

Science, Service, Stewardship



Standardized Bycatch Reporting Methodology: SBRM 3-year Review Report 2011 Part 2

Presentation To:

Mid-Atlantic Fishery Management Council
October 12, 2011 via Webinar

New England Fishery Management Council
November 16, 2011

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Outline of Today's Presentation

- SBRM Lawsuit Update
- SBRM 3-year Review Report 2011
 - PART 2 Analyses
- Recommendations/considerations for changes to SBRM

SBRM Lawsuit Update

- Court of Appeals—July 19, 2011
 - the court found that the agency had not "established" a lawful SBRM because it still had discretion to allocate observers at a level less than the minimum needed to achieve 30% CV, if faced with external constraints such as budget shortfalls.
- US District Court of District of Columbia 9/15/11
 - Accordingly, it is **ORDERED** that the Amendment is **VACATED**; and it is further **ORDERED** that the case is **REMANDED** to the National Fisheries Management Service for further proceedings consistent with the opinion of the Court of Appeals.

SBRM 3-year Review Report 2011

“Every 3 years, the Regional Administrator and the Science and Research Director will appoint appropriate staff to work with staff appointed by the Executive Directors of the Councils to obtain and review available data on discards and to prepare a report assessing the effectiveness of the Northeast Region SBRM.”

(Taken from Federal Register, Vol. 73, No. 18, Monday, January 28, 2008, Page 4738)

SBRM 3-year Review Report 2011

Examines 2009, 2010, and 2011 SBRMs

"SBRM 2009" = July 2007 through June 2008

"SBRM 2010" = July 2008 through June 2009

"SBRM 2011" = July 2009 through June 2010

Two parts:

1) Data portion in April 2011

2) Evaluation portion in the Fall 2011

SBRM 3-year Review Report 2011

Part 1 is NEFSC Ref Doc

- 1) Background
- 2) A review of the recent levels of observer coverage
- 3) A review of recent observed encounters
- 4) A review of the CVs of the discard information
- 5) An estimate of total discards associated with each fleet

<http://www.nefsc.noaa.gov/publications/crd/crd1109/>

SBRM 3-year Review Report 2011

Background: Summary of Statistics

Summary Statistics	SBRM 2009	SBRM 2010	SBRM 2011
Number of Fleets	44	51	52
Fleets with Pilot coverage	24	28	30
Baseline Sea Days	54,631	51,252	52,651
SBRM Standard Sea Days	15,125	14,147	19,507
Funded Sea Days	6,161	14,375	13,904
Sea Day Shortfall	-7,746	*	-5,603
Final Funded Sea Days	6,283	13,950	14,004
Number of Fleets with Sea Days	17	30	32

* *Sea day shortfall existed for some fleets due to funding constraints.*

Fleets with little or no NEFOP coverage are fleets in need of Pilot coverage. Pilot coverage is defined as a minimum level of coverage to acquire bycatch information with which to calculate variance estimates that in turn can be used to further define the level of sampling needed. In SBRM, 2% of VTR trips is used.

SBRM 3-year Review Report 2011

Part 2 Evaluation portion by FMAT

5 monthly FMAT meetings were held via teleconference between May and Sept

Participants of FMAT Meetings

NEFSC staff,

NERO staff,

MAFMC staff,

NEFMC staff and

ASMFC staff

SBRM 3-year Review Report 2011

Part 2 {in Progress}

- 1) Summarization of Discard Reasons
- 2) Effectiveness of SBRM at meeting the performance standard
- 3) SBRM Methods
- 4) Assessment of potential sources of bias and analysis of accuracy
- 5) Implications for Management
- 6) Recommendations

Discard Reasons

To minimize discards it is useful to know why discarding is occurring: Economic vs Regulatory

Calculated the percentage of discards associated with the following discard reason categories:

- No Market,
- Poor Quality,
- Regulation, Size
- Regulation, Quota,
- Regulation, Other
- Other

Discard Reason Summary

Roughly 80% of SBRM species group discards (by weight) were attributed to 'NO Market'; 15% were associated with 'Regulations'; 5% were split between 'Poor Quality' and 'Other'.

