NASA Causeway Bridge Replacement Project
Environmental Assessment

Appendix G

Essential Fish Habitat Information and Coordination

EFH Verification Form (Updated December 2023)

Submitted to:
NOAA Fisheries, Greater Atlantic Regional
Fisheries Office, Habitat Conservation Division
(GARFO HCD)

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 37º 51' 8" N, Longitude = 76º 30' 36" W
Decimal Degrees: Latitude = 37.852, Longitude = -75.490

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

***** W A R N I N G *****

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Herring	Adult	New England	Amendment 3 to the Atlantic Herring FMP
		Windowpane Flounder	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Clearnose Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
		Atlantic Butterfish	Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Summer Flounder	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

Link		Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Black Sea Bass	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

All spatial data is currently available for the Mid-Atlantic and New England councils,
Secretarial EFH,
Bigeye Sand Tiger Shark,
Bigeye Sixgill Shark,
Caribbean Sharpnose Shark,
Galapagos Shark,
Narrowtooth Shark,
Sevengill Shark,
Sixgill Shark,
Smooth Hammerhead Shark,
Smalltail Shark

Appendix B. Verification Form

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (state DOT) will email a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (GARFO HCD) at NMFS.GAR.EFH.Consultation@noaa.gov, upon obtaining sufficient information. FHWA/state DOT must receive a response from GARFO HCD or wait at least 30 calendar days to proceed under the programmatic EFH consultation. FHWA will compile the information from the completed Verification Forms for the purposes of tracking and annual monitoring. FHWA/state DOT must include the completed Verification Form as part of a permit application with any other federal agency, such as U.S. Army Corps of Engineers or U.S. Coast Guard, to confirm that EFH consultation is complete.

Project Activity Type

1. ■ Bridge repair, demolition, and replacement
2. ☐ Culvert repair and replacement
3. ☐ Docks, piers, and waterway access projects
4. ☐ Slope stabilization

Transportation Project Information

Project Name:	Wallops Island Bridge	Project Number:	NASA 1(9)
Project Sponsor:	FHWA/NASA	Contact Person:	Ryan Kimberley
Email:	ryan.kimberley@dot.gov	Phone:	703-404-6240
Latitude (e.g., 42.625884):		37.852000	
Longitude (e.g., -70.646114):		-75.490000	
City/Town, State:	Assawoman, VA	Waterway:	Cat Creek
Project Description and Purpose:	The project will replace the Wallops Island Causeway Bridge. The bridge spans a tidal waterway and tidal mudflats. Realignment of the causeway will occur at the bridge approaches. The existing bridge will be demolished. A temporary bridge may be required for access. Utilities will be relocated by attaching them to the new bridge or underground via horizontal drilling.		
Anticipated Project Start Date:	6/1/24	Anticipated Project End Date:	12/31/29
Total area of impact to EFH (in acres): Include locus map with area of impact.		5.11	
Area of impacts to sensitive habitats (in square feet):		No impacts to submerged aquatic vegetation (SAV) or oyster reefs allowed.	
Natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel):		0	
Salt marsh:		43,560	
Areas containing shellfish (excluding oyster reefs):		5,000	
Intertidal mudflats:		174,240	
Area of impact to diadromous fish habitat:		0	

Potential Stressors Caused by the Activity (Check all that apply based on activity type)

☒ Underwater Noise
☒ Impingement/Entrainment and Entanglement
☒ Water Quality/Turbidity
☒ Habitat Alteration
☒ Vessel Traffic

EFH Conservation Recommendation Checklist

FHWA/state DOT will indicate how the project addresses each of the programmatic EFH conservation recommendations, by selecting the appropriate check box and providing a brief explanation where necessary. If the project is not in compliance with a particular programmatic EFH conservation recommendation and FHWA/state DOT has still determined that the effects of a project on EFH are not substantial and the project is otherwise consistent with the FHWA programmatic EFH consultation, provide justification below under the conservation recommendations that is not included.

Underwater Noise

☐ Check here if the EFH conservation recommendations in this section are not applicable because the project will not create underwater noise as a stressor. Proceed to the next stressor.

1. Use a soft start each day of pile driving, after a break of 30 minutes or more, and if any increase in pile installation or removal intensity is required. Build up power slowly from a low energy start-up over a 20-minute period to warn fish to leave the vicinity. This buildup shall occur in uniform stages to provide a constant increase in output.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

☒ Met:
- ☐ Shown on project plans
- ☒ Included in description, other terms and conditions

2. Noise-generating work conducted in diadromous streams within the spring diadromous fish TOY restriction listed in Appendix D must be isolated behind sealed, dewatered cofferdams, to avoid impeding fish migration.

