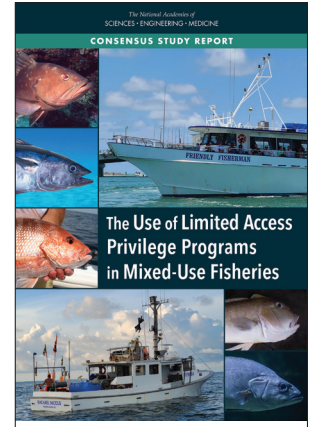




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The Use of Limited Access Privilege Programs in Mixed-Use Fisheries



A central goal of U.S. fisheries management is to control the exploitation of fish populations so that fisheries remain biologically productive, economically valuable, and socially equitable. Although the Magnuson-Stevens Fishery Conservation and Management Act led to many improvements, a number of fish populations remained overfished and some fisheries were considered economically inefficient. In response, Congress amended the Act in 2006 to allow additional management approaches, including Limited Access Privilege Programs (LAPPs, often called Individual Fishing Quotas or IFQs) in which individuals receive a permit to harvest a defined portion of the total allowable catch for a particular fish stock.

This report, which was mandated by Congress, examines the impacts of LAPPs on mixed-use fisheries, defined as fisheries where recreational, charter, and commercial fishing sectors target the same species or stocks. The report offers recommendations for NOAA’s National Marine Fisheries Service (NMFS) and the Regional Fishery Management Councils (the Councils) who oversee and manage federally regulated fisheries. For each of the five mixed-use fisheries included in the report (see Table 1), the committee examined available fisheries data and analyses and collected testimony from fishery participants, relevant Councils, and NMFS regional experts through a series of public meetings.

Table 1. Fisheries studied in this report

Mixed-Use Fisheries Studied	Fishery Management Council
Red Snapper	Gulf of Mexico Fishery Management Council
Grouper and Tilefish	
Wreckfish	South Atlantic Fishery Management Council
Golden Tilefish	Mid-Atlantic Fishery Management Council
Bluefin Tuna (a Highly Migratory Species)	Secretary of Commerce

Progress in Meeting Goals of LAPPs

Under the MSA, Councils must periodically review LAPPs established after January 12, 2007, assessing progress towards meeting the goals of each LAPP. The 5-year reviews of the red snapper and grouper-tilefish LAPPs were moderately to highly successful in reducing overcapacity and mitigating derby fishing conditions. The use of individual bycatch quotas in the bluefin tuna program was successful in reducing catch and discards, but did not meet the goal of maintaining the profitability of the longline fleet (likely due to global market reasons unrelated to the bycatch program).

The review of the golden tilefish program found that, since program implementation, overcapacity was reduced, derby-style fishing subsided, and wholesale prices improved, generally meeting the program goals. The 2019 wreckfish review found relative success in achieving its objectives; however, given the very small number of vessels and people involved, NMFS's rules on confidentiality limited the data available to assess economic and social objectives.



Regional fishery management councils and NMFS must consider the impacts of LAPPs and other measures to prevent overfishing on both commercial and recreational marine fishing interests. A commercial reef fish longliner at Madeira Beach, FL. SOURCE: Steven Murawski

Social and Economic Effects for Commercial Participants

Evaluating the effects of LAPPs in mixed-use fisheries requires multiple disciplines spanning fisheries ecology and the social sciences. Because LAPPs are mainly designed to address economic goals, economics looms large but other social sciences such as anthropology are central to social impact assessment. The committee evaluated the LAPPs in relation to several expected or commonly observed economic and social impacts.

The Race to Fish

More traditional approaches to fishery management such as limited seasons or trip-by-trip quotas can result in a “race to fish” where fishers try to harvest as much as possible before a season has ended or a total allowable catch is reached. The committee found strong evidence for a reduced race to fish in the red snapper LAPP. Evidence is also strong in the related grouper-tilefish IFQ program that, despite differences among the many species involved, the race to fish was reduced. Evidence of impact on the race to fish is weak for wreckfish, but strong for golden tilefish. Reducing the race to fish was not a goal in the longline sector of the bluefin tuna fishery, where the LAPP applies only to bluefin tuna bycatch.

