

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely impact Essential Fish Habitat (EFH). EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (NOAA, 1999). A Federal agency must identify the species of concern and prepare an analysis of the effects of the proposed action. The agency must also give its views regarding the effects of the proposed action and propose mitigation if applicable. NMFS has suggested that the EFH analysis and determination be incorporated as part of the National Environmental Policy Act (NEPA) process rather than in a separate document such as a biological assessment, which is prepared for endangered species. An EFH habitat assessment is included in the Environmental Appendix (C) of this Draft DPR. This assessment accessed the website: <http://www.habitat.noaa.gov/protection/efh/efhmapper/index.html> on 18 APR 2016 and utilized the built-in location query capability to determine the specific fish species with EFH in the local project area.

EFH for local project area

Species	Eggs	Larvae	Juveniles	Adults
summer flounder (<i>Paralichthys dentatus</i>)	x	x	X	X
windowpane flounder (<i>Scopthalmus aquosus</i>)			X	X
scup (<i>Stenotomus chrysops</i>)	n/a	n/a	X	X
black sea bass (<i>Centropristus striata</i>)	n/a		X	X
Clearnose skate (<i>Raja eglanteria</i>)			X	X
Little skate (<i>Leucoraja erinacea</i>)			X	X
Winter skate (<i>Leucoraja ocellata</i>)			X	X
Bluefish (<i>Pomatomis saltatrix</i>)	X	x	X	X
Atlantic butterfish (<i>Peprilus triacanthus</i>)		X		X
sandbar shark (<i>Charcharinus plumbeus</i>)				X

Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Management and Conservation Act require Federal action agencies to consult with the NMFS regarding the potential effects of their actions on EFH, which is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growing to maturity. Step 1 of the consultation process was accomplished by notifying NMFS that this EA was being prepared. Step 2 is the preparation of an EFH Assessment by the Federal agency proposing the action. The EFH assessment shall include: (1) a description of the proposed action; (2) an analysis of the effects of the action on EFH and associated species; (3) the Federal agency's views regarding the effects of the action on EFH; and (4) a discussion of proposed mitigation, if applicable. Step 3 of the consultation process is completed after NMFS reviews the Draft EA for which NMFS provides EFH Conservation Recommendations within 30 days. This response, in writing, must either describe the measures proposed by the agency to avoid, mitigate, or offset the impacts of the action on EFH pursuant to NMFS recommendations, or it must explain its reasons for not following impacts to EFH.

(1) Description of proposed action: See page 25, the Tentatively Selected Plan of the Draft DPR.

(2) Analysis of the effects of the action on EFH: Appendix A describes the species and at which life stage EFH has been determined by NMFS in the vicinity of the project. No HAPC designations for any species exists in the project area. HAPC are described in regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally-stressed area. Potential adverse effects to EFH species result from the construction aspects of the proposed project, namely increased local turbidity, direct encounters with stone or sand as it is being placed, and impacts to populations of prey items. Increased turbidity has the potential to lower DO. There will be a conversion of what is now open shallow water to estuarine wetlands, beach, and stone nearshore revetments, though the shoreline configuration that results will mimic a historical shoreline. Turbidity increases will be of short duration, and DO levels, if affected at all, will return to pre-construction levels quickly. Due to the open nature of this portion of the Bay, DO levels are not expect to vary significantly at all. Although motile, the potential exists for fish to be impacted throughout the water column by direct encounters with sand or stone as it is being placed. Adverse effects on prey items will occur if such organisms are buried during construction of the nearshore revetments and attached sand tombolos. Conversion of habitat may negatively impact some opportunistic prey items, although the primary effects of project will be positive, with benefits in increased productivity, species diversity, and habitat diversity as nearby SAV beds expand. These benefits will result in increased productivity at higher trophic levels, such as in the finfish community. To conclude, the USACE determination regarding EFH for the proposed project is that the project may affect but is not likely to affect EFH in the local region of the proposed project.

Department of the Army's views regarding the effects of the action on EFH: All of the fish that have EFH within the study area are mobile and would likely vacate the area during the construction period. Therefore, there are no significant negative impacts resulting from project implementation. The fish are anticipated to return soon afterwards. Overall, EFH in the study area would be more productive as a

result of implementing the project. Fish species that have EFH in the local area should benefit from implementing the proposed project. SAV is expected to increase, many EFH species utilize SAV for foraging areas as well as cover to hide from larger predators. Prey diversity, abundance, and biomass should increase as SAV beds are highly productive. Specific EFH findings are listed by species, after the associated background information in the following species-specific text.

NMFS ESSENTIAL FISH HABITAT DESIGNATION

INTRODUCTION

The analysis includes the EFH species that are found within the area of the proposed project. Each species summary includes a discussion of the life cycle and history of the animal, the status of the fishery, and how the animal will be affected by the proposed project.

SUMMER FLOUNDER

Life Cycle and Habitat

This fish is a member of the flounder family, Parlichthyidae, and is a left-eye flatfish capable of changing its skin color to blend in with the surrounding bottom. They reach maturity in 2 years and typically weighs 0.5-1.5 kg, though individuals up to 11.8 kg have been recorded. They are a benthic predatory fish, mostly eating other fish and crustaceans. They are typically found partially buried in muddy to sandy bottoms. They range from Nova Scotia to Florida, and as they prefer warmer waters, are typically a summer visitor to the Bay, migrating offshore for winter. Spawning occurs in the open ocean along the continental shelf. Eggs and larvae are pelagic, and can be swept into the Bay. Benthic juveniles and adults are commonly found in the Chesapeake Bay.

The Fisheries

The commercial fishery for the summer flounder is mainly otter trawl, they are also taken in pound nets and gill nets. There is also a sizeable recreational fishery for the summer flounder, typically 40% of the total catch of summer flounder is via the recreational fishery. The stock is considered over-exploited but still at a medium population level compared to historical abundance.

Impacts to EFH

It is possible that juvenile to adult summer flounder could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

SANDBAR SHARK

Life Cycle and Habitat

This shark can be found as adults in the local area. This species is the principal species caught in the commercial shark fishery of the U.S. Atlantic coast and is also important recreationally (Conrath and Musick, 2007). It is a large coastal ranging species, with females growing up to 2.5 m and males up to 1.8 m total length. They typically roam in small groups to schools, segregated by sex, and undergo seasonal migrations to avoid overwintering in cold, northern waters. Due to this, they range from Cape Cod to the western Gulf of Mexico, though they are not found north of the Carolinas in the winter months. Sandbar sharks, like many elasmobranch fishes, are viviparous, giving birth to live young. They typically give birth to less than 10 young, once per two years. The primary reason that the local waters

are considered HAPC is because the lower Chesapeake Bay is one of the most important nursery grounds for this species on the U.S. East Coast. Female sharks give birth in the local area in large numbers, and the lower bay and lower Eastern Shore are important nursery grounds for the juveniles.

The Fisheries

The fishery is considered severely depleted. Restrictions on their take have been put in place to hopefully allow for species recovery. The status of the sandbar shark along much of the east coast is “protected,” meaning that there is no permitted commercial harvest of the species in Federal waters but harvest does continue to occur in state waters under a quota set by NMFS. It does continue to be taken incidentally. Current numbers are low and do not support wide scale commercial fishing at this time.

Impacts to EFH

It is possible, though doubtful due to the shallowness; that sandbar sharks could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

WINDOWPANE FLOUNDER

Life Cycle and Habitat

According to Essential Habitat Designations within the Northeast Region (Maine to Virginia), NOAA and NMFS describe habitat conditions for life stages of windowpane flounder. Eggs are found in surface waters around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras. Eggs are found where sea surface temperatures are less than 20 °C and water depths are less than 70 meters. In the middle Atlantic, eggs are often observed from February to November with peaks in May and October. It is a small left-eye flatfish, typical adults reach 25-35 cm in length.

