



ECONOMIC ANALYSIS OF THE
PROPOSED RULE TO
AMEND COMMERCIAL FISHING
REGULATIONS IN BISCAYNE
NATIONAL PARK

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prepared for:

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SUMMARY OF ANALYSIS

PURPOSE OF ANALYSIS

The National Park Service (NPS) is in the process of issuing a rule (proposed rule) to revise its regulations regarding commercial fishing in Biscayne National Park (the “park”). There are four key elements of the proposed rule:

- (1) Non-transferable lifetime permit system that would phase out commercial fishing in the park as permits expire over time;
- (2) Prohibition of the setting of commercial lobster or crab traps in identified Coral Reef Protection Areas (CRPAs);
- (3) Shrimp trawler inspections to ensure that trawl gear complies with state law; and
- (4) Prohibition of commercial fishing for sponge and tropical ornamental marine life species.

As part of the rulemaking process, this report presents a cost-benefit analysis consistent with Executive Order (E.O.) 12866, “Regulatory Planning and Review.” It also presents an analysis of the potential impacts on small entities, as required by the Regulatory Flexibility Act (RFA), as amended by the 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA) (5 U.S.C. 601 et seq.). Below is a summary of the findings of each analysis.

COST-BENEFIT ANALYSIS

This analysis follows Office of Management and Budget (OMB) guidance to estimate and present costs and benefits of the proposed rule and alternatives, which are measured as changes in producer and consumer surplus. Impacts are analyzed for the study area, which is comprised of the park and surrounding areas, over a 20-year study period (2016 through 2035).

Costs. This analysis finds that costs of the proposed rule will primarily stem from requirements for non-transferable commercial fishing permits and the prohibition of commercial lobster and crab trap placement in CRPAs. Rule costs will primarily be borne by commercial fishers. Because the response of fishers to fishing restrictions could vary, costs to fishers are estimated using two potential scenarios:

- Scenario 1 assumes that fishers who are not able to fish within the park due to the proposed rule forego their fishing trips. The economic costs of the proposed rule under this scenario would be the associated foregone producer surplus, estimated as lost fishing profits.
- Scenario 2 assumes that fishers who are not able to fish within the park due to the proposed rule expend additional effort to maintain their catch by fishing outside of the park. Under this scenario, the economic costs of the proposed rule would be the added costs incurred by the fishers to maintain their catch.

The analysis suggests that annualized costs to commercial fishers may range from \$220,000 to \$260,000, depending on the response of commercial fishers to the proposed rule and the discount rate chosen for the analysis. Of these total costs, approximately 50 percent are anticipated to be associated with impacts to invertebrate fishers (excluding shrimp fishers) related to the rule element regarding prohibition on commercial lobster and crab traps in CRPAs and 50 percent are related to the non-transferable permit system rule element. Other proposed rule elements are not expected to result in incremental costs.

Benefits. This analysis finds that the benefits of the proposed rule will accrue primarily to recreational visitors to the park and to NPS. Recreational visitors to the park may benefit from reduced commercial fishing vessel traffic, reduced degradation of coral reef habitat, and the potentially increased abundance of marine life within the park. The improved recreational experiences may benefit the approximately 473,000 annual visitors to the park and has the potential to result in increased visitation.

NPS' marine debris removal program may also benefit if commercial fishing and the generation of new marine debris declines within the park. Since its inception in 2007, program expenditures have averaged \$69,000 annually.

The analysis concludes that the proposed rule is unlikely to generate costs exceeding \$100 million in any year as quantified costs of the rule are approximately \$0.25 million annually.

SMALL ENTITY IMPACT ANALYSIS

In accordance with the RFA/SBREFA, this analysis finds that the proposed rule will affect the current commercial fishers operating within the park (approximately 75) by requiring the purchase of a special park use permit for commercial fishing. Of these, approximately 25 crab and lobster fishers in the park face additional restrictions on fishing areas. The estimated upper bound annualized costs for these fishers ranges from \$4,800 to \$5,200 in reduced profits per fisher. Appendix A presents the Initial Regulatory Flexibility Act analysis for the proposed rule.

SECTION 1. INTRODUCTION

The following section is an abridged version of text appearing in the Biscayne Fishery Management Plan Environmental Impact Statement (FMP/EIS).¹

Located in southeastern Florida, Biscayne National Park (the “park”) encompasses approximately 173,000 acres (~270 square miles), of which 95 percent are marine. Within the park’s boundaries exists a diversity of marine habitats, including seagrass meadows, hardbottom communities, expansive coral reefs, sand and mud flats, and mangrove fringes. Through provision of prey availability and shelter, these areas provide habitat for numerous species of ecologically important fish and macro-invertebrates.

With minor exceptions, fishing in the park follows State of Florida Fishing Regulations, as determined by the Fish and Wildlife Conservation Commission (FWC). Commercial fishing occurs in both bay and ocean waters, and targets numerous species. The most commercially important species are shrimp, other invertebrates (e.g., spiny lobster, blue crab, and stone crab), and finfish (baitfish and members of the snapper/grouper complex; in particular yellowtail snapper).

Recreational fishing is among the most popular activities in the park. Recreational fishing targets species such as bonefish, snook, tarpon, permit, blue crab, stone crab, snapper, grouper, grunt, barracuda, spadefish, spiny lobster, and triggerfish. Other recreational activities include snorkeling, scuba diving, boating, canoeing, kayaking, windsurfing and swimming.

1.1 PURPOSE OF THIS ANALYSIS

The National Park Service (NPS) is in the process of issuing a rule (proposed rule) to revise its regulations regarding commercial fishing in the park.² These changes include some of the elements of the Preferred Alternative (Alternative 4) identified in the FMP/EIS.³ This report presents a regulatory analysis of the impacts of the proposed rule in order to assist NPS in meeting the requirements of Executive Order (E.O.) 12866, “Regulatory Planning and Review,” which requires Federal agencies to assess the potential costs and benefits of proposed regulatory actions. It also addresses the requirements of the Regulatory Flexibility Act/Small Business Regulatory Enforcement Fairness Act (RFA/SBREFA), which requires Federal agencies to consider the potential impacts of any regulatory actions on small entities.

¹ Biscayne Fishery Management Plan EIS. National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/ EIS). U.S. Department of the Interior.

² National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. December 5, 2014 draft.

³ Biscayne Fishery Management Plan EIS. National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/ EIS). U.S. Department of the Interior.

1.2 STRUCTURE OF THE REPORT

This report is organized as follows:

- Section 1 describes the elements of the proposed rule;
- Section 2 discusses the framework for the cost-benefit analysis;
- Section 3 describes the baseline conditions against which all costs and benefits will be compared;
- Section 4 presents the cost-benefit analysis of the proposed rule; and
- Appendix A presents an analysis of the potential impacts of the proposed rule on small entities.

1.3 STATEMENT OF NEED FOR THE PROPOSED ACTION

E.O. 12866 indicates that Federal agencies should only promulgate regulations that address a compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In this case, NPS is promulgating regulations to address the environmental status of the park. The proposed rule states that

...collected data suggest that fisheries resources in the park have declined from historical levels as a result of increasing human population and related fishing pressure. The preponderance of the available data suggests that numerous fish species in the park are under considerable fishing pressure and in some cases are regionally overfished or subject to overfishing. In tandem with increased numbers of recreational and commercial fisherman harvesting fish and invertebrates from park waters, there has been considerable improvement of fishing efficiency due to the development and continued improvement of technology such as fish finders, depth indicators, global positioning systems, improved vessel and gear design, increased engine horsepower, and radio communications. This has likely compounded the negative impacts on fishery resources in [the park].⁴

The purpose of the proposed rule is to seek “substantial improvement in the status of fishery resources in the park and a reduction in fishing-related impacts to habitat.”⁵

1.4 DESCRIPTION OF THE PROPOSED RULE

NPS is proposing four key changes to commercial fishing regulations in the park. Below, each proposed regulatory change is described in more detail. The following section is an abridged version of text appearing in the proposed rule.⁶

⁴ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. December 5, 2014 draft.

⁵ Ibid.

⁶ Ibid.

Lifetime Non-Transferable Special Park Use Permit System for Commercial Fishing

The proposed rule would establish a lifetime, special park use permit system for commercial fishing in the park. The purchase of NPS-issued permits would be required to fish commercially in the park, and permits would be non-transferable.⁷ The price of the permits would be set to recover costs incurred by NPS in administering the special park use permit system. The permit requirement would not apply to commercial fishing charters that provide visitor services; it would only apply to those who fish for the purpose of sale or barter. The non-transferable commercial fishing permits would expire under any of the following circumstances:

- The permittee fails to renew the permit on time;
- The permittee fails to land any catch in the park in the previous year; or
- The permittee operates a shrimp trawler that fails three inspections.

Because permits would be non-transferable, commercial fishing would be expected to be phased out in the park over the long term.

Prohibition of Setting Commercial Lobster or Crab Traps in Identified Coral Reef Protection Areas

To protect coral reef habitat, the proposed rule would prohibit setting commercial lobster or crab traps in Coral Reef Protection Areas (CRPAs). FWC and NPS staff, or other authorized personnel, would record lobster or crab traps within CRPAs and could seize, impound, and remove these traps from these areas. The CRPAs would be identified on a map available at the park's Visitor Center and on the park's website.

Shrimp Trawler Inspections

Under the proposed rule, shrimp trawlers would be subject to periodic and unannounced inspections to ensure that trawl gear complies with FWC Rules Chapter 68B-31,⁸ including horizontal beam length and finger bar spacing. These inspections would help ensure that trawl gear minimizes trawl-related habitat damage.

⁷ To be eligible for a NPS special park use permit, individuals would be required to have met the minimum landing qualifier for landings within the park in one of the previous three years. The minimum landing qualifiers would be a minimum value or amount of fish or invertebrate caught in a single year within the park, as determined by NPS. Applicants who are denied a permit based on failing to meet minimum landing qualifiers could appeal to the Southeast Regional Director of NPS. For a description of the relationship between the Park and FWC with respect to fisheries management activities, please refer to the FMP/ EIS.

⁸ See <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-31>.

Prohibition of Commercial Fishing for Sponge and Tropical Ornamental Marine Life Species

The proposed rule would prohibit commercial fishing for (i) “sponge,” as defined in FWC Rules Chapter 68B-28⁹ and (ii) “tropical ornamental marine life species,” as defined in FWC Rules Chapter 68B-42.¹⁰

1.5 REGULATORY ALTERNATIVES

NPS considered regulatory alternatives to the proposed rule, which are detailed in the FMP/EIS.¹¹ Several alternatives considered in the FMP/EIS contain alternate versions of the elements contained in the proposed rule, as follows:

- Under Alternative 2, all commercial fishers would be required to obtain a limited-entry, special use permit from the park Superintendent. The permit would be transferable and would require annual renewal for each year in which landings are reported. Shrimp trawlers would be subject to inspection, as under the proposed rule. Additionally, the park would explore the feasibility and effectiveness of establishing a regulation to restrict traps from hardbottom habitat.
- Alternative 3 expands upon Alternative 2 primarily by making permits non-transferable for the first five years and establishing CRPAs to delineate coral reef habitat where lobster and crab traps would be prohibited.
- Under Alternative 5, the targets for species recovery are higher than under the Alternative 4, from which the proposed rule derives. However, the specific park management measures affecting commercial fishers would be the same as the requirements of the proposed rule.

SECTION 2. FRAMEWORK FOR COST-BENEFIT ANALYSIS

Under guidance from the Office of Management and Budget (OMB) and in compliance with E.O. 12866, Federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action. In the context of the proposed regulatory actions, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of the regulations. OMB defines opportunity cost as “the preferred measure of cost of the resources used, or the benefits foregone, as a result of the regulatory action.”¹²

⁹ See <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-28>.

¹⁰ See <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-42>.

¹¹ For a full description of the alternatives considered, please refer to the Biscayne Fishery Management Plan EIS. National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/ EIS). U.S. Department of the Interior.

¹² U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

Economists generally characterize opportunity costs in terms of changes in producer and consumer surplus (i.e., social welfare impacts) in affected markets.¹³ The objective of cost-benefit analysis is to measure the costs imposed on society (losses in social welfare) and the benefits to society (gains in social welfare).

To compare costs and benefits for a proposed action, costs and benefits will ideally be presented in monetary (i.e., dollar) units. However, E.O. 12866 recognizes that in some cases it may be infeasible to monetize all the potential costs and benefits associated with a proposed regulatory change. In such cases, OMB Circular A-4 allows Federal agencies to present relevant quantitative information in physical units or to present information qualitatively.

This analysis also considers the potential distributional impacts of the rule, i.e., whether the proposed action may unduly burden a particular group or economic sector. For example, while the proposed actions may have a small cost relative to the regional economy, individuals employed in a particular sector of the economy may experience relatively greater costs.

The sections that follow describe the baseline for the analysis, then identify, describe, and where possible, measure, the changes in social welfare associated with the proposed rule and its alternatives as compared to baseline conditions.

SECTION 3. DESCRIPTION OF BASELINE CONDITIONS

This section describes the baseline conditions for fishing activities in and current uses of the park. OMB defines “baseline” as the “best assessment of the way the world would look absent the proposed action.”¹⁴ In other words, the baseline includes the existing regulatory and socio-economic burden already imposed on entities that may be affected by the proposed rule.¹⁵ In this case, these entities are primarily commercial fishers, consumers of commercially sold marine species, recreational park users, and NPS. For the purpose of this analysis, all commercial fishers in the park are assumed to be in compliance with existing Federal and State regulations affecting their activities.

¹³ For additional information on the definition of “surplus” and an explanation of consumer and producer surplus in the context of regulatory analysis, see: Gramlich, Edward M., A Guide to Benefit-Cost Analysis (2nd Ed.), Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. Environmental Protection Agency, Guidelines for Preparing Economic Analyses, EPA 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

¹⁴ U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, accessed at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

¹⁵ Relevant to the FMP/EIS, the baseline is represented by the “no action alternative” (Alternative 1).

