

## MEMORANDUM | January 17, 2024

**TO** U.S. Fish and Wildlife Service

**FROM** Industrial Economics, Incorporated (IEc)

**SUBJECT** Draft Screening Analysis of the Probable Economic Impacts of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee

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The Service intends to publish a proposed rule to revise critical habitat for the West Indian manatee (*Trichechus manatus*), including the Florida manatee (*T. manatus latirostris*) and Antillean manatee (*T. manatus manatus*) subspecies. As part of the rulemaking process, the Service must consider the economic impacts, including costs and benefits, of the proposed rule in the context of three separate requirements:<sup>1</sup>

- **Executive Order (E.O.) 12866 Regulatory Planning and Review**, which directs Agencies to assess the costs and benefits of the regulatory action;<sup>2</sup>
- **Section 4(b)(2) of the Endangered Species Act (the Act)**, which requires the Secretary of the Interior to consider economic impacts prior to designating critical habitat; and
- **Regulatory Flexibility Act**, which requires Federal agencies to prepare and make available for public comment an initial regulatory flexibility analysis that describes the effect of a proposed rule on small entities. No initial regulatory flexibility analysis is required if the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.<sup>3,4</sup>

This memorandum provides information to the Service on the potential costs, cost savings, and benefits of the proposed revised critical habitat designation to determine whether the rule meets the threshold for a rule that is significant under Section 3(f)(1) of Executive Order 12866, as

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<sup>1</sup> Additional laws and executive orders require the consideration of the distribution of impacts on vulnerable subpopulations, such as state or local governments. These requirements for distributional analysis are beyond the scope of this memorandum.

<sup>2</sup> Published September 20, 1993. As affirmed by E.O. 13563 (Improving Regulation and Regulatory Review) of January 18, 2011, and amended by E.O. 14094 (Modernizing Regulatory Review) of April 6, 2023.

<sup>3</sup> 5 U.S.C. § 601 et seq.

<sup>4</sup> For a discussion of the Service's findings regarding the Regulatory Flexibility Act (RFA) and other relevant statutes, please refer to the preamble to the proposed rule published in the Federal Register.

amended by Executive Order 14094.<sup>5</sup> This memorandum also identifies the geographic areas or specific activities that could experience the greatest impacts, measured in terms of changes in social welfare, to inform the Secretary's decision under section 4(b)(2).<sup>6</sup>

To prepare this assessment, we primarily rely on the following information sources: (1) the Service's incremental effects memorandum (IEM); (2) geographic information systems (GIS) data layers describing the proposed revised designation as well as existing critical habitat for the species; (3) consultation history for the West Indian manatee; (4) biological opinions from past consultations that considered the West Indian manatee; and (5) information provided by Federal partners.

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<sup>5</sup> E.O. 14094, issued on April 6, 2023, amends Section 3(f)(1) of E.O. 12866 to define a significant regulatory action under Section 3(f)(1) as, among other things, any regulatory action likely to result in a rule that may have an annual effect on the economy of \$200 million or more. This threshold will be adjusted every three years to account for inflation.

<sup>6</sup> The discipline of welfare economics focuses on maximizing societal well-being (see Just et al. 2005. *The Welfare Economics of Public Policy: A Practical Approach to Project and Policy Evaluation*. Edward Elgar Publishing, Cheltenham and Northampton). It measures costs and benefits in terms of the opportunity costs of employing resources for the conservation of the species and individual willingness to pay to conserve those species. Opportunity cost is the value of the benefit that could have been provided by devoting the resources to their best alternative uses. Opportunity costs differ from the measurement of accounting costs (e.g., actual expenses). Welfare economics is recognized by the U.S. Office of Management and Budget (OMB) as the appropriate tool for valuing the costs and benefits of proposed regulatory actions (OMB, "Circular A-4." November 9, 2023).

### ***Findings of the Screening Analysis***

The proposed rule revises critical habitat for the West Indian manatee. This memorandum evaluates the effects of the proposed revised critical habitat (1,982,312 acres in Florida and Puerto Rico) where the existing critical habitat is the baseline (965,386 acres in Florida only). Thus, the proposed rule does not change the status quo regulatory requirements of critical habitat in the 705,569 acres included in both existing and proposed revised critical habitat. The analysis therefore focuses on costs of critical habitat areas that would be added (1,198,622 acres in Florida and 78,121 acres in Puerto Rico) as well as cost saving in the 259,817 acres of existing critical habitat in Florida not included under the new rule.

In summary, the proposed rule is unlikely to generate annual effects on the economy of \$200 million or more. In making this conclusion, we considered costs, cost savings, benefits, and forgone benefits. Therefore, the rule is unlikely to meet the threshold for an economically significant rule as defined in E.O. 14094.

#### **Section 7 Costs and Cost Savings**

The economic effects of implementing the rule through section 7 of the Act will most likely be limited to changes in administrative effort to consider adverse modification of West Indian manatee critical habitat during consultations and technical assistances. This finding is based on the following:

- All 25 proposed revised units are considered occupied by the West Indian manatee, and occupied units are afforded significant baseline protection under the Act due to the presence of the listed species;
- All projects with a Federal nexus would be subject to section 7 consultation regardless of the designation of critical habitat due to the presence of the listed species;
- Critical habitat is not likely to change the Service's recommendation for project modifications as part of future consultations considering the West Indian manatee; and
- The West Indian manatee receives additional baseline protection from co-occurring listed species and their critical habitats.

Based on past consultation activity for the West Indian manatee in areas *added* to existing critical habitat, we find that the incremental cost of considering adverse modification in these consultations is on the order of \$190,000 annually (2023 dollars). When considering areas *removed* from existing critical habitat, the cost savings associated with reduced requirements during section 7 consultations is on the order of \$57,000 annually. The expected net cost of revising critical habitat is an increase in administrative costs of approximately \$130,000 in a given year.

#### **Section 7 and Other Benefits and Forgone Benefits**

The critical habitat designation is intended to bolster the West Indian manatee's conservation and recovery. However, because this economic screening analysis finds that the designation is not likely to result in changes in project modifications, economic benefits and (or forgone benefits) are not anticipated.

#### **Alternate Baseline**

This memorandum includes an additional assessment of the cost of proposed revised critical habitat relative to a world without existing critical habitat for the West Indian manatee. Under this alternate baseline, total incremental administrative costs are not expected to exceed \$400,000 in a given year. Benefits are not anticipated under this alternate baseline.

#### **Distribution of Costs by Geography and Activity Type**

The location of future activities that will trigger section 7 consultations for the West Indian manatee is uncertain. In recent years, consultation activity for the West Indian manatee in the areas proposed for critical habitat were greater in Florida than Puerto Rico.

The activities most likely to result in section 7 consultation related to critical habitat for the West Indian manatee are associated with aquaculture, border protection, conservation, restoration, dredging, flood control, in-water construction, power generation, recreation, shoreline stabilization, transportation, unexploded ordnance management, utilities, and water quality management.

## Section 1. Background<sup>7</sup>

West Indian manatees (*Trichechus manatus*) are large marine mammals characterized by their paddle-shaped tail and short flippers. There are two subspecies of West Indian manatees that are morphologically similar and have comparable appearances: the Florida manatee (*T. manatus latirostris*) and the Antillean manatee (*T. manatus manatus*). These subspecies are most often distinguished through analysis of their genetics and measurements of their skeletons; Florida manatees often weigh more and are larger in size compared to the Antillean manatee.

West Indian manatees rely on forage such as seagrass, freshwater for drinking and calm shallow waters that provide shelter from large waves and wind. The range of the West Indian manatee stretches from southeastern North America to northern South America, with each subspecies found in different areas. Florida manatees most often are found in estuaries, rivers, and coastal areas in and around Florida; along the Mid-Atlantic coast of the United States; and in the northern Gulf of Mexico. The subspecies cannot tolerate cold waters and typically migrates to natural warm-water springs in the winter months. The Antillean manatee range includes the east coast of Mexico, Central America, northern South America, and around islands in the Caribbean Sea. The only two areas of the United States within the range of the Antillean manatee are Puerto Rico and the U.S. Virgin Islands, although sightings in the latter are rare.

