

*Science, Service, Stewardship*



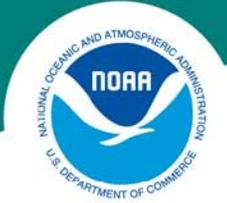
# Discard Estimation Methodology Review: Overview and Summary of Working Paper 1

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February 22, 2010

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## Terms of Reference

1. Compare and contrast the performance with alternative estimators of total discards with respect to precision and accuracy.
2. Evaluate impacts of trimming observations (e.g. large discard events) on the magnitude of bias and measures of precision.

**Covered by WORKING PAPERS 2 and 4**

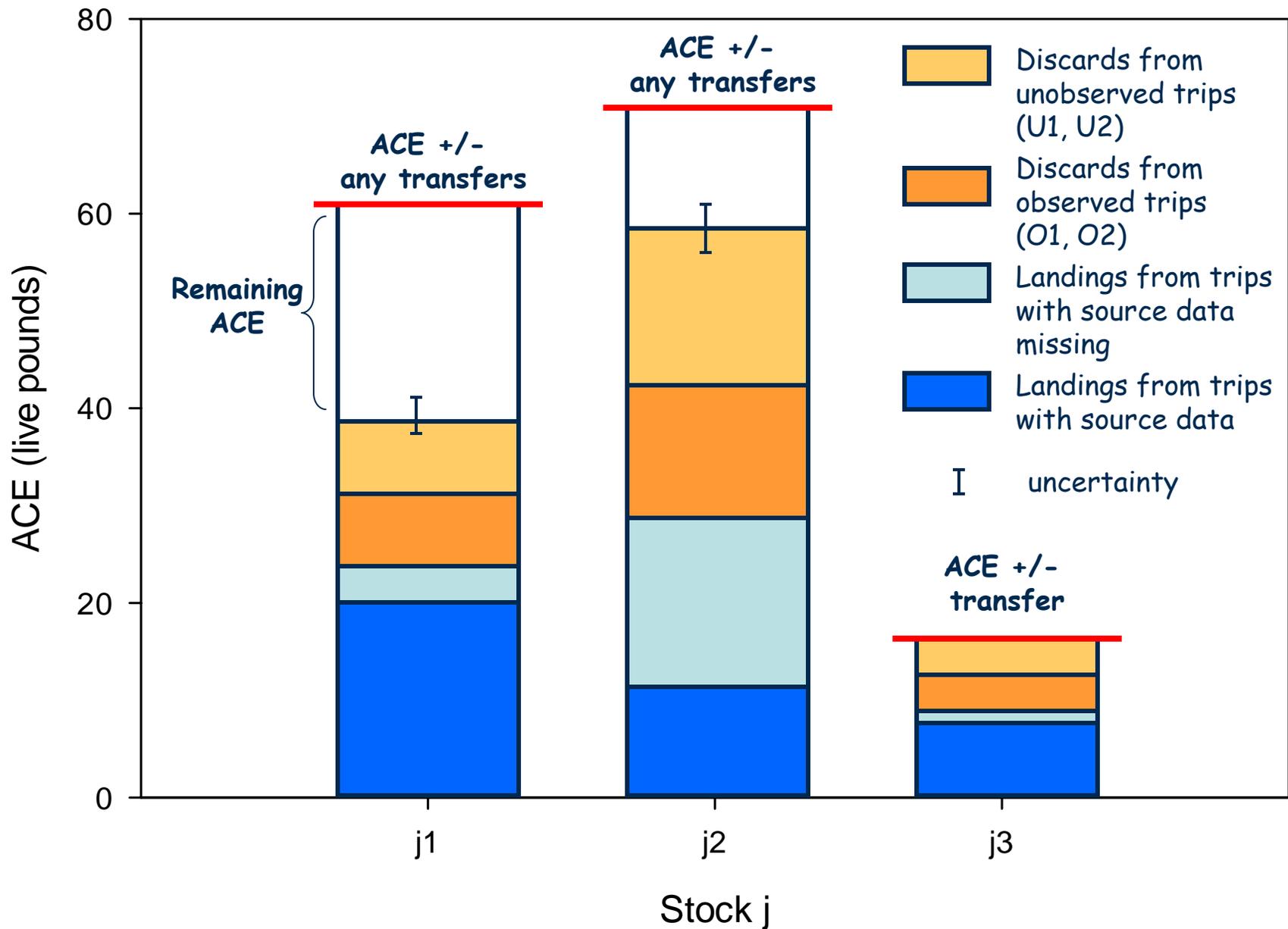
Available on-line at <http://www.nefsc.noaa.gov/groundfish/Discard.html>

