

Towards new bathymetry for OFAM/COSIMA

GFDL 0.1degree mercator/tripolar grid.
3600x2700

Kial Stewart's 75 depth levels.

Gebco 2014 30sec bathymetry (43200x21600)
V20150318

http://www.gebco.net/data_and_products/gridded_bathymetry_data/

Initial steps

- λ Align GEBCO to start at -280 degrees.
- λ Create mean of all wet points in a cell rather than simple interpolation.
- λ Mean of all points.
- λ Median of wet points.
- λ Median of all points.
- λ Fraction of wet points

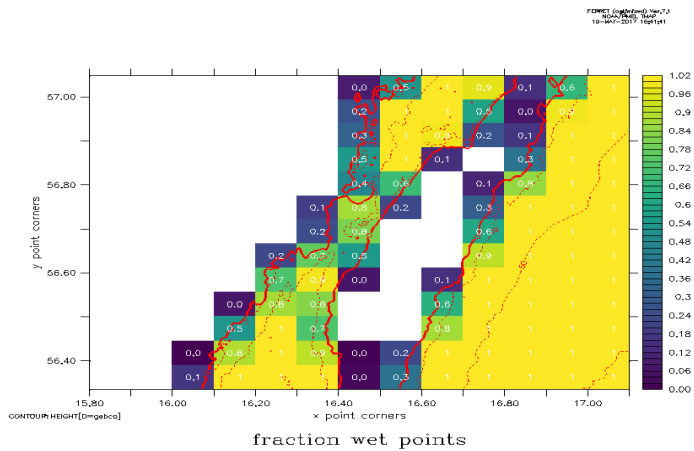
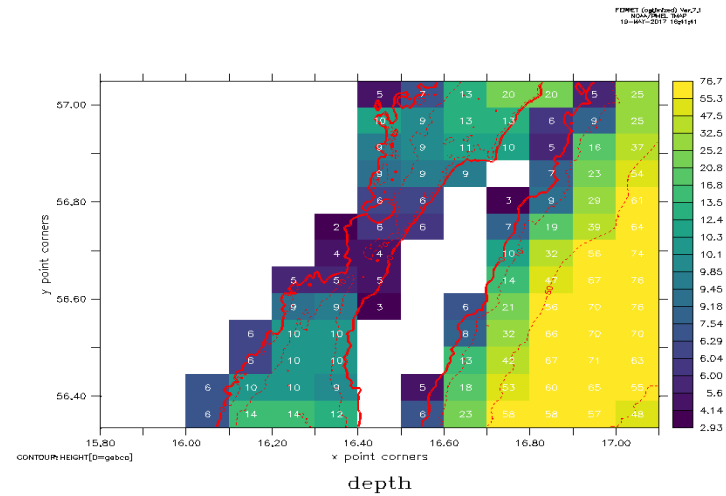
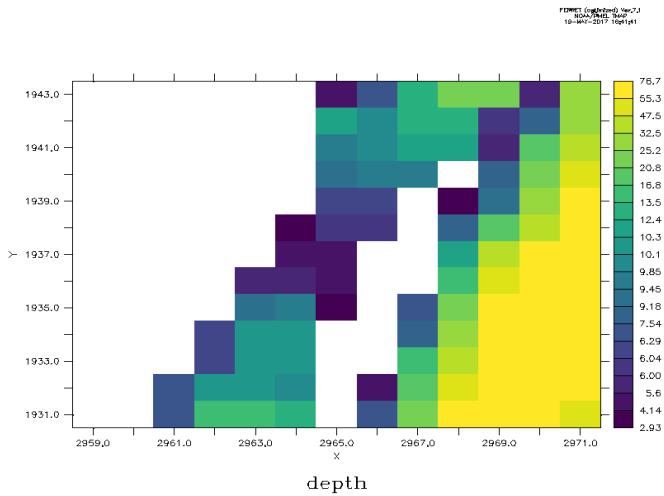
First cut

- λ Limit to 5808m.
- λ Set $<2\text{m}$ to land.
- λ Check pathways to ensure connectivity (Black Sea, Med, Baltic). Not automatic.
- λ Remove isolated seas/lakes with diffusion algorithm (about 7 forward/reverse Gauss-Seidel sweeps does the job)
- λ Remove non advective “rivers” and troublesome shallow 2x1 bays
- λ Fill deeper nonadvective cells.

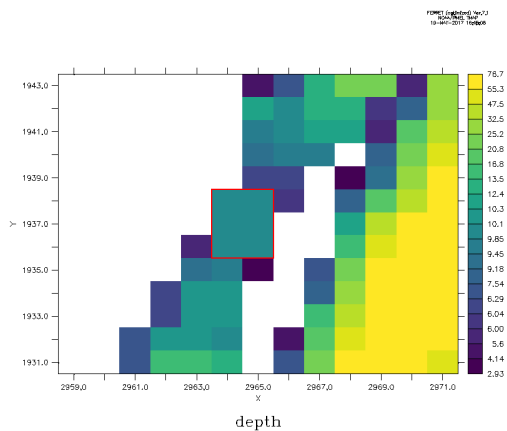
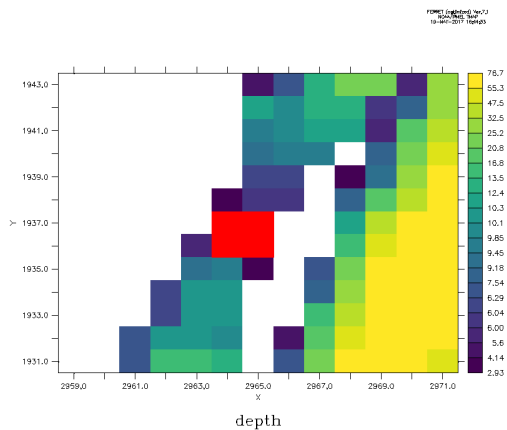
Criteria for hand editing.

- λ Aim for 10m minimum depth. OFAM is currently 15m. GFDL 40m. Generally will carve out shallow regions. Leave wet at the moment and automate later.
- λ Log changes. Position. New depth. Comment.
- λ Base on mean but use auxiliary variable to make “informed” alterations.
- λ Need both real coordinates and index space.
- λ Move around quickly, zoom in out.
- λ Use combo of Ferret and shell out to make changes. Bit clunky but does the job. Many aliases help.

Baltic example



λ Show depth, fraction and original bathymetry



- λ Set to zero will fill in region to be changed
- λ Change depth outlines region and does temporary shade.
- λ Committing change will write to log file and netCDF.

Just for Slartibartfast!

FORNET (optimized) Ver.7.1
NOAA/PMEL TRAP
18-MAY-2017 16:09:28

