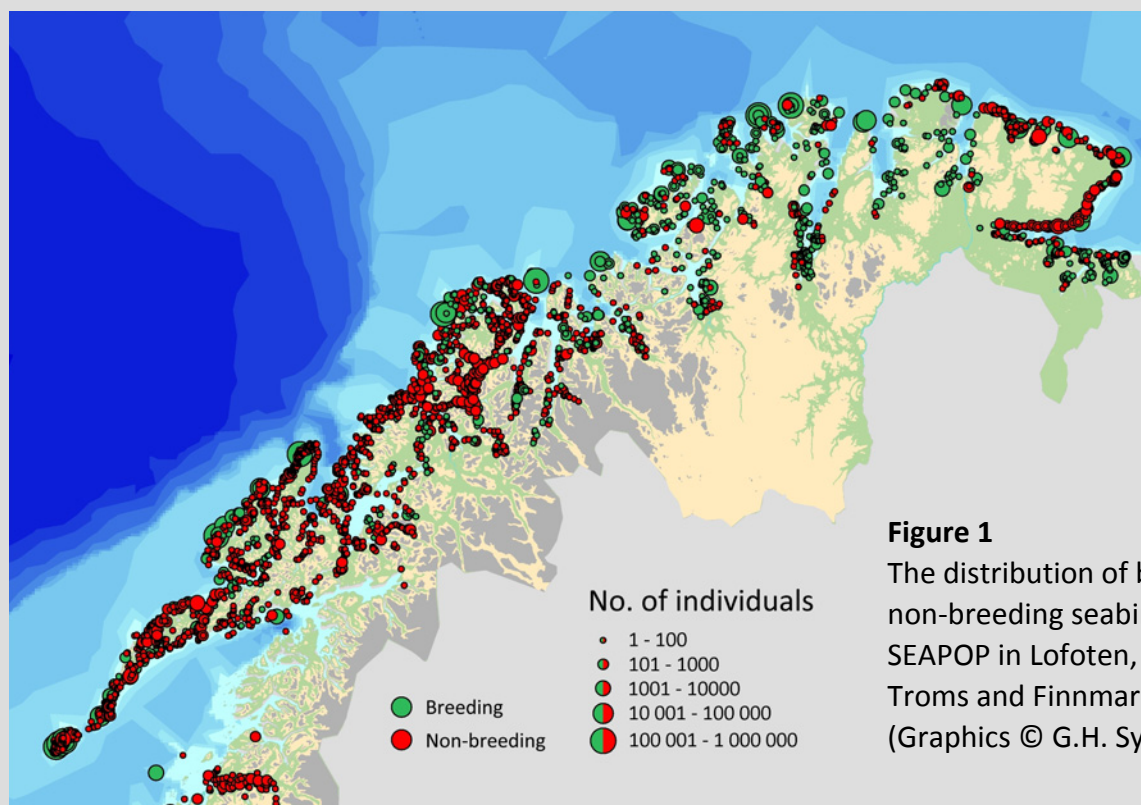


Figure 1

The distribution of breeding and non-breeding seabirds mapped by SEAPOP in Lofoten, Vesterålen, Troms and Finnmark in 2005-2009. (Graphics © G.H. Systad)

Mapping in 2009

The mapping of breeding seabirds between Røst and the Russian border was concluded for the time being in 2009. Because of bad weather, some counts were not made at colonies, but the overall coverage was good. Some species that have concealed nest sites or breed in small numbers, such as shags or red-breasted mergansers, are difficult to census. The distribution of the various species varies greatly. Some breed in a few, but large colonies, e.g. puffin, while others are spread along the whole coast, e.g. great black-backed gull (**Figure 1**).

Aerial survey of the north coast

With the exception of the innermost fjords of Troms in August, the whole

coast between Røst and the Russian border were surveyed in March and August-September. All species seen were registered, but focus was on wintering species or moulting birds. This survey was made in collaboration between the Danish Environmental Research Institute (DMU) and NINA. The former flew transects perpendicular to the coast at 5 km intervals whereas NINA flew along the coast. An overlap around Andøya enabled a comparison of the methods.