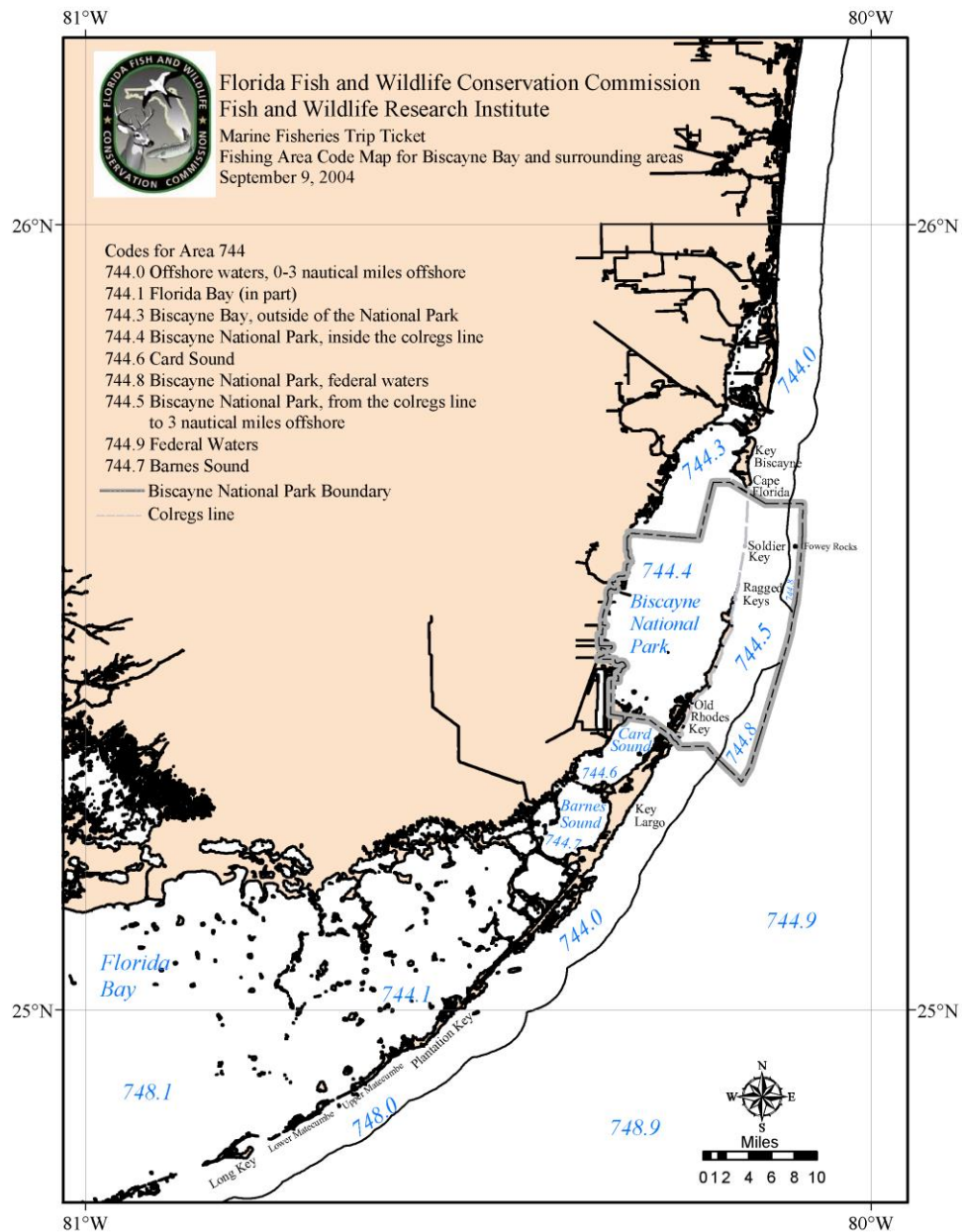
3.1. COMMERCIAL FISHING ACTIVITY WITHIN AND AROUND BISCAYNE NATIONAL PARK

The FWC requires licensed wholesale dealers to report the area where landings occur and attributes of the catch in defined Trip Ticket Areas. As shown in Exhibit 3-1, the FWC Area 744 includes the park as well as surrounding waters. For the purposes of this analysis, Area 744 is referred to as the “study area.” Three zones within Area 744 encompass the park itself:

- Zone 744.4 includes the bay portion of the park;
- Zone 744.5 is located on the ocean side of the barrier islands, and includes reef habitats; and
- Zone 744.8 is a small zone at the edge of the park, which covers Federal waters.

For each zone within Area 744, FWC provided annual data from 2003 to 2013 on the number of commercial fishers, the volume of fish landings, and the dockside value of those landings. Because of the relatively small number of fishing entities, FWC provided data that were aggregated for their standard groupings of commercial species: finfish, shrimp (including bait shrimp and food shrimp), and other invertebrates (including blue crab, stone crab, spiny lobster, and excluding shrimp). These three categories encompass all commercial bait and food landings within the study area.

EXHIBIT 3-1. FWC COMMERCIAL FISHING AREAS AND ZONES IN SOUTH FLORIDA



Source: Florida Fish and Wildlife Conservation Commission. Available at:

http://myfwc.com/media/1623003/Biscayne_Bay_fishing_areacodes.pdf.

Exhibits 3-2 through 3-5 show for the Trip Ticket Areas covering the park (Zones 744.4, 744.5, and 744.8), the annual commercial fishers, fishing trips, weight of landings, and value of landings from 2003 to 2013 for finfish, invertebrates (excluding shrimp), and shrimp.¹⁶ On average during this time period, approximately 75 commercial fishers were active in the park. This number fluctuated over the study period from high of 95 in 2003 to a low of 56 in 2008 then rising through 2011 before falling to 70 by 2013, suggesting a potentially declining trend. The number of annual trips recorded by these fishers ranged from approximately 1,500 to 3,000 trips over this time period. These trips account for approximately 18 percent of all trips taken in Area 744. Of the trips within the park, approximately 51 percent were fishing for shrimp, 15 percent were fishing for finfish, and 33 percent were fishing for invertebrates (excluding shrimp), on average during the time period. For comparison, FWC reports that approximately 168,540 commercial fishing trips were made in Florida in 2014.¹⁷

Recorded landings from park zones (Zones 744.4, 744.5, and 744.8) ranged from 200,000 to almost 600,000 pounds. During this period, dockside revenue averaged slightly greater than \$1.1 million dollars (2014\$) annually. This comprised approximately 14 percent of the average annual value of the volume landed in Area 744 (nearly \$9 million dollars), and 13 percent of the average annual weight (approximately 5.6 million pounds). Landings in all of Florida in 2014 were approximately 72 million pounds, valued at over \$216 million.¹⁸

While invertebrates (excluding shrimp) typically comprised 20 percent of total landed volume within the park during recent years, invertebrates (excluding shrimp) comprised 38 percent of the total landed value due to their relatively high sales price per pound.¹⁹

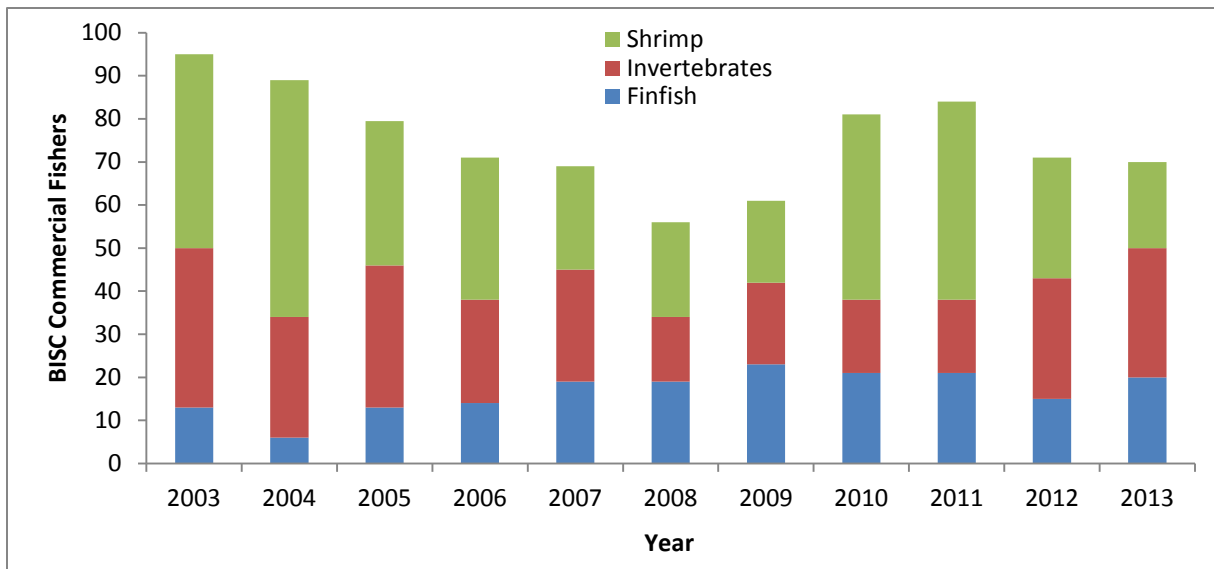
¹⁶ For each zone within Area 744, FWC provided annual data from 2003 to 2013 on the number of commercial fishers, the volume of fish landings, and the dockside value of those landings. Because of the relatively small number of fishing entities, FWC provided data that were aggregated for their standard groupings of commercial species: finfish, shrimp (including bait shrimp and food shrimp), and other invertebrates (including blue crab, stone crab, spiny lobster, and excluding shrimp). Florida Fish and Wildlife Conservation Commission, data provided on November 25, 2014. All values are expressed in 2014 dollars, using the GDP implicit price deflator where appropriate. Bureau of Economic Analysis. 2015. "Table 1.1.4. Price Indexes for Gross Domestic Product." Released January 30. Available at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=4>. Accessed January 30, 2015.

¹⁷ Florida Fish and Wildlife Conservation Commission (FWC). Marine Fisheries Information System. 2014 Annual Landings Summary. Accessed February 4, 2015 http://myfwc.com/media/2641800/sumstate_14.pdf.

¹⁸ Ibid.

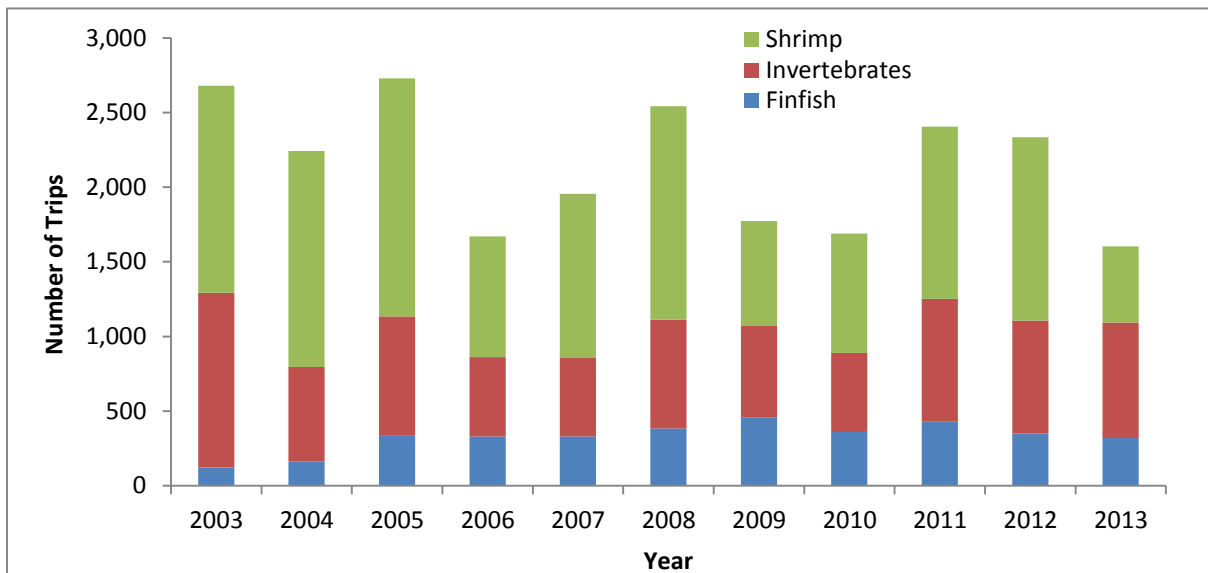
¹⁹ This is particularly true in recent years, when the price of spiny lobsters has increased from around \$4 per pound in the beginning of the 2012/2013 season to approximately \$18 per pound by the end of the season. Clark, C. 2013. Keys lobster fishermen drop traps for opening of commercial season. Miami Herald. Accessed February 4, 2015 <http://www.miamiherald.com/sports/outdoors/article1953843.html>.

EXHIBIT 3-2. NUMBER OF COMMERCIAL FISHERS WITHIN BISCAYNE NATIONAL PARK, 2003 TO 2013



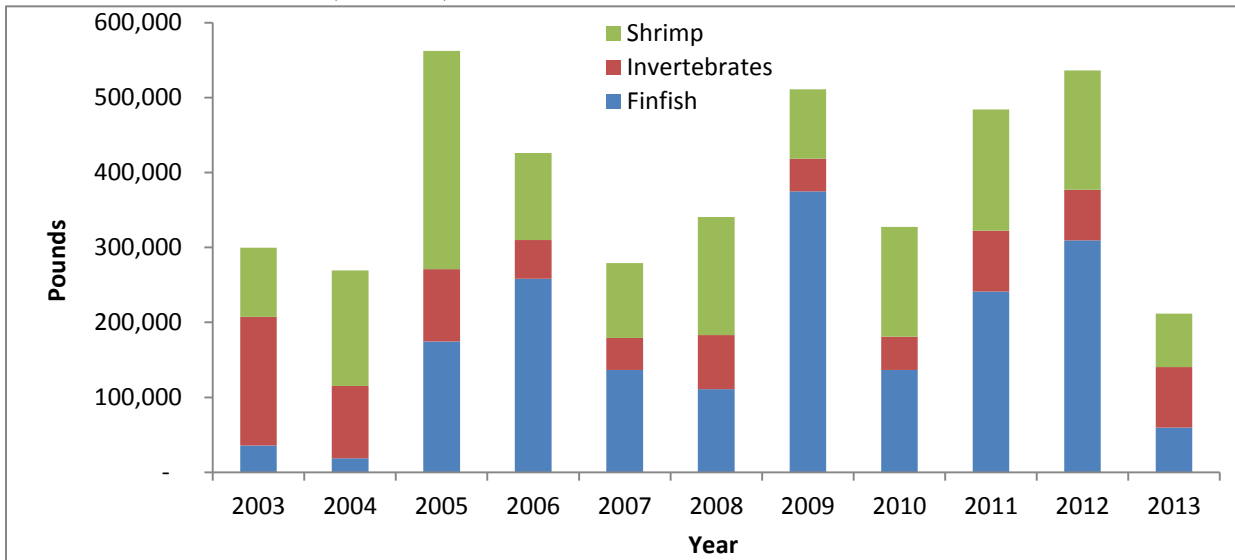
- Source: Number of commercial fishers in Zones 744.4, 744.5, and 744.8. Florida Fish and Wildlife Conservation Commission, data provided on November 25, 2014.
- Notes: "Finfish:" All finfish. "Shrimp:" bait shrimp and food shrimp. "Invertebrates:" blue crab, stone crab, spiny lobster, and excluding shrimp. The number of 2005 shrimp fishers in the FWC data was miscoded. The value in the graph is the average value of the remaining years.