The West Indian manatee faces habitat threats that organize into six categories:

- 1. Loss of foraging habitat and other areas of habitat** as a result of anthropogenic activities and development.
- 2. Loss of warm-water habitat** due to alterations of springs and other warm-water sources through reductions in flow or the creation of barriers such as dams and obstructions that block manatee access.
- 3. Algal blooms** can cause the loss of seagrasses that the manatees rely on as a source of food.
- 4. Climate change** is affecting the temperature of the manatee's water habitat, altering weather patterns, including more frequent and more intense storm events and causing sea level rise.
- 5. Contaminants** from human waste, oil, agriculture, and runoff are directly impacting the manatees and their habitat.
- 6. Storm events such as tropical storms and hurricanes** are not only increasing but also becoming more severe as a result of climate change and warming water temperatures.

The Florida manatee was listed by the Service under the Endangered Species Preservation Act in 1967.<sup>8</sup> In 1970 an amendment was made to the 1967 listing to include the West Indian manatee.<sup>9</sup> Since this time, two key events occurred: 1) Critical habitat was designated for the Florida manatee in 1977 and only included Florida waterways known to support manatees and 2) the West Indian

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<sup>7</sup> U.S. Fish and Wildlife Service. "Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee." September 5, 2023.

<sup>8</sup> Federal Register, Volume 32, Number 48. March 11, 1967. Page 4001.

<sup>9</sup> Federal Register, Volume 35, Number 233. December 2, 1970. Page 18320.

manatee was reclassified from endangered to threatened in 2017 by the Service.<sup>10,11</sup> The Service now proposes to revise critical habitat for the West Indian manatee by defining physical or biological features (PBFs) essential to the conservation of the species and adding a critical habitat designation for the Antillean manatee. The Service describes the PBFs separately for each subspecies.

- **Florida manatee:**

- Areas of water warmed by natural processes with either reliable thermal quality throughout the winter or established manatee use throughout winter each year.
- Areas supporting submerged, emergent, or floating aquatic vegetation within 18.6 miles of the natural warm-water sources described above.
- Areas supporting submerged, emergent, or floating aquatic vegetation within 18.6 miles of other established winter manatee aggregation areas (power plants with established manatee use).

- **Antillean manatee:**

- Areas that have at least two of the following resources within a 3-mile radius and that support the greatest aggregation of manatees: (1) freshwater sources, (2) seagrass less than 43 feet deep, or (3) calm waters with water depths of less than 9.8 feet and wave heights less than 0.98 feet.

The Service has identified 25 critical habitat units that span 1,982,312 acres, including 12 units located in Florida (1,904,191 acres) and 13 units located in Puerto Rico (78,121 acres). All units are occupied by the species and contain one or more of the PBFs described above. As shown in Table 1, the Florida units include land managed by the state (57 percent), Federal government (34 percent), local jurisdictions (7 percent), and private entities (2 percent). All proposed units in Puerto Rico are managed by the Commonwealth government.

The proposed units represent a revision of the existing critical habitat in Florida. Table 2 provides a comparison of existing critical habitat and proposed revised critical habitat in Florida. In total, the existing critical habitat spans 965,386 acres, and proposed revised critical habitat in Florida includes 1,904,191 acres, representing an almost doubling of critical habitat in the state.<sup>12</sup> The net increase in the proposed revised designation is 938,805 acres.

The proposed critical habitat in Florida is a significant change from the existing critical habitat. Nine of the 12 proposed critical habitat units overlap with existing critical habitat, although all 9 units include areas that are newly proposed (i.e., not existing critical habitat). Three of the 12 proposed units do not overlap with existing critical habitat. Further, 259,817 acres of existing critical habitat do not overlap with the proposed revised units.

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<sup>10</sup> Federal Register, Volume 42, Number 184, September 22, 1977. Page 47841.

<sup>11</sup> Federal Register, Volume 82, Number 64, April 5, 2017. Page 16668.

<sup>12</sup> IEc projected both the existing and proposed critical habitat shapefiles to the NAD 1983 Contiguous USA Albers coordinate reference system, which is area-accurate throughout the contiguous United States. This coordinate reference system differed from the system the Service used in its projections. While both are area-accurate, the two methods result in a slight difference in our estimation of the total size of existing critical habitat (e.g., approximately 8 acres).

Figure 1 provides an overview of the existing critical habitat removed from proposed revised critical habitat (in red), areas in both existing and proposed revised critical habitat (in blue), and areas added to West Indian manatee critical habitat within the state of Florida via the proposed revised units (in green). Figure 2 depicts the full geographic extent of proposed critical habitat for the West Indian manatee within Puerto Rico.

Table 1. Summary of Proposed Revised Critical Habitat for the West Indian Manatee (Acres)

Proposed Unit	Proposed Unit Name	Total Area	State or Commonwealth	Federal	Local	Private
FL-01	Wakulla Springs	22,593	21,598	936	1	58
FL-02	Manatee and Fanning Springs	4,452	4,157	224	12	59
FL-03	Withlacoochee Bay to Anclote River	364,584	335,064	21,131	1,670	6,716
FL-04	Tampa Bay	181,015	68,347	682	108,805	3,181
FL-05	Venice to Estero Bay	219,217	191,975	2,048	16,821	8,373
FL-06	Rookery Bay to Florida Bay West	450,052	105,559	343,626	18	849
FL-07	Upper Florida Keys	244,254	76,635	161,201	2,762	3,656
FL-08	Biscayne Bay to Deerfield Beach	146,725	46,768	91,404	5,525	3,028
FL-09	Boynton Beach to Fort Pierce	37,829	35,967	203	533	1,126
FL-10	Vero Beach to Northern Indian River Lagoon	153,589	117,318	33,077	1,782	1,410
FL-11	Upper St. Johns River	79,444	76,984	1,815	150	495
FL-12	Silver Springs	438	417	6	-	15
<b>Florida Sub-Total</b>		<b>1,904,191</b>	<b>1,080,797</b>	<b>656,356</b>	<b>138,080</b>	<b>28,969</b>
PR-01	Boca Vieja	2,640	2,640	-	-	-
PR-02	Condado Lagoon	91	91	-	-	-
PR-03	Rio Grande	1,691	1,691	-	-	-
PR-04	Fajardo	2,065	2,065	-	-	-
PR-05	Ceiba	6,429	6,429	-	-	-
PR-06	Vieques	4,980	4,980	-	-	-
PR-07	Arroyo	15,001	15,001	-	-	-
PR-08	Santa Isabel to Jobos Bay	24,360	24,360	-	-	-
PR-09	Guayanilla	7,404	7,404	-	-	-
PR-10	Guánica	1,798	1,798	-	-	-
PR-11	Bahía Sucia	1,732	1,732	-	-	-
PR-12	Boquerón	1,989	1,989	-	-	-
PR-13	Mayagüez	7,949	7,949	-	-	-
<b>Puerto Rico Sub-Total</b>		<b>78,121</b>	<b>78,121</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>		<b>1,982,312</b>	<b>1,158,918</b>	<b>656,356</b>	<b>138,080</b>	<b>28,969</b>

Source: U.S. Fish and Wildlife Service. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee, September 5, 2023. Table 2.

Table 2. Summary of Existing and Proposed Revised Critical Habitat in Florida for the West Indian Manatee (Acres)

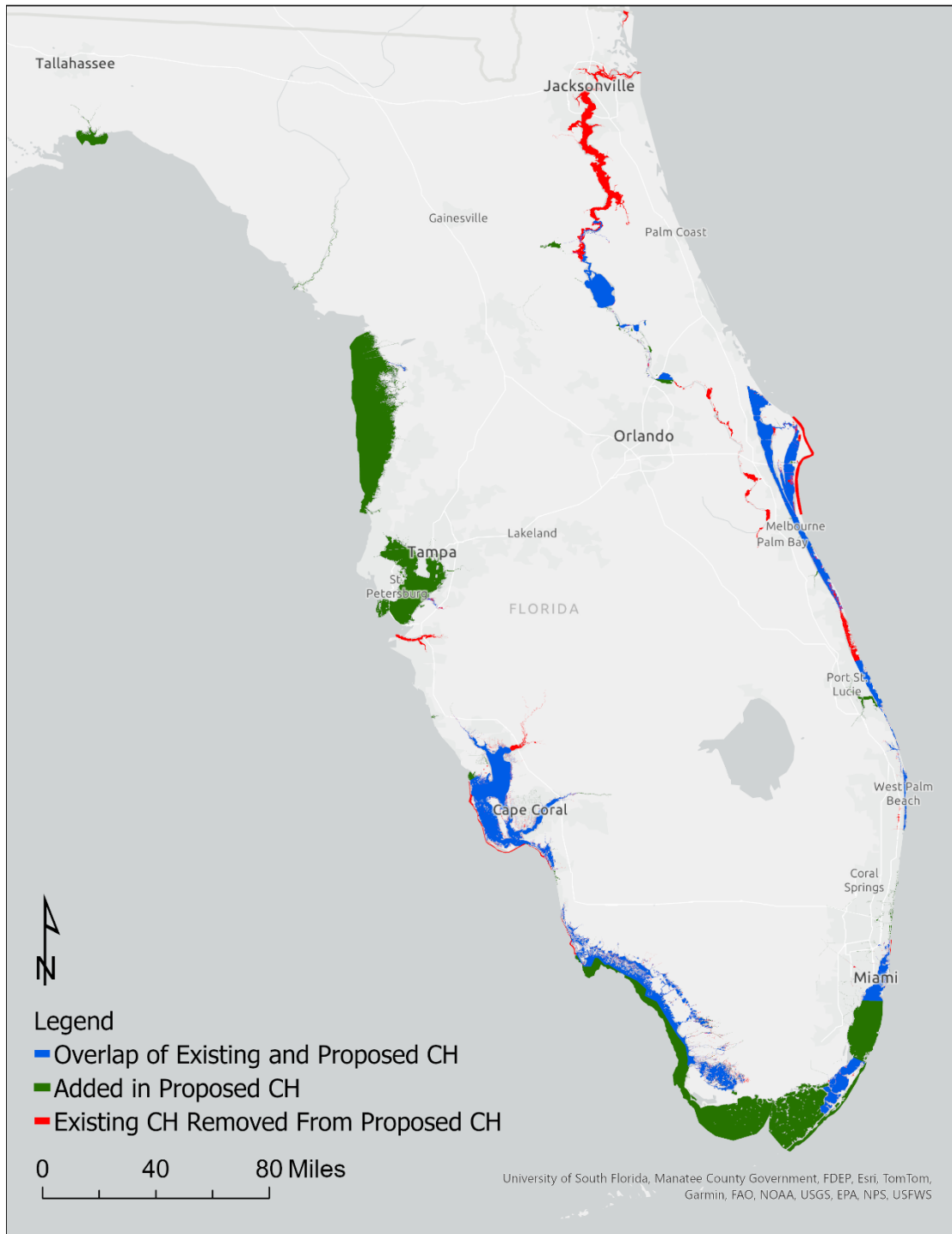
Proposed Unit Name	Existing Critical Habitat	Proposed Revised Critical Habitat	Incremental Change in Critical Habitat
FL-01 Wakulla Springs	0	22,593	22,593
FL-02 Manatee and Fanning Springs	0	4,452	4,452
FL-03 Withlacoochee Bay to Anclote River	906	364,584	363,678
FL-04 Tampa Bay	1,158	181,015	179,857
FL-05 Venice to Estero Bay	207,005	219,217	12,211
FL-06 Rookery Bay to Florida Bay West	165,048	450,052	285,004
FL-07 Upper Florida Keys	50,595	244,254	193,659
FL-08 Biscayne Bay to Deerfield Beach	34,993	146,725	111,732
FL-09 Boynton Beach to Fort Pierce	29,235	37,829	8,594
FL-10 Vero Beach to Northern Indian River Lagoon	150,665	153,589	2,924
FL-11 Upper St. John River	65,963	79,444	13,481
FL-12 Silver Springs	0	438	438
<b>Sub-total within proposed revised units</b>	<b>705,569</b>	<b>1,904,191</b>	<b>1,198,622</b>
<b>Sub-total outside of proposed revised units</b>	<b>259,817</b>	<b>0</b>	<b>-259,817</b>
<b>Total</b>	<b>965,386</b>	<b>1,904,191</b>	<b>938,805</b>

**Source:** IEc calculations using geospatial data and analysis tools with the provided existing critical habitat and proposed critical habitat shapefiles from the Service.

**Notes:** IEc projected both the existing and proposed critical habitat shapefiles to the NAD 1983 Contiguous USA Albers coordinate reference system, which is area-accurate throughout the contiguous United States. IEc then estimated the acreage of the existing and the proposed revised critical habitat, as well as the overlap between the two. The overlapping acreage is represented at the proposed-revised-unit-level under the 'Existing CH' column. All existing critical habitat located outside of the proposed revised critical habitat is reported under the same column in the 'Sub-total outside of proposed revised units' row. The total acreage of each proposed revised unit is represented under the 'Proposed Revised CH' column. The column 'Incremental Change in CH' is the simple difference between the values in the 'Proposed Revised CH' column and the 'Existing CH' column. Because the Service uses a different coordinate reference system in its GIS analysis, the acres presented in this table differ slightly than those presented in the Service's IEM.



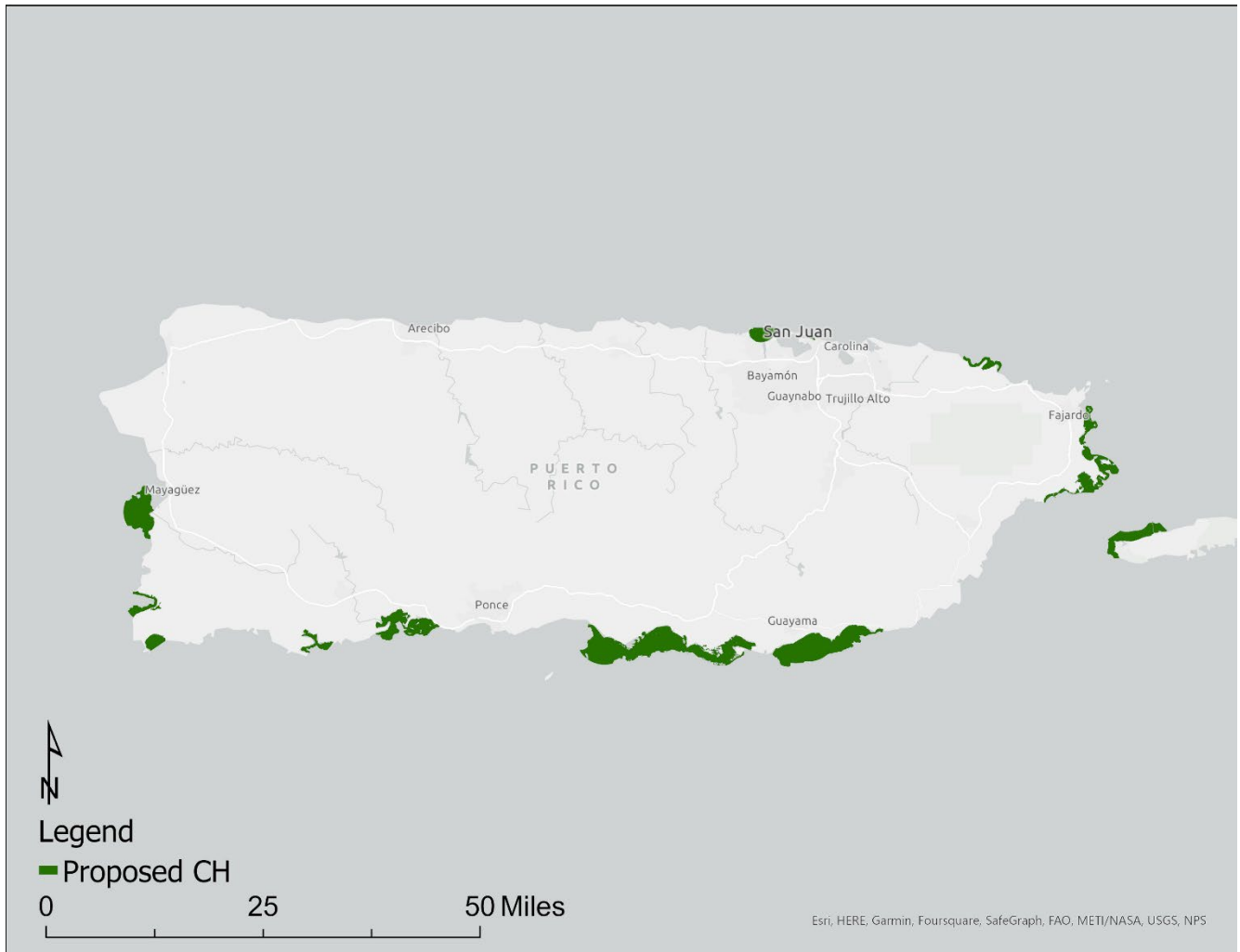
Figure 1. Overview of Proposed Revised Critical Habitat for the West Indian Manatee in Florida



**Source:** GIS data layers describing the proposed revised designation as well as existing critical habitat for the West Indian manatee provided by the Service.

**Notes:** The original GIS data layer for existing critical habitat included an area spanning the lower portion of Merritt Island. The Service clarified this area is not part of the existing designation, so it was removed from the map.

Figure 2. Overview of Proposed Critical Habitat for the West Indian Manatee in Florida



Source: GIS data layers describing the proposed revised designation for the West Indian manatee provided by the Service.

## Section 2. Framework

Guidelines issued by the U.S. Office of Management and Budget (OMB) for the economic analysis of regulations direct Federal agencies to measure the costs, cost savings, and benefits of a regulatory action against a baseline (i.e., costs, cost savings, and benefits that are “incremental” to the baseline). OMB defines the baseline as the “best assessment of the way the world would look absent the proposed action.”<sup>13</sup> In other words, the baseline includes any existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users affected by the designation of critical habitat. The baseline includes the economic impacts of listing the species under the Act, even if the listing occurs concurrently with critical habitat designation. In the case of the West Indian manatee, the baseline also includes the existing critical habitat designation for the species. This is because, the Service describes that, absent the proposed rule, existing critical habitat for the West Indian manatee would remain in place.<sup>14</sup>

Impacts that are incremental to the baseline (i.e., occurring relative to existing constraints) are those that are solely attributable to the revision of critical habitat as described in the proposed rule. This screening analysis focuses on the likely incremental effects of the proposed revised critical habitat rule. We consider incremental effects in two key categories: (1) those that may be generated by section 7 of the Act; and (2) other types of impacts outside of the context of section 7:

- **Incremental section 7 impacts:** Activities with a Federal nexus that may affect listed species are subject to section 7 consultation to consider whether actions may jeopardize the existence of the species, even absent critical habitat.<sup>15</sup> As part of these consultations, critical habitat triggers an additional analysis evaluating whether an action will diminish the recovery potential or conservation value of the designated area. Specifically, following the designation, Federal agencies must also consider the potential for activities to result in the destruction or adverse modification of critical habitat. These consultations are the regulatory mechanism through which critical habitat rules are implemented. Any time and effort spent on this additional analysis, as well as the costs and benefits of implementing any recommendations resulting from this review, are economic impacts of the critical habitat designation.
- **Other incremental impacts:** Critical habitat may also trigger additional regulatory changes. For example, the designation may cause other Federal, state, or local permitting or regulatory agencies to expand or change standards or requirements. Regulatory uncertainty generated by critical habitat may also have impacts. For example, landowners or buyers may perceive that the rule will restrict land or water use activities in some way and therefore value the use of the land less than they would have absent critical habitat. This is a perception, or stigma, effect of critical habitat on markets.

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<sup>13</sup> OMB, “Circular A-4,” November 9, 2023. Circular A-4 provides “guidance to Federal Agencies on the development of regulatory analysis as required under Section 6(a)(3)(c) of E.O. 12866...”, Page 1.

<sup>14</sup> Personal communication between IEc and the Service on August 9, 2023.

<sup>15</sup> A Federal nexus exists for activities authorized, funded, or carried out by a Federal agency.

The proposed revised critical habitat includes 1) existing critical habitat that *would remain* critical habitat under the proposed revision, 2) new critical habitat areas that *would be added* as part of the revision, and 3) existing critical habitat that *would be removed*. For the areas in the first category, the proposed rule would not generate economic impacts because any section 7 or other impacts associated with critical habitat are expected to occur under the baseline scenario, regardless of whether the proposed rule is enacted. For the second category (i.e., added to existing critical habitat), the proposed rule generates new requirements for section 7 consultation, which has the potential for incremental costs and benefits. Finally, for the areas in the third category (i.e., existing critical habitat excluded from revised proposed critical habitat), there is a reduction in section 7 consultation effort (i.e., consideration of adverse modification of critical habitat is no longer necessary), which results in the potential for cost savings and foregone benefits. The net effect of the proposed rule considers the relative magnitude of these costs, cost savings, benefits, and forgone benefits. Table 3 describes the geographic areas in which these various impacts may occur. The sections that follow provide a quantitative assessment of these impacts.

**Table 3. Incremental Effects of the Revised Proposed Critical Habitat Rule by Geographic Area**

Unit Name	Unaffected Critical Habitat	Added Critical Habitat	Removed Critical Habitat
Florida units	705,569 acres	1,904,191 acres	259,817 acres
	No effects of the rule	Potential for costs and benefits	Potential for cost savings and forgone benefits
Puerto Rico units	N/A	78,121 acres	N/A
		Potential for costs and benefits	

**Notes:** See Table 2 for details on Florida units and Table 1 for details on Puerto Rico units.

### Section 3. Section 7 Costs and Cost Savings of the Revised Critical Habitat Rule

Section 7 of the Act requires Federal agencies to consult with the Service to ensure that their actions will not jeopardize the continued existence of the West Indian manatee regardless of critical habitat. Thus, section 7 provides some baseline protection and generates baseline costs associated with conservation and recovery of the West Indian manatee due to the species listing, regardless of critical habitat. In the presence of critical habitat, section 7 additionally requires that Federal agencies ensure their actions will not adversely modify critical habitat. Thus, a key focus of this screening analysis is to determine the likelihood that the designation of critical habitat would trigger new project modifications to avoid adverse modification that would be above and beyond any modifications triggered by adverse effects to the species itself. Additionally, because revised proposed critical habitat removes some areas in the existing designation, this screening analysis seeks to determine the likelihood that project modifications in the baseline would no longer occur if the proposed rule went into effect.

This screening analysis finds that the incremental effects (costs and cost savings) associated with section 7 consultations for the West Indian manatee are likely limited to administrative costs. In other words, project modification recommendations to avoid adverse modification of critical habitat for the manatees are not anticipated to change given other baseline protections of the species and its habitat. Therefore, in all proposed units, the incremental effects of the proposed critical habitat rule are most likely limited to changes in the effort required to administer section 7 consultations. This conclusion is based on multiple factors:

- **No change in costs of complying with critical habitat in existing critical habitat that is included in the proposed revised critical habitat (36 percent of proposed revised critical habitat).**<sup>16</sup> Requirements for section 7 consultations will not differ between existing critical habitat and revised proposed critical habitat. Therefore, section 7 consultation frequency and outcomes will not change in existing critical habitat that will also be part of revised proposed critical habitat.
- **The listing of the West Indian manatee under the ESA provides substantial baseline protection throughout proposed revised critical habitat (100 percent of proposed revised critical habitat).**
  - **All projects with a Federal nexus will be subject to section 7 consultation regardless of the presence of critical habitat.** All 25 proposed units are occupied by the West Indian manatee. According to the Service, “because consultation is already necessary when there is a Federal action in areas occupied by the West Indian manatee [...] no additional consultations are expected.”<sup>17</sup> That is, the nature of activities that may require section 7 consultation is not different with or without critical habitat.
  - **Critical habitat is not likely to change the Service's recommendation for project modifications as part of future consultations considering the West Indian manatee.** For future consultations that consider West Indian manatee revised critical habitat, the Service anticipates that the same kinds of conservation recommendations made to avoid jeopardy would avoid adverse modification of critical habitat. The Service notes, “Recommended project modifications would be the same for jeopardy and adverse modification avoidance. In both cases, the goals would be to maintain habitat to support existing populations and ensure connectivity to nearby populations where possible.”<sup>18</sup> Confirming this assessment, the Service provided recent consultations for inside and outside of existing critical habitat, and the conservation recommendations were found to be similar.<sup>19</sup> Thus, the outcome of these consultations is unlikely to be different with or without critical habitat.

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<sup>16</sup> 705,569 acres of overlap (see Table 2) / 1,982,312 total acres in proposed revised critical habitat rule (see Table 1) = 36 percent

<sup>17</sup> U.S. Fish and Wildlife Service. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee, September 5, 2023. Page 72.

<sup>18</sup> *Ibid.* Page 67.

<sup>19</sup> See details in “Likelihood of Project Modification Costs or Cost Savings” sub-section of this memorandum.

- **Species and habitat conservation efforts for co-occurring listed species and their critical habitats provide additional baseline protection for the West Indian manatee.**

The ranges of 26 other listed species overlap with proposed revised critical habitat.<sup>20</sup> Of these species, there are 9 with existing critical habitat that overlaps proposed revised critical habitat for the West Indian manatee. Including existing critical habitat for the West Indian manatee, 61 percent of the proposed revised designation overlaps with existing critical habitat.<sup>21</sup>

Accordingly, the effects of section 7 consultation are likely to be limited to changes in administrative effort during consultations. In the new proposed critical habitat, these effects result in minor additional costs to consider adverse modification of West Indian manatee critical habitat. In existing critical habitat removed from the proposed revised critical habitat, the effect is a cost savings from no longer needing to consider adverse modification during section 7 consultations. The following sections provide information on the anticipated levels of consultation activity to assess the likely magnitude of associated costs and cost savings. First, we estimate future section 7 consultations for the West Indian manatee based on recent consultations for the species within existing and new proposed critical habitat. We then summarize the associated costs and cost savings of these consultations and technical assistances.

This analysis finds that administrative costs and cost savings are on the order of \$190,000 and \$57,000, respectively, in a given year (2023 dollars). The expected net effect of revising critical habitat for the West Indian manatee is a \$130,000 increase in administrative costs per year. The section concludes with a description of the likelihood of project modification costs or cost savings.

## Expected Future Consultations

The Service anticipates that many project types will or could have a Federal nexus and require section 7 consultation that considers West Indian manatee critical habitat in the future.<sup>22</sup> The number of future consultations expected to arise from these activities is uncertain. To address this uncertainty, the Service conducted outreach to Federal agencies likely to consult on activities in the proposed revised critical habitat.<sup>23</sup> Most of the Federal agencies indicated they do not anticipate any changes in the number of activities that require consultation over the next two decades.<sup>24</sup> One exception is the Federal Emergency Management Agency (FEMA), which suggested its activity level may increase as natural disasters become more frequent and Federal funding for non-disaster

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<sup>20</sup> Additionally, ranges of 3 other species proposed for listing also occur within proposed revised West Indian manatee critical habitat.

<sup>21</sup> U.S. Fish and Wildlife Service. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee, September 5, 2023. Table 4.

<sup>22</sup> These project types include: projects associated with aquaculture, border protection, conservation, restoration, dredging, flood control, in-water construction, power generation, recreation, shoreline stabilization, transportation, unexploded ordinance management, utilities, and water quality management. *Ibid.* Page 71.

<sup>23</sup> These agencies included: the National Oceanic and Atmospheric Administration (NOAA), U.S. Coast Guard (USCG), U.S. Army Corps of Engineers (USACE), Federal Emergency Management Agency (FEMA), Forest Service, the Navy and Marine Corps, Florida Department of Transportation (FDOT), and Federal Regulatory Commission (FERC).

<sup>24</sup> Email communication between the Navy and the Service on August 22, 2022; email communication between the Marine Corps and the Service on August 18, 2022; email communication between the Forest Service and the Service on August 18, 2022; email communication between the USCG and the Service on August 1, 2022.

activities increases.<sup>25</sup> Additionally, the Florida Department of Transportation (FDOT) provided different predictions for different districts; while some FDOT districts do not anticipate an increase in activity levels, other districts expect potential increases due to increased construction and repair needs resulting from population growth and worsening storm events.<sup>26</sup> However, neither FEMA nor the FDOT quantified these potential increases in activity level.

Absent a specific forecast of future activity levels, this analysis constructed a forecast of future consultation activities using recent rates of consultation activities that considered the West Indian manatee in both existing and proposed revised critical habitat areas between 2018 (the first complete year after the species was downlisted) and 2022 (the most recent complete year of data).<sup>27</sup> This analysis leveraged GIS software to determine how frequently consultations occurred within the existing and proposed critical habitat.<sup>28</sup> To isolate incremental costs, costs savings, and baseline costs, this analysis distinguished between consultations in existing critical habitat, proposed revised critical habitat, and the overlap between the two.

The frequency of consultations and technical assistance efforts varied substantially between 2018 and 2022. This variance is partially accounted for by disruptions in Federal activity levels caused by the COVID-19 pandemic. The Service indicated they do not expect any lapse in Federal projects to persist over time and confirmed activity levels should resemble pre-pandemic levels in the future.<sup>29</sup> This analysis conservatively assumes the annual number of consultation activities in each critical habitat unit will be equivalent to the maximum number of consultations by unit in any calendar year between 2018 and 2022. Table 4 below displays the resulting consultation forecast. The forecast distinguishes between consultation and technical assistance activities expected to occur in existing critical habitat areas that would remain critical habitat under the proposed designation (“unaffected”), new critical habitat areas that would be added (“additional effort”), and existing critical habitat areas that would be removed (“reduced effort”). The Service expects formal consultations regarding the West Indian manatee or its critical habitat to be infrequent.<sup>30</sup>

The forecast indicates that additional effort to consider adverse modification of critical habitat may occur during 62 informal consultations and 59 technical assistance efforts in each future year across the acres being added to the critical habitat designation in both Florida and Puerto Rico (“additional effort”). Because the proposed rule would remove existing critical habitat in select

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<sup>25</sup> Email communication between FEMA and the Service on July 22, 2022.

<sup>26</sup> Email communication between FDOT and the Service on August 23, 2022.

<sup>27</sup> Data from the Service also included 2017 and 2023, but only partial fiscal years.

<sup>28</sup> To accomplish this, coordinates for consultations were extracted from TAILS and EcoSPHERE then mapped to shapefiles provided by the Service. Consultations occurring within 50 meters of a critical habitat boundary (either existing critical habitat, proposed revised critical habitat, or the overlap), were counted as occurring within that critical habitat boundary. This method was used to prevent undercounting due to imprecise geographic coordinates.

<sup>29</sup> Personal communication between IEc and the Service on September 6, 2023.

<sup>30</sup> Personal communication between IEc and the Service on August 9, 2023 as well as email communication between the same entities on December 11, 2023. The Service undertakes effort to work “would-be” formal consultations to informal consultations because it cannot grant incidental take for the manatee. This effort would be expended for the listing status of the species, meaning it is not an incremental cost of critical habitat. A total of 12 formal consultations (6 in existing Florida critical habitat, 2 in proposed revised Florida critical habitat, and 4 in the overlap) from the recent set were counted as informal consultations for the purpose of this analysis.

areas in Florida, the proposed rule could also result in a reduction in effort to consider adverse modification of critical habitat during 19 informal consultations and 14 technical assistances annually (“reduced effort”). Finally, the annual effort devoted to 72 informal consultations and 44 technical assistances in existing West Indian manatee critical habitat that is also part of the proposed revised critical habitat is expected to be unaffected by the proposed rule (“unaffected”). In addition to informal consultations and technical assistances that occur in the consultation history data, the Service also considered whether it would revise any existing programmatic consultations that cover the West Indian manatee and determined that it is unlikely that proposed revised critical habitat would trigger reinitiation of an existing programmatic consultation.<sup>31</sup>

In addition to the consultation activities outlined above, the USACE undertakes effort to refer to the “2013 Effects Determination Key” provided by the Service when a project occurs in the West Indian manatee’s range in Florida. The programmatic key outlines a series of conditions that must be satisfied for a given project to be “not likely to adversely affect” the West Indian manatee. The USACE does not need to consult with the Service directly when using the key, nor does it need to notify the Service when it finds a project in compliance with the key. Because the Service is not directly involved, the section 7 consultation history provided by the Service does not include this effort.<sup>32</sup> USACE refers to the key due to the presence of the listed species, and any use of the key would not differ in the presence of critical habitat.<sup>33</sup> Therefore, any revisions to West Indian manatee critical habitat will not influence the amount of effort USACE devotes to aligning its projects with the conditions in the key. In addition, the Service indicated it does not expect to revise the programmatic consultation that resulted in the programmatic key because of the proposed revised critical habitat.<sup>34</sup>

The administrative costs, cost savings, and net effect of revising the critical habitat designation for the West Indian manatee were estimated by applying the incremental costs to consider adverse modification per activity (Table 5) to the forecast of future section 7 consultation activity in critical habitat areas (Table 4). Table 6 summarizes the results of this exercise.

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<sup>31</sup> Personal communication between IEc and the Service on August 9, 2023.

<sup>32</sup> Per the data provided by the agency, USACE refers to this key over 1,000 annually within existing and proposed revised critical habitat for the West Indian manatee. (Source: Historical key references documented in USACE records and shapefiles of existing and proposed revised critical habitat provided by the Service via email communication on September 6, 2023.)

<sup>33</sup> Personal communication between IEc and the Service on September 6, 2023.

<sup>34</sup> *Ibid.*



Table 4. Maximum Annual Frequency of Recent (2018-2022) Section 7 Consultations for the West Indian Manatee in Critical Habitat Areas

Proposed Unit Name	Informal Consultations			Technical Assistances		
	Unaffected	Additional Effort	Reduced Effort	Unaffected	Additional Effort	Reduced Effort
FL-01: Wakulla Springs		0			0	
FL-02: Manatee and Fanning Springs		1			1	
FL-03: Withlacochee Bay to Anclote River	6	10		1	3	
FL-04: Tampa Bay	0	18		1	18	
FL-05: Venice to Estero Bay	30	3		9	1	
FL-06: Rookery Bay to Florida Bay West	7	2		4	1	
FL-07: Upper Florida Keys	3	8		2	5	
FL-08: Biscayne Bay to Deerfield Beach	11	11		12	8	
FL-09: Boynton Beach to Fort Pierce	7	1		7	1	
FL-10: Vero Beach to Northern Indian River Lagoon	6	2		6	4	
FL-11: Upper St. Johns River	2	1		2	0	
FL-12: Silver Springs		0			1	
All Areas Removed from Existing CH			19			14
<b>Florida Subtotal</b>	<b>72</b>	<b>57</b>	<b>19</b>	<b>44</b>	<b>43</b>	<b>14</b>
PR-01: Boca Vieja		1			1	
PR-02: Condado Lagoon		0			0	
PR-03: Río Grande		2			0	
PR-04: Fajardo		1			1	
PR-05: Ceiba		0			3	
PR-06: Vieques		0			0	
PR-07: Arroyo		0			0	
PR-08: Santa Isabel to Jobos Bay		1			2	
PR-09: Guayanilla		0			6	
PR-10: Guánica		0			1	
PR-11: Bahía Sucia		0			0	
PR-12: Boquerón		0			1	
PR-13: Mayagüez		0			1	
<b>Puerto Rico Subtotal</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>
<b>Total</b>	<b>72</b>	<b>62</b>	<b>19</b>	<b>44</b>	<b>59</b>	<b>14</b>

**Source:** Recent (2018-2022) consultation information documented in the Service's TAILS and ECOSphere databases and shapefiles of existing and proposed revised critical habitat provided by the Service via email communication on September 6, 2023.

**Notes:**

1. Grey cells are not applicable because there is no critical habitat area of the relevant type (e.g., the Puerto Rico units do not contain any baseline critical habitat areas).
2. See main text for definitions of consultations and technical assistances that are "unaffected" or that require "additional effort" or "reduced effort" relative to the baseline.
3. See main text for description of geospatial analysis to identify overlap between consultations and both existing and proposed revised critical habitat.

## Administrative Costs and Cost Savings of Section 7 Consultations

The cost associated with a section 7 consultation varies both by type of consultation as well as whether the consultation considers adverse modification, jeopardy, or both. Table 6 presents the per-consultation administrative costs, including 1) the total cost of consultations that consider both jeopardy and adverse modification and 2) the incremental cost of effort to consider adverse modification in a consultation that also considers jeopardy.

The incremental costs to consider critical habitat as part of informal consultations and technical assistance efforts total \$2,700 and \$430, respectively, across all participating parties (2023 dollars). These estimates assume that consultations would occur even in the absence of critical habitat due to the presence of the listed species in the proposed critical habitat areas. The fraction of the total consultation costs relevant to this analysis reflect the fraction of time focused specifically on consideration of adverse modification.

Table 5. Range of Administrative Consultation Costs per Effort (2023 USD)

Consultation Type	Service	Federal Agency	Third Party	Biological Assessment	Total Costs
<b>Total Cost of Consultation Considering Both Jeopardy and Adverse Modification</b>					
Technical Assistance	\$670	N/A	\$1,100	N/A	\$1,700
Informal	\$2,900	\$3,700	\$2,100	\$2,000	\$11,000
Formal	\$6,500	\$7,300	\$3,500	\$4,800	\$22,000
Programmatic	\$20,000	\$16,000	N/A	\$5,600	\$42,000
<b>Additional Effort to Address Adverse Modification in a New Consultation</b>					
Technical Assistance	\$170	N/A	\$260	N/A	\$430
Informal	\$730	\$920	\$510	\$500	\$2,700
Formal	\$1,600	\$1,800	\$880	\$1,200	\$5,500
Programmatic	\$4,900	\$4,100	N/A	\$1,400	\$10,000

**Source:** IEC analysis of administrative costs is based on data from the Federal Government Schedule Rates, Office of Personnel Management, 2023, and a review of consultation records from several Service field offices across the country conducted in 2002.

**Notes:**

1. Estimates are rounded to two significant digits and may not sum to the totals reported due to rounding.
2. Estimates reflect average hourly time required by staff.

Specifically, to forecast the *incremental costs* associated with consultation activities that will consider adverse modification of critical habitat, we multiplied the expected number of consultations and technical assistances with anticipated “additional effort” in added critical habitat areas (Table 4) by the cost of addressing adverse modification per consultation (Table 5). These administrative costs are expected to be approximately \$190,000 in a given year (undiscounted, 2023 dollars), including \$160,000 for informal consultations and \$25,000 for technical assistance

efforts. Florida is expected to bear \$170,000 of the administrative costs (roughly 87 percent of the total), whereas Puerto Rico is expected to incur the remaining \$20,000.

Separately, this analysis calculates the *incremental cost savings* of removing select critical habitat areas from existing West Indian manatee critical habitat in Florida. To do this, we multiplied the expected number of consultations and technical assistances with anticipated “reduced effort” in areas removed from critical habitat (Table 4) by the cost of addressing adverse modification per consultations (Table 5). These administrative cost savings total approximately \$57,000, including \$51,000 for informal consultations and \$6,000 for technical assistance efforts.

Finally, we calculate the “net effect” of the proposed rule by subtracting the cost savings from the costs. In total, we identify a net increase in administrative costs relative to baseline effort devoted to section 7 consultations. This analysis estimates an increase in net costs associated with the administration of section 7 consultation activity for the West Indian manatee on the order of \$130,000 per year, including \$110,000 per year in informal consultations and \$19,000 per year in technical assistances.

Table 6. Total Annual Administrative Section 7 Consultation Costs, Cost Savings, and Net Effects for the West Indian Manatee by Proposed Unit and Consultation Type (2023 USD)

Proposed Unit Name	Informal Consultations			Technical Assistances			Total Section 7 Activities		
	Costs	Cost Savings	Net Effect	Costs	Cost Savings	Net Effect	Costs	Cost Savings	Net Effect
FL-01: Wakulla Springs	\$0		\$0	\$0		\$0	\$0		\$0
FL-02: Manatee and Fanning Springs	\$2,700		\$2,700	\$430		\$430	\$3,100		\$3,100
FL-03: Withlacoochee Bay to Anclote River	\$27,000		\$27,000	\$1,300		\$1,300	\$28,000		\$28,000
FL-04: Tampa Bay	\$48,000		\$48,000	\$7,700		\$7,700	\$56,000		\$56,000
FL-05: Venice to Estero Bay	\$8,000		\$8,000	\$430		\$430	\$8,400		\$8,400
FL-06: Rookery Bay to Florida Bay West	\$5,300		\$5,300	\$430		\$430	\$5,800		\$5,800
FL-07: Upper Florida Keys	\$21,000		\$21,000	\$2,100		\$2,100	\$23,000		\$23,000
FL-08: Biscayne Bay to Deerfield Beach	\$29,000		\$29,000	\$3,400		\$3,400	\$33,000		\$33,000
FL-09: Boynton Beach to Fort Pierce	\$2,700		\$2,700	\$430		\$430	\$3,100		\$3,100
FL-10: Vero Beach to Northern Indian River Lagoon	\$5,300		\$5,300	\$1,700		\$1,700	\$7,000		\$7,000
FL-11: Upper St. Johns River	\$2,700		\$2,700	\$0		\$0	\$2,700		\$2,700
FL-12: Silver Springs	\$0		\$0	\$430		\$430	\$430		\$430
All Areas Removed from Existing CH		\$51,000	-\$51,000		\$6,000	-\$6,000		\$57,000	-\$57,000
<b>Florida Subtotal</b>	<b>\$150,000</b>	<b>\$51,000</b>	<b>\$100,000</b>	<b>\$18,000</b>	<b>\$6,000</b>	<b>\$12,000</b>	<b>\$170,000</b>	<b>\$57,000</b>	<b>\$110,000</b>
PR-01: Boca Vieja	\$2,700		\$2,700	\$430		\$430	\$3,100		\$3,100
PR-02: Condado Lagoon	\$0		\$0	\$0		\$0	\$0		\$0
PR-03: Río Grande	\$5,300		\$5,300	\$0		\$0	\$5,300		\$5,300
PR-04: Fajardo	\$2,700		\$2,700	\$430		\$430	\$3,100		\$3,100
PR-05: Ceiba	\$0		\$0	\$1,300		\$1,300	\$1,300		\$1,300
PR-06: Vieques	\$0		\$0	\$0		\$0	\$0		\$0
PR-07: Arroyo	\$0		\$0	\$0		\$0	\$0		\$0
PR-08: Santa Isabel to Jobos Bay	\$2,700		\$2,700	\$860		\$860	\$3,500		\$3,500
PR-09: Guayanilla	\$0		\$0	\$2,600		\$2,600	\$2,600		\$2,600
PR-10: Guánica	\$0		\$0	\$430		\$430	\$430		\$430
PR-11: Bahía Sucia	\$0		\$0	\$0		\$0	\$0		\$0

Proposed Unit Name	Informal Consultations			Technical Assistances			Total Section 7 Activities		
	Costs	Cost Savings	Net Effect	Costs	Cost Savings	Net Effect	Costs	Cost Savings	Net Effect
PR-12: Boquerón	\$0		\$0	\$430		\$430	\$430		\$430
PR-13: Mayagüez	\$0		\$0	\$430		\$430	\$430		\$430
<b>Puerto Rico Subtotal</b>	<b>\$13,000</b>		<b>\$13,000</b>	<b>\$6,900</b>		<b>\$6,900</b>	<b>\$20,000</b>		<b>\$20,000</b>
<b>Total</b>	<b>\$160,000</b>	<b>\$51,000</b>	<b>\$110,000</b>	<b>\$25,000</b>	<b>\$6,000</b>	<b>\$19,000</b>	<b>\$190,000</b>	<b>\$57,000</b>	<b>\$130,000</b>

**Source:** Recent (2018-2022) consultation information documented in the Service's TAILS and ECOSphere databases and shapefiles of existing and proposed revised critical habitat provided by the Service via email communication on September 6, 2023, and administrative consultation costs per effort as recorded in Table 5.

**Notes:**

1. Grey cells are not applicable because there is no critical habitat area of the relevant type (e.g., the Puerto Rico units do not contain any baseline critical habitat areas).
2. Estimates are rounded to two significant digits and may not sum to the totals reported due to rounding.

## Likelihood of Project Modification Costs or Cost Savings

The Service anticipates that any future section 7 consultations for the West Indian manatee critical habitat will not result in more or different conservation effort recommendations.<sup>35</sup> This is because the Service would request the same conservation efforts during section 7 consultations regardless of whether critical habitat was revised due to the listing status of the species.

To assess whether this has been the case in recent consultations inside and outside existing critical habitat for the West Indian manatee, the Service provided recent consultations for a range of activities in manatee habitat. In general, the reports detailed that the Service recommended the same project modifications to avoid jeopardy as it did to avoid adverse modification, regardless of whether the consultations fell within or outside of the existing critical habitat. For instance:

- **Outside of existing critical habitat:** In a October 2020 letter to the U.S. Army Corps of Engineers (USACE), in regard to a dredging and restoration project, the Service advised that the project should follow the Standard Manatee Conditions for In-Water Work in order to avoid jeopardy.<sup>36</sup> The project took place outside of critical habitat for the West Indian manatee in the Homosassa River.<sup>37</sup>
- **Within existing critical habitat:** In a September 2019 letter to the USACE, the Service wrote a biological opinion for a project upgrading to a stormwater management system and displacing sand on Sanibel Causeway Island. Like the consultation above, the Service recommended that the project implementers follow the Standard Manatee Conditions for In-Water Work to avoid both jeopardy and adverse modification.<sup>38</sup>

The fact that the Service recommended the same set of practices both within and outside of critical habitat for the West Indian manatee provides support to its claim that future section 7 consultation activities are unlikely to result in more or different conservation effort recommendations. Typical recommendations as part of section 7 consultations for the West Indian manatee include avoidance and minimization of impacts to aquatic vegetation during in-water construction or development, limiting the size of facilities to reduce vessel traffic and other impacts in sensitive areas, limiting watercraft access and speeds in important manatee areas (e.g., foraging areas, warm-water refuges, shelter areas, freshwater sources), and maintaining manatee access to important manatee areas.

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<sup>35</sup> U.S. Fish and Wildlife Service. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee, September 5, 2023. Page 64-65.

<sup>36</sup> Standard Manatee Conditions for In-Water Work (2011) is available at:  
[https://www.fws.gov/sites/default/files/documents/20130425\\_2011\\_Standard%20Manatee%20Construction%20Conditions.pdf](https://www.fws.gov/sites/default/files/documents/20130425_2011_Standard%20Manatee%20Construction%20Conditions.pdf)

<sup>37</sup> Consultation letter number 2020-I-1223.

<sup>38</sup> Biological opinion number 2019-F-0553.

## Section 4. Other Costs and Cost Savings of the Critical Habitat Rule

This section discusses the potential for incremental costs or cost savings to occur outside of the section 7 consultation process. These types of effects include additional requirements or project modifications under state laws or regulations, and perceptual effects on markets. These types of costs or cost savings may occur even when activities do not have a Federal nexus for consultation.

### Additional State or Local Regulation

Indirect incremental impacts may occur if the designation of critical habitat increases awareness of the presence of the species or the need for protection of its habitat, particularly when new state or local regulations or requirements are triggered outside of the Act. The Service does not expect additional state or local regulations to be triggered by the designation of critical habitat for the West Indian manatee.<sup>39</sup> Similarly, the Service does not anticipate the “easing” of any requirements where the proposed revised critical habitat removes areas previously designated for the species in Florida.<sup>40</sup>

### Possible Impacts of Public Perception

Comments received regarding proposed designations of critical habitat throughout the United States indicate that the public perceives critical habitat designation as potentially resulting in incremental changes to private property values, above and beyond any effects associated with specific forecasted project modifications under section 7 of the Act.<sup>41</sup> These commenters suggest that, all else being equal, a property that is inhabited by a threatened or endangered species or that lies within a critical habitat designation will have a lower market value than an identical property that is not inhabited by the species or that lies outside of critical habitat. This lower value results from the perception that critical habitat will preclude, limit, or slow development, or somehow alter the highest and best use of the property.

We have reviewed all existing studies on the potential property value impacts of critical habitat.<sup>42</sup> While some identify property value effects of critical habitat designation, others do not. Still other studies identify that critical habitat can positively affect property values. Mamun et al. (2023) which represents the most comprehensive analysis of critical habitat property value impacts conducted to date, finding that “[critical habitat] has had little to no effect, at least at the national level, on treated

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<sup>39</sup> U.S. Fish and Wildlife Service. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Revise Critical Habitat for the West Indian Manatee, September 5, 2023. Page 68.

<sup>40</sup> Email communication between IEC and the Service on November 27, 2023.

<sup>41</sup> See, for example, public comments on the possible impact of designating private lands as critical habitat for the Northern spotted owl (as summarized in Industrial Economics, Incorporated. Economic Analysis of Critical Habitat Designation for the Northern Spotted Owl: Final Report. Prepared for the U.S. Fish and Wildlife Service. November 20, 2012. p.5-21) and the cactus ferruginous pygmy owl (as summarized in Industrial Economics, Incorporated. Economic Analysis of Critical Habitat Designation for the Cactus Ferruginous Pygmy-Owl. Prepared for the U.S. Fish and Wildlife Service. June 1999. p.44).

<sup>42</sup> For a review of the existing literature, see: Paterson, R. and M. Flight. “Critical Habitat Designation and Property Values.” A white paper produced for the U.S. Fish and Wildlife Service. November 2023.

sales relative to matched control sales.”<sup>43</sup> In general, the literature suggests that the potential for property value impacts is species-specific and not generalizable to all critical habitat designations.

Though the literature suggests perceptual effects on property values are possible, the likelihood, magnitude, and duration of such effects for any given designation are uncertain. Over time, as public awareness of the potential regulatory burden placed on designated lands evolves, particularly where no Federal nexus compelling a section 7 consultation exists, the effect of critical habitat designation on property values may attenuate. Existing literature provides little specific insight into the time horizon of potential property value effects. Furthermore, the empirical research does not address whether adding critical habitat for a new species in areas of existing critical habitat for other species generates an incremental property value effect.

## Section 5. Geographic Distribution of Costs and Cost Savings

The geographical distribution of future section 7 consultations and associated costs and cost savings is uncertain. If the consultation forecast outlined in Table 4 is a good predictor of the future distribution of section 7 consultations that consider West Indian manatee critical habitat, then most future consultations (and associated administrative costs) are expected to occur in Florida. In total, proposed revised critical habitat in Florida would generate approximately \$110,000 (85 percent) of the net administrative costs and in Puerto Rico would generate the remaining \$20,000 (15 percent).

Of the future consultation activity that will require “additional effort,” the majority are expected to occur in Units FL-04 and FL-08. In Puerto Rico, only 9 of 13 proposed units have experienced consultation activity since the species was reclassified as threatened in 2017. The proposed units in Puerto Rico with the highest anticipated incremental costs are PR-03 and PR-08. All areas with “reduced effort” (i.e., existing critical habitat not included in the proposed rule) are in Florida. Figure 1 describes the spatial distribution of that area.

## Section 6. Economic Benefits of the Proposed Rule

Conservation of the West Indian manatee may have various economic benefits, including benefits associated with tourism for recreational wildlife viewing, non-use values, and their contributions as a species within local ecosystems in Florida and Puerto Rico. Existing research demonstrates that people value the conservation of the West Indian manatee. One study found that residents of Citrus County, Florida alone would be willing to donate approximately \$300,718 per year (2023 dollars) to protect the manatees.<sup>44,45</sup>

However, the purpose of this analysis is to identify incremental benefits specific to revising critical habitat for the West Indian manatee above and beyond any benefits that may accrue under baseline conditions, including the existing critical habitat. As described in this memorandum,

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<sup>43</sup> Mamun, S., E. Nelson and C. Nolte. “Estimating the Impact of Critical-Habitat Designation on the Values of Developed and Undeveloped Parcels.” *Land Economics*. 2023. Pg. 3.

<sup>44</sup> Solomon, Barry D., Corey-Luse, Cristi M., Halvorsen, Kathleen E. “The Florida Manatee and Eco-tourism: Toward a Safe Minimum Standard.” *Ecological Economics*. 2004. Pages 101-115.

<sup>45</sup> The reported values in the paper were adjusted to 2023 dollars using the Gross Domestic Product from the U.S. Bureau of Economic Analysis, available at: <https://apps.bea.gov/iTable/iTable.cfm?ReqID=19&step=4&isuri=1&1921=flatfiles> (Table 1.1.9 in the Section 1). For 2023, we averaged the first three quarterly estimates.



revised critical habitat is unlikely to result in a change in conservation efforts for the species. For the area added through the proposed revised critical habitat rule, this means we do not anticipate economic benefits. For the areas removed from existing critical habitat, forgone benefits are not anticipated because the Service would not change its conservation recommendations in these areas either. As the designation is unlikely to result in a change in project modifications, ancillary economic benefits, and forgone ancillary benefits (e.g., ecosystem services associated with changes in water quality) also are unlikely.

## Section 7. Summary

In conclusion, the incremental costs of revising critical habitat for the West Indian manatee are likely to be limited to additional administrative effort to consider adverse modification in section 7 consultations for the species. Based on consultation history for the West Indian manatee in critical habitat areas, these costs are on the order of \$190,000 in a given year (2023 dollars). The proposed rule would also remove critical habitat in some parts of Florida, thereby saving additional administrative effort to consider adverse modification in section 7 consultations for the species in those areas. Based on consultation history in these removed areas, the cost savings generated by the rule are on the order of \$57,000. The expected net effect of revising critical habitat for the West Indian manatee is a \$130,000 increase in administrative costs annually. Incremental economic benefits and forgone benefits are not anticipated. Therefore, the regulatory action is unlikely to meet the threshold for an economically significant rule as defined in E.O. 14094.

This finding is based on several factors, including:

- No change in costs of complying with critical habitat in existing critical habitat that is included in the proposed revised critical habitat;
- All 25 proposed revised units are considered occupied by the West Indian manatee, and occupied units are afforded significant baseline protection under the Act due to the presence of the listed species;
- All projects with a Federal nexus would be subject to section 7 consultation regardless of the designation of critical habitat due to the presence of the listed species;
- Critical habitat is not likely to change the Service's recommendation for project modifications as part of future consultations considering the West Indian manatee; and
- The West Indian manatee receives additional baseline protection from co-occurring listed species and their critical habitats.

The incremental effects of proposed revised critical habitat for the West Indian manatee are subject to uncertainty due to limited information on what future projects may require section 7 consultation that considers West Indian manatee habitat. However, the focus of the screening analysis is on determining if this proposed rule is likely to be economically significant, and it is unlikely that additional data gathering and analysis to address uncertainty would change the findings of this analysis.