Safety at Sea

Because LAPPs allow fishers to decide when to catch fish rather than forcing them into competitive and often short seasons, they can avoid bad weather and other potential safety hazards. Some evidence from risk-exposure and before-and-after comparisons show positive changes in safety (i.e., reduction in the number of accidents) in the LAPP fisheries considered in this study. Inference and surveys of participants, where they exist, generally show perceptions of improved safety at sea as well.

Prices and Profitability

A number of studies indicate that LAPPs can increase prices by allowing fishers to time their catches with market demand and avoid market gluts, improving product quality (by not racing to fish) and fetching a premium (by landing more fresh fish that otherwise would have to be frozen under derby conditions). Of the LAPPs with a goal to increase fish prices (red snapper, grouper-tilefish, and golden tilefish), all three had evidence of price increases. The quota for bluefin tuna was not designed to increase prices. The evidence for wreckfish was not publicly available due to confidentiality restrictions.

Effort Reduction and Consolidation

LAPPs are expected to reduce total fishing effort and change industry structure. Consolidation refers to changes in industry structure where catch, boat ownership, and/or quota holdings become more concentrated among fewer vessels, individual owners, and/or fishing firms. There was some evidence of consolidation in each of the four IFQ fisheries in this study. Consolidation was not considered an issue for the bluefin quota system. In most instances, evaluations lack statistical control of counterfactuals, and in some it is difficult to accurately identify the entities that participate in owning, leasing, and using quota shares. This is a perceived problem in the red snapper and grouper-tilefish programs in the Gulf of Mexico.

Labor and Employment

If the LAPP creates conditions for reduction in the number of boats and/or trips and other changes linked to greater efficiency, one can expect effects on the number and character of jobs at sea and on land, the nature of work, and conditions of employment. Studies have shown both positive and negative outcomes for crew from fewer vessels participating over longer seasons

and with possible increases in the unit value of catch, affecting wages and employment.

No information was available on labor and employment shifts due to LAPPs for the wreckfish, golden tilefish, and Atlantic bluefin tuna programs. However, special efforts were made for the two Gulf of Mexico LAPPs to survey shareholders, captains, and crew and to use ethnographic methods in selected fishing communities. There was evidence of some decline in crew sizes and the proportion of trip revenue afforded to crew in the traditional “lay” or share system of payment, but mixed results on income and job satisfaction.

Social and Economic Effects on Recreational Fishery Stakeholders

Evaluating the impacts of LAPPs in mixed-use fisheries requires careful consideration of the nature of recreational and commercial fishery management, as well as how LAPPs have altered this management. All of the mixed-use fisheries that include LAPPs for the commercial sector and are analyzed herein have parallel management programs using regulatory controls for the recreational sectors. Examining potential sources of conflict such as overlap of recreational and commercial fishing effort in space and time, the committee finds no evidence for direct negative effects of LAPPs on private recreational anglers or recreational for-hire providers. There may be indirect effects related to the fact that the recreational sectors of some of the mixed-use fisheries have had difficulty keeping recreational catches within the limit established for that sector, whereas the commercial sector is better able to keep to its limit.

Recommendations for Existing and Future LAPPs

The report offers recommendations designed to address the economic, social, and ecological impacts of LAPPs. A subset of those recommendations are highlighted below.

Impacts to Recreational Fisheries

A major finding of this study is that there is little if any direct impact of LAPPs in the commercial sectors on the recreational sector of the mixed-use fisheries. However, the creation of a LAPP could trigger additional fishing effort moving into other sectors. LAPPs may be viewed as problematic to efforts to expand recreational access to the total allowable catch for a fishery because the

system creates a new social category, quota shareholders, potentially shifting the power structure of decision-making. In addition, apparent increases in the accountability of the commercial sector due to incentives for higher compliance associated with LAPPs may highlight accountability problems in the recreational sector and increase pressure for management improvements. Additional tools are needed to improve accountability across sectors.

