

Environmental Sensitivity Analysis

BOEM uses the **Marine Sensitivity Toolkit (MST)** to meet the Outer Continental Shelf (OCS) Lands Act National Program requirement to consider the “relative environmental sensitivity and marine productivity of different areas of the OCS” (Section 18(a)(2)(G)).

The open-source, interactive MST platform combines the following to conduct and visualize a fine-scale sensitivity analysis of the OCS:

- 17,000+ spatially explicit species distribution models,
- comprehensive extinction risk data, and
- satellite-based primary productivity

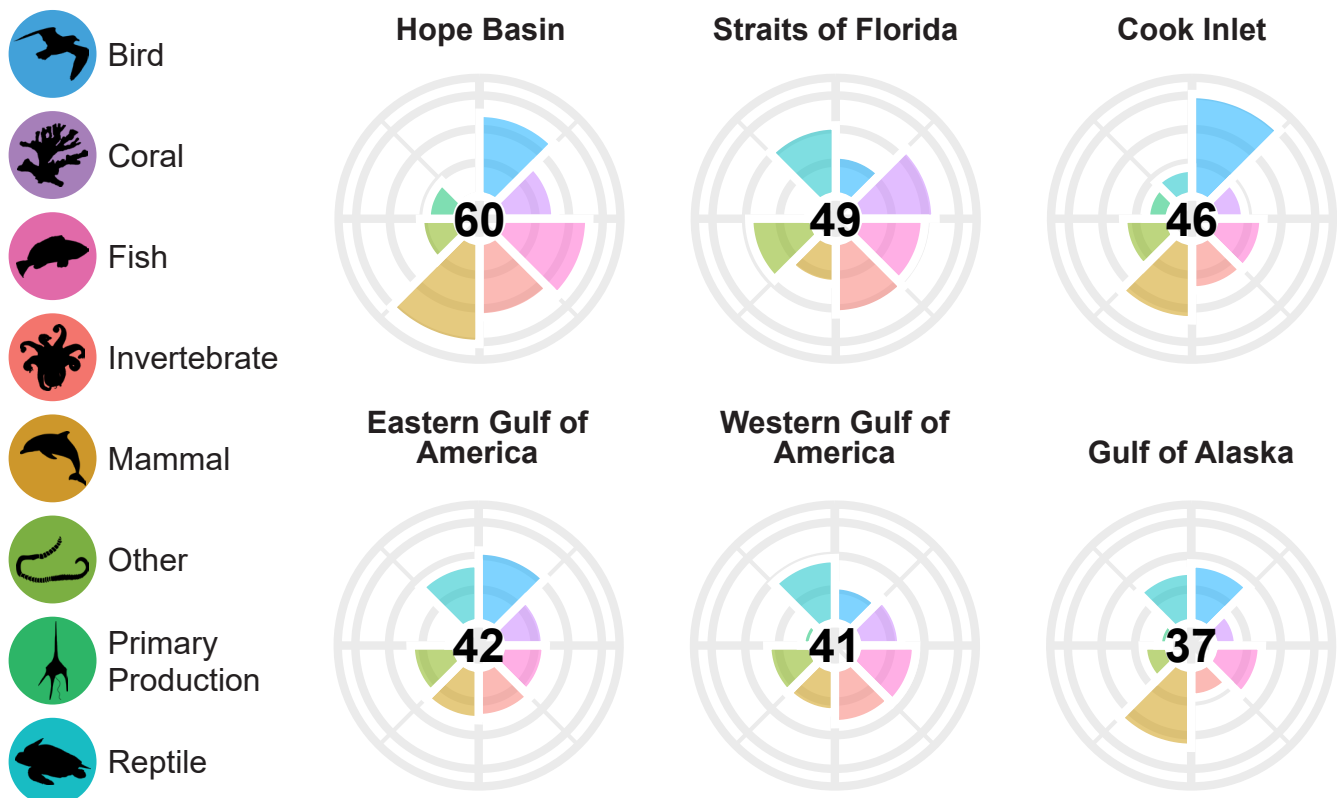
High-sensitivity areas are characterized by elevated biological productivity, critical habitat for endangered and threatened species, and complex oceanographic features that support exceptional biodiversity.

