Setting Annual Catch Limits

A report of an Expert Working Group

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MSA catch limits requirements

- 2007 Magnuson-Stevens amendments designed to improve accountability and prevent overfishing.
  - Section 104(a)(105) – specify annual catch limits.
- Deadline for catch limits for overfished fisheries is 2010. Deadline for other fisheries is 2011.

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Challenges in meeting MSA catch limits requirements

- Insufficient information about status of some stocks
- Short time frame: deadline in 2010
- Multi-species fisheries make setting clear catch limits difficult

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Catch Limits Expert Working Group

Developed approach for establishing annual catch limits and accountability measures to meet the Magnuson-Stevens requirements.

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Catch Limits Expert Working Group

David Agnew, Beth Babcock, Andrew Cooper, Charlotte Mogensen, Robert O'Boyle, Joseph Powers, Andrew Rosenberg, Gunner Stefansson, Jill Swasey

Convened by the Lenfest Ocean Program
& managed by MRAG Americas, Inc.

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Catch Limits Expert Working Group

Report Release in September 2007

1. Guiding principals for establishing annual catch limits (ACLs)
2. Step-by-step process for setting ACLs
3. Suggested approaches for establishing ACLs for data poor stocks and assemblages

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Guiding Principles

- Annual catch limits should apply to all stocks.
- To successfully end overfishing: OFL > ABC > ACL.
- Catch limits should account for overfishing risks for each stock.
- Uncertainty is inevitable and should be accounted for in ABC and ACL.
- Risk assessment includes evaluation of the vulnerability of each stock to the fishery.
- Grouping stocks should be done cautiously because vulnerability and the consequences of overfishing relate to individual stocks
- Buffer between the ACL and the OFL should be greater when the risk of overfishing is higher.
- Setting ACLs should be considered a performance measure for each fishery and used for accountability.

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The buffer is the key

The most significant component in preventing overfishing =

Establishing a precautionary buffer between:
(1) the overfishing limit (OFL) set by scientists and
(2) the annual catch limit (ACL) set by fishery managers.

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The buffer is the key

Factors to consider in determining the size of the buffer:

(1) Vulnerability (the vulnerability of the fish population to fishing pressure);

(2) Scientific uncertainty (the uncertainties in scientific information about the status of the fish population); and

(3) Management uncertainty (the uncertainties in the effectiveness of management tactics).

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ACL Process

Step 1: Evaluate Vulnerability

Scientists evaluate vulnerability for each stock based on productivity and susceptibility analysis.

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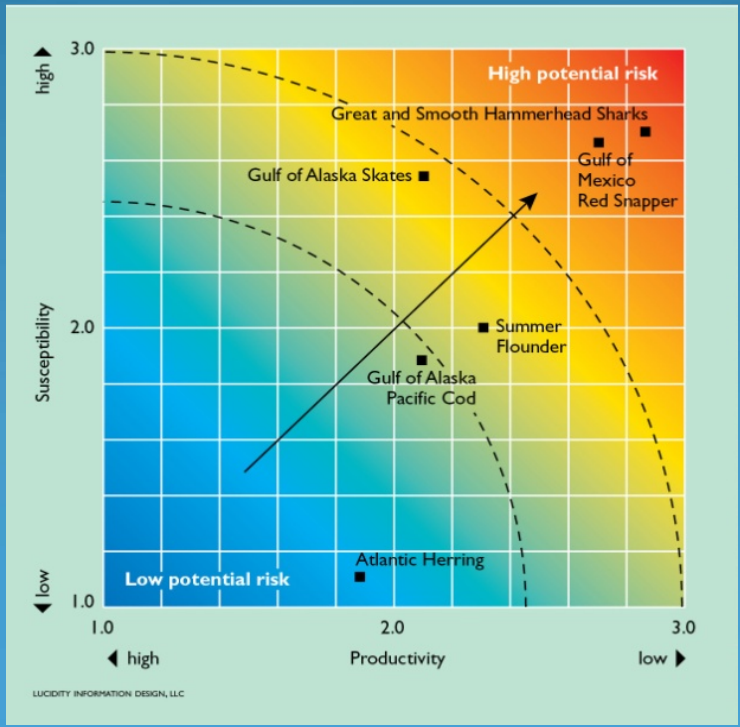
Evaluating Vulnerability:

The Productivity – Susceptibility Analysis Approach

- The Working Group adopted the Productivity – Susceptibility Analysis (PSA) evaluation developed by the joint Australian CSIRO/AFMA Ecological Risk Assessment (ERA) project.
- PSA ranks the relative vulnerability of different fish populations by mapping them in a chart with their susceptibility and productivity scores. Stocks are ranked by knowledgeable experts.





ACL Process

Step 1: Evaluate Vulnerability (cont.)

Where vulnerability is minimal and unlikely in the future, stocks are considered *de minimus* and re-evaluated periodically. Other stocks, go to step 2.

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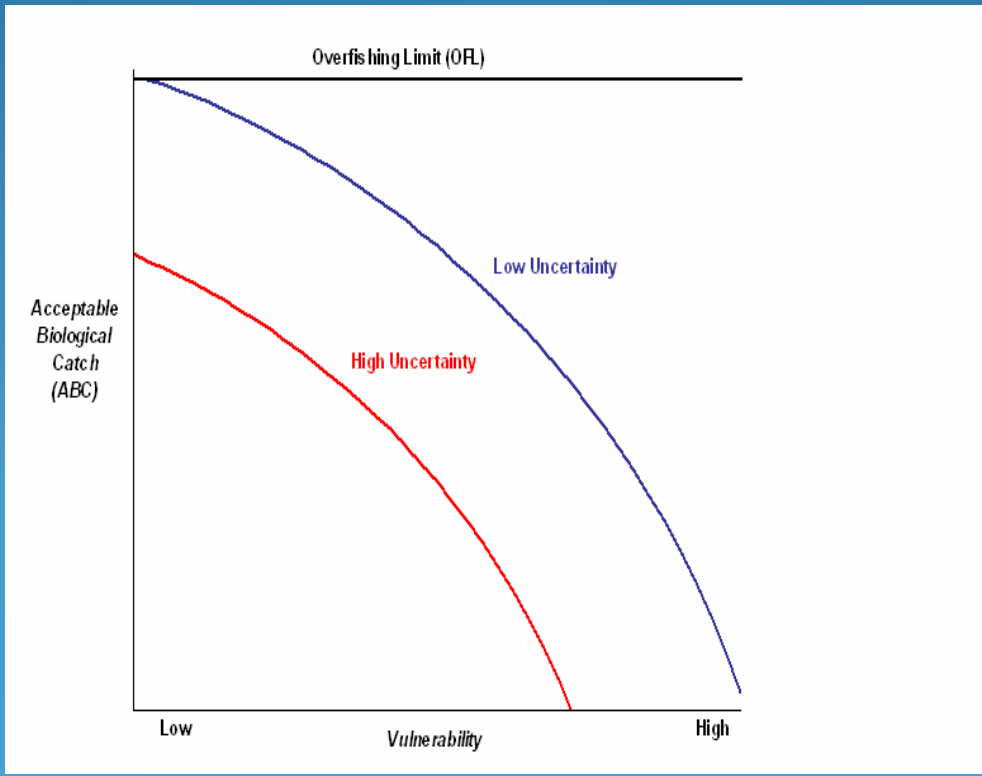
ACL Process

Step 2: Determine an OFL

Scientists determine a sensible overfishing level (OFL) for each stock

Scientists base OFL on maximum sustainable yield concept and estimate uncertainty in the knowledge of stock status and trends.





ACL Process

Step 3: Choose an Acceptable Level of Risk

Managers decide on an acceptable level of risk of exceeding the overfishing limit (OFL), considering the vulnerability of each stock and the consequences of overfishing

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ACL Process

Step 4: Choose an ABC, above the ACL

Scientists recommend an acceptable biological catch (ABC) below the overfishing limit (OFL), so that the risk of overfishing is not exceeded.

Scientists account for various sources of uncertainty (scientific and management uncertainty) by increasing the buffer distance between ABC and OFL.

The scientifically-determined ABC is a maximum for the ACL. Policy makers may choose to set the ACL at or below the ABC considering other social, economic or ecological factors.

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ACL Process

Step 5: Account for Performance of the Fishery

Managers and scientists should regularly evaluate management performance in adhering to the ACL and preventing overfishing.

The buffer serves as an accountability measure - managers and scientists should adjust the size of the buffer between the OFL and ACL depending on whether the fishery adheres to the ACL and achieves the management goals.

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How to Develop ACLs for Data-Poor Stocks?

- Catch limits should be established for ALL fish populations – not just the data rich ones.
- The ACL development process recommended by the Working Group can be used for data poor stocks as well.
- The Working Group made recommendations for how to develop OFLs (and ACLs) when data are limited.
- Don't "solve" the problem of data poor stocks by grouping fish populations of differing vulnerabilities into assemblages
- If no time series data are available, the fishery should be managed at as low a catch level as possible until data are available.

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How to Develop ACLs for Data-Poor Stocks?

- The Working Group discussed a straightforward method for estimating sustainable catch levels when at least limited time series data are available (called The Windfall/Sustainable Yield Ratio method).
- The approach relies on a time series of catch levels, some basic life history characteristics and expert opinion on the current level of depletion of the population relative to the unexploited biomass level or biomass needed to support MSY.
- The average catch is discounted by the difference between the unexploited biomass level and MSY biomass level. The discounted average catch level can then be used to establish the OFL.

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Setting OFL for Assemblages

- Species grouped into assemblages may not have similar measures of vulnerability or uncertainty.
- This means the more vulnerable stocks will be at greater risk of depletion if fishing level is based on the less vulnerable stocks.
- PSA vulnerability analysis should be performed on all stocks individually.
- If the catches of individual stocks in the assemblage cannot be determined, the buffer between OFL and ABC should be increased to prevent overfishing and to account for this uncertainty.

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