In all, more than 100 000 seabirds were seen in March. The commonest were eider (23 000 individuals, **Figure 2**), kittiwake (19 600), herring gull (19 100), great black-backed gull (6 900) and cormorant (1 900). Unidentified gulls numbered 18 400 and “shagorants” 3 300. Rare species such as white-billed/great northern diver (50) and whooper swan (132) were also counted.

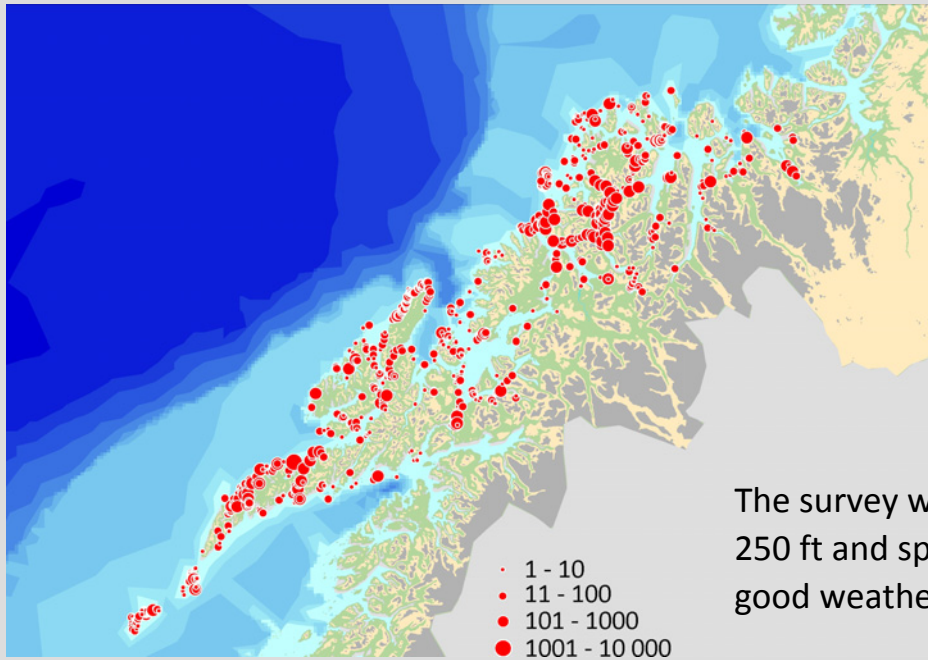


Figure 2

The distribution of eiders (individuals) in Lofoten and Vesterålen, surveyed from the air in March 2009. (Graphics © G.H. Systad)

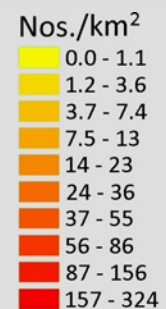
The survey was made at an altitude of 250 ft and speed of 180 km/t in very good weather.

In Lofoten and Vesterålen, 28 species were seen during the autumn survey. Most were unidentified gulls (4 234) and “shagorants” (3 141), herring gulls (1 787), eider (968) and great black-backed gull (909). The true numbers are, however, much higher since the transects 5 km apart did not cover the whole area. Around Andøya and in Troms, the commonest species were herring gull (21 200), kittiwake (7 700), eider (6 200), great black-backed gull (5 800) and goosander (5 200), plus many unidentified gulls (46 200) and “shagorants” (9 900). White-billed/great northern divers (15) and whooper swans (125) were also seen.

The commonest species was eider (10 122 individuals), but there were also large numbers of gulls and red-breasted mergansers. Based on the observations and digital maps of the habitats, the distribution of eiders in the whole area was modelled (**Figure 3**). The model gave an estimate of 45 000 eiders in the whole area, i.e. more than four times the number actually counted.

