**FY18 RAP funding Project Description**

**Please provide short responses to the following questions.**

**RAP/Science Center:**

Gulf of Alaska/Alaska Fisheries Science Center

**Title of the action/activity:**

New time-series indicators of thermal conditions in the Gulf of Alaska

**What is the specific goal of this activity? What specific issue/need and NCSS Objective(s) does it address?**

Increases in water temperature are a direct consequence of global climate change and temperature is a primary rate determinant for most biological processes in marine ecosystems. The development and monitoring of temperature-related indicators that are relevant to resident marine life is fundamental to ecosystem-based management of living marine resources. Current indices of water temperature in the GOA are quite limited in spatial extent (e.g., sea surface, GAK Line, National Data Buoy Center, PMEL moorings), and researchers often default to using reanalysis products such as the NCEP/NCAR Reanalysis, which is limited to sea surface conditions over a coarse resolution.

**Short description of the action/activity:**

We propose to develop new indices of water temperature (e.g., temperature profiles, anomalies, mixed-layer depth, bottom temperature, degree days) using spatially comprehensive historical (since the 1980s) and current data from ecosystem and bottom-trawl surveys by NOAA’s Alaska Fisheries Science Center (EMA, EcoFOCI, Groundfish). Water column data are available in the form of Seacat, Fastcat, MBT, and CTD casts. The archived data have not been exploited for index development due partly to the large volume and limited processing resources. We now have the tools and technical expertise to process and analyze it. We therefore propose to:

1. assess the limitations of the available data (spatial and temporal integrity),
2. develop techniques for processing and analyzing existing as well as future data,
3. produce new temperature-related indicators related to biological rates of interest to assess thermal conditions in the GOA,
4. compare these new indices to other point-, transect-, and model-based sources, and
5. ensure data are contributed to NOAA's National Centers for Environmental Information (formerly NODC) as appropriate.

Funds requested will support a contractor for 3-4 months to complete this work. Additional funds will be necessary to support data transfer to PMEL for upload to NCEI (JISAO contract).

**What are the expected accomplishments/results/products in FY18? Overall?**

The project will produce new temperature-related indicators to assess thermal conditions in the GOA. These indicators will be important for tracking anticipated climate changes that may impact the marine ecosystem.

**List any partners in the project:**

PMEL

**List any other funding/resources for the project:**

Proposed work will leverage existing survey programs.

**Contact for this activity:**

Lauren Rogers [lauren.rogers@noaa.gov](mailto:lauren.rogers@noaa.gov)

Janet Duffy-Anderson [janet.duffy-anderson@noaa.gov](mailto:janet.duffy-anderson@noaa.gov)