(1) A copy of the current cleaning plan and previous versions;

(2) The dates, duration, and completion status of equipment and area cleaning each time a cleaning plan is executed;

(3) Implementation records documenting the initial date of cleaning plan implementation; and

(4) Documentation that instruction has been provided to potentially exposed persons whose job function includes cleaning plan implementation or whose job function requires them to be present in a regulated area where a cleaning plan could be executed.

(d) *Retention.* Owners or operators must retain the records required in paragraphs (a) through (c) of this section for five years from the date that such records were generated.

[FR Doc. 2024–30931 Filed 1–13–25; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

45 CFR Parts 205, 260, 261, and 263

RIN 0970–AC97

Strengthening Temporary Assistance for Needy Families (TANF) as a Safety Net and Work Program; Withdrawal

AGENCY: Administration for Children and Families (ACF), HHS.

ACTION: Proposed rule; withdrawal.

SUMMARY: This document withdraws a proposed rule that was published in the **Federal Register** on October 2, 2023. The proposed rule would have amended the Temporary Assistance for Needy Families (TANF) program regulations to strengthen the safety net and reduce administrative burden.

DATES: The Administration for Children and Families is withdrawing the proposed rule published October 2, 2023 (88 FR 67697) as of January 14, 2025.

FOR FURTHER INFORMATION CONTACT: The Office of Family Assistance, ACF, at *TANFquestions@acf.hhs.gov or 202–401–9275.* Deaf and hard of hearing individuals may call 202–401–9275 through their chosen relay service or 711 between 8 a.m. and 7 p.m. Eastern Time.

SUPPLEMENTARY INFORMATION: The Administration for Children and Families (ACF) published a notice of proposed rulemaking (NPRM) related to the administration of TANF in the **Federal Register** on October 2, 2023 (88 FR 67697). The NPRM proposed to (1) establish a ceiling on the term ''needy''; (2) clarify when an expenditure is ''reasonably calculated to accomplish a TANF purpose''; (3) exclude as an allowable TANF maintenance-of-effort (MOE) expenditures cash donations from non-governmental third parties and the value of third-party in-kind contributions; (4) ensure that excused holidays match the number of Federal holidays, following the recognition of Juneteenth as a Federal holiday; (5) develop new criteria to allow States to use alternative Income and Eligibility Verification System (IEVS) measures; (6) clarify the ''significant progress'' criteria following a work participation rate corrective compliance plan; and (7) clarify the existing regulatory text about the allowability of costs associated with disseminating program information.

However, upon further consideration, the Department has elected to withdraw the Strengthening TANF as a Safety Net and Work Program Notice of Proposed Rulemaking published in the **Federal Register** on 10/02/2023, effective January 14, 2025. The Department appreciates the more than 7,000 comments received from State agencies, advocates and a broad range of additional stakeholders. In making the decision to withdraw the NPRM, the Department continues to recognize the importance of rulemaking to ensure that TANF funds are used in a manner consistent with statutory requirements. However, the Department has determined that it could benefit from additional public input and consideration on a set of issues relating to allowable TANF spending before adopting a final rule. With the time left in this Administration, the Department is focusing on other matters, including implementing the TANF provisions of the Fiscal Responsibility Act of 2023, and it is not feasible to solicit additional public comments. The Department has concluded that withdrawing the NPRM will assure agency flexibility in re-examining and exploring options and alternatives with stakeholders in the future prior to developing an NPRM that could draw from this additional stakeholder engagement. For these independently sufficient reasons, the Department is withdrawing this NPRM.

The NPRM published on October 2, 2023, is hereby withdrawn.

Dated: January 7, 2025.

Xavier Becerra,

Secretary, Department of Health and Human Services.

[FR Doc. 2025–00537 Filed 1–13–25; 8:45 am]

BILLING CODE 4184–36–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2024–0050; FXES1111090FEDR–256–FF09E21000]

RIN 1018–BH60

Endangered and Threatened Wildlife and Plants; Threatened Status for the Florida Manatee and Endangered Status for the Antillean Manatee

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the two subspecies of the West Indian manatee, the Florida manatee (*Trichechus manatus latirostris*) and the Antillean manatee (*Trichechus manatus manatus*), under the Endangered Species Act of 1973, as amended (Act). We have conducted status reviews for the two subspecies, and, as a result, we are proposing to list the Florida manatee as a threatened species with protective regulations under section 4(d) of the Act (''4(d) rule''), and the Antillean manatee as an endangered species, under the Act. These two listings would replace the current threatened species listing of the West Indian manatee (*Trichechus manatus*). This determination also serves as our 12-month findings on two petitions and as our completed 5-year review of the West Indian manatee. If we finalize this rule as proposed, it would remove the West Indian manatee from the Federal List of Endangered and Threatened Wildlife (List), add the Florida manatee and Antillean manatee to the List, and extend the Act's protections to the Florida manatee and Antillean manatee.

DATES: We will accept comments received or postmarked on or before March 17, 2025. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for an additional public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by February 28, 2025.

Public informational meeting and public hearing: On February 26, 2025, we will hold a public informational meeting followed by a public hearing from 5 p.m. to 7 p.m., Eastern-Standard time (6 p.m. to 8 p.m., Atlantic-Standard time). For more information, see *Public Hearing,* below.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *https://www.regulations.gov.* In the Search box, enter FWS–R4–ES–2024–0050, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on ''Comment.''

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R4–ES–2024–0050, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *https://www.regulations.gov.* This generally means that we will post any personal information you provide us (see Information Requested, below, for more information).

Availability of supporting materials: Supporting materials, such as the species status assessment report, are available on the Service's website at *https://www.fws.gov/species/manatee-trichechus-manatus*, at *https://www.regulations.gov* at Docket No. FWS–R4–ES–2024–0050, or both.

Public hearing: We will hold a virtual public informational meeting followed by a public hearing on this proposed rule using the Zoom online video platform and teleconference. For more information, see *Public Hearing,* below.

FOR FURTHER INFORMATION CONTACT: Gian Basili, Deputy State Supervisor, Florida Ecological Services Office, 7915 Baymeadows Way, Suite 200, Jacksonville, FL 32256–7517; telephone 904–731–3079; or Lourdes Mena, Field Supervisor, Caribbean Ecological Services Field Office, P.O. Box 491, Boqueron, PR 00622; telephone 352–749–2462. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States. Please see Docket No. FWS–R4–ES–2024–0050 on *https://www.regulations.gov* for a document that summarizes this proposed rule.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. The Act (16 U.S.C. 1531 *et seq.*) defines the term ''species'' as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature. Under the Act, a species warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the species promptly and designate the species' critical habitat to the maximum extent prudent and determinable. We have determined that the Florida manatee meets the Act's definition of a threatened species, and the Antillean manatee meets the Act's definition of an endangered species; therefore, we are proposing to list them as such. We proposed to revise and/or designate critical habitat for the Florida manatee and Antillean manatee in a recent **Federal Register** publication (89 FR 78134). Listing a species as an endangered or threatened species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. We propose to list the two accepted subspecies of the West Indian manatee, the Florida manatee (*Trichechus manatus latirostris*) and the Antillean manatee (*Trichechus manatus manatus*), under the Act. We would list the Florida manatee as a threatened species covered by the ''blanket'' protective regulation at 50 CFR 17.31(a) (''blanket 4(d) rule''), and the Antillean manatee as an endangered species. These two separate listings would replace the current threatened species listing of the West Indian manatee (*Trichechus manatus*). Therefore, if we finalize this action as proposed, we would list both of the accepted subspecies of the West Indian manatee, and therefore all of *Trichechus manatus,* but with a different listing status for each subspecies (threatened species status for the Florida manatee with the blanket 4(d) rule, and endangered species status for the Antillean manatee).

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the Florida manatee is threatened throughout its range due to the following primary threats: watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, unusual mortality events, natural processes (including cold weather events and harmful algal blooms), human interactions, loss of warm-water refugia, and climate change. We have also determined that the Antillean manatee is endangered throughout its range due to the following primary threats: watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, natural processes like harmful algal blooms, human interactions, poaching, low genetic diversity, and climate change.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of either subspecies, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns and the locations of any additional populations of either subspecies;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for either subspecies, their habitats, or both.

(2) Threats and conservation actions affecting either subspecies, including:

(a) Factors that may be affecting the continued existence of either subspecies, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory

mechanisms, or other natural or manmade factors;

(b) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to either subspecies; and

(c) Existing regulations or conservation actions that may be addressing threats to either subspecies.

(3) Additional information concerning the historical and current status of either subspecies.

(4) Information to assist with applying or issuing protective regulations under section 4(d) of the Act that may be necessary and advisable to provide for the conservation of the Florida manatee. In particular, we seek information concerning:

(a) The extent to which we should include any of the Act's section 9 prohibitions in the 4(d) rule for the Florida manatee; and

(b) Whether we should consider any additional or different exceptions from the prohibitions in the 4(d) rule for the Florida manatee.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made solely on the basis of the best scientific and commercial data available.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *https://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *https://www.regulations.gov.*

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *https://www.regulations.gov.*

Our final determinations may differ from this proposal because we will consider all comments we receive during the comment period as well as any information that may become available after this proposal. Based on the new information we receive (and, if relevant, any comments on that new information), we may conclude the Florida manatee is endangered instead of threatened, that the Antillean manatee is threatened instead of endangered, or that either subspecies does not warrant listing as an endangered species or a threatened species. In addition, we may change the parameters of the prohibitions or the exceptions to those prohibitions in the protective regulations under section 4(d) of the Act for the Florida manatee if we conclude it is appropriate in light of comments and new information received. For example, we may expand the prohibitions if we conclude that the protective regulation as a whole, including those additional prohibitions, is necessary and advisable to provide for the conservation of the subspecies. Conversely, we may establish additional or different exceptions to the prohibitions in the final rule if we conclude that the activities would facilitate or are compatible with the conservation and recovery of the subspecies. In our final rule, we will clearly explain our rationale and the basis for our final decisions, including why we made changes, if any, that differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. At this time, we have preemptively scheduled a public informational meeting and public hearing on this proposed rule. We will hold the public informational meeting and public hearing on the date and at the time listed above under *Public informational meeting and public hearing* in **DATES**. We are holding the public informational meeting and public hearing via the Zoom online video platform and via teleconference so that participants can attend remotely. The use of a virtual public hearing is consistent with our regulations at 50 CFR 424.16(c)(3).

For security purposes, anyone intending to listen to and view the hearing via Zoom, listen to the hearing by telephone, or provide oral public comments at the hearing by Zoom or telephone must register in advance. For information on how to register, or if you encounter problems joining Zoom on the day of the hearing, visit *https://www.fws.gov/project/manatee-virtual-public-hearing.* Registrants will receive the Zoom link and the telephone number for the public hearing. Interested members of the public who are not familiar with the Zoom platform should view the Zoom video tutorials (*https://learnzoom.us/show-me*) prior to the public hearing.

The public hearing will provide interested parties an opportunity to present verbal testimony (formal, oral comments) regarding this proposed rule. The public hearing will not be an opportunity for dialogue with the Service, but rather a forum for accepting formal verbal testimony. In the event there is a large attendance, the time allotted for oral statements may be limited. Therefore, anyone wishing to make an oral statement at the public hearing for the record is encouraged to provide a prepared written copy of that statement to us through the Federal eRulemaking Portal, or U.S. mail (see **ADDRESSES**, above). There are no limits on the length of written comments submitted to us.

Reasonable Accommodation

The Service is committed to providing access to the public hearing for all participants. Closed captioning will be available during the public hearing. Participants will also have access to live audio during the public hearing via their telephone or computer speakers. Persons with disabilities requiring reasonable accommodations to participate in the hearing should contact the person listed under **FOR FURTHER INFORMATION CONTACT** at least 5 business days prior to the date of the hearing to help ensure availability. An accessible version of the Service's presentation will also be posted online at *https://www.fws.gov/project/manatee-virtual-public-hearing* prior to the hearing (see **DATES**, above). See *https://www.fws.gov/project/manatee-virtual-public-hearing* for more information about reasonable accommodation. Finally, a full audio and video recording and transcript of the public hearing will be posted online at *https://www.fws.gov/project/manatee-virtual-public-hearing* after the hearing.

Previous Federal Actions

The Florida manatee (*Trichechus manatus latirostris*), a subspecies of the West Indian manatee, was listed as endangered in 1967 (see 32 FR 4001, March 11, 1967) under the Endangered Species Preservation Act of 1966 (Pub. L. 89–669; 80 Stat. 926). After adoption of the Endangered Species Conservation Act of 1969 (Pub. L. 91–135; 83 Stat. 275), the Florida manatee listing was amended in 1970 to include the West Indian manatee (*Trichechus manatus*)

throughout its range, including in northern South America (see 35 FR 8491, June 2, 1970). A December 2, 1970, amendment then added the Caribbean Sea to the ''Where found'' information in the listing entry for the West Indian (Florida) manatee, which added the Antillean manatee to the listing (see 35 FR 18319). The West Indian manatee was subsequently grandfathered into the List of Endangered and Threatened Wildlife under the Act in 1973 (16 U.S.C. 1531 *et seq.*). In 2017, the West Indian manatee, including both subspecies, was reclassified from endangered to threatened (see 82 FR 16668, April 5, 2017).

On October 21, 2021, we received a petition from Julio C. Colón requesting that we list the Puerto Rico population of the Antillean manatee as an endangered distinct population segment (DPS) and that we designate critical habitat for this entity under the Act. The petition provided substantial scientific or commercial information indicating that the petitioned entity may qualify as a DPS, and we found that the petition provided substantial information regarding low genetic diversity and isolation (Factor E) and boat collisions (Factor E) that may be potential threats to the Puerto Rico manatee population (see 88 FR 70634, October 12, 2023).

On November 21, 2022, we received a petition from the Center for Biological Diversity (CBD) and others requesting that we reclassify (uplist) the West Indian manatee, including its subspecies the Antillean manatee and Florida manatee, as endangered species under the Act. The petition presented substantial information on the loss of seagrass (Factor A) within the range of the Florida manatee, as well as the negative impacts of this factor to the West Indian manatee's viability (see 88 FR 70634, October 12, 2023).

In response to the October 21, 2021, and November 21, 2022, petitions, we initiated a status review. To ensure that status review was complete, we requested new scientific and commercial data and other information regarding the West Indian manatee throughout its range, including information specific to the Puerto Rico population of Antillean manatee, and factors that may affect their status (88 FR 70634, October 12, 2023). This document serves as our 12-month findings for those two petitions.

Peer Review

Species status assessment (SSA) teams prepared SSA reports for the Florida manatee (Service 2024a, entire) and Antillean manatee (Service 2024b, entire). The SSA teams were composed of Service biologists, in consultation with other species experts. The SSA reports each represent a compilation of the best scientific and commercial data available concerning the status of each subspecies, including the impacts of past, present, and future factors (both negative and beneficial) affecting each subspecies.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review in listing and recovery actions under the Act, we will solicit independent scientific review of the information contained in the Florida manatee and Antillean manatee SSA reports during the comment period for this proposed rule.

I. Proposed Listing Determination

Background

A thorough review of the taxonomy, life history, and ecology of the Florida manatee (*Trichechus manatus latirostris*) is available in its SSA report (version 1.1; Service 2024a, pp. 17–33) and of the Antillean manatee (*Trichechus manatus manatus*) in its SSA report (version 1.1; Service 2024b, pp. 15–34).

West Indian manatees (manatees) are large, herbivorous marine mammals with short, paired flippers and a distinct paddle-shaped tail. Adults average about 3.0 meters (m) (9.8 feet (ft)) in length and 400 kilograms (kg) (900 pounds (lb)) in weight, but they may reach lengths of up to 4 m (13 ft) (Husar 1978, p. 1; Reynolds and Odell 1991, p. 38) and weigh as much as 1,620 kg (3,570 lb) (Rathbun et al. 1990, p. 23). The two subspecies appear similar, share most common morphological characteristics, and can typically only be distinguished through skeletal measurements or genetic analysis. A difference commonly reported between the two subspecies is size, with the Florida manatee larger and heavier than the Antillean manatee; however, sizes do overlap (Converse et al. 1994, p. 427; Wong et al. 2012, p. 5; Castelblanco-Martínez et al. 2021, p. 7).

Manatees use a wide variety of freshwater, estuarine, and marine habitats for their survival as well as life-history needs (*i.e.,* feeding and drinking, traveling, resting, thermoregulation, cavorting, mating, calving, and nursing). Manatees feed on a variety of freshwater and marine vegetation, as well as seek out sources of fresh drinking water when in marine and estuarine habitats. Manatees tend to travel along the waterward edges of beds of vegetation in or near channels, and sometimes along coastal beaches. Manatees often use secluded canals, creeks, embayments, and lagoons, particularly near the mouths of rivers and sloughs, for feeding, resting, cavorting, mating, and calving.

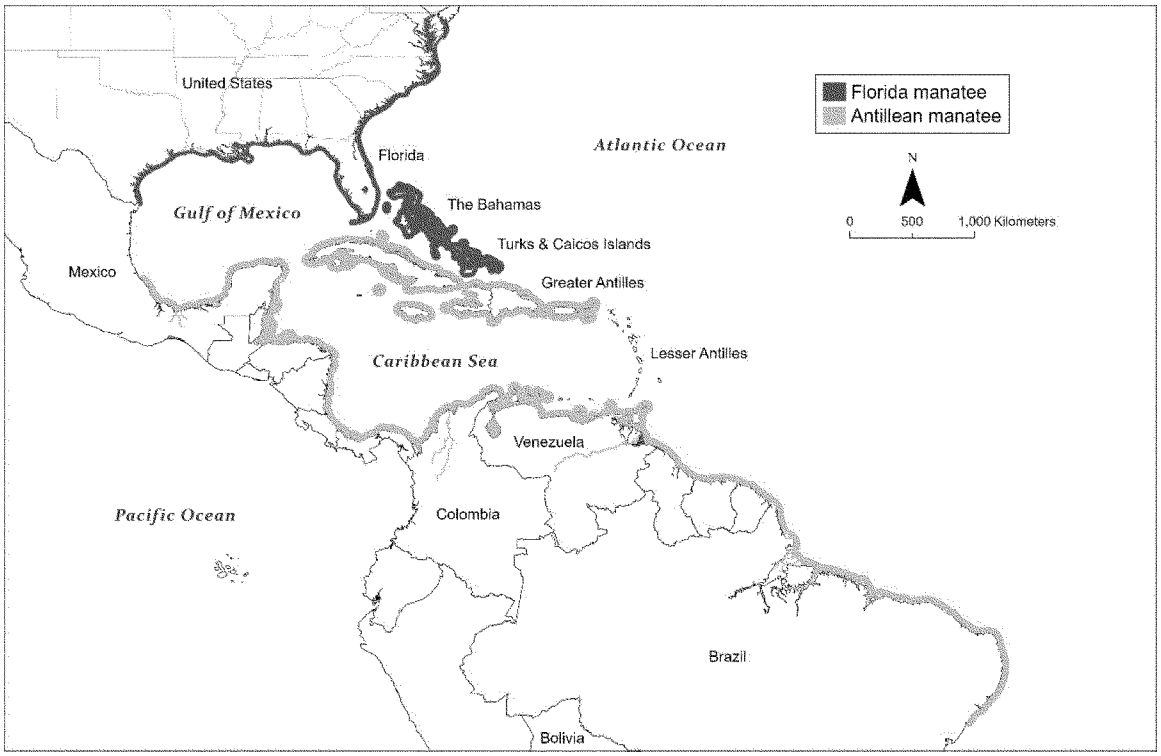

Figure 1. Distribution of Florida manatee and Antillean manatee. Areas of potential overlap are not shown on this map.

