UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
https://www.fisheries.noaa.gov/region/southeast

05/29/2026

F/SER31:MA/ZH
SERO-2025-02855

Michelle Gilbert,
Chief, Fort Myers Section
Jacksonville District Corps of Engineers
Department of the Army
1520 Royal Palm Square Boulevard, Suite 310
Fort Myers, Florida 33919

Ref.: SAJ-2022-00335, Jason Battin, Riprap and Dock Removal and Seawall Construction, Port Charlotte, Charlotte County, Florida

Dear Michelle Gilbert,

The enclosed Biological Opinion responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.) for the above referenced action. The Opinion has been given the NMFS tracking number SERO-2025-02855. Please use the NMFS tracking number in all future correspondence related to this action.

The Opinion considers the effects of the Jacksonville District of the United States Army Corps of Engineers (USACE) proposal to authorize riprap and dock removal and seawall construction by Jason Battin, the applicant, in Port Charlotte, Charlotte County, Florida on the following listed species and critical habitat: green sea turtle (North Atlantic Distinct Population Segment [DPS]), hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic DPS), giant manta ray, smalltooth sawfish (United States [U.S.] DPS), and smalltooth sawfish critical habitat. The Opinion is based on information provided by the USACE, the applicant, and the published literature cited within. NMFS concludes that the proposed action will have no effect on hawksbill sea turtles and giant manta ray. NMFS concludes that the proposed action is not likely to adversely affect the following species: green sea turtle (North Atlantic DPS), Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic DPS), or smalltooth sawfish (U.S. DPS). NMFS concludes that the proposed action is likely to adversely affect, but is not likely to result in the destruction or adverse modification of critical habitat for smalltooth sawfish (U.S. DPS).

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and critical habitat. If you have any questions regarding this consultation, please contact Melissa Alvarez, by email at Melissa.Alvarez@noaa.gov.

Sincerely,

AMENDOLA.KIMBERLY.BARBARA.1365830769
Digitally signed by AMENDOLA.KIMBERLY.BARBARA.1365830769
Date: 2026.05.29 16:15:20 -04'00'

for Andrew J. Strelcheck
Regional Administrator

Enclosure:
NMFS Biological Opinion SERO-2025-02855
cc: Stephen Fleming, Stephen.J.Fleming@usace.army.mil
nmfs.ser.esa.consultations@noaa.gov
File: 1514-22.f.4

Endangered Species Act - Section 7 Consultation

Biological Opinion

Action Agency:	United States Army Corps of Engineers, Jacksonville District Permit number: SAJ-2022-00335
Applicant:	Jason Battin
Activity:	Riprap and Dock Removal and Seawall Construction
Location:	Port Charlotte, Charlotte County, Florida
Consulting Agency:	National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Protected Resources Division, St. Petersburg, Florida NMFS Tracking Number: SERO-2025-02855
Approved by:	for AMENDOLA.KIMBERLY.BARBARA.1365830769 Digitally signed by AMENDOLA.KIMBERLY.BARBARA.1365830769 Date: 2026.05.29 16:15:50 -04'00' Andrew J. Strelcheck, Regional Administrator NMFS, Southeast Regional Office St. Petersburg, Florida
Date Issued:	05/29/2026

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS, ABBREVIATIONS, AND UNITS OF MEASURE

ac	Acre(s)
°C	Degrees Celsius
CFR	Code of Federal Regulations
CHEU	Charlotte Harbor Estuary Unit

CHPSP	Charlotte Harbor Preserve State Park
cm	Centimeter(s)
CO_2	Carbon dioxide
DPS	Distinct Population Segment
ECO	Environmental Consultation Organizer
EFH	Essential Fish Habitat
ESA	Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.)
°F	Degrees Fahrenheit
FR	Federal Register
ft	Foot/feet
ft^2	Square foot/feet
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Florida Fish and Wildlife Research Institute
in	Inch(es)
IPCC	Intergovernmental Panel on Climate Change
km	Kilometer(s)
lin ft	Linear foot/feet
m	Meter(s)
MIT	Massachusetts Institute of Technology
MHW	Mean High Water
mi	Mile(s)
mi^2	Square mile(s)
MLLW	Mean Lower Low Water
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAD83	North American Datum of 1983
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
Opinion	Biological Opinion, Conference Biological Opinion, or Draft Biological Opinion
RM	Red mangrove essential feature of smalltooth sawfish designated critical habitat
SERO PRD	NMFS Southeast Regional Office, Protected Resources Division
SAV	Submerged aquatic vegetation
SH	Shallow, euryhaline habitat essential feature of smalltooth sawfish designated critical habitat
SSRIT	Smalltooth Sawfish Recovery Implementation Team
TTIEU	Ten Thousand Islands/Everglades Unit of smalltooth sawfish designated critical habitat
U.S.	United States of America
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
YOY	Young-of-the-year

1 INTRODUCTION

1.1 Overview

Section 7(a)(2) of the ESA, requires that each federal agency ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. Section 7(a)(2) requires federal agencies to consult with the appropriate Secretary in carrying out these responsibilities. The NMFS and the USFWS share responsibilities for administering the ESA. Consultations on most ESA-listed marine species and their critical habitat are conducted between the federal action agency and NMFS (hereafter, may also be referred to as we, us, or our).

Consultation is required when a federal action agency determines that a proposed action "may affect" ESA-listed species or critical habitat and can be conducted informally or formally. Informal consultation is concluded after NMFS issues a Letter of Concurrence that concludes that the action is "not likely to adversely affect" ESA-listed species or critical habitat. Formal consultation is concluded after we issue a Biological Opinion (hereafter, referred to as an/the Opinion) that identifies whether a proposed action is "likely to jeopardize the continued existence of an ESA-listed species" or "destroy or adversely modify critical habitat," in which case Reasonable and Prudent Alternatives to the action as proposed must be identified to avoid these outcomes. An Opinion often states the amount or extent of anticipated incidental take of ESA-listed species that may occur, develops Reasonable and Prudent Measures necessary or appropriate to minimize such impact of incidental take on the species and lists the Terms and Conditions to implement those measures. An Opinion may also develop Conservation Recommendations that help benefit ESA-listed species.

This document represents NMFS's Opinion based on our review of potential effects of the USACE's proposal to authorize riprap and dock removal and seawall construction by the applicant, Jason Battin, in Port Charlotte, Charlotte County, Florida, on the following listed species and critical habitat: green sea turtle (North Atlantic DPS), hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic DPS), giant manta ray, smalltooth sawfish (U.S. DPS), and smalltooth sawfish critical habitat. Our Opinion is based on information provided by the USACE, the applicant, and the published literature cited within.

This biological opinion was prepared by NMFS pursuant to section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402. On March 30, 2026, in Center for Biological Diversity v. Burgum, No. 24-cv-04651 (N.D. Cal.), the U.S. District Court for the Northern District of California vacated aspects of four provisions from the 50 CFR part 402 regulations governing interagency consultation under section 7 of the Endangered Species Act and reinstated the provisions that were previously in effect. Consistent with the Court's ruling, these are the governing provisions for this consultation:

- "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological

features essential to the conservation of a species or that preclude or significantly delay development of such features." 50 CFR 402.02 (2018).

- "Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration."[1] 50 CFR §402.02 (2018).
- 50 CFR §402.14(g)(8): "In formulating its biological opinion, any reasonable and prudent alternatives, and any reasonable and prudent measures, the Service will use the best scientific and commercial data available and will give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation." 50 CFR §402.14(g)(8) (2018).
- 50 CFR §402.16(a): "(a) Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and...." 50 CFR §402.16(a) (2023).

The Gulf of Mexico was renamed the Gulf of America pursuant to Executive Order 14172, and Secretary of the Interior Order No. 3423. All geographical references to the Gulf of America or "the Gulf" in this Opinion refer to the same body of water formerly known as the Gulf of Mexico.

1.2 Consultation History

The following is the consultation history for the NMFS ECO tracking number SERO-2025-02855, Battin Seawall Install.

[1] This definition includes the second sentence of the definition of "effects of the action." That sentence provided the definition of "environmental baseline" in effect as of 2018. In the 2019 rule amending the 50 CFR part 402 regulations, the Services established "environmental baseline" as a stand alone definition. 84 Fed. Reg. 44976, 45016 (August 27, 2019). In the 2024 rule, the Services made minor revisions to the "environmental baseline" definition. 89 Fed. Reg. 24268, 24298 (April 5, 2024). The Court's ruling did not touch upon that definition of "environmental baseline," and it therefore remains valid. The definition is also fully consistent with the definition of "effects of the action" from 2018.

On October 20, 2025, we received a request for formal consultation under Section 7 of the ESA from the USACE to permit riprap and dock removal and seawall installation by Jason Battin in Port Charlotte, Charlotte County, Florida, in a letter dated October 20, 2025.

The package was received with sufficient information to conduct our analysis, and we initiation consultation on October 20, 2025.

2 PROPOSED ACTION

2.1 Project Details

2.1.1 Project Description

The USACE proposes to permit the applicant to remove 80 lin ft of existing riprap and the remnants of a wooden dock, to be replaced by a new concrete seawall that will be installed 2 ft forward of the MHW line. The applicant proposes to remove approximately 77 lin ft (400 ft^2) of red mangrove shoreline. The riprap, dock, and shoreline vegetation will be removed using mechanical equipment from shore. Prefabricated, concrete slabs will be jetted into place using mechanical equipment from shore. In-water construction is expected to take 5 days to complete during daylight hours only.

2.1.2 Mitigation Measures

The applicant will comply with our *Protected Species Construction Conditions* (NMFS 2021), including the use of turbidity curtains. Floating turbidity screens, with weighted skirts that extend within 1 ft of the bottom, will be placed around all work areas that are in surface waters. Screens will be left in place until all in-water work has been completed and the turbidity level is within tolerable limits. All construction debris will be disposed of at an approved upland facility. Any project vessels will maintain a minimum clearance of at least 12 in at all times.

2.1.3 Best Practices

The applicant will report all future sightings of smalltooth sawfish at the property to the FWC via E-mail: Sawfish@MyFWC.com or telephone: 844-472-9347 (1-844-4SAWFISH).

2.2 Action Area

The project site is located at 2533 Cannolot Boulevard (26.991288°, -82.143244° NAD83). The project site is located at an undeveloped, single-family residential lot on Auburn Waterway, a man-made canal, approximately 2.6 mi from Alligator Bay on the Peace River (**Figure 1**).

Figure 1. The project site at 2533 Cannolot Boulevard, Port Charlotte, Charlotte County, Florida, on Auburn Waterway in relation to Alligator Bay on the Peace River (©2026 Google Earth).

The action area is defined by regulation as all areas to be affected by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). For the purposes of this federal action, the action area includes the 80-lin-ft armored shoreline and submerged habitat within the immediate vicinity of the project site that will be affected by the proposed action, including the submerged habitat within the boundary of the turbidity curtain (**Figure 2**). Substrate in the action area is sand. Depth where the turbidity curtains will be installed is approximately 5 ft at MHW. Depth where the new seawall will be placed is 1.1 ft at MHW. The action area is devoid of corals and SAV. There are 77 lin ft (400 ft^2) of red mangrove shoreline within the action area.

