Jonah Crab Project: Spatial Comparison of Fishery Dependent Datasets

Kathleen M. Reardon
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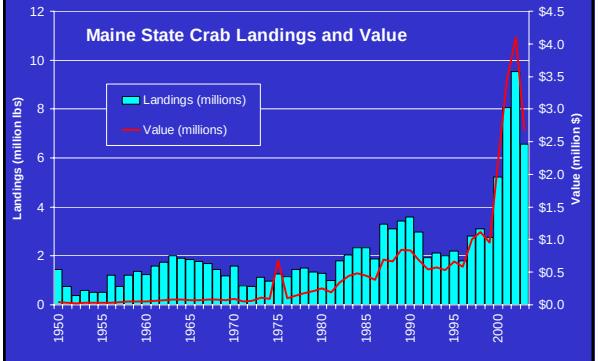


Jonah Crab Project

- Fishermen initiated project
- DMR and NMFS issued permits for experimental gear 2002-2004
- Two fishery dependent datasets
  - Sea sampling data
  - Fisherman Daily Logbooks

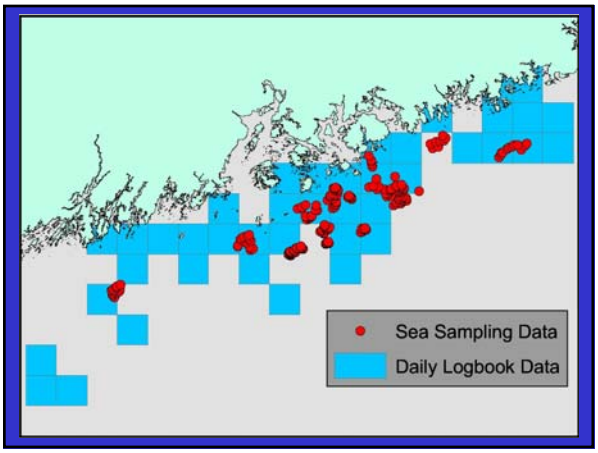
Objective

Spatially compare the catch per trap measures within two fishery dependent datasets:

Is the Sea Sampling dataset accurately representing the fishing activity reported by Fishermen's Daily Logbooks?

Fishery Dependent Data

- Sea sampling
  - Size
  - Molt
  - Sex
  - Location
    - GPS point every 10-20 traps
    - Type of trap
- Daily Logbooks
  - General location (10 minute square grid id)
  - Pounds
  - # of traps hauled
  - Type of trap

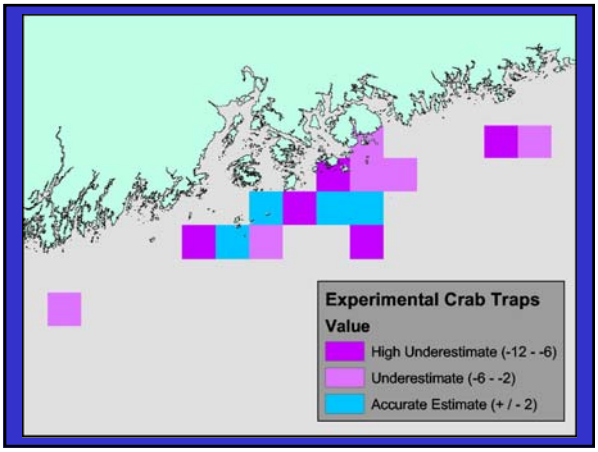


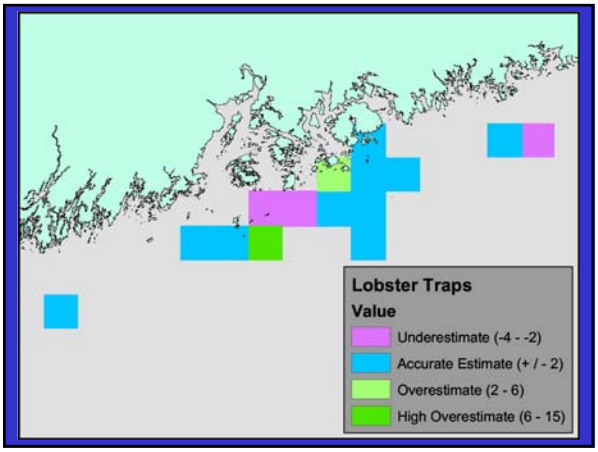
Methods

- Sea sampling
  - Only include large hard male crabs
  - Calculate catch per trap (CPT) for each point
  - Average CPT for each 10 min. grid
    - spatial join – points to polygon
- Logbooks
  - Spatially display CPT using grid ID
    - join by attribute

Methods

- Clip logbook data with sea sampling data and vice versa for complete overlap
  - Intersect function
- Convert to Raster files
- Subtract logbook CPT from sea sampling CPT
  - Raster calculator





Results

- Experimental crab traps
  - Sea sampling underestimated many areas
- Lobster traps
  - Sea sampling provided accurate representation in most areas
  - A few areas had both underestimates and high overestimates

Conclusions

- ***Sea sampling seems to provide a relatively accurate mechanism for groundtruthing logbooks***
  - ***Better estimate for CPT from lobster traps***
  - ***Underestimates CPT for crab from experimental crab traps***