☒ Not met:
- ☒ Not applicable, provide reasoning: no diadramous fish identified in EFH mapper
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

Impingement/Entrainment and Entanglement

☐Check here if the EFH conservation recommendations in this section are not applicable because the project will not lead to impingement/entrainment and entanglement as a stressor. Proceed to the next stressor.

3. Turbidity control measures must be properly secured and monitored to ensure aquatic species are not entangled or trapped in the project area.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

◼ Met:
- ☐ Shown on project plans
- ◼ Included in description, other terms and conditions

4. Temporary intakes related to construction must be equipped with mesh size screening and approach velocity appropriate for the species and life stage anticipated. Per the NMFS Anadromous Salmonid Passage Facility Design manual, screen openings must not exceed 3/32 inch and screen approach velocity must be less than .25 feet per second (ft/sec).
    - In New York, New Jersey, Delaware, Maryland, and Pennsylvania, 2 millimeter (mm) wedge wire screens must be used with a maximum intake velocity of 0.5 feet per second (ft/sec).
    - In Virginia, a 1 mm wedge wire with a maximum intake velocity of 0.25 ft/sec).

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

◼ Met:
- ☐ Shown on project plans
- ◼ Included in description, other terms and conditions

5. No new permanent surface water withdrawal, water intakes, or water diversions.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

◼ Met:
- ◼ Shown on project plans
- ◼ Included in description, other terms and conditions

Water Quality/Turbidity

☐Check here if the EFH conservation recommendations in this section are not applicable because the project will not negatively affect water quality or create turbidity. Proceed to the next stressor.

6. Install soil erosion, sediment, and turbidity controls and maintain them in effective operating condition during construction. Remove controls upon completion of work, after all exposed soil and other fills, as well as any work waterward of ordinary high water or the high tide line, are permanently stabilized.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

▬ Met:
- ▬ Shown on project plans
- ▬ Included in description, other terms and conditions

7. Install and remove any in-water soil erosion, sediment, and turbidity controls outside the TOY restrictions in Appendix D.

▬ Not met:
- ▬ Not applicable, provide reasoning: No diadromous fish or SAV
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

8. Work that produces greater than minimal turbidity or sedimentation in diadromous streams or EFH must not be done during the TOY restriction(s) in Appendix D.

▬ Not met:
- ▬ Not applicable, provide reasoning: No diadromous fish or streams
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

9. Prevent construction debris and sediment from entering aquatic areas and remove all construction debris and excess/deteriorated materials and dispose of in an upland area.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

▬ Met:
- ☐ Shown on project plans
- ▬ Included in description, other terms and conditions

10. Dredged and/or excavated materials, including any fine-grained materials removed from inside culverts, shall either be moved to an upland location and stabilized to prevent reentry into the waterway or disposed of at a previously approved disposal site.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

▬ Met:
- ☐ Shown on project plans
- ▬ Included in description, other terms and conditions

11. Completely remove and do not reuse existing creosote piles that are affected by project activities and do not install new creosote piles.

▬ Not met:
- ▬ Not applicable, provide reasoning: no known wooden piles exist in the project area
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

12. Coat any chemically or pressure treated piles (CCA, ACQ, etc.) with an impact-resistant, biologically inert substance. Coat the piles at the point of manufacture, not on site.

▬ Not met:
- ▬ Not applicable, provide reasoning: no wooden piles are proposed
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

13. Derelict, degraded, or abandoned piles, except for those inside of existing work footprints for piers, must be completely removed or cut and driven three feet below the surface.

▬ Not met:
- ▬ Not applicable, provide reasoning: no wooden piers are known to exist
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

14. Ensure that raw concrete does not contact the water; wet pours of concrete must be confined within sealed forms until the concrete is set or pre-cast members installed.

☐ Not met:

☐ Not applicable, provide reasoning:
☐ Project is unable to accommodate, provide justification:

☒ Met:
☐ Shown on project plans
☒ Included in description, other terms and conditions

Habitat Alteration

☐Check here if the EFH conservation recommendations in this section are not applicable because the project will not cause habitat alteration. Proceed to the next stressor.

15. Remove temporary and/or obsolete structures and fills in their entirety. Use geotextile barriers prior to placement of temporary fill material to ensure complete removal.

☐ Not met:
☐ Not applicable, provide reasoning:
☐ Project is unable to accommodate, provide justification:

☒ Met:
☐ Shown on project plans
☒ Included in description, other terms and conditions

16. Install a riprap bedding layer (such as a gravel filter blanket or geotextile) prior to riprap placement to prevent underlying soils from washing through the riprap during high water.

☐ Not met:
☐ Not applicable, provide reasoning:
☐ Project is unable to accommodate, provide justification:

☒ Met:
☒ Shown on project plans
☒ Included in description, other terms and conditions

17. Return areas impacted by temporary activities, fills, or structures to pre-construction or better condition, including elevations and substrate, and replant with native species.

