



NOAA
FISHERIES

Greater Atlantic
Region Fisheries
Office

Fisheries Dependent Data Validation

Evaluating reporting accuracy through multiple
data source comparison

June 9, 2016

J. Michael Lanning, Ph. D.
Analysis and Program Support Division

Brant McAfee
Analysis and Program Support Division

Concern

- Fishery dependent data (FDD) reporting accuracy
- Effort level data elements are critical for accurate quota monitoring and stock assessments
 - Area
 - Gear
- Most effort information obtained from Vessel Trip Reports (VTR), which are self-reported by harvester
- Previous analysis suggests some discrepancy between VTR data and other sources

Available Data Sources

- Vessel Trip Reports (VTR)
- Vessel Monitoring System (VMS)
 - Vessel positions
 - Declarations
 - Catch reports
- Observer
- Dealer Reports

Evaluating Reported Fishing Locations

- VTR vs. Observer: Compare reported areas
- VTR vs. VMS: Compare VTR reported area with VMS positions
 - Apply spatial algorithm to infer fishing locations from VMS positions

Caveats:

- Observer vs. VTR comparisons are only a subset of all trips
- VMS vs. VTR area comparisons can be ambiguous
 - VMS Fishing locations are **INFERRED** based on vessel behavior
 - Vessel may erroneously appear to be fishing in area, but could be transiting, steaming slowly (poor weather), stopped for repairs, scouting for fish, etc.
- Difficult to definitively apportion catch to VMS fishing locations
 - Catch per unit effort is not necessarily even
 - Vessel could operate the majority of time in one area and catch little, and conversely catch the majority of its fish in another area where it spent little time

Preliminary Evaluation: Observer vs. VTR Area

Scope:

- FY2010-2015 matched sector and common pool groundfish trips where observer or VTR reported retained groundfish (n=10,987)
- Includes At-Sea Monitor and Northeast Fisheries Observer Program trips
- Excludes trips w/less than 100% observed hauls
- Comparison spatial resolution: Statistical Reporting Area

Results:

Fishing Year	<u>Single Area* Trips:</u> Percent Trips VTR and Observer Area Agreement	<u>Multiple Area* Trips:</u> Percent Trips VTR and Observer Area Agreement	VTR-Observer Kept Groundfish Pounds Difference (negative = VTR < Observer)
2010	87%	57%	-1%
2011	87%	69%	-3%
2012	84%	61%	-3%
2013	82%	72%	-2%
2014	79%	71%	-3%
2015	85%	74%	-3%
Overall	85%	68%	-2%

*Multiple and single area trips defined by the number of distinct statistical reporting areas reported on the VTR

Ongoing Analysis

- Compare VTR area vs. VMS position data: Evaluate accuracy of reported area
- QA/QC program enhancing automated tools to identify landings and area reporting discrepancies
- Assess potential impact of area reporting errors on multispecies stock assignment

Example Comparison of VTR Reported Fishing Locations (shaded red) and VMS Positions

