



Report on Evaluation of Effectiveness of Stock Rebuilding Plans in the United States

National Academy of Sciences

MSA Stock Rebuilding Requirements

- Senator Snowe and Representative Frank requested NOAA to fund a study by NAS to regarding MSA rebuilding requirements

MSA Stock Rebuilding Requirements

- 85 Stock complexes in US were designated as overfished triggering rebuilding plans
- rebuilding plans were implemented for 79 stocks; 25 were rebuilt (5 autocorrected)
- in general, stocks under rebuilding plans increased in abundance and fishing mortality was reduced

NRC Findings

MSA Stock Rebuilding

- Appears to be a mismatch between policy makers expectations for scientific precision and the inherent limits of science due to data limitations and the complex dynamics of ecosystems
- Mixed outcomes of rebuilding highlighted social and economic concerns, especially for overfished stocks taken in mixed stock fisheries

NRC Findings

MSA Stock Rebuilding

- HCRs where F is promptly decreased as stocks decline in abundance (“hockey stick”) have lower chance of becoming overfished and provide an approach for rebuilding
- Fishing mortality reference points are more robust to uncertainty than biomass reference points

NRC Findings

MSA Stock Rebuilding

- Rebuilding plans focusing on meeting F targets rather than exact schedules for attaining biomass targets may be more robust to scientific uncertainty, natural variability and ecosystem considerations and have lower social and economic impacts

NRC Findings

MSA Stock Rebuilding

- Stock rebuilding depends on ecological and environmental conditions (climate change) in addition to fishing induced mortality
- F based rebuilding strategies that reduce F below F_{msy} for long periods will rebuild age structure of the stock
- When stocks fail to rebuild, keeping $F \ll F_{msy}$ may forego less yield and have fewer social and economic impacts than rules that would require even stricter catch limits to achieve B targets

NRC Findings

MSA Stock Rebuilding

- Data poor stocks (no analytical assessment) make developing yield based catch limits very difficult; input controls on F may be more defensible
- Retrospective reviews of socio-economic impacts of rebuilding plans are rare, but would help in refining rebuilding plans and ameliorate consequences of such actions

Questions?

