Ecology and Oceanography of Harmful Algal Blooms (ECOHAB)

The NCCOS Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) Program funds research to understand the causes and impacts of HABs and their toxins, which is fundamental to successful management and mitigation.

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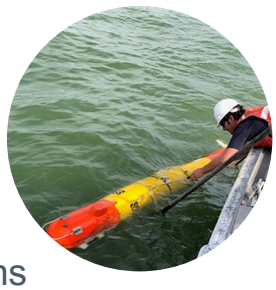
Priorities

Advance the understanding of:

- Drivers of HAB initiation, maintenance and termination
  - HAB toxin biosynthesis, uptake, metabolism, depuration, trophic transfer and the mechanisms of toxicity/impacts
    - HAB impacts on food safety and security
    - Effects of environmental and anthropogenic changes on HABs and HAB impacts



Funding Details

Type of Work Supported: Research

Award Format:
Cooperative Agreement

Frequency of Availability:
Periodic, typically every 2-3 years

Award Size: $200K - $1M/year

Duration of Award: 2-5 years

Eligible Groups:
State, Local, Tribal, Private, Non-profit, Academic, Federal

Is match required? No

Is the funding competitive? Yes

Program Details

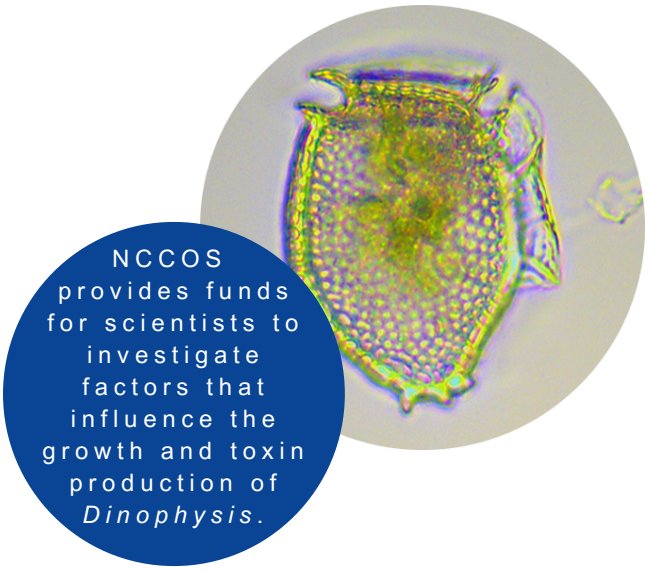
ECOHAB is a national, peer-reviewed, competitive research funding program authorized by the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA). It seeks to achieve a holistic, quantitative understanding of nuisance and toxin-producing HABs to inform the development of predictive models, forecasts, mitigation tools, and prevention strategies.

- **Targeted** ECOHAB studies address fundamental ecological and oceanographic questions related to understanding HAB events. These projects are typically 2-3 years in duration, are conducted by individual investigators or small teams.
- **Regional**-scale and comparative, cross-regional ECOHAB investigations are conducted by multi-institutional project teams and are typically 3-5 years in duration.

EXAMPLE ECOHAB PROJECTS

Multidisciplinary Approach to a Cross-Regional Problem: *Dinophysis* and DSP Toxicity

Diarrhetic shellfish poisoning (DSP) has emerged as a significant and expanding seafood safety threat in coastal regions across the United States. The harmful algal species, *Dinophysis*, produces toxins known to cause DSP that can accumulate in shellfish. Little is known about the environmental and biological drivers of *Dinophysis* growth and toxin production. This project will develop a nationwide network of Imaging FlowCytobots optimized for monitoring *Dinophysis* blooms and determine how growth rates and toxin production are influenced by the environment. The results will help address regional management needs.



NCCOS provides funds for scientists to investigate factors that influence the growth and toxin production of *Dinophysis*.

Trophic Transfer and Effects of HAB Toxin Alaskan Marine Food Webs

This project aims to determine harmful algal bloom species composition and cell densities in Alaskan waters, and to model toxin transfer pathways to zooplankton, shellfish, finfish, and marine mammals, and potential risks to human health.

Oceanographic and Cellular Controls on Domoic Acid Production in the California Current System

Domoic acid is a neurotoxin produced by some diatoms in the genus *Pseudo-nitzschia*. Domoic acid can accumulate in shellfish and fish, and cause illness or death in humans, marine mammals, and birds. In 2015, a bloom along the U.S. West Coast devastated the crab fishery and resulted in harvesting closures of fish and shellfish. This project aims to quantify the oceanographic and cellular factors that regulate and promote domoic acid biosynthesis in the California Current System.

Scan the QR codes

Current and past project details

New funding announcements

NCCOS