SBRM Year	Total Discards (kt)	No Market	Regulations	Poor Quality	Other
2009	7,529	83%	14%	1%	2%
2010	6,210	80%	14%	3%	3%
2011	5,452	80%	16%	2%	3%

Effectiveness of SBRM Performance Standard

To evaluate the SBRM at meeting the performance standard, six SBRM performance classifications were established:

Not Applicable;

Unknown;

Met (filtered out);

Not Met (filtered out);

Met and

Not Met

Number of Fleets Meeting the CV Standard by Species Group

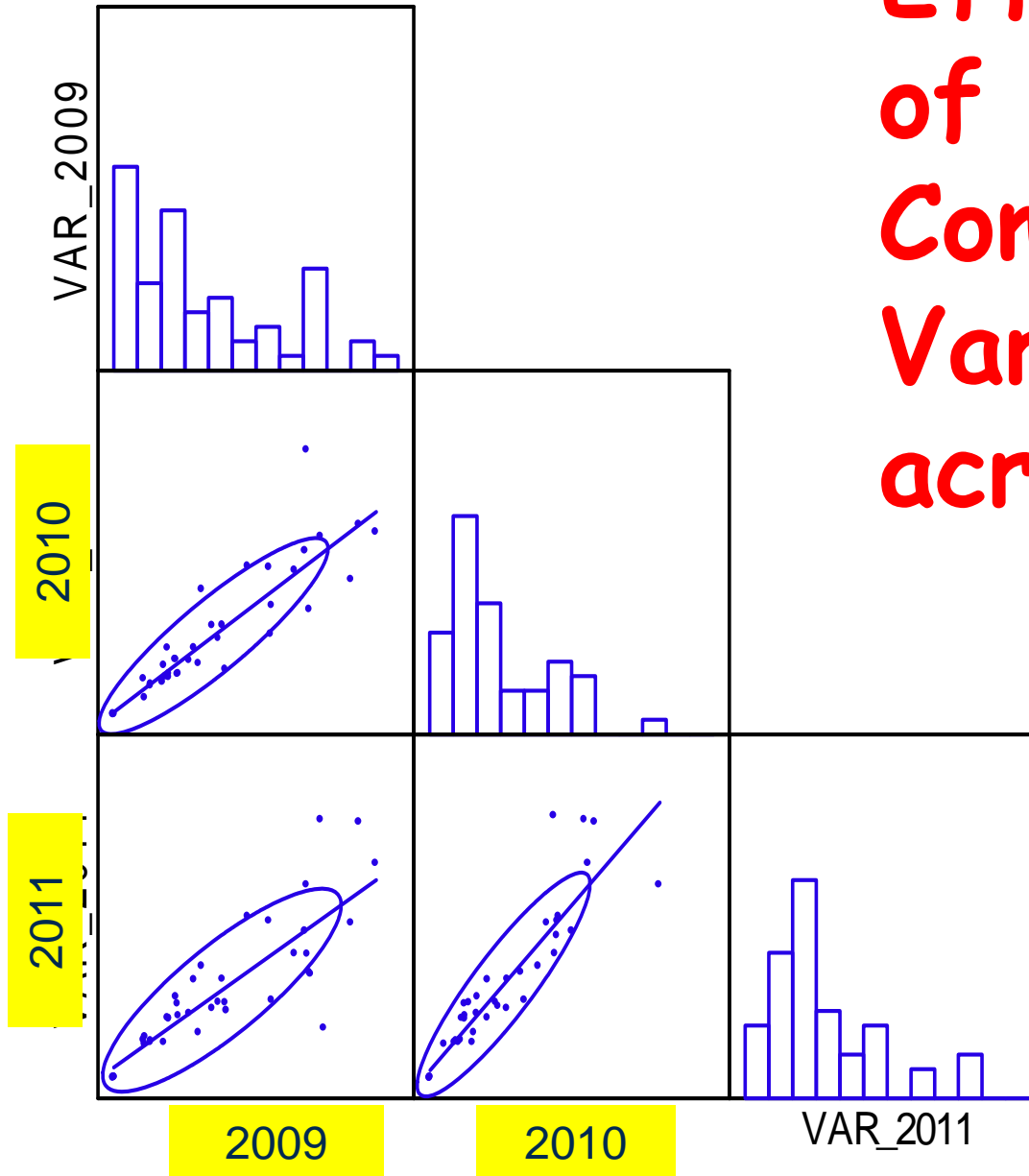
Species Group	<= 30% CV		>= 30% CV	
	New England	Mid Atlantic	New England	Mid Atlantic
Fluke -Scup – Black Sea Bass	7	5	2	3
Large Mesh Groundfish	9	2	1	2
Monkfish	12	7		3
Red Crab	1		1	
Sea Scallop	3			
Skate Complex	8	11	4	2
Small Mesh Groundfish	5		4	4
Spiny Dogfish	13	6	5	6
Squid- Mackerel -Butterfish			2	2
Total	58	31	19	22