☐ Not met:
☐ Not applicable, provide reasoning:
☐ Project is unable to accommodate, provide justification:

☒ Met:
☒ Shown on project plans
☒ Included in description, other terms and conditions

18. Temporary monitoring devices shall be removed and the substrate restored to preconstruction elevations no later than 24 months from initial installation, or upon completion of data acquisition.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

19. Pipelines and cables that cross a waterway must not rest on the substrate. They may be attached to an overwater structure or be buried to allow an area to return to preexisting conditions.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

20. Any fill, including planting media and placement of any seed shellfish, spatted-shell, or cultch must be free of all non-native or invasive species and/or contaminants. An invasive species control plan must be part of the project if the transportation agency cannot guarantee this.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

21. Prevent dislodging of coir logs, mats, or native oyster shell.

☒ Not met:
  ☐ Not applicable, provide reasoning:
  ☒ Project is unable to accommodate, provide justification: low concentrations of oyster shells will be relocated in coordination with VMRC

☐ Met:
  ☐ Shown on project plans
  ☐ Included in description, other terms and conditions

22. Incorporate measures to increase the ambient light transmission under overwater structures.

☒ Not met:
  ☒ Not applicable, provide reasoning: Roadway width has been minimized to the extent practicable but the bridge deck is opaque

☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

23. The lowermost part of floating docks must be ≥ 18 inches above the substrate at all times, to avoid grounding and propeller scour and to provide adequate circulation and flushing.

☒ Not met:
- ☒ Not applicable, provide reasoning: no floating docks are proposed
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

24. Conduct and submit pre-dredge benthic biological surveys to determine benthic communities present and conduct post-dredge surveys to ensure targeted depths have been reached and to determine benthic recovery.

☒ Not met:
- ☒ Not applicable, provide reasoning: No dredging is proposed;
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

25. Grain size of any sediment used as part of habitat restoration must be the same size or larger than the native material at the site.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

☒ Met:
- ☐ Shown on project plans
- ☒ Included in description, other terms and conditions

26. If rock relocation is necessary, move them to an area of equivalent depth and substrate.

☒ Not met:
- ☒ Not applicable, provide reasoning: no rock relocation proposed.
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans

☐ Included in description, other terms and conditions

27. Incorporate natural habitats (e.g., living shorelines) and soft approaches (e.g., vegetative plantings and large woody debris) into the stabilization design in addition to or instead of hardened structures. See NOAA's Guidance for Considering the Use of Living Shorelines for more information.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

☒ Met:
- ☐ Shown on project plans
- ☒ Included in description, other terms and conditions

Sensitive Habitats (SAS, natural rocky habitats, intertidal areas, and areas containing shellfish)

28. Locate all temporary structures, construction, access, and dewatering actives outside of sensitive habitats.

☒ Not met:
- ☐ Not applicable, provide reasoning:
- ☒ Project is unable to accommodate, provide justification: the bridge construction and demolition require impacts parallel to the bridges in sensitive area

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

29. Prior to construction, identify and mark in the field any SAV at the project site. An SAV survey is required for activities adjacent to mapped or known SAV if a survey has not been conducted in three years.

☒ Not met:
- ☒ Not applicable, provide reasoning: mapped SAV is not found on the site
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

30. Provide compensatory mitigation for all permanent and temporary impacts to sensitive habitats. This could include a contribution to an existing in-lieu fee program. When impacts are unavoidable:
    - conduct a biological survey to map the coverage of the sensitive habitats;
    - develop a compensatory mitigation plan for biological resource losses, including success criteria, monitoring plan, and long-term maintenance plan;

- submit the results of the biological survey and the mitigation plan to GARFO HCD for review; and
- undertake compensatory mitigation prior to or concurrent with any impacts to sensitive habitat.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

31. Where construction requires heavy equipment operation in or across wetlands or mudflats, the equipment shall have low ground pressure (typically ≤ 3 pounds per square inch); be placed on construction timber mats that are adequate to support the equipment; or be operated on dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats must not be dragged into position.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

32. Habitat restoration or mitigation projects must not result in a permanent conversion or loss of sensitive habitats.

☐ Not met:
  ☐ Not applicable, provide reasoning:
  ☐ Project is unable to accommodate, provide justification:

☒ Met:
  ☐ Shown on project plans
  ☒ Included in description, other terms and conditions

33. No dredging shall occur within:
  - intertidal areas;
  - 100 feet of SAV; or
  - 25 feet of SAS, natural rocky habitats, or areas containing shellfish.

☒ Not met:
  ☒ Not applicable, provide reasoning: no dredging is proposed
  ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

34. The height of docks and piers must be at least four feet above salt marsh substrate and must be greater than or equal to the width of the deck, to minimize shading impacts. The height must be measured from the marsh substrate to the bottom of the longitudinal support beam.

