



NAME

Nils Christian Stenseth

TITLE OF PRESENTATION

Adapting to climate change: ecological dynamics, evolutionary changes and management adaptations

ABSTRACT OF PRESENTATION

Harvested populations are under strong pressure from a number of forces.

For example, human-induced changes in age and size at maturation have been observed for many fish stocks, with a component of these being attributed to genetic adaptations. Such evolutionary changes have economic implications: they can increase economic yield, but too high exploitation rates ? as observed in the past ? can lead to genetic changes that actually lower the economic income. At the same time, climate change can affect ecological processes such as recruitment and individual growth. Overall, this may make the populations less resilient, and more susceptible to larger perturbations. By statistically analyzing time-series of the historical fluctuations in wild populations we can understand the underlying mechanisms of how species adapt to their biological and social environment.

BIOGRAPHICAL NOTE

Background: I am a Core Member, Research Professor and the Chair of CEES. In addition, I am a Chief Scientist at the [Institute of Marine Research](#).

My research interests span a broad spectrum of ecological and evolutionary topics, most of which are rooted in population biology. Before the early 1990s, much of my work was purely theoretical. Later, I have adopted the research strategy of 'asking' available data what the underlying ecological or evolutionary process might most likely be - all within a theoretical perspective. I strongly favour comparative studies - by comparing similar features between different (but comparable) systems, we typically learn more than we otherwise would have done. Variations in population densities in time and space - and the underlying demographic processes - have been a main interest of mine over the years. An important example is the interdependent relation between density-dependent and density-independent processes, where the ecological effect of climate is an important example of the latter.

Most of my work relates to basic issues. (I have never claimed that my research is of any immediate use, although I do hope it will be in the long run.) However, I find great pleasure in working on more applied issues as well; I have never been ashamed of my research being of practical use here and now. These applied interests have brought me into work on pest control (e.g., rodents in Africa), harvesting (marine and terrestrial), bio-economics (e.g., the ecological dynamics of dry-land pastoral systems) and epidemiology (Plague).

I am convinced that it is helpful to try to understand what has happened in the past, in preparing for what might happen in the future, e.g., ecological and evolutionary effects of climate change. For this reason, I value the existence of long-term time series - and the analysis of them.

I love interacting with colleagues, and find great pleasure in building and maintaining teams. I am an [ISI highly cited researcher](#).

Besides being an active scientist I am also a public advocate for science, actively participating in the discussions of how best to structure and strengthen the scientific community. I am an elected member of the [Norwegian Academy of Science and the Letters, DNVA](#); currently I'm the president of that Academy. I am also an elected member/fellow of several other academies, including the [Royal Norwegian Society of Science and Letters, DKNVS](#), [Academia Europaea](#), [French Académie des Sciences](#) and the [Finnish Society of Sciences and Letters](#). I have been awarded honorary doctorates (Doctor Honoris Causa) at the University of Antwerpen, Belgium (2001) and at the École Normale Supérieure, Lyon, France (2011). I am Chevalier (Knight) in the French National Order of the Legion of Honour. I also do quite a bit of editorial work, including as Editor-in-Chief of [Climate Research](#).

Research interests: Population biology (ecology and genetic structuring); large-scale ecological and evolutionary patterns; effects (ecology and evolution) of climate variation; terrestrial, marine and freshwater systems.