Effectiveness of SBRM

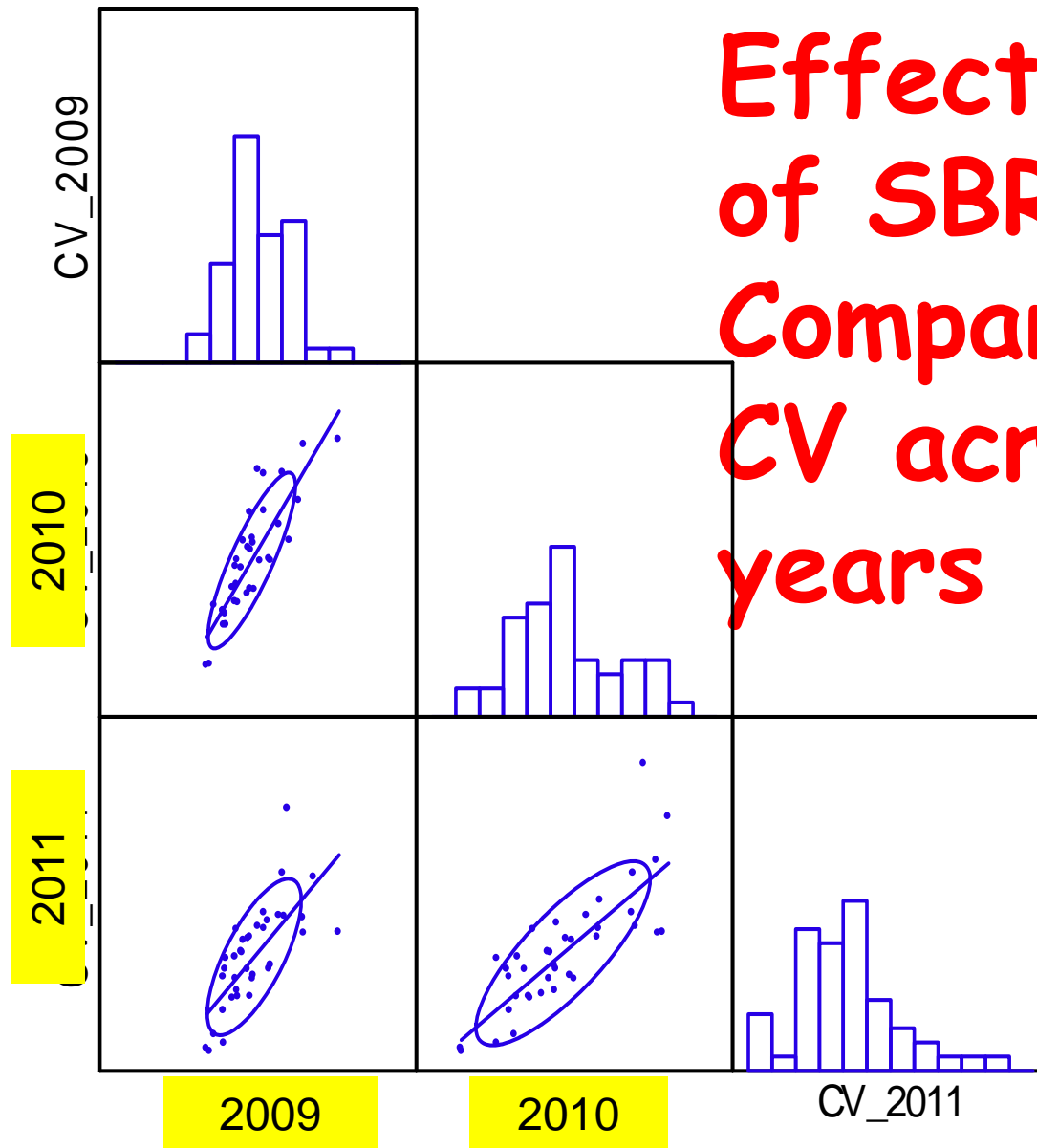
Variance Stability

- Uses the variance of discards from the previous year to determine the number of sea days needed in the next year.
- Assumes the persistence of fishing behavior over time.
- Comparisons of the discard variance and comparisons of coefficient of variation (CV) of the discards were conducted for fleet and species groups between the three SBRM years