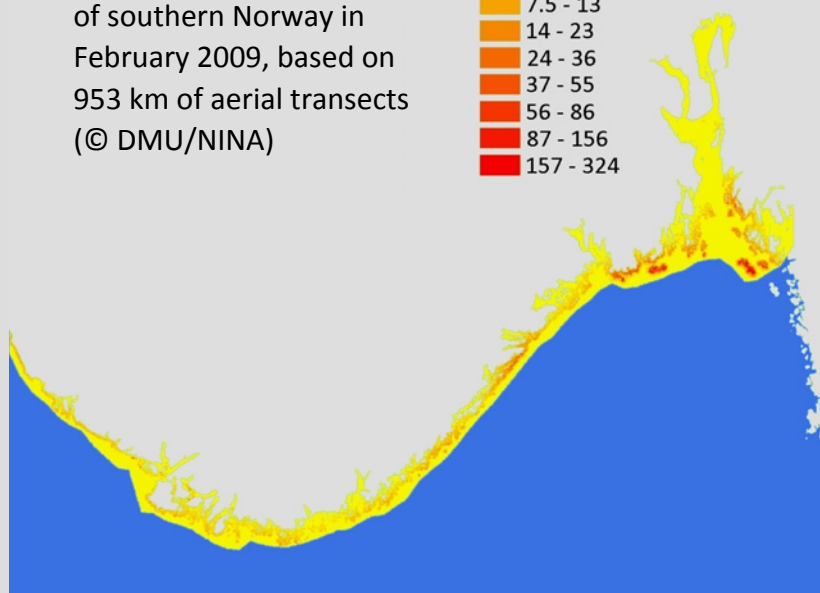
Figure 3

The modelled distribution of eiders along the coast of southern Norway in February 2009, based on 953 km of aerial transects (© DMU/NINA)



Aerial survey of the south coast

In South Norway, birds wintering in waters of 40 m or shallower between the Swedish border and Rogaland were counted from the air by DMU using the same methods as described above.



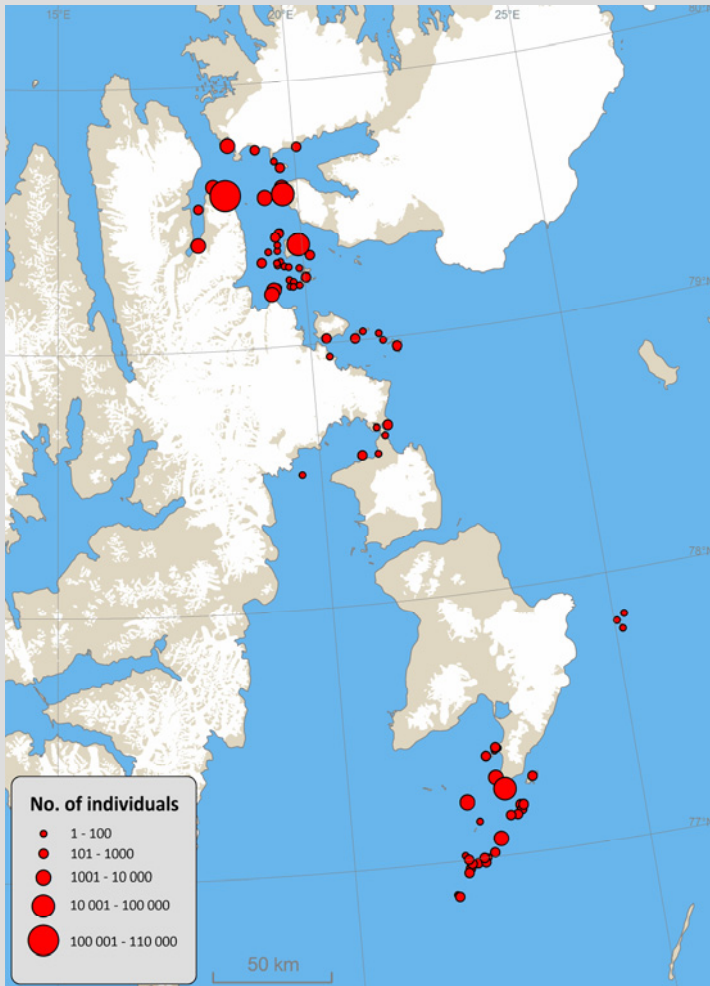


Figure 4

The distribution of seabird colonies censused in summer 2009 in Hinloppstredet, on the north coast of Barentsøya and in SE Edgeøya. (Graphics © NP)

Svalbard

Surveys of colonies along the east coast of Spitsbergen, plus Barentsøya and Edgeøya were given priority in 2009. Despite difficult ice conditions, the surveys were successful. Compared to the west coast of Spitsbergen, the eastern part of the archipelago is characterised by many small and few large (e.g. Alkefjellet, Wahlgergøya and Negerpynten, **Figure 4**) colonies. The dominant species were little auk, Brünnich's guillemot, kittiwake and fulmar. As yet, SEAPOP has given priority to the documentation of the summer situation, in the areas most visited by humans (e.g. Isfjorden) and the east coast. The latter is expected to be more accessible as the summer ice cover decreases. Most of the west coast, parts of the east coast and all of Bjørnøya was surveyed in 2005-09.