Florida manatees are found in coastal and inland waters in Florida year-round, regularly in Georgia and the Carolinas, and in coastal Alabama and Louisiana during warmer months; vagrants can be found as far north as Massachusetts and as far west as Texas (see figure 1, above; Gunter 1941, p. 64; Lowery 1974, p. 481; Domning and Hayek 1986, p. 136; Fertl et al. 2005, p. 74; Beck 2015, unpubl. data). Florida manatees are also known to travel to and from the Bahamas, Cuba, and Mexico (Odell et al. 1978, p. 289; Alvarez-Alemán et al. 2010, p. 148; Melillo-Sweeting et al. 2011, p. 505). Antillean manatees are found in the coastal waters of the Greater Antilles (*i.e.,* Cuba, Jamaica, Hispaniola, and Puerto Rico) and discontinuously along the Gulf coast of Mexico, Caribbean coast of Central and South America, and Atlantic coast of South America as far south as Bahia, Brazil (see figure 1, above; Self-Sullivan and Mignucci-Giannoni 2012, p. 36). Except for rare sightings, manatees are no longer found in the Lesser Antilles (*i.e.,* Caribbean islands extending from the U.S. and British Virgin Islands to Grenada) (Lefebvre et al. 2001, p. 425). The few individuals that have been reported for the U.S. and British Virgin Islands, Turks and Caicos, Cayman Islands, St. Maarten, Curacao, and Bonaire are considered vagrant from nearby populations (Service 2007, p. 27; Self-Sullivan and Mignucci-Giannoni 2012, p. 40).

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species.

The Act defines an ''endangered species'' as a species that is in danger of extinction throughout all or a significant portion of its range, and a ''threatened species'' as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ''threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ''threat'' may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ''endangered species'' or a ''threatened species.'' In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ''endangered species'' or a ''threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species.

The Act does not define the term ''foreseeable future,'' which appears in the statutory definition of ''threatened species.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis, which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department of the Interior, Office of the Solicitor (M–37021, January 16, 2009; ''M-Opinion,'' available online at *https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf*). The foreseeable future extends as far into the future as the U.S. Fish and Wildlife Service and National Marine Fisheries Service (hereafter, the Services) can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. ''Reliable'' does not mean ''certain''; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

Analytical Framework

The SSA reports document the results of our comprehensive biological review of the best scientific and commercial data regarding the status of each of the subspecies, including an assessment of the potential threats to each subspecies. The SSA reports do not represent our decision on whether the subspecies should be proposed for listing as an endangered or threatened species under the Act. However, they do provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess the Florida manatee's and Antillean manatee's viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events); and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogens). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified each subspecies' ecological requirements for survival and reproduction at the individual, population, and subspecies levels, and described the beneficial and risk factors influencing the subspecies' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual subspecies' life-history needs. The next stage involved an assessment of the historical and current condition of the subspecies' demographics and habitat characteristics, including an explanation of how the subspecies arrived at its current condition. The final stage of the SSA involved making predictions about the subspecies' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of the subspecies to sustain populations in the wild over time, which we then used to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA reports; each SSA report can be found at Docket No. FWS–R4–ES–2024–0050 on *https://www.regulations.gov.*

Summary of Biological Status and Threats

In this discussion, we review the biological condition of each subspecies and their resources, and the threats that influence each subspecies' current and future condition, in order to assess each subspecies' overall viability and the risks to that viability.

Species Needs

As mentioned above, manatees use a wide variety of freshwater, estuarine, and marine habitats for their life-history needs (*i.e.,* feeding and drinking, traveling, resting, thermoregulation, cavorting, mating, calving, and nursing). For all life stages, manatees require access to fresh water for drinking, travel corridors during migration to reach habitats needed for survival and reproduction, and calm waters for resting (Ortiz et al. 1999, p. 33; Deutsch et al. 2003, entire; Flamm et al. 2005, entire; Drew et al. 2012, p. 24; Favero et al. 2020, p. 1670; Ross et al. 2020, entire). For pregnant females, sheltered backwaters with little disturbance are required for parturition (Hartman 1979, p. 110; Reynolds and Odell 1991, p. 51).

All manatee life stages require appropriate forage and water temperatures (Best 1981, p. 7; Irvine et al. 1983, p. 323; Smith 1993, entire; Rommel et al. 2001, p. 339; Rommel and Caplan 2003, p. 343; Reich and Worthy 2006, p. 304; Florida Fish and Wildlife Conservation Commission (FWC) 2007, p. 2; United Nations Environment Programme (UNEP) 2010, p. 8; Allen et al. 2018, p. 1931). Because seagrass is one of the largest components of the manatee's diet in coastal areas, healthy seagrass ecosystems are critical for the species' survival. Manatees predominantly feed on seagrass in near-shore, shallow waters averaging 1 to 3 meters (3.3 to 9.8 ft) in depth (Smith 1993, p. 11). Salt marsh vegetation, specifically smooth cordgrass (*Spartina alterniflora),* is an important food source for manatees in northeastern Florida, Georgia, and South Carolina (Zoodsma 1991, pp. 54–61).

The Antillean manatee inhabits the southern limits of the manatee's distribution; therefore, the subspecies is tropical and does not face cold stress risk. Florida manatees may exhibit major shifts in distribution during different times of the year largely due to the subspecies being subtropical and cold-intolerant. Because the Florida

subspecies occurs in the northern limits of the manatee's range, it requires stable, long-term sources of warm water, such as natural springs, during colder months in order to survive. These warm-water sites buffer the lethal effects of cold temperatures. Over half of Florida manatees are known to use warm-water discharges from power plants rather than natural springs, thermal basins, or other sites (Laist et al. 2013, p. 4; Valade et al. 2020, p. 3). Florida manatees in the southernmost parts of the range depend primarily on industrial warm-water outfalls, while Florida manatees in the northernmost parts of the range rely almost exclusively on natural springs (Laist et al. 2013, p. 4). An ambient temperature of 68 degrees Fahrenheit (°F) (20 degrees Celsius (°C)) has been identified as the threshold when many Florida manatees seek out warm-water refugia, although there is considerable variability for individual tolerance to cold and when individual manatees begin to move toward warmer waters (Deutsch et al. 2003, pp. 22–25).

Threats Analysis

There are many factors affecting the viability of manatees; these factors include habitat loss (including seagrass loss) and modification from coastal development, overutilization from recreational disturbance by humans, disease and predation, pollution and harmful algal blooms, collisions from boating, entrapment in water control structures, loss of warm-water refugia, poaching, entanglement in fishing gear and marine debris, low genetic diversity, and climate change. The current and future primary influences on the Florida manatee are watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, unusual mortality events (UME), natural processes (including cold weather events and harmful algal blooms), human interactions, loss of warm-water refugia, and climate change. The current primary influences on the Antillean manatee are watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, natural processes like harmful algal blooms, human interactions, poaching, low genetic diversity, and climate change.

Watercraft Collisions

Collisions with watercraft are a primary threat to both subspecies of the manatee. Watercraft-related collisions result in direct impacts to manatees in the form of lethal and sublethal injuries, can lead to orphaning dependent calves of mothers that succumb to injuries, and can result in additional impacts to reproduction. Collisions with watercraft can occur rangewide anywhere watercraft usage overlaps with waterways accessible to manatees, and manatees are particularly vulnerable to collisions in shallow-water habitats (Edwards et al. 2016, p. 8).

Within the United States, collisions with watercraft have been identified as the most significant anthropogenic threat to Florida manatees (Runge et al. 2017, p. 37; Service 2023, p. 10), causing fatalities, sublethal injuries, and the orphaning of dependent calves (Service 2023, p. 11). Ninety-six percent of Florida manatees have scars from at least one watercraft collision, and 25 percent of adults have scars from 10 or more watercraft collisions (Bassett et al. 2020, entire). From 1990 through 2021, watercraft-related collisions were the most prevalent cause of death for Florida manatees; during that time, 2,503 Florida manatee deaths (or 19.1 percent of all documented carcasses) were attributed to watercraft-related collisions. Both a potential increase in the number of manatees and boaters would lead to a greater number of expected collisions (Martin et al. 2016, pp. 43–44). There were 1,029,993 boats registered in Florida as of 2022, and an unknown number of out-of-State boats were brought in by seasonal residents and visitors. Florida has the highest number of registered boats of any U.S. State (FWC 2022, entire), and since 1990, the number of boats registered in Florida has increased by more than 33 percent, even with the reduced registrations accompanying the economic recession that began in 2008. The human population in Florida is expected to grow by millions in the next few decades (approximately 3 to 9 million more people by 2045; Rayer and Wang 2020, entire). With an increasing human population, the number of boats in Florida waters is also expected to increase, resulting in more opportunities for watercraft-related manatee injuries and deaths.

Watercraft collisions that kill or injure manatees are a threat for the Antillean manatee as well. However, current information on watercraft collisions is limited and variable for most of the countries within the subspecies' range. This threat is likely widespread in portions of the range near human populations and has likely been increasing in magnitude over the last few decades and will continue to increase into the future as motorboats become more abundant.

In Puerto Rico, 43 years of manatee mortality data from 1980 to 2022 indicate that a total of 54 manatees are known to have died due to watercraft collisions (Mignucci-Giannoni et al. 2000, p. 192; Mignucci-Giannoni 2006, p. 2; Puerto Rico Department of Natural and Environmental Resources (PRDNER) and Caribbean Manatee Conservation Center (CMCC) 2022, unpubl. data). This number represents approximately 18 percent of the total known mortality cases during that time (54 out of 308), with a maximum of seven manatees in 2021 and usually at least one manatee per year. Unfortunately, there appears to be a recent increasing trend of watercraft-related mortalities with three cases in 2020, seven in 2021 (highest on record), and three in 2022. In Belize, watercraft collisions are the predominant cause of death, and strandings due to watercraft collisions have been increasing over recent decades (UNEP 2010, p. 22; Galves et al. 2023, entire; Specially Protected Areas and Wildlife Regional Activity Center (SPAW–RAC) 2021, p. 20). In Mexico, watercraft-related mortalities do not seem to be a significant cause of manatee mortality, and there was a recent (March 2020) documentation of the first case in 20 years of a watercraft collision with a healthy juvenile female manatee (Castelblanco-Martínez et al. 2020, p. 14). In Brazil, increased boating activities have resulted in both lethal collisions with manatees and disruption of manatee behavior (Self-Sullivan and Mignucci-Giannoni 2012, p. 43).

Habitat Loss and Modification

Human activities have caused the loss and alteration of manatee habitat used for breeding, feeding, sheltering, and seasonal migration. Seagrass, macro-algae, salt marsh, and freshwater vegetation have been affected, leading to significant losses of foraging habitat. Human activities that can result in the loss of aquatic vegetation as food resources include dredging, filling, boating, eutrophication, and coastal development (Zieman and Zieman 1989, pp. 88–96; Duarte 2002, p. 194; Orth et al. 2006, p. 991; PRDNER 2008, entire; PRDNER 2012, entire). Dredging directly removes submerged aquatic vegetation (SAV), and sediments suspended in the water column during dredge and fill activities cover adjacent SAV beds (Zieman and Zieman 1989, pp. 88–89; Auil 1998, p. 9). Boat groundings and boat propellers scar seagrass beds when boats navigate through seagrass beds in water that is too shallow for the draft (deepest point) of their boats, and even if the areas can eventually recover, the process can take many years (Sargent et al. 1995, pp. 6, 28; Hallac et al. 2012, entire). Additionally, excess nitrogen

and phosphorus that enters the aquatic system via septic systems, stormwater runoff or outfalls, or industrial and agricultural runoff can cause eutrophication, which reduces the amount of light available for photosynthesis, which subsequently may increase SAV mortality (Ralph et al. 2007, pp. 571–577; Lapointe et al. 2020, p. 2). Coastal development can have numerous negative impacts on manatee habitat, including impacts on tidal marsh and SAV. The most significant impact development has on tidal marsh is the direct conversion of marsh to development, resulting in a direct loss of habitat and forage.

In Florida, seagrass resources have declined along the Atlantic coast since 2011, most notably in the 156-mile (mi) (251-kilometer (km)) Indian River Lagoon (IRL), which is considered an important area for manatees in Florida (Landsberg et al. 2022, p. 1). Loss of seagrass is expected to have contributed to the unusual mortality event in the winter of 2020–2021 that affected IRL populations (described below under ''Unusual Mortality Events''). Seagrass declines have also been observed in other locations in southeastern Florida estuarine systems, including northern and central Biscayne Bay. As of 2015, Statewide mapping effort estimated 2.48 million acres of seagrass coverage in the shallow coastal regions of Florida (Yarbro and Carlson 2016, p. 5). While there have been recent gains or stability in seagrass coverage in many areas due to improvements in water quality and restoration, the total acreage of seagrass in Florida today is less than half of what it was in the 1950s (Yarbro and Carlson 2016, p. 3). During the winter of 2022–2023, manatees from the upper IRL were observed foraging in the central and southern Mosquito Lagoon where seagrass beds have been reported to be in healthier condition, but to access forage in that area, manatees are traveling more than 20 miles (32 kilometers) from warm-water sites each way. In addition, the St. Johns River Water Management District (Saint Johns River Water Management District (SJRWMD) 2023, entire) reports some improvement in the condition of the seagrass in the IRL in 2023.

Anthropogenic activities that result in the loss of seagrass also occur in Puerto Rico. Although there are no estimates of how much seagrass is needed to sustain the manatee population in Puerto Rico, seagrass abundance is not currently considered a limiting factor for the Antillean manatee population there (Drew et al. 2012, p. 13). Within other areas of the Antillean manatee's range, effects of habitat fragmentation from agriculture, development, resource extraction, and boating contribute to habitat loss. In Panama, manatee distribution is apparently fragmented because of discontinuous and likely depleted habitat (Lefebvre et al. 2001, p. 442). In Colombia, Antillean manatees have been cut off from important habitat by highway construction activities since the 1970s (Montoya-Ospina et al. 2001, p. 127). Agriculture and development have impacted coastal and estuarine manatee habitat in Honduras (Cerrato 1993, in Lefebvre et al. 2001, p. 440; UNEP 2010, p. 52), Costa Rica (UNEP 2010, p. 34), Jamaica (UNEP 2010, p. 55), Trinidad and Tobago (UNEP 2010, p. 76), and Mexico and Belize (UNEP 2010, pp. 23, 58–59). In Cuba, agricultural activities directly impacted manatees when residues from sugar processing killed eight manatees in 1981 and caused others to abandon Cuba's largest bay (UNEP 2010, p. 37). Furthermore, resource extraction and seagrass scarring pose a threat to manatees in Guatemala (UNEP 2010, pp. 45–46), while in the northeastern estuaries of Brazil, habitat destruction and degradation of mangrove forests are the main influencing factors for calf strandings (Dos Santos-Medeiros et al. 2021, entire). We anticipate many of these factors contributing to habitat fragmentation and loss will continue to act on both the Florida manatee and Antillean manatee into the future.

Unusual Mortality Events

Per the Marine Mammal Protection Act of 1972 (MMPA; 16 U.S.C. 1361 *et seq.*), an ''unusual mortality event'' (UME) may be declared when there is a stranding that is unexpected, involves a significant die off of any marine mammal population, and demands immediate response (16 U.S.C. 1421h(9)). When a UME is declared by the appropriate agency (for the manatee, this agency is the Service), the event will be investigated, and expertise shared through the MMPA-established Working Group on Marine Mammal Unusual Mortality Events (WGMMUME) (16 U.S.C. 1421c). In addition, funds may be made available for response and investigation through the UME Contingency Fund (16 U.S.C. 1421d).

The first formally designated UME affecting Florida manatees occurred in 1996, with the loss of 149 manatees due to red tide toxicity (see ''Pollution and Red Tides,'' below) associated with brevetoxins (tasteless, odorless neurotoxic compounds) (Bossart et al. 1998, p. 277). Since that time, there have been several red tide-related UMEs or ''repeat mortality events'' (RMEs), as well as events in 2010 and 2011 (cold temperatures), 2013 (deaths associated with a dietary shift or change in gut flora), and an ongoing event that started in December 2020 (starvation due to loss of foraging habitat along the Atlantic Coast of Florida) (Barlas et al. 2011, pp. iii–vi; Hardy et al. 2019, p. 1).

Two of the most recent UME events have occurred in the IRL area along Florida's Atlantic Coast. A ''superbloom'' event of phytoplankton in 2011, followed by successive blooms in 2016 and 2018, contributed to a significant loss of seagrass in this estuary (Martin et al. 2017, p. 5; Runge et al. 2017, p. 21; Service 2023, p. 47). During the winter of 2020–2021, the IRL experienced a more substantial collapse of almost all forage in Brevard County and neighboring counties along the IRL (Service 2023, p. 5; SJRWMD 2023, unpublished data). This latest UME was officially declared in March 2021, and encompasses the area of the east coast of Florida and the Lower St. Johns River north of Putnam County (referred to as the Atlantic Management Unit) (Service 2023, p. 5). The current UME is marked by a significant increase in mortality and morbidity, with affected animals—of which an unusually large proportion has been adults—showing similar signs of malnutrition and starvation (Service 2023, p. 17). From December 1, 2020, to September 27, 2024, a preliminary total of 1,693 carcasses (from all causes of death, including watercraft collisions, starvation, unknown causes, etc.) have been verified from the Atlantic Management Unit (FWC Manatee Mortality Database 2024, unpaginated). During this same period, more than 210 Florida manatees were rescued for a variety of causes, with UME-related manatees in need of rescue characterized by emaciation, sideways swimming, or impaired lung function. The long-term implications of this UME to the Florida manatee population are unknown and will take many years post-event to assess. There are no documented UMEs for the Antillean manatee.

