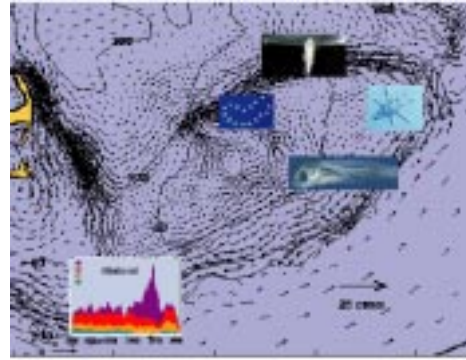


# CLIMATE AND FISHERIES

**ZOOL 796/896 and EOS 896.**  
**Winter Semester 2003**  
**Credits: 3.0 (T-Th. 2:10-3:30)**



This course reviews the mechanisms by which variation in year-class strength of exploited fish and invertebrate stocks may be connected to fluctuations in climate on interannual and interdecadal time scales. Linkage may be mediated directly by changes in circulation or hydrography or indirectly by ecosystem variation in planktonic production and predator fields determining growth and mortality of early life history stages. The course content includes examination of biological and physical processes controlling recruitment and plankton productivity, climate-mediated changes in ocean circulation and temperature in the North Atlantic and Pacific Oceans, monitoring programs for long time series of biological and physical oceanographic data, examples of climate-zooplankton-fish linkage, modelling approaches and ecosystem-based management strategies.

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## Climate and Fisheries Course Structure\*

**ZOOL 796/896 and EOS 896.**  
**Winter semester 2003**  
**Credits: 3.00 (T-Th. 14:10-15:30)**

<b>Week</b>	<b>Topic</b>
1a	Course Introduction
1b	Interannual recruitment variability
2a	The early life history of fish: egg production; larval growth and mortality, juvenile survival
2b	Ecological factors controlling recruitment: plankton production
3a	Ecological factors controlling recruitment: predation
3b	Physical factors controlling recruitment: advection and retention
4a	Student presentations of papers (recruitment case studies)
4b	Physical factors controlling recruitment: temperature, mixing and turbulence
5a	Student presentations of papers (recruitment case studies)
5b	Interdecadal variation and regime shifts
6a	Student presentations of papers (recruitment case studies)
6b	Climate-Plankton/Fish Linkage in the Pacific Ocean
7a	Student presentations of papers (climate linkage studies)
7b	Variability in small pelagic fish stocks
8	Mid-term Exam
Break	
9a	Climate-Plankton/Fish Linkage in the North Atlantic I.
9b	Climate-Plankton/Fish Linkage in the North Atlantic II
10a	Student presentations of papers (climate linkage studies)
10b	Environmental monitoring programs I
11a	Student presentations of papers (climate linkage studies)
11b	Environmental monitoring programs II
12a	Student presentations of papers (climate linkage studies)
12b	Biological-Physical modelling I
13a	Student presentations of papers (biophysical modelling)
13b	Biological-Physical modelling II
14a	Student presentations of papers (biophysical modelling)
14b	Climate effects vs. fishing mortality; Ecosystem management and fisheries
15a	Fishing management practice: the Northern Cod Story
16	Final Exam

\* subject to some change, depending on enrollment