Seabirds at sea

At-sea surveys continued as in previous years based on the Norwegian Marine Research Institute's "ecosystem surveys". The modelled distribution of seabirds in all Norwegian waters was updated, and organised for use by various external bodies in standard GIS format (**Figure 5**).

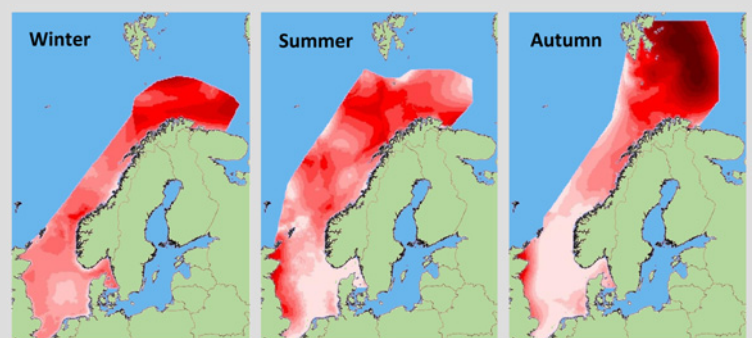


Figure 5

An updated model of the distribution of kittiwakes at sea (nos. pr 10x10 km² block) in three seasons. (Graphics © P. Fauchald)

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Digital monitoring – valuable and rational

The collection of data in the field normally requires a lot of manpower and money. One aim of SEAPOP is to use new technology that will make better use of the resources, and time-lapse digital cameras are now used to monitor populations and breeding success of several species. Prototypes have been tested on Røst and Bjørnøya since 2001, and when SEAPOP started in 2005 it was possible to develop and deploy this technology at a larger scale. Today digital cameras are used as a standard part of the monitoring of kittiwakes, ivory gulls and both species of guillemot on Svalbard (**Figure 6**) and puffins, common guillemots and black guillemots on Røst, Anda and Sklinna. Cameras are also used to monitor breeding success of kittiwakes and Brünnich's guillemots.

Each unit is fitted in a waterproof compartment with an internal camera run by a built-in or external battery. The camera is operated by an adjustable control unit preset to trigger pictures at an optional frequency (e.g. every hour) or, in some systems, at programmed times. The pictures are stored on the camera's memory stick, and the batteries can run the system for up to half a year, depending on individual needs and settings. Some systems are self-driven by means of solar panels and rechargeable batteries.

The cameras are normally deployed early in the season and collected again at the

end. Their use enables SEAPOP field workers to devote more time on other tasks, and considerably reduces disturbance at the colonies in question. This is especially relevant on Svalbard where logistics are often very difficult and expensive. Weather conditions are also of less importance as the cameras take pictures throughout the summer.



Figure 6
One of SEAPOP's monitoring cameras above a colony of ivory gulls at Palanderbukta on Nordaustlandet, Svalbard. (© H. Strøm)

Time-lapse photography also tells us more about what is going on in the colony at different times of the day and season. Although analysing the pictures is manual and time-consuming, they give us many more counts than otherwise is possible. This is important as variations in numbers of birds present in a colony during the different phases of breeding (nest-establishment, egg-laying, incubation, fledging) contribute to the explanation of the breeding success. Knowledge of when large changes occur help identify the mechanisms behind the breeding result.

SEAPOP coordinates old and new activities

The thought behind the scientific concept of SEAPOP was based on an analysis of the needs of the parties involved and how these needs could be optimally satisfied. In the light of this, all ongoing monitoring and associated research activity was evaluated to establish which could contribute best to SEAPOP's goals. Those that were relevant have been allowed to continue in full, and not at the expense of the new activities that have been started in the programme.