Effectiveness of SBRM: Comparison of Variances across years



Effectiveness of SBRM: Comparison of CV across years

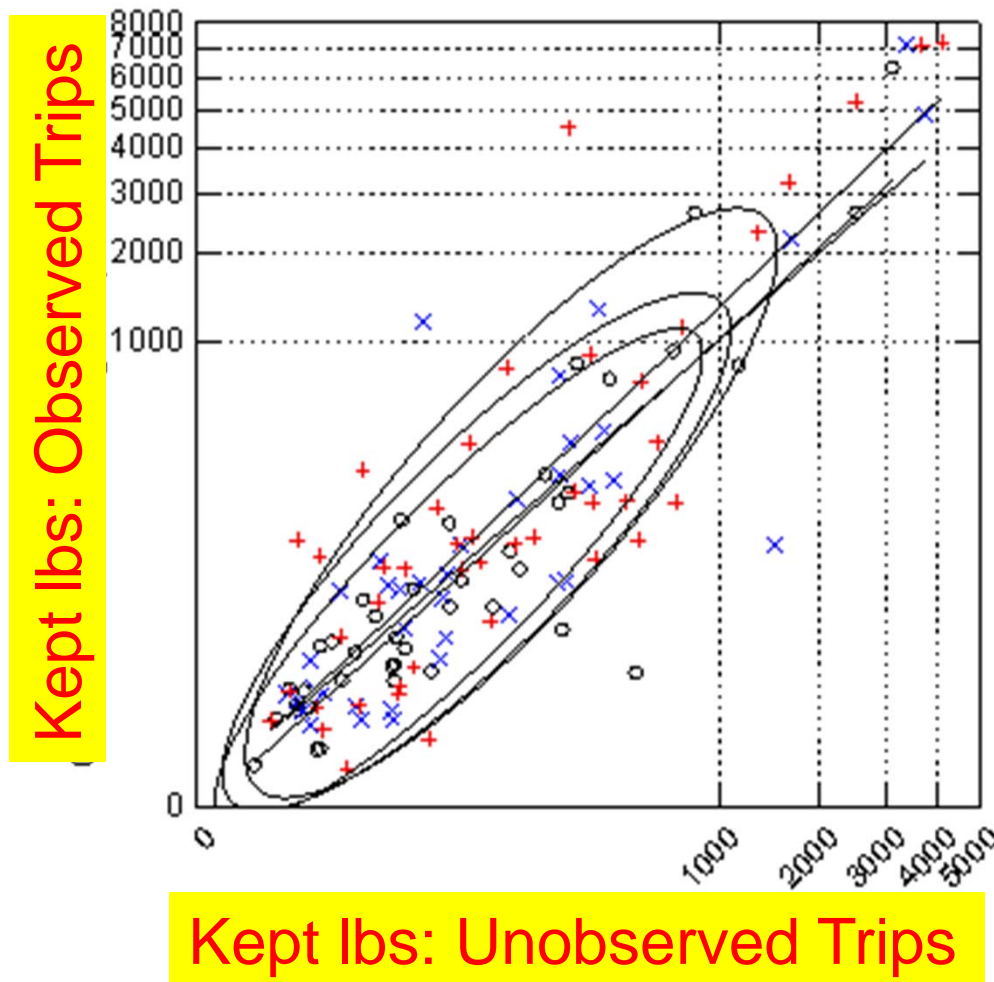


Measures of Bias: Must rely on comparison of measurable properties of trips with observers and without observers

- Compare average kept pounds by species group for observed and unobserved trips in each fleet
- Compare differences in averages
- Compare Trip Duration of observed vs unobserved