Resources

- ➔ [BOEM Marine Sensitivity Interactive Model](#)
- ➔ [Marine Sensitivity GitHub Repository](#)
- ➔ [Marine Sensitivity Online Documentation](#)

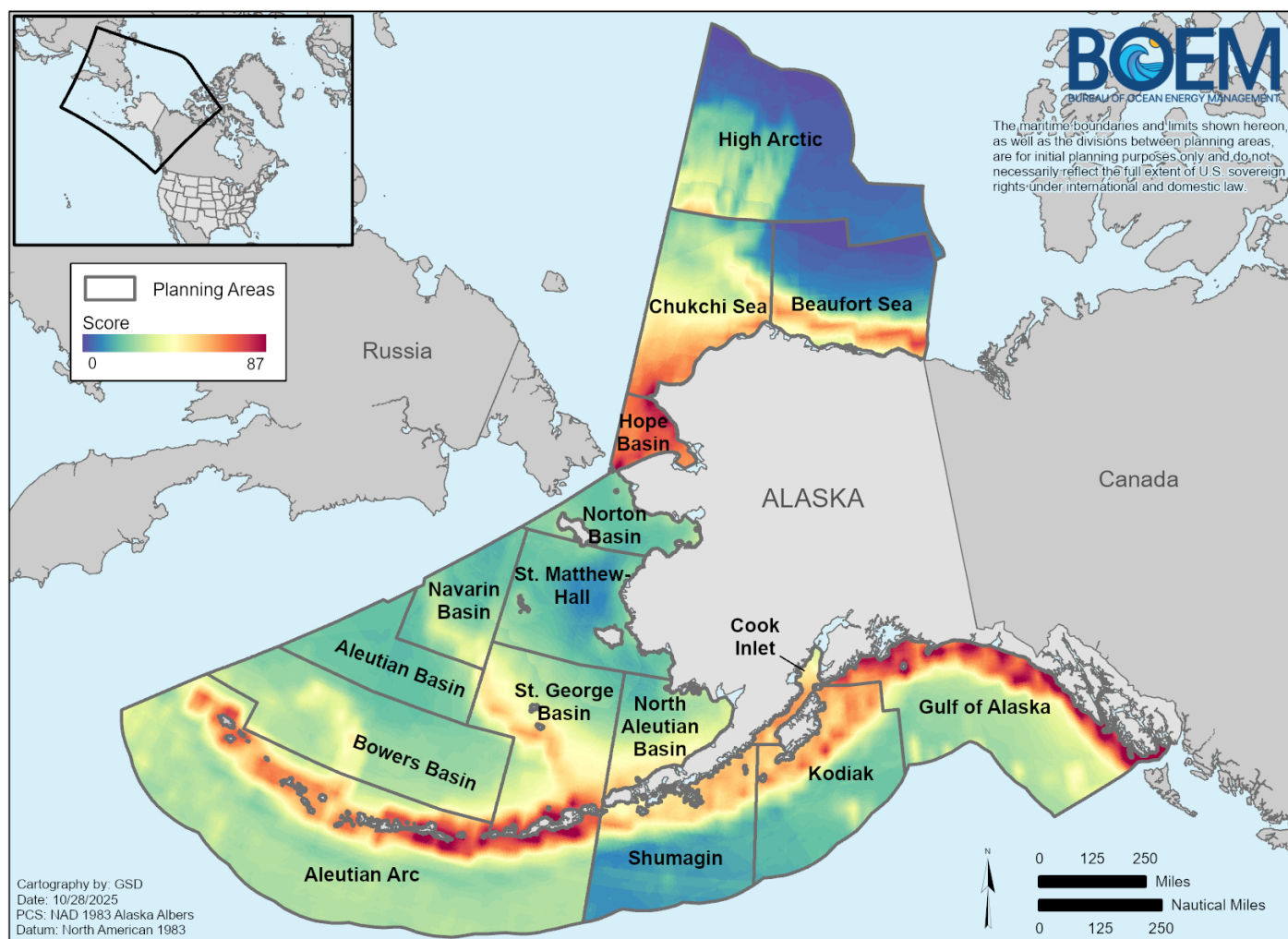
Visualizing Sensitivity with Flower Plots and Heatmaps

Each **lower plot** represents a planning area, with petals showing relative sensitivity scores for birds, fish, mammals, primary productivity, corals, invertebrates, other (e.g., worms, tunicates, and bryozoans), and reptiles. The number in the center is the overall sensitivity score for that planning area. Higher scores (larger petals) indicate greater environmental sensitivity.



