A.G. Huntsman Award Presentation and Distinguished Lecture

2017 Recipient

Jeffrey A. Hutchings

Dalhousie University, Nova Scotia

Tuesday, November 28, 2017
1:30 pm
Ford Auditorium
Bedford Institute of Oceanography

The Ecology and Evolution of Recovery: Lessons Learned Since the Collapse of Northern Cod

The Ecology and Evolution of Recovery: Lessons Learned Since the Collapse of Northern Cod

T he collapse of Canadian Atlantic cod spawned global examinations of the correlates of recovery. Foremost was the obvious need to reduce fishing mortality (F). But it became evident that this was not always sufficient to generate recovery, especially when reductions in F were neither timely nor meaningful. Research increasingly focussed on the fundamentals of ecology and evolution. All else being equal, small populations are more vulnerable to environmental stochasticity (unpredictability) than large populations, rendering recovery slower and more uncertain. The pace and probability of recovery is further hindered by the magnitude of population depletion, low rates of per capita productivity, and overfishing-induced increases in natural mortality. The concept that population-size thresholds exist, below which recovery is impaired ('Allee effects'), is increasingly gaining empirical traction. And the longer a population remains depleted, the greater the probability that the ecosystem will change in ways that are unfavourable to that population. Coupling population-dynamical correlates of recovery with evolution – the result of natural and human-induced selection – provides additional challenges to forecasting rates and probabilities of recovery in depleted fishes.