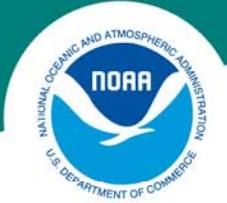
## Terms of Reference continued

3. Examine the cumulative method and temporally stratified cumulative method and recommend a preferred method.
4. Provide guidance of methods to measure uncertainty of the preferred method (asymptotic vs bootstrap ests. of variance)
5. Provide guidance on risks of alternative management actions given the uncertainty and/or behavior of the preferred discard estimation method.
6. Consider implications of finer-scale stratification on performance of estimators that might be required for sector-specific discard rates and will be required for multi-stock species.

**Covered by Working Paper 3**

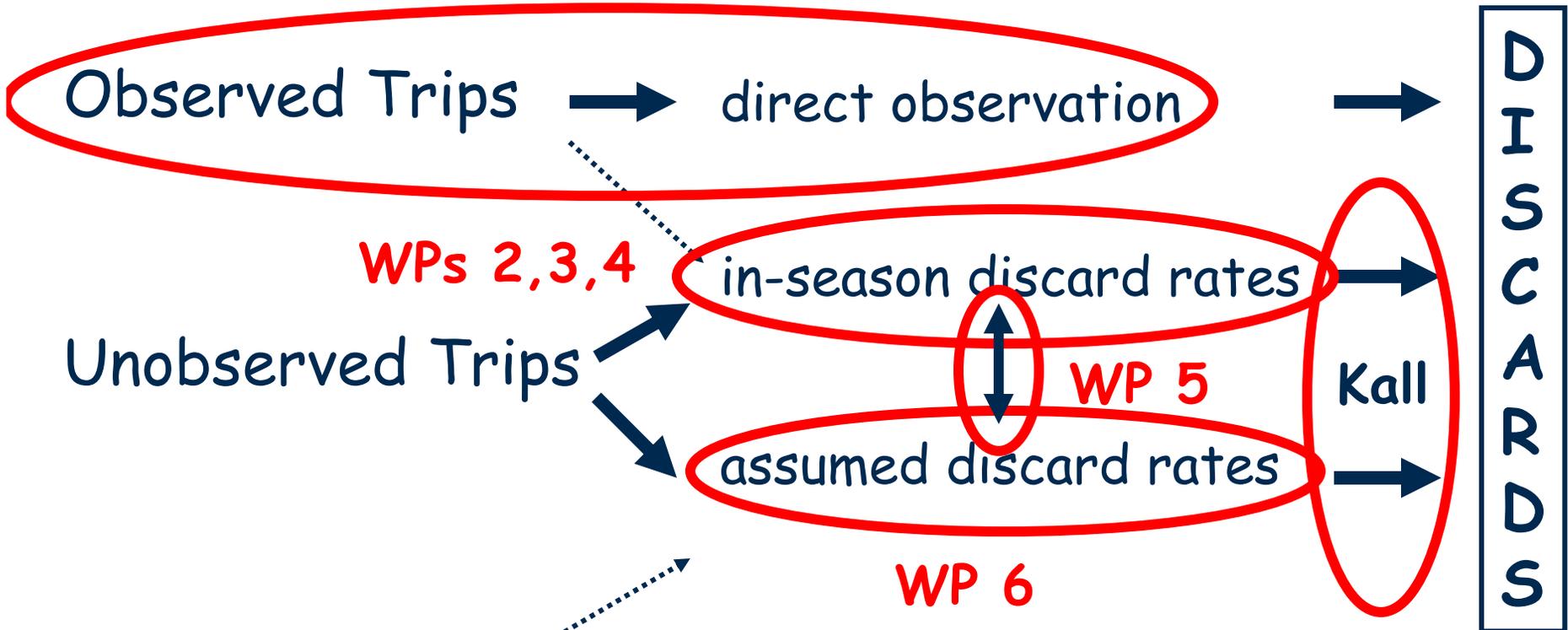
# Sector's ACE





# Overview

WP 1



WPs 2,3,4

WP 5

WP 6

Kall

DISCARDS

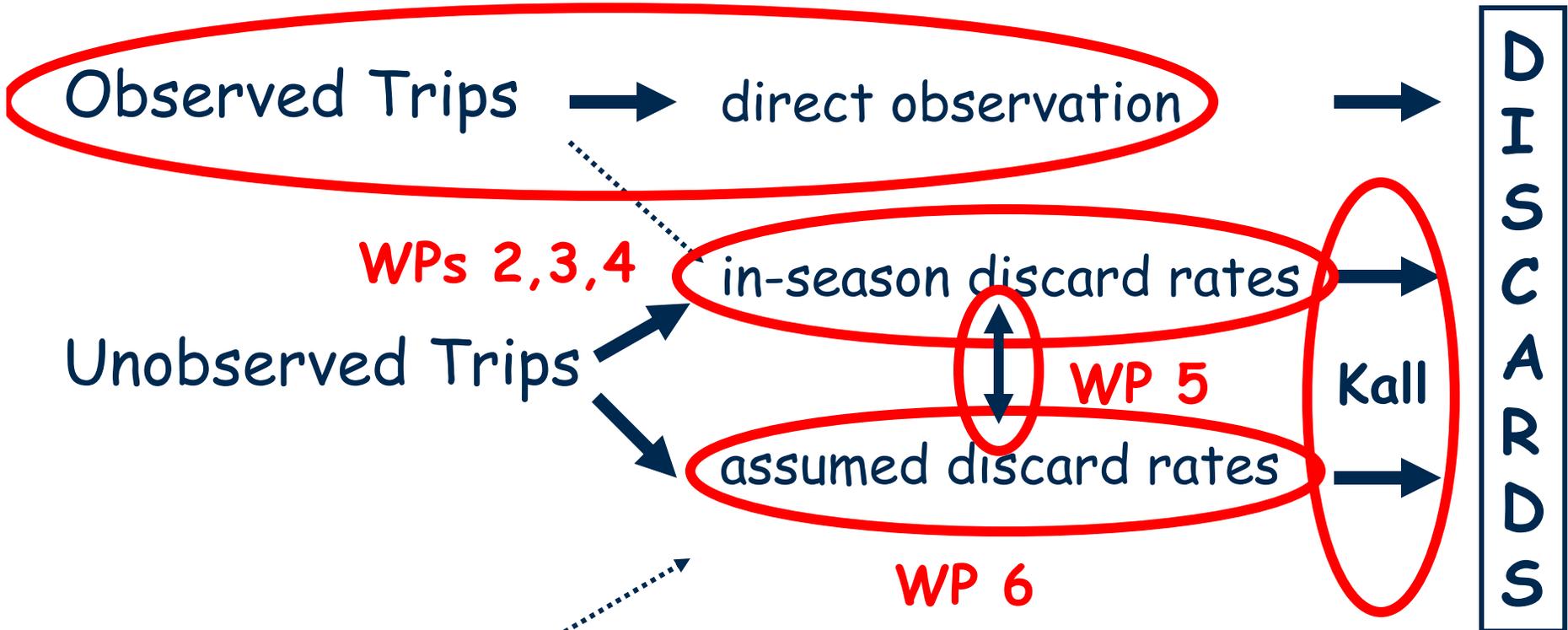
Observed trips  
from previous year

CRD 10-02  
Stock Apportionment



# Overview

WP 1



Observed trips  
from previous year

CRD 10-02  
Stock Apportionment



## WP 1: Methods for Observed Trips

Key Data Elements are given in Table 1

Used for direct observation and in-season rates

discard weight of stock  $j$  ( $d_j$ )

kept weight of stock  $j$  ( $k_j$ )

sum of kept weight of all species ( $k_{all_o}$ ,  $k_{all_u}$ )

Stratification variables: general trip characteristics

include: vessel, gear, mesh, area fished

Clarification: 'observed' haul means observed for all discards  
the kept portion of catch is obtained for every haul



## WP 1: Observed Trips continued

Three scenarios may occur on an Observed trip:

Scenario 1: all hauls are observed for discards

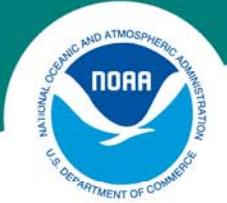
Scenario 2: some hauls are observed for discards and some hauls are not observed for discards

Scenario 3: no hauls are observed for discards

Considered not observed for discard estimation purposes

Meta data are needed to track type of trip, method used, status of data used.

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**Questions or comments ?**