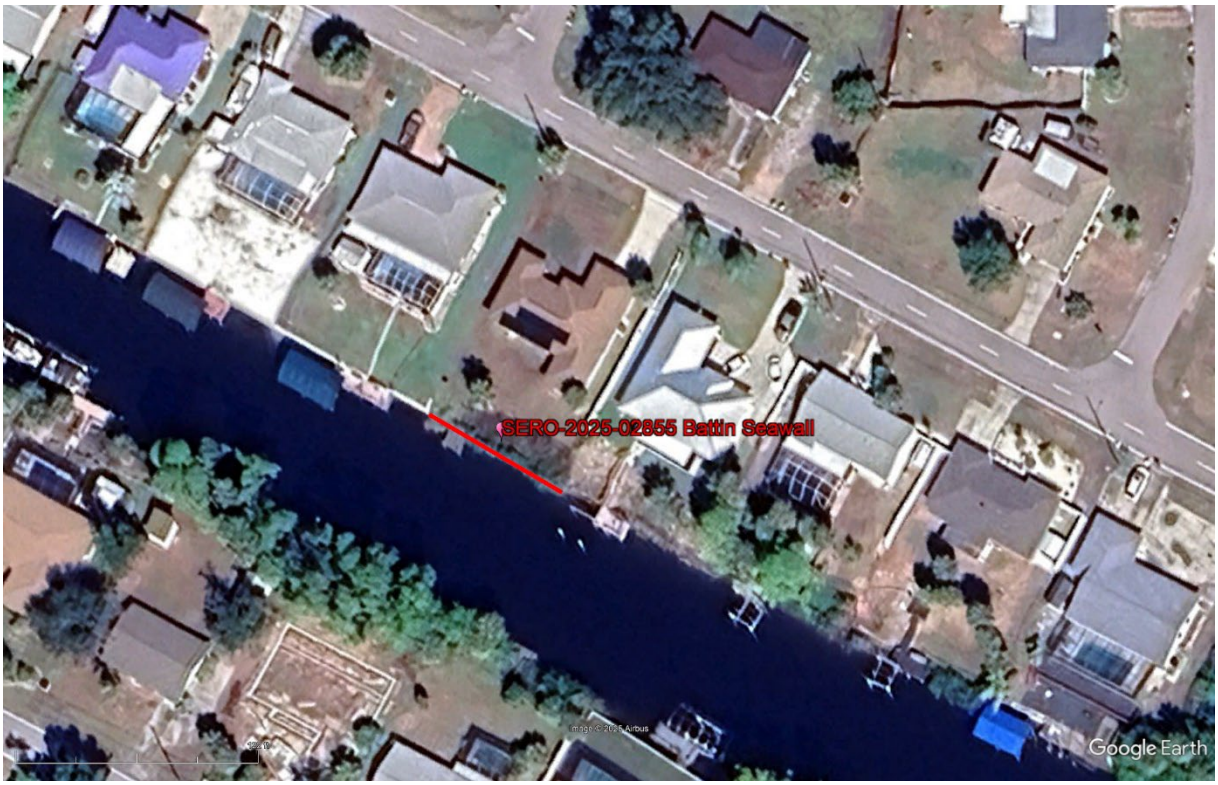

Figure 2. The project site at 2533 Cannolot Boulevard, Port Charlotte, Charlotte County, Florida, on Auburn Waterway, showing 80 lin ft of armored shoreline and the installation location of the new seawall (©2026 Google Earth).

3 EFFECTS DETERMINATIONS

Please note the following abbreviations are only used in **Table 1** and **Table 2** and are not, therefore, included in the list of acronyms: E = endangered; T = threatened; LAA = likely to adversely affect; NLAA = may affect, not likely to adversely affect; NE = no effect.

3.1 Effects Determinations for ESA-Listed Species

We have assessed the ESA-listed species that may be present in the action area, and our determination of the project's potential effects is shown in **Table 1** below.

3.1.1 Agency Effects Determinations

Table 1. ESA-listed Species in the Action Area and Effect Determinations

Species (DPS)	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan (or Outline) Date	USACE Effect Determination	NMFS Effect Determination
Sea Turtles					

Species (DPS)	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan (or Outline) Date	USACE Effect Determination	NMFS Effect Determination
Green sea turtle (North Atlantic DPS)	T	81 FR 20057/ April 6, 2016	October 1991	NLAA	NLAA
Hawksbill sea turtle	E	35 FR 8491/ June 2, 1970	December 1993	NLAA	NE
Kemp's ridley sea turtle	E	35 FR 18319/ December 2, 1970	September 2011	NLAA	NLAA
Loggerhead sea turtle (Northwest Atlantic DPS)	T	76 FR 58868/ September 22, 2011	December 2008	NLAA	NLAA
Fishes					
Giant manta ray	T	83 FR 2916/ January 22, 2018	October 2024 (Draft)	NLAA	NE
Smalltooth sawfish (U.S. DPS)	E	68 FR 15674/ April 1, 2003	January 2009	NLAA	NLAA

We believe the proposed action will have no effect on the hawksbill sea turtle due to the species' very specific life history strategies, which are not supported at the project site. Hawksbill sea turtles typically inhabit inshore reef and hard bottom areas where they forage primarily on encrusting sponges. We believe the proposed action will have no effect on giant manta ray which occur in marine waters, bays, and estuaries, but are not likely to occur in canals, including the action area for this project.

3.1.2 Effects Analysis for ESA-Listed Species Not Likely to be Adversely Affected by the Proposed Action

Sea turtles and smalltooth sawfish may be physically injured if struck by construction equipment, support vessels, or materials. We believe this is extremely unlikely to occur due to the species' ability to move away from the project site if disturbed. Mobile species, such as these, are able to avoid slow-moving equipment, support vessels, and the placement of material. In addition, the implementation of our *Protected Species Construction Conditions* (NMFS 2021) will require all construction workers to observe in-water activities for the presence of these species. Operation of any mechanical construction equipment shall cease immediately if a protected species is seen within a 150-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition or 20 minutes have passed since the animal was last

seen in the area. Further, construction would be limited to daylight hours so construction workers are able to see protected species, if present, and avoid interactions with them.

The action area contains shallow-water habitat and mangroves that may be used by smalltooth sawfish and sea turtles for foraging and refuge. These species may be affected if they are temporarily unable to use the site for forage or refuge habitat due to avoidance of construction activities, related noise, and physical exclusion from the use of turbidity curtains. Although species will be temporarily unable to access the construction areas, these effects will be insignificant given the project's limited footprint and availability of similar habitat nearby (unconsolidated shorelines within the canal system). Any disturbances to species would be temporary, limited to 5 days of in-water construction during daylight hours only, after which animals will be able to return to the site. Additionally, sea turtles and smalltooth sawfish (at the sizes that would be found in the action areas) are highly mobile organisms, and because similar habitat is nearby, we expect these adjacent sites could provide short-term refuge or forage habitat.

The action area contains habitat that serves nursery area functions, including foraging and refuge, for juvenile smalltooth sawfish. Juvenile smalltooth sawfish may be affected by the permanent loss of habitat associated with the proposed action (160 ft^2 of shallow euryhaline [fill associated with an 80-lin-ft concrete seawall placed 2 ft waterward of the MHW line into water depth between the MHW line and 3 ft measured at MLLW] and 77 lin ft [400 ft^2] of red mangrove shoreline). We believe this loss will be insignificant to the species given the relatively small amount of red mangroves being lost and the availability of similar habitat nearby. There is undisturbed habitat just outside the canal system, which is located within the CHPSP system, and there are extensive red mangrove shoreline and shallow euryhaline habitat remaining within the CHEU.

3.2 Effects Determinations for Critical Habitat

3.2.1 Agency Effects Determinations

We have assessed the critical habitats that overlap with the action area, and our determination of the project's potential effects is shown in **Table 2** below.

Table 2. Critical Habitat in the Action Area and Effect Determinations

Species (DPS)	Critical Habitat Unit in the Action Area	Critical Habitat Rule/Date	USACE Effect Determination	NMFS Effect Determination (Critical Habitat)
Fishes				
Smalltooth sawfish (U.S. DPS)	Charlotte Harbor Estuary Unit	74 FR 45353/ September 2, 2009	LAA	LAA

3.2.2 Critical Habitat Likely to be Adversely Affected by the Proposed Action

We have determined that the Charlotte Harbor Estuary Unit (abbreviated CHEU for the remainder of this opinion) of the U.S. DPS of Smalltooth Sawfish is likely to be adversely affected by the proposed action and thus requires further analysis. We provide greater detail on the potential effects to critical habitat from the proposed action in the Effects of the Action (Section 6.2) and whether those effects, when considered in the context of the Status of the Critical Habitat (Section 4.1), the Environmental Baseline (Section 5), and the Cumulative Effects (Section 7), are likely to cause destruction or adverse modification of critical habitat.

4 STATUS OF ESA-DESIGNATED CRITICAL HABITAT CONSIDERED FOR FURTHER ANALYSIS

4.1 Status of the Critical Habitat Considered for Further Analysis

4.1.1 Smalltooth Sawfish Critical Habitat

The U.S. DPS of smalltooth sawfish was listed as endangered on April 1, 2003. At that time, NMFS was unable to determine critical habitat but began funding studies to identify specific habitats and environmental features important for the conservation of the species. Using the best scientific data available, including the results from the new studies, NMFS issued a Final Rule (74 FR 45353; see also 50 CFR 226.218) to designate critical habitat for the U.S. DPS of smalltooth sawfish on September 2, 2009. Researchers identified nursery areas in southwest Florida and centered the critical habitat designations around those nurseries. The critical habitat consists of 2 units located along the southwestern coast of Florida: the CHEU, which is comprised of approximately 221,459 ac (346 mi^2) of coastal habitat, and the TTIEU, which is comprised of approximately 619,013 ac (967 mi^2) of coastal habitat.

Critical Habitat Unit Affected by this Action

This consultation focuses on an activity occurring in the CHEU, which encompasses portions of Charlotte and Lee Counties (**Figure 3**). The CHEU is comprised of Charlotte Harbor, Gasparilla Sound, Matlacha Pass, Pine Island Sound, San Carlos Bay, and Estero Bay. The Unit is fed by the Myakka and Peace Rivers to the north and the Caloosahatchee River to the east. A series of passes between barrier islands connect the CHEU with the Gulf of America. The CHEU is a relatively shallow estuary with large areas of SAV, oyster bars, saltwater marsh, freshwater wetlands, and mangrove shorelines. Freshwater flows from the Caloosahatchee River are controlled by the Franklin Lock and Dam, which periodically releases water, which thereby affects downstream salinity regimes. The CHEU boundaries are defined in detail in the Final Rule (74 FR 45353; see also 50 CFR 226.218).