The most relevant long-term studies that are now part of SEAPOP are:

- ✦ The national mapping project for seabirds (1980–, NINA, data since 1961)
- ✦ The seabird database for Svalbard (1989–, NP, data since 1980)
- ✦ The national monitoring programme for seabirds (1988–, NINA for DN, first data from 1946)
- ✦ The monitoring programme for seabirds on Svalbard (1986–, NP)
- ✦ The population ecology of puffins on Røst (1979–, NINA for DN, data since 1964)
- ✦ Seabird studies on Hornøya (1980–, TMU)
- ✦ Seabird studies on Bear Island (1986–, NP)
- ✦ Other, shorter-term projects relevant to SEAPOP (most of which are commissioned by management authorities and companies in the energy sector)

When both new and traditional activities are accounted for and own efforts in all segments are included, these studies were cast up at constituting 38 % of the total activity in SEAPOP in 2009.



The Puffin project on Røst was started by Svein Myrberget in 1964 and is one of the world's longest running seabird projects. This picture from 1982 shows the then leader of the project Gunnar Lid (right), the Minister of Environment Wenche Frogm Sellæg (centre), Inger Lise Skarstein (MP, Cons.) and Undersecretary Jan Abrahamsen (Dep. of Env.). (© T. Anker-Nilssen)

SEAPOP and the marine management plans

The documentation of knowledge gaps revealed in *The Management Plan for Lofoten and the Barents Sea* (2005) was an important motive to bring SEAPOP to full scale in the north, and this has always influenced the work priorities in the programme. At the same time, it has been vital to ensure the overlying, professional principals that are the basis of SEAPOP as an adequate national programme. The wish of the authorities to improve our knowledge during the review of the management plan in 2010 was no hinder. Since SEAPOP started in 2005, the mapping of the coastal areas of the mainland has thus been top priority, especially along Lofoten and Vesterålen in the southwest part of the management area. Since the programme started at full national scale in 2008, similar focus has been (and is) given to the management plans for the Norwegian Sea and North Sea.

SEAPOP Key info

Economy

The SEAPOP programme is financed by the Norwegian government and the petroleum industry. Funds from the Ministry of Environment and the Ministry of Oil and Energy are channelled through the Directorate of Nature Management (DN) and the Norwegian Research Council to the institutions involved: Norwegian Institute for Nature Research (NINA), Norwegian Polar Institute (NP) and Tromsø University Museum (TMU).

Steering committee

The Ministry of Environment has nominated a steering committee that is led by DN. At present the following institutions are represented:

- ✂ Directorate of Nature Management
- ✂ Norwegian Petroleum Directorate
- ✂ The Norwegian Oil Industry Association
- ✂ The Norwegian Coastal Administration
- ✂ The Norwegian Maritime Directorate
- ✂ The Norwegian Institute of Marine Research

The Norwegian Institute of Marine Research has an observer/advisor status in the committee, as do NINA and NP.

Cooperation

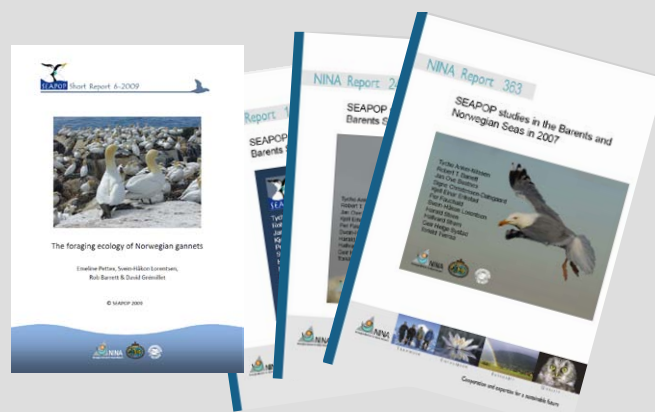
SEAPOP cooperates formally and informally with many other organisations, including national bodies such as:

- ✂ The County Governors
- ✂ The Norwegian Institute of Marine Research
- ✂ The Norwegian Coast Guard
- ✂ The Norwegian Coastal Administration
- ✂ The Norwegian Ornithological Society
- ✂ The Norwegian Nature Inspectorate
- ✂ The Governor of Svalbard

In addition are a large number of individuals, both in Norway and abroad – no names given, nobody forgotten...