Comparison of mean kept pounds between unobserved and observed trips using VTR

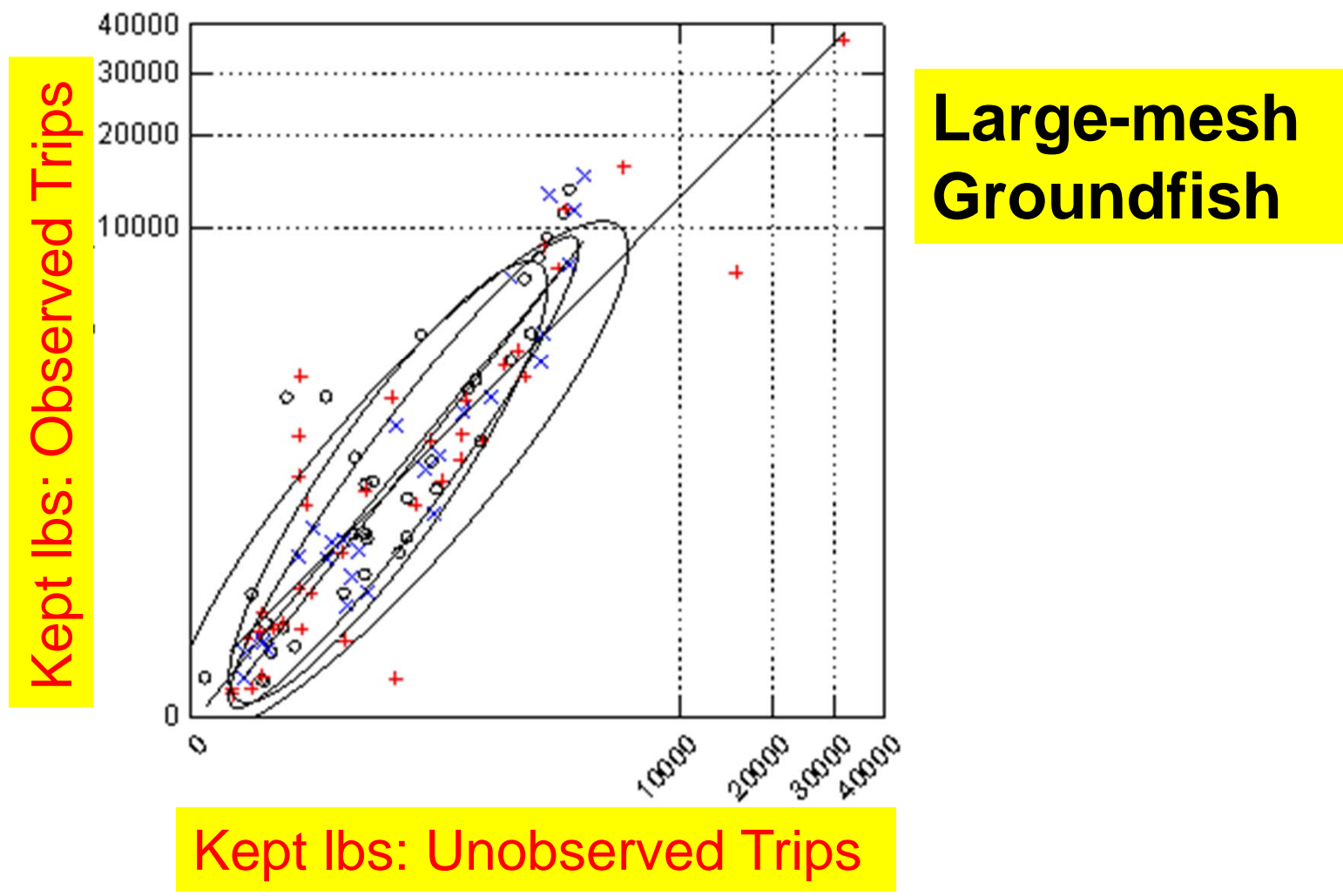
Comparisons of Average Kept Pounds



**Fluke - Scup -
Black Sea Bass**

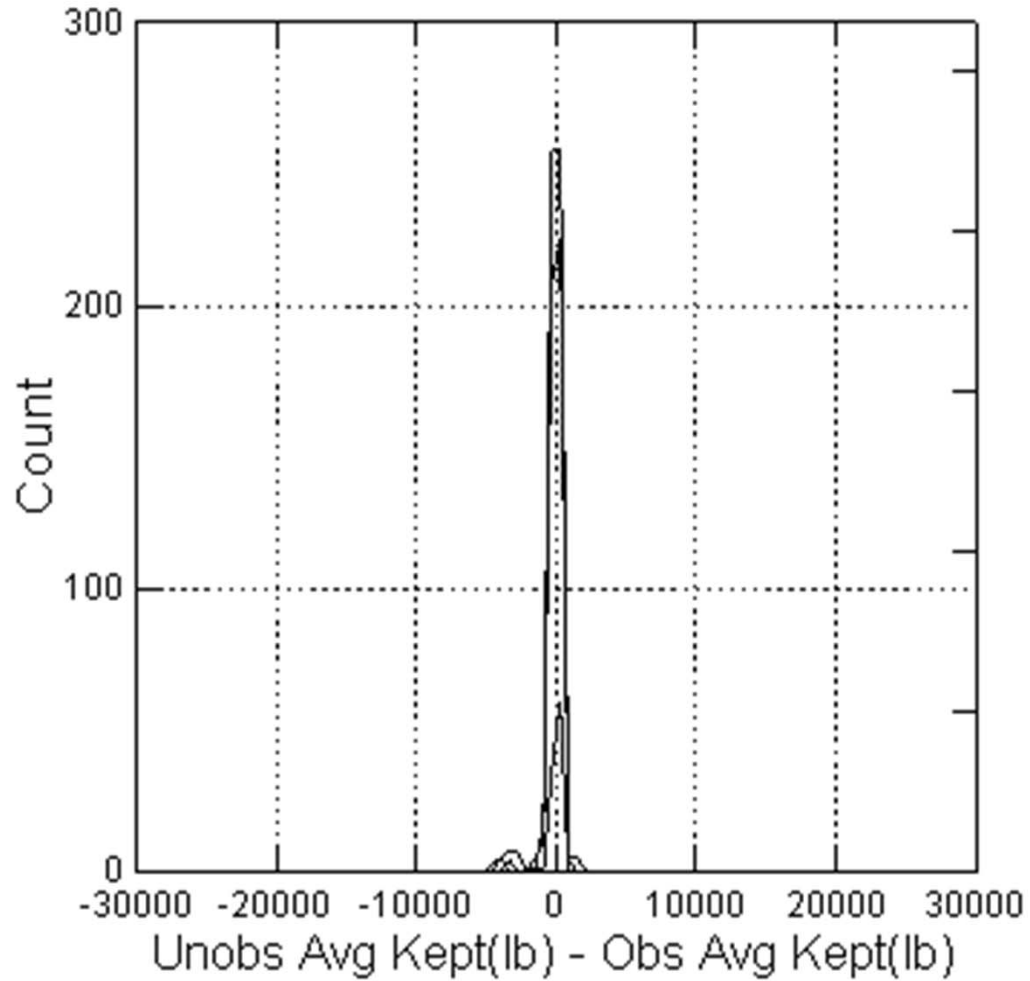
