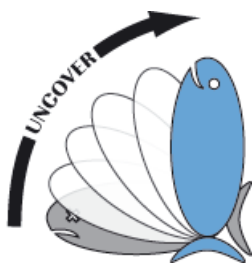


### “UNCOVER”

## Developing strategies for the recovery of marine fish stocks

*It has become widely recognized that many of the world's fisheries are in decline. In 2006, the Food and Agricultural Organisation of the United Nations reported that approximately one quarter of all marine capture fisheries are overexploited, with only one percent undergoing some form of recovery from depletion.*

*While in extreme cases, the International Council for the Exploration of the Sea advises to close fisheries, underlying mechanisms of stock recovery might have altered in such a way that full recovery is no longer possible.*



For example, the biology and population parameters of the affected stocks might have changed as a consequence of the decline. Detailed knowledge about these underlying mechanisms is still largely missing. Moreover, for many of the management measures that have been taken to restore marine fish stocks, a comprehensive evaluation of their success and/or failure is lacking.

The purpose of **UNCOVER** is to **develop recovery strategies for fish stocks in the European Union that are outside safe biological limits (SBL)**. The project's principle objectives are to:

- identify various changes experienced during the decline of fish stocks in order to understand the prospects for their recovery;
- enhance the scientific understanding of the mechanisms of fish stock recovery; and
- formulate recommendations for fisheries on how best to implement stock recovery plans.

The project started in March 2006 and will run for four years, during which relevant information from previous and ongoing research

programmes will be synthesized and integrated, and strategies that incorporate biological and environmental factors, as well as technical and socio-economic constraints, will be evaluated and developed.

Recovery strategies developed in UNCOVER will be area- and ecosystem-specific and tuned to key species and their fishing techniques. The **four case study areas** chosen represent ecosystems that vary significantly in structure and productivity due to differences in climatic influences, physical properties, species composition and species interactions. They encompass a wide range of physiological and population limiting conditions and processes, are subject to differing harvesting intensity and strategy and represent a broad array of socio-economic concerns:

- Barents and Norwegian Seas: Arctic cod, Norwegian spring spawning herring, capelin
- North Sea: cod, plaice, autumn spawning herring
- **Baltic Sea: sprat, eastern Baltic cod**
- Bay of Biscay: northern hake, anchovy

Within the framework of the project, a report, "**Review of institutional arrangements and**

**Project acronym:**

UNCOVER

**Full title of Project:**

Understanding the mechanisms of stock recovery

**EU contract number:**

022717

**Web-site:**[www.uncover.eu](http://www.uncover.eu)**Coordinator**

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**evaluation of factors associated with successful stock recovery plans"**, has been published that reviews the development and success of fish stock recovery plans in the United States of America, Australia, New Zealand and Europe. A range of multi-disciplinary factors that have been associated with successful stock recovery were evaluated for 33 case studies. The results show that rapid and often large reductions in catches at the start of the recovery process, and biological characteristics, such as the life-history strategies of species and the demographic composition of the stock, play a key role in the ability of populations to recover.



NORTH SEA COD STOCKS HAVE BEEN OUTSIDE OF "SAFE BIOLOGICAL LIMITS" SINCE THE LATE 1980S. PHOTO COURTESY OF DANIEL STEPPUTTIS, ROSTOCK.

**"RAPID AND OFTEN LARGE REDUCTIONS IN CATCHES AT THE START OF THE RECOVERY PROCESS, AND BIOLOGICAL CHARACTERISTICS PLAY A KEY ROLE IN THE ABILITY OF POPULATIONS TO RECOVER"**

The report also states that recovery is more effective when the recovery plan is **part of a legal mandate**, which is automatically triggered when pre-defined limit reference points are reached. In addition, recovery is more likely when effort reductions are created through days at sea,

decommissioning or harvest control rule schemes, and when there are positive recruitment events during the recovery period, either stimulated by or coincident with the reductions in effort.

In 2002, the World Summit on Sustainable Development agreed to the Johannesburg Plan of Implementation to "maintain or restore fish stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis where possible not later than 2015". This recognized, however, that social and economic considerations should be taken into account and that oceanographic and environmental conditions will have a significant influence on the rate of stock restoration.

UNCOVER will bring all of these factors together and feed them into a series of models that are designed to evaluate different recovery strategies, sensitive to various stock, environmental and fisheries conditions. This way the project will provide a sound basis for fish stock management.