☒ Not met:
- ☒ Not applicable, provide reasoning: no docks or piers
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

35. Outlets must not discharge directly into sensitive habitats.

☒ Not met:
- ☐ Not applicable, provide reasoning:
- ☒ Project is unable to accommodate, provide justification:

The new bridge may not be able to avoid direct discharge of deck runoff. FHWA conducted a preliminary hydrology and stormwater management analysis which determined that full on-site collection and treatment of stormwater is not feasible due to the high water table and low elevation of this coastal site. The design engineers may be able to provide partial onsite treatment supplemented by the purchase of Nutrient Credits. Another option under consideration is the use of direct discharge scuppers with all stormwater management treatment requirements achieved through Nutrient Credit purchases. Since the existing bridge uses direct discharge, and there is no proposed increase in roadway capacity for the bridge, the amount of on-site pollutants discharged from the bridge is not expected to increase significantly.

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

Fish Passage/Migration Habitat

36. Design replacement crossings to provide diadromous and resident fish and aquatic organism passage. Structures must:
    - provide sufficient water depth and maintain suitable water velocities during migration periods; and
    - maintain or replicate natural stream channel and flow conditions.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

☒ Met:
- ☒ Shown on project plans
- ☒ Included in description, other terms and conditions

37. Incorporate climate change projections into the project design. Use the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) 8.5/high greenhouse gas emission scenario and RCP 4.5/intermediate greenhouse gas emission scenario (IPCC 2014) and the global mean and regional sea level rise projections for

intermediate-high and extreme scenarios referenced in Sweet *et al*. (2017) in design calculations for replacement structures.

☒ Not met:
- ☐ Not applicable, provide reasoning:
- ☒ Project is unable to accommodate, provide justification: FHWA used USACE modeling to incorporate climate change

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

38. Replaced or upgraded crossings must be "in kind" or go up in order of preference set out in NMFS' Anadromous Salmonid Passage Facility Design:
    - Road abandonment and reclamation or road realignment to avoid crossing the stream.
    - Bridge or stream simulation spanning the stream flood plain, providing long-term dynamic channel stability, retention of existing spawning areas, maintenance of benthic invertebrate production, and minimized risk of failure. If a stream crossing is proposed in a segment of stream channel that includes a salmonid spawning area, only full-span stream simulation designs are acceptable.
    - Embedded pipe culvert, bottomless arch designs or non-floodplain spanning stream simulation.
    - Hydraulic design method, associated with more traditional culvert design approaches- limited to low stream gradients (0 to 1%) or for retrofits.
    - Culvert designed with an external fishway (including roughened channels) for steeper slopes.
    - Baffled culvert or internal weirs- to be used only for when other alternatives are infeasible.

☒ Not met:
- ☒ Not applicable, provide reasoning: replacement bridge; not AOP or anadromous area
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

39. For activities that require soil erosion, sediment, and turbidity controls
    - in non-tidal streams containing diadromous fish:
        i. They must not encroach >25% of the stream width measured from ordinary high water during the diadromous TOY restriction; and
        ii. They must maintain safe, timely, and effective downstream fish passage throughout the project.
    - in tidal waters:
        i. They must not encroach >50% of a tidal stream's width as measured from mean high water.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

▬ Met:
- ▬ Shown on project plans
- ☐ Included in description, other terms and conditions

Vessel Traffic

☐Check here if the EFH conservation recommendations in this section are not applicable because the project will not use vessels.

40. Project vessels shall be operated in adequate water depths to avoid propeller scour and grounding at all tides. Shallow draft vessels will be used in shallow areas to maximize the navigational clearance between the vessel and the bottom substrate. Spuds may be used to elevate the vessel.

☐ Not met:
- ☐ Not applicable, provide reasoning:
- ☐ Project is unable to accommodate, provide justification:

▬ Met:
- ☐ Shown on project plans
- ▬ Included in description, other terms and conditions

41. Project vessels shall not be moored in or use spuds in SAV or be located in such a way that the vessel could shade SAV.

▬ Not met:
- ▬ Not applicable, provide reasoning: SAV not present
- ☐ Project is unable to accommodate, provide justification:

☐ Met:
- ☐ Shown on project plans
- ☐ Included in description, other terms and conditions

NEW CLAUSE

Other Justification for Use of the Programmatic EFH Consultation

If the project is outside of the covered activities in the programmatic EFH consultation (i.e., is one of the actions described in the Excluded Activities list noted below) and FHWA/state DOT believes the effects are not any more significant and that the project should be eligible for programmatic EFH consultation, provide additional justification in the space below. FHWA/state DOT must provide appropriate rationale and GARFO HCD must review and approve it. The automatic concurrence period does not apply for transportation activities in this section that fall outside of the programmatic EFH consultation as described.