Pollution and Harmful Algal Blooms

Exposure to contaminants in the water may affect the immune response of manatees to environmental stressors. Pollution generated from agriculture, human wastewater, oil and gas production, and general urban runoff contribute contaminants that are discharged into waterways and become integrated into sediments. Some contaminants are concentrated near industry and human population centers, while others are distributed more broadly in water.

Florida manatees in areas with widespread use of copper as an aquatic herbicide have been found to have high concentrations of copper in liver tissues, which can lead to jaundice, and toxic levels can lead to death (O'Shea et al. 1984, pp. 741, 746). Even Florida manatees in less agricultural outfalls in Citrus, Brevard, and Charlotte Counties have demonstrated high copper concentrations (O'Shea et al. 1984, pp. 742–743; Takeuchi et al. 2016, p. 447); however, because manatees cover such great distances in their routine migrations, it is challenging to link manatee bioaccumulation of copper to specific locations.

Antillean manatees can be directly and indirectly exposed to harmful toxicants in waterways, which impacts individuals' overall body condition and behavior. Exposure to these toxicants can alter behavior, reduce immune function and reproductive ability, and, depending on the magnitude and frequency of exposure, result in death. Within the Antillean manatee's range, water pollution has been shown to occur due to agricultural practices (*e.g.,* cane cultivation), development, and motorized boats (Corona-Figueroa et al. 2022, entire). These practices can increase runoff (heavy metals, pesticides, herbicides, etc.), which is harmful to the subspecies and its primary food source (*i.e.,* sea grass). Contaminants have been implicated in the death of one Antillean manatee calf in Puerto Rico (from a diesel spill), and mortality associated with residues from sugar processing may have also occurred in Cuba (UNEP 1995, p. 23). This contamination is considered a rationale for Antillean manatees' abandonment of Bahía de Nipe, Cuba's largest bay (UNEP 1995, p. 23). One study from Mexico found metal concentrations (arsenic, cadmium, chromium, copper, lead, nickel, and zinc) within Antillean manatee bones higher than for most other marine mammals globally, and significantly different concentrations between the sample from the Gulf of Mexico versus the Mexican Caribbean samples (Romero-Calderón et al. 2016, p. 9). Despite this knowledge, metal toxicity thresholds for the Antillean manatee are unknown.

Increases in nutrient and chemical runoff may promote harmful algal blooms (such as red tides) or damage seagrass beds that manatees rely on for a food source. During red tide events, which occur primarily along Florida's Gulf Coast, phytoplankton (microalgae) blooms and high concentrations of the marine algae produce brevetoxins, which can have debilitating or lethal effects on manatees and other aquatic life. Observations of red tides and accompanying fish kills have been recorded in Florida and the Gulf of Mexico since at least the 1800s (note that fish kills plausibly caused by red tides in the Gulf of Mexico have been recorded since 1648), and have been documented spreading via ocean currents up the Atlantic Coast of the United States to the Carolinas (Steidinger 2009, p. 550; Fleming et al. 2011, p. 225). Brevetoxins can sicken or kill animals, including humans, through direct exposure in water, aerosolized brevetoxins in the air, or bioaccumulation up the food web (Landsberg et al. 2009, p. 600; Steidinger 2009, p. 550). Brevetoxins can also be inhaled or ingested while manatees are foraging in seagrass communities, and brevetoxins may reside in the sediments for extended periods of time. Initiation of red tide algal blooms occurs in offshore areas, after which they are transported closer to shore by upwelling ocean currents (Weisberg et al. 2016, p. 116).

These red tide events occur in Florida and the Gulf of Mexico, and for the Florida manatee, these events have had the greatest impacts in southwest Florida (Lazensky et al. 2021, p. 1). While marine algae have been reported from Mexico, Trinidad and Tobago, and Jamaica (Steidinger 2009, pp. 550–551), red tide algal blooms are not known to be a significant threat to the Antillean manatee throughout its range. However, between 2018 and 2019 in Mexico, more than 50 Antillean manatee deaths were attributed to toxicity from algal blooms within the wetlands in the Tabasco region, but the algal species and cause of the bloom were not identified (Núñez-Nogueira and Uribe-López 2020, p. 257). The magnitude, timing, and frequency of harmful algal blooms may change in the future with a changing climate.

Human Interactions

The general threat from human interaction is widespread throughout both subspecies' ranges and is concentrated around human population centers and heavily used recreation sites. While it is known that interaction with and harassment by humans can cause manatees to alter their natural behavior and habitat use, impacts at the population level are not well understood.

Potential overutilization of manatees and their habitats for recreational purposes may take place during viewing activities conducted by commercial tour operators and private citizens in the southeastern United States, Belize, and Mexico, and is becoming more frequent in Puerto Rico. People view manatees from the water; from boats, kayaks, paddleboards, and canoes; and from shoreline areas. The presence of motorized and nonmotorized watercraft and swimmers can disturb manatees and cause them to alter their habitat use, potentially causing them to leave the habitats on which they depend to fulfill physiological needs (Buckingham et al. 1999, entire; Sorice et al. 2003, entire). For the Florida manatee, this type of activity may be most detrimental when manatees are clustered at warm-water aggregation areas necessary for survival due to their sensitivity to cold.

Disturbance from recreation can also cause manatees to alter behaviors such as resting or nursing, and sometimes could result in separation of mother/calf pairs or interfere with reproduction or socialization. There are also frequently documented accounts of the public touching, pursuing, and offering water and food to manatees. Manatees may become conditioned to these interactions and thus alter their behavior such that they may be attracted to high human-use areas, posing additional risk to manatees especially in areas of high boat traffic. This further exposes manatees to human-associated threats such as watercraft collisions.

Within the Florida manatee's range, the types of human interaction can vary. These include Florida manatee viewing from the water or shoreline to swimming with manatees. Human interaction with manatees may result in disruption of the manatee's natural behaviors (such as foraging, resting, thermoregulating at warm-water sites, and nursing and caring for their young) and interfere with mating herds, reproduction, or socialization behaviors. Some human activities may discourage Florida manatees' use of, or result in Florida manatees leaving, vital warm-water habitats necessary for their survival. For the Florida manatee, the highest levels of human interaction often occur during the winter months, when hundreds of manatees aggregate at warm-water sites, and effects from disturbance can be particularly detrimental due to the manatee's physiological need for warmth. During the rest of the year, many of the same types of human interactions occur at some level throughout the subspecies' range, but the magnitude of impact of these interactions is not well understood. For example, areas that are frequented by Florida manatees in South Carolina have become increasingly more well known and attract people to view the manatees; therefore, human interaction with

Florida manatees does not occur only in Florida. Many times, these viewing opportunities are passive, but there have been reports of people touching, feeding, providing water to, swimming with, or trying to ride on manatees.

There is evidence that Antillean manatees are facing similar human interaction pressures throughout their range. In Puerto Rico, interaction with manatees by kayak and paddleboard users, divers, and swimmers occurs in several popular beach and coastal recreational areas. There is at least one case in Puerto Rico in which a person may have separated a newborn calf from its mother and the calf had to be rescued. In Swallow Caye, Belize, manatees stopped visiting suitable manatee habitat in 1992 after swim-with-the-manatee programs were allowed without proper control (Auil 1998, p. 12). In Costa Rica, manatees appear to avoid areas of high-quality habitat during the day when they are frequented by boats (UNEP 2010, p. 34). In Mexico, there is concern over the increased boat-based tourism that targets manatees and dolphins within the Sian Ka'an Biosphere Reserve (Catesblanco-Martínez et al. 2019, entire). Specific information is lacking for other range countries, but Antillean manatees are likely influenced by human interactions wherever their populations overlap with areas of human use. It is likely the threat of overutilization of manatees and their habitats will continue in the future and increase in areas with higher human populations.

Poaching

Historically, manatees were harvested for a variety of purposes including meat; bones for weapons, medicine, and artisanal crafts; hides; oil for cooking; and fat for candle-making (Lefebvre et al. 2001, p. 426; UNEP 2010, pp. 12, 31, 40; Marsh et al. 2011, p. 264; Self-Sullivan and Mignucci-Giannoni 2012, pp. 42–45). Now, they are primarily hunted for their meat (Jiménez 2002, p. 276). Manatees are particularly susceptible to overexploitation because of their low reproductive rates, and poaching continues to pose a serious threat to some Antillean manatee populations, especially in those areas where few manatees remain (Lefebvre et al. 2001, p. 12).

In the past, poaching has been responsible for declining numbers throughout much of the Antillean manatee's range (in 17 of 20 range countries; Thornback and Jenkins 1982, as cited in Lefebvre et al. 2001, p. 426). Poaching is still common in areas where enforcement is lacking or where local people are unaware of laws in place to protect Antillean manatees (UNEP 2010, entire; Marsh et al. 2011, p. 386). In general, the actual level of poaching is not well-documented throughout the Antillean manatee's range. Poaching is currently not considered a threat in Puerto Rico, but it is still considered a primary threat to Antillean manatees in Cuba (Álvaréz-Alemán et al. 2021, entire) and Guatemala (Machuca-Coronado et al. 2023, entire). Poaching is not considered a threat to the Florida manatee.

Cold Stress and Loss of Warm-Water Refugia

The manatee is a subtropical species that has little tolerance for cold. Cold stress is not known to affect Antillean manatees because they inhabit warmer subtropical waters. However, for the Florida manatee, past and potential future losses of natural and human-made warm-water habitat coupled with cold stress constitute a major threat to this subspecies (Runge et al. 2017, p. 26; Valade et al. 2020, p. 2).

Manatees are characterized as having low metabolism and poor insulation, which inhibit their ability to retain heat and thermoregulate (Irvine 1983, entire; Worthy et al. 2000, p. 3; Rommel et al. 2001, p. 339; Bossart et al. 2002, p. 45; Rommel et al. 2002, p. 3; Hardy et al. 2019, p. 2; Martony et al. 2019, p. 86). The likelihood of cold stress is highest where water temperatures are colder or have greater fluctuations (*e.g.,* shallower water depths), as well as in areas with limited warm-water or foraging habitat. Cold stress is only an immediate threat during winter but impacts to the overall health and fitness of individuals are likely to carry over after cold weather has passed (Walsh et al. 2005, entire). The magnitude of this threat varies annually depending on the severity of the winter. Cold temperatures limit the northern extent of the Florida manatee's winter range and restrict the available wintering sites to areas mostly in peninsular Florida, although anthropogenic thermal discharges have extended the winter range of the Florida manatee and altered its distribution in Florida waters (Laist and Reynolds 2005a, p. 740).

Florida's natural springs have seen substantial declines in flows and water quality, and many springs have been altered (*i.e.,* dammed, silted in, or otherwise obstructed) to the point they are no longer accessible to manatees (Laist and Reynolds 2005b, p. 287; Taylor 2006, pp. 5–6; FWC 2007, p. 10). Flow declines are largely attributable to demands on aquifers (spring recharge areas) for potable water or other users such as agriculture (Marella 2014, pp. 1–2). Declining flows can result in fewer usable warm-water sites for wintering manatees, both in terms of thermal quantity and quality.

In Florida, manatees are known to utilize 67 primary and secondary warm-water sites, including 10 power plants, 23 springs and spring complexes, and 34 passive thermal basins (Valade et al. 2020 pp. 2–3, 25–30). Groundwater seeps, haloclines, solar radiation, thermal inertia, and biodegradation provide the source of heated water for passive thermal basins (Stith et al. 2012, entire; Laist et al. 2013, p. 1). Industrial outfalls are the primary warm-water sites most heavily used in the two largest Florida winter management units (Southwest and Atlantic), while Florida manatees in the two smallest and more northerly winter management units (*i.e.,* Upper St. Johns River and Northwest) rely almost exclusively on natural springs (Laist et al. 2013, p. 4). If power plant outflows in the Southwest and Atlantic management units are lost, or have reduced or unpredictable flows, manatees that winter at such sites would have to overcome their strong site fidelity and shift their distribution south in order to convert to using passive thermal basins and warm ambient waters in southern Florida, or they would have to move north to utilize the springs in the Upper St. Johns River and Northwest winter management units. Experience with disruptions at sites has shown that some manatees can adapt to minor changes at these sites; during temporary power plant shutdowns, manatees have been observed to use less-preferred nearby sites when an alternate warm-water source was not provided at the primary site.

The potential loss of warm water at natural springs, passive thermal basins, and power plants in Florida is a significant threat to the subspecies, as more individuals would be susceptible to lethal and sublethal effects of cold stress (Service 2001, entire; Laist and Reynolds 2005*a,* 2005*b,* entire; Service 2007, entire; Runge et al. 2017, entire). Loss of warm-water sites has the potential to influence population dynamics enough to significantly increase the risk of population quasi-extinction (Runge et al. 2017, p. 26). However, severity and timing of these losses and their effect on populations are uncertain. In the future, warm-water refugia loss is likely to continue to be a threat to the Florida manatee and will increase over time.

Low Genetic Diversity

Low genetic diversity has been identified in Antillean manatee populations in Puerto Rico, Belize, Brazil, Mexico, Panama, and Cuba (Hunter et al. 2010, entire; Nourisson et al. 2011, p. 833; Hunter et al. 2012, entire; Díaz-Ferguson et al. 2017, pp. 383–384; Alvarez-Alemán 2019, pp. 103, 115; Luna et al. 2021, entire). Low genetic diversity likely exists elsewhere across the Antillean subspecies' range, and genetic diversity is likely lower the more isolated a population is. Additional research is needed to understand whether low genetic diversity leads to reduced fitness or poses an imminent threat to manatee populations. When genetic diversity is substantially reduced or slowly eroded over time through loss of individuals, it can lead to an extinction vortex, which results in an inbreeding feedback loop and can lead to extinction (Nordstrom et al. 2023, p. 2). There is no evidence that low genetic diversity is an issue for the Florida manatee.

Climate Change

Climate change impacts are likely to influence the viability of manatees in several ways, including temperature increases, sea level rise, fluctuations in ocean chemistry, hydrological cycle deviations, and changes in timing and intensity of tropical storms, as well as extreme cold events. These large-scale impacts may lead to habitat changes, increased algal blooms, and new threats from diseases (Edwards 2013, pp. 727, 735; Marsh et al. 2017, entire; Osland et al. 2020, entire). The synergism of these factors will affect manatee health and habitat, and potentially reduce the future range of each subspecies.

More than 90 percent of the excess heat accumulated in the climate system between 1971 and 2010 has been stored in the ocean, particularly near the surface (Intergovernmental Panel on Climate Change (IPCC) 2014, pp. 40–42; IPCC 2019, p. 9). The upper ocean (0–700 m, or 0–2,297 ft) has warmed since the 1970s due to human-caused carbon dioxide emissions (IPCC Sixth Assessment Report Summary for Policymakers (AR6 SPM) 2021). The ocean will continue to warm throughout the 21st century, and the strongest warming is predicted to occur in tropical regions and Northern Hemisphere subtropical regions (IPCC 2014, p. 60). Increasing ocean temperatures will affect estuarine and freshwater systems, seagrass, and other forage plant communities by influencing photosynthetic rates and biomass, changes in plant communities and growth of competitors, changes in aspects of life history, or shifts in distribution if physiological tolerances are exceeded (Short and Neckles 1999, pp. 172–175; Bjork et al. 2008, pp. 21–23). Influences can be both positive (*e.g.,* possible increased photosynthesis and growth from increased carbon) and negative (*e.g.,* increased growth of competitive algae and epiphytes that shade seagrass and reduce growth) (Short and Neckles 1999, pp. 172–175; Bjork et al. 2008, pp. 21–23). Increased temperatures can also increase stress on plants, decreasing growth and reproduction and resulting in less forage for manatees (Marsh et al. 2017, p. 343).

An increase in temperature will likely decrease the frequency and intensity of cold weather events, which in turn would decrease Florida manatees' exposure to cold stress and may reduce the time they spend at warm-water sites. However, these changes may not completely eliminate mortality events from cold weather (Osland et al. 2020, pp. 3, 13). Conversely, manatees in tropical regions may reach upper thermal tolerances due to rising water temperatures (Marsh et al. 2017, p. 336).

Due to the projected sea level rise (SLR) associated with climate change, coastal systems and low-lying areas will increasingly experience submergence, coastal flooding, and coastal erosion (IPCC 2014, p. 17). In response to SLR and other climate change impacts, many terrestrial, freshwater, and marine species have shifted their geographic ranges, seasonal activities, and migration patterns (IPCC 2014, p. 4). Increases in sea level have been occurring throughout the southeastern Atlantic and Gulf coasts of the United States, and the overall magnitude of SLR in the region has been slightly higher than the global average (Mitchum 2011, p. 9). At various locations in Florida, SLR has averaged about 3.0 millimeters (mm) (0.12 inches (in)) per year since the early 1990s (Ruppert 2014, p. 2). The amount of SLR that will occur in the future will depend largely on the rate of anthropogenic greenhouse gas emissions and associated warming. Salt marshes may be able to persist with SLR by either floodwater sedimentation or through landward migration. However, future SLR is expected to shift available habitat farther inland (in some cases closer to developed areas) or the habitat will be lost all together. Coastal tidal marshes are threatened by this ''coastal squeeze,'' the combination of SLR rise and a physical barrier that prevents the landward migration of marshes (Martinez et al. 2014, p. 180).

Regarding fluctuations in ocean chemistry, rising carbon dioxide levels will directly impact seagrasses and other aquatic vegetation (Unsworth et al. 2019, p. 810). As carbon dioxide increases in the atmosphere, it will continue to increase in the ocean and lead to a decrease in pH. Under elevated carbon dioxide conditions, seagrass growth rates will increase (Koch et al. 2013, p. 103). An additional consequence of fluctuations in ocean chemistry from climate change may be harmful algal blooms. Increased ocean temperatures will influence the range, frequency, duration, size, and seasonal window of opportunity for harmful algal blooms.

Hydrological cycle deviations are another potential consequence of climate change, with projections for future precipitation trends suggesting overall annual precipitation will decrease in the southeastern United States and Puerto Rico (Carter et al. 2014, p. 17; Khalyani et al. 2016, pp. 271–275; Bhardwaj et al. 2018, p. 145). Similarly, uncertain predicted changes in precipitation in Mexico, Central America, and South America indicate that the wet season could become drier, and the dry season could become either wetter or drier depending on the region, but primarily drier along the Caribbean coast of Central America and most of South America (Vera et al. 2006, p. 4; Karmalkar et al. 2011, pp. 622–626). Climate change could intensify or increase the frequency of drought events. Frequency, duration, and intensity of droughts are likely to increase in the southeastern United States where Florida manatees primarily occur (Thomas et al. 2004, pp. 145–147). Overall, the changes in rainfall patterns will likely have a geographically uneven impact on manatees.