Juveniles are found in bottom habitats consisting of a mud or fine-grained sand substrate around the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras. Juveniles are found in waters with temperatures below 25 °C, depths from 1-100 meters, and salinities between 5.5-36 ppt.

Adults are found in areas with bottom habitats consisting of mud or fine-grained sand around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the Middle Atlantic south to the Virginia-North Carolina border. Adults are found in waters with temperatures below 26.8 °C, depths from 1-75 meters, and salinities between 5.5 and 36 parts per thousand (ppt). Spawning occurs in waters with temperatures below 21 °C, depths from 1-75 meters, and salinities between 5.5 to 36 ppt. Windowpane flounder are most often observed spawning during the months of February through December, with a peak in May in the middle Atlantic (NOAA/NMFS, 1999).

The Fisheries

The stock in the Chesapeake Bay region is considered overfished, though stocks to the north are in better condition, being fully exploited. Due to their small size, they are typically caught as by-catch when fishing for larger species of flounder, and there is no targeted fishery for windowpane flounder.

Impacts to EFH

It is possible that juvenile to windowpane flounder could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

SUMMER FLOUNDER

Summer flounder or fluke (*Paralichthys dentatus*) live in estuarine and coastal waters from Nova Scotia to Southern Florida, with greatest abundance between Cape Cod, MA and Cape Hatteras, NC. Most summer flounder inhabit Chesapeake Bay in the summer and move offshore to depths of 120 to 600 feet of water during the fall and winter. However, some summer flounder over winter in the Chesapeake Bay. Flounder are more common in the deep channels of the lower Chesapeake Bay than in the upper Bay, extending as far north as the Gunpowder River.

Like other flounders, this species is a bottom-dwelling predator, relying on its flattened shape and ability to change color and pattern on the upper (eyed) side of its body. A predator with quick movements and sharp teeth, the flounder is able to capture the small fishes, squid, worms, shrimp, and other crustaceans that comprise the bulk of its diet. Summer flounder can live to 20 years of age with females living longer and growing larger than males (up to 95 cm total length [3ft]).

Life Cycle and Habitat

Summer flounder spawn during their offshore migration, from late summer to midwinter. Larvae and post-larvae drift and migrate in shore, aided by prevailing water currents, and enter the Chesapeake Bay from October through May. Larval flounder, which have body symmetry and eyes on both sides of their heads, more closely resemble the larvae of other fishes than they do adult flounder. Upon reaching the estuaries, larval flounder undergo a metamorphosis to the post-larval stage. During metamorphosis, the right eye of the larval flounder gradually migrates to the left side of the head—the feature distinguishing summer flounder from winter flounder, whose eyes are on the right side—and the body takes on the flattened appearance that it retains as an adult fish. Once the metamorphosis is complete, the post-larval flounder assumes the adults' bottom-dwelling lifestyle. Juvenile summer flounder often live among eelgrass beds in the Chesapeake Bay.

The Fisheries

Summer flounder are of major recreational and commercial importance north of Cape Hatteras. Anglers catch summer flounder from the shore, piers, and boats with hook and line. The recreational catch far exceeds the commercial catch in the Chesapeake Bay and near shore coastal waters. The lower

Chesapeake Bay and seaside inlets produce the bulk of the recreational landings. Between 1979 and 1985, the combined recreational harvest in Maryland and Virginia averaged 5.5 million pounds per year, with 90 percent taken from Virginia waters.

Commercial landings in Virginia have historically been greater than those in Maryland. Between 1981 and 1986, Virginia averaged 5.7 million pounds per year and Maryland averaged 583,000 pounds. However, more than 90 percent of the landings recorded for both states have come from outside state waters. The great bulk of the catch is produced by the winter trawl fishery that operates in mid-continental shelf waters. In the Chesapeake Bay, summer flounder are commercially-caught by haul seines, pound nets, and gill nets, but the species does not form a significant commercial fishery. In 1990, only 48,000 pounds of summer flounder were taken in Virginia's Chesapeake Bay and ocean waters. Since the mid-1980's, commercial and recreational catches have declined precipitously because of overfishing and year-class failure. The Chesapeake Bay record for summer flounder is a fish weighing 15 pounds, which was taken in Maryland waters (Chesapeake Bay Program, 1999).

Impacts to EFH

It is possible that juvenile to adult summer flounder could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

BLUEFISH

Bluefish, *Pomatomus saltatrix*, is the sole representative of the family Pomatomidae and is closely related to the jacks, pompanos, and roosterfish. Commonly known as chopper, tailor, snapper, elf, skipjack, greenfish, and blue, the bluefish inhabits the continental shelf waters of temperate zones. Along the eastern United States, it is found from Nova Scotia to Texas and visits the Chesapeake Bay region from spring to autumn. The bluefish is abundant in the lower Bay and common most years in the upper Chesapeake Bay, although it is rare north of Baltimore.

Life Cycle and Habitat

Schools of like-sized bluefish can cover tens of square miles and undertake extensive coastal migrations. Adults overwinter off the southeastern coast of Florida and begin a northerly migration in the spring, following warmer water with local movements into and out of bays and sounds. Their movement patterns are complex and not well understood. Younger fish appear to follow different migratory routes than older fish.

Bluefish have a worldwide distribution with occurrences recorded in the Atlantic Ocean, the Mediterranean Sea, the Black Sea, and the Indian Ocean. Adult bluefish are found in a variety of habitats, usually in response to food availability and spawning cues. Bluefish are voracious predators and will feed on virtually any food they can catch and swallow, including butterfish, menhaden, sand lances, silversides, mackerel anchovies, sardines, weakfish, spotted seatrout, croaker, spot, white perch, shad, alewife, blueback herring, and striped bass. Due to their predacious nature, bluefish are in

competition with adult striped bass, mackerel, and large weakfish. They have few predators and can live 12 years and weigh up to 20 pounds.

During the northward migration, a spring spawning period occurs from Florida to southern North Carolina. A second spawning occurs off the Mid-Atlantic coast during the summer. In the Chesapeake Bay area, peak spawning is in July and occurs over the outer continental shelf. Most bluefish mature at age two and have high fecundity. Females can produce 900,000 to 4,500,000 eggs. The distribution of bluefish eggs is related to temperature and salinity and can vary from year to year.

Bluefish larvae can be found offshore between Cape Cod, MA, and Palm Beach, FL, during every season of the year. After the spring spawn, bluefish move shoreward. The smaller fish generally enter the Chesapeake Bay, while the larger fish head farther north. Larval distribution is affected by the wind and currents. Larvae that originate from spawning off the Chesapeake Bay are carried south and offshore. As larvae grow and are able to swim, they leave the surface for deeper water and move in shore. Early juveniles (young fish whose fins have formed) enter the lower Chesapeake Bay and its tributaries in the late summer and fall where estuarine areas provide food and shelter. In the early autumn, bluefish begin to migrate out of the Chesapeake Bay and move south along the coast. Peak abundance near the Chesapeake Bay mouth occurs from April to July and again in October and November.

The Fisheries

The bluefish commercial fishery in Chesapeake Bay accounts for about 20 percent of the total US landings of bluefish. Commercial landings from the Chesapeake Bay were generally high during the 1930's, modest to poor from the 1940's through the 1960's, and again high from the early 1970's through the mid-1980s. In recent years, overfishing has become a concern. Historically, the commercial bluefish harvest has been more important in Virginia than in Maryland, with 10 times the landings of Maryland.

The predominant commercial gear used in harvesting bluefish from the Chesapeake Bay has been pound nets but other gear also is used, including gill nets, otter trawls, haul seines, and hand lines. Currently, all commercial gears, except Virginia's hook and line fisheries, are required to have a license. The bluefish's aggressive feeding habits and spirited fight make it a popular and important sportfish. Landings from the recreational fishery are five to six times that of commercial landings. In the Chesapeake Bay, bluefish ranked highest in both number and weight among sportfish nearly every year from 1970 to 1990. Due to the high recreational value, the conservation effort by anglers has been strong (Chesapeake Bay Program, 1999).