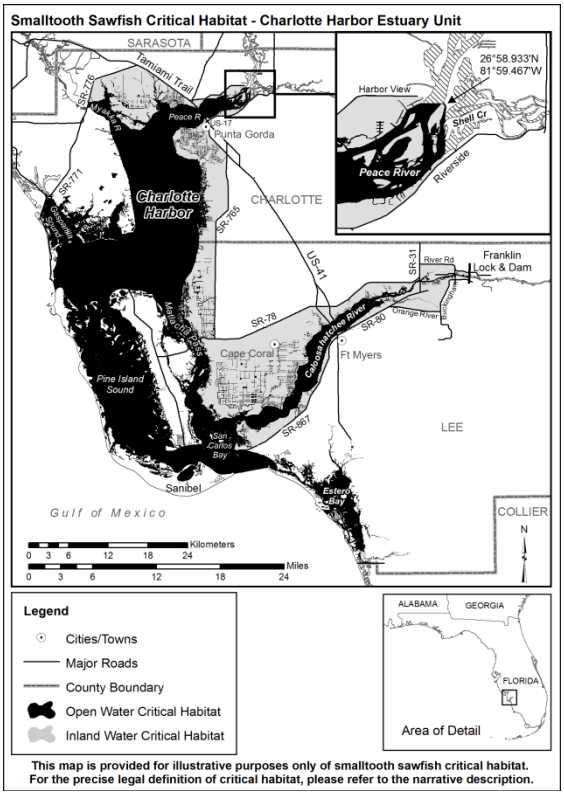

Figure 3. Map of smalltooth sawfish critical habitat – Charlotte Harbor Estuary Unit

Essential Features of Critical Habitat

The recovery plan developed for the smalltooth sawfish, which represents NMFS's best judgment about the objectives and actions necessary for the species' recovery, identified a need to increase the number of juvenile smalltooth sawfish developing into adulthood by protecting or restoring nursery habitat (NMFS 2009). NMFS determined that without sufficient habitat, the population was unlikely to increase to a level associated with low extinction risk and de-listing. Therefore, within the 2 critical habitat units NMFS identified 2 habitat features essential for the conservation of this species: (1) red mangroves, and (2) shallow, euryhaline habitats characterized by water depths between the MHW line and 3 ft (0.9 m) measured at MLLW (Final Rule, 74 FR 45353). These essential features of critical habitat provide juveniles refuge from predation and forage opportunities within their nursery habitat. One or both of these essential features must be present in an action area for it to function as critical habitat for smalltooth sawfish.

Habitat Use

Juvenile smalltooth sawfish up to approximately 7.2 ft (2.2 m) in length (Brame et al. 2019), inhabit the shallow waters of estuaries and can be found in sheltered bays, dredged canals, along banks and sandbars, and in rivers (NMFS 2000). Juvenile smalltooth sawfish occur in euryhaline waters (i.e., waters with a wide range of salinities) and are often closely associated with muddy or sandy substrates, and shorelines containing red mangroves (Simpfendorfer 2001; Simpfendorfer 2003). The structural complexity of red mangrove prop roots creates a unique

habitat used by a variety of fish, invertebrates, and birds. Juvenile smalltooth sawfish, particularly YOY measuring less than 53.5 inches (136 cm) in length) (Kroetz et al. 2025), use these areas as both refuge from predators and forage grounds, taking advantage of the large number of fish and invertebrates found there.

Tracking data from the Caloosahatchee River in Florida indicate very shallow depths and specific salinity ranges are important abiotic factors influencing juvenile smalltooth sawfish movement patterns, habitat use, and distribution (Simpfendorfer et al. 2011). An acoustic tagging study in a developed region of Charlotte Harbor, Florida, identified the importance of mangroves in close proximity to shallow-water habitat for juvenile smalltooth sawfish, stating that juveniles generally occur in shallow water within 328 ft (100 m) of mangrove shorelines (Simpfendorfer et al. 2010). Juvenile smalltooth sawfish spend the majority of their time in waters shallower than 13 ft (4 m) deep (Simpfendorfer et al. 2010) and are seldom found deeper than 32 ft (10 m) (Poulakis and Seitz 2004). Simpfendorfer et al. (2010) also indicated the following developmental differences in habitat use: the smallest YOY juveniles generally used water shallower than 1.6 ft (0.5 m), had small home ranges, and exhibited high levels of site fidelity. Although small juveniles exhibit high levels of site fidelity for specific nursery habitats for periods of time lasting up to 3 months (Wiley and Simpfendorfer 2007), they undergo small movements coinciding with changing tidal stages. These movements often involve moving from shallow sandbars at low tide and among red mangrove prop roots at higher tides (Simpfendorfer et al. 2010), behavior likely to reduce the risk of predation (Simpfendorfer 2006). As juveniles increase in size, they begin to expand their home ranges (Simpfendorfer et al. 2010), eventually moving to more offshore habitats where they likely feed on larger prey.

Researchers have identified several areas within the Charlotte Harbor Estuary that are disproportionately more important to juvenile smalltooth sawfish (**Figure 4**), based on intra- or inter-annual capture rates during random sampling events within the estuary (Poulakis 2012; Poulakis et al. 2011). The areas, termed “high-use areas (HUAs)”, correspond with areas where public encounters are most frequently reported. Use of these HUAs can be variable within and among years based on the amount and timing of freshwater inflow. Smalltooth sawfish use HUAs further upriver during drought (i.e., high salinity) conditions and areas closer to the mouth of the Caloosahatchee River during times of high freshwater inflow (Simpfendorfer et al. 2011). At this time, researchers are unsure what specific biotic (e.g., presence or absence of predators and prey) or abiotic factors (e.g., flow rate, water temperature, etc.) influence this habitat selection. Still, they believe a variety of conditions in addition to salinity, such as temperature, dissolved oxygen, water depth, shoreline vegetation, and food availability, may influence smalltooth sawfish habitat selection (Simpfendorfer et al. 2011).

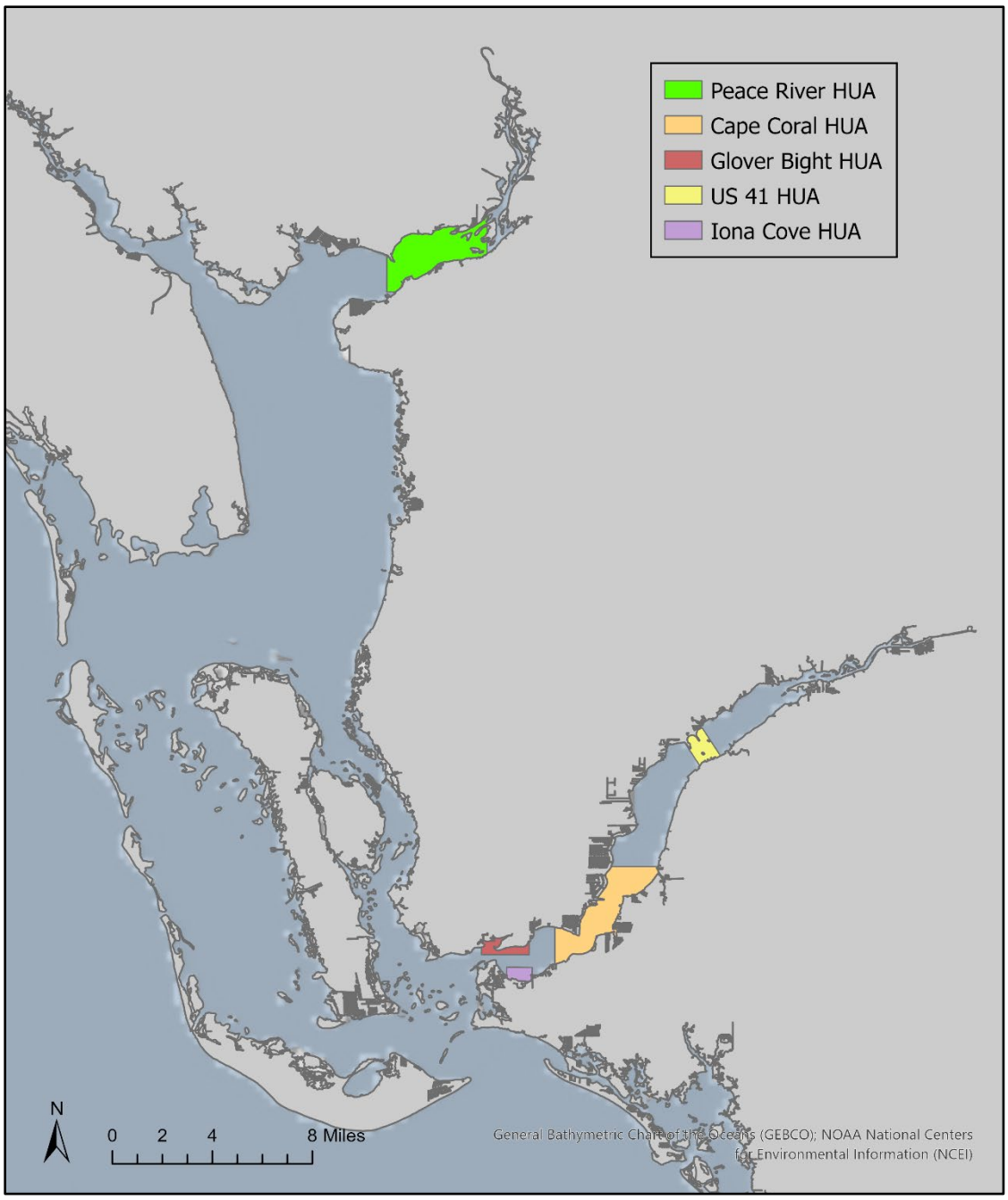

Figure 4. Map of identified sawfish high-use areas (HUA) in the Peace and Caloosahatchee Rivers of Charlotte Harbor.

Status and Threats to Critical Habitat

Modification and loss of smalltooth sawfish critical habitat is an ongoing threat contributing to the current status of the species. Activities such as agricultural and urban development, commercial activities, dredge-and-fill operations, boating, erosion, and diversions of freshwater runoff contribute to these losses (SAFMC 1998). Large areas of coastal habitat were modified or lost between the mid-1970s and mid-1980s within the United States (Dahl and Johnson 1991;

USFWS 1999). Since then, rates of loss have decreased even though habitat loss continues. Between 1998 and 2004, approximately 2,450 ac (3.8 mi^2) of intertidal wetlands consisting of mangroves or other estuarine shrubs were lost along the Atlantic and Gulf coasts of the United States (Stedman and Dahl 2008). In another study, Orlando et al. (1994) analyzed 18 major southeastern estuaries and recorded over 703 mi (1,131 km) of navigation channels and 9,844 mi (15,842 km) of shoreline with modifications. Additionally, changes to the natural freshwater flows into estuarine and marine waters through construction of canals and other water-control devices have altered the temperature, salinity, and nutrient regimes, reduced both wetlands and SAV coverage, and degraded vast areas of coastal habitat utilized by smalltooth sawfish (Gilmore 1995; Reddering 1988; Whitfield and Bruton 1989). Juvenile sawfish and their critical habitat are particularly vulnerable to these kinds of habitat losses or alterations due to the juveniles' affinity for (and developmental need of) shallow, estuarine systems. Although many forms of habitat modification are currently regulated, some permitted direct and/or indirect damage to habitat from increased urbanization still occurs and is expected to continue in the future.

In Florida, coastal development often involves the removal of mangroves, the armoring of shorelines through seawall construction, and the dredging of canals. This is especially apparent in master plan communities such as Cape Coral and Punta Gorda, which are located within the Charlotte Harbor Estuary. These communities were created through dredge-and-fill projects to increase the amount of waterfront property available for development, but in doing so, developers removed the majority of red mangrove habitat from the area. The canals created by these communities require periodic dredging for boat access, further affecting the shallow, euryhaline essential feature of critical habitat. Development continues along the shorelines of Charlotte Harbor in the form of docks, boat ramps, shoreline armoring, utility projects, and navigation channel dredging.

To protect critical habitat, federal agencies must ensure that their activities are not likely to result in the destruction or adverse modification of the physical and biological features that are essential to the conservation of sawfish, or the species' ability to access and use these features (ESA Section 7(a)(2); see also 50 CFR 424.12(b) [discussing essential features]). Therefore, proposed actions that may impact critical habitat require an analysis of potential impacts to each essential feature. As mentioned previously, there are 2 essential features of smalltooth sawfish critical habitat: (1) red mangroves; and (2) shallow, euryhaline habitats characterized by water depths between the MHW line and 3 ft (0.9 m) measured at MLLW. The USACE oversees the permitting process for residential and commercial marine development in the CHEU. The FDEP and their designated authorities also regulate mangrove removal in Florida. All red mangrove removal permit requests within smalltooth sawfish critical habitat necessitate ESA Section 7 consultation. NMFS Protected Resources Division tracks the loss of these essential features of smalltooth sawfish critical habitat.

Threats to Critical Habitat

Dock and Boat Ramp Construction

The USACE recommends that applicants construct docks in accordance with the NMFS-USACE *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or*

over Submerged Aquatic Vegetation (SAV), Marsh, or Mangrove Habitat ("Dock Construction Guidelines") when possible. The current dock construction guidelines allow for some amount of mangrove removal; however, it is typically restricted to either (1) trimming to facilitate a dock, or (2) complete removal up to the width of the dock extending toward open water, which the guidelines define as a width of 4 ft.

Installation or replacement of boat ramps is often part of larger projects such as marinas, bridge approaches, and causeways where natural and previously created deepwater habitat access channels already exist. Boat ramps can result in the permanent loss of both the red mangrove and the shallow, euryhaline habitat features of critical habitat for smalltooth sawfish.

Marina Construction

Marinas have the potential to adversely affect aquatic habitats. Marinas are typically designed to be deeper than 3 ft MLLW to accommodate vessel traffic; therefore, most existing marinas lack essential features and are unlikely to function as critical habitat for smalltooth sawfish. The expansion of existing marinas and creation of new marinas can result in the permanent loss of large areas of this shallow nursery habitat.

Bulkhead and Seawall Construction

Bulkheads and other shoreline stabilization structures are used to protect adjacent shorelines from wave and current action and to enhance water access. These projects may adversely impact critical habitat for smalltooth sawfish by removal of the essential features through direct filling and dredging to construct vertical or riprap seawalls. Generally, vegetation plantings, sloping riprap, or gabions are environmentally-preferred shoreline stabilization methods instead of vertical seawalls because they provide better quality fish and wildlife habitat. Nevertheless, placement of riprap material removes more of the shallow euryhaline essential feature than a vertical seawall. Also, many seawalls built along unconsolidated shorelines require the removal of red mangroves to accommodate the seawalls.

Cable, Pipeline, and Transmission Line Construction

While not as common as other activities, excavation of submerged lands is sometimes required for installing cables, pipelines, and transmission lines. Construction may also require temporary or permanent filling of submerged habitats. Open-cut trenching and installation of aerial transmission line footers are activities that have the ability to temporarily or permanently impact critical habitat for smalltooth sawfish.

Transportation Infrastructure Construction

Potential adverse effects from federal transportation projects in smalltooth sawfish critical habitat (CHEU) include operations of the Federal Highway Administration, USACE, and the Federal Emergency Management Agency. Construction of road improvement projects typically follow the existing alignments and expand to compensate for the increase in public use. Transportation projects may impact critical habitat for smalltooth sawfish through installation of bridge footers, fenders, piles, and abutment armoring, or through removal of existing bridge materials by blasting or mechanical efforts.

Dredging

Riverine, nearshore, and offshore areas are dredged for navigation, construction of infrastructure, and marine mining. An analysis of 18 major southeastern estuaries conducted in 1993-1994 demonstrated that over 7,000 km of navigation channels have already been dredged (Orlando et al. 1994). Habitat effects of dredging include the loss of submerged habitats by disposal of excavated materials, turbidity and siltation effects, contaminant release, alteration of hydrodynamic regimes, and fragmentation of physical habitats (GMFMC 1998; SAFMC 1998; GMFMC 2005). In the CHEU, dredging to maintain canals and channels constructed prior to the critical habitat designation, limits the amount of available shallow, euryhaline essential feature to the edges of waterways and these dredging activities can disturb juveniles that are using these areas. At the time of critical habitat designation, many previously dredged channels and canals existed within the boundaries of the critical habitat units; however, we are unsure which of those contained the shallow-water essential feature at that time. It is likely that many of these channels and canals were originally dredged deeper than 3 ft MLLW, but they have since shoaled in and now contain the essential feature of shallow, euryhaline habitat. Therefore, maintenance dredging impacts are counted as a loss to this essential feature, even though the areas may or may not have contained the essential feature at time of designation (see **Figure 5**, panels A and B).

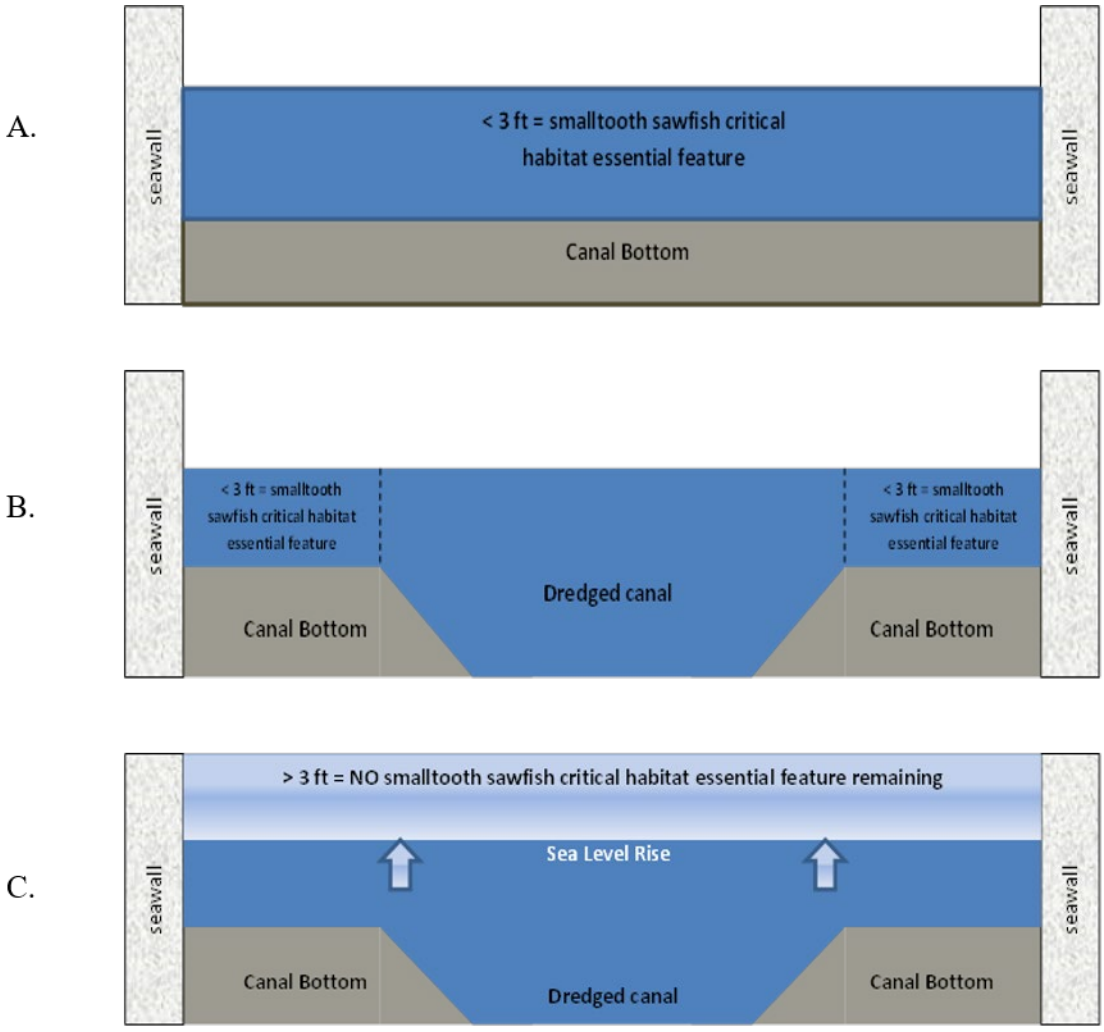

Figure 5. Diagram A depicts a cross section of a historically dredged channel/canal within the boundaries of the critical habitat units that has not been maintained. Diagram B depicts the typical cross section of a maintenance-dredged channel/canal. Diagram C depicts a cross section of a maintained dredged channel/canal after sea level rise of > 1 ft.

Construction, Operations and Maintenance of Impoundments and Other Water Level Controls

Federal agencies such as the USACE have historically been involved in large water control projects in Florida. Agencies sometimes propose impounding rivers and tributaries for such purposes as flood control, salt water intrusion prevention, or creation of industrial, municipal, and agricultural water supplies. Projects to repair or replace water control structures may affect smalltooth sawfish critical habitat by limiting sufficient freshwater discharge, which could alter the salinity of estuaries. The ability of an estuary to function as a nursery depends upon the quantity, timing, and input location of freshwater inflows (Garmestani and Percival 2005; Norton et al. 2012; USEPA 1994). Estuarine ecosystems are vulnerable to the following man-made disturbances: (1) decreases in seasonal inflow caused by the removal of freshwater upstream for agricultural, industrial, and domestic purposes; (2) contamination by industrial and sewage discharges; (3) agricultural runoff carrying pesticides, herbicides, and other toxic pollutants; and

(4) eutrophication (e.g., influx of nutrients such as nitrates and phosphates most often from fertilizer runoff and sewage) caused by excessive nutrient inputs from a variety of nonpoint and point sources. Additionally, rivers and their tributaries are susceptible to natural disturbances, such as floods and droughts, whose effects can be exacerbated by these man-made disturbances.

As stated above, smalltooth sawfish show an affinity for a particular salinity range, moving downriver during wetter months and upriver during drier months to remain within that range (Simpfendorfer et al. 2011). Therefore, water management decisions that affect salinity regimes may impact the functionality of critical habitat. This may result in smalltooth sawfish following specific salinity gradients into less advantageous habitats (e.g., areas with less shallow-water or red mangrove habitat). Furthermore, large changes in water flow over short durations would likely escalate movement patterns for smalltooth sawfish, thereby increasing predation risk and energy output. Researchers are currently looking into the effects of large-scale freshwater discharges on smalltooth sawfish and their designated critical habitat. The most vulnerable portion of the juvenile sawfish population to water-management outfall projects appears to be smalltooth sawfish in their first year of life. Newborn smalltooth sawfish remain in smaller areas irrespective of salinity, which potentially exposes them to greater osmotic stress (a sudden change in the solute concentration around a cell, causing a rapid change in the movement of water across its cell membrane), and impacts the nursery functions of sawfish critical habitat (Poulakis et al. 2013; Simpfendorfer et al. 2011).

Changing Environmental Conditions

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) indicates environmental conditions are changing (IPCC 2021). Some of the anticipated outcomes that may affect smalltooth sawfish or their habitat are (1) sea level rise, (2) increased frequency of severe weather events (e.g., tropical weather, increased precipitation, droughts, heatwaves), (3) changes in air and water temperature, and (4) increased precipitation. NOAA's climate web portal provides information on changing environmental conditions (https://www.noaa.gov/climate#understandingClimate).

Sea level rise

A recent IPCC report on sea level indicates global sea level is rising and accelerating (Figure 6), largely due to glacier and ice sheet melting (Oppenheimer et al. 2019). Rising sea level may affect the amount of shallow water available for juvenile smalltooth sawfish. A 2010 climate study by the Massachusetts Institute of Technology forecasted sea level rise in a study area with significant overlap within the range of smalltooth sawfish (Vargas-Moreno and Flaxman 2010). The study used sea level modeling data to forecast a range of sea level rise trajectories from low, to moderate, to high predictions (Figure 7). The effects of sea level rise on available shallow-water habitat for smalltooth sawfish would be exacerbated in areas where there is shoreline armoring (e.g., seawalls) as vertical seawalls prevent landward retreat. This is especially true in canals where shallow areas (specifically <3 ft) along the edges of the canals will become deeper and cease to function as critical habitat as sea level rises (Figure 5, panel C).

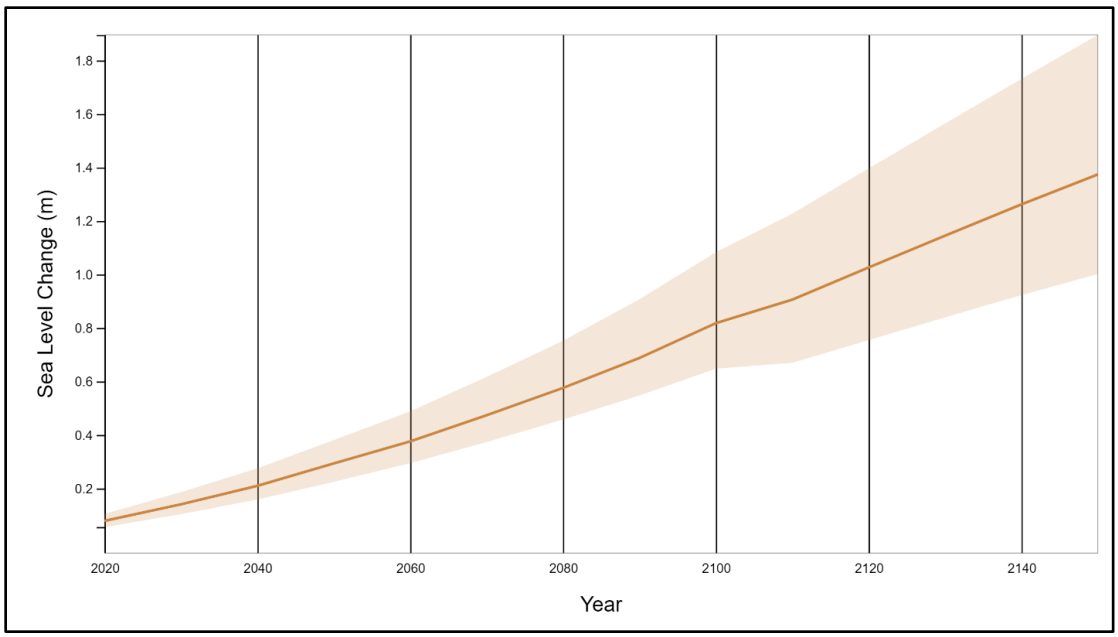

Figure 6. Sea level change projections in comparison to 1995-2014 levels, scenario SSP3-7.0 (https://sealevel.nasa.gov/ipcc-ar6-sea-level-projection-tool).

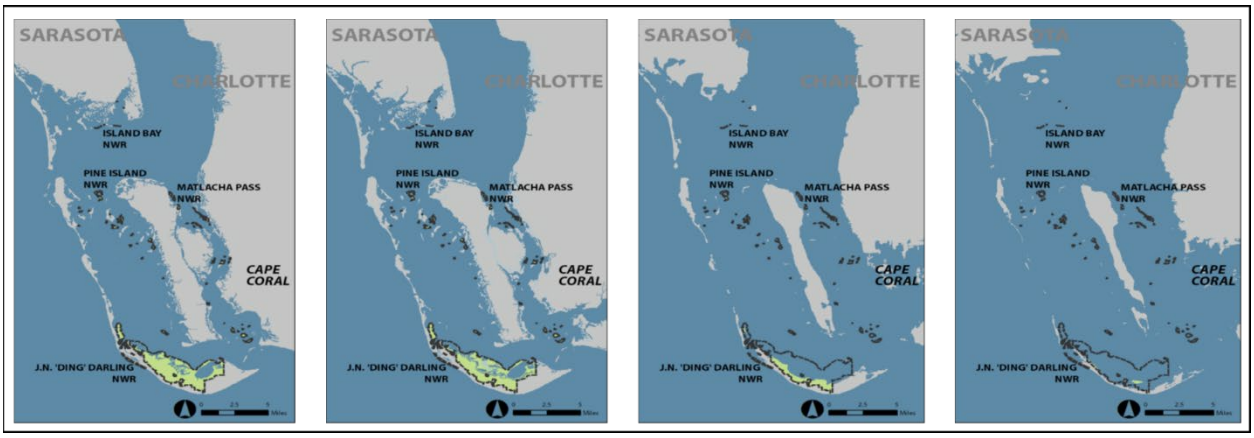

Figure 7. From left to right: current shoreline, + 3.5 in (+ 9 cm); + 18.5 in (+ 47 cm); and + 38.97 in (+ 99 cm) sea level rise by 2060. Figure adapted from Vargas-Moreno and Flaxman (2010)

A rise in sea level along the coasts of south Florida will also affect mangrove resources. As sea levels rise, mangroves will be forced landward in order to remain at a preferred water inundation level and sediment surface elevation necessary for successful growth (Field 1995). This retreat landward will not keep pace with conservative projected rates of elevation in sea level (Gilman et al. 2008). Forced landward progression poses the greatest threat to mangroves in areas where there is limited or no room for landward or lateral migration due to shoreline armoring and coastal development (Semeniuk 1994). We assess this potential habitat loss as a high concern (4) for smalltooth sawfish.

Increased severe weather

Changing environmental conditions may increase the severity of storms and hurricanes (Emanuel 2005; Knutson and Tuleya 2004). Tropical storms are expected to increase in intensity and/or frequency (Mann and Emanuel 2006), which may directly affect existing mangroves that are already adversely impacted by increased seawater temperatures, CO_2, and changes in precipitation (Cahoon et al. 2003; Trenberth 2005). The combination of all of these factors may lead to reduced mangrove height (Ning et al. 2003) and productivity (Field 1995). Further, intense storms could result in more severe storm surges and lead to potential changes in mangrove community composition, mortality, and recruitment (Gilman et al. 2006).

Warming air and water

Increased air and water temperature associated with changing environmental conditions will have effects on smalltooth sawfish and their habitat. The IPCC has considered multiple scenarios for temperature over the next century as well and described these as Reasonable Concentration Pathways (RPC) (Fisher et al. 2007). RCP8.5 has been termed the "business as usual" scenario that considers climate effects associated with rates of greenhouse gas consumption at the time of development. More recent literature (Hausfather and Peters 2020) has made the case that this scenario is more of a worst case scenario considering widespread reductions in fossil fuel consumption and a push into greener energy sources. RCP8.5 modeled temperature increases of 2.6 to 4.8 percent by 2100 in comparison to the period 1986 to 2005. More generally, a warming of about 0.4°F per decade is projected for the next 2 decades over a range of emission scenarios (Fisher et al. 2007). An updated scenario SSP3-7.0 estimates increases in temperature ranging from 5.0 to 8.3°F (2.8–4.6°C) by 2100, relative to the period of 1850 to 1900 (IPCC). This newer scenario suggests an increase of 2.7°F (1.5°C) by 2040. This temperature increase will very likely be associated with more extreme precipitation and faster evaporation of water, leading to greater frequency of both very wet and very dry conditions. Changing environmental conditions have resulted in increased precipitation, river discharge, and glacial and sea-ice melting (Greene et al. 2008).

Sawfish and the mangroves they rely on are restricted based on thermal tolerances so increased water temperature may allow for range expansion to more temperate regions. However, temperature increases may also adversely affect mangrove habitat. Many species of mangroves show an optimal shoot density in sediment temperatures between 59-77°F (15–25°C) (Hutchings and Saenger 1987). Yet, at temperatures between 77–95°F (25–35°C), many species begin to show a decline in leaf structure and root and leaf formation rates (Saenger and Moverley 1985). Temperatures above 95°F lead to adverse effects on root structure and survivability of seedlings (UNESCO 1992) and temperatures above 100.4°F (38°C) lead to a cessation of photosynthesis and mangrove mortality (Andrews et al. 1984). Although impossible to forecast precisely, sea surface ocean temperatures are predicted to increase 1.8–3.6°F (1–2°C) by 2060 (Kirtman et al. 2013), which will in turn impact underlying sediment temperatures along the coast. Ultimately, some uncertainty remains in how red mangroves will respond to physiochemical changes to the environment.

