



**NOAA
FISHERIES**



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For More Information on the Methodology:

<http://www.st.nmfs.noaa.gov/ecosystems/climate/tools/assessing-vulnerability-of-fish-stocks>

For Vulnerability Assessment Results:

<https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index>

Assessing Climate Vulnerability of Marine Fish and Invertebrates

Changes in climate are affecting marine and coastal fishery resources and the communities that depend on them. These impacts are expected to increase in the future with continued changes in the planet's climate and ocean system. For example, changes in ocean temperatures have been linked to shifting distributions and abundances of fish and invertebrates in many marine ecosystems.

To help fishery managers and scientists identify ways to reduce these risks and impacts, NOAA Fisheries and partners developed a methodology to assess the vulnerability of U.S. marine fish and invertebrates to climate-related changes in marine ecosystems. The methodology uses existing information on climate and ocean conditions, species distributions, and species life history characteristics to estimate the relative vulnerability of species to projected changes in climate and ocean conditions. NOAA Fisheries used the methodology to complete an assessment of the climate vulnerability of 82 species in the Northeast in March 2014 (see links below). Additional assessments are underway in other regions.

The Fish Stock Climate Vulnerability Assessment is designed to help:

- Identify which species may be most vulnerable to changing climate and ocean conditions.
- Identify what additional information is needed to understand, track and address these risks.
- Provide a basis for considering what actions might be taken to reduce species vulnerability.

The figure below describes the climate vulnerability assessment process:

