

Please provide the following information, and submit to the NOAA DM Plan Repository.

### Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

## 1. General Description of Data to be Managed

### 1.1. Name of the Data, data collection Project, or data-producing Program:

Massachusetts and Rhode Island 2016 FISH (Fish Polygons)

### 1.2. Summary description of the data:

This data set contains sensitive biological resource data for finfish in Massachusetts and Rhode Island. Vector polygons in this data set represent include selected marine, estuarine, and diadromous species of commercial, recreational, ecological and/or conservation interest. Species-specific abundance, seasonality, status, life history, and source information are stored in associated data tables (described below) designed to be used in conjunction with this spatial data layer. This data set is a portion of the ESI data for Massachusetts and Rhode Island. As a whole, the ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil, and include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

### 1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

### 1.4. Actual or planned temporal coverage of the data:

2014 to 2016

### 1.5. Actual or planned geographic coverage of the data:

W: -71.8944, E: -69.6609, N: 42.8876, S: 40.9459

### 1.6. Type(s) of data:

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*  
Map (digital)

### 1.7. Data collection method(s):

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

### 1.8. If data are from a NOAA Observing System of Record, indicate name of system:

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

ESI Program Manager

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

**2.4. E-mail address:**

orr.esi@noaa.gov

**2.5. Phone number:**

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

ESI Program Manager

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

**5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Process Steps:

- 2016-01-01 00:00:00 - Step 1, Selecting species and data sources for FISH feature class: Fish species distributions and associated data were provided by the Massachusetts of Division of Marine Fisheries (MDMF), Massachusetts Division of Fisheries and Wildlife (MADFW), Northeast Fisheries Science Center (NEFSC), and Rhode Division of Fish and Wildlife (RI DFW), and through interviews with local resource experts. All digital data received from MA and RI for the Fish Layer were edited as necessary to match NOAA ESI Shoreline layer included in this atlas. Fish species distributions and associated data were provided by the Massachusetts of Division of Marine Fisheries (MDMF), Massachusetts Division of Fisheries and Wildlife (MADFW), Northeast Fisheries Science Center (NEFSC), and Rhode Division of Fish and Wildlife (RI DFW), and through interviews with local resource experts. All digital data received from MA and RI for the Fish Layer were edited as necessary to match NOAA ESI Shoreline layer included in this atlas.

- 2016-01-01 00:00:00 - Step 2, Developing ESI data for freshwater and diadromous ( migratory) fish species: Freshwater fish species in Rhode Island were mapped using collection point data and expert input provided by Alan Libby of RI DFW. American brook lamprey is limited to the Blackstone River and a few of its tributaries and was assigned the mapping qualifier of “Vulnerable Occurrence”. Freshwater species in Massachusetts were mapped using the 2016 Coldwater Fisheries Resources (CFRs) data layer and accompanying species list provided by MADFW. Diadromous fish species included in this atlas were mapped primarily using data and local resource expert input from RI DFW Freshwater and Diadromous Fisheries, MDMF, MADFW Fisheries, and the 2015 MA SWAP. Marine distribution was informed by trawl and seine survey data provided by MDMF and RI DFW, and NROC’s 2016 habitat-based density models. Atlantic salmon have been extirpated in Rhode Island primarily by the construction of dams that create barriers to upstream spawning habitat. Their presence now is the result of the state’s stocking efforts (fry and smolts) for restoration in the Pawcatuck River watershed. Distribution polygons for these areas of Atlantic salmon were assigned the mapping qualifier of “Harvest Area”. The stocked fish eventually migrate downstream to sea, and a few years later returning adults are trapped at the Potter Hill fishway and taken to a hatchery, where they are held until fall for spawning ( Libby, 2015 RI WAP). There has been limited success restoring Atlantic salmon in Massachusetts and populations may be occurring in the Merrimack and nearby river systems. Distribution in these areas was mapped using CFRs data and assigned the mapping qualifier of “Spawning Area”. General distribution of Atlantic sturgeon (federally threatened) in Rhode Island was mapped in Narragansett Bay and offshore waters. Data for federally and state-listed sturgeon species in Massachusetts was provided by MADFW NHESP and is included in the atlas as “ Rare sturgeon” with the mapping qualifier of “Vulnerable Occurrence”, though it should be noted that these are areas of spawning as well. Spawning areas for striped bass were mapped using information from USFWS species profiles. Sea lamprey populations are declining in Massachusetts due to loss of spawning and rearing habitat; this species was mapped using CFRs data and assigned the mapping

qualifier of “Vulnerable Occurrence”. Known and potential spawning areas and migratory routes for American shad and river herring in Rhode Island were provided by diadromous fish experts at RI DFW. Spawning areas for American shad, river herring, and rainbow smelt were mapped in Massachusetts primarily using point data from the 2011 Diadromous Fish Habitat Restoration Priority List (under revision) and expert input provided by Brad Chase, MDMF. Migration areas for the American eel were also mapped using fish passage data and supplemented by species profiles in the 2015 MA SWAP. Experts at RI DFW note that the inland distribution maps for brook trout primarily illustrate potential areas where it may be found when environmental conditions are suitable (e.g. water temperature). Brook trout (sea run) may coexist in the same river systems as resident brook trout, but spawning and migratory areas have not yet been specifically identified.