Increased precipitation

Changes in the amount and distribution of precipitation as a result of changing environmental conditions may also affect sawfish habitat. A 25% increase in precipitation globally is predicted

by 2050 (McLeod and Salm 2006), but the specific geographic distribution will vary, leading to increases and decreases in precipitation at the regional level. Changes in precipitation may affect the physiochemical environment (Chin et al. 2010), notably salinity, and the resources that rely on these environments. Generally, precipitation will influence salinity in nearshore estuarine areas which in turn affects the flora and fauna of the ecosystem. Juvenile smalltooth sawfish have an affinity for a specific salinity range (Poulakis et al. 2011) and thus increased or decreased salinity could result in a habitat shift. Similarly, changes in salinity could also affect available prey resources found within sawfish habitats. Reduced precipitation leads to increased salinity, which can inhibit mangrove productivity, growth, seedling survival, and spatial coverage (Burchett et al. 1984). It may also result in a shift in mangrove species composition, favoring more salt-tolerant types (Ellison 2010). Increases in precipitation may benefit some species of mangroves, increasing spatial coverage and allowing them to out-compete other salt marsh vegetation (Harty 2004). However, any potential expansion of mangrove habitats is heavily dependent on patterns and intensity of coastal development (e.g., bulkheads, seawalls).

5 ENVIRONMENTAL BASELINE

5.1 Overview

This section describes the effects of past and ongoing human and natural factors contributing to the current status of the affected smalltooth sawfish critical habitat, and ecosystem within the action area without the additional effects of the proposed action. In the case of ongoing actions, this section includes the effects that may contribute to the projected future status of the species, their habitats, and ecosystem. The environmental baseline describes the critical habitat's health based on information available at the time of the consultation.

By regulation, the environmental baseline for an Opinion refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The impacts to listed species or designated critical habitat from Federal agency activities or existing Federal facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

Focusing on the impacts of the activities in the action area specifically, allows us to assess the prior experience and state (or condition) of the areas of critical habitat that occur in an action area, that will be exposed to effects from the action under consultation. This focus is important because, in some states or life history stages, or areas of their ranges, critical habitat features will commonly exhibit, or be more susceptible to, adverse responses to stressors than they would be in other states, stages, or areas within their distributions. These localized stress responses or stressed baseline conditions may increase the severity of the adverse effects expected from the proposed action.

5.1.1 Baseline Status of Critical Habitat Considered for Further Analysis

As stated in Section 2.2 (Action Area), the action area is located within the boundaries of the CHEU of smalltooth sawfish designated critical habitat at a vacant, residential lot on Auburn Waterway in the man-made canal system in Port Charlotte, Charlotte County, Florida. Water depths at the project site shoreline are approximately 1.1 ft at MHW. The action area is devoid of corals or SAV, and there are approximately 77 lin ft of red mangroves along the shoreline. The action area is adjacent to the CHPSP system. The CHPSP system is comprised of 43,000 acres and protects 80 mi of shoreline habitat along the Charlotte Harbor estuaries in Charlotte and Lee Counties, Florida, providing a natural buffer between the aquatic preserves and urban development and agriculture (Florida Department of Environmental Protection 2017). While there have been no sightings of smalltooth sawfish within the action area, there have been several sightings of juvenile smalltooth sawfish within the canal system between the action area and the nearest opening to the Peace River; the nearest sighting of a smalltooth sawfish to the action area is approximately 2.7 mi downstream (U.S. Sawfish Recovery encounter database, unpublished data).

5.2 Additional Factors Affecting the Baseline Status of Critical Habitat Considered for Further Analysis

5.2.1 Federal Actions

We have consulted on several USACE shoreline stabilization and dock construction projects in the greater residential canal system where the project is located since the effective date of critical habitat designation (i.e., October 2, 2009). However, other than the proposed action, no other federal actions are known to have occurred or have had effects to smalltooth sawfish designated critical habitat within the action area, as per a review of our Protected Resources Division's completed consultation database by the consulting biologist on April 23, 2026.

5.2.2 State and Private Actions

Examples of nonfederal activities that may adversely affect designated critical habitat for smalltooth sawfish in the action area include residential in-water activities that do not require federal permits or otherwise have a federal nexus. The direct and indirect impacts from these activities are difficult to quantify but may include loss or degradation of red mangroves or shallow, euryhaline habitat from unauthorized mangrove trimming, shoreline stabilization, or in-water construction. NMFS does not have any knowledge of state or private actions occurring in the action area that would not also require a federal permit; the likelihood of a project occurring in the action area that does not require a federal permit for in-water construction work is very small. Where possible, conservation actions in ESA Section 10 permits, ESA Section 6 cooperative agreements, and state permitting programs are being implemented or investigated to monitor or study impacts from these sources.

5.2.3 Habitat Modification and Degradation

Smalltooth sawfish habitat, in general, and designated critical habitat, specifically, have been degraded or modified throughout the southeastern U.S. from agriculture, urban development,

commercial activities, channel dredging, boating activities, and the diversion of freshwater runoff. The habitat within the CHEU will likely continue to experience the same types of actions described in Section 4 (Status of Critical Habitat Considered for Further Analysis).

5.2.4 Stochastic Events

Stochastic events, such as hurricanes, are common throughout the range of smalltooth sawfish, especially in the current core of its range (i.e., south and southwest Florida). These events are by nature unpredictable and their effect on the survival and recovery of the species and on critical habitat are unknown; however, they have the potential to impede the survival and recovery directly if animals die as a result of them, or indirectly if habitat, especially critical habitat, is damaged as a result of these disturbances. Hurricanes Irma (2017), Ian (2022), Helene (2024), and Milton (2024) likely damaged habitat, including mangroves, in and around the action area in.

5.2.5 Changing Environmental Conditions

Many threats to smalltooth sawfish critical habitat are expected to be exacerbated by the effects of changing environmental conditions, as discussed in Section 4.1 above. Potential increases in sea level may impact the availability of nursery habitat, particularly shallow, euryhaline habitat and red mangrove lined, low-lying coastal shorelines (Intergovernmental Panel on Climate Change 2014; Wanless et al. 2005). For example, nursery habitat could be negatively affected by increased temperatures, salinities, and acidification of coastal waters (Snedaker 1995), (Wanless et al. 2005), (Scavia et al. 2002), as well as increased runoff and erosion due to the expected increase in extreme storm events (Intergovernmental Panel on Climate Change 2014; Wanless et al. 2005). These alterations of the marine environment due to changing environmental conditions could affect the distribution of shallow, euryhaline habitat, which would ultimately affect the distribution, physiology, and growth rates of red mangroves. These alterations could potentially eliminate red mangroves from particular areas. The magnitude of the effects of changing environmental conditions on smalltooth sawfish critical habitat are difficult to predict, yet, when combined with the cyclical loss of habitat from extreme storm events, a decrease in the red mangrove essential feature of smalltooth sawfish critical habitat is likely (Norton et al. 2012; Scavia et al. 2002). However, the proposed action is of such a small scale, scope, and limited period that it is not very likely to contribute to, or be affected cumulatively by, changing environmental conditions.

5.2.6 Conservation and Recovery Actions Shaping the Environmental Baseline

Federal EFH consultation requirements pursuant to the MSA can minimize and mitigate for losses of wetland and preserve valuable foraging and developmental habitat that is used by juvenile smalltooth sawfish, including areas that have been designated as smalltooth sawfish critical habitat. NMFS has designated mangrove and estuarine habitats as EFH as recommended by the Gulf of Mexico Fishery Management Council. Both essential features are critical components of areas designated as EFH and receive a basic level of protection under the MSA to the extent that the MSA requires minimization of impacts to EFH resources.

6 EFFECTS OF THE ACTION

6.1 Overview

Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action that will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. 50 CFR 402.02 (2018).

In this section of our Opinion, we assess the effects of the action on critical habitat that are likely to be adversely affected. The analysis in this section forms the foundation for our destruction or adverse modification analysis in Section 8. The quantitative and qualitative analyses in this section are based upon the best available commercial and scientific data on species biology and the effects of the action.

6.2 Effects of the Proposed Action on Critical Habitat Considered for Further Analysis

Where data are limited or equivocal, we have occasionally needed to make reasonable determinations based upon our best professional judgment to bridge the gap in the available data. Sometimes, the best available information may include a range of values for [add consultation-specific element(s) here][and different analytical approaches]. In all instances the approach to our analysis is explained, including how uncertainty, causation, and the choice among a range of values are evaluated and addressed.

The proposed action area is within the boundary of the CHEU of smalltooth sawfish designated critical habitat. The physical and biological features essential to the conservation of the U.S. DPS of smalltooth sawfish, which provide nursery area functions, are: (1) shallow, euryhaline habitats characterized by water depths between the MHW line and 3 ft (0.9 m) measured at MLLW, and (2) red mangroves. We believe the proposed action will affect both essential features of smalltooth sawfish designated critical habitat as outlined below.

6.2.1 Routes of Effect that Are Likely to Adversely Affect Critical Habitat

We believe the proposed action is likely to adversely affect smalltooth sawfish designated critical habitat due to the permanent removal of 160 ft^2 (fill associated with an 80-lin-ft concrete seawall placed 2 ft waterward of the MHW line into water depth between the MHW line and 3 ft measured at MLLW) of the shallow, euryhaline habitat essential feature, which provides forage, shelter, or other nursery habitat functions for juvenile smalltooth sawfish. Because we calculate and track losses to the shallow, euryhaline habitat essential feature of critical habitat in acres, we convert the project's effects from square feet to acres and use acres in the analyses below (i.e., 0.003674 ac, where 1 ft^2 = 0.0000229568 ac). We estimated that the total amount of shallow, euryhaline habitat in CHEU at the effective date of species listing (May 1, 2003) was approximately 84,480 ac. While the available shallow, euryhaline essential feature will be diminished, the proposed action is not severing or preventing juvenile smalltooth sawfish access

to alternate habitat with this essential feature in the surrounding area. Still, some ecological function provided to juvenile smalltooth sawfish currently using the area, and conservation benefits to future juvenile sawfish in terms of the shallow, euryhaline essential feature, will be lost; therefore, we believe the project is likely to adversely affect critical habitat in the CHEU.

We believe the proposed action is likely to adversely affect smalltooth sawfish designated critical habitat due to the permanent removal of 77 lin ft (400 ft^2) of the red mangrove essential feature, which provides forage, shelter, or other nursery habitat functions for juvenile smalltooth sawfish. Typically, USACE reports project effects to red mangroves in both linear feet (denoting the amount of shoreline) and square feet (denoting the magnitude of the area). We use linear feet when calculating and tracking losses to the red mangrove essential feature of critical habitat. During the development of the smalltooth sawfish recovery plan (NMFS 2009), we estimated the amount of red mangrove shoreline in linear feet because we assumed that juvenile smalltooth sawfish were typically only able to access the waterward edges of red mangrove stands. Therefore, in the analyses below, losses to red mangroves will be reported in linear feet only. Using remote sensing data acquired from the FWC FWRI, we were able to compile information relating to the total area of this essential feature within smalltooth sawfish critical habitat. Based on that information, we estimated that the total amount of red mangrove shoreline in CHEU at the effective date of species listing (May 1, 2003) was approximately 5,512,320 lin ft. While the available red mangrove essential feature in the CHEU will be diminished, the proposed action is not severing or preventing juvenile smalltooth sawfish access to alternate habitat with this essential feature in the surrounding area. Still, some ecological function provided to juvenile smalltooth sawfish in terms of the red mangrove essential feature will be lost; therefore, we believe the project is likely to adversely affect critical habitat in the CHEU.