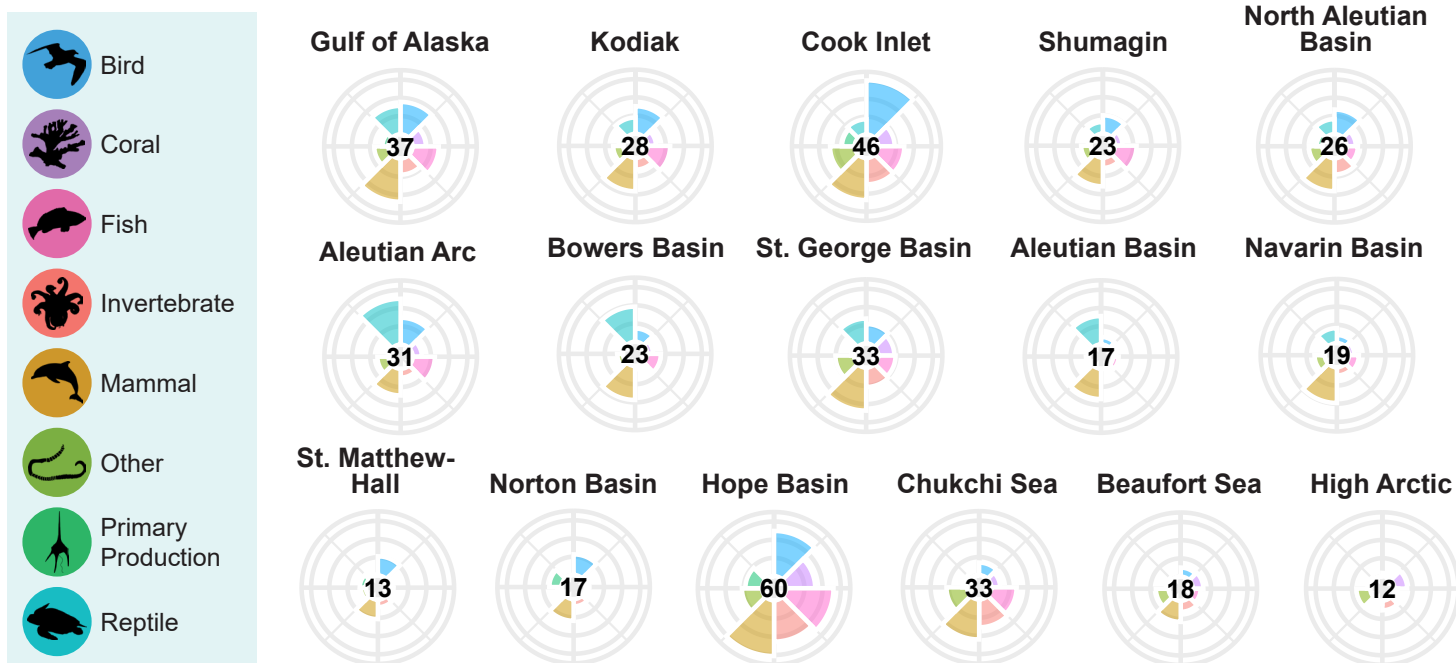
The above flower plots represent the 6 planning areas with the highest sensitivity scores; Chapter 10 of the 1st Analysis contains additional flower plots and sensitivity scores for all 11th Program planning areas. The following maps illustrate sensitivity of all planning areas through **heatmaps**.