Comparison of mean kept pounds between unobserved and observed trips using VTR data

Comparisons of Average Kept Pounds



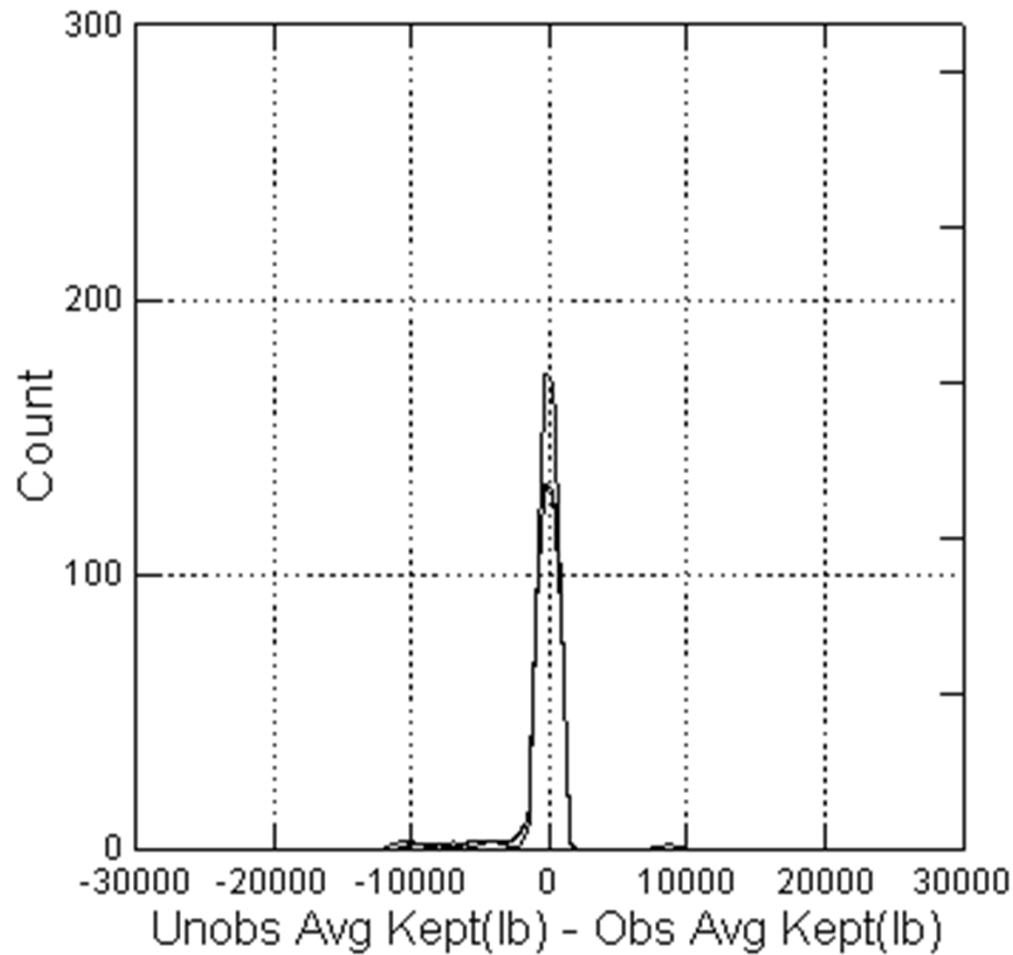
Comparison of Average Kept Pounds Differences

