

*Missing Data
and
Implications for Scientific Uncertainty*

Discussion Topic #2

Joint Meeting of the
Scientific and Statistical Committee and
Mid-Atlantic Fishery Management Council
October 6, 2020

Problem

- Due to the COVID 19 Pandemic, many of the data sets used in stock assessments will either be incomplete or unavailable in 2020. These data gaps have important, but as yet unknown implications for development of catch recommendations by the SSC.
- Terra incognita

50 Shades of Incompleteness

- Affected Time Series include:
 - NEFSC Surveys
 - NEAMAP Surveys
 - Many State Surveys
 - MRIP
 - At-Sea Observers
 - Port sampling
- Largely Unaffected:
 - Commercial catch monitoring
 - VMS
 - Ageing of samples

NEFSC and GARFO are coordinating a plan to identify all missing data and potential responses.

- Consequences will vary by type of assessment and models used, however, all models are sensitive to missing terminal years.
- 2021 Management Track Updates include:
 - Atlantic Mackerel
 - Black Sea Bass
 - Bluefish
 - Golden Tilefish
 - Scup
 - Summer Flounder

MRIP

- APAIS—Missing waves and changes to sampling.
- FES—OK but depends, in part, on APAIS
- Some problems cannot be fixed with reweighting of sample
- Will need to consider totality of realized sampling design and data in 2020
- MRIP working with consultants to devise best overall plan

Potential SSC Responses

- Overarching Principle—objective but need to identify concerns to management
- Distinguish
 - {data updates, Level 1 Management Track}
 - {Level 2 and 3 Management Track, Research Track}
- Options
 - Insufficient information → Status quo
 - Insufficient information but know status or trend → revise OFL CV, modify ABC

SSC Recommendations

- Rely on the assessment models where possible.
 - Data rich assessments will be less affected than index based assessments.
- Utilize updated forecasts of stock size based on realized catches rather than assumed harvest of the ABC in the interim years.
- Ad hoc “borrowing” or imputation based on statistical models could introduce problems. Don’t want the cure to be worse than the disease.

Next Steps

- Monitor progress/recommendations from NEFSC and GARFO
- Raise concerns to NRCC for its fall meeting
- Consider intersessional meeting as appropriate between now and March 2021.
- **DISCUSSION?**