7 CUMULATIVE EFFECTS

ESA Section 7 regulations require NMFS to consider cumulative effects in formulating its Opinions (50 CFR 402.14). Cumulative effects include the effects of future state or private actions, not involving federal activities, that are reasonably certain to occur within the action area considered in this Opinion (50 CFR 402.02). NMFS is not aware of any future projects that may contribute to cumulative effects. Within the action area, the ongoing activities and processes described in the environmental baseline are expected to continue and NMFS did not identify any additional sources of potential cumulative effect. Although the present human uses of the action area are expected to continue, some may occur at increased levels, frequency, or intensity in the near future as described in the environmental baseline.

8 DESTRUCTION OR ADVERSE MODIFICATION ANALYSIS

NMFS's regulations define *destruction or adverse modification* to mean "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features" (50 CFR 402.02[2018]). NMFS will generally conclude that a federal action is likely to "destroy or adversely modify" critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological

features of critical habitat and if the effect of the alteration is to appreciably diminish the value of critical habitat as a whole for the conservation of the species.

This analysis takes into account the geographic and temporal scope of the proposed action, recognizing that "functionality" of critical habitat necessarily means that the critical habitat must now and must continue in the future to support the conservation of the species and progress toward recovery. The analysis takes into account any changes in amount, distribution, or characteristics of the critical habitat that will be required over time to support the successful recovery of the species. Destruction or adverse modification does not depend strictly on the size or proportion of the area adversely affected, but rather on the role the action area and the affected critical habitat serves with regard to the function of the overall critical habitat designation, and how that role is affected by the action.

8.1 Protect and Restore Smalltooth Sawfish Habitat (Recovery Objective #2)

In establishing Recovery Objective #2, we recognized that recovery and conservation of smalltooth sawfish depends on the availability and quality of nursery habitats. Historically, juvenile sawfish were documented in mangrove and non-mangrove habitat in the southeastern United States. Due to the protections provided by the Ten Thousand Islands National Wildlife Refuge, Everglades National Park, and the Florida Keys National Marine Sanctuary, much of the historic juvenile smalltooth sawfish habitat in southwest Florida has remained high-quality juvenile habitat. Recovery Regions G, H, and I in southwest Florida extend from the Manatee River on the west coast of Florida, south through Everglades National Park and the Florida Keys to Caesar Creek on the southeast coast of Florida. The CHEU is in Recovery Region G. While much of the CHEU is protected by the CHPSP system and the Estero Bay Aquatic Preserve, it is also highly anthropomorphically influenced.

The recovery plan states that for the 3 recovery regions with remaining high-quality habitats (i.e., Recovery Regions G, H, and I), juvenile habitats "must be maintained over the long term at or above 95% of the acreage available at the time of listing" (NMFS 2009). To ensure that a proposed action will not impede Recovery Objective #2, we determine whether the critical habitat unit will be able to maintain 95% of the areas containing each essential feature after taking into account project impacts in the context of the status of the critical habitat, the environmental baseline, and cumulative effects. While the CHEU is only a part of the larger Recovery Region G, and the 95% protection threshold applies across not just Recovery Region G, but also Recovery Regions H and I, the threshold is still useful for evaluating the impacts at the individual recovery region level and for sub-units of the recovery regions. The CHEU contains the only known nursery areas within Recovery Region G; thus, we believe it is appropriate to evaluate impacts at the level of the unit. In addition, functioning critical habitat contains either one or both of the essential features, and the essential features were selected based on their role in facilitating recruitment of juvenile animals into the adult population, which the recovery plan likewise seeks to conserve and protect. Consequently, we also believe it is appropriate to consider whether 95% of each of the essential features of critical habitat in the CHEU is maintained. Therefore, below we estimate the percent impact the proposed action will have on the shallow, euryhaline habitat and red mangrove essential features of critical habitat within the CHEU.

8.1.1 Shallow, Euryhaline Essential Feature Impacts

We estimated that 84,480 ac of shallow, euryhaline habitat (abbreviated SH throughout this section) was available within the CHEU at the effective date of species listing (i.e., May 1, 2003) (**Table 3**, Line 1). As discussed above, we must determine whether a proposed action's impact will interfere with long-term maintenance of this essential feature at or above 95% of the acreage available at the time of listing; however, loss of critical habitat was not formally monitored until the effective date of critical habitat designation (i.e., October 2, 2009). Therefore, we must estimate habitat loss that occurred during the period between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009).

To do this, we use an 84-month dataset of our completed Section 7 consultations (October 3, 2009 – September 30, 2016), including yearly losses due to programmatic consultations, to generate a rate of loss that can then be used to back-calculate the loss of SH between the effective date of species listing and the effective date of critical habitat designation. We rely on this dataset because using approximately 7 years of information helps avoid over- or under-estimating the rate of habitat loss due to any potential inter-annual variability associated with economic growth and contraction that may have occurred in that time. Our consultations completed during this time indicate that 17.60 ac of SH in the CHEU was lost due to federal agency actions.

Based on these losses, we estimate a monthly loss rate of SH in the CHEU using the following equation:

$$
\begin{aligned}
&Monthly\ loss\ rate\ of\ SH\ (CHEU)\\
&= SH\ lost\ through\ federal\ agency\ actions \div 84\ months\\
&= 17.60\ ac\ \div 84\ months\\
&= 0.21\ ac\ per\ month
\end{aligned}
$$

Assuming the same monthly loss rate, we back-calculate the loss of SH in the 77 months between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009) in the CHEU using the following equation:

$$
\begin{aligned}
&SH\ lost\ prior\ to\ critical\ habitat\ designation\ (CHEU)\\
&= 0.21\ ac\ per\ month \times 77\ months\\
&= 16.17\ ac\ \text{(Table 3, Line 2)}
\end{aligned}
$$

Next, we determine the loss of SH since the effective date of critical habitat designation. Due to the high frequency of relatively small projects affecting smalltooth sawfish critical habitat, we update the losses to the shallow, euryhaline habitat essential feature from federal actions every 12 months (i.e., January 1). From the effective date of critical habitat designation through December 31, 2025, 78.71 ac of SH in the CHEU has been lost due to federal agency actions (**Table 3**, Line 3). While this amount of loss only takes into account projects with a federal nexus requiring ESA Section 7 consultation, there are very few projects without a federal nexus that could affect shallow, euryhaline habitat in the CHEU as most in-water construction projects require federal authorization.

Using this information, we calculate the SH currently available in CHEU using the following equation:

$$
\begin{aligned}
&SH\ currently\ available\ (CHEU)\\
&= SH\ at\ time\ of\ species\ listing - (SH\ lost\ prior\ to\ critical\ habitat\ designation\\
&\qquad + SH\ lost\ since\ critical\ habitat\ designation)\\
&= 84,480\ ac\ - (16.17\ ac + 78.71\ ac)\\
&= 84{,}385.12\ ac\ (\text{Table 3, Line 4})
\end{aligned}
$$

We calculate the amount of SH that must be maintained in the CHEU per Recovery Objective #2 using the following equation:

$$
\begin{aligned}
&SH\ that\ must\ be\ maintained\ (CHEU)\\
&=\ SH\ at\ time\ of\ species\ listing\ \times 95\%\\
&=\ 84{,}480\ ac\ \times 0.95\\
&=\ 80{,}256\ ac\ (\text{Table 3, Line 5})
\end{aligned}
$$

The proposed action would result in the permanent loss of 0.003674 ac of SH (**Table 3**, Line 6). Using the above results, we estimate the total amount of SH lost in the CHEU since species listing, including losses from the proposed action using the following equation:

$$
\begin{aligned}
&\%\ SH\ lost\ since\ species\ listing\ (CHEU)\\
&= [(SH\ lost\ due\ to\ this\ project +\ SH\ lost\ prior\ to\ critical\ habitat\ designation\\
&\qquad + SH\ lost\ since\ critical\ habitat\ designation)\\
&\qquad \div Total\ SH\ at\ time\ of\ species\ listing] \times 100\\
&= [(0.003674\ ac + 16.17\ ac\ + 78.71\ ac) \div 84,480\ ac] \times 100\\
&= (94.887424\ ac \div 84,480\ ac) \times 100\\
&= 0.112319\%\ (\text{Table 3, } Line\ 7)
\end{aligned}
$$

Thus, we estimate the percent of SH remaining within the CHEU as:

$$
\begin{aligned}
&\%\ SH\ remaining\ (CHEU)\\
&= 100\% - \%\ SH\ lost\ since\ species\ listing\ (CHEU)\\
&= 100\% - 0.112319\%\\
&= 99.887681\%\ (\text{Table 3, } Line\ 8)
\end{aligned}
$$

Table 3. Summary of Impacts to the Shallow, Euryhaline Habitat Essential Feature

Shallow, Euryhaline Habitat in the CHEU	Acres
1. Available at the time of species listing	84,480
2. Losses prior to critical habitat designation	16.17
3. Losses since critical habitat designation	78.71
4. Available as of January 1, 2025	84,385.12
5. Area that must be maintained per Recovery Plan	80,256 (95% of 84,480)
6. Affected by the proposed action	0.003674
7. Affected since species listing (including the proposed action)	94.887424 (0.112319% of 84,480)
8. Remaining	84,385.112576 (99.887681% of 84,480)

8.1.2 Red Mangrove Essential Feature Impacts

Remote sensing data from FWC FWRI indicated that approximately 5,512,320 lin feet of red mangrove shoreline (abbreviated RM throughout this section) was available in the CHEU at the effective date of species listing (i.e., May 1, 2003) (**Table 4**, Line 1). As described above, we must determine whether project impacts will interfere with long-term maintenance of this essential feature at or above 95% of the linear feet of habitat available at the time of listing; however, loss of critical habitat was not formally monitored until the effective date of critical habitat designation (i.e., October 2, 2009). Therefore, we must estimate habitat loss that occurred during the period between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009).

To do this, we use an 84-month dataset of our completed Section 7 consultations (October 3, 2009 – September 30, 2016), including yearly losses due to programmatic consultations, to generate a rate of loss that can then be used to back-calculate the loss of RM between the effective date of species listing and the effective date of critical habitat designation. We rely on this dataset because using approximately 7 years of information helps avoid over- or under-estimating the rate of habitat loss due to any potential inter-annual variability associated with economic growth and contraction that may have occurred in that time. Our consultations completed during this time indicate that 9,142.50 lin ft of RM in CHEU was lost due to federal agency actions.

