

NTAP Restrictor Experiment Sampling Design



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Northeast Trawl Advisory Panel

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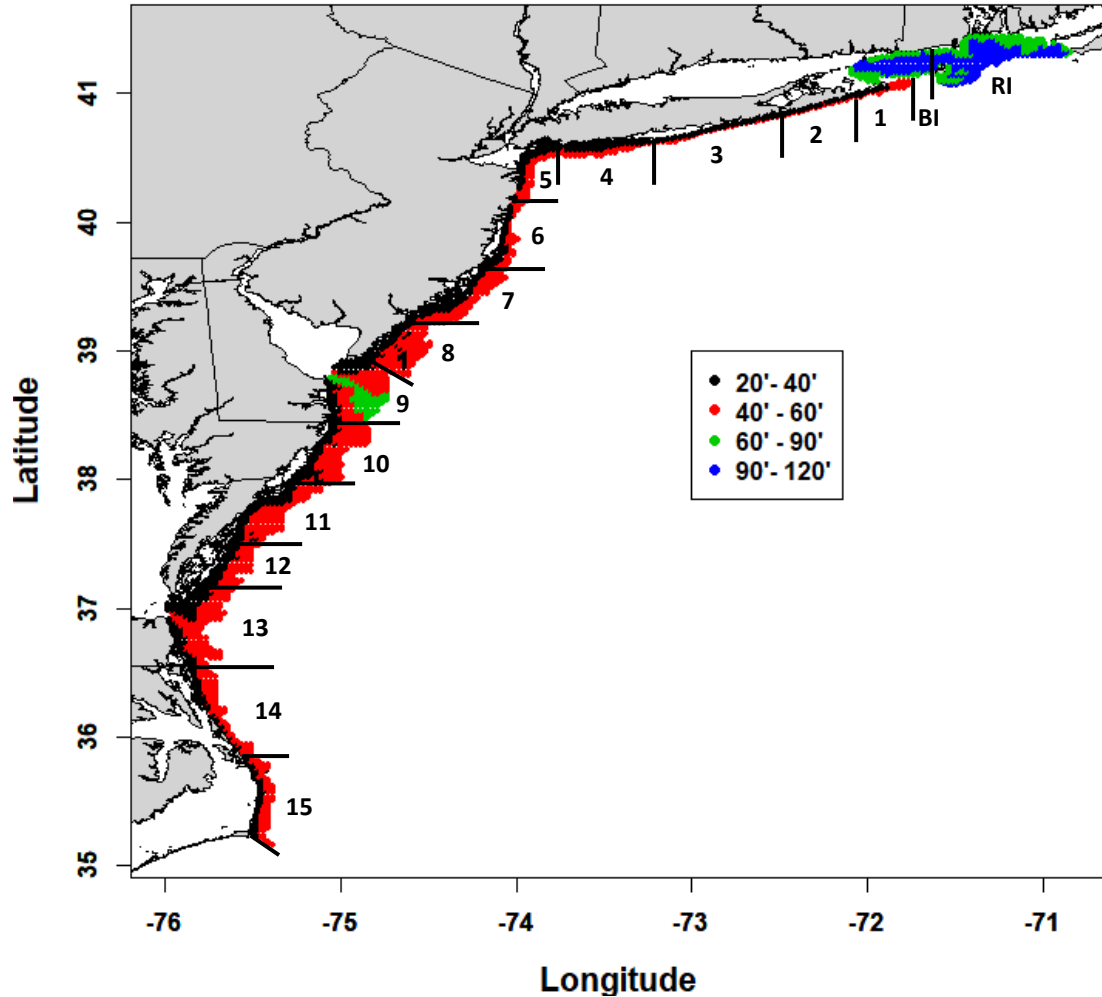
Recall: Objective Statement

Implement an ABBA* experimental design to evaluate possible changes in catch composition, catch rate (CPUE), and size distribution due to the addition of a restrictor rope between the doors of the 400x12cm, three-bridle four-seam survey trawl package used by NEAMAP

