Assessing the comparability of CFRF and NEFOP Biosamples Data for Catch Characterization

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• The lobster stock assessment uses biosamples (catch composition) to characterize the size and sex of the catch to model removals from the population.
  • Particularly critical for sex composition as the landings are split by sex and modeled separately in the model
• Thus, we look for sufficient biosamples data to for catch characterization at the resolution of the landings data, which is year, season, and statistical area.
• NOAA has no dedicated effort or mandate for sampling the federal fishery, so federal observer coverage is based on needs to estimate finfish bycatch of commercial species.
• With limited federal observer coverage, we relied heavily on early data from CFRF to characterize much of the offshore fishery and the next assessment will be a similar situation.
• However, now that we have several years of data from CFRF and additional federal data, it is appropriate to more closely examine how the data compare.
  • In particular, federal coverage would, hypothetically, be a random draw from among the vessels fishing some area and, thus, provide an unbiased characterization of the fishery.
  • However, CFRF fleet members represent repeated samplings from a subset of vessels in an area and, because lobstermen typically fish a limited area, lobsters encountered by a vessel may fully reflect the size and sex composition of the entire region.
• This next stock assessment presents an opportunity to validate the usefulness of the CFRF fleet data and address any issues we identify.
Statistical Area 537
Stress = 0.17
Levels of variability in catch composition:

• Program: NEFOP vs CFRF; Vessels in different programs are consistently recording different sized lobsters.

• Vessel: Different vessels catch consistently different sized lobsters or different sex ratios.

• Trip: Lobster size and sex changes from one trip to another within a vessel.

• Haul: Variations in catch composition across hauls within trips.

• Residual: Variations among lobsters within a haul.

For a given statistical area, where is most of the variability observed?
Most differences are observed across hauls or trips.

Less differences among vessels.

No differences between programs.
Variations in catch spread across all levels and depend on season; may be sampling effect.

Hi program variations in winter but based on small samples.

Moderate variations across vessels and hauls but not trips in the spring.
Statistical Area 526

- Moderately well sampled
- Almost entirely vessel effects
Statistical Area 537

- Very well sampled.
- Mostly vessel effects.
• Generally weak variations across scales.

• No individual scale with notably high variations.
Statistical Area 616

- Poorly sampled (not a lot of data).
- No strong effects at any particular scale.
- Mostly variations at the scale of individual hauls.
• Observed program or vessel effects in some stat areas merit further analysis.

• Program or Vessel effects on Georges Bank probably not a big issue due to the scale of the GOM / GBK fishery.

• Vessel effects in Stat Area 537 should be of concern to stock assessment committee as this is more probable to have impacts on the SNE assessment.

• Need to expand analysis to sex ratios and potentially develop bivariate methods to examine size and sex simultaneously.