Tropical cyclones, severe storms, and dust storms will bring intense flooding that may impact seagrasses and manatees through increased runoff and turbidity in coastal waters (Marsh et al. 2017, p. 343). Impacts to manatees from tropical storms and hurricanes include strandings, debris-related injuries, individuals being swept off-shore or exceedingly far inshore, entrapment in isolated water bodies, and impacts to forage (Langtimm and Beck 2003, entire; Langtimm et al. 2006, entire; Langtimm et al. 2007, p. 192; NOAA 2007, pp. 94–96). The Florida manatee survival rate is negatively correlated with more intense hurricane seasons (Langtimm and Beck 2003, p. 262). Tropical storms, hurricanes, and high tide flooding events are already contributing to increased Florida manatee rescues as manatees are gaining access to areas that were previously inaccessible, such as in golf course ponds, in culverts, in

stormwater retention areas, and behind water control structures. In Puerto Rico, tropical storms and hurricanes intensify heavy surf, and at least one manatee calf death was attributed to Hurricane Hortense in 1996 (Service 2007, p. 33). For the Antillean manatee, hurricane events may have a greater impact on some populations (Caribbean and Gulf of Mexico) than on others (coast of South America).

Other Influences

Disease and Predation: Numerous infectious diseases and parasites have been reported in manatees) (Owen et al. 2018, entire). Papillomaviruses can infect individuals with suppressed immune systems have been observed in manatees and are believed to be spread via contact (Bossart et al. 2002, entire; Woodruff et al. 2005, entire; Halvorsen and Keith 2008, p. 414). However, papillomas (epithelial tumors) on infected manatees are benign. Toxoplasmosis has been identified in the Florida manatee and the Antillean manatee in Puerto Rico, but cases of the disease and evidence of antibodies to *Toxoplasma gondii* were rare in the Puerto Rican population (Buergelt and Bonde 1983, entire; Smith et al. 2016, entire; Bossart et al. 2012, entire).

There is no evidence that predation is a significant threat to the viability of either the Florida manatee or the Antillean manatee. There have been documented interactions with sharks and alligators on manatees, but these instances are rare (Mou Sue et al. 1990, p. 239; Marsh et al. 2011, p. 239). As there is no evidence of predation being a significant threat to either subspecies of manatee, we do not anticipate this to change in the future. However, impacts from disease may increase over time if manatees are under stress due to climate change.

Entanglement by Fishing Gear and Marine Debris: Fishing gear, both active and discarded, can kill or injure both subspecies of manatee through either entanglement (*e.g.,* in nets, crab traps, or monofilament line), ingestion (*e.g.,* monofilament line, fishhooks, etc.), or incidental capture (*e.g.,* in inshore recreational and commercial shrimp trawls). Other marine debris not related to fishing, like plastics, rope, wire, sponges, balloons, etc., can pose an issue for manatees (Reinert et al. 2017, p. 418; Service Captive Manatee Database 2024, unpaginated; Service 2020, pp. 2–3). Causes of death from ingestion of marine debris include intussusception (telescoping of the intestine into itself) of the small intestine and impaction, obstruction, and perforation of the gastrointestinal tract (Beck and Barros 1991, p. 509; Reinert et al. 2017, p. 418). Causes of death from entanglement have included secondary infection, drowning, and being tethered to an immovable object (Reinert et al. 2017, p. 418).

Drowning in fishery nets has occurred but appears to be infrequent, with just one instance of a manatee associated with a recreational shrimp net between 2014 and 2018 (FWC Manatee Mortality Database 2024, unpaginated). Incidental captures of manatees by research groups does occur and non-target manatees can be caught during other rescue activities, again with limited frequency, but manatees are typically released unharmed (Service 2020, p. 2). In 2019, Florida manatees were reported to be incidentally captured on at least 15 occasions (Service 2020, p. 2). Because conservation actions have been implemented, deaths from marine debris are rare, and population modeling efforts have determined that marine debris (including entanglements and ingestion of fishing gear) presents only a low threat to the persistence of the Florida manatee (Runge et al. 2015, p. 16; 2017, p. 18).

Entrapment in Water Control Structures: Water control structures include flood gates that control water movement and navigation locks that allow vessel passages past dams and impoundments, such as those associated with the Caloosahatchee Waterway. Water control structures and navigation locks have historically posed a threat to the Florida manatee. Between 1980 and 1999, an average of 6.6 Florida manatees per year died in structure-related deaths (FWC Manatee Mortality Database 2021, unpaginated).

Because of safety advances for water control structures (discussed further under *Conservation Efforts and Regulatory Mechanisms,* below), these structures are not currently considered a major threat to the Florida manatee. Most water control structures that may impact Florida manatee have been retrofitted with manatee protection systems or mesh barriers, and these structures implement standard operating procedures to reduce impacts to manatees. Information is not available regarding the precise degree to which water control structures pose a threat to the Antillean manatee, but the best available information indicates a few manatee deaths are reported in Mexico, Colombia, and Cuba due to dams and water control structures. Water control structures are not believed to currently be a major threat to either subspecies of manatee, and we do not anticipate this threat to increase in the future because we assume that management actions to prevent entrapment will continue.

Conservation Efforts and Regulatory Mechanisms

As described under *Threats Analysis,* above, several factors can affect the viability of manatees. Below, we provide an overview of conservation efforts, and regulatory mechanisms, and recovery plans that address the threats and provide benefits to manatees.

Watercraft Collisions

The primary conservation action to reduce the risk of manatee injury and death from watercraft collisions is the establishment of protected areas that restrict boat entry and limit vessel speeds. The rationale behind speed limits is that a slower speed allows both manatees and boaters additional response time to avoid a collision (Calleson and Frohlich 2007, p. 297; Rycyk et al. 2018, p. 956). Furthermore, if an impact occurs, the degree of trauma will generally be less if the colliding boat is operating at slower speed (Laist and Shaw 2006, p. 478; Calleson and Frohlich 2007, p. 297).

For the Florida manatee, manatee protection zones are a primary conservation tool that has been implemented to address this threat. These zones, which have been implemented in Florida at the Federal, State, and local level, regulate boater entry and speed in protected areas to reduce risk to manatees and their habitat. There are many different types of protection zones, including idle- and slow-speed areas, boater travel corridors that allow higher speeds in deeper channels, shoreline buffers, zones with seasonal entry or speed limitations, non-motorized areas, and no-entry areas (FWC 2007, p. 148). Federal, State, and local manatee protection speed zones have been established in 27 Florida counties.

For the Antillean manatee, some countries have designated protected areas to help reduce the impact of watercraft collisions and other threats to manatees. For example, Belize has three protected areas created specifically to safeguard manatee habitat: Swallow Caye Wildlife Sanctuary, Corozal Bay Wildlife Sanctuary, and Gales Point Wildlife Sanctuary, as well as numerous protected areas within coastal areas (UNEP 2010, p. 24). Other countries, including Brazil, the Dominican Republic, Guatemala, and Mexico, have also designated reserves specifically for the conservation of manatees (UNEP 2010, pp. 28, 41, 47, 60).

Habitat Loss and Modification

To offset threats to seagrass in the United States, including Puerto Rico, a wide range of conservation efforts are ongoing. These include the collective efforts of the Service, U.S. Army Corps of Engineers (USACE), Puerto Rico Department of Natural and Environmental Resources (PRDNER), National Oceanic and Atmospheric Administration (NOAA), U.S. Coast Guard, FWC, Florida Department of Environmental Protection (FDEP), Florida's regional Water Management Districts (WMDs), and others who are working to avoid, minimize, and mitigate project impacts on manatee habitat. The development and implementation of no-wake areas, marked navigation channels, boat exclusion areas, and standard manatee construction conditions for marinas and boat ramps are a few of the efforts making a positive impact on maintaining and protecting important manatee habitat.

For the Florida manatee, habitat degradation and loss from natural and human-related causes are being addressed through collective efforts to improve overall water quality; minimize construction-related impacts; minimize loss of seagrass due to propeller scarring and dock construction; and increase the abundance of SAV, salt marsh, and mangroves by restoring these habitats. The Service, USACE, and NOAA, as well as multiple State agencies including FWC, FDEP, and regional WMDs, review development permits to identify potential impacts and develop measures that will avoid, minimize, or mitigate for direct and secondary impacts. In addition, these agencies have programs for increasing SAV, salt marsh, and mangrove habitats through restoration; restoring living shorelines; and improving water quality. In southwest Florida, spatial coverage of seagrass increased by more than 12,000 ha between the 1980s and 2016 in six assessed estuaries (St. Joseph Sound, Clearwater Harbor, Tampa Bay, Sarasota Bay, Lemon Bay, and Charlotte Harbor; Tomasko et al. 2018, p. 1135). This recovery was made possible by conservation actions that limited nutrient loads in the water, including upgrading wastewater and stormwater systems, as well as legislation regulating discharged pollutants (Tomasko et al. 2018, pp. 1133–1135). Protected areas where boat access is limited or prohibited also protect manatee habitat from direct threats from vessels, their wakes, and other destructive activities.

Major habitat restoration efforts were undertaken by Save Crystal River, Inc., with financial backing by the State of Florida and other sources. As part of this effort to restore Kings Bay, a three-pronged approach was instituted in the area, consisting of: organic detritus/muck removal; then replanting with more salt-tolerant eelgrass variants (''Rock Star'' and ''Salty Dog''), with the initial plantings protected by herbivory exclusion cages; and then maintenance of the restoration site (Kramer 2020, pp. 1–4; Save Crystal River 2021, entire). Over time, the plants have shown strong growth and persistence, and have expanded the vegetated area well beyond the initial planting locations, contributing to enhanced water clarity in many parts of the bay. While water clarity has improved, an added benefit for manatees is that the SAV has expanded nearer to natural spring sites, resulting in reduced travel distances to feed and less exposure to colder ambient temperatures and boat traffic.

Current efforts to forestall reductions in salt marsh habitat include reducing impacts from coastal development through the Federal and State permitting process, mitigation for lost salt marsh, and restoration efforts to enhance and increase salt marsh habitat (Radabaugh et al. 2017, pp. 139–141).

There are recovery efforts being made to protect the Antillean manatee against threats posed by habitat loss or modification. In Puerto Rico, there have been efforts to restore damaged habitat, protect habitat by restricting boater entry or speeds, and provide mooring buoys to prevent anchorage (PRDNER 2012, entire). In Belize, three protected areas were created specifically to protect critical manatee habitat (Swallow Caye Wildlife Sanctuary, Corozal Bay Wildlife Sanctuary, and Gales Point Wildlife Sanctuary), and more than 43 percent of the country's protected areas are within the coastal zone (UNEP 2010, p. 24). Mexico has designated significant special manatee protection areas (UNEP 2010, p. 60). The Dominican Republic and Guatemala also have designated protected habitat specifically for Antillean manatee conservation, in addition to other protected coastal and wetland areas that are not protected specifically for manatees (UNEP 2010, pp. 19–82; Domínguez Tejo 2019, p. 6).

Some Antillean manatee habitat has been protected in other range countries including the Bahamas, Brazil, Colombia, Costa Rica, Cuba, French Guiana, Honduras, Jamaica, Nicaragua, Panama, Suriname, Trinidad and Tobago, and Venezuela, although these protected areas are not necessarily protected or enforced to the benefit of manatees specifically (*e.g.,* Ramsar sites designated as wetlands of international importance but without specific management or planning to benefit manatees) (UNEP 2010, pp. 19–82).

Pollution and Harmful Algal Blooms

Conservation measures associated with harmful algal blooms include rescue and treatment of affected individuals, and efforts to reduce the occurrence of harmful algal blooms in cases where the drivers of blooms are understood, which is not the case for red tides caused by blooms of the marine algae *Karenia brevis.* Although there are no effective conservation measures available currently to reduce the impact of red tides themselves, manatee rescue, care and treatment, and release have aided in the rehabilitation of numerous manatees suffering from sublethal effects of brevetoxin exposure. Between 2010 and 2022, 70 Florida manatees have been rescued (7.7 percent of all rescues) for red tide-related causes (FWC Manatee Mortality Database 2024, unpaginated).

Many efforts are being undertaken to address recurring algal blooms in Florida, and specifically in the IRL. The State of Florida, Indian River Lagoon National Estuary Program (IRLNEP), Brevard County, and many other partners have funded and are implementing a large number of projects to improve the IRL's health. The initiatives are aimed at removing legacy nutrient loads and reducing current nutrient sources through the implementation of stormwater improvement projects, fertilizer bans, septic to sewer conversions, dredging of accumulated muck from the lagoon, and restoration projects for oysters, clams, and seagrass (Tetra Tech and Closewaters, LLC 2021, entire; IRLNEP 2019, entire).

For the Antillean manatee, once the manatee deaths in the Tabasco region started to increase, the Mexican government summoned a committee to investigate the causes of death. While brevetoxins have been reported from Mexico, Trinidad and Tobago, and Jamaica (Steidinger 2009, pp. 550–551), algal blooms are not known to be a significant threat to the Antillean manatee throughout its range. However, between 2018 and 2019, more than 50 Antillean manatee deaths in Mexico were attributed to toxicity from algal blooms within the wetlands in the Tabasco region, although the algal species and cause of the bloom was not identified (Núñez-Nogueira and Uribe-López 2020, p. 257). The magnitude, timing, and frequency of harmful algal blooms may change in the future with a changing climate. Further, large mats

of pelagic sargassum may impact Antillean manatees' respiratory, ocular, and neurological functions.

Human Interactions

In Florida, where people currently view manatees, numerous measures are in place to prevent the take of manatees due to disturbance from viewing-related harassment. All waterborne activities are prohibited in Federal manatee sanctuaries and FWC or other State no-entry zones; specific waterborne activities may be restricted in Federal manatee refuges and FWC no-motorized-vessel zones. Both the Service and FWC promote and post appropriate guidelines for Florida manatee viewing through outreach via social media and signage at public viewing areas. Ecotourism is popular throughout the State of Florida but remains a significant concern due to increasing demand for manatee-related tourism, limited law enforcement presence, and cumulative effects from these activities on manatees especially when the activities occur in the vicinity of large manatee aggregations at warm-water sites.

Within the Crystal River National Wildlife Refuge in Citrus County, Florida, a special use permit system is in place to govern commercial tours within refuge waters. The permit system ensures these activities occur with proper education and viewing practices in place. Federal and State designated sanctuaries and protected areas keep people out of sensitive manatee habitats (*i.e.,* warm-water sites), educated tour guides are tasked with ensuring that their customers do not harass manatees, and many educational programs prescribe appropriate measures to take when in the presence of manatees. Refuge staff, including law enforcement, hold annual meetings with volunteers and tour guides to provide updates on manatee issues in the area and to review proper manatee viewing practices. The federally designated Kings Bay Manatee Refuge regulates waterborne activities that are disruptions to natural behaviors such as resting, nursing, foraging, mating, and socializing, and has established speed zones for the protection of manatees.

There is limited information available about conservation measures that address human interaction in many range countries for the Antillean manatee. In Puerto Rico, government agencies and local nongovernmental organizations have implemented education and outreach strategies to ensure that manatee harassment is avoided and minimized by concessionaires and others within manatee use areas. There has been an increase in the type and number of recreational activities where manatees occur and, thus, an increase in the scenarios where manatee harassment occurs. In general, surveillance and enforcement related to human interactions with manatees is difficult given the frequency and diversity of the incidents. There are examples of similar protected areas and use restrictions to protect Antillean manatees in other range countries from human interactions. For example, at Swallow Caye in Belize where manatees stopped visiting suitable habitat after swim-with-the-manatee programs were allowed, community groups and a local conservation organization helped to declare the area a wildlife sanctuary in 2002. The area is currently co-managed between the Belize Forest Department and a local conservation organization, and manatees have returned to the area (UNEP 2010, p. 23). In Mexico, several workshops and meetings were conducted with the local tourist operators and the authorities within the Sian Ka'an Biosphere Reserve (Castelblanco-Martínez et al. 2019, entire).

Loss of Warm-Water Refugia

As discussed under *Threats Analysis,* above, cold stress does not tend to affect Antillean manatees, because they inhabit warmer subtropical waters. Florida manatees during the colder months may suffer from cold stress and require human intervention. However, for the Florida manatee, primary direct conservation response to address cold stress is rescue and treatment. Providing care for cold-stressed manatees is dependent on the public or other entities reporting these distressed manatees to FWC and other rescue partners, as well as the availability of experienced rescue personnel, availability of rehabilitation space, and other resources necessary to rescue, transport, and provide treatment. Consequently, only a small number of individuals that need treatment for cold stress are likely to be rescued and rehabilitated.

Over the last 10 years (2014–2023), close to 40 manatees have been rescued outside of Florida, and most of those rescues were the result of artificial warm-water attractants (power plants, pulp mills, and other industrial-related outfalls that produce heated effluents in manatee-accessible waters) that altered manatee migratory behavior but where the heated discharges were insufficient to sustain manatees through the winter (Service Manatee Database 2024, unpaginated). When these situations occur, the Service works cooperatively with the industrial partner to try to mitigate those attractants.

Major spring restoration efforts have occurred at Homosassa Springs, Three Sisters Springs, Chassahowitzka Spring, Ulele Spring, Fanning Springs, Manatee Springs, and Warm Mineral Springs, where sand bars and other obstructions were removed to facilitate manatee access to these areas (TNC 2015, unpaginated; Valade et al. 2020, p. 17). Restoration and shoreline stabilization at Blue Spring (Volusia County), a major natural warm-water site, is ongoing. Because of sedimentation from human activities, manatees could not access the Warm Mineral Springs warm-water site under certain low tide conditions (FWC 2019, pp. 16–17). Another site in southwest Florida at Port of the Islands is expected to be lost because of hydrologic restoration in the Picayune Strand as part of the Comprehensive Everglades Restoration Plan (CERP). In response, a manatee warm-water mitigation feature was built that includes three deep pools that are connected to the surficial aquifer and hold warm saline groundwater for manatee use. This site is being monitored by researchers to evaluate temperature conditions and manatee use (FWC 2019, pp. 16–17).

The State of Florida's WMDs are also required to set minimum flows and levels (MFLs) for aquifers, surface watercourses, and other surface water bodies. Minimum flows are required for rivers, streams, estuaries, and springs in Florida, which provide benefits to manatees and help provide protection for natural warm-water sites. The MFLs created for each waterbody must establish a limit that identifies a point where further water withdrawals will be harmful to the water resources or ecology of the area; non-consumptive and environmental values are considered in this determination. After an MFL is set, water use permits are used to regulate and prevent groundwater withdrawals that would lower flows or levels that fall below the MFL. MFL reviews typically occur on a 5-year cycle, and these levels ensure adequate flows and require that conservation measures be taken should flows drop below targets. MFLs have been completed for numerous waterbodies including those important for manatees, like Blue Spring (Volusia County); Manatee and Fanning Springs (Levy County); Weeki Wachee Spring (Hernando County); Homosassa, Chassahowitzka, and the Crystal River/Kings Bay system (Citrus County); DeLeon Springs (Volusia County); Silver Glen Springs (Lake and Marion

Counties); and Wakulla Springs (Wakulla County).

Additional conservation actions include the Service's and FWC's coordination with the power-generating companies in Florida, and through the FDEP, manatee protection conditions are incorporated into each facility's National Pollution Discharge Elimination System permit. The Service also coordinates with State and industry partners to minimize any future manatee losses from industrial site reductions or closures by seeking short-term alternatives and long-term sustainable options for supporting manatees without reliance on industrial warm-water sources. In 2004, the Warm-water Task Force created the first version of the Warm-water Habitat Action Plan to address the expected loss of warm-water habitat produced by Florida power plants. The task force was part of the Service's Manatee Recovery Team and consisted of representatives of Federal and State wildlife agencies, the power industry, recreational and commercial boating interests, and environmental organizations. The Service and FWC finalized the Florida Manatee Warm-water Habitat Action Plan (Valade et al. 2020, entire), and this document serves as the framework to address the expected loss of industrial warm-water habitat in the future. This plan consists of seven main strategies and sets forth both short-term and long-term measures to address one of the most significant threats to the future existence of the Florida manatee and the recovery of the subspecies (Valade et al. 2020, entire).

Water Control Structures

Water control structures are not believed to be a major threat to the Antillean manatee. However, advances in manatee protection systems installed on water control structures to prevent Florida manatees from being crushed or impinged have been largely successful. Efforts to mitigate the negative effects of these water control structures on manatees are ongoing. In Florida, most water control structures that are known to have caused Florida manatee deaths have been retrofitted with manatee protection systems (Service 2023, p. 12), including acoustic arrays and piezo-electric strips that reverse closing locks or gates when they encounter a manatee. In addition, mesh exclusion barriers are used to prevent manatees from accessing the recessed areas of navigational locks. Risks at navigational locks and water control structures have been further reduced by the implementation of standard operating procedures developed by the Florida WMDs and the USACE (Service 2023, p. 12). In response to these advances, annual mortality has fallen to an average of 4.2 manatees per year between 2000 and 2019 (FWC Manatee Mortality Database 2024, unpaginated).

Entanglement by Fishing Gear and Marine Debris

Conservation actions to reduce the impact of this threat include rescue, efforts to remove and keep discarded fishing gear and debris out of the water, and community outreach and education. In addition, best management practices have been provided by FWC and the Service for some commercial fisheries and research activities that have included active tending of nets, limited set times, location restrictions, and reporting of entanglements and captures of manatees during these activities.

Rescue activities have reduced mortality associated with fishing gear, which has likely contributed towards recovery of the Florida manatee. Permits related to in-water activities, such as mooring fields, turbidity booms, and other entangling materials, are reviewed by FWC and Service staff, and conditions to minimize or eliminate entanglements are provided as specific conditions to the issued permit. Derelict crab trap removal, monofilament recycling programs, and other coastal cleanup efforts also aid in reducing the threat to marine wildlife and minimizing the number of entanglements by removing gear from the water. Extensive education and outreach efforts increase awareness and promote sound gear-disposal activities.

Recovery Plans and Recovery Actions

Recovery and conservation actions for the West Indian manatee are described in the ''UNEP Caribbean Environment[al] Program's Regional Management Plan for the West Indian Manatee'' (UNEP 2010, entire) and in national conservation plans for countries outside the United States. The UNEP plan identifies short- and long-term conservation and research measures that should be implemented to conserve the West Indian manatee. This plan also includes an overview of manatees within their range countries, including descriptions of regional and national conservation measures and research programs that have been implemented. Given the general lack of information about the Antillean manatee in most of its range countries, the plan recommends that needed research and the development of common methodologies be prioritized in concert with coordinated manatee and manatee habitat protection efforts (UNEP 2010, entire). Belize, Colombia, Costa Rica, Guatemala, Mexico, and Trinidad have developed country-specific manatee recovery plans as well (UNEP 2010, p. 92).

Efforts to conserve manatees outside the United States vary significantly from country to country. Some countries, including, but not limited to, Mexico, Belize, Guatemala, Brazil, Dominican Republic, and Cuba, are engaged in efforts to assess the current status and distribution of manatees. Many countries also provide protections for manatees and their habitats. A number of governments have designated manatee protection areas and have developed or are developing conservation plans (UNEP 2010, p. xiv). National legislation exists for manatees in all range countries, and many countries have ratified their participation in international conventions and protocols that protect manatees and their habitat (UNEP 2010, p. xv). Other efforts to protect manatees include education and outreach efforts, and countries promote cooperation and information exchanges.

Within the United States, the Service's Recovery Plan for the Puerto Rico Population of the West Indian (Antillean) Manatee (Service 1986, entire), the South Florida Multi-Species Recovery Plan (Service 1999, entire), and the Florida Manatee Recovery Plan (Service 2001, entire) identify recovery and conservation actions for the two subspecies. Actions common to all plans include minimizing manatee mortality and injury, protecting manatee habitats, and monitoring manatee populations and habitat.

The Recovery Plan for the Puerto Rico population of the West Indian (Antillean) Manatee (Service 1986, entire) included three major objectives: (1) To identify, assess, and reduce human-related mortalities, especially those related to gill-net entanglement; (2) to identify and minimize alteration, degradation, and destruction of important Antillean manatee habitats; and (3) to develop criteria and biological information necessary to determine whether and when to reclassify (either delist or downlist) the Puerto Rico population (Service 1986, p. 12). The 1986 plan also includes a step-down outline that identifies two primary recovery actions: (1) population management, and (2) habitat protection. The 1986 plan (Service 1986, entire) does not establish quantitative recovery criteria to describe a sustainable population of manatees in Puerto Rico. It does, however, direct the Service to determine and satisfy the recovery criteria that are based on mortality and

abundance trends and a minimum population size and to ensure that adequate habitat protection and anti-poaching measures are implemented (Service 1986, Executive Summary). Since the release of the 1986 plan, initiated recovery actions have provided substantial new knowledge about the subspecies' ecology and threats. Some of these efforts apply to multiple tasks and are helping to update conservation information and tools that are applied towards adaptive management and education. Efforts include (but are not limited to) the rescue, rehabilitation, and release actions related to strandings (led by PRDNER); aerial surveys; identification of important manatee habitats and resources in Puerto Rico; and developing conservation measures as part of project reviews.

The current Florida Manatee Recovery Plan on October 30, 2001 (Service 2001, entire) includes four principal objectives: (1) Minimize causes of Florida manatee disturbance, harassment, injury, and mortality; (2) determine and monitor the status of Florida manatee populations; (3) protect, identify, evaluate, and monitor Florida manatee habitats; and (4) facilitate Florida manatee recovery through public awareness and education. To help achieve these objectives, the 2001 recovery plan identifies 118 recovery implementation tasks. Since the release of the 2001 recovery plan, initiated recovery actions have provided substantial new knowledge about the subspecies' ecology and threats. Some of these efforts apply to multiple tasks and are helping to update conservation information and tools that are applied towards adaptive management and education. The delisting criteria for maintaining spring flows and protecting warm-water refugia have not yet been met.

Recovery actions are also implemented during technical assistance and project review. Any action or project with a Federal nexus (*e.g.,* Federal funds, permits, or actions) will require a consultation with the Service under section 7 of the Act. During the consultation process, the Service identifies conservation measures to avoid and minimize possible effects of proposed actions or projects. Each year, we review numerous projects pertaining to the manatee (*e.g.,* dredging, dock and marina construction, coastal development, marine events (*i.e.,* high-speed boat races), and underwater and beach unexploded ordnance). The Service has developed guidelines specific to Puerto Rico for Antillean manatee conservation measures. For example, we have worked with the U.S. Coast Guard to develop and implement standard permit conditions for boat races, such as observer protocols.

Regulatory Mechanisms

Because the Florida manatee is a subspecies of the West Indian manatee, its conservation has benefited from a number of Federal, State, and local laws. The species is federally protected in the United States, including Puerto Rico, under the Act and the MMPA. In addition to the consultation procedures under section 7 of the Act, the Clean Water Act (33 U.S.C. 1251 *et seq.*) and Fish and Wildlife Coordination Act (16 U.S.C. 661–666c) provide regulatory mechanisms for interagency consultation associated with projects, and these reviews may result in habitat protection for the subspecies. The boat facility siting strategies in the 16 county manatee protection plans are a major component of the section 7 consultation process under the Act. Manatee protection plans (MPPs) are Federal, State, and local agreements designed to help direct future boat facility development away from the highest manatee use areas on a county-specific basis.

Critical habitat for the Florida manatee was designated in 1976 (see 41 FR 41914, September 24, 1976, and 42 FR 47840, September 22, 1977). This designation identified specific waterways in Florida that were historically known to support high concentrations of Florida manatees at that time. In 2010, the Service concluded that revisions to critical habitat for the Florida manatee were warranted and that future updates to this designation would need to encompass the most recent studies of distribution, habitat use, and habitat requirements (75 FR 1574, January 12, 2010). We proposed to revise the critical habitat designation for the Florida manatee and to designate critical habitat for the Antillean manatee in a separate **Federal Register** publication (89 FR 78134).

In addition to the Act, within the continental United States, Puerto Rico, and U.S. Virgin Islands, the MMPA and State and Commonwealth laws and regulations provide protections for Florida and Antillean manatees. Under the MMPA, the primary objective of marine mammal management is to maintain the health and stability of the marine ecosystem (16 U.S.C. 1361(6)). Service regulations implementing the MMPA restrict the taking, possession, transportation, selling, offering for sale, and importing of all marine mammals (50 CFR part 18).

In addition to the Federal protections discussed above, the Florida manatee is protected at the State level in Florida. The first State protection of manatees in Florida was established in 1893 when hunting was prohibited, and a State law was instituted in 1907 that imposed a $500 fine and/or 6 months in prison for killing or molesting a manatee. The first manatee protection areas were established in 1979 (FWC 2007, p. 179). The subspecies is protected under the Florida Endangered and Threatened Species Act (see Florida Statutes at section 379.2291) and the Florida Manatee Sanctuary Act of 1978 (see Florida Statutes at section 379.2431(2)). At the species level, the West Indian manatee (*Trichechus manatus*) is listed as endangered on the State marine endangered and threatened species list (see Florida Administrative Code at section 68A–27.0031).

Within Florida, the Florida Manatee Sanctuary Act of 1978 provides significant protections, including authority for the regulation of manatee protection zones in manatee habitat and the development of county-specific MPPs. In establishing the Florida Manatee Sanctuary Act, Florida declared the entire State a refuge and sanctuary for manatees and called for the protection of manatees from injury, disturbance, harassment, or harm. The Florida Manatee Sanctuary Act also allows for the enforcement of boat speeds and operations in areas where manatees have been frequently seen and where the best scientific information supports that manatees inhabit the areas on a regular basis.

Manatee protection plans are comprehensive county-wide manatee protection strategies that are developed cooperatively and agreed to by the county, FWC, and the Service. Important aspects of MPPs include boat facility siting recommendations and associated predictability for permitting, habitat protection policies, education programs, and coordinated law enforcement efforts with a plan for implementation.

Manatee protection plans are also addressed in the Florida Manatee Sanctuary Act and the Florida Manatee Recovery Plan. In 1989, the Florida Governor and Cabinet provided a directive that identified 13 ''key'' counties that needed to develop MPPs and described what conservation measures should be incorporated into these plans. In 2002, the Florida Legislature amended the Florida Manatee Sanctuary Act to include the requirement for MPPs in these 13 key

counties. Furthermore, deadlines were set up for completion of these plans and criteria for approval. MPPs have also been established in other counties.

Federal and State agencies have made the effort to mitigate the loss of warm-water habitat in Florida by providing regulatory measures to protect spring flows, supporting spring restoration efforts, and working cooperatively with industry to maintain important artificial warm-water sources while regional warm-water networks are established to support the manatee population. In some areas of Florida, local governments have also adopted protection measures, including local speed zones that provide benefits to manatees (see appendix B of the SSA report (Service 2024a, pp. B71–B79)).

In other parts of its range, the Florida manatee is listed under State laws. For each State listed here, the listed entity is the West Indian manatee rather than the Florida subspecies, but the Florida subspecies is the only subspecies known to regularly occur in these States. The West Indian manatee is listed as endangered under State law in Georgia, South Carolina, North Carolina (when present in inland waters), Mississippi, and Virginia. The species is listed as threatened under State law in Louisiana and Texas. Alabama does not have a State law that designates species as either endangered or threatened, but West Indian manatees are a protected species under the State's Protected Nongame Species Regulation (Alabama Administrative Code at section 220–2–.92(1)(e)). In addition to protections from take and harassment, Louisiana Department of Wildlife and Fisheries (LDWF) also conducts some boater awareness by posting manatee signs at boat launches in Southern Louisiana. The Georgia Department of Natural Resources (GADNR), in coordination with the USACE, requires permanent manatee education signs to be posted at all boat launches, marinas, and community docks in tidal waters; GADNR also requires temporary signs and other standard conditions for in-water work in tidal waters and marshes.

The Antillean manatee in Puerto Rico is also protected by Commonwealth laws and regulations (see appendix B of the SSA report (Service 2024b, p. 35)). A number of international environmental agreements provide protections for the West Indian manatee or its habitat, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; March 3, 1973, 27 U.S.T. 1087); Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (WCR or Cartagena Convention; adopted on March 24, 1983, and entered into force on October 11, 1986); Cartagena Convention's Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region (adopted on January 18, 1990, and entered into force on June 18, 2000); Convention on Biological Diversity (1992); International Convention for the Prevention of Pollution from Ships (MARPOL Convention; adopted on November 2, 1973); and United Nations Law of the Sea Convention (UNCLOS; 1982). Further, multiple international treaties and agreements provide protections for the Antillean manatee throughout its range including the UNEP Regional Management Plan for the West Indian Manatee (*Trichechus manatus*) and manatee protection ordinance. For additional information on existing regulatory protections for the manatee, please refer to appendix D of the SSA report (Service 2024b, pp. 137–139).

While regulatory mechanisms should be effective and consistent across the two subspecies' ranges, the extent and overall effectiveness of these regulatory protections to the subspecies and their habitats vary from country to country. Lack of enforcement remains a critical issue for the Antillean manatee (UNEP 2010, p. 89; Marsh et al. 2011, p. 387), and despite having laws in place, illegal activities such as poaching and destruction of habitat still occur (Self-Sullivan and Mignucci-Giannoni 2012, p. 41). In Puerto Rico, for example, PRDNER has indicated that current speed regulatory buoys are ineffective, in part because regulations do not identify the perimeter or area that each buoy regulates (Service 2017, p. 16695). Although some efforts may be having a positive impact on manatee recovery, enforcement and compliance will require significant cooperative efforts and funding, particularly with regulations and enforcement to avoid and minimize watercraft collisions and habitat degradation.

Cumulative Effects

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA reports, we have analyzed the cumulative effects of identified threats and conservation actions on both subspecies. To assess the current and future condition of each subspecies, we evaluate the effects of all the relevant factors that may be influencing the subspecies, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire subspecies, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

Current Condition—Florida Manatee

Viability of the Florida manatee is best understood by describing resiliency, redundancy, and representation (see *Analytical Framework,* above). Maintaining sufficiently resilient populations across the range of a species increases the ability of that species to adapt to natural selection processes, increasing the chances that the species will persist in a changing world (Service 2016, pp. 12–13). We delineated resiliency units within each representative unit to serve as the basis for this status assessment. We use the term ''resiliency unit'' rather than population to be clear that delineated units do not necessarily align with biological populations. While we used the concept of biological populations as a guide in delineating these units, there were cases where information was lacking about connectivity and barriers to connectivity between groups of manatees, or where data availability necessitated assessing units at different scales. These delineations were based on a number of factors including connectivity and dispersal patterns, site fidelity, seasonal differences in distribution, ecological differences, and the scale of data availability. There are five representative units for the West Indian manatee, and the Florida manatee is contained within one representative unit (see *Current Condition—Antillean Manatee,* below, and section 4.1.1 of the Florida manatee SSA report for more details (Service 2024a, pp. 64–67)).

The Florida manatee was characterized at two seasonal scales to assess resiliency: one based on warm season distribution (also called warm season coastal resiliency units) and one based primarily on cold season distribution (also called winter management units) (see figure 2, below). Warm season coastal resiliency units include the Gulf and East Coast units as well as the freshwater tributaries flowing into the two units. Cold season distribution is based on four Florida winter management units: Northwest, Southwest, Atlantic, and Upper Saint Johns River (see chapter 4 of the SSA report (Service 2024a, pp. 63–94)).