◯ The project is not listed as an excluded activity.

◉ The project is listed as an excluded activity.

Indicate the activity number from the list below (1 through 21): 1,10,20

Provide additional justification on why the activity should be eligible:

Project will replace existing bridge; impacts will be minimized; wetland mitigation and environmental permitting will be completed. Minor causeway realignment near the abutments is required.

Activities that Require Individual Consultation

1. Any work (including anchoring) that results in impacts to:
   - existing or historically mapped submerged aquatic vegetation (SAV) beds or areas within 100 feet of existing or historically mapped SAV beds;
   - l,000 square feet of salt marsh, areas containing shellfish, and intertidal areas;
   - l00 square feet of natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel);
2. Stream channelization.
3. Any temporary structures, construction access, and dewatering activities proposed to be in place for ≥ two years.
4. Slip-lining or invert lining existing culverts.
5. Any permanent structures longer than 150 linear feet over salt marsh.
6. Construction of new or expansion of existing boating facilities17 or ferry terminals.
7. Independent pedestrian trails or bridges located directly adjacent to an existing crossing.
8. New or improvement dredging.
9. Any nearshore disposal or beach nourishment activities.
10. New fill/stabilization placed below mean low water in excess of 200 linear feet (lf).
11. Replacement or maintenance of:
    - sloped stabilization structures > 200 lf and waterward of the existing toe, or
    - vertical structures > 18 inches waterward of the existing face and > 200 lf.
12. In-water utility lines ≥ l00 lf installed by trench excavation, or 2 200 lf installed by jetplow, fluidization or other direct burial methods.
13. Thin layer deposition as a part of wetland restoration.
14. Placement of any seed shellfish, spatted-shell, or cultch in SAS.
15. Any exploratory trenching or other similar survey activities.
16. Airgun seismic activities.
17. Any new permanent surface water withdrawal, water intakes, or water diversions.
18. Any blasting or use of explosives that affects EFH or diadromous species habitats.
19. Construction of new bridges or culverts, where no crossing existed previously.
20. Any new or replacement causeways (raised roadways across waters or wetlands).
21. Any in-water work on dams, tide gates, or breakwaters.

FHWA's Determination of Effects to Essential Fish Habitat and Signature
After reviewing the programmatic EFH conservation recommendations in Appendix A, FHWA/ state DOT will select the appropriate determination:

- ◯ The activity is in compliance with all programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation and adverse effects to EFH will not be substantial.

- ◯ The activity is not in compliance with all of the programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation, however, the justification below demonstrates that the adverse effects to EFH are not substantial. This does not apply to EFH conservation recommendations that are not applicable to the project.

Use the electronic fillable fields to include the name and signature of the FHWA/state DOT preparing this Verification Form, along with the date.

FHWA/Eastern Federal Lands	*RyanKimberley*
FHWA/state DOT Name	Signature

12/8/23
Date

By providing your determination and signature, you are certifying that to the best of your knowledge the information provided in this form is accurate and based upon the best available scientific information. This form must be filled out and signed by FHWA or state DOT staff, as an officially designated non-federal representative. Do not lock the form when saving, as HCD will be unable to sign and finalize. Email this Verification Form as a fillable PDF to NMFS.GAR.EFH.Consultation@noaa.gov.

GARFO HCD Determination and Signature (To be filled out by NMFS)
After receiving the Verification Form, GARFO HCD will contact FHWA/state DOT with any concerns. HCD will email the completed form back to the FHWA/state DOT for record keeping.

- ◯ GARFO HCD concurs with FHWA's determination that the proposed project is consistent with the programmatic EFH consultation (without the need for justification).

- ◯ GARFO HCD concurs with FHWA's determination that the proposed project is consistent with the programmatic EFH consultation, with justification described above.

- ◯ GARFO HCD does not concur with FHWA's determination that the project is consistent with the programmatic EFH consultation. FHWA/state DOT must conduct additional coordination with GARFO HCD and a separate individual EFH consultation may be required.

GARFO HCD Name	Signature
Date	

EFH Species Information

Essential Fish Habitat (EFH) Species information

Habitat

Tidal Wetlands

Tidal wetlands provide food, refuge and nursery habitat for federally managed species and support forage fish and invertebrates that form the base of the food chain for commercially and recreationally valuable fish. Tidal wetlands also provide shoreline erosion protection, flood attenuation and water quality protection by filtering runoff (NMFS and FHWA 2018).

Intertidal Mudflats

Mudflats serve as EFH for multiple managed species during spawning, juvenile, and/or adult life history stages. They can serve as nursery and forage areas and support benthic communities that provide prey (NMFS and FHWA 2018).