- 2016-01-01 00:00:00 - Step 3, Developing ESI data for estuarine and marine fish species: Distribution, abundance, and seasonality of marine fish species was based primarily on data and expert input provided by RI DFW Marine Fisheries, URI Graduate School of Oceanography (GSO), MDMF, and NROC. Rhode Island coverages were informed by datasets from the following three fishery independent surveys conducted by RI DFW Marine Fisheries: 1) RI Coastal Fishery Resource Assessment Trawl Survey; 2) RI Narragansett Bay Juvenile Finfish Beach Seine Survey; and 3) RI Coastal Pond Juvenile Finfish Beach Seine Survey. Data collected by the URI GSO Fish Trawl Survey from 2006-2015 was also used to support bottom fish presence in Narragansett Bay. This survey consists of two stations and was developed to quantify the seasonal occurrences of migratory fish populations. Inshore coverages in Massachusetts were created using datasets from two surveys conducted by MDMF Resource Assessment Project. A subset of the MDMF trawl dataset was used from 2000 through 2015, and all other survey datasets were used in their entirety through 2015. Offshore coverages in Massachusetts were created using NROC’s 2016 habitat-based density models that characterize the predicted distribution and abundance of fish species. The digital maps sourced from fall bottom trawl surveys performed by NEFSC (1970-2014) were used as a guide to map species presence in federal waters. The majority of estuarine and marine fish species in Rhode Island were mapped to one of the following three spatial coverages: 1) Little Narragansett Bay, Narrow River, coastal ponds including Great Salt Pond (Block Island), and tidal waters in Narragansett Bay north of the COLREGS line; 2) all of the aforementioned areas in addition to a one nautical mile extension seaward from the coastal feature; or 3) all coastal waters. A few estuarine species, e.g. white perch, are mapped in coastal streams and nearshore waters of Narragansett Bay. Atlantic cod adults are present year-round in offshore waters only and were not mapped in waters shallower than 30’; larvae and juveniles, however, are present in all coastal waters January through May. The species group killifish (*Fundulus* spp.) mapped in Rhode Island includes rainwater killifish (*Lucania parva*), striped killifish (*Fundulus majalis*), and spotfin killifish (*Fundulus luciae*). Killifish were mapped to coastal ponds and Narragansett Bay, but rainwater killifish can also be found in coastal streams. The sand tiger, mapped to

all coastal waters, is in need of special protective management measures due to its reduced ability to sustain fishing pressure. The majority of estuarine and marine fish species in Massachusetts were mapped using broad distributions with a clearly defined boundary between state and federal coastal waters.

- 2016-01-01 00:00:00 - Step 4, Assessing relative abundance: Relative abundance values within state waters for species identified as Important Fish Resources by the 2015 Massachusetts Ocean Management Plan were calculated using MDMF trawl survey counts/weights and assigned a concentration value of “Abundant”, “Common”, or “Rare”. Seven of these species (Atlantic cod, black sea bass, haddock, red hake, silver hake, spiny dogfish, and winter skate) have distinct fall and spring concentrations in varying locations such as Cape Cod Bay, Nantucket Sound, and Buzzards Bay. All other species have similar seasonal concentration and distribution year-round: little skate, scup, summer flounder, tautog, windowpane, winter flounder, witch flounder, and yellowtail flounder. Several estuarine fish including the threespine stickleback (state threatened) were mapped solely to bays, estuaries, and tidal rivers, a few species of which were also mapped to coastal streams using CFRs data. The species group tunas was mapped to all coastal waters in Massachusetts using NROC’s 2015 Highly Migratory Essential Fish Habitat (EFH) Overlay data layer and includes bluefin tuna (*Thunnus thynnus*) and yellowfin tuna (*Thunnus albacares*), though the latter is only present in offshore waters south of Islands. The Atlantic wolfish (*Anarhichas lupus*) was mapped to all coastal waters but should be noted for its species of concern status in the Gulf of Maine, as designated by NOAA’s NMFS. The species group searobins (*Prionotus* spp.) was mapped to all coastal waters in both Massachusetts and Rhode Island and includes striped searobin (*Prionotus evolans*) and northern searobin (*Prionotus carolinus*). Two estuarine and marine fish species of importance in Massachusetts and Rhode Island coastal waters but not included in the atlas are Atlantic menhaden (*Brevoortia tyrannus*