Impacts to EFH

It is possible that juvenile bluefish could be found in the subtidal sand flats in the project ROI (region of impact). Adults are unlikely to be found in such shallow waters. This species is a highly mobile, fast-swimming pelagic predator, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

BLACK SEA BASS

The black sea bass (*Centropristis striata*) is a member of the family Serranidae, or true sea basses. Also known in the Chesapeake Bay area as "black will," "chub," or simply sea bass, they are year-round inhabitants of the Mid-Atlantic region. These bass are bluish-black fish as adults and brownish as juveniles; they have scales with pale blue or white centers.

Life Cycle and Habitat

The black sea bass population extends from Maine to the Florida Keys and into the Gulf of Mexico. Black sea bass found north of Cape Hatteras are seasonally migratory and from a stock that is considered distinct from that south of the Cape. In the Chesapeake Bay, adults migrate offshore and south to overwinter in the deep, 100-meter waters off the Virginia and Maryland coasts. In spring the fish return to the mid and lower Chesapeake Bay, as far north as Solomon's Island, and remain there until late fall. Black sea bass have been captured as far north as the Chester River, but most fish encountered near the shore are juveniles (1 to 2 years old).

Adult black sea bass are considered a temperate reef fish and are most often found on rocky bottoms near pilings, wrecks, and jetties. Visual feeders during daylight hours, black sea bass rely on swift currents and their large mouths to capture their prey, which include other fish, crabs, mussels, and razor clams. Although they do not travel in schools, they can be found in large groups around structures or during in shore-offshore migrations.

Black sea bass are protogynous hermaphrodites, which means that initially they are females, but some larger fish (between 9 and 13 inches) reverse sex to become males. Thirty-eight percent of females in the Mid-Atlantic demonstrate sex reversal, usually between August and April, indicating that reversal takes place after spawning.

In the Mid-Atlantic continental shelf waters (59-148 ft deep), spawning begins in June, peaks in August, and continues through October. The fish, ages 2 to 5, produce approximately 280,000 eggs, which are buoyant and contain a single oil globule. Larvae develop in coastal waters 2 to 50 miles offshore at depths of up to 108 feet, preferring salinities of 30-35 ppt and temperatures of 58-82 °F. When they are about 13 millimeter (mm) (0.5 inches [in]), young black sea bass move in shore into estuaries, bays, and sounds, where they find shelter in beds of SAV, in oyster reefs, and among wharves, pilings, and other structures. Young black sea bass feed primarily on crustaceans, such as shrimp, amphipods, and isopods.

Juveniles migrate offshore in December, although some young-of-the-year may remain in the Chesapeake Bay throughout the winter. Black sea bass are reported to live as long as 20 years and reach a maximum adult size of two feet. However, individuals longer than 15 inches (approximately the size of an 8-year-old fish), are uncommon. Large fish are more common offshore than in the Chesapeake Bay.

The Fisheries

The black sea bass forms the base of an important recreational fishery. An estimated 1.5 million black sea bass were taken by anglers in the lower Chesapeake Bay in 1991. Anglers bottom fish using squid and other natural baits to catch this highly esteemed and flavorful fish. The commercial interest in the

Chesapeake Bay is modest, however, with commercial landings averaging less than 2,275 kg (5,000 pounds) per year. Gear types include trawls, pots, and hook and line.

In 1996, the Chesapeake Bay Program developed the “Chesapeake Bay and Atlantic Coast Black Sea Bass Fishery Management Plan” to enhance and perpetuate black sea bass stocks in the Chesapeake Bay and its tributaries. Stock assessments before 1996 indicated that the species was being over-harvested in the Chesapeake Bay, which led the Mid-Atlantic Fishery Management Council/Atlantic States Marine Fisheries Commission to take several measures: implementing a 9-inch total length minimum size limit for 1996-97, with ensuing limits to be revised on an annual basis; requiring a 4-inch minimum mesh size for trawlers that harvest more than 100 pounds; and requiring all black sea bass pots to have escape vents and biodegradable hinges and fasteners. The goal is to reduce exploitation and to improve protection of the black sea bass spawning stock in the Chesapeake Bay and the Atlantic.

