

# Seabird research in NINA



## Some highlights:

### Seabird and kelp harvesting

By removing or reducing the kelp forests, kelp harvesting influences the abundance of small fish and fish-eating seabirds such as the great cormorant (*Phalacrocorax carbo*). NINA's research has demonstrated that in the harvested areas, the density of small gadids (mainly cod, *Gadus morhua*, and saithe, *Pollachius virens*) was only 20% of the density in unaffected areas. This difference persisted for at least one year after the kelp was harvested. The study also showed that the cormorants had to dive more frequently, and spend more time searching for fish, in harvested than in unharvested areas. To achieve sustainable management of these areas, there is a pressing need for more ecosystem-based research.



Photo: K.-O. Jacobsen

### Seabirds as indicators

In areas north of 62 °N, the breeding performance of several seabird species reflects the year-class abundance of young saithe. This response is seen several years before the trend in saithe recruitment is revealed by traditional research vessel surveys. This was demonstrated analysing 15-25 year long data series from seabird colonies along the coast of Central and North Norway. In combination with climate variables in complex statistical models, the reproductive success of sea birds may be useful as a prognostic tool for fisheries management.

Along the northernmost coast of Norway, seabird counts from a small aircraft demonstrated that seabird density and species composition was highly correlated with physical conditions as well as human activities. The results indicate that aerial surveys are well-suited for studying human impacts in coastal habitats.



Photo: A. Sivertsen



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## The SEAPOP programme

SEAPOP (SEAbird POPulations) is a new and long-term monitoring and mapping programme for Norwegian seabirds that was established in 2005. The programme represents a new initiative for these activities in Norway, Svalbard and adjacent sea areas, and will provide and maintain base-line knowledge of seabirds for an improved management of this marine environment. The data analyses aim to develop further models of seabird distribution and population dynamics using different environmental parameters, and to explore the degree of covariation across different sites and species. This knowledge is urgently needed to distinguish human influences from those caused by natural variation.

The activities in the two initial years were restricted to the Lofoten and Barents Sea area (Northern Norway), but the programme is designed for implementation on the full national scale within a few years. The work is organised and carried out by the Norwegian Institute for Nature Research (NINA) in close cooperation with the Norwegian Polar Institute (NP) and Tromsø University Museum, and is currently financed by the Ministry of Environment, the Ministry of Petroleum and Energy and the Norwegian Oil Industry Association. The data and knowledge is being organised for serving different users online via an own web site ([www.seapop.no](http://www.seapop.no)).



Photo: J. O. Bustnes

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