Shellfish Areas

Shellfish areas provide habitat for many fish species, improve water quality through water column filtration, and serve to stabilize sediment, as well as being an important food source for managed species (NMFS and FHWA 2018). Shellfish are particularly susceptible to elevated levels of suspended sediments which can interfere with spawning success, feeding, and growth (Wilber and Clarke 2001).

Shallow Water Habitat

Shallow water coastal, marine, and estuarine habitats are important for multiple managed fish species for spawning, juvenile, and/or adult life history stages. Because of their shallow depths, seasonally warm water temperatures, and proximity to nutrients derived from runoff, these habitats are highly productive (NMFS and FHWA 2018).

EFH Species Descriptions

Atlantic butterfish (*Peprilus triacanthus*)

Butterfish are a pelagic fish species that form loose schools, often near the surface, and migrate seasonally in response to water temperature. They winter near the edge of the continental shelf in the Middle Atlantic Bight and migrate inshore in the spring into southern New England and Gulf of Maine waters. During summer, butterfish occur over the entire Mid-Atlantic shelf from sheltered bays and estuaries out to about 200 m (656 ft) in depth. Schools are often seen on shallow flats and sheltered bays and estuaries. Spawning in the Middle Atlantic Bight occurs from May through October. In late fall, butterfish move southward and offshore in response to falling water temperatures. Atlantic butterfish are frequently found over sand, mud, and mixed substrates (Cross et al. 1999).

EFH for adult Atlantic butterfish is pelagic (water column) habitat in inshore estuaries and embayments from Massachusetts Bay to Pamlico Sound, North Carolina, inshore waters of the Gulf of Maine and the South Atlantic Bight, on Georges Bank, on the inner continental shelf south of Delaware Bay, and on the outer continental shelf from southern New England to South Carolina.

EFH for adult Atlantic butterfish is generally found over bottom depths between 10 m (33 ft) and 250 m (820 ft) where water salinities are above 5 parts per thousand (ppt) (MAFMC 2011).

Atlantic herring (*Clupea harengus*)

Atlantic herring are a pelagic, schooling, species than undergo complex north-south migrations for feeding, spawning, and overwintering. This species overwinters in the Mid-Atlantic region, primarily in offshore waters and may be found in Mid-Atlantic near shore waters in the spring (Stevenson and Scott 2005); therefore, this species is most likely to be in the Project Area vicinity in spring. EFH for adult Atlantic herring is sub-tidal pelagic habitat with maximum depths of 300 m (984 ft). They generally avoid low salinities (NEFMC and NMFS 2017).

Black sea bass (*Centropristis striata*)

Black sea bass are a temperate, coastal fish species whose habitat is usually defined by structures such as reefs and shellfish beds. Juveniles become demersal (close to the sea floor) and utilize estuaries when water temperatures warm during summer months to take advantage of seasonally abundant fish and invertebrate prey. Juveniles use estuarine shallow, hard bottom habitat with structure, which may include shellfish beds, sponge beds, sea grass beds, and cobble, as nurseries. Juveniles are not as common on open un-vegetated bottoms (Drohan et al. 2007). Within estuaries, older juveniles use estuarine channels and habitats < 10 m (33 ft) deep but young of the year may use shallower shoal (submerged ridge) habitats (approximately 1 m [3 ft]). Primary summer habitat for adults is located on the nearshore continental shelf and they may use complex habitats in the lower reaches of large estuaries which are relatively shallow (approximately 5 m [16 ft]) (Drohan et al. 2007). Unlike juveniles, adults tend to enter only larger estuaries and are most abundant along the coast. Eggs and larvae are largely absent in estuaries (Drohan et al. 2007).

Inshore juvenile black sea bass EFH includes estuaries where black sea bass are common, abundant, or highly abundant per the Estuarine Living Marine Resources (ELMR) database, including Chincoteague Bay (Nelson and Monaco 2000). Juveniles are found in the estuaries in the summer and spring, generally in salinities greater than 18 ppt and coastal areas, but winter offshore. Juvenile black sea bass are usually found in association with rough bottom, shellfish and eelgrass beds, man-made structures in sandy shelly areas; offshore clam beds and shell patches may also be used during wintering (MAFMC and ASFMC 2002). Inshore adult EFH includes estuaries where black sea bass are common, abundant, or highly abundant per the ELMR database, including Chincoteague Bay (Nelson and Monaco 2000). Adults are generally found in estuaries from May to October. Wintering adults (November through April) are generally offshore. Structured habitats (natural and man-made), sand and shell are typically the preferred substrate (MAFMC and ASFMC 2002).