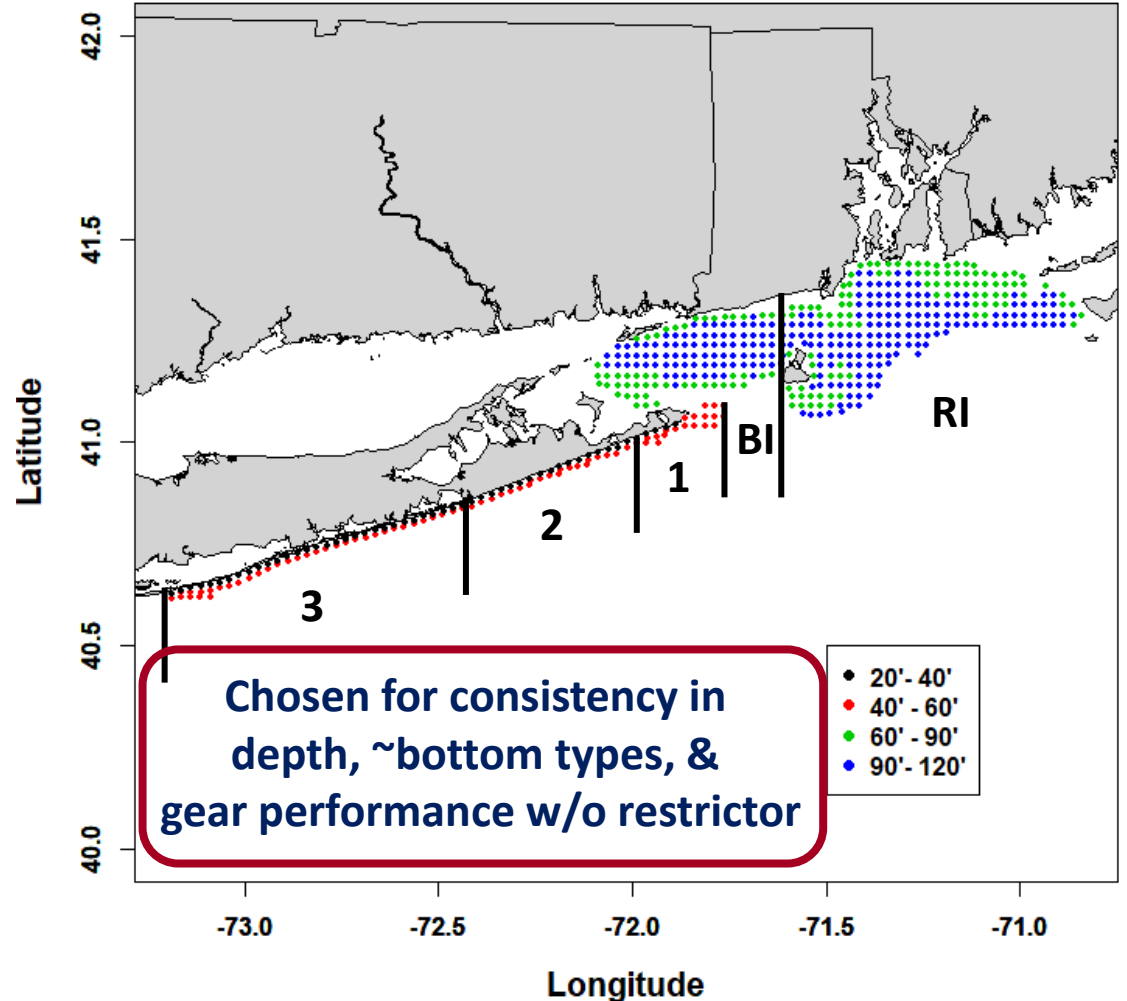


Design Considerations: Location

NEAMAP Sampling Frame



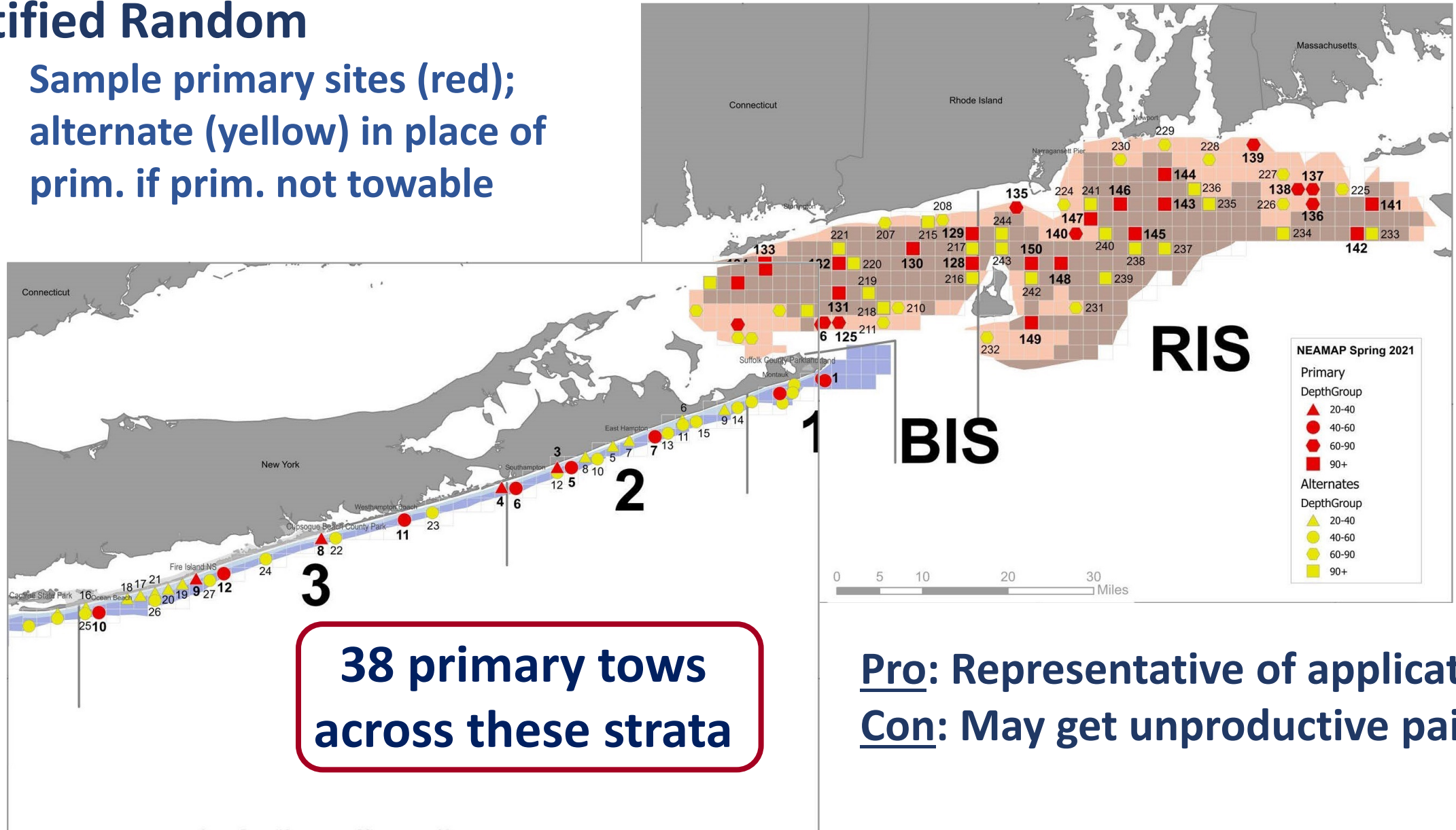
Restrictor Sampling Frame



Design Considerations: Sampling Approach

Stratified Random

- Sample primary sites (red); alternate (yellow) in place of prim. if prim. not towable



Design Considerations: Effort

Budget for project is \$170k; \$162.2k available

Field sampling maximized by:

- NEFSC leads field data collection & analysis; VIMS supports
- ~20 sampling days on the *Darana R* (fuel is wildcard)
- Expect 65-85 paired tows (130-170 tows)
 - Split between spring & fall

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Interested in field sampling?