Kept pounds differences between unobserved and observed trips



**Fluke -
Scup -
Black Sea
Bass**

Comparison of Average Kept Pounds Differences

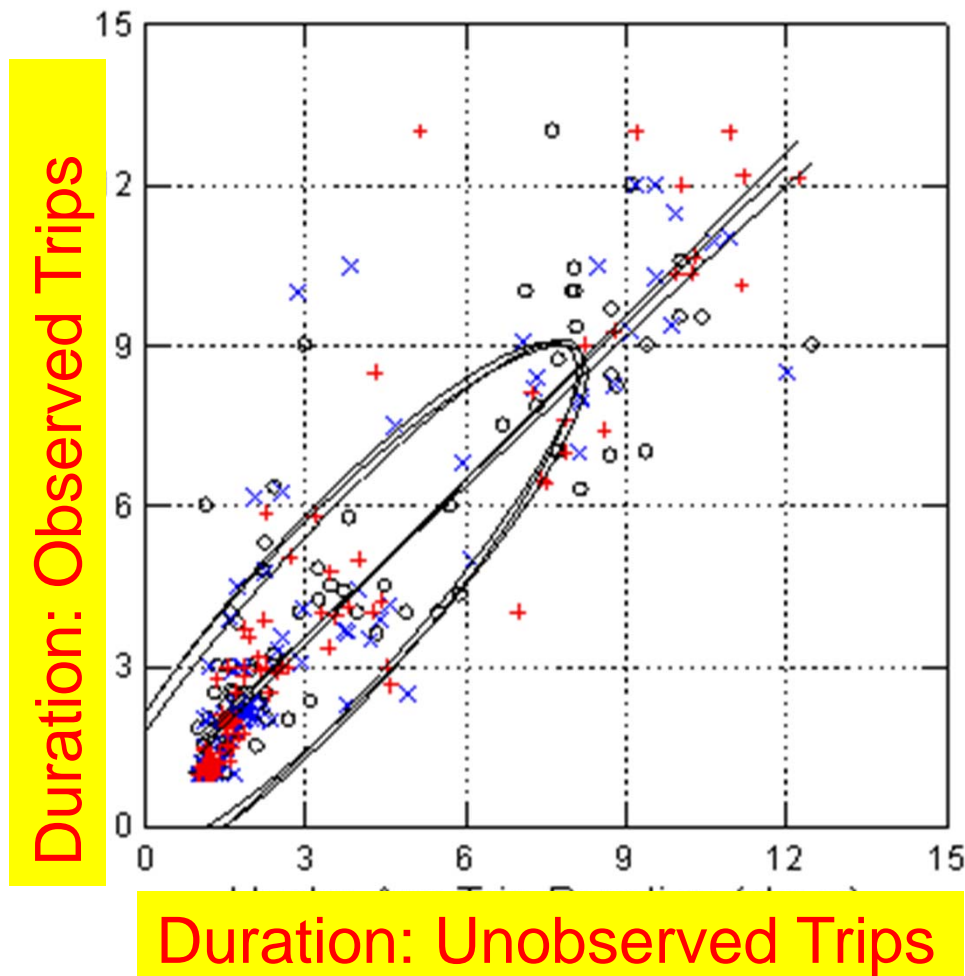


Kept pounds
differences
between
unobserved and
observed trips

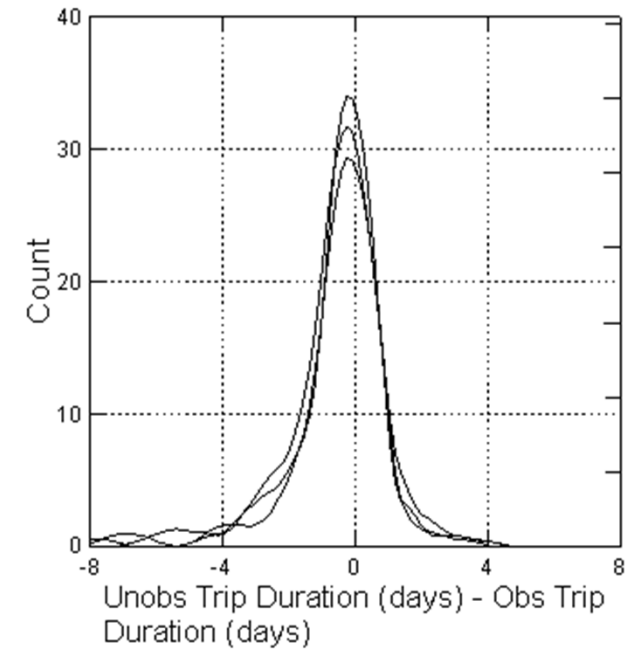
**Large-mesh
Groundfish**

Trip Duration: Obs vs Unobserved

Comparison of Average Trip Duration



Comparison of Average Trip Duration



Implications of Low Precision (i.e., high CV) Discard Estimates for Management

- Decreased precision of discard estimates could affect overall uncertainty of stock assessment (Uncertainty Tier 1, 2, 3, or 4)
- Increase buffer between the OFL and ABC
- Impede Council's ability to achieve Optimum Yield.
- Imprecise estimates of discards reduce ability to determine if management measures are effectively reducing discards.

Recommended changes for future SBRMs

- Changes reported in Part 1
 - Seven New fleets
 - Updated Unlikely filters for turtles
- Omit Unlikely Filter, use only Fraction of Discard Filter and Fraction of total Mortality
- Review Pilot coverage levels
- Integrate model-based models for turtles to the extent possible
- Consideration of additional species.

Recommendations (cont.)

- Future SBRM will require flexibility in modifying fleet coverage rates without needing frameworks or amendments, especially adding/deleting fleets.
- Annual Discard report should give total discards rather than rates. List of improvements
- Synchronization of information requirements for all FMP fishing years, fiscal years and observer coverage years is not possible.
- Constraints on funding need to be resolved.

Overarching Issues

- Comprehensive treatment of observer allocation is essential first step in monitoring the efficacy of fisheries management.
- Be specific about CV. Always ask "30% of what?"
- There will always be tradeoffs.
 - Increased emphasis on one species, one region, or a subgroup of vessels will come at the expense of reduced coverage for something else.
 - Tradeoffs can be handled objectively or not, but industry, consumers, or taxpayers must pay for increased coverage.
 - Objectives of MAFMC have implications for NEFMC and vice versa
- Magnitude of discards compared to other sources of mortality is important when defining precision targets.

What should the next SBRM look like?

- Add/delete fleets as needs arise?
- Consider additional species groups as basis for allocating observers?
- Do we need precision target at 30% for each species, each stock, each sector, each gear within sector, etc. ?
- Can we combine port sampling with at-sea sampling or other approaches to reduce monitoring costs for landed bycatch?
- Handling of protected species, especially those without estimates of total stock size?
- Do ACLs and Ams affect reliability of observed discard rates?
- How to fund a moving target?

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Questions ?

Recommendations

Example of additional information for Sea Day and Prioritization Report

Shows shape of curve for
The various SBRM species groups

Provides sample sizes in terms of:
Days, Trips, % of Trips

