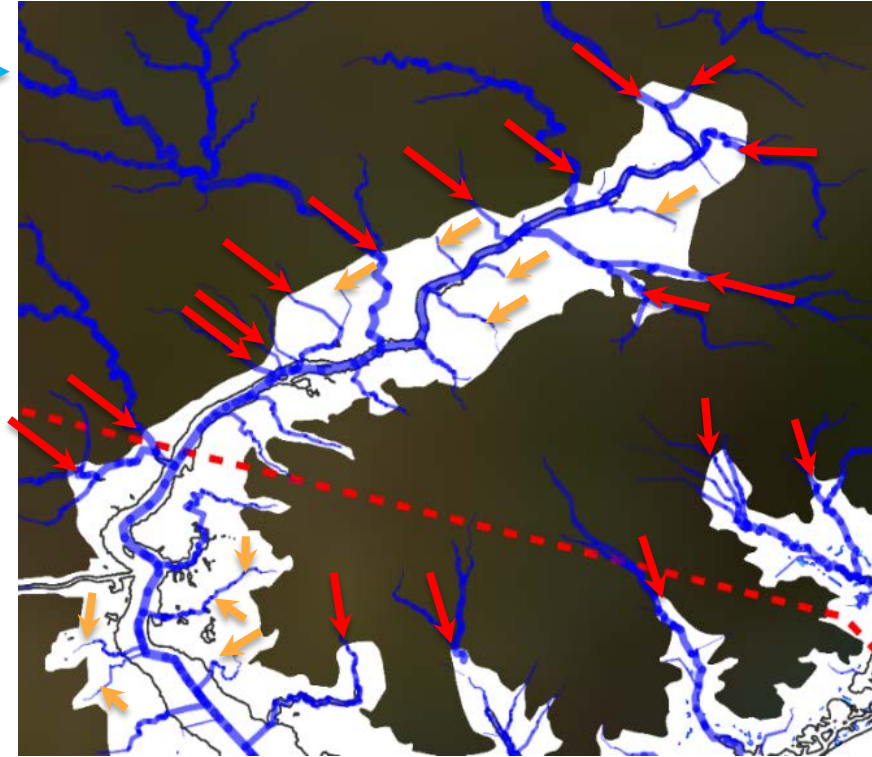# Suggested locations for handing-off NWM data to Coastal Ocean Models

Discharges from NWM   Lateral fluxes from NWM

Coastal Ocean Models Hand-off Location

Variable	End user	Level	Priority
Total Water Level (Mass continuity)	FEMA, Coastal communities, …	~ 10 m above MSL	1st
3D (Temp, Salt, Velocity)	Fisheries (Temp and Salt) Navigation, Coast guard (surface current) Water quality	Cover flood plains up to certain level above MSL (e.g. Mean High Water Level)	2nd
Water column properties	Biogeochemical modelers, Ecosystem engineers, HAB	Cover flood plains up to certain level above MSL (e.g. Mean High Water Level)	3rd

Coastal Ocean Models: near future requirements (1~2 years)

- Contact person from NWC/NWM for oceanmodelers
- Unified coupling framework

  - State for coupling cap development model

  - Does it implemented in the daily work flow
- Sea-Ice-freshwater coupling
- Integrated dissemination system

Contact: Saeed.Moghimi@noaa.gov

- What are the barriers for defining the river boundary conditions above MSL?

  - Flux boundary condition?

  - Source term?

- What are the complications when:

  - Boundary get dry

  - Boundary get inundated

Longitudinal profile
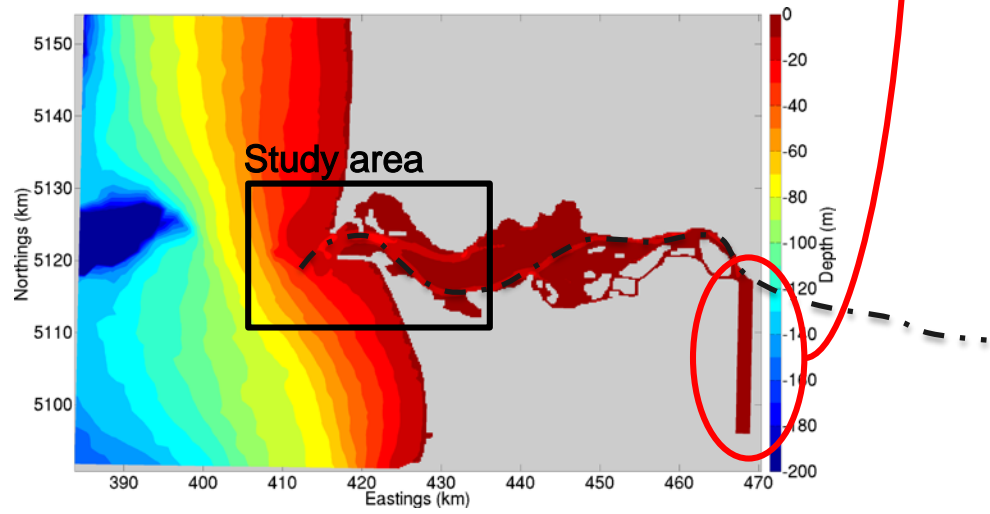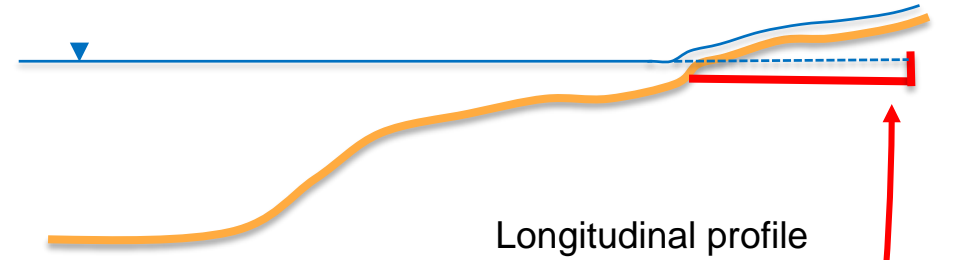
Columbia River (ROMS setup)

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Possible model developments/questions

- Extending the numerical domains to cover overland/inundation region. *Shall we do this for all the ocean models!?*

- Topo-bathy z-coordinate system VS. conventional positive downward depth coordinate system

- Geo-potential based vertical datum VS. MSL

- Wetting and drying algorithm capable of generating river normal flow above MSL (e.g. flash flood)

- Volume of precipitation
  - ❑ On wet elements/cells
  - ❑ Flood routing on dry elements/cells

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