**Proposal for ROMS monthly aggregated statistics**

Statistics based on shelf & slope waters (< 1000 m bottom depth)

## 1. Depth ranges:

Surface (from 0 to 10 m depth)

Bottom (from bottom to 10 m from bottom)

Midwater (from 10 m depth to 10 m from bottom)

## 2. Alongshore: NMFS statistical areas:

610, 620, 630, 640, 650 to 1,000 m isobaths

610, 620, 630, 640, 650 to 200 m isobaths (onshelf)

610, 620, 630, 640, 650 to 200 m to 1,000 m isobath (offshelf)

## 3. ROMS NEP variables to extract:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Units** | **NEP name** |
| Ammonium | mmol N m^-3 | NH4 |
| detritus concentration | mg C m^-3 | Det |
| euphausiid concentration | mg C m^-3 | Eup |
| euphausiid net production rate | mg C m^-3 d^-1 | prod\_Eup |
| Iron concentration | micromol Fe m-3 | Iron |
| Large copepod concentration | mg C m^-3 | NCa |
| Large copepod production rate | mg C m^-3 d^-1 | prod\_NCa |
| Large microzooplankton concentration | mg C m^-3 | MZL |
| Large microzooplankton production rate | mg C m^-3 d^-1 | prod\_MZL |
| Large phytoplankton concentration | mg C m^-3 | PhL |
| Large phytoplankton production rate | mg C m^-3 d^-1 | prod\_PhL |
| Time-averaged f ratio for large phytoplankton |  | frat\_PhL |
| Nitrate | mmol N m^-3 | NO3 |
| Salinity | PSU | salt |
| Small copepod concentration | mg C m^-3 | Cop |
| Small copepod net production rate | mg C m^-2 d^-1 | prod\_Cop |
| Small microzooplankton concentration | mg C m^-3 | MZS |
| Small microzooplankton production rate | mg C m^-3 d^-1 | prod\_MZS |
| Small phytoplankton concentration | mg C m^-3 | PhS |
| Small phytoplankton production rate | mg C m^-3 d^-1 | prod\_PhS |
| Time-averaged f ratio for small phytoplankton |  | frat\_PhS |
| Temperature | Celcius | temp |

## 4. Other specialized statistics:

Coastal current intensity?

Onshore/offshore transport?

Along shelf transport?

Across shelf transport?

|  |  |  |
| --- | --- | --- |
| u-momentum component | meter second-1 | u |
| v-momentum component | meter second-1 | v |

## 5. ROMS NEP runs

* nep 10km model hindcast:
  + monthly\_aves\_nep\_hind
* nep 10km model GFDL "historical" run:
  + monthly\_aves\_nep\_wb\_hist
* nep 10km model GFDL ssp126 projection:
  + monthly\_aves\_nep\_wb\_ssp126
* nep 10km model GFDL ssp585 projection:
  + monthly\_aves\_nep\_wb\_ssp585

## 6. Methods

The above ROMS NEP variables in will be averaged (temperature, salinity, ratios of production, concentrations and rates) and summed (concentrations and rates, because Ecopath needs values per m2, please Ecopath modelers correct this assumption if wrong) across each depth range (1) and spatial area (2) for each monthly average for hindcast and projections. The horizontal area for each spatial area (< 200 m, < 1,000 m, or 200 < 1,000 m) will also be reported so that basin wide weighted averages can be taken.

Map

Description automatically generated