EXHIBIT 3-3. NUMBER OF COMMERCIAL FISHING TRIPS WITHIN BISCAYNE NATIONAL PARK, 2003 TO 2013



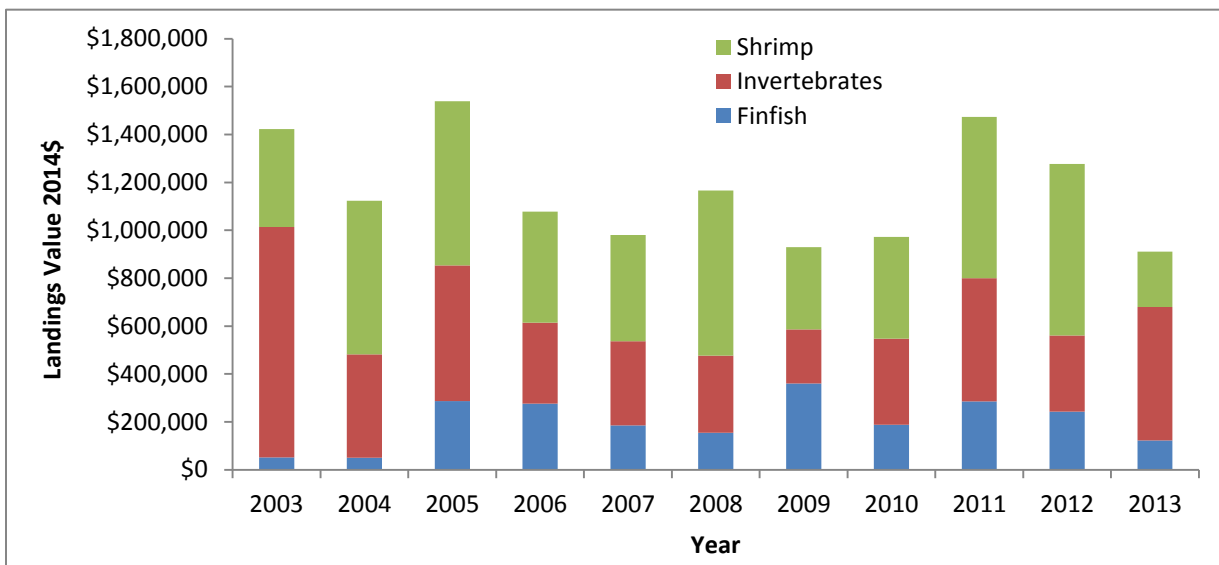
- Source: Number of commercial fishing trips in Zones 744.4, 744.5, and 744.8. Florida Fish and Wildlife Conservation Commission, data provided on November 25, 2014.
- Notes: "Finfish:" Number of recorded finfish trips. "Shrimp:" Number of recorded bait shrimp and food shrimp trips. "Invertebrates:" number of blue crab, stone crab, spiny lobster trips, excluding shrimp.

EXHIBIT 3-4. COMMERCIAL FISH LANDINGS BY VOLUME WITHIN BISCAYNE NATIONAL PARK, 2003 TO 2013 (POUNDS)



- Source: Volume of commercial fish landings in Zones 744.4, 744.5, and 744.8. Florida Fish and Wildlife Conservation Commission, data provided on November 25, 2014.
- Notes: "Finfish:" Volume of all finfish landings. "Shrimp:" Volume of bait shrimp and food shrimp landings. "Invertebrates:" Volume of blue crab, stone crab, spiny lobster landings, and excluding shrimp.

EXHIBIT 3-5. LANDINGS VALUE WITHIN BISCAYNE NATIONAL PARK 2003 TO 2013 (2014\$)



- Source: Value of commercial fish landings in Zones 744.4, 744.5, and 744.8. Florida Fish and Wildlife Conservation Commission, data provided on November 25, 2014.
- Notes: "Finfish": Value of all finfish landings. "Shrimp": value of all bait shrimp and food shrimp landings. "Invertebrates": value of blue crab, stone crab, spiny lobster landings, and excluding shrimp.

3.1.1 Applicable Commercial Fishing Regulations

FWC promulgated a series of regulations for saltwater commercial fishing in State waters, which comprise Chapter 68B of the State of Florida's Administrative Code. The regulations afford FWC a significant level of control/management over commercial fishing, and include species- and location-specific regulations. The regulations include a number of provisions that apply to activities within the park. FWC regulations apply to State waters, which extend three nautical miles off of the Atlantic Coast. Nearly 90 percent of the park area falls in State waters; the remaining areas outside of three nautical miles are Federal waters.

The central component of FWC's commercial fishing licensing is the Saltwater Products License (SPL), which is required for the harvest or sale of all saltwater products including fish, plants, and invertebrates. SPLs can be attained either by individual or by vessel. Current costs of an SPL for an individual fisher are \$50 for a resident and \$200 for a non-resident. Vessel SPLs are more costly, and range from \$100 to \$600. Commercial vessels are also required to have corresponding non-transferable registration, which must be renewed every one to two years. The distinction between recreational and commercial fishing is made based on several independent criteria, including exceeding the recreational bag limit for a given species, use of certain types of harvest gear, and possession of more than 100 pounds per person per day of species lacking bag limits.

Commercial harvest and sale of certain species requires an additional Restricted Species Endorsement (RSE). Restricted species relevant to the park include mackerel, grouper, snapper, tropical and ornamental marine life, blue crab, stone crab, spiny lobster, and shrimp. For some species the RSE carries an additional cost. Relevant to the park, the RSE for blue crab, spiny lobster, and stone crab costs \$125.²⁰ To qualify for an RSE, an individual or business must have evidence of \$5,000 in income from the sale of saltwater products during any one-year period or during the last three years. Alternatively, documentation of 25 percent of income during one of the past three years resulting from the sale of saltwater products is also sufficient.²¹

3.1.2 Ornamental Fish and Sponge Harvest

Existing FWC regulations limit harvest of ornamental fish species within the park. Specifically, in its section on "closed areas" for marine life harvest, FWC indicates that harvest of "tropical ornamental marine life species or any tropical ornamental marine plant within Biscayne National Park" requires a park-issued permit.²² With regard to sponge harvest, FWC regulations are stricter, prohibiting the harvest, landing, and possession of sponges from the park.²³ From 2003 to 2013, an average of \$934 in landings revenue was collected from ornamental marine life within the park. However,

²⁰ FWC. August 2013. Commercial Saltwater Regulations Magazine.

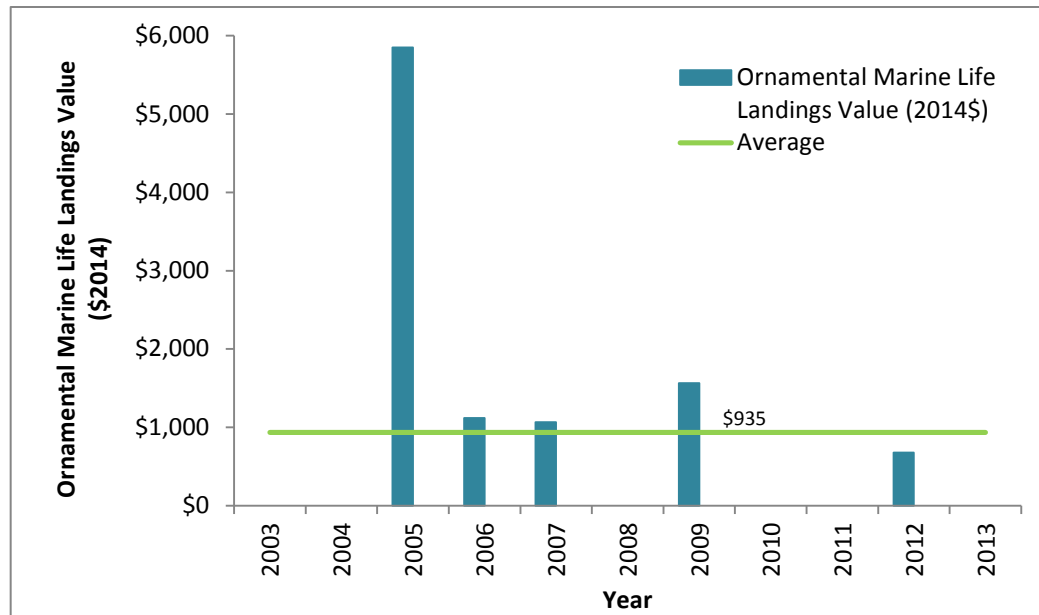
²¹ <http://myfwc.com/license/saltwater/commercial-fishing/qualifying-for-rs/>

²² Florida Administrative Code. Section 68B-42.0036 Closed Areas.

²³ Florida Administrative Code. Section 68B-28.008. Harvest of Sponges Prohibited in Biscayne National Park.

three of the last five years of data (2009 to 2013), no harvests were reported, as presented in Exhibit 3-6.

EXHIBIT 3-6. ORNAMENTAL MARINE LIFE LANDINGS VALUE WITHIN BISCAYNE NATIONAL PARK 2003 TO 2013 (2014\$)



Source: Florida Fish and Wildlife Conservation Commission, provided on November 25, 2014.

3.2 RECREATIONAL ACTIVITY IN BISCAYNE NATIONAL PARK

The park averaged approximately 473,000 recreational users annually over the past five years.²⁴ Popular recreational activities within the park include fishing, snorkeling, and glass boat tours. As stated in the proposed rule:

Recreational fishing is among the most popular activities in the park, and recreational users fish from land in canals within park boundaries and from boats in park waters. Recreational fishing targets species such as bonefish, snook, tarpon, blue crab, stone crab, snapper, grouper, grunt, barracuda, spadefish, spiny lobster, and triggerfish. In addition to recreational fishing, many park visitors use vessels to conduct recreational activities in the park, including swimming, snorkeling, SCUBA diving, sunbathing, and bird-watching.²⁵

A number of businesses serve these recreational users. As stated in the FMP/EIS, “Commercial visitor services include businesses that transport visitors by vessel for

²⁴ National Park Service (NPS). 2014. Annual Park Recreation Visitation (1904 - Last Calendar Year). U.S. Department of the Interior. Retrieved November 5, 2014 from <https://irma.nps.gov/Stats/Reports/Park>

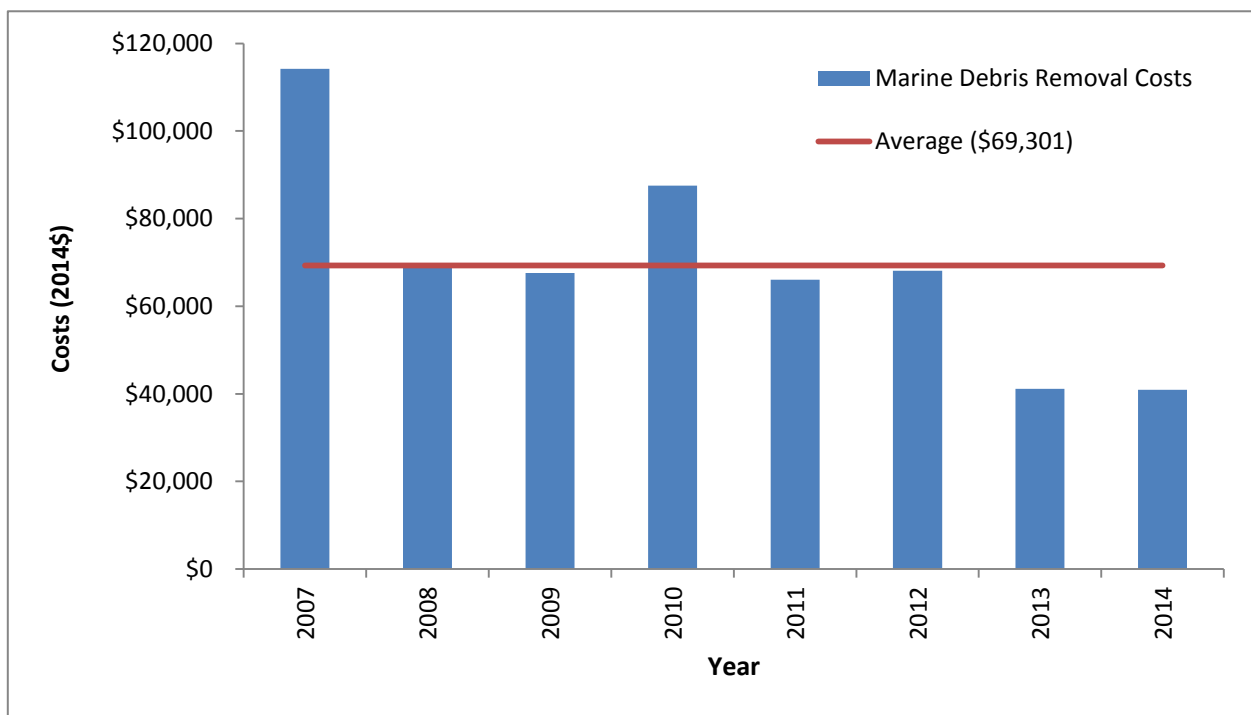
²⁵ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

fishing, snorkeling, SCUBA diving, parties, or sightseeing activities. Guided sport fishing primarily targets bonefish, tarpon, and other game fish in the flats on the east or west sides of the bay. Most offshore fishing guides are long-term area residents whose primary business or source of employment is catch-and-release charter fishing.”²⁶

3.3 NPS ACTIVITIES RELEVANT TO THE PROPOSED RULE

NPS administers a marine debris removal program. Under the program, a contractor removes marine debris from the park, including derelict traps and other commercial fishing gear. Since the start of the program in 2007, NPS has spent an average of approximately \$69,000 dollars annually (2014\$) to remove marine debris (Exhibit 3-7).

EXHIBIT 3-7: COSTS OF THE PARK’S MARINE DEBRIS PROGRAM



Source: Written communication, Staff Biologist, Biscayne National Park, October 31, 2014.

SECTION 4. COST-BENEFIT ANALYSIS OF THE PROPOSED RULE

This section presents analysis of the potential costs and benefits likely to result from the proposed rule.

4.1 METHODS FOR ESTIMATING COSTS AND BENEFITS OF THE PROPOSED RULE

As directed by OMB, this analysis focuses on estimating costs and benefits of the proposed rule, as measured by changes in producer and consumer surplus. The analysis

²⁶ Ibid.

assesses potential costs and benefits to four groups of entities that would likely be affected by the proposed rule:

- Commercial fishers;
- Consumers in the region who purchase finfish, invertebrates, or shrimp for consumption or bait;
- Recreational park users; and,
- NPS.²⁷

For each group of the potentially affected entities, the effects of the proposed rule and its alternatives are analyzed over a 20 year study period. The proposed rule is assumed to take effect in 2016 and is analyzed through 2035. This 20-year study period balances the need for capturing the longer-term effects of the proposed rule with the limitations of forecasting future conditions using current data and assumptions.

Key information sources for this analysis included the following:

- Data on commercial fisheries in the study area provided by FWC;
- Interviews with a number of active or former fishers in the park;
- The Biscayne National Park FMP/EIS;
- The proposed rule; and,
- Communications with NPS.

4.1.1 Methods for Estimating Costs (and Benefits) of the Rule Elements to Commercial Fishers

All four elements of the proposed rule have some potential to affect commercial fishers:

- The proposed rule element related to the special park use permit system for commercial fishing is anticipated to lead to a reduction, and ultimately, elimination, of commercial fishing in the park. However, because current fishers who have met minimum landings qualifications within the last three years would be eligible to receive permits initially, the impacts will occur when eligible fishers retire and new entrants are not able to fish within the park;
- The proposed rule element related to the prohibition of traps in CRPAs is anticipated to restrict lobster and crab fishing within the park;
- The proposed rule element related to shrimp trawler inspections has the potential to impose costs on commercial fishers and, potentially, to require operational changes;

²⁷ Although the FMP/EIS is a joint effort by FWC and NPS, the proposed rule is implemented solely by NPS and is not expected to impact FWC or the State of Florida.

- The proposed rule element related to the prohibition of commercial fishing for sponge and tropical ornamental marine life species would eliminate revenues from this activity in the park.

As baseline conditions assume compliance with existing regulations, inspections of shrimp trawlers are already required by State law and are not expected to change the behavior of fishers. In addition, as the harvest from commercial fishing for sponge and tropical ornamental marine life species has averaged below \$1,000 per year in the past 11 years and in three of the last five years (2009 to 2013) no harvests were reported, the impact of prohibiting harvests is assumed to be negligible.

Impacts of the impacts of commercial permit requirements and CRPA trap requirements require further analysis. These rule elements have the potential to change the behavior of commercial fishers in the study area in a number of ways. This analysis examines two possible responses of fishers (Scenario 1 and Scenario 2) that are intended to capture the range of potential economic effects:

- Scenario 1 assumes that fishers who are not able to fish within the park due to the proposed rule, either because they lack an appropriate permit or because areas in which they wish to fish are no longer available in the park, will forego their fishing trips. These trips are assumed not to be replaced within the park or elsewhere. The economic costs of the proposed rule under this scenario are therefore equal to the foregone producer surplus, estimated as the fisher's profits, which are lost when these fishing trips are not taken.
- Scenario 2 assumes that fishers who are not able to fish within the park due to the proposed rule expend additional effort to maintain their catch by fishing outside of the park. Under this scenario, the economic costs of the proposed rule are equal to the added travel costs incurred by the fishers.

The following sections describe these scenarios in more detail. We apply the following key assumptions in these scenarios:

- **Baseline Fishing Levels.** As recent data shows that levels of fishers, landings, landings revenue, and the number of fishing trips do not appear to be increasing over time, but also do not show a clear trend downward (Exhibits 3-2 through 3-4), this analysis assumes that under the baseline, the average values observed during 2003 through 2013 will continue throughout the study period.
- **Requirement for commercial fishing special park use permit.** This analysis assumes a constant annual decline in the number of finfish and shrimp fishers in the park due to retirements such that at the end of the study period, no fishers remain in the park. This linear decline is equivalent to a five percent reduction each year for 20 years. This assumption is more likely to overstate than understate impacts, as some fishers may remain active in the park throughout and even beyond the 20-year study period.
- **Prohibition of placing traps in CRPAs.** The proposed rule does not identify the explicit timing and spatial extent of the prohibitions on commercial crab or

lobster traps in the CRPAs. This analysis assumes that prohibitions are effective as of the start of the study period and cover all desirable areas for trapping invertebrates within the park. Invertebrate (crab and lobster) fishers are therefore assumed to avoid the park upon implementation of the rule. As such, estimates should be interpreted as an upper bound estimate of potential effects on invertebrate fishers (excluding shrimp fishers).

Commercial Fishers Scenario 1

Scenario 1 assumes that as permits are retired or prohibitions on placing traps in CRPAs are implemented, fishers will forego fishing trips to the park.²⁸ As noted, the appropriate economic measure of the foregone catch is the associated change in producer surplus. OMB defines producer surplus as “the difference between the amount a producer is paid for a unit of a good and the minimum amount the producer would accept to supply that unit.”²⁹ In effect, this is equivalent to the profits that fishers realize. The terms producer surplus and profits are used interchangeably in subsequent sections.

Profit margins in commercial fishing are influenced by many factors, including the skill of the fisher, the characteristics of the fishery, the price of fuel and ice, the catch per unit effort, and other variables. As a result, returns vary across fishers and across years. Relatively few profit estimates exist in the economics literature and past regulatory analyses, and these estimates vary greatly in magnitude, ranging from net losses to profits of up to 40 percent.^{30, 31} Some estimates are also for time periods well before the study period of this analysis, making their relevance uncertain. This analysis draws on the available information to develop an overall estimate of producer surplus; sufficient information does not exist to differentiate among the individual fisheries within the park. The values used to inform the estimate of producer surplus for the Biscayne fishery are reported in Exhibit 4-1.

²⁸ As fishers forego trips to the park and surrounding areas, catch rates per unit effort are assumed to remain constant for fishers who continue to operate within the park. If, in fact, park fishers' catch rates increase as fishing pressure decreases, this may offset some lost profits estimated for the fishers who forego trips.

²⁹ U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

³⁰ Cato, J.C. and Prochaska, F.J. 1977. A Statistical and Budgetary Economic Analysis of Florida-Based Gulf of Mexico Red Snapper-Grouper Vessels by Size and Locations, 1974-75. *Marine Fisheries Review* p. 6-14.

³¹ Travis, M.D. and Griffin, W.L. 2004. Update on the Economic Status of the Gulf of Mexico Commercial Shrimp Fishery. National Marine Fisheries Service. National Oceanic and Atmospheric Administration.

EXHIBIT 4-1. ESTIMATES OF PRODUCER SURPLUS FOR COMMERCIAL FISHERS IN SOUTH FLORIDA

MEASURE OF PROFIT PERCENTAGE	FISHERY	VALUE	SOURCE
Profit as percentage of gross revenue (Costs include depreciation and owners cost of capital)	Small vessels in the Gulf of Mexico shrimp fishery in 2002	Net Loss	Travis and Griffin 2003 ³²
Median net income (Defined as gross revenue minus all fishing expenses)	Vessels in the Upper Keys reef fishery in 1993	23%	Waters et al. 2001 ³³
Profit as percentage of gross revenues (Profit defined as gross revenues minus average variable expenses)	Small vessels in the Southeast shrimp trawl fishery	30%	Federal Register / Vol. 68. No. 35, Friday, February 21, 2003 ³⁴
Profit as percentage of revenue (profits defined as revenue minus cash costs, not including depreciation or owners cost of capital)	Small vessels (<45 feet) in the Gulf of Mexico commercial shrimp fishery from 1965-1995	31%	Funk 1998 ³⁵
Profit as percentage of gross revenue (Costs include variable costs and fixed costs except for depreciation)	Vessels 38 to 47 feet in the Southeastern Gulf Red Snapper/Grouper Fishery in 1974-1975	40%	Cato and Prochaska 1977 ³⁶

The two most applicable estimates are those taken from Waters et al. (2001) and the Federal Register final rule action related to amending turtle exclusion devices, which are from the Upper Keys reef fishery and the Southeast shrimp trawl fishery, respectively. The greater of these two profit values (30 percent) is adopted as a measure of producer surplus for purposes of this analysis.

³² Travis, M. D. and W.L. Griffin. Economic Analysis of the Texas Closure for 2003. Presentation to the Gulf of Mexico Fishery Management Council, January 13, 2003.

³³ Waters, J.R., Rhodes, R.J., and Wiggers, R. 2001. Description of Economic Data Collected with a Random Sample of Commercial Reef Fish Boats in the Florida Keys. NOAA Technical Report NMFS 154, A Scientific Paper of the Fishery Bulletin.

³⁴ Federal Register / Vol. 68. No. 35, Friday, February 21, 2003. "Endangered and Threatened Wildlife; Sea Turtle Conservation Requirements." Final Rule. Pages 8456-8471.

³⁵ Funk, R. D. 1998. Economic Impacts of License Limitation and Buyback on the Texas Bay Shrimp Fishery. Ph. D. Dissertation, Department of Agricultural Economics, Texas A&M University. 97 pp.

³⁶ Cato, J.C. and Prochaska, F.J. 1977. A Statistical and Budgetary Economic Analysis of Florida-Based Gulf of Mexico Red Snapper-Grouper Vessels by Size and Locations, 1974-75. Marine Fisheries Review p. 6-14.

To estimate the total change in producer surplus, the average revenue of fish caught in the park is assumed to decline proportionally with the decline in permits/fishers. For each year of the analysis, the foregone revenue is multiplied by the estimate of the profit margin to calculate foregone producer surplus.

Commercial Fishers Scenario 2

Scenario 2 assumes that, rather than forgoing their catch, fishers incur added costs by steaming to alternative, potentially less desirable, fishing grounds outside of the park.

Commercial Fishers Added Distance

Fishers have the potential to adjust effort in response to the proposed rule in a number of ways. For example, fishers may take more frequent trips to alternative fishing grounds, travel greater distances to alternative fishing grounds, hire additional crew to increase fishing efficiency, or relocate their port of origin.³⁷

While it is not possible to predict what combination of such potential responses will result from the rule, an estimation of added costs that may be incurred to compensate for harvest lost from within park boundaries is amenable to analysis, and provides an alternative perspective on potential economic impacts.

This analysis focuses on the additional operating costs associated with fuel and time. Other potential costs that could not be reasonably quantified are not included in the analysis:

- Fishers may also incur costs related to additional vessel maintenance and depreciation costs;
- Fishers may also have costs related to fishing less familiar waters; and
- Fishers may need to take additional trips to maintain their previous catch levels; this may occur if the productive fishing time per trip is reduced due to the added travel time or if the catch rate is lower in the replacement areas.

Determining plausible alternative fishing grounds requires modeling the port of origin for fishers affected by the proposed rule and potential catch in areas outside of the park.

Ethnographic surveys indicate that most trips for fishers originate from marinas north of the park or from bay side marinas; for the latter, primarily Black Point Marina.^{38, 39}

Without additional information to assign origins to fishers affected by the proposed rule,

³⁷ For instance, the bayside ports of Black Point Marina and Homestead Bay Point Marina may become less desirable to commercial fishers who lack permits to fish within the Park or face restrictions in Coral Reef Protection Areas.

³⁸ National Park Service (NPS). 2006. Final Report: Biscayne National Park Ethnographic Overview and Assessment. U.S. Department of the Interior

³⁹ Some fishers may also originate from ports south of the Park, such as in Key Largo. Including fishers affected by the proposed rule with ports south of the park raises two difficulties. One, the fishing grounds tend to be more bountiful south of the Park, making it less likely for these fishers to cross the park to reach fishing grounds north of the Park. Two, the number of current fishers with ports south of the Park appears to be small, suggesting that modeling these fishers' impacts would have a minor impact on the modeled increased distance. For these reasons, it is reasonable to model affected fishers as departing from ports north and west of the Park.

the analysis assumes an equal distribution of fishers who port north of the park and who port west of the park, the latter modeled as Black Point Marina.

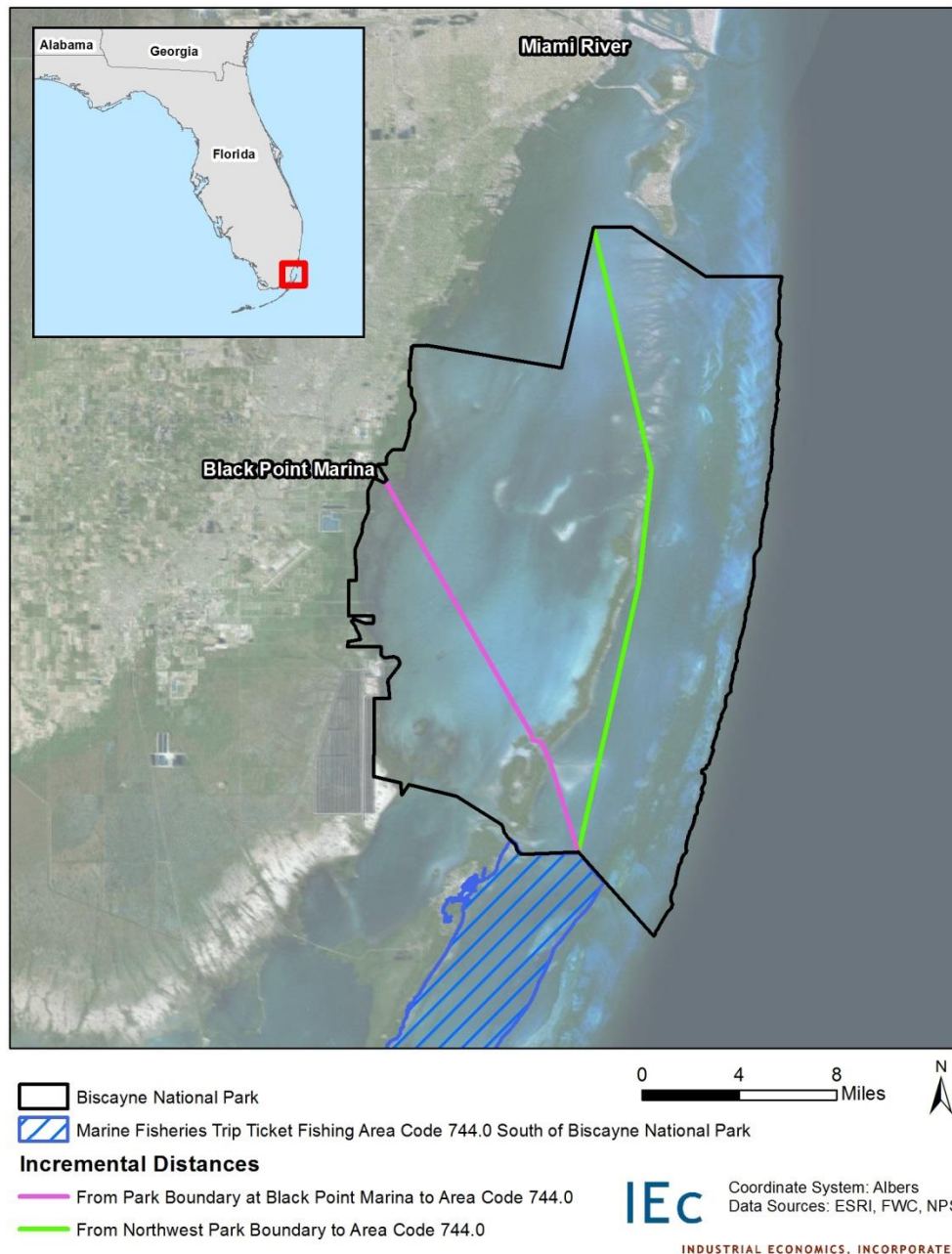
To determine alternative fishing grounds, the analysis examines the total value of catch by fishery in each zone within Area 744 from 2003 to 2013. As shown in Exhibit 4-2, for finfish and invertebrates (excluding shrimp), the majority of the catch in areas bordering the park occurs in Zone 744.0. This zone extends both north and south of the park.

Assuming that the larger fishing area of Zone 744.0 south of the park is more desirable, the alternative fishing ground is modeled as the southern portion of Zone 744.0. For finfish and invertebrate boats (excluding shrimp boats) entering the park from the north, the analysis uses the distance from the northwest terminus (the first point of the park that fishers encounter) to the closest point of Zone 744.0 south of the park. For vessels entering the park from the west, the analysis uses the distance from the boundary of the park closest to Black Point Marina to the closest point of Zone 744.0 south of the park (see Exhibit 4-1).

To determine alternative fishing grounds for shrimp vessels, both Zones 744.0 and 744.6 have sizable shrimp catches. As the distance from the fishing ports identified to Zone 744.0 is slightly greater than that to 744.6, Zone 744.0 is used as the alternative fishing ground for shrimp vessels. As such, the added distance to alternative fishing grounds is the same for all three fisheries.

The added distances were calculated using Geographic Information System (GIS) analysis. The GIS analysis sought to determine an approximate least-distance, navigable route. The routes are shown in Exhibit 4-2.

EXHIBIT 4-2. ADDED DISTANCE FROM COMMERCIAL FISHERS' HOME PORTS TO ALTERNATIVE FISHING AREAS OUTSIDE OF THE PARK



Commercial Fishing Fuel costs

To estimate the added fuel costs associated with traveling to alternative fishing sites, the analysis requires an estimate of the fuel economy of the vessels. Vessel fuel economy is determined by multiple factors, including vessel length, engine horsepower and efficiency, vessel design, vessel load, speed, and daily conditions, such as tide, wind, and

waves. The most commonly reported of these characteristics are horsepower and vessel length.

These characteristics vary within and across fisheries in the park. For the shrimp fishery, recent research suggests that the length of shrimp trawlers ranges from 27 to 32 feet and wing net shrimper skiffs range from 25 to 30 feet and are often kept on trailers.⁴⁰ For invertebrates (excluding shrimp), blue crab vessels are also frequently trailered and range from 15 to 20 feet.⁴¹ Stone crab vessels are larger than blue crab vessels due to the heavier traps.⁴²

Estimates for vessels targeting other invertebrates and finfish within the park are not readily available. The best estimates come from nearby fisheries. For other invertebrates, estimates for the Florida spiny lobster fishery report annual medians of vessel length of 33 to 34 feet and engines with 300 to 320 horsepower.⁴³ For finfish, surveys of vessels operating in reef fisheries in the upper Florida Keys, with boats targeting primarily finfish, with some stone crab and spiny lobster catch, report a mean vessel length of 30.4 feet and mean engine size of 296.9 horsepower.⁴⁴

Given that the variations in vessel size do not align with the fishery categories of interest, the analysis uses a single average fuel economy for the study area fishery. This approach likely overstates the costs for certain fishers who have smaller vessels or the ability to trailer boats to alternative fishing grounds. To estimate fuel economy, the analysis uses 300 horsepower to estimate the study area fleet engine size, which is consistent with a vessel length of 30 to 33 feet.^{45, 46}

The analysis applies a relationship between horsepower and fuel consumption derived from commercial lobster vessels to arrive at an estimate of fuel economy per hour of steaming for the Biscayne fleet.⁴⁷ Likewise, the average steaming speed for commercial lobster boats of 14 knots is used to model steaming speed in the study area.⁴⁸ Combined,

⁴⁰ National Park Service (NPS). 2006. Final Report: Biscayne National Park Ethnographic Overview and Assessment. U.S. Department of the Interior

⁴¹ Ibid.

⁴² Ibid.

⁴³ Vondruska, J. 2010. Florida's Commercial Fishery for Caribbean Spiny Lobster, SERO-FSSB-2010-02. National Marine Fisheries Service, Southeast Regional Office. Fisheries Social Science Branch.

⁴⁴ Waters, J.R., Rhodes, R.J., and Wiggers, R. 2001. Description of Economic Data Collected with a Random Sample of Commercial Reef Fish Boats in the Florida Keys. NOAA Technical Report NMFS 154, A Scientific Paper of the Fishery Bulletin.

⁴⁵ Ibid

⁴⁶ Vondruska, J. 2010. Florida's Commercial Fishery for Caribbean Spiny Lobster, SERO-FSSB-2010-02. National Marine Fisheries Service, Southeast Regional Office. Fisheries Social Science Branch.

⁴⁷ National Marine Fisheries Service (NMFS). 2014. Final Environmental Impact Statement for Amending the Atlantic Large Whale Take Reduction Plan: Vertical Line Rule Volume I of II. National Oceanic and Atmospheric Administration. Department of Commerce.

⁴⁸ Ibid.

this analysis results in an estimated fuel efficiency of approximately 0.88 nautical miles per gallon. Exhibit 4-3 presents the parameters used to calculate the added fuel costs.

EXHIBIT 4-3. PARAMETERS TO ESTIMATE FUEL EFFICIENCY OF STUDY AREA COMMERCIAL FISHING FLEET

PARAMETER	MODEL VALUE	SOURCE(S)
Horsepower	300	NPS 2006, ⁴⁹ Vondruska 2010, ⁵⁰ Waters et al., 2001 ⁵¹
Fuel Efficiency	0.88 Nautical Miles per Gallon	Formula from NMFS 2014 ⁵²
Boat Speed	14 Knots	NMFS 2014 ⁵³
Added Distance	34.1 Nautical Miles	IEc Analysis

Commercial Fishers Time Costs

The appropriate measure of the economic costs of the captain's and crew's time associated with traveling to alternative fishing sites is the opportunity costs of their labor. Their opportunity cost is the wages they could have received for their labor in alternative employment. Most fishing vessels do not pay hourly wages, so these wage estimates are an approximation of the cost of additional time on the water.

To estimate substitute wages, the analysis uses a standard reported wage rate for fishing and similarly categorized industries by the Bureau of Labor Statistics (BLS). The analysis examines three BLS areas: "South Florida non-metropolitan area," "Miami-Fort Lauderdale-Pompano Beach, FL" and "Miami-Miami Beach-Kendall, FL Metropolitan Division." For crew members mean hourly wage, the analysis uses the labor category "Farming, Fishing, and Forestry Occupations" as reported by the BLS, and for captains the analysis uses the labor category "First-Line Supervisors of Farming, Fishing, and Forestry Workers." The average of the mean hourly wage values across the three areas is used to model the opportunity cost of time for both crew and captains (Exhibit 4-4). The analysis assumes one crew member and a captain for shrimp fishers, and captains working alone for finfishers and invertebrate fishers (excluding shrimp fishers).^{54, 55} The

⁴⁹ National Park Service (NPS). 2006. Final Report: Biscayne National Park Ethnographic Overview and Assessment. U.S. Department of the Interior

⁵⁰ Vondruska, J. 2010. Florida's Commercial Fishery for Caribbean Spiny Lobster, SERO-FSSB-2010-02. National Marine Fisheries Service, Southeast Regional Office. Fisheries Social Science Branch.

⁵¹ Waters, J.R., Rhodes, R.J., and Wiggers, R. 2001. Description of Economic Data Collected with a Random Sample of Commercial Reef Fish Boats in the Florida Keys. NOAA Technical Report NMFS 154, A Scientific Paper of the Fishery Bulletin.

⁵² National Marine Fisheries Service (NMFS). 2014. Final Environmental Impact Statement for Amending the Atlantic Large Whale Take Reduction Plan: Vertical Line Rule Volume I of II. National Oceanic and Atmospheric Administration. Department of Commerce.

⁵³ Ibid.

⁵⁴ National Park Service (NPS). 2006. Final Report: Biscayne National Park Ethnographic Overview and Assessment. U.S. Department of the Interior

length of additional steaming time comes from an analysis of the location of alternative fishing grounds and the vessel speeds reported in Exhibit 4-3. Exhibit 4-4 presents the parameters used to calculate the added time costs.

EXHIBIT 4-4. PARAMETERS USED TO ESTIMATE TIME COSTS OF COMMERCIAL FISHERS TO REACH ALTERNATIVE FISHING GROUNDS OUTSIDE OF THE PARK

PARAMETER	VALUE (2014\$)	SOURCE
Opportunity Costs of Time -Captain	\$20.01	BLS 2013 ⁵⁶
Opportunity Costs of Time -Crew	\$10.51	BLS 2013 ⁵⁷
Added Steaming Time (Round Trip)	2.4 hours	IEc Analysis

4.1.2 Methods for Estimating Potential Costs and Benefits to Consumers of Study Area Commercial Species

As fishers' behavior changes under the proposed rule, it is possible that overall catch in the South Florida region may decline for some species. As noted before, under Scenario 1, the decrease in quantity supplied is assumed equal to loss of catch in the park. Under Scenario 2, there is no decrease in quantity supplied as fishers increase their effort. For consumers of study area landings to experience a reduction in consumer surplus, the proposed rule would have to reduce the available supply sufficiently to increase retail prices. As retail prices increase, the difference between what consumers are willing to pay to purchase landings and the price of landings diminishes, therefore reducing their consumer surplus. This analysis examines the size of the regional fishery relative to park landings to determine if consumers are likely to face price increases.

4.1.3 Methods for Estimating Potential Costs and Benefits to Recreational Park Visitors

The proposed rule may impact other users of the park by reducing both the quantity of fish caught by commercial vessels and the presence of commercial vessels within the park.⁵⁸ Visitors may also benefit from improved coral reef habitat.

The environmental economics literature contains many examples of the benefits to recreators from increased catch frequency, catch size, and the presence of coral reefs (e.g., see Letson and Milon 2002 for a summary of Florida specific estimates). Under

⁵⁵ South Atlantic Fishery Management Council (SAFMC). 2009. Volume III: South Atlantic Human and Institutional Environment. Fishery Ecosystem Plan of the South Atlantic Region. Pursuant to National Oceanic and Atmospheric Administration Award No. FNA05NMF4410004.

⁵⁶ Bureau of Labor Statistics (BLS). 2013. Occupational Employment Statistics (OES) Survey. Accessed January 15, 2015 from <http://www.bls.gov/oes/tables.htm>

⁵⁷ Ibid.

⁵⁸ Users who buy bait caught within the park may also be affected by increased prices. This effect is covered in Section 4.1.2 and not included here to avoid double counting.

Scenario 1, the total commercial catch of fish within and around the park would be reduced under the proposed rule, but the effect on the larger fishery is not known. The fish within the park are part of a larger ecosystem and it is difficult to determine the broader effect of reduced catch.⁵⁹ Assuming that the reduced commercial catch increases fish abundance and size with the park, then visitors, particularly fishers, snorkelers, and divers, would be expected to enjoy increased recreational benefits (i.e., increased consumer surplus per visit). Furthermore, the avoidance of further coral reef degradation due to damage from lobster and crab traps may benefit snorkelers and divers, as well as overall ecosystem health.

Absent information on the specific nature and extent of increased recreational benefits, the analysis reports the annual number of recreational users of the park and provides illustrative consumer surplus estimates from the environmental economics literature for similar benefits.

Finally, the impact of the presence of commercial fishing vessels on recreators is unclear, and is likely to vary. Some recreators may find increased enjoyment from watching commercial fishers. Other groups of visitors, including snorkelers, divers, kayakers, sightseers, and others may benefit from the reduction in commercial vessel traffic, and in turn congestion, within the park.

4.1.4 Methods for Estimating Costs and Benefits to NPS

NPS will incur the costs of implementing and managing the special park use permit system for commercial fishing. NPS intends to recover these costs by imposing a small fee on the special park use permits that would be required under the proposed rule. As a result, there will likely be no net change in operating budget.

NPS also runs a marine debris removal program. Reduced commercial fishing activity within the park may improve the effectiveness of this program by reducing the generation of new marine debris. As data are insufficient to estimate the incremental reduction in debris associated with reduced commercial fishing activity, for context the historical costs of administering the program are presented in Exhibit 3-7.

4.2 RESULTS OF THE COST-BENEFIT ANALYSIS OF THE PROPOSED RULE

Consistent with data provided by FWC, proposed rule impacts are analyzed across the three fisheries of finfish, invertebrates (excluding shrimp), and shrimp, and then total impacts of the proposed rule are presented.⁶⁰

⁵⁹ National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/EIS). U.S. Department of the Interior.

⁶⁰ Two elements of the Proposed Rule are determined to have a negligible economic impact. First, as baseline conditions assume compliance with existing regulations, any additional inspections of shrimp trawlers are not expected to change the behavior of fishers. Second, as the harvest from commercial fishing for sponge and tropical ornamental marine life species has averaged below \$1,000 per year in the past 11 years and in three of the last five years (2009 to 2013) no harvests were reported, the impact of prohibiting harvests is determined to be negligible.

4.2.1 Costs and Benefits of the Proposed Rule on Commercial Fishing

The results are presented below in Exhibit 4-5 as annualized values over the study period using three and seven percent discount rates per OMB guidance.^{61, 62} As described earlier, the effects on the study area invertebrate fishery (excluding shrimp) begin at the start of the study period and are constant across the study period. The effects on the finfish and shrimp fisheries increase over the study period as special park use permit holders retire. As shown, the proposed rule is expected to result in costs on the order of \$220,000 to \$260,000 per year, depending on how commercial fishing behavior changes in response to the rule, and the discount rate chosen for the analysis. The impacts on the invertebrate fishery (excluding shrimp) are due to the prohibitions on traps for lobster and crab within the CRPAs. Estimated annualized reduced profits are \$130,000 and estimated annualized increased costs are \$120,000.⁶³ Across scenarios and discount rates, costs to the invertebrate fishery (excluding shrimp) are approximately 55 percent of total costs of the proposed rule. The impacts on the finfish and shrimp fisheries are due to the special park use permit system for commercial fishing, which over time phases-out commercial fishing within the park. Finfishers annualized costs vary from \$24,000 to \$29,000, depending on scenario and discount rate. Across scenarios and discount rates, their costs represent approximately 10 percent of total annualized costs. For both finfish and invertebrates (excluding shrimp), reduced profits are slightly greater than increased costs. In contrast, the study area shrimp fishery has estimated increased costs greater than reduced profits, in part due to the assumed presence of a crew member on shrimp vessels. Their annualized costs vary from \$65,000 to \$100,000, depending on scenario and discount rate. Across scenarios and discount rate, their costs represent approximately 35 percent of total annualized costs.

In addition to these costs, commercial finfish and shrimp fishers would incur some incremental costs related to purchasing the special park use permit system under the proposed rule.⁶⁴ The park intends to set the permit fee to recover these costs, but the specific fee has not yet been determined.

Lastly, the value of commercial fishing assets, such as gear and vessels, is in part determined by the expected stream of profits from employing these assets in the future. If the assets could only be sold within the study area, then the proposed rule, by reducing the profitability of commercial fishing within the study area, could reduce the value of these assets. However, to the extent that these assets would be expected to be traded within the broader regional fishery, then impacts would be mitigated by the opportunity to utilize these assets in other waters where profits are unaffected by the proposed rule. In

⁶¹ Annualized values convert the present value of future costs or benefits into equal annual payments akin to annual payments on a fixed rate mortgage.

⁶² U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

⁶³ As compliance costs are constant across the study period, annualized costs are equivalent under both discount rates.

⁶⁴ Invertebrate fishers (excluding shrimp fishers) are assumed to not be able to fish within the park due to the CRPAs.

this manner, fishers within the study area wishing to retire their permits and sell their assets may incur increased transaction costs related to transporting and refurbishing their equipment for resale outside of park waters, relative to the baseline. However, some value of the assets would be retained, i.e., not all asset value would be expected to be lost due to the rule.

EXHIBIT 4-5. INCREASED COSTS OF THE PROPOSED RULE, ANNUALIZED 2016 TO 2035 (\$2014)

FISHERY	3 PERCENT DISCOUNT RATE		7 PERCENT DISCOUNT RATE	
	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT
Finfish	\$29,000	\$27,000	\$25,000	\$24,000
Invertebrates (excluding shrimp)	\$130,000	\$120,000	\$130,000	\$120,000
Shrimp	\$74,000	\$100,000	\$65,000	\$92,000
Total	\$240,000	\$260,000	\$220,000	\$240,000
Source: IEc analysis				
Note: Totals may not sum due to rounding.				

4.2.2 Costs and Benefits of the Proposed Rule on Consumers of Study Area Commercial Species

As mentioned previously, for consumers of commercial species to experience a reduction in consumer surplus, the proposed rule would have to reduce the available supply sufficiently to increase retail prices. To place the potential reduction in supply in context, East Florida fisheries landings revenue in 2012 was over \$57 million while park landings revenue was \$1.2 million, or approximately two percent of the East Florida landings revenue. For the South Atlantic Fishery, comprised of East Florida, Georgia, South Carolina, and North Carolina, 2012 landings revenue was \$171 million, of which park revenue would represent approximately 0.7 percent. It is likely that any potential reductions in supply under the proposed rule would have a negligible effect on prices, and, therefore a negligible effect on consumer surplus.

A possible exception is that certain aspects of the Biscayne fishery may operate within a localized market, such as bait shrimp and bait fish. Consumers of these products within the local market could face price increases if the response of fishers to the proposed rule led to decreased supply of these species to the localized market. However, available data and information are insufficient to predict the extent and magnitude of any such changes.

4.2.3 Costs and Benefits of the Proposed Rule on Recreational Park Visitors

Visitors to the park are expected to benefit from the proposed rule. The park averages 473,000 visitors annually. Almost all of these visitors are thought to engage in marine activities of some kind. If marine life improves within the park, visitors are expected to experience increased benefits (consumer surplus). For example, Letson and Milon (2002)

review the values for increased catch and improved snorkeling/diving opportunities in Florida; mid-point estimates range from roughly \$0.50 to \$3.00 per trip (2014\$).⁶⁵

4.2.4 Costs and Benefits of the Proposed Rule on NPS

A phase out of commercial fishing would reduce the generation of new marine debris in the park. As a result, the annual average \$69,000 spent by NPS could more effectively reduce the accumulated marine debris within the park. Habitat may also benefit from the reduction of marine debris, resulting in improved fish stocks, healthier reefs, and improved visitor experiences.

4.2.5 Summary Costs and Benefits of the Proposed Rule

In summary, costs of the proposed rule would accrue to different groups than the benefits of the rule. Commercial fishers are anticipated to experience costs from the proposed rule, estimated to range from a total of \$220,000 to \$260,000 annualized, depending on behavioral responses of fishers to the proposed rule and the choice of future discount rate. Consumers of commercial species from the study area would be largely unaffected by the proposed rule, with the possible exception of local consumers of bait shrimp and fish, who may incur higher prices. Nearly half a million recreational visitors to the Park, and potentially additional new visitors, would benefit from improved marine habitat, reduced commercial vessel traffic, and potentially increased abundance and size of marine species due to effects of the proposed rule. NPS would likely experience greater effectiveness of its marine debris removal program.

Because quantified costs of the rule are expected to be approximately \$0.25 million annually, the analysis concludes that the proposed rule is unlikely to generate costs exceeding \$100 million in any year.

4.2.6 Results for Relevant Elements of Proposed Rule Alternatives

The alternatives analysis describes the conditions under the no action alternative (Alternative 1) and then describes the effects of the elements of the proposed rule present in the action alternatives relative to the no action alternative. Under Alternative 1, baseline conditions would continue at the park. The average level of producer surplus for the fishery of approximately \$350,000 would be expected to continue. Current levels of recreational users would likely continue at approximately 473,000 visitors to the park annually.

The elements of Alternative 2 relevant to the proposed rule are not expected to change the behavior of commercial fishers:

- As the baseline assumes a constant level of fishers, the establishment of transferable permits does not reduce commercial fishing and fishers pay an annual permit fee;

⁶⁵ Letson, D. and Milon J. (Eds.). 2002. Florida Coastal Environmental Resources: A Guide to Economic Valuation and Impact Analysis.

- The park's exploration of the feasibility and effectiveness of establishing a regulation to restrict traps from hardbottom habitat may lead to further regulatory decisions, but in itself is not expected to change the behavior of fishers; and
- Lastly, as under the proposed rule, the inspections of shrimp trawlers is not expected to lead to costs to shrimp fishers as compliance is assumed under baseline conditions.

As commercial fishing behavior is unchanged, the analysis expects little impacts to consumers of landings from the park, to the visitor experience at the park, or to NPS.

One element of Alternative 3 relevant to the proposed rule is expected to influence the behavior of commercial fishers.⁶⁶

- The prohibitions on lobster and crab traps in CRPAs and the shrimp trawler inspections are treated the same as under the proposed rule – fishers targeting invertebrate species (excluding shrimp) are analyzed as foregoing catch within the park.

As under the proposed rule, the prohibitions in the CRPAs have the potential to cause consumers to experience a reduced supply of invertebrates (excluding shrimp), but prices are not expected to increase as the reduction in supply is expected to be minor compared to the size of the market. Visitors to the park benefit from improved coral habitat and reduced commercial traffic. The marine debris removal program administered by NPS may become more effective. Under Alternative 5, the targets for species recovery are higher than under the Alternative 4, from which the proposed rule derives. However, the specific park management measures affecting commercial fishers would be the same as the requirements of the proposed rule.⁶⁷ Consequently, compliance costs are also assumed to be equivalent.

Exhibits 4-6 and 4-7 present the commercial fishing results for the relevant elements of alternatives to the proposed rule. The results are annualized using three and seven percent discount rates and are shown in \$2014. As shown, Alternative 3 for the invertebrate fishery (excluding the shrimp fishery) has the same annualized compliance costs as under the proposed rule. Unlike the proposed rule, these compliance costs represent the total quantified costs of the alternative. Alternative 5 has equivalent annualized compliance costs as the proposed rule with total costs being split among the invertebrate fishery (excluding shrimp, 55 percent), the shrimp fishery (35 percent) and the finfish fishery (10 percent).

⁶⁶ The establishment of special park use permits that are transferable after five years potentially could reduce the number of fishers within the park; a fisher may choose to retire within five years and consequently that permit would be removed. However, data and information are insufficient to determine if fishers would choose to retire or to continue fishing. This analysis assumes that fishers would continue to fish until permits could be transferred leading to no change in overall fishing effort from baseline conditions.

⁶⁷ National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/EIS). U.S. Department of the Interior.

EXHIBIT 4-6. EFFECTS OF RELEVANT ELEMENTS OF PROPOSED RULE ALTERNATIVES RELATIVE TO THE NO ACTION ALTERNATIVE, ANNUALIZED, THREE PERCENT DISCOUNT RATE, 2016 TO 2035 (2014\$)

RELEVANT ELEMENTS OF FMP/EIS ALTERNATIVE	FINFISH		INVERTEBRATES (excluding shrimp)		SHRIMP		TOTAL	
	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT
Alternative 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Alternative 3	\$0	\$0	\$130,000	\$120,000	\$0	\$0	\$130,000	\$120,000
Alternative 4 (proposed rule)	\$29,000	\$27,000	\$130,000	\$120,000	\$74,000	\$100,000	\$240,000	\$260,000
Alternative 5	\$29,000	\$27,000	\$130,000	\$120,000	\$74,000	\$100,000	\$240,000	\$260,000
Source: IEc analysis								
Note: Totals may not sum due to rounding.								

EXHIBIT 4-7. EFFECTS OF RELEVANT ELEMENTS OF PROPOSED RULE ALTERNATIVES RELATIVE TO THE NO ACTION ALTERNATIVE, ANNUALIZED, SEVEN PERCENT DISCOUNT RATE, 2016 TO 2035 (2014\$)

RELEVANT ELEMENTS OF FMP/EIS ALTERNATIVE	FINFISH		INVERTEBRATES (excluding shrimp)		SHRIMP		TOTAL	
	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT	SCENARIO 1 - FOREGONE CATCH	SCENARIO 2 - INCREASED EFFORT
Alternative 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Alternative 3	\$0	\$0	\$130,000	\$120,000	\$0	\$0	\$130,000	\$120,000
Alternative 4 (proposed rule)	\$25,000	\$23,000	\$130,000	\$120,000	\$64,000	\$91,000	\$220,000	\$240,000
Alternative 5	\$25,000	\$23,000	\$130,000	\$120,000	\$64,000	\$91,000	\$220,000	\$240,000
Source: IEc analysis								
Note: Totals may not sum due to rounding.								

4.3 CAVEATS AND UNCERTAINTIES

Exhibit 4-8 presents a summary of the caveats and uncertainties that are relevant to this analysis. The table inventories all of the assumptions and estimates relied upon in calculating potential impacts of the rules and indicates the likely direction of influence of each on the results- i.e., “+” (more likely to result in an overestimate of impacts), “+/-” (direction of impact is indeterminate), or “-” (more likely to result in an underestimate of impacts).

EXHIBIT 4-8. CAVEATS AND UNCERTAINTIES

CAVEAT/UNCERTAINTY	DESCRIPTION	DIRECTION OF INFLUENCE
<i>Study Period</i>	A 20-year study period balances the competing demands of capturing the long-term effects of the proposed rule and using reasonable data and assumptions for the analysis.	+/-
<i>FWC Data</i>	Absent any regulatory changes the average values observed during 2003-2013 are assumed to continue throughout the study period.	+/-
<i>Rate of Retirement</i>	The analysis assumes five percent of the fishers retire each year of the study period. In the final year, no fishers are active in the park.	+
<i>CRPAs</i>	The proposed rule does not include the explicit timing or extent of the prohibitions on commercial crab or lobster traps in the CRPAs. Prohibitions are assumed to be effective at the start of the study period and cover all desirable crab and lobster trap areas within the park.	+
<i>Commercial Fishers' Increased Effort Under Scenario 2</i>	Fishers have the potential to increase effort in response to the proposed rule in a number of ways. The analysis examines the effects of fishers traveling greater distances to alternative fishing sites.	+/-
<i>Ports of Origin and Alternative Fishing Grounds</i>	The analysis is consistent with ethnographic surveys indicating that most trips for fishers originate north of the park or from bay side marinas (primarily Black Point Marina). Assuming that fishers will choose alternative fishing grounds south of the park and Ports north and east of the park is more likely to overestimate the additional distance traveled as some fishers may be closer to substitute fishing grounds.	+
<i>Alternative Fishing Grounds Shrimp Vessels</i>	The distance from the fishing ports identified to the alternative shrimp fishing area of Zone 744.0 is greater than that to alternative area Zone 744.6. Zone 744.0 is selected as the alternative fishing ground for shrimp vessels.	+
<i>Vessel Fuel Economy</i>	The analysis uses a single average fuel economy for the study area fishery. This approach likely overstates the costs for certain fishers who have smaller vessels or the ability to trailer boats to alternative fishing ground. To estimate fuel economy, the analysis uses 300 horsepower to estimate the study area fleet engine size, which is consistent with a vessel length of 30 to 33 feet.	+

CAVEAT/UNCERTAINTY	DESCRIPTION	DIRECTION OF INFLUENCE
<i>Average Steaming Speed</i>	The average steaming speed for commercial lobster boats of 14 knots is used to model steaming speed in the study area fishery.	+/-
<i>Presence of Crew Members</i>	The analysis models one crew member and a captain for shrimp fishers, and captains working alone for finfishers and invertebrates (excluding shrimp).	+/-
<i>Catch Rates of Fishers</i>	The catch rates per unit effort for fishers who continue to operate within the park are modeled as not affected by the reduced catch of fishers who forego park trips.	+

NOTES:

“+” Assumption leads analysis to be more likely to overstate than understate actual costs.