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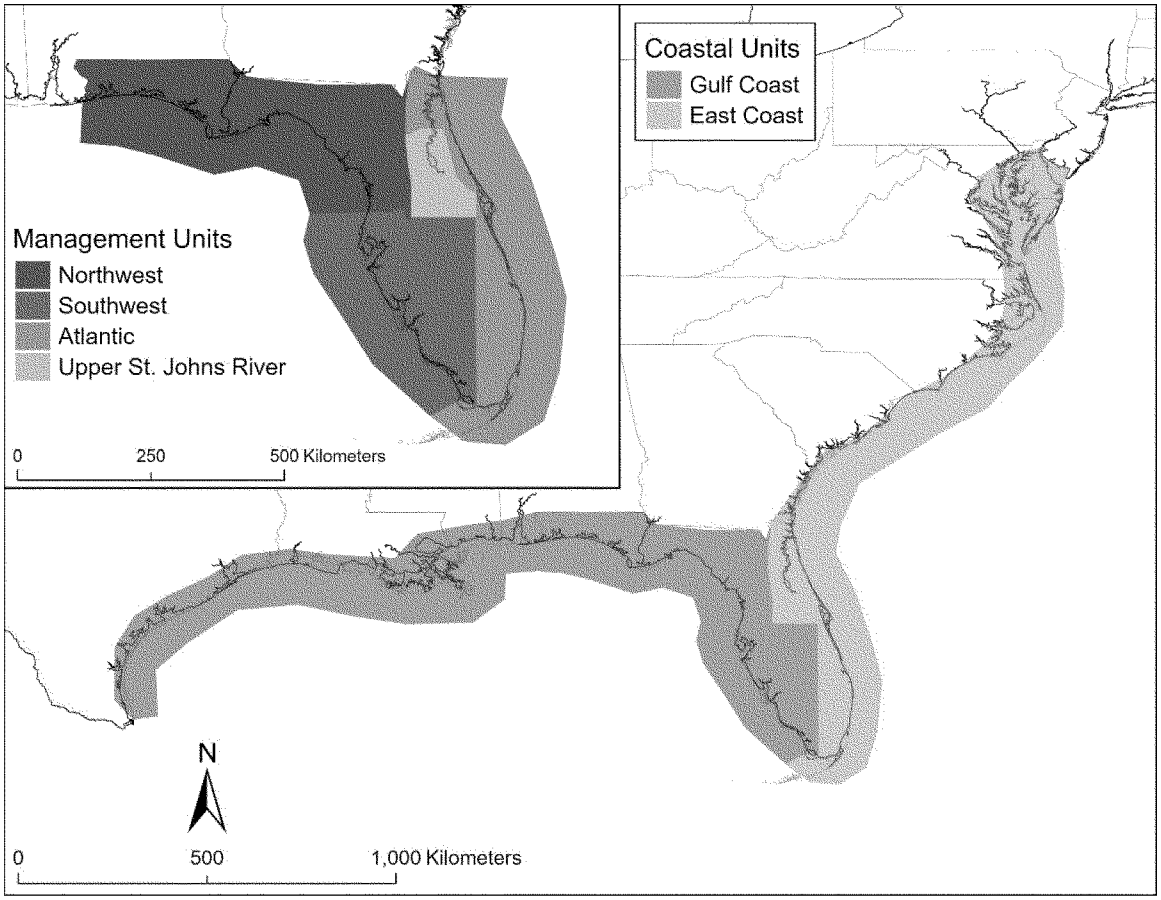

Figure 2. Florida manatee winter management and warm season coastal resiliency units.

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To measure the current resiliency of the Florida manatee, we first analyzed and scored four condition factors: (1) population trend, (2) regional foraging habitat condition, (3) winter foraging habitat condition, and (4) winter warm-water refugia condition. Overall resiliency was calculated by tallying the number of times a unit was assigned high, moderate, or low condition across the four resiliency factors at both warm season and winter management scales (Service 2024a, pp. 69–94). For more details on resiliency methodology, see section 4.2 of the SSA report (Service 2024a, pp. 69–78).

Based on the assessment of current demographic and habitat needs for the Florida manatee, three winter management units (Northwest, Southwest, Upper St. Johns River) have high resiliency and one winter management unit (Atlantic) has moderate resiliency (see table 1, below). Scaled to warm season coastal resiliency units, the Gulf Coast exhibits high resiliency, and the East Coast exhibits moderate resiliency. Forage conditions and availability of warm-water habitat for the Florida manatee are currently in good condition for three of the four winter management units. The exception is the Atlantic winter management unit, where the forage-driven UME affected resiliency in the unit from 2021–2023. While the long-term implications of this UME to the Florida manatee population are unknown, the population trend for the Atlantic winter management unit was tentatively assessed as low, leading to an overall resiliency of low for this recent two-year period. The Atlantic winter management unit has the highest estimated abundance of Florida manatees, as calculated from the 2021–2022 Statewide abundance survey in Florida (Gowan et al. 2023, p. 7), indicating a large number of manatees were being affected by the loss of forage and degraded conditions in this unit.

TABLE 1—CURRENT RESILIENCY FOR THE FOUR FLORIDA MANATEE WINTER MANAGEMENT UNITS AND TWO WARM SEASON COASTAL RESILIENCY UNITS

[Service 2024a, pp. 93–94]

	Abundance	Trend (2011–2020)	Forage	Winter forage	Warm-water refugia	Overall resiliency
Management Unit:						
Northwest	1,270 (790–1,840)	High	Good	Good	Good	HIGH.

TABLE 1—CURRENT RESILIENCY FOR THE FOUR FLORIDA MANATEE WINTER MANAGEMENT UNITS AND TWO WARM SEASON COASTAL RESILIENCY UNITS—Continued

[Service 2024a, pp. 93–94]

	Abundance	Trend (2011–2020)	Forage	Winter forage	Warm-water refugia	Overall resiliency
Southwest	2,966 (2,551–3,434)	Moderate	Good	Good	Good	HIGH.
Atlantic	3,520 (2,750–4,430)	Moderate	Diminished	Diminished	Good	MODERATE.
2021–2023		(Low)				(LOW).
Upper St. Johns River	480 (460–510)	High	Good	Good	Good	HIGH.
Warm Season Coastal Resiliency Unit:						
Gulf Coast	4,810 (3,820–6,010)	High	Good	Good	Good	HIGH.
East Coast	4,000 (3,240–4,910)	Moderate	Caution *	Diminished	Good	MODERATE.

* "Caution" condition indicates that there are some metrics that indicate that forage resources are being impacted.

The Florida manatee, which comprises a single representative unit, currently has one coastal resiliency unit exhibiting high resiliency and the second exhibiting moderate resiliency (see table 1, above). Three of the four winter management units exhibit high resiliency and one (the Atlantic unit) exhibits moderate resiliency. Of note, from 2021 to 2023, the Atlantic unit had a low level of resiliency, driven by losses of forage and high mortality due to the UME declared in 2021 (Service 2023, p. 5). However, when comparing from 2011–2020 across the winter management units, the Atlantic unit was assessed to have moderate resiliency currently. Additionally, the number of manatees in Florida on the East coast from 2021–2022 was estimated to be between 3,940–6,980 (Gowan et al. 2023, p. 1). The estimate from 2022 was higher than the estimate from 2016; however, the credible intervals permit a range of population trajectories (Gowan et al. 2023, p. 5). This range of population trajectories lends credence to a tentative score of low from 2021 to present in the Atlantic winter management unit in the SSA report (Service 2024a, p. 90), but this range also leaves the possibility that the population is increasing after the UME.

Loss of forage is the driver limiting the resiliency of the East Coast resiliency unit. Prior to the UME, the Atlantic unit was exhibiting stable or slow population growth, while the other three winter management units were, and continue to, exhibit positive growth (Service 2023, p. 5). The full impacts of the ongoing UME are continuing to be assessed at this time and both retrospective and predictive population modeling efforts are underway and will be included in future versions of the SSA report.

Redundancy for the Florida manatee can be described as the number and distribution of sufficiently resilient populations across the range, and the subspecies' ability to withstand anticipated species-relevant catastrophic events. The Florida manatee has redundancy at a regional scale; in addition to the overall moderate resiliency of Atlantic unit and overall high resiliency of Northwest, Southwest, and Upper St. John's River the East Coast resiliency unit currently has moderate, and the Gulf Coast high, resiliency. In addition, the subspecies is distributed throughout its historical range. Resiliency across the Florida manatee's range has enabled the subspecies to survive past catastrophic events, such as UMEs and hurricanes, and to recover from such events. Thus, the Florida manatee has sufficient redundancy, or distribution of current moderate to high resiliency units, across its range to withstand catastrophic events.

Representation refers to the breadth of genetic and environmental diversity within and among populations that contributes to the ability of the species to respond and adapt to changing environmental conditions over time (Service 2016, p. 6). Maintaining sufficiently resilient populations across the range of the species increases the ability of the species to adapt to natural selection processes, increasing the chances that the species will persist in a changing world (Service 2016, pp. 12–13). Partial migration between resiliency and management units results in genetic mixing, which has led to low genetic differentiation between units (Service 2023, pp. 25–27). This migration and subsequent genetic mixing increases the adaptive capacity of the Florida manatee by allowing for the introduction of advantageous traits across units that can enhance the species' ability to adapt to changing environmental conditions. Partial migration describes a species' adaptive ability to exploit new areas where conditions are favorable before retreating when the season changes and conditions become unfavorable (Bright Ross et al. 2021, entire). Partial migration has already enabled range shifts for the Florida manatee on the Gulf Coast (Cloyed et al. 2021, p. 6) and contributes to the subspecies' adaptive capacity. Partial migration allows portions of a population to respond to environmental variability, such as losses of warm-water refugia, and shift to other available wintering locations. Thus, the Florida manatee does exhibit potential adaptive capacity to changing environmental conditions.

Future Conditions—Florida Manatee

In our analysis of the Florida manatee's future condition, we carefully considered the best available science, including future condition projections of modeled threats and the subspecies' response to those threats from a 2016 modeling effort, as well as information regarding the ongoing threat of seagrass loss, the emerging effects of the UME, and the emerging effects of climate change. We relied on a core biological model (CBM) that resulted from a collaborative research effort of subject matter experts and represents the most comprehensive analysis to date (Runge et al. 2017, entire). Plausible future scenarios were developed and modeled to project the future condition of the subspecies. The CBM forecasts population dynamics of the Florida manatee in four regions (Northwest, Upper St. Johns River, Atlantic, and Southwest winter management units), incorporating current information on life history and uncertainty in parameter estimates, and applying environmental as well as demographic stochasticity (Runge et al. 2017, p. 33). The plausible scenarios predicted future viability under multiple scenarios grouped as: baseline (no change to current habitat, demographics, or threats), current and ongoing threats (level of various threats increased or decreased to examine their effects on long-term viability of Florida manatees), and potential emerging

threats (investigated the possible impact of multiple emerging threats on the viability of the Florida manatee) (Runge et al. 2017, pp. 13–16).

Current and ongoing threats in the CBM included mortality resulting from watercraft collisions, water control structures, and entanglement by fishing gear and marine debris; loss of warm-water habitat; and red tide. Potential emerging threats included cold-related mortality and a multiple emerging threats scenario, which included seven features. The seven features included in the multiple emerging threats scenario are: (1) watercraft-related mortality rate increasing by 50 percent over the next 30 years, then stabilizing; (2) immediate loss of industrial power plants; (3) reduction of carrying capacity provided by natural spring flows of 50 percent over the long term; (4) manatees choosing warm-water sites in proportion to their historical use; (5) elevated frequency of cold and severely cold years; (6) elevated frequency of moderate and intense red tide events; and (7) chronic density-independent additional mortality (2 percent) occurring in the IRL area. The analysis for the CBM was completed using data up to 2016, prior to the recent UME, and serves as the best available science providing a comprehensive assessment and projected future condition for the Florida manatee (Runge et al. 2017, p. 4). Nevertheless, the models developed and used within the SSA provide the best available future projections for the Florida manatee (see section 5.3 of the SSA report (Service 2024a, pp. 104–107)). Although Runge et al. (2017, entire) did not account explicitly for the current and ongoing UME, the multiple emerging threats scenario did account for chronic density-independent additional mortality in the area that is part of the current UME, and current ongoing modeling efforts will result in an updated version of the SSA report when completed.

Our baseline and threats future condition scenarios forecast viability 50, 100, and 150 years in the future, and the emerging threats future condition scenarios forecast viability 100 years in the future. We have sufficient information to determine the threats that are currently impacting the subspecies and are expected to continue to impact the subspecies in the future, as well as the subspecies' response to those threats (baseline and threats future condition scenarios). The timeframes of 50, 100, and 150 years also give time for this long-lived mammal to demonstrate the impact of threats on populations and the subspecies as a whole. For emerging threats, we have sufficient certainty to project threats that are expected to impact the subspecies in the future at 100 years and the subspecies' response to those threats. Earlier than this timeframe, we do not have information that impacts to the subspecies will be demonstrable, and beyond this timeframe, there is too much uncertainty about subspecies' response. Therefore, the selected timeframes are reasonable to model threats and forecast variations of threats acting on the subspecies and its habitat, as well as reasonable time for a long-lived marine mammal to respond to those threats. Although we need not identify the foreseeable future in terms of a specific period of time, we have described the foreseeable future for the Florida manatee as far into the future as we can make reasonably reliable predictions about the threats to the subspecies and the subspecies' responses to those threats. We have taken into account considerations such as the subspecies' life-history characteristics, threat-projection timeframes, and environmental variability in our future condition scenarios and timeframes.

The suite of future condition threats scenarios for the Florida manatee (modeled at 50, 100, and 150 years) predict how particular threats impact the subspecies' probability of falling below established quasi-extinction thresholds (100, 250, 500 individuals) and expected minimum population (EMP) size. Threats generally fall into two groups: those that have minimal effect on quasi-extinction probability (*e.g.,* water-control structures, marine debris) and those that have a more significant effect (*e.g.,* watercraft collisions, warm-water refugia loss, harmful algal blooms/red tide). The potential emerging threats scenarios take into consideration increases to existing threats, appearance of new threats, and multiple threats increasing at the same time, and compare the results to the baseline scenario.

For the Florida manatee, both the baseline and ongoing threats scenario future condition results indicate that the probability of Florida manatee extinction at 150 years is low, but substantial threats remain. Model results indicate that there could be a substantial shift in the distribution of Florida manatees, depending on the threat being considered. Long-term declines are projected in the Southwest and Atlantic resiliency units (or winter management units), while long-term increases are projected for the Northwest and Upper St. Johns River winter management units. Based on factors affecting warm-water habitats, the model estimates a higher carrying capacity for Florida manatees in the Northwest and Upper St. Johns River winter management units (Runge et al. 2017, p. 13). However, in the Southwest and Atlantic units, declines are expected due to the number of power plants operating with once-through cooling in those regions, which may only be available until the end of the operational lifetime of each plant (Runge et al. 2017, pp. 14, 20). Overall, threat scenario results projections for the Florida manatee are variable, but the model indicates the future viability of the Florida manatee will likely be impacted as watercraft use increases due to human population increases and as cold water stress or red tide events increase. The greatest risk of decline is predicted for the Atlantic and Southwest winter management units, largely because of the expected loss of artificial warm-water sources. Under all future scenarios, the EMP size is expected to decrease over time; however, overall extinction risk is low, and the adult population of Florida manatee will likely remain above quasi-extinction thresholds for 150 years. However, the long-term viability of the Florida manatee is related to the subspecies' ability to withstand human-caused and natural threats of varying magnitude and duration, as well as the effectiveness of conservation efforts to address the Florida manatee's needs.

The future projections modeling effort did not explicitly include the severity of impacts from the most recent UME, as the consequences of this UME on population size and trend are not completely understood at this time but are currently being assessed to update the CBM. The USGS and FWC have ongoing initiatives to update demographic data, integrated population models, and the CBM for the Florida manatee. We acknowledge the unknown consequences to Florida manatees associated with the recent UME have likely had implications on the subspecies' future viability that were not detected in the modeling effort. For further information on the future conditions of the Florida manatee, please refer to chapter 5 of the SSA report (Service 2024a, pp. 97–113).

Concomitant with the UME, seagrass loss and loss of foraging habitat were not explicitly included in the modeling effort. As described above in *Habitat Loss and Modification,* seagrass resources have been declining in multiple locations across Florida since 2011 and are contributing factors to the recent UMEs. While there has been some recently reported improvement in the condition of seagrass beds in the IRL (SJRWMD 2023, entire), current seagrass

levels are greatly reduced from previous long-term levels and remain a risk to manatee viability in the future.

The modeling effort also did not forecast industrial warm-water sources going offline within the next 20–25 years as has been discussed by power plant representatives in recent years. The baseline scenario encompassed power plants being online for 50 years, which is no longer the case. The greatest effect would be to the Atlantic and Southwest winter management units. Currently, more than half of Florida manatees seek shelter from winter cold in the warm-water discharges of power plants. The rest of the population uses natural springs and thermal basins located in Florida. The power companies will likely phase out power plant discharges within the next 25 years, and human-caused impacts to warm water availability, such as flow reductions and other activities, threaten Florida's springs and thermal basins. Although some mitigation strategies have been discussed and planned, uncertainty associated with manatee spatial and temporal response to these plant shutdowns is important in assessing viability of the subspecies in the future.

Also not included in the modeling effort are the effects of climate change on Florida manatees in the future. Climate change impacts are expected to influence the viability of manatees in several ways, including temperature increases, sea level rise, fluctuations in ocean chemistry, hydrological cycle deviations, and changes intiming and intensity of tropical storms, as well as extreme cold events.These large-scale impacts may lead to habitat changes, increased algal blooms, and new threats from diseases (Edwards 2013, pp. 727, 735; Marsh et al. 2017, entire; Osland et al. 2020, entire). The synergism of these factors will affect manatee health and habitat, and potentially reduce the future range of the Florida manatee.

While the risk of population decline at the regional level is high for the Florida manatee at the Southwest and Atlantic units, risk of population decline is moderate at the warm season coastal resiliency unit scale. It is important to note that the 2016 model did not include the severity of the ongoing UME, nor did it include differing seagrass loss/rebound futures, nor did it include effects of future climate change. These are substantial risks to the Florida manatee in the future, all of which may negatively impact the viability of the Florida manatee and increase its extinction risk.

Current Condition—Antillean Manatee

The West Indian manatee species is divided into five representation units. The current range of the Antillean manatee is grouped into four representation units based on known genetic and ecological variation across the subspecies' range, as well as input from subspecies experts. Unit 1 represents the Florida manatee (see *Current Condition—Florida Manatee,* above), and there are four units (Units 2–5) that encompass the Antillean manatee. The four Antillean representative units are: Unit 2: Greater Antilles, Unit 3: Gulf of Mexico to Caribbean coast of South America–Coastal, Unit 4: Gulf of Mexico to Caribbean coast of South America–Freshwater, and Unit 5: Atlantic Coast of South America (inset of figure 3, below; section 4.1.1 of the Antillean manatee SSA report (Service 2024b, pp. 45–47)). Representation units for the Antillean manatee are based on known genetic and ecological variation across the subspecies' range.