Recommendation: Councils should conduct reviews of their management of both private recreational and for-hire fisheries for species shared under LAPPs in mixed-use fisheries and propose and implement reforms that foster accountability while enhancing fishing experiences and opportunities for heterogeneous groups of anglers. To foster comparison between sectors, review guidelines like those that exist for the commercial sector should be established for each sector (e.g., including goals, objectives, and measurable outcomes).

Impacts to Commercial Participants

LAPP design features, such as initial allocation, have enduring effects. Therefore, in a series of committee recommendations, Councils are advised to put more effort, via data collection, research, and deliberation, into the development and design of new LAPPs and reform of existing ones, building upon known issues such programs have in achieving both efficiency and equity.

Recommendation: The Councils and NMFS, in planning new LAPPs in mixed-use fisheries, should develop a broad range of options for the initial allocation of quota, including but going beyond the practice of limiting eligibility to existing vessel owners or permit holders with historic records (especially if overcapitalization is not a goal and shares are to be given for free). Where available, data on the contributions of hired captains and crew to the historic performance of vessels should be collected and used to assess the potential of awarding shares to them as well as vessel owners. If such data are not available, the Councils should consider delaying the creation of a LAPP for a limited time to conduct a rapid assessment of crew contributions that would inform initial allocations.

Impacts to Fishing Communities

LAPPs can have discernable and sometimes negative effects on communities through changes such as increased social conflict, diminished employment, or

loss of product for processing plants. However, there is a paucity of data on the community dimensions of the fisheries studied. This gap presents a major challenge to evaluating the effects of LAPPs on the broader community engaged in the mixed-use fisheries.

Recommendation: NMFS and the Councils should develop explicit measures to associate LAPP fishing activity, as well as fishing activities of the for-hire and recreational sectors, with fishing communities represented in the NOAA Social Indicators data, both in the baseline (pre-LAPP) period and in subsequent periods. These measures should capture multiple community connections (e.g., residency, vessel homeport, landings, and support services for recreational and commercial fisheries).

Data Collection and Future Research

Because the committee encountered major gaps in the kinds of information needed to address its tasks, a large set of recommendations focused on data needs, some of which overlap with the sector-specific recommendations above. For fisheries where LAPPs may be contemplated, given the likelihood of having to make significant trade-offs, there is a pressing need for additional economic and social data, including pre-implementation baselines and concurrent examination of the LAPP in relation to other sectors of the fisheries.

Recommendation: For fisheries where LAPPs may be contemplated, Councils and NMFS should establish longitudinal data collection protocols for additional

economic and social information, including pre-implementation baselines. These protocols should collect ongoing, and where possible, retrospective data prior to LAPP implementation and continue thereafter, with minimal disruptions to the survey protocols. At a minimum these data collection efforts should focus on social and economic data at the vessel level (e.g., revenues, input use, costs, ownership, community affiliation) including detailed demographic and economic data on crew, captains, vessel owners, and shareholders. Additionally, all data sets should cross reference each other to facilitate linking by including the appropriate identifiers.

Interdisciplinary Impact Assessment

Fisheries policy issues with major economic, social, and ecological dimensions require interdisciplinary conceptualizations and methods for research. Finding ways to integrate divergent disciplinary perspectives and qualitative and quantitative data more effectively could lead to new insights, fruitful hypotheses, and more informed and improved decision making.

Recommendation: NMFS and the Councils should encourage interdisciplinarity and better integrate qualitative and quantitative data to generate hypotheses and discern and test policy impacts. These activities and discussions can happen within the multidisciplinary Scientific and Statistical Committees of the regional councils as well as within the regional science centers of the NMFS.

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For More Information . . . This Consensus Study Report Highlights was prepared by the National Academies of Sciences, Engineering, and Medicine based on the Consensus Study Report *The Use of Limited Access Privilege Programs in Mixed-Use Fisheries* (2021). The study was sponsored by the National Oceanic and Atmospheric Administration. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. Copies of the Consensus Study Report are available from the National Academies Press, (800) 624-6242; <http://www.nap.edu> or via the Ocean Studies Board web page at <http://www.nationalacademies.org/osb/ocean-studies-board>

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