Planning and Tracking Stock Assessments

Office of Science & Technology

Stock Assessment Science Program Review

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Richard D. Methot, Ph.D.

NOAA Senior Scientist for Stock Assessments

National Marine Fisheries Service

Outline

Stock assessment prioritization

- History
- Objectives and benefits
- National protocol

Species Information System

- Description, content, use
- Development and management

Strengths, challenges, solutions

Stock Assessment Prioritization

History

- Assessments scheduled regionally (national umbrella)
  - Councils, Commissions, & Centers
- Processes currently under development (e.g., NE/SE)
- OMB requested NMFS develop National assessment prioritization system
- 2011: NMFS formed WG to develop
- 2013: prioritization requested in
  - GAO review of NMFS assessments
  - Bill to improve science for Magnuson-Stevens Act

Stock Assessment Prioritization

Work smarter, not harder

- All managed stocks need some level of assessment
- Certain stocks require comprehensive, timely assessments
- Costs of comprehensive, timely assessments >> benefits for other stocks

Prioritization objectives

- Determine assessment level and frequency appropriate for achieving objectives
- Compare assessment level and frequency across stocks to quantify and rank priorities

Stock Assessment Prioritization

Benefits of a National system

- A prioritized portfolio of *right-sized* assessments, specific to each stock, could:
  - Best utilize resources
  - Facilitate & standardize regional processes
  - Identify gaps to consider in future investments
  - Provide transparency in the entire portfolio of assessment needs

Stock Assessment Prioritization

National protocol

- Data required
  - Commercial fishery importance
  - Recreational fishery importance
  - Ecosystem importance
  - Stock biology (natural mortality rate and recruitment variability)
  - Stock status (previous assessment)
  - Assessment history and unresolved uncertainties

Stock Assessment Prioritization

National protocol

- Factors considered

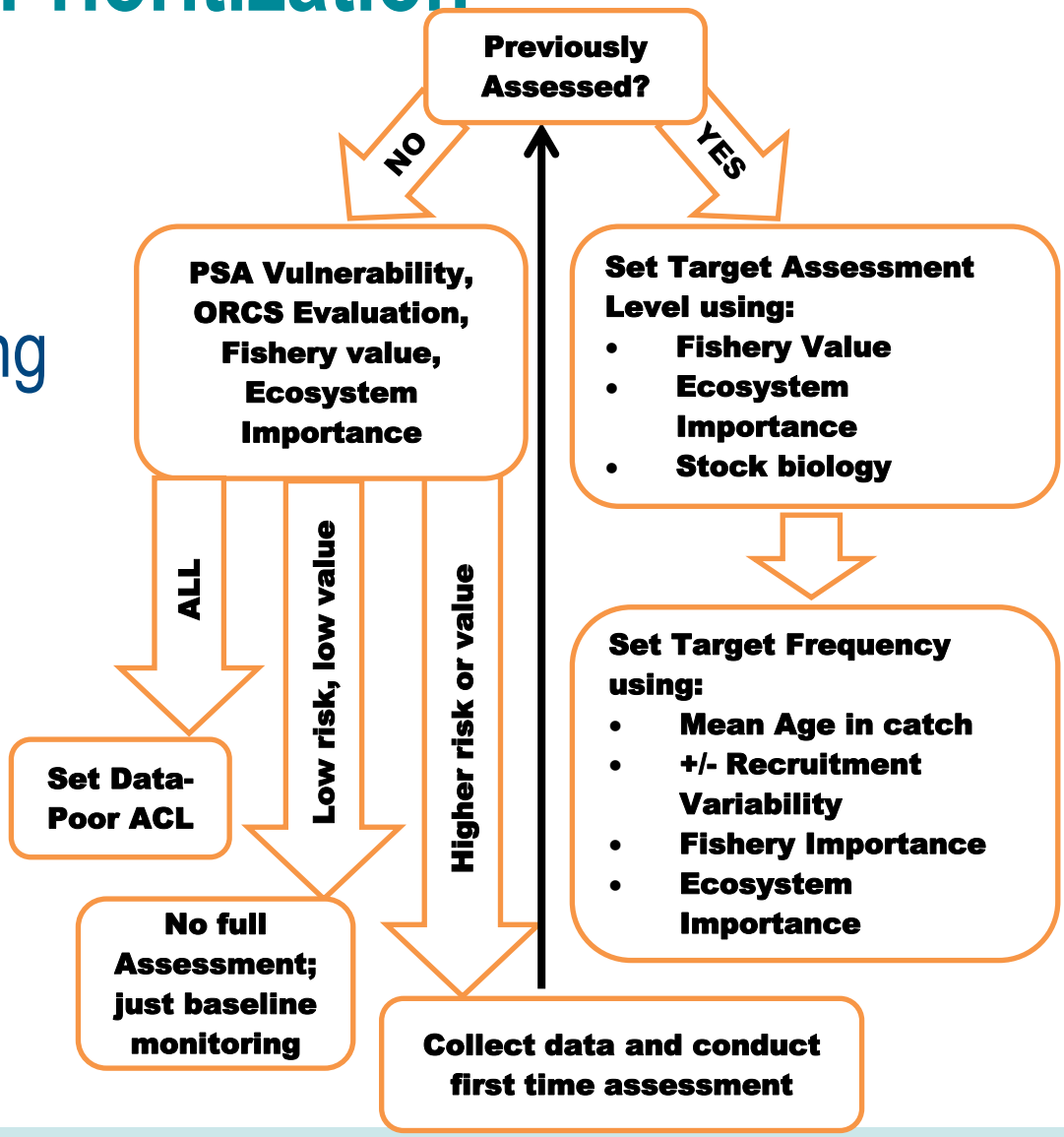
FACTOR	First-time assessments	Target assessment level	Target Assessment frequency	Priority for assessment	Priority for benchmark
Fishery importance	Yes	Yes	Yes	Yes	
Ecosystem importance	Yes	Yes	Yes		
Stock status	Yes, from ORCS & PSA			Yes	
Stock biology		Yes	Primary		
Assessment history; Due or overdue?				Primary	
New data indicates drift from forecast				Yes	
New data can raise level or resolve uncertainty					Yes