Impacts to EFH

It is possible that juvenile to adult black sea bass could be found in the subtidal sand flats in the project ROI (region of impact), though it is unlikely due to their preference for structure and rocky bottom, neither of which are found in the proposed project ROI. This species is highly mobile, and any individuals found would likely leave the immediate project area, returning once construction is completed. The rock structure may provide habitat to the black sea bass in the ROI, a benefit to them. No significant impacts to this species are expected.

SCUP

The scup, *Stenotomus chrysops*, is a member of the family Sparidae, and is commonly known as the porgy. It can grow as large as 45 cm and 2 kg, but averages 0.25-.5 kg. They are a demersal fish as adults, typically being found near the bottom. Adults are benthic feeders. As juveniles, they can be found in shallower waters. Scup typically mature at 2 years of age. Eggs and larvae are pelagic. Smaller adult scup are often found in estuaries, large adults prefer more oceanic waters and deeper waters.

Life Cycle and Habitat

Scup are a migratory, schooling species commonly found along the continental shelf and are not common in Chesapeake Bay, though they can be found in estuaries, usually as small adults. Scup spawn offshore, along the inner continental shelf. Their larvae grow and metamorphose in nearshore waters, including the Bay mouth region. They are typically found in the local Tangier region as larger juveniles and adults.

The Fisheries

The scup fishery in the USA operates from Maine to Cape Hatteras. They are typically fished for using otter trawls, though other types of nets are also used. There is also a significant recreational fishery for the scup. The stock is considered a single stock in the mid-Atlantic bight region, which includes the Chesapeake Bay. Commercial landings have declined significantly since peak landings in the 1950s-early 60s, and recreational landings have also declined. The stock is currently considered overfished due to historically low abundance levels with catches that have exceeded F_{max} .

Impacts to EFH

It is possible that juvenile to small adult scup could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

ATLANTIC BUTTERFISH

The Atlantic butterfish (*Peprilus triacanthus*) is a member of the family Stromateidae, of which two species are found within the Chesapeake Bay. Butterfishes are characterized as being very deep-bodied and highly compressed, with adults lacking pelvic fins (Murdy et al., 1997). The Atlantic butterfish is a fast-growing, schooling, pelagic fish that ranges from Newfoundland to the Gulf Coast of Florida, but is most abundant in the region from the Gulf of Maine to Cape Hatteras. It is a rather small fish, with maximum adult length reported as 30 centimeters (cm) (Murdy et al., 1997). Short-lived, butterfish rarely live beyond 3 years of age and attain sexual maturity at 1 to 2 years of age. Butterfish are typically found in euryhaline (5-32 ppt) environments (Musick, 1972).

Life Cycle and Habitat

Butterfish occur in large schools in bays and over continental shelves. They are a pelagic species, typically found in waters over shallow bottoms. The butterfish occurs in the Chesapeake Bay from March through November and is considered common to abundant in the lower bay. Within the bay, the butterfish move northward in the spring, first appearing in Virginia waters in March but not found above the Rappahannock River before May. All leave the bay by December, overwintering offshore in deeper water (590-690 feet) (Murdy et al., 1997). Butterfish are broadcast spawners, and spawn offshore from May to July in the Chesapeake Bay. After hatching, juveniles move into the near-coastal waters, sometimes including bays and estuaries. The young often hide from predators in mats of floating seaweed or among the tentacles of jellyfish. Juveniles feed primarily on phytoplankton, while the adult diet is comprised mainly of jellyfish, small fishes, crustaceans, and worms. (Murdy et al., 1997).