“-” Assumption leads analysis to be more likely to more likely to understate than overstate actual costs.

“+/-” Assumption leads analysis has neutral or indeterminate influence estimates with respect to actual costs.

APPENDIX A. INITIAL REGULATORY FLEXIBILITY ANALYSIS

This Initial Regulatory Flexibility Analysis (IRFA) considers the extent to which the economic impacts resulting from the proposed rule may be borne by small businesses. The analysis presented is conducted pursuant to the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996. Information for this analysis was gathered from the Small Business Administration (SBA), the National Park Service (NPS), and the Florida Fish and Wildlife Conservation Commission (FWC).

A.1 INTRODUCTION

First enacted in 1980, the RFA was designed to ensure that Federal Agencies consider the potential for its regulations to unduly inhibit the ability of small entities to compete. The goals of the RFA include increasing the government's awareness of the impact of regulations on small entities and to encourage agencies to exercise flexibility to provide regulatory relief to small entities.

When a Federal agency proposes regulations, the RFA requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).⁶⁸ For this rulemaking, this analysis takes the form of an IRFA. Under 5 U.S.C., Section 603(b) of the RFA, an IRFA is required to contain:

- i. A description of the reasons why action by the agency is being considered;
- ii. A succinct statement of the objectives of, and legal basis for, the proposed rule;
- iii. A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- iv. A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- v. Identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule; and

⁶⁸ 5 U.S.C. 601 et seq.

- vi. Each Initial Regulatory Flexibility Analysis shall also contain a description of any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

A.2 REASONS WHY ACTION IS BEING CONSIDERED, OBJECTIVES OF, AND LEGAL BASIS FOR THE PROPOSED RULE

NPS' through the proposed rule seeks to improve fisheries conditions and marine habitat in Biscayne National Park. The follow sections describe why the action is being considered, its objectives, and legal basis in more detail. Much of the text in this section is taken from the proposed rule and the Fishery Management Plan / Environmental Impact Statement (FMP/EIS) which can be referred to for more information.

A.2.1. REASONS WHY ACTION IS BEING CONSIDERED AND OBJECTIVES

As stated in the FMP/EIS, Biscayne National Park must balance the existence of recreational and commercial fishing in park waters with its mandate and responsibility to manage its fishery resources in a way that such resources remain unimpaired. While Congress has given NPS the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the Federal courts) that NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. For example, a loss of fisheries resources within the park, due to overfishing at unsustainable levels, could be considered impairment since it would result in lost opportunities for enjoyment of fisheries resources (for both extractive and non-extractive activities), while drastically altering natural resource community composition.⁶⁹

As explained in the FMP/EIS, collected data suggest that fisheries resources in the park have declined from historical levels as a result of increasing human population and related fishing pressure. The preponderance of the available data suggests that numerous fish species in the park are under considerable fishing pressure and in some cases are regionally overfished or subject to overfishing. In tandem with increased numbers of recreational and commercial fisherman harvesting fish and invertebrates from park waters, there has been considerable improvement of fishing efficiency due to the development and continued improvement of technology such as fish finders, depth indicators, global positioning systems, improved vessel and gear design, increased engine

⁶⁹ National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/EIS). U.S. Department of the Interior.

horsepower, and radio communications. This has likely compounded the negative impacts on fishery resources in the park.⁷⁰

The proposed rule seeks substantial improvement in the status of fishery resources in the park and a reduction in fishing-related impacts to habitat.⁷¹

A.2.2. LEGAL BASIS FOR THE PROPOSED RULE

Legal Mandates Governing the Park.

As stated in the proposed rule, Congress established Biscayne National Park “to preserve and protect for the education, inspiration, recreation and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty” (16 USC 410gg). The House of Representatives Committee on Interior and Insular Affairs recognized “the unique and special values” of the resources within the park, as well as the “vulnerability of these resources to destruction or damage due to easy human access by water” (House Report No. 96-693). The Committee directed NPS to “manage this area in a positive and scientific way in order to protect the area’s natural resource integrity” (House Report No. 96-693). The Committee recognized “the great importance of retaining the health of the natural aquatic ecosystem of the area so that it can continue to serve, as it has historically, as a nursery for the continued productivity of the larger ocean area” (House Report No. 96-693).⁷²

The park’s enabling act (16 USC 410gg-2) directed the Secretary of the Interior, acting through the National Park Service (NPS), to administer the park in accordance with the provisions of the National Park Service Organic Act of 1916 (Organic Act) (54 USC 100101*et seq.*). In the Organic Act, Congress granted NPS broad authority to regulate the use of areas under its jurisdiction provided that the associated impacts will leave the “scenery, natural and historic objects, and wild life ... unimpaired for the enjoyment of future generations.” The Organic Act authorizes the Secretary of the Interior, acting through NPS, to “prescribe such regulations as the Secretary considers necessary or proper for the use and management of [National Park] System units” (54 USC 100751(a)). In 1976, Congress clarified and augmented that authority with respect to waters by authorizing the Secretary to “prescribe regulations ... concerning boating and other activities on or relating to water located within [National Park] System units, including water subject to the jurisdiction of the United States . . .” 54 USC 100751(b).⁷³

⁷⁰ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

Fishery Management in Biscayne National Park.

In 1980, Congress established Biscayne National Park and concurrently abolished and incorporated Biscayne National Monument into the newly-created park (16 USC 410gg-2). With respect to fishing in the park, Congress directed that:

- The park will continue to be open to fishing according to the laws of the State of Florida *except* as the Secretary of the Interior, after consultation with the State of Florida, prohibits, limits, or otherwise regulates fishing in the interest of sound conservation to achieve the purposes for which the park was established.
- Provided, that with respect to lands donated by the State of Florida after June 28, 1980 (the effective date of the enabling act), fishing shall be in conformance with state law.⁷⁴

Commercial Fishing

Although it occurs there, NPS regulations have prohibited commercial fishing in the park for more than 30 years. National Park System-wide regulations in place since 1983 prohibit commercial fishing, “except where specifically authorized by Federal statutory law” (36 CFR 2.3(d)(4)). This regulation is consistent with long-standing NPS policy. In order to be “specifically authorized,” commercial fishing must be expressly authorized by statute, and a more general authorization of “fishing” is not sufficient.⁷⁵ For example, Congress specifically authorized commercial fishing in the enabling acts for Cape Hatteras National Seashore⁷⁶ and Jean Lafitte National Historical Park and Preserve.^{77,78}

Congress did not specifically authorize commercial fishing at Biscayne National Park, and its general authorization of “fishing” is not sufficient to authorize it. This is further supported by the legislative history of the park statute, in which the House of Representatives Committee on Interior and Insular Affairs explained that National Parks “tend to be areas where nature displays her processes unfettered, and commercial resource utilization is forbidden or forcefully curtailed to every possible extent” (House Report No. 96-693).⁷⁹

Absent express statutory authority and a park-specific regulation modifying the general prohibition on commercial fishing at 36 CFR 2.3(d)(4), NPS regulations require

⁷⁴ Ibid.

⁷⁵ See *Organized Florida Fishermen of Florida v. Hodel*, 775 F.2d 1544 at 1548 (11th Cir. 1985) (“Where Congress has intended to permit commercial fishing in a national park, it has done so expressly by statute.”).

⁷⁶ 16 U.S.C. 459a-1 (“legal residents of villages referred to in section 459 of this title shall have *the right to earn a livelihood* by fishing with the [national seashore]”) (emphasis added).

⁷⁷ 16 U.S.C. 230d (“Within the Barataria Preserve Unit, the Secretary shall permit hunting, fishing (*including commercial fishing*), and trapping”) (emphasis added). See also Wrangell St. Elias and Glacier Bay National Preserves (16 USC 410hh-4); and Kaloko-Honokohau National Historical Park (16 U.S.C. § 396d-396f).

⁷⁸ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

⁷⁹ Ibid.

elimination of commercial fishing in the park. NPS may phase out commercial fishing in a park by promulgating a park-specific regulation, under 36 CFR 1.2(c), that modifies the general regulatory prohibition on commercial fishing. Courts have recognized the limited, discretionary authority of the Secretary of the Interior, acting through NPS, to phase-out commercial fishing through special regulations.⁸⁰ The proposed rule would implement a lifetime, non-transferable commercial fishing permit program that would authorize certain types of commercial fishing but ultimately phase out this activity entirely to protect park resources and values.⁸¹

A.3 DESCRIPTION AND ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE RULE APPLIES

A.3.1. DEFINITION OF A SMALL ENTITY

Three types of small entities are defined in the RFA:

- **Small Business.** Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. The U.S. SBA has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System (NAICS) industries. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.
- **Small Governmental Jurisdiction.** Section 601(5) defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. Special districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. Most tribal governments will also meet this standard. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.
- **Small Organization.** Section 601(4) defines a small organization as any not-for-profit enterprise that is independently owned and operated and not dominant in its field. Small organizations may include private hospitals, educational institutions, irrigation districts, public utilities, agricultural co-ops, etc. Depending upon state laws, it may be difficult to distinguish whether a small entity is a government or

⁸⁰ *Alaska Wildlife Alliance v. Jensen*, 108 F.3d 1065 (9th Cir. 1997); *Organized Florida Fishermen of Florida v. Hodel*, 775 F.2d 1544 (11th Cir. 1985).

⁸¹ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

non-profit entity. For example, a water supply entity may be a cooperative owned by its members in one case and in another a publicly chartered small government with the assets owned publicly and officers elected at the same elections as other public officials.

A.3.2. DESCRIPTION OF SMALL ENTITIES TO WHICH THE RULE WILL APPLY

This IRFA focuses on identifying small businesses that will be directly affected by the proposed rule. Impacts to small governmental jurisdictions and small organizations are not anticipated. In particular, this analysis focuses on identifying potential impacts to commercial fishers who will have to comply with the proposed rule. Potential impacts to commercial visitor services are also discussed.

Exhibit A-1 presents an outline of the fishing industry as defined by the NAICS system and the SBA size standards. The SBA size standards represent the annual receipts that indicate the maximum allowed for a concern and its affiliates to be considered small.

EXHIBIT A-1 INDUSTRY SECTORS ANTICIPATED TO BE DIRECTLY AFFECTED BY THE PROPOSED RULE

RELEVANT ACTIVITY	INDUSTRY AND DESCRIPTION	NAICS CODE	SBA SIZE STANDARD (MILLIONS OF DOLLARS IN ANNUAL RECEIPTS)
SECTOR 11—AGRICULTURE, FORESTRY, FISHING, AND HUNTING			
Subsector 114- Fishing, Hunting and Trapping	Finfish Fishing This industry includes establishments primarily engaged in the commercial catching or taking of finfish (e.g., snapper, grouper) from their natural habitat. ⁸²	114111	\$20.5
	Shellfish Fishing This industry includes establishments primarily engaged in the commercial catching or taking of shellfish (e.g., clams, crabs, lobsters, shrimp) from their natural habitat. ⁸³	114112	\$5.5
Source: Size Standards Used to Define Small Business Concerns (13 CFR Part 121). Accessed January 6, 2015 from http://www.ecfr.gov/cgi-bin/text-idx?SID=dfda62b572eeace328f56498a62a0bc5&node=%20sg13.1.121_1109.sg1&rgn=div7 .			

⁸² U.S. Census Bureau. 2012. North American Industry Classification System. 114111 Finfish Fishing. Accessed January 12, 2015 from <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>

⁸³ U.S. Census Bureau. 2012. North American Industry Classification System. 114112 Shellfish Fishing. Accessed January 12, 2015 from <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>

Commercial Visitor Services

The proposed rule is not anticipated to directly affect commercial visitor services. Commercial visitor services are allowed in the park pursuant to a valid concession contract or commercial use authorization. These services may include guided fishing charters, party boats, and other businesses that transport visitors by vessel for snorkeling, SCUBA diving, wildlife viewing, or other sightseeing activities. Commercial visitor services are subject to the terms and conditions of the concession contract or commercial use authorization, as well as any charter captain, boat, or other licenses required by the State of Florida.⁸⁴ Since the proposed rule is not anticipated to adversely affect commercial visitor services they are not analyzed further.

A.3.3. ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE RULE WILL APPLY

Using data received from FWC, this analysis estimates the number of small entities to which the proposed rule would apply. Between 2003 and 2013 an average of 17 finfishers, 25 invertebrate fishers (excluding shrimp fishers), and 34 shrimp fishers fished within the park annually, or an average annual total of 75 commercial fishers (Exhibit A-2).^{85, 86} Due to confidentiality concerns, revenue data specific to individual entities (commercial fishers and their vessels) were unavailable. However, the FWC reports that Florida saltwater commercial fishing trips resulted in approximately \$205 million (dockside value) of landings in 2012 by 10,144 unique saltwater products license holders.⁸⁷ Using these figures the average revenue per commercial fisher in Florida is \$20,200 annually. While recognizing that revenue for individual fishers varies, this analysis assumes that all commercial fishers within the park are small entities under SBA size standards.

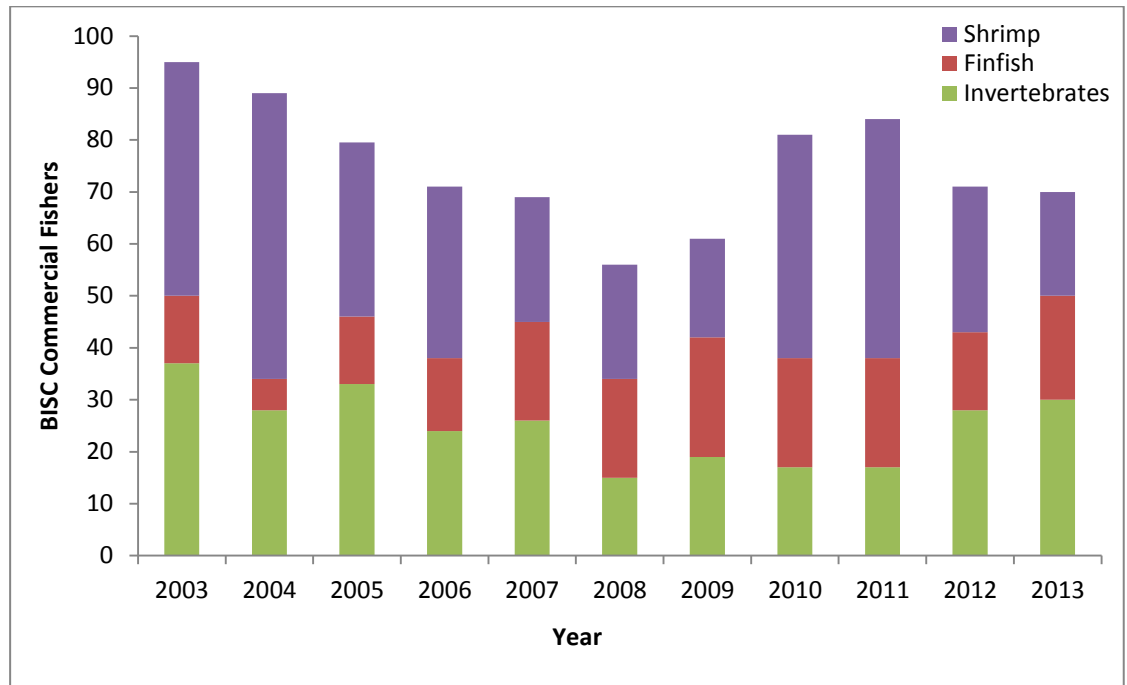
⁸⁴ For more information, see <http://www.myfwc.com/license/saltwater/commercial-fishing/charter/>.