Environmental Sensitivity Scores Across Alaska OCS Planning Areas

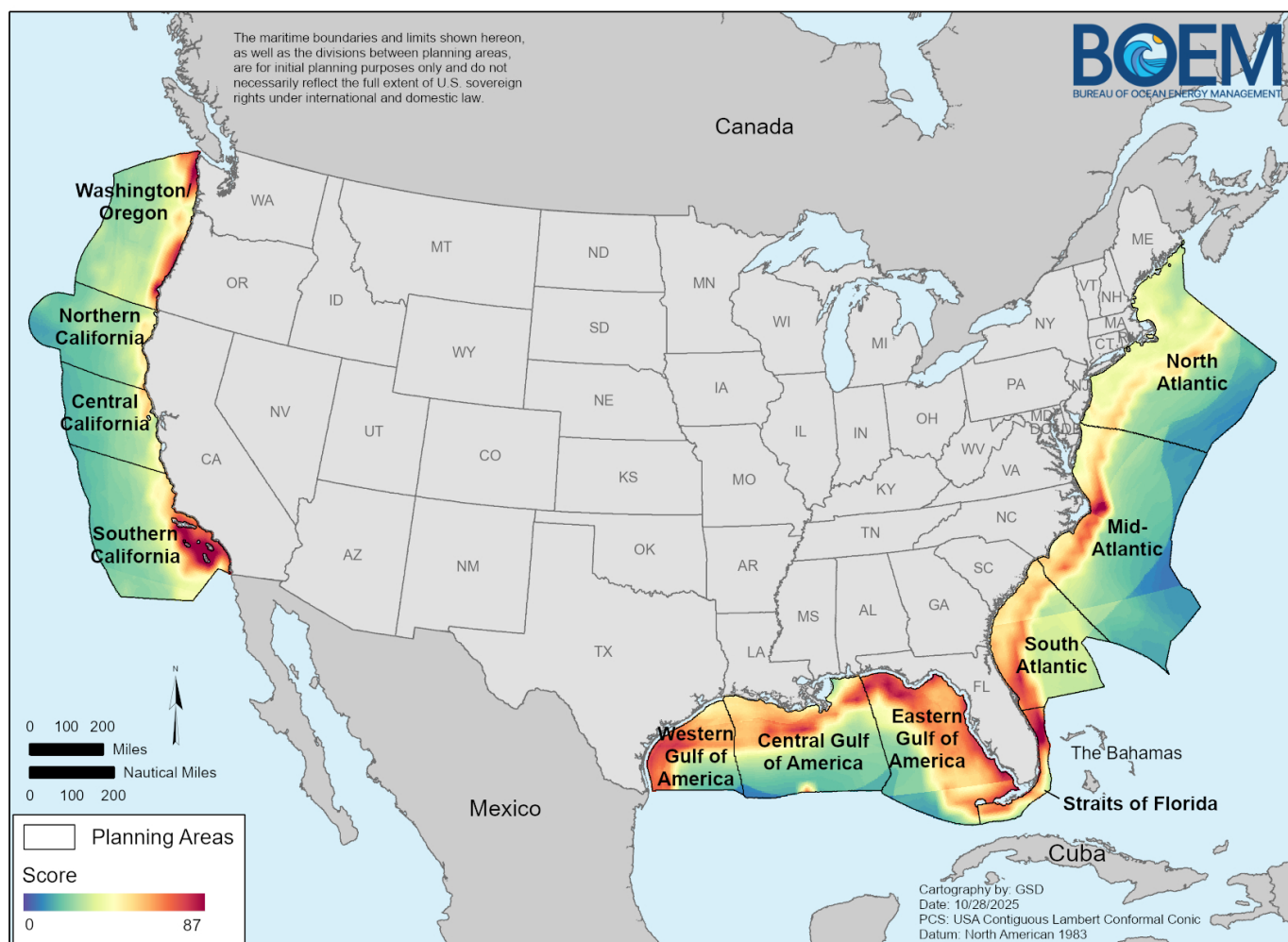


The color gradient represents relative environmental sensitivity values ranging from 0 (lowest sensitivity, blue) to 87 (highest sensitivity, red), derived from integrated assessments of primary productivity, marine mammal populations, fish diversity, crustacean abundance, mollusk communities, birds, sea turtle presence, and other ecological components.

Planning Area Flower Plot Scores



Environmental Sensitivity Scores Across BOEM OCS Planning Areas for the Contiguous United States



The color gradient represents relative environmental sensitivity values ranging from 0 (lowest sensitivity, blue) to 87 (highest sensitivity, red), derived from integrated assessments of primary productivity, marine mammal populations, fish diversity, crustacean abundance, mollusk communities, birds, sea turtle presence, and other ecological components.

Planning Area Flower Plot Scores

