**PROTOCOL FOR ZooMSS CLIMATE CHANGE ANALYSIS**

**Aim**

Use ZooMSSv2 to assess the impacts of climate change on the structure of the global zooplankton community, and its role in mediating energy from phytoplankton to fish

**Datasets**

Annual average surface chlorophyll (chlos) and surface temperature (tos)

netcdfs for

historical,

ssp126,

ssp370,

ssp585 climate simulations

from the:

CESM2,

GFDL-ESM4,

IPSL-CM6A-LR,

MPI-ESM1-2HR and

UKESM1-0-LL earth system models.

Historical datasets run from 1950-2014, ssp datasets run from 2015-2100.

**Required runs**

For each dataset, we need to complete these runs:

1. The standard model run, with all groups included – COMPLETED
2. A run with salps and larvaceans removed (no filter feeders)
3. A run with carnivorous copepods, chaetognaths and jellyfish removed (no carnivores)
4. A run with omnivorous copepods and euphausiids removed (no omnivores)
5. A run with one zooplankton group
6. A run with three zooplankton groups…..

**Required outputs**

For each model run, we need to extract:

1. The abundance of each functional group in the model
2. The diet matrix

These are standard outputs from ZooMSS, and are reported as the average of the last 50% of the total time over which the model is run.

Change through time from 1950-1960 average.

**Required figures**