NExUS Reports and Tools (Data, Products and Services) Mon Feb 18 13:28:56 EST 2019

Name	Cusk (Brosme brosme) and Climate Change: Assessing the Threat to a Candidate Marine Fish Species Under the US Endangered Species Act
Description	Abstract: "In the Northwest Atlantic Ocean cusk (Brosme brosme) has declined dramatically primarily as a result of fishing activities. These declines have lead to concern about its status, which has prompted reviews under the U.S. Endangered Species Act (ESA) and the Canadian Species at Risk Act (SARA). Changes in distribution and abundance of number of marine fish in the Northwest Atlantic have been linked to climate variability and change, suggesting that both fishing and climate may affect the future status of cusk. Our goal was to evaluate potential effects of climate change on Northwest Atlantic cusk distribution. Coupling a species niche model with the output from an ensemble of climate models, we projected cusk distribution in the future. Our results indicate cusk habitat in the region will shrink and fragment, which is a result of a spatial mismatch between high complexity seafloor habitat and suitable temperature. The importance of habitat patch connectivity for cusk is poorly understood, so the population-level consequences of climate-related habitat fragmentation are uncertain. More broadly, climate change may reduce appropriate thermal habitat and increase habitat fragmentation for other cold water species in the region; thereby, increasing the potential for regional overexploitation and extirpation."
Type	- PRODUCTS: Plans, Assessments, Studies
Sector	- Managed Ecosystems - Natural Ecosystems
Focus Area	- Sustainability of Marine Ecosystems
Region	- National - Regional Or State -- New England -- Mid-Atlantic
Lead Agencies	NOAA National Marine Fisheries Service (NMFS), EPA, NOAA Earth System Research Laboratory, University of Connecticut, NOAA Geophysical Fluid Dynamics Laboratory
Contacts	Jon Hare, NOAA NMFS, jon.hare@noaa.gov