

# Cumulative Discard Methodology Review

## Terms of Reference

1. For each fishery subject to in-season discard monitoring utilizing the cumulative discard method, summarize the variability in discard rate by measurable strata: fishery, gear, area, season, volume of catch, etc.

2. Identify more optimal applications of the current cumulative method for in-season estimation of discards in comparison to existing cumulative discard methodology and stratification schemes.

Alternatives identified will include

- a. Existing cumulative discard methodology and stratification scheme as a baseline
- b. Pooling data across current stratifications to increase information and precision. As an example, pooling across sectors and gears.
- c. Including seasonality as a stratification
- d. Allocate/restrict sampling requirements to those strata which in aggregate constitute a target fraction of total stock-specific discards. (i.e, excluding or minimizing sampling for strata with negligible discard totals)

3. Methods identified in TOR 2 will be compared using the following metrics

- a. Precision of the discard estimates for a given level of observer coverage
- b. Consistency of discard estimates calculated over the course of the fishing year.
- c. Precision and consistency of the CV discard metric for a given level of observer coverage
- d. Sensitivity to missing or erroneous data.

4. Examine methods for including data from past years to improve predicting the in-season estimation of discards.

5. Use archived data to simulate in-season behavior (with various time steps and discarding patterns) and recommend a preferred method for each fishery with consideration of the following:

- a. Feasibility, particularly the implications of stratum size and within-year pattern of precision.
- b. The probability and timing of premature closure (i.e. false positive).
- c. The probability and magnitude of exceeding a cap (i.e. e. false negative).