Stock Assessment Prioritization

National protocol

- Approach

1. Identify stocks needing first assessment vs. baseline monitoring
2. Among first-time & previously assessed:
   - Target level (data required)
   - Target frequency

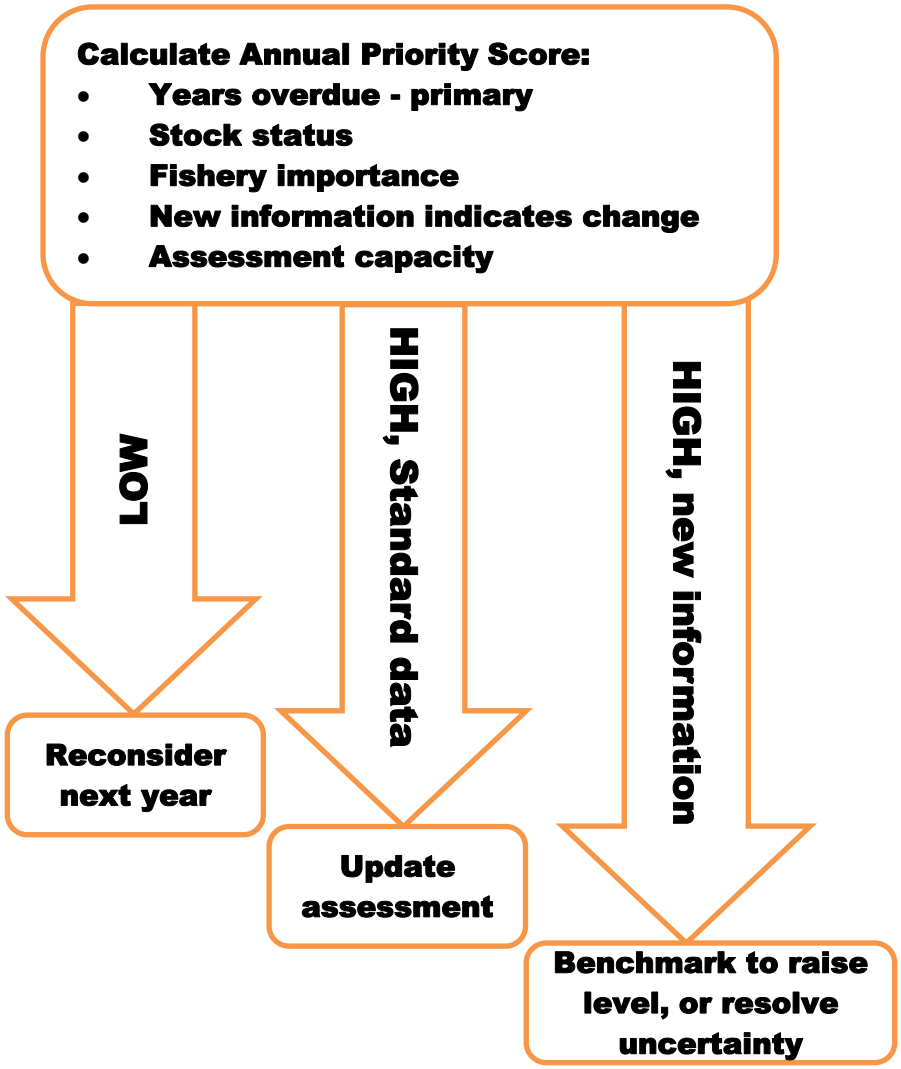


Stock Assessment Prioritization

National protocol

- Setting priorities

1. Update annually
2. Low score = later
3. High score:
    - No new data streams: -update
    - New data streams: -benchmark