Bluefish (*Pomatomus saltatrix*)

Bluefish are a pelagic, schooling fish species common to temperate waters. In the Mid-Atlantic, both juveniles and adults are observed in large estuaries and bays, as well as in the offshore portions of the continental shelf. Bluefish migrate seasonally to warm waters. Migrations in the spring are directed north towards warming coastal waters, while fall-winter migrations are directed

towards waters south of Cape Hatteras, North Carolina. Eggs and larvae occur only in oceanic waters (Fahay et al. 1999).

Juvenile and adult bluefish EFH includes all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Generally, juvenile bluefish occur in Mid-Atlantic estuaries from May to October, and adult bluefish occur in Mid-Atlantic estuaries from April to October generally in salinities over 25 ppt (MAFMC and ASMFC 1998).

Clearnose skate (*Raja eglanteria*)

The clearnose skate occurs along the eastern United States coast from Nova Scotia to Florida. North of Cape Hatteras, clearnose skate move inshore and northward along the continental shelf during the spring and early summer, and offshore and southward during fall and early winter (Packer et al. 2003a). They have been found in Chincoteague Bay from May to November. The clearnose skate is found on soft bottoms along the continental shelf but may also occur on rocky or gravelly bottoms (Packer et al. 2003a). Juvenile and adult EFH includes sub-tidal benthic habitats in coastal and inner continental shelf waters including high salinity (>25 ppt) zones of Chincoteague Bay, from shoreline to 30 m (98 ft) (juvenile) or 40 m (131 ft) (adult), primarily on mud and sand, but also on gravelly and rocky bottom (NEFMC and NMFS 2017).

Summer flounder (*Paralichthys dentatus*)

The center of summer flounder abundance is found within the Middle Atlantic Bight from Cape Cod, Massachusetts to Cape Hatteras, North Carolina. Summer flounder exhibit strong seasonal inshore-offshore movements. Adult and juvenile summer flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the fall and winter. In Virginia, adult summer flounder use the Eastern Shore seaside lagoons and inlets as summer feeding areas. These fish usually concentrate in shallow warm water at the upper reaches of the channels and larger tidal creeks in April, then move toward the inlets as spring and summer progress (Packer et al. 1999). Juvenile summer flounder use estuarine marsh creeks as nursery habitats, as well as seagrass beds, mud flats and open bay areas. In Virginia, the most important nursery areas for summer flounder include the lagoon systems behind the barrier islands on the seaside of the Eastern Shore. Young-of-the-year enter these nursery areas in early spring and remain there until fall when water temperatures drop. Summer flounder are specifically noted for utilizing artificial reef habitats, including concrete infrastructure projects (Packer et al. 1999).

EFH includes estuaries where black sea bass are common, abundant, or highly abundant per the ELMR database, including Chincoteague Bay (Nelson and Monaco 2000).

Windowpane flounder (*Scophthalmus aquosus*)

Windowpane flounder are a demersal species and are generally found in shallow waters with sand to sand/silt or mud substrates. They are most abundant from 1-2 m (3-6 ft) to 56 m (184 ft). While they inhabit nearshore waters, their occurrence in estuaries is not well documented. Adults may migrate to nearshore or estuarine habitats in the southern Middle Atlantic Bight during spring through fall (Chang et al. 1999). Windowpane are sensitive to hypoxic conditions and rarely found where dissolved oxygen concentrations are less than 3 mg/l. Juvenile and adult EFH includes

intertidal and sub-tidal benthic habitats in estuarine, coastal marine, and continental shelf waters including high salinity (>25 ppt) zones of Chincoteague Bay, from the intertidal zone to 60 m (197 ft) (juvenile) or 70 m (230 ft) (adult) primarily on mud and sand substrate (NEFMC and NMFS 2017).

Winter skate (*Leucoraja ocellata*)

While more common in northern waters, winter skate distribution extends south to northern North Carolina. Juveniles and adults may be found in the region in winter and in the spring concentrated nearshore (Packer et al 2003b). Juvenile EFH includes sub-tidal benthic habitats, coastal waters, and continental shelf waters including high salinity (>25 ppt) zones of Chincoteague Bay, from shoreline to 90 m (295 ft) (juvenile) or 80 m (262 ft) (adult) primarily on sand and gravel substrate, although they are also found on mud (NEFMC and NMFS 2017).

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EFH Conservation Recommendations

Appendix G.2 – EFH Conservation Recommendations

FHWA Programmatic Essential Fish Habitat Consultation for Select Transportation Actions in the NMFS Greater Atlantic Region EFH Conservation Recommendations

Underwater Noise EFH Conservation Recommendations:

- The project shall use a soft start each day of pile driving, after a break of 30 minutes or more, and if any increase in pile installation or removal intensity is required. The project shall build up power slowly from a low energy start-up over a 20-minute period to warn fish to leave the vicinity. This buildup shall occur in uniform stages to provide a constant increase in output.