The Fisheries

The butterfish fishery of the Chesapeake Bay is presently of minor commercial importance. Formerly, catches were much larger. For example, in 1920, Chesapeake Bay landings were reported as 590,000 kilograms (kg) (1.3 million pounds), with almost all catch from pound-nets. In contrast, the reported catch for 1990 was 9,100 kg (20,000 pounds). Catches occur in two peaks, the first occurring from April-May and the second occurring from September-October. Butterfish are of only minor interest to recreational fishermen, as they rarely take bait (Murdy et al., 1997). The butterfish stock is not overfished nor approaching an overfished condition (Cross et al., 1999; NMFS, 1997).

Impacts to EFH

It is possible that juvenile to adult butterfish could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

CLEAR NOSE SKATE

Life History and Habitat

This small elasmobranch skate occurs in the North Atlantic ranging from Nova Scotia to the Gulf of Mexico, though it is rare in the northern portion of its range and migrates from cooler northern waters as winter approaches. It is migratory in the local area, typically appearing in the Chesapeake Bay in April to November-December. In the Bay, the only records have been from the Bay mainstem; none have been caught in the tributaries. The maximum size is approximately 80 cm total length at an age of 5-6 years. They feed on small benthic organisms as well as on small fishes. Typical habitat is softer bottom areas along the continental shelf, though they can also be found in rockier habitat. As is common in skates, this species is an egg layer, typically laying up to 30 pairs of eggs in a season. Both juveniles and adults can be found in the Chesapeake Bay. They prefer higher salinity waters of > 22 ppt, with most being found in waters of at least 31 ppt.

The Fisheries

There is a commercial fishery for the clear nose skate. The primary means to capture them is via otter trawling, though they are also taken as bycatch in groundfish trawling and scallop dredging fisheries. This small species is typically used for bait, not human consumption. The current status is not overfished.

Impacts to EFH

It is possible that juvenile to adult clear nose skate could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly mobile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

WINTER SKATE

Life History and Habitat

This small elasmobranch skate occurs from the coast of Newfoundland to Cape Hatteras. It prefers colder waters than many fish species found in the Chesapeake Bay area. In the local area, it can be found from December to April. Its maximum size is approximately 1.5 m in total length. Similar to most skates, it is an egg layer. It is not known to lay eggs in the local area, preferring colder waters to spawn in, and juveniles are not commonly found in the Chesapeake Bay area, only rarely being observed near the Bay mouth in the winter. It typically feeds on a wide variety of invertebrate benthic organisms but also takes small fish and squid. It prefers sand and gravel bottoms but can sometimes be found on mud bottom habitat. It typically buries itself in the sand during the day, feeding at night.

The Fisheries

Otter trawling is the main method to catch most skate species, including the winter skate. This species is also caught as bycatch during groundfish trawling and during sea scallop dredging. The skate fishery is mainly a bait fishery, though this larger species does have a commercial market for its wing meat for human consumption. As a result of these uses, fishing pressure grew intense and the winter skate was

overfished. However, it has since recovered and although its biomass is still well below its original level (about 25 percent of the observed peak) and it is not currently considered to be overfished.

Impacts to EFH

It is possible that juvenile to winter skate could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly motile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

LITTLE SKATE

Life History and Habitat

This is a small elasmobranch species, and adult maximum size is approximately 60 cm. It occurs from Nova Scotia to Cape Hatteras and is very abundant. Like most skates, it is an egg layer and has been known to lay eggs throughout the year. This skate typically feeds upon small invertebrates, primarily crustaceans, squid, and polychaetes, though fish and other organisms are sometimes consumed. They prefer sand or gravel bottoms, as do many skate species, though they can also be found on mud bottom habitat. They often bury themselves in the sand during the day and feed at night.

The Fisheries

There is a commercial fishery for the clear nose skate. The primary means to capture them is via otter trawling, though they are also taken as bycatch in groundfish trawling and scallop dredging fisheries. This small species is typically used for bait, not human consumption. The current status is not overfished, and the population biomass is estimated to be a medium level.

Impacts to EFH

It is possible that juvenile to adult clear nose skate could be found in the subtidal sand flats in the project ROI (region of impact). This species is highly motile, and would likely leave the immediate project area, returning once construction is completed. No significant impacts to this species are expected.

REFERENCES

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