Based on these losses, we estimate a monthly loss rate of RM using the following equation:

$$
\begin{aligned}
&Monthly\ loss\ rate\ of\ RM\ (CHEU)\\
&= RM\ lost\ through\ federal\ agency\ actions \div 84\ months\\
&= 9{,}142.50\ lin\ ft \div 84\ months\\
&= 108.84\ lin\ ft\ per\ month
\end{aligned}
$$

Assuming the same monthly loss rates, we back-calculate the loss of RM in the 77 months between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009) in the CHEU using the following equation:

$$
\begin{aligned}
&RM\ loss\ prior\ to\ critical\ habitat\ designation\ (CHEU)\\
&= 108.84\ lin\ ft\ per\ month \times 77\ months\\
&= 8{,}380.68\ lin\ ft\ (\text{Table 4}, Line\ 2)
\end{aligned}
$$

Next, we determine the loss of RM since the effective date of critical habitat designation. Due to the high frequency of relatively small projects affecting smalltooth sawfish critical habitat, we update the losses to the red mangrove essential feature from federal actions every 12 months (i.e., January 1). From the effective date of critical habitat designation through December 31, 2025, 34,779.17 lin ft of RM in the CHEU has been lost due to federal agency actions (**Table 4**, Line 3). While this amount of loss only takes into account projects with a federal nexus requiring ESA Section 7 consultation, there are very few projects without a federal nexus that could affect red mangrove shoreline in the CHEU as most in-water construction projects require federal authorization.

Using this information, we calculate the RM currently available in the CHEU using the following equation:

$$
\begin{aligned}
&RM\ currently\ available\ (CHEU)\\
&= RM\ at\ time\ of\ species\ listing - (RM\ loss\ prior\ to\ critical\ habitat\ designation\\
&\qquad + RM\ loss\ since\ critical\ habitat\ designation)\\
&= 5{,}512{,}320\ lin\ ft - (8{,}380.68\ lin\ ft + 34{,}779.17\ lin\ ft)\\
&= 5{,}469{,}160.15\ lin\ ft\ (\text{Table 4}, Line\ 4)
\end{aligned}
$$

We calculate the amount of RM that must be maintained in the CHEU using the following equation:

$$
\begin{aligned}
&RM\ that\ must\ be\ maintained\ (CHEU)\\
&= RM\ at\ time\ of\ species\ listing \times 95\%\\
&= 5{,}512{,}320\ lin\ ft \times 0.95\\
&= 5{,}236{,}704\ lin\ ft\ (\text{Table 4}, Line\ 5)
\end{aligned}
$$

The proposed action would result in the permanent loss of 77.00 lin ft of RM (**Table 4**, Line 6). Using the above results, we estimate the total amount of RM lost in the CHEU since species listing, including losses from the proposed action using the following equation:

$$
\begin{aligned}
&\%\ RM\ lost\ in\ CHEU\ since\ species\ listing\\
&= [(RM\ loss\ due\ to\ this\ project + \ RM\ lost\ prior\ to\ critical\ habitat\ designation\\
&\qquad + RM\ lost\ since\ critical\ habitat\ designation)\\
&\qquad \div Total\ RM\ in\ CHEU\ at\ time\ of\ species\ listing] \times 100\\
&= [(77.00\ lin\ ft + 8{,}380.68\ lin\ ft + 34{,}779.17\ lin\ ft) \div 5{,}512{,}320\ lin\ ft] \times 100\\
&= (43{,}236.85\ lin\ ft\ \div 5{,}512{,}320\ lin\ ft) \times 100\\
&= 0.784368\%\ (\text{Table 4, Line 7})
\end{aligned}
$$

Thus, we estimate the percent of RM remaining within the CHEU as:

$$\%\ RM\ remaining\ (CHEU)$$
$$= 100\% - \%\ RM\ lost\ since\ species\ listing\ (CHEU)$$
$$= 100\% - 0.784368\%$$
$$= 99.215632\%\ (\text{Table 4}, Line\ 8)$$

Table 4. Summary of Impacts to the Red Mangrove Essential Feature

Red Mangrove Shoreline in the CHEU	Linear Feet
1. Available at the time of species listing	5,512,320
2. Losses prior to critical habitat designation	8,380.68
3. Losses since critical habitat designation	34,779.17
4. Available as of January 1, 2025	5,469,160.15
5. Linear feet that must be maintained per Recovery Plan	5,236,704 (95% of 5,512,320)
6. Affected by the proposed action	77.00
7. Affected since species listing (including the proposed action)	43,236.85 (0.784368% of 5,512,320)
8. Remaining	5,469,083.15 (99.215632% of 5,512,320)

8.1.3 Summary of Impacts to the Essential Features

Very small percentages of the essential features of smalltooth sawfish designated critical habitat have been affected by federal agency actions since the effective date of species listing. Including losses from the proposed action, 99.887681% of the SH essential feature (**Table 3**, Line 8) and 99.215632% of the RM essential feature (**Table 4**, Line 8) available at the time of species listing remain in the CHEU. Thus, the loss of essential features associated with the proposed action, in combination with losses since we listed the species, does not provide any impediment to effectively protecting 95% of juvenile habitat in the CHEU available at the effective date of species listing, and therefore will not be an impediment to Recovery Objective #2.

8.2 Ensure Smalltooth Sawfish Abundance Increases (Recovery Objective #3)

In establishing Recovery Objective #3, we recognized that it was important that sufficient numbers of juvenile sawfish inhabit several nursery areas across a diverse geographic area to ensure survivorship and growth and to protect against the negative effects of stochastic events within parts of their range. To meet this objective, Recovery Region G (i.e., CHEU) must support sufficiently large numbers of juvenile sawfish to ensure that the species is viable in the long-term and can maintain genetic diversity. Recovery Objective #3 requires that the relative abundance of small juvenile sawfish (< 200 cm) either increases at an average annual rate of at least 5% over a 27-year period, or juvenile abundance is at greater than 80% of the carrying capacity of the recovery region.

Assessing the effect of the proposed action on small juvenile abundance is made difficult by the state of available data. Since the designation of critical habitat and the release of the recovery plan in 2009, ongoing studies have been in place to monitor the U.S. DPS of smalltooth sawfish. FWC FWRI is conducting a study in the CHEU that is supported primarily with funding provided by NMFS through the ESA Section 6 Species Recovery Grants Program, while Florida State University and the NOAA NMFS Southeast Fisheries Science Center Panama City Laboratory have focused studies in the TTIEU. The intent of these studies is to determine the abundance, distribution, habitat use, and movement of smalltooth sawfish. Early indications are that juvenile sawfish are at least stable and likely increasing in the CHEU, due in large part to ESA-listing of the species and designation of critical habitat. While it may be too early to state definitively that juveniles within CHEU are surviving to adulthood, researchers consistently capture newborn smalltooth sawfish, particularly within "hotspots," indicating adult smalltooth sawfish are pupping within Recovery Region G. Available data from the adjacent Recovery Region H (i.e., TTIEU) indicate that adult smalltooth sawfish are also reproducing within this recovery region and that the juvenile population trend is at least stable and possibly increasing—though variability is high (Carlson and Osborne 2012; Carlson et al. 2007). With no other data to consider, the abundance trend in the TTIEU represents the best data available for assessing the population trends in the CHEU. Therefore, we do not believe the loss of habitat associated with the proposed action, in combination with the losses to date, will impede the 5% annual growth objective for the juvenile population within Recovery Region G.

9 CONCLUSION

We reviewed the Status of the Critical Habitat, the Environmental Baseline, the Effects of the Action, and the Cumulative Effects using the best available data.

We conclude that the permanent loss of 0.003674 ac (160 ft^2) of shallow, euryhaline essential feature and the loss of 77 lin ft (400 ft^2) of red mangrove essential feature due to the proposed action will not interfere with achieving the relevant habitat-based recovery objectives for smalltooth sawfish and will not impede the critical habitat's ability as a whole to support the conservation of smalltooth sawfish, despite permanent adverse effects. Therefore, given the nature of the proposed action and the information provided above, we conclude that the action, as proposed, is not likely to destroy or adversely modify the critical habitat of the U.S. DPS of smalltooth sawfish.

10 INCIDENTAL TAKE STATEMENT

10.1 Overview

NMFS does not anticipate that the proposed action will incidentally take any ESA-listed species under our purview, and no take is authorized in this Opinion. Nonetheless, as soon as the USACE becomes aware of any take of an ESA-listed species under NMFS's purview that occurs during the proposed action, the USACE shall report the take to NMFS SERO PRD via the NMFS SERO Endangered Species Take Report Form. This form shall be completed for each individual known reported capture, entanglement, stranding, or other take incident. Information provided via this form shall include the title, Battin Seawall Install, the issuance date, and ECO tracking number, SERO-2025-02855, for this Opinion; the species name; the date and time of the

incident; the general location and activity resulting in capture; condition of the species (i.e., alive, dead, sent to rehabilitation); size of the individual, behavior, identifying features (i.e., presence of tags, scars, or distinguishing marks), and any photos that may have been taken. At that time, consultation may need to be reinitiated.

11 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation Recommendations identified in Opinions can assist action agencies in implementing their responsibilities under Section 7(a)(1). Conservation recommendations are discretionary activities designed to minimize or avoid adverse effects of a proposed action on ESA-listed species or critical habitat, to help implement recovery plans, or to develop information. The following conservation recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the federal action agency:

1. Continue public outreach and education on smalltooth sawfish and smalltooth sawfish critical habitat in an effort to minimize interactions, injury, and mortality.

2. Provide funding to conduct directed research on smalltooth sawfish that will help further our understanding about the species (e.g., implement a relative abundance monitoring program which will help define how spatial and temporal variability in the physical and biological environment influence smalltooth sawfish) in an effort to predict long-term changes in smalltooth sawfish distribution, abundance, extent, and timing of movements.

3. Fund surveys of detailed bathymetry and mangrove coverage within smalltooth sawfish critical habitat. Lee County and the USACE recently funded such surveys within the Cape Coral municipality. Data is needed from other municipalities within the CHEU to establish a more accurate baseline assessment of both critical habitat features (red mangroves and shallow-water areas).

4. Fund and support restoration efforts that rehabilitate and create shallow, euryhaline and mangrove fringe habitats within the range of smalltooth sawfish.

To stay abreast of actions that minimize or avoiding adverse effects or benefit listed species or their habitat, we request notification of the implementation of any conservation recommendations.

12 REINITIATION OF CONSULTATION

This concludes formal consultation on the proposed action. As provided in 50 CFR 402.16, reinitiation of formal consultation is required and shall be requested by USACE, where discretionary federal action agency involvement or control over the action has been retained, or is authorized by law, and if: (a) the amount or extent of incidental take specified in the Incidental Take Statement is exceeded, (b) new information reveals effects of the action on listed species or critical habitat in a manner or to an extent not considered in this Opinion, (c) the action is

subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion, or (d) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the USACE must immediately request reinitiation of formal consultation and project activities may only resume if the USACE establishes that such continuation will not violate Sections 7(a)(2) and 7(d) of the ESA.

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