Stock Assessment Prioritization

National protocol

- Implementation steps

1. Spring 2014: draft protocol to Councils, Regional Offices, Commissions, and public via website
2. May 2014: receive comments from Council and summarize to CCC
3. Fall 2014: regions begin PSAs and ORCS
4. Fall 2014: test prioritization system and make necessary adjustments
5. Winter 2015: augment Species Information System with information needed for prioritization
6. 2015: commission MSE to test performance
7. 2016: Explore Decision Support System facilitators to guide regional application

Stock Assessment Prioritization

National protocol

ST role

- Review and discuss draft protocol
- Incorporate, expand, and harmonize within Stock Assessment Improvement Plan
- Expand Species Information System to implement & store necessary data
- Facilitate and support regional application
- Assist with communication and outreach to various stakeholders

Species Information System (SIS)

Relational database & reporting system for tracking assessments for FMP stocks:

- Initiated soon after SAIP (2001) published
- Now includes:
  - Stock assessment details & results
  - Stock status determination
  - Catch recommendations
  - Surveys linkages
  - Assessment documents

Species Information System (SIS)

Stock assessment details & results

- Stock; time; region; jurisdiction; review; assessment model, point of contact
- Terminal year fishing rate, biomass, and MSY statistics
- Time series of recruits, spawners, fishing rate, and catch
- 2001 SAIP Levels (catch, abundance, life history, assessment, frequency)

Species Information System (SIS)

Stock status determination

- Status determination time, management action, rebuilding progress
- Overfishing/overfished statuses, bases, ratios

Catch recommendations (ACL)

- Management criteria: OFL, ABC, ACL, ACT
- Catches (commercial, recreational, discards)
- Catches relative to management criteria

Species Information System (SIS)

Survey linkages

- Fishery-independent surveys; commercial/recreational CPUE; other (tagging, non-traditional survey)

Assessment documents (new feature)

- Assessment reports; review documents; management documents; model input/output

Species Information System (SIS)

Usage

Strategic planning & performance tracking

- Budget and planning documents (e.g., SAIP)
- Performance measures (FSSI, % adequate), milestones, and projections

Reporting

- Status of U.S. Fisheries (Annual Report to Congress), Assessment Quarterly Reports

Inquiries

- GAO review, Congress and stakeholders, internal leadership, NAS review of rebuilding

Outreach

- SIS Public Portal

Species Information System (SIS)

Development & Management

- Development team

Position	Office
Senior Scientist for Stock Assessments	NMFS Leadership
SIS Coordinator	Science & Technology
Stock Assessment Coordinator	Science & Technology
SIS Programmer	Science & Technology
IT Specialist	Science & Technology
Policy Analyst	Sustainable Fisheries

Species Information System (SIS)

Development & Management

SIS Programmer: provides technical management

- System maintenance, implementation of new features

SIS Coordinator: provides information management

- QA/QC, quarterly data requests, generate reports, respond to inquiries, user training

POC(s) in each region: supply information quarterly

- Provide lists of conducted & planned assessments
- Update records with new assessments

Species Information System (SIS)

Important developments ahead

Implement new Prioritization Protocol

- Some new fields (a few are difficult to obtain: life history parameters, recreational value, etc.)
- Develop module to run protocol

Conform to new SAIP assessment categorization

- Incorporate new categories, levels, descriptions
- Train users
- Create smooth transition (maintain old system??)

SIS Coordinator position

- Previously half-time, becoming full-time

Strengths

General

- Developing a cohesive planning and tracking system

Prioritization

- Satisfies directed need (Congress, OMB)
- Provides strategic approach to address ACL mandate
- Supports Science Centers in scheduling process
- Transparently identifies unknown gaps and opportunities to improve efficiency

Species Information System

- Ability to track and report on a complex national program
- Streamlines strategic planning and stakeholder interactions
- Active and engaged development team

Challenges

General

- Significant effort required to develop cohesive system
- Fitting new developments into a complex, long-standing program

Prioritization

- Initial implementation is a major undertaking
- Some data requirements difficult to fulfill/unreliable
- Expert opinion plays a role (some subjectivity)
- Determining ecosystem importance is preliminary

Species Information System

- Science centers less engaged in national synthesis
  - Data collection = major burden to field scientists (new developments add to burden)
  - Quarterly requests are challenging for Coordinator
- Standard data fields do not fit all scenarios (entities, F reporting, etc.)
- QA/QC not fully automated/documented
- Could be adjusted for better utilization in other areas (meta-analytic research)

Solutions

General

- Expand capacity (e.g., full-time SIS Coordinator)
- Maintain communication with Councils and stakeholders

Prioritization

- ST actively engage in initial Regional implementation
  - Assist with process, data gathering, facilitate standardization

Species Information System

- Streamline data input (XML files)
- Further spread the data entry burden
- Create flexibility to accommodate variable stocks/assessments
- Formalize QA/QC protocol
- Encourage National-scale research


Thank You!