⁸⁵ The number of 2005 shrimp fishers in original data was miscoded. Reported average for shrimp fishers is for the remaining years.

⁸⁶ Florida Fish and Wildlife Conservation Commission. Data received November 25, 2014.

⁸⁷ Florida Fish and Wildlife Conservation Commission (FWC). The Economic impact of Saltwater Fishing in Florida. Accessed February 3, 2014 from <http://myfwc.com/conservation/value/saltwater-fishing/>

EXHIBIT A-2 NUMBER OF COMMERCIAL FISHERS REPORTING LANDINGS FROM BISCAYNE 2003 TO 2013



Source: Florida Fish and Wildlife Conservation Commission. Data received November 25, 2014.⁸⁸

There are four elements of the proposed rule that could impact the small entities identified above:

- (1) Non-transferable lifetime permit system that would phase out commercial fishing in the park as permits expire over time;
- (2) Prohibits the setting of commercial lobster or crab traps in identified Coral Reef Protection Areas (CRPAs);
- (3) Shrimp trawler inspections to ensure that trawl gear complies with state law; and
- (4) Prohibition of commercial fishing for sponge and tropical ornamental marine life species.⁸⁹

These four elements of the proposed rule are considered in turn.

The proposed rule element related to the special park use permit system for commercial fishing is anticipated to lead to a reduction, and ultimately, elimination, of commercial fishing in the park. However, because current fishers who have met minimum landings qualifications within the last three years would be eligible to receive permits initially, the

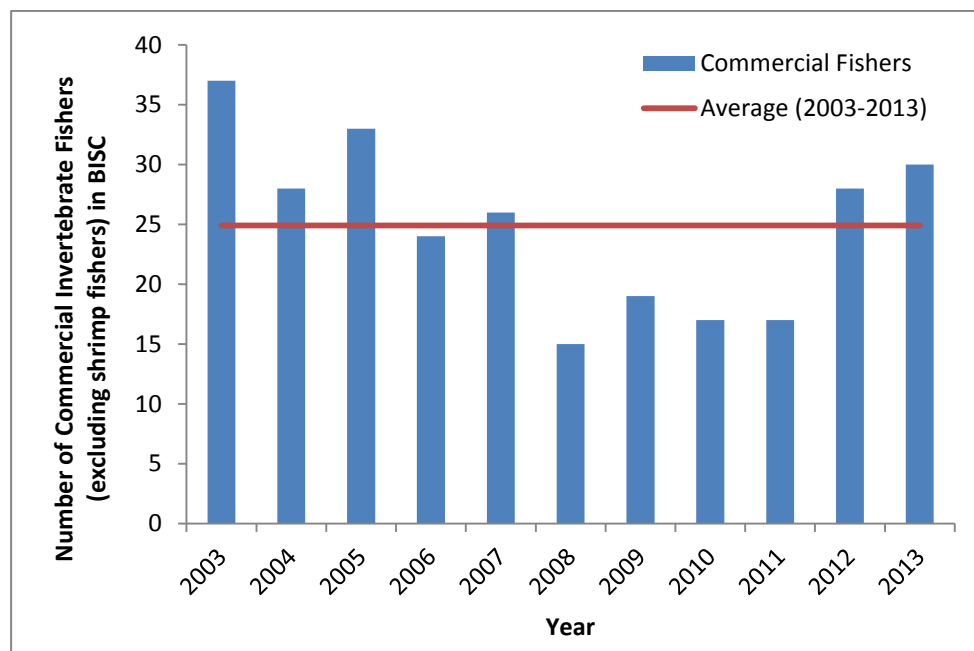
⁸⁸ The number of 2005 shrimp fishers in original data was miscoded. Value in graph is the average value of remaining years.

⁸⁹ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

effects are most likely to occur when eligible fishers retire and new entrants are not able to fish within the park. In addition, as discussed in the economic analysis in Section 4.2.1, when commercial fishers sell their fishing gear and vessels, for instance upon retirement, they may experience lower sale prices or increased transaction costs related to transporting and refurbishing their equipment for resale. Recent data suggests that there are approximately 75 commercial fishers on average operating within the park each year, including finfish fishers, invertebrate fishers (excluding shrimp fishers), and shrimp fishers. NPS intends to set the permit fees such that costs incurred by NPS in administering the special park use permit system would be recovered; however this permit fee has not yet been determined.

As discussed in the economic analysis, the proposed rule element related to the prohibition of traps in CRPAs is anticipated to restrict lobster and crab fishing within the park. Fishers who currently target invertebrates (excluding shrimp) in the park are anticipated to travel to new trap locations, or to forego revenue from these areas. FWC trip ticket information for the years 2003 through 2013 suggest that an annual average of 25 commercial fishers targeted invertebrates (excluding shrimp) within park waters during this period (Exhibit A-3).⁹⁰ While there is some evidence that the number of fishers may be decreasing, this IRFA assumes that 25 commercial fishers would be affected by the proposed rule.

EXHIBIT A-3 NUMBER OF COMMERCIAL INVERTEBRATE FISHERS (EXCLUDING SHRIMP FISHERS) WITHIN BISCAYNE 2003 TO 2013



Source: Florida Fish and Wildlife Conservation Commission. Data received November 25, 2014.

⁹⁰ Florida Fish and Wildlife Conservation Commission. Data received November 25, 2014.

For the purpose of this analysis, all commercial fishers in Biscayne National Park are analyzed as in compliance with existing Federal and state regulations affecting their activities. Consequently, the rule element that requires shrimp trawler inspections is not expected to change the behavior of commercial fishers, as they are assumed to be already complying with State law.

The fourth element of the proposed rule, which prohibits commercial fishing for sponge and tropical ornamental marine life species, is anticipated to have a negligible effect on small entities. The value of the harvest of these species within the park has averaged below \$1,000 per year in the past 11 years and in three of the last five years (2009-2013), no harvests were reported.⁹¹

In sum, the proposed rule is anticipated to result in permit fee costs to 75 small commercial fishing entities operating within the park by requiring special park use permits. In addition, approximately 25 of these commercial fishers who target invertebrates (excluding shrimp) would face restrictions on their available fishing areas within the park.⁹²

A.4 DESCRIPTION OF REPORTING, RECORD KEEPING EFFORTS, AND COMPLIANCE REQUIREMENTS

A.4.1. REPORTING AND RECORD KEEPING EFFORTS

This rule contains no information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act is not required. OMB has approved the information collection requirements associated with NPS special park use permits and has assigned OMB Control Number 1024-0026 (expires 08/31/16).⁹³

There is no additional reporting expected from the implementation of this rule. FWC's existing trip ticket system already requires the information necessary to issue permits based on use of the park. There may be a minor time burden on commercial fishers to apply for the special-use permits annually.

A.4.2. ESTIMATE OF COMPLIANCE COST OF THE PROPOSED RULE

As described above, the non-transferable lifetime permit system rule element would require eligible fishers to renew the permit annually and pay a permit fee. The dollar value of this fee has not yet been determined, but will be set to allow NPS to recover its costs in administering the special park use permit system.

⁹¹ Florida Fish and Wildlife Conservation Commission. Data received November 25, 2014.

⁹² It is possible that restrictions on trapping could lead commercial lobster and crab fishers to not seek a special use park permit, in which case, they would not have to pay the permit fee.

⁹³ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

As described above, the rule element related to the prohibition of setting lobster and crab traps in CRPAs in the proposed rule is anticipated to require fishers who currently target invertebrates (excluding shrimp) within the park to either forego catch from these areas or travel to alternative areas. Compliance costs can be measured as the foregone profit from the reduced catch or the additional cost of the increased effort to reach alternative areas. As the proposed rule does not identify the timing and spatial extent of the prohibitions in the CRPAs, this analysis assumes that prohibitions are effective as of the start of the study period and cover all desirable areas for trapping invertebrates (excluding shrimp). As such, estimates should be interpreted as an upper bound of potential effects on invertebrate fishers (excluding shrimp fishers). The analysis of compliance costs suggest that if invertebrate fishers (excluding shrimp fishers) choose to forego profits from the park, this would result in a loss of approximately \$5,200 per fisher, annually; if invertebrate fishers (excluding shrimp fishers) choose to pursue the same harvest levels, but they incur higher costs to do so, this would increase their annual costs by \$4,800 per fisher (Exhibit A-4). For a more detailed explanation about the methods used to estimate compliance costs, please refer to the “Economic Analysis of the Proposed Rule to Amend Commercial Fishing Regulations in Biscayne National Park” (Economic Analysis) Section 4.1.1.

EXHIBIT A-4 ESTIMATED COMPLIANCE COSTS PER FISHER DUE TO THE PROPOSED RULE, ANNUALIZED 2016 TO 2035 (\$2014)

FISHERY	THREE PERCENT DISCOUNT RATE		SEVEN PERCENT DISCOUNT RATE	
	SCENARIO 1: FOREGONE CATCH	SCENARIO 2: INCREASED EFFORT	SCENARIO 1: FOREGONE CATCH	SCENARIO 2: INCREASED EFFORT
Invertebrates (excluding shrimp)	\$5,200	\$4,800	\$5,200	\$4,800
Source: IEc Analysis. Note: The average number of commercial invertebrate fishers (excluding shrimp fishers) in the park from 2003 through 2013 (25 fishers) was used to calculate per fisher compliance cost estimates.				

A.5 IDENTIFICATION OF RELEVANT FEDERAL RULES THAT MAY DUPLICATE, OVERLAP, OR CONFLICT WITH THE PROPOSED RULE

A number of Federal statutes, regulations, and policies impact commercial fishing activities within the park. In particular, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) is the primary law governing marine fisheries management in United States Federal waters. Among other attributes, the MSA created eight regional fishery management councils, including the South Atlantic Fishery Management Council, which includes Florida. The role of the fishery management plans is to manage fishery resources within Federal waters, which only have a small overlap with Biscayne National

Park. The Council is very involved in the management of snapper-grouper stocks; thus improvements to the stocks as a result of management would benefit park resources.

This analysis also notes some overlapping State regulations, including that the shrimp trawler inspections that would occur under the proposed rule are to ensure that the trawl gear used is in accordance with Florida State law (FWC Rules Chapter 68B-31).⁹⁴ As such, this element of the proposed rule would overlap with existing state laws. Additionally, the ban on sponge (as defined in FWC Rules Chapter 68B-28)⁹⁵ and tropical ornamental marine life species (as defined in FWC Rules Chapter 68B-42)⁹⁶ harvest would be similar to existing state regulation.⁹⁷ NPS invites comments that identify additional statutes, regulations, or policies that may duplicate, overlap, or conflict with the proposed rule.

A.6 DESCRIPTION OF ALTERNATIVES TO THE PROPOSED RULE THAT WOULD MINIMIZE SIGNIFICANT ECONOMIC IMPACTS ON SMALL ENTITIES

An IRFA should include a description of any significant alternatives to the proposed rule that minimize significant economic impacts on small entities while accomplishing the agency's objectives. During the development of the FMP/EIS, NPS considered three alternatives to the proposed rule. The following descriptions of these alternatives only include the elements that are related to the specific management measures of the proposed rule.

Under Alternative 2, all commercial fishers would be required to obtain a limited-entry, special park use permit from the park Superintendent. The permit would be transferable and would require annual renewal for each year in which landings are reported. As under the proposed rule, fishers would pay a permit fee. Shrimp trawlers would be subject to inspection, as under the proposed rule. Additionally, the park would explore the feasibility and effectiveness of establishing a regulation to restrict traps from hardbottom habitat.⁹⁸ As discussed in the Economic Analysis, because the permit would be transferable, the number of fishers would be expected to be largely maintained at current levels over time as permits are transferred. If fishers in the park were forecast to increase over time, this element would limit the total number of fishers in the park. However, because the number of fishers is forecast to be constant in the park under the baseline, an incremental effect of this alternative on fishers is anticipated.

⁹⁴ <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-31>.

⁹⁵ <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-28>.

⁹⁶ <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-42>.

⁹⁷ National Park Service (NPS) 2014b. Proposed Rule: Special Regulations; Areas of the National Park System; Biscayne National Park; Commercial Fishing. Draft date 12.05

⁹⁸ National Park Service (NPS) 2014a. Fishery Management Plan Final Environmental Impact Statement (FMP/EIS). U.S. Department of the Interior.

Alternative 3 expands upon Alternative 2 primarily by making permits non-transferable for the first five years and establishing CRPAs to delineate coral reef habitat where lobster and crab traps could be prohibited.⁹⁹ Again, if fishers in the park were forecast to increase over time, this element would have limited the total number of fishers in the park. It is unclear whether a short-term limit on permit transferability would have an effect on total fishers. It is possible that some retirements could occur during those five years, which would further limit the activity in the park even after permits could be transferred. Alternatively, fishers might choose to continue fishing until they could transfer their permit. As the effect of this five year window is uncertain, this analysis assumes that compliance costs related to this rule element are the same as under Alternative 2, i.e., limited to the annual permit fee. The rule element under this alternative related to CRPAs is similar to the relevant element in the proposed rule. Consequently, compliance costs related to CRPAs experienced by invertebrate fishers (excluding shrimp fishers) under Alternative 3 are equivalent to those due to the proposed rule.

Under Alternative 5, the targets for species recovery are higher than under the Alternative 4, from which the proposed rule derives. However, the specific park management measures affecting commercial fishers would be the same as the requirements of the proposed rule.¹⁰⁰ Consequently, compliance costs are also assumed to be equivalent.

⁹⁹ Ibid.

¹⁰⁰ Ibid.