Impingement/Entrainment and Entanglement EFH Conservation Recommendations:

- Turbidity control measures shall be properly secured and monitored to ensure aquatic species are not entangled or trapped in the Project Area.
- If required, temporary intakes related to construction shall be equipped with mesh size screening and approach velocity appropriate for the species and life stage anticipated.
- There shall be no new permanent surface water withdrawals, water intakes, or water diversions.

Water Quality/Turbidity EFH Conservation Recommendations:

- The project shall install soil erosion, sediment, and turbidity controls and maintain them in effective operating condition during construction. The project shall remove controls upon completion of work, after all exposed soil and other fills, as well as any work waterward of ordinary high water or the high tide line, are permanently stabilized.
- The project shall prevent construction debris and sediment from entering aquatic areas and remove all construction debris and excess/deteriorated materials and dispose of in an upland area.
- Dredged and/or excavated materials shall be either moved to an upland location and stabilized to prevent reentry into the waterway or disposed of at a previously approved disposal site.
- The project shall ensure that raw concrete does not contact the water; wet pours of concrete shall be confined within sealed forms until the concrete is set or pre-cast members installed.

Habitat Alteration EFH Conservation Recommendations:

- The project shall remove temporary and/or obsolete structures and fills in their entirety. The project shall use geotextile barriers prior to placement of temporary fill material to ensure complete removal.

- If required, the project shall install a riprap bedding layer (such as gravel filter blanket or geotextile) prior to riprap placement to prevent underlying soils from washing through the riprap during high water.
- The project shall return areas impacted by temporary activities, fills, or structures to pre-construction or better condition, including elevations and substrate, and replant with native species.
- If required, temporary monitoring devices shall be removed and the substrate restored to preconstruction elevations no later than 24 months from initial installation, or upon completion of data acquisition.
- Pipelines and cables that cross a waterway shall not rest on the substrate. They may be attached to an overwater structure or be buried to allow an area to return to preexisting conditions.
- Any fill, including planting media and placement of any seed shellfish, spatted-shell, or cultch must be free of all non-native or invasive species and/or contaminants. An invasive species control plan must be part of the project if this cannot be guaranteed.
- Grain size of any sediment used as part of habitat restoration shall be the same size or larger than the native material at the site.
- The project shall incorporate natural habitats (e.g., living shorelines) and soft approaches (e.g., vegetative plantings and large woody debris) into stabilization design in addition to or instead of hardened structures.

Sensitive Habitats (Special Aquatic Sites[1], natural rocky habitats, intertidal areas, and areas containing shellfish) EFH Conservation Recommendations:

- The project shall provide compensatory mitigation for all permanent and temporary impacts to sensitive habitats. This could include a contribution to an existing in-lieu fee program. When impacts are unavoidable:
    - Conduct a biological survey to map the coverage of the sensitive habitats;
    - Develop a compensatory mitigation plan for biological resource losses, including success criteria, monitoring plan, and long-term maintenance plan;
    - Submit the results of the biological survey and the mitigation plan to the Greater Atlantic Regional Fisheries Office (GARFO) Habitat Conservation Division (HCD) for review; and

[1] Special Aquatic Sites are areas that are afforded additional protection under Section 404 of the Clean Water Act (CWA). They are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E and include fish and wildlife sanctuaries and refuges, wetlands, mudflats, SAV beds, and riffle and pool complexes.

    - Undertake compensatory mitigation prior to or concurrent with any impacts to sensitive habitat.

- Where construction requires heavy equipment operation in or across wetlands or mudflats, the equipment shall have low ground pressure (typically ≤ 3 pounds per square inch); be placed on construction timber mats that are adequate to support the equipment; or be operated on dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats shall not be dragged into position.
- Habitat restoration or mitigation shall not result in a permanent conversion or loss of sensitive habitats.
- If required, outlets shall not discharge directly into sensitive habitats.

Fish Passage/Migration Habitat EFH Conservation Recommendations:

- All replacement crossings shall provide sufficient water depth and maintain suitable water velocities during migration periods and maintain or replicate natural stream channel and flow conditions.
- The project shall incorporate climate change projections into the project design. [2]
- Soil erosion, sediment, and turbidity controls shall not encroach > 50% of a tidal stream's width as measured from mean high water.

Vessel Traffic EFH Conservation Recommendations:

- Project vessels shall be operated in adequate water depths to avoid propeller scour and grounding at all tides. Shallow draft vessels shall be used in shallow areas to maximize the navigational clearance between the vessel and the bottom substrate. Spuds may be used to elevate the vessel.

[2] Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) 8.5/high greenhouse has emission scenario and RCP 4.5/intermediate greenhouse gas emission scenario (IPCC 2014) and the global mean and regional sea level rise projections for intermediate-high and extreme scenarios referenced in Sweet et al. (2017) (revised Sweet et al. 2022) in design calculations for replacement structures.

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