SEAPOP Web and Publications

SEAPOP produces many written publications. Reports can be downloaded free from the programme's website www.seapop.no. Here can be found a lot of information, and the results from many of the projects within the programme are published in English. News items are presented and the site has an up-to-date list of publications. Access to the various databases is possible, and distribution maps can be generated by the public.



Thanks

We thank our sponsors and all participants for their good cooperation in 2009!



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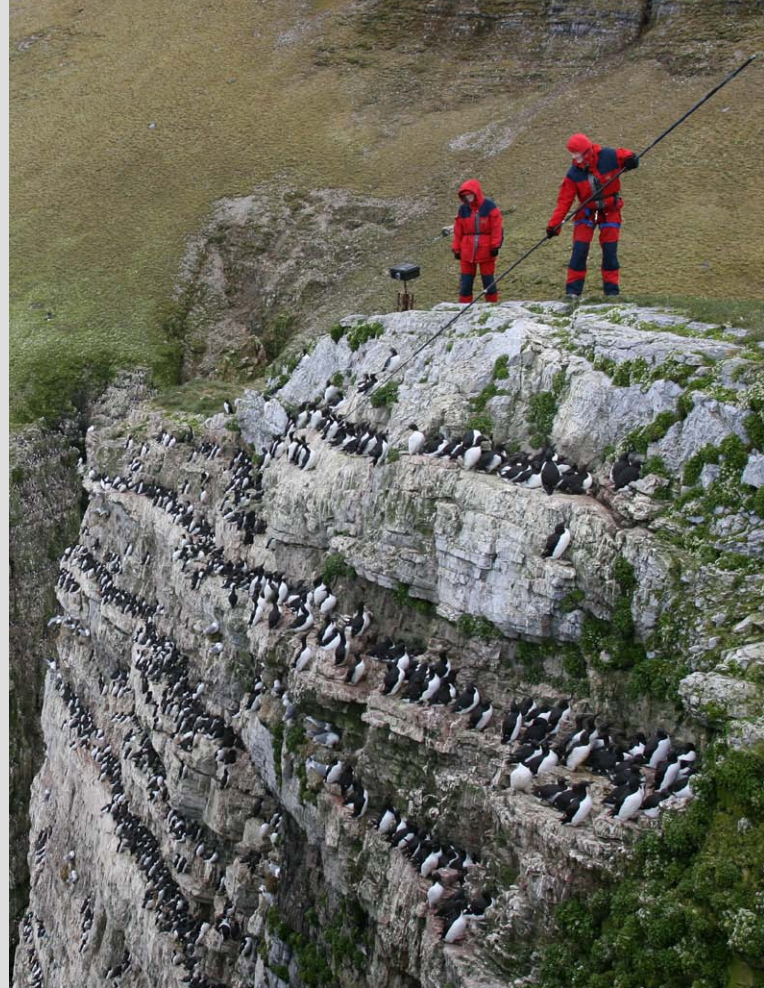
Why SEAPOP?

Seabirds are the most conspicuous of all marine animals and a very popular part of the coastal and marine environment. Their capacity to exploit the elements is fascinating and helps explain why seabirds still have a large utilitarian value. Although modern trade and technology have reduced their value as a food source and indicator of fishing grounds, there is a constant documentation of their role as early, sensitive and cost-effective indicators of the state of the marine environment. We therefore believe that increased knowledge concerning their ecology is socially useful and will contribute to a more complete and viable management of our marine ecosystems.

Norway has more seabirds than many other countries. Our international responsibility is therefore large. One of six of our common species has its main distribution in Norway, and one of three is listed in the Norwegian Red List. Five are considered as strongly or critically threatened.

SEAPOP is a national programme that contributes greatly to and coordinates our knowledge concerning seabirds in Norwegian waters. Their populations are mapped continuously and their numbers and demography are monitored at a network of key sites. Studies of their ecological role in the marine system are carried out at the same time. SEAPOP has special focus on the documentation and explanation of changes in the species

Ringling of Brünnich's guillemots on Bjørnøya © H. Strøm



considered most sensitive to outer influences. Such knowledge is essential before corrective managerial measures can be set in.

The preparation and communication of the results is given high priority in SEAPOP. Most of the collected data are operationalized and made available through the programme's website at www.seapop.no. There you can read how we work, download some of the results and find references to publications that are based on data collected in the programme.



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