Design Considerations: Target Species

Target Species - Rounds

- Scup (95%)
- Butterfish (94%)
- Longfin squid (94%)
- Black sea bass (71%)
- Silver hake (63%)
- Northern sea robin (55%)
- Spotted hake (50%)

Secondary Species - Flats

- Little skate (100%)
- Summer flounder (92%)
- Winter skate (89%)
- Windowpane (77%)
- Winter flounder (74%)

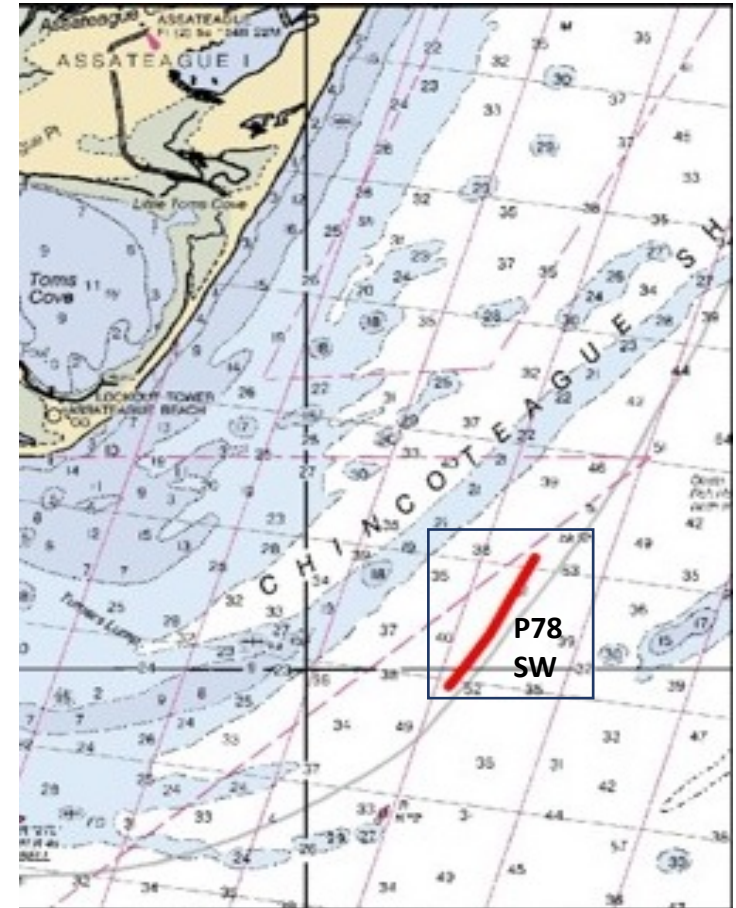
Operational Considerations

Spatial Offset of Pairs

- 1/8 n.mi (~0.25 km); attempt to sample same assemblage while minimizing disturbance
- Lewy et al. 2004 approach rejected by WG

Towing Protocols

- NEAMAP: 3.0 kts (SOG), 20 minutes, HL 4.7-5.8 m, WS 12.3 – 14.7 m
- Randomized starting position (i.e., corner of the box)



Data Elements

Tow-Level

- Site ID
- Restrictor / No Restrictor
- Date & Time
- Position & Direction
- Speed
- Net geometry
- Warp Lengths
- Tow Track
- Depth

Biological

- Species ID
- Aggregate Weight
- Count
- Individual Length

Hydrographic

- Water Temp.
- Salinity
- Dissolved O₂ Conc.

Other

- Simrad ES-80
- Go-Pro Video

Atmospheric

- Air Temp.
- Wind Spd. & Dir.
- Baro. Pres.
- Sea State
- General Weather