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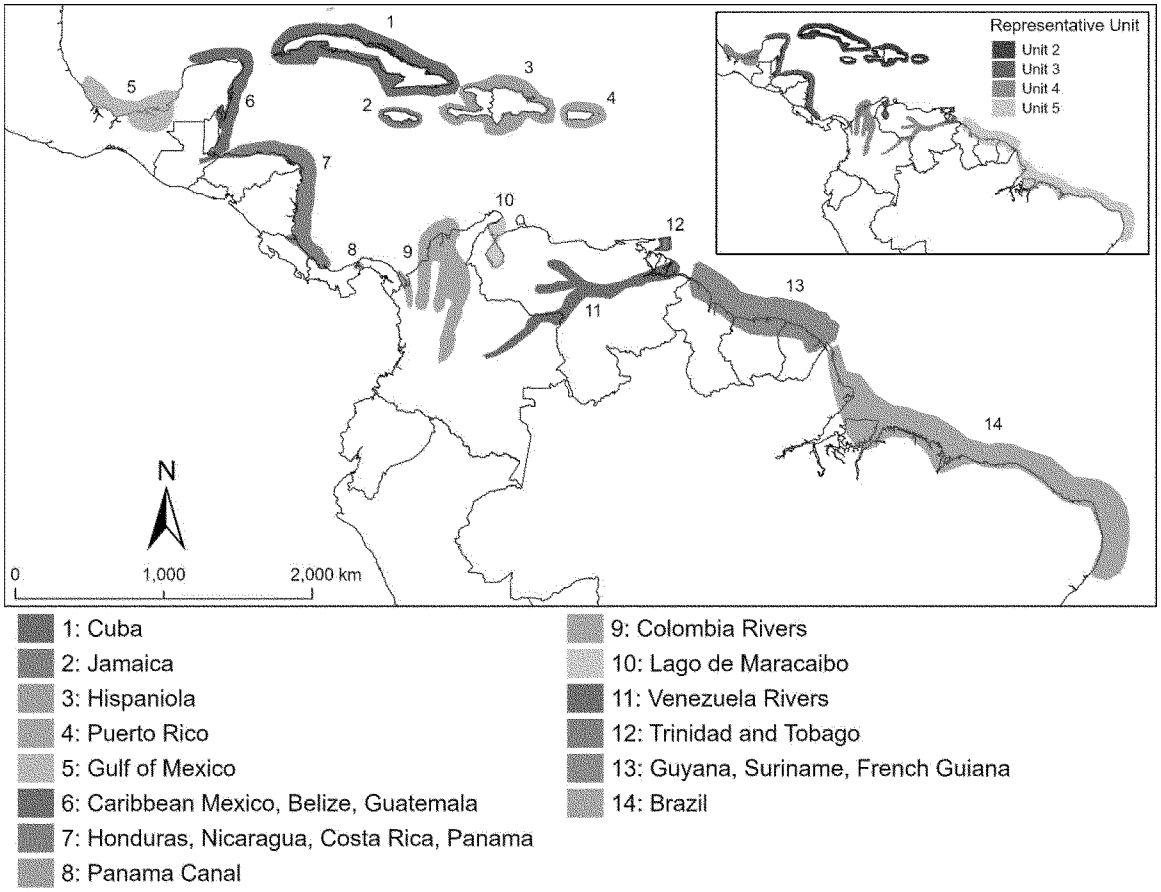

Figure 3. Antillean manatee's 4 representative units (units 2–5) and 14 resiliency units. The units portray the general extent of each unit and do not reflect presence and absence within each unit.

Figure 3. Antillean manatee's 4 representative units (units 2–5) and 14 resiliency units. The units portray the general extent of each unit and do not reflect presence and absence within each unit.

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These four representative units of the Antillean manatee span 20 countries and are characterized by 14 resiliency units (see figure 3, above) based on assumed connectivity as well as data availability (see chapter 4 of the SSA report (Service 2024b, pp. 44–74)). The current resiliency assessments for the Antillean manatee differ from the Florida manatee because: (1) the biology and ecology of the two subspecies differ, primarily because different factors influence their resiliency; and (2) the two subspecies differ in the amount of data and information available to assess their resiliency.

Current resiliency (henceforth called current condition) for each Antillean manatee resiliency unit was determined using the best available information on population trends. Population trends were used to determine the current condition of each resiliency unit, as population trends are an indicator of current condition; populations that are stable or increasing are more resilient to stochastic events than those that are declining. The best available information on trends was gathered primarily from three publications: (1) the most recent International Union for Conservation of Nature (IUCN) Red List assessment for the West Indian manatee (Deutsch et al. 2008, Supplementary Table 1), (2) the UNEP Regional Management Plan for the West Indian manatee (UNEP 2010, p. 11), and (3) a population viability analysis for the Antillean manatee (Castelblano-Martinez et al. 2012, p. 132).

Sometimes different data sources report different trends (*e.g.,* one source says ''stable,'' while another says ''declining''). In all these cases, we retain all the reported trends in the current condition assessment for each country to transparently report the uncertainty in the current trend. Trends were ranked moderate if they were reported as stable and ranked low if any sources reported them as declining. For resiliency units made up of multiple countries where different trends were reported for different countries, we report the trend of the entire unit to be the trend associated with more than half of the manatees in the unit. For example, if two out of three countries were reported to have a declining trend and one out of three was reported to have a stable trend, the entire unit with these three countries was reported to have a declining trend.

After the reported population trends for each resiliency unit were identified, each resiliency unit was sorted into one of four categories, called trend categories, shown in Table 2 below. These trend categories were used to describe current condition of Antillean manatee resiliency units. For populations where trends were unknown, they were classified the same as otherwise identical trend descriptions without ''unknown'', with

the uncertainty in the true trend incorporated into the certainty metric associated with the trend.

TABLE 2—REPORTED POPULATION TRENDS THAT WERE INCLUDED IN HIGH, MODERATE, LOW, AND UNKNOWN TREND CATEGORIES

Trend category	Reported population trends
High	Increasing; Increasing/Unknown; Stable/Increasing; Stable/Increasing/Unknown.
Moderate	Stable; Stable/Unknown.
Low	Stable/Declining; Stable/Declining/Unknown; Declining; Declining/Unknown.
Unknown.	Unknown.

Trend certainty also helped convey the variability in data availability across the subspecies' large geographic range (see table 4–2 in the SSA report (Service 2024b, p. 53)). These certainty levels are defined as High (based on recent information (*i.e.,* within 20 years)), Moderate (based on other recent data, but not a statistical estimate (*e.g.,* minimum counts, genetic analysis, mortality records, etc.)), and Low (based on informed opinions of local experts, localized and/or outdated data (*e.g.,* more than 20 years old)).

Certainty levels were also reported for abundance. While not used to explicitly determine current condition of resiliency units, abundance was also reported for each resiliency unit because the ability of Antillean manatee to withstand the normal range of environmental and demographic stochasticity increases with abundance. We believe the general magnitude of the estimates are informative, such that a list of resiliency units ranked in order of estimated abundance is likely to provide a fair interpretation of which resiliency units have relatively higher or lower abundance than the others. The abundance of each resiliency unit was informed primarily by the same three sources that informed population trends (Deutsch et al. 2008, Supplementary Table 1; UNEP 2010, p. 11; Castelblanco-Martínez et al. 2012, p. 132).

Current condition for the Antillean manatee is also influenced by the quality and quantity of habitat, threats and stressors, and conservation actions pursued in each population. Study and documentation of these factors are uneven across the subspecies' range and cannot be assessed in a consistent manner across all or even most populations. Consequently, we have not included these factors explicitly in the current condition assessment but do summarize the information available for each population. While the quantity and quality of habitat is important for the current condition of populations, information about habitat status is not available for many areas within the subspecies' large geographic range. Habitat information for each population is summarized in the SSA report (Service 2024b, pp. 55–71).

Thirteen out of 14 resiliency units exhibit low current condition, and only the Puerto Rico resiliency unit, where the trend is stable, has moderate current condition. Our current condition assessment for the Antillean manatee was mostly characterized by low certainty for the current status, and Antillean manatees are consistently described as being more abundant historically than they are today.

TABLE 3—CURRENT CONDITION SUMMARY FOR THE ANTILLEAN MANATEE SORTED IN DESCENDING ORDER OF ESTIMATED ABUNDANCE

[Service 2024b, p. 71]

Resiliency unit	Abundance (certainty)	Trend (certainty)	Trend category [1]	Current condition
Brazil	>1,104 (>485–2,221) (low certainty)	Stable/Declining/Unknown (low certainty).	Low	LOW.
Caribbean Mexico, Belize, Guatemala.	650–1,400 (moderate certainty)	Stable/Declining/Unknown (moderate certainty).	Low	LOW.
Honduras, Nicaragua, Costa Rica, Panama Coastal.	800–950 (169–204 minimum) (low certainty).	Declining (low certainty)	Low	LOW.
Gulf of Mexico	600–850 (moderate certainty)	Declining (low certainty)	Low	LOW.
Colombia Rivers	400 (100–1,000) (low certainty)	Unknown/Declining (low certainty)	Low	LOW.
Puerto Rico	386 (sd = 89) (high certainty)	Stable (moderate certainty)	Moderate	MODERATE.
Cuba	100–500 (50 minimum) (low certainty).	Unknown/Declining (low certainty)	Low	LOW.
Hispaniola	300 (38–53 minimum) (low certainty).	Declining (low certainty)	Low	LOW.
Guyana, Suriname, French Guiana	300 (45 minimum) (low certainty)	Declining (low certainty)	Low	LOW.
Venezuela Rivers	<300 (low certainty)	Declining (low certainty)	Low	LOW.
Trinidad and Tobago	100 (25–30 minimum) (low certainty).	Declining (low certainty)	Low	LOW.
Lago de Maracaibo (Venezuela)	<100 (low certainty)	Unknown (low certainty)	Unknown	LOW.
Jamaica	50 (low certainty)	Unknown/Declining (low certainty)	Low	LOW.
Panama Canal	20–25 (16 minimum) (moderate certainty).	Unknown (low certainty)	Unknown	LOW.

[1] Trends that were unknown were categorized as such. Trends were ranked as high if they were reported to be increasing or if different sources reported them to be stable or increasing. Trends were ranked as moderate if they were reported to be stable. To be conservative, trends were ranked as low if any sources reported them as declining, even if they were also reported as stable by the same source (*i.e.,* one source described it as stable/declining) or different sources (*i.e.,* one source described it as stable and a different source described it as declining).

The resiliency uncertainty carries over into our interpretations of redundancy and representation in the four Antillean manatee representative units (see inset of figure 3, above). The Greater Antilles representative unit (Unit 2) contains one resiliency unit (Puerto Rico) that currently exhibits a moderately certain stable population, resulting in moderate current condition. All remaining resiliency units in the Greater Antilles representative unit (Cuba, Hispaniola and Jamaica) and all resiliency units in the other three Antillean manatee representative units (Units 3, 4, 5) exhibit low current condition. The most genetically distinct Antillean manatee representative unit, in terms of evolutionary history indicated by mitochondrial DNA haplotypes, is the Atlantic Coast of South America unit (Unit 5) (Service 2024b, pp. 24–28). Both resiliency units in this representative unit currently exhibit low current condition. The most ecologically distinct Antillean manatee representative unit, the Gulf of Mexico to Caribbean Coast of South America–Freshwater unit (Unit 4), is also characterized by all resiliency units exhibiting low current condition.

The best available information indicates abundance is declining across most of the subspecies' range (see section 4.2.2 in the SSA report (Service 2024b, pp. 55–71)). Current abundance estimates in each resiliency unit for the Antillean manatee vary widely, ranging from 20 to more than 1,000 individuals (see table 3). Two resiliency units are estimated to have more than 1,000 Antillean manatees: (1) Caribbean, Mexico, Belize, and Guatemala, and (2) Brazil. Four resiliency units are estimated to have 100 or fewer Antillean manatees: (1) Trinidad and Tobago, (2) Lago de Maracaibo, (3) Jamaica, and (4) Panama Canal; those four resiliency units are comparatively smaller than those that support larger Antillean manatee populations. The remaining eight resiliency units are estimated to support between 100 and 1,000 Antillean manatees. As with trend estimates, the certainty of abundance estimates vary across the range of the Antillean manatee and are mostly based on expert input, past versus present occurrence records or perceptions, and mortality records.

The majority of the genetic and ecological diversity within the subspecies occurs in resiliency units characterized as having low current condition, thus leading to overall low representation for the subspecies. Redundancy is also low, as all but one of the resiliency units are in low condition, thus the subspecies is susceptible to catastrophic events. As discussed previously, more information about the status of the Antillean manatee and its habitat across its range is needed to reduce uncertainty on the current status of the subspecies as a whole. We note that the subspecies is represented throughout its historical range and in regard to redundancy, there are 4 representative units and 14 resiliency units. This analysis led to an overall current condition of low for the Antillean manatee.

Because we have determined that the Antillean manatee meets the Act's definition of an ''endangered species'' (see Determination of Status for the Florida Manatee and Antillean Manatee, below), we are not presenting the results of the future scenarios for the Antillean manatee in this proposed rule. Instead, details regarding the future conditions analysis and the future resiliency, redundancy, and representation of the Antillean manatee are presented in detail in the SSA report (see chapter 5 of the SSA report (Service 2024b, pp. 76–96)), which is available at *https://www.regulations.gov* under Docket No. FWS–R4–ES–2024–0050.

Determination of Status for the Florida Manatee and Antillean Manatee

The Act defines the term ''species'' as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an ''endangered species'' as a species in danger of extinction throughout all or a significant portion of its range and a ''threatened species'' as a species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of an endangered species or a threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

Proposed Action for West Indian Manatee Listing

Based on the best available scientific and commercial information, the West Indian manatee species is comprised of two subspecies: the Florida manatee and the Antillean manatee. We recognize the Florida manatee and the Antillean manatee as separate listable entities (*i.e.,* subspecies) under the Act. We no longer recognize the listed entity of the West Indian manatee separate from the two subspecies, and we, therefore, propose to remove the West Indian manatee from the List.

Status Throughout All of Its Range—Florida Manatee

Based on our assessment of demographic and habitat needs for the Florida manatee, three winter management units (Northwest, Southwest, and Upper St. Johns River) have high current condition, and one winter management unit (Atlantic) has moderate current condition. Scaled to warm season coastal resiliency units, the Gulf Coast unit exhibits high current condition, and the East Coast unit exhibits moderate current condition. The loss of forage (particularly, but not limited to, winter forage) led to a tentative short term (2021–2023) classification of low condition for the Atlantic winter management unit. However, the number of manatees in Florida on the East Coast from 2021–2022 was estimated to be between 3,940–6,980 (Gowan et al. 2023, p. 1). While the credible intervals permit a range of population trajectories, the estimate from 2022 was higher than the estimate from 2016 (3,240–4,910; Gowan et al. 2023, pp. 5–6).

The overall current condition for the broader East Coast resiliency unit is moderate given the 10-year assessment timeframe. Two winter management units with high current condition, Northwest and Upper St. Johns River, are dependent upon natural springs for warm water, unlike the Atlantic and Southwest units, which use industrial outfalls as their primary artificial warm-water sites. The Northwest and Upper St. Johns River winter management units support the two smaller abundances of Florida manatees. The Atlantic winter management unit has the highest estimated abundance of Florida manatees, meaning a large number of manatees are currently being affected by the loss of forage and conditions in this unit. However, the range of population trajectories leaves the possibility that the population is increasing after the UME.

While Florida manatees are currently affected by watercraft collisions (Factor E), habitat loss (including seagrass loss) and modification from coastal development (Factor A), unusual mortality events (UME) (Factor E), natural processes including cold weather events and harmful algal blooms (Factor E), and human interactions (Factor B), all winter management and coastal resiliency units exhibit current moderate to high current condition that supports the current viability of the subspecies. The recent UME is impacting the Atlantic winter management unit, although the magnitude and severity of the impact has not yet been determined. The other three winter management units exhibited, and continue to exhibit, stronger positive growth compared to the Atlantic unit. The Florida manatee is a highly managed species for which many conservation initiatives have been and continue to be implemented to ameliorate threats, including efforts to improve water quality and restore seagrass. The best available science demonstrates long-term population growth and some adaptive capacity. The subspecies is represented throughout its historical range, and there are multiple units with moderate to high current condition across the range. While we anticipate that the threats will continue to act on the subspecies in the future, they are not currently affecting the subspecies such that it is in danger of extinction now. Further, the Florida manatee's vulnerability to stressors is not of such magnitude that it is currently in danger of extinction as a result of the threats to the subspecies or the subspecies' response to those threats. After assessing the best scientific and commercial data available, we find that, given the moderate to high current condition for all Florida manatee units and the distribution of these resilient units throughout the subspecies' range, the Florida manatee is not in danger of extinction throughout all of its range and does not meet the Act's definition of an endangered species.

We therefore proceed with determining whether the Florida manatee is likely to become endangered within the foreseeable future throughout all of its range. Future viability of the Florida manatee was investigated under plausible future condition scenarios: a baseline scenario, threats scenarios, and multiple emerging threats scenarios. We assessed Florida manatee future condition at 50, 100, and 150 years under all future scenarios. We determined these timeframes represent the period of time under which we are able to reasonably determine that both the future threats and subspecies' response to those threats are likely. As described above in *Future Conditions—Florida Manatee,* the selected timeframes are reasonable to model threats and forecast variations of threats acting on the subspecies and its habitat, and they are reasonable timeframes for a long-lived marine mammal to respond to those threats. Although we need not identify the foreseeable future in terms of a specific period of time, we have described the foreseeable future for the Florida manatee as far into the future as we can make reasonably reliable predictions about the threats to the subspecies and the subspecies' responses to those threats. We have taken into account considerations such as the subspecies' life-history characteristics, threat-projection timeframes, and environmental variability in our future condition scenarios and timeframes.

Overall, future condition modeling results indicate the probability of Florida manatee extinction is low under scenario projections as described above in *Future Conditions—Florida Manatee.* However, substantial risks remain across the range of the subspecies. In the future, the Florida manatee will continue to be threatened by watercraft collisions (Factor E), habitat loss (including seagrass loss) and modification from coastal development (Factor A), unusual mortality events (UME) (Factor E), natural processes including cold weather events and harmful algal blooms (Factor E), and human interactions (Factor B), as well as the potential loss of warm-water refugia (Factor A) and climate change (Factor E). The greatest risk is estimated for the Atlantic and Southwest wintering populations; this risk is largely driven by the continued loss of seagrasses (Factor A), increase in cold water events (Factor E), and red tides (Factor E).

In our future condition projections, at the winter management unit level, probability of decline is greatest in the Atlantic winter management unit, followed by the Southwest, Northwest, and Upper St. Johns River winter management units. At the warm season coastal resiliency unit scale, the East Coast and its tributaries have a greater probability of decline than the Gulf Coast and its tributaries. At this warm season coastal resiliency unit scale, risk of population decline is moderate, while at the regional level, risk of population decline is high for the two larger winter management units (*i.e.,* Southwest and Atlantic). In addition, future distributional shifts of the subspecies are predicted to be largely driven by the loss of artificial warm-water refugia, and the future viability of Florida manatees in the Southwest and Atlantic winter management units may be most negatively impacted by this.

Overall, future condition modeling efforts project low risk of extinction for the Florida manatee under all future condition scenarios in 50, 100, and 150 years. These modeling efforts include relevant threats at the time of the assessment, but information was not available to incorporate loss of seagrass related to the UME, the short- and long-term effects of the UME on subspecies abundance and distribution, and the subspecies' response to both loss of seagrass and the UME. In addition, updated climate change assessments have become available since the future condition modeling effort, which was based on the 2017 assessment. Therefore, in our determination of the Florida manatee's status, we carefully considered the best available science, including future condition projections of modeled threats and the subspecies' response to those threats, as well as information regarding the ongoing and emerging threat of seagrass loss, the effects of the UME, and the emerging effects of climate change.

We expect that the current threats to the subspecies, including watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, UMEs, cold weather events and harmful algal blooms, and human interactions, will continue to affect the subspecies' viability, and the negative impacts of emerging threats, including the loss of warm-water refugia, effects of climate change, loss of seagrass, and effects of UMEs, will further affect the subspecies' viability. After evaluating threats to the subspecies and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we determine that the Florida manatee meets the definition of a threatened species across its range. Thus, after assessing the best scientific and commercial data available, we conclude that the Florida manatee is not in danger of extinction but is likely to become in danger of extinction within the foreseeable future throughout all of its range.

Status Throughout a Significant Portion of Its Range—Florida Manatee

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. The

court in *Center for Biological Diversity* v. *Everson,* 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), vacated the provision of the Final Policy on Interpretation of the Phrase ''Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ''Endangered Species'' and ''Threatened Species'' (hereafter ''Final Policy''; 79 FR 37578, July 1, 2014) that provided if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the ''significance'' question or the ''status'' question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Everson,* we now consider whether the Florida manatee is in danger of extinction in a significant portion of its range. In undertaking this analysis for Florida manatee, we choose to address the status question first.

We evaluated the range of the Florida manatee to determine if the subspecies is in danger of extinction in any portion of its range. The subspecies' range can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the subspecies' range that may meet the Act's definition of an endangered species. For the Florida manatee, we considered whether the threats or their effects on the subspecies are greater in any biologically meaningful portion of the subspecies' range than in other portions such that the subspecies is in danger of extinction in that portion.

We examined the following threats: watercraft collisions, habitat loss (including seagrass loss) and modification from coastal development, UMEs, natural processes including cold weather events and harmful algal blooms, human interactions, loss of warm-water refugia, and climate change, including cumulative effects. We found a potential difference in biological condition of the subspecies in the wintering area of the southeast coast of Florida (Brevard County south to Miami-Dade County; Atlantic winter management unit). The Atlantic winter management unit includes the current extent of the ongoing UME, is recognized as the larger of the two important wintering areas of the East Coast resiliency unit and contains a high abundance of Florida manatees. The current UME is the result of massive loss of forage for manatees, and there has been a substantial increase in mortality of manatees. Based on the forage-driven UME, the Atlantic winter management unit has a tentative lower level of condition in the 2021–2023 timeframe; however, when comparing similar time periods (past 10 years) across the winter management units, the Atlantic unit is assessed to have moderate current condition. Additionally, the number of manatees in Florida on the East coast from 2021–2022 was estimated to be higher than an estimate provided from 2016, though credible intervals permit a range of population trajectories (Gowan et al. 2023, pp. 1, 5). This range of population trajectories lends credence to a tentative score of low from 2021 to present in the Atlantic winter management unit in the SSA report (Service 2024a, p. 90), but this range also leaves the possibility that the population is increasing after the UME.

Recent demographic evidence for Florida manatees that winter in the Atlantic winter management unit indicates this area has the highest abundance estimate of manatees. The number of manatees could provide potential resilience to threats along the southeast coast of Florida. Thus, we determined that although the recent UME has negatively impacted short-term condition in the Atlantic winter management unit, the area exhibits overall moderate current condition and still contains the greatest number of Florida manatees; therefore, the Atlantic winter management unit does not exhibit a different status from the rest of the range. We found no biologically meaningful portion of the Florida manatee's range where the biological condition of the subspecies differs from its condition elsewhere in its range such that the status of the subspecies in that portion differs from any other portion of the subspecies' range. Therefore, no portion of the subspecies' range provides a basis for determining that the subspecies is in danger of extinction in a significant portion of its range, and we determine that the subspecies is likely to become in danger of extinction within the foreseeable future throughout all of its range. This does not conflict with the courts' holdings in *Desert Survivors* v. *U.S. Department of the Interior,* 321 F. Supp. 3d 1011, 1070–74 (N.D. Cal. 2018) and *Center for Biological Diversity* v. *Jewell,* 248 F. Supp. 3d 946, 959 (D. Ariz. 2017) because, in reaching this conclusion, we did not apply the aspects of the Final Policy, including the definition of ''significant'' that those court decisions held to be invalid.

Determination of Status—Florida Manatee

Our review of the best available scientific and commercial information indicates that the Florida manatee meets the Act's definition of a threatened species. Therefore, we propose to list the Florida manatee as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Status Throughout All of Its Range—Antillean Manatee

Current abundance estimates in each resiliency unit for the Antillean manatee range from 20 to more than 1,000 individuals. While abundance estimates for Antillean manatee resiliency units are highly uncertain, the best available information indicates abundance is declining across most of the subspecies' range. One out of 14 resiliency units has moderate current condition (Puerto Rico, where the trend is stable), and the remaining 13 units have low current condition. When comparing abundance estimates, two resiliency units (Caribbean/Mexico/Belize/Guatemala and Brazil) are estimated to have more than 1,000 Antillean manatees. However, four resiliency units (Trinidad and Tobago, Lago de Maracaibo, Jamaica, and the Panama Canal) are estimated to have 100 or fewer Antillean manatees. The remaining eight resiliency units are estimated to support between 100 and 1,000 Antillean manatees.

While the current condition assessment is characterized by low certainty, the best available information indicates declining population numbers due to current and ongoing threats such as watercraft collisions (Factor E), habitat loss (including seagrass loss) and modification (Factor A), natural processes like harmful algal blooms (Factor E), human interactions (Factor B), poaching (Factor E), and low genetic diversity (Factor E). Additionally, there is a lack of effective enforcement of manatee conservation regulations in the Antillean manatee's range (Factor D), with enforcement varying widely by country due to limited funding and understaffed law enforcement agencies. Although the Antillean manatee subspecies possesses some redundancy and an ability to withstand catastrophic

events on a rangewide basis, all resiliency units, except for one (Puerto Rico), have low current condition. Two units have an abundance over 1,000 individuals, but four units have 100 or fewer individuals. Further, low genetic diversity in some areas indicates the Antillean manatee may lack adaptive capacity. Despite populations being spread out across multiple units, the low abundance, habitat fragmentation, and adaptive capacity of populations throughout the subspecies' range compromise Antillean manatee redundancy.

After evaluating threats to the subspecies and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we determined the best scientific and commercial data available indicates declining population numbers due to current and ongoing threats such as watercraft collisions, habitat loss and modification, natural processes like harmful algal blooms, human interactions, poaching, and potentially low genetic diversity. The best scientific and commercial data available indicates an overall low current condition for the Antillean manatee subspecies. Although populations are widely distributed in multiple units across the subspecies' range, the low abundance in many of these units reduce Antillean manatee redundancy. Most delineated units have very low numbers of Antillean manatees; four units contain 100 or fewer individuals, and eight units contain 100 to 1,000 animals. Further, the small, isolated populations and potential low genetic diversity indicate the Antillean manatee may lack adaptive capacity. It is important to recognize the different methodologies used to define populations for both subspecies, therefore it is not appropriate to make direct comparisons between the two. While the Antillean manatee may have some individual populations larger than some of the Florida manatee the condition of the Antillean manatee also reflects declining trends and isolation of populations. Thus, after assessing the best scientific and commercial data available, we determine that the Antillean manatee is in danger of extinction throughout all of its range.

Status Throughout a Significant Portion of Its Range—Antillean Manatee

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. We have determined that the Antillean manatee is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portion of its range. Because the Antillean manatee warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Everson* because that decision concerns significant portion of the range analyses for species that warrant listing as threatened, not endangered, throughout all of their ranges.

Determination of Status—Antillean Manatee

Our review of the best available scientific and commercial information indicates that the Antillean manatee meets the Act's definition of an endangered species. Therefore, we propose to list the Antillean manatee as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act. We have determined that the Antillean manatee is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of a potential DPS for the Puerto Rico population.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies, foreign governments, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies, including the Service, and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (''downlisting'') or removal from protected status (''delisting''), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery outline, draft recovery plan, final recovery plan, and any revisions will be available on our website as they are completed (*https://www.fws.gov/program/endangered-species*) or from our Florida Ecological Services Field Office and Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If this rulemaking is finalized, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, Puerto Rico and the State of Florida would be eligible for

Federal funds to implement management actions that promote the protection or recovery of the Antillean manatee and the Florida manatee, respectively. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/service/financial-assistance.*

Although the separate listings of the Florida manatee and the Antillean manatee are only proposed actions under the Act at this time, please let us know if you are interested in participating in recovery efforts for these subspecies. Additionally, we invite you to submit any new information on these subspecies whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7 of the Act is titled, ''Interagency Cooperation,'' and it mandates all Federal action agencies to use their existing authorities to further the conservation purposes of the Act and to ensure that their actions are not likely to jeopardize the continued existence of listed species or adversely modify critical habitat. Regulations implementing section 7 are codified at 50 CFR part 402.

Section 7(a)(2) states that each Federal action agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Each Federal agency shall review its action at the earliest possible time to determine whether it may affect listed species or critical habitat. If a determination is made that the action may affect listed species or critical habitat, formal consultation is required (50 CFR 402.14(a)), unless the Service concurs in writing that the action is not likely to adversely affect listed species or critical habitat. At the end of a formal consultation, the Service issues a biological opinion, containing its determination of whether the Federal action is likely to result in jeopardy or adverse modification.

In contrast, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. Although the conference procedures are required only when an action is likely to result in jeopardy or adverse modification, action agencies may voluntarily confer with the Service on actions that may affect species proposed for listing or critical habitat proposed to be designated. In the event that the subject species is listed or the relevant critical habitat is designated, a conference opinion may be adopted as a biological opinion and serve as compliance with section 7(a)(2) of the Act.

Examples of discretionary actions for the Florida manatee or the Antillean manatee that may be subject to conference and consultation procedures under section 7 of the Act are land management or other landscape-altering activities on Federal lands administered by the U.S. Army Corps of Engineers, Department of Defense, and the Service, as well as actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation. Federal agencies should coordinate with the local Service Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on section 7 consultation and conference requirements.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, and the Service's implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or to cause to be committed any of the following acts with regard to any endangered wildlife: (1) import into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State or Territorial conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits for endangered wildlife are codified at 50 CFR 17.22, and general Service permitting regulations are codified at 50 CFR part 13. With regard to endangered wildlife, a permit may be issued: for scientific purposes, for enhancing the propagation or survival of the species, or for take incidental to otherwise lawful activities. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

II. Protective Regulations Under Section 4(d) of the Act

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for the conservation of species listed as threatened species. Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. With these two sentences in section 4(d), Congress delegated broad authority to the Secretary to determine what protections would be necessary and advisable to provide for the conservation of threatened species, and even broader authority to put in place any of the section 9 prohibitions for a given species.

The courts have recognized the extent of the Secretary's discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld, as a valid exercise of agency authority, rules developed under section 4(d) that included limited prohibitions against takings (see *Alsea Valley Alliance* v. *Lautenbacher,* 2007 WL 2344927 (D. Or. 2007); *Washington*

Environmental Council v. *National Marine Fisheries Service,* 2002 WL 511479 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana* v. *Verity,* 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, ''once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [her] with regard to the permitted activities for those species. [She] may, for example, permit taking, but not importation of such species, or [she] may choose to forbid both taking and importation but allow the transportation of such species'' (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

The provisions of the Florida manatee's proposed protective regulations under section 4(d) of the Act are one of many tools that we would use to promote the conservation of the Florida manatee. The proposed protective regulations would apply only if and when we make final the listing of the Florida manatee as a threatened species. Nothing in 4(d) rules change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the Florida manatee. As mentioned previously in Available Conservation Measures, section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, even before the listing of any species or the designation of its critical habitat is finalized, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. These requirements are the same for a threatened species regardless of what is included in its 4(d) rule.

Section 7 consultation is required for Federal actions that ''may affect'' a listed species regardless of whether take caused by the activity is prohibited or excepted by a 4(d) rule (''blanket rule'' or species-specific 4(d) rule). A 4(d) rule does not change the process or criteria for informal or formal consultations and does not alter the analytical process used for biological opinions or concurrence letters. For example, as with an endangered species, if a Federal agency determines that an action is ''not likely to adversely affect'' a threatened species, this will require the Service's written concurrence (50 CFR 402.13(c)). Similarly, if a Federal agency determinates that an action is ''likely to adversely affect'' a threatened species, the action will require formal consultation with the Service and the formulation of a biological opinion (50 CFR 402.14(a)). Because consultation obligations and processes are unaffected by 4(d) rules, we may consider developing tools to streamline future intra-Service and interagency consultations for actions that result in forms of take that are not prohibited by the 4(d) rule (but that still require consultation). These tools may include consultation guidance, Information for Planning and Consultation (IPaC) effects determination keys, template language for biological opinions, or programmatic consultations.

Exercising the Secretary's authority under section 4(d) of the Act, we propose to apply the protections for the Florida manatee through our regulations at 50 CFR 17.31(a). In our April 5, 2024, final rule revising those regulations (89 FR 23919 at 23922–23923), we found that applying those regulations as a whole satisfies the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the threatened species. We have not identified any ways in which a protective regulation for this threatened subspecies would need to differ from the regulations at 50 CFR 17.31(a) in order to contain the protections that are necessary and advisable to provide for the conservation of the Florida manatee. Therefore, if we finalize this rule as proposed, the regulations at 50 CFR 17.31(a) apply. This means that, except as provided in 50 CFR 17.4 through 17.8, or in a permit issued pursuant to 50 CFR 17.32, all of the provisions of 50 CFR 17.21 for endangered wildlife, except § 17.21(c)(3) and (5), would apply to the Florida manatee, and the provisions of 50 CFR 17.32(b) concerning exceptions for certain entities would also apply to the subspecies.

Accordingly, protections in Florida's coastal and inland waters will not change with the designation of the Florida manatee subspecies as a threatened species. Manatee protection areas (MPAs) have played a substantial role in manatee conservation and will be needed into the foreseeable future, and the designation of these areas will not be affected by the Florida manatee's listing. In addition, the MMPA prohibits the ''take'' (*i.e.,* to harass, hunt, capture, kill, or attempt to harass, hunt, capture, or kill; 16 U.S.C. 1362(13)) of marine mammals. MPAs also play an important role in avoiding take under the MMPA.

Required Determinations

Clarity of the Rule

We are required by Executive Order (E.O.) 12866 and E.O. 12988 and by the Presidential memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

Regulations adopted pursuant to section 4(a) of the Act are exempt from the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) and do not require an environmental analysis under NEPA. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This includes listing, delisting, and reclassification rules, as well as critical habitat designations and species-specific protective regulations promulgated concurrently with a decision to list or reclassify a species as threatened. The courts have upheld this position (*e.g., Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995) (critical habitat); *Center for Biological Diversity* v. *U.S. Fish and Wildlife Service,* 2005 WL 2000928 (N.D. Cal. Aug. 19, 2005) (concurrent 4(d) rule)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994

(Government-to-Government Relations With Native American Tribal Governments; 59 FR 22951, May 4, 1994), E.O. 13175 (Consultation and Coordination With Indian Tribal Governments), the President's memorandum of November 30, 2022 (Uniform Standards for Tribal Consultation; 87 FR 74479, December 5, 2022), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes and Alaska Native Corporations (ANCs) on a government-to-government basis. In accordance with Secretary's Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We have communicated with the Miccosukee Tribe of Indians and the Seminole Tribe of Florida for the Florida manatee. There are no federally recognized Tribes within the range of the Antillean manatee. We will continue to work with Tribal entities during the development of a final listing rule for the Florida manatee.

References Cited

A complete list of references cited in this proposed rule is available on the internet at *https://www.regulations.gov* and upon request from the Florida Ecological Services Field Office (Florida manatee) and Caribbean Ecological Services Field Office (Antillean manatee) (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Florida and Caribbean Ecological Services Field Offices.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. In § 17.11, in paragraph (h), amend the List of Endangered and Threatened Wildlife under MAMMALS by adding, in alphabetical order, entries for ''Manatee, Antillean'' and ''Manatee, Florida'', and removing the entry for ''Manatee, West Indian'', to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
		MAMMALS		
*	* *	*	*	* *
Manatee, Antillean	*Trichechus manatus manatus*.	Wherever found	E	[**Federal Register** citation when published as a final rule].
Manatee, Florida	*Trichechus manatus latirostris*.	Wherever found	T	[**Federal Register** citation when published as a final rule].
*	* *	*	*	* *

Martha Williams,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2025–00467 Filed 1–13–25; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 622

[Docket No. 250107–0004]

RIN 0648–BN31

Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Snapper-Grouper Fishery of the South Atlantic; Amendment 59

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; notice of availability of a fishery management plan amendment; request for comments.

SUMMARY: NMFS proposes regulations to implement Amendment 59 to the Fishery Management Plan (FMP) for the Snapper-Grouper Fishery of the South Atlantic (Snapper-Grouper FMP) (Amendment 59). If approved, Amendment 59 and this proposed rule would, for South Atlantic red snapper: revise the fishing mortality (F) at maximum sustainable yield (MSY) proxy for determining overfishing, acceptable biological catch (ABC), sector annual catch limits (ACLs), fishing year, sector fishing season start dates, recreational fishing season structure, commercial trip limits, and establish an annual experimental studies program. Additionally, Amendment 59 and this proposed rule would establish a snapper-grouper discard reduction season in South Atlantic Federal waters. This action is intended to end and prevent overfishing of red snapper while reducing dead discards and providing additional fishing opportunities.

DATES: Submit comments on this combined proposed rule and notice of availability of an FMP amendment on or before March 17, 2025.

ADDRESSES: A plain language summary of this proposed rule is available at *https://www.regulations.gov/docket/NOAA-NMFS-2024-0142.* You may submit comments on this document, identified by [NOAA–NMFS–2024–0142], by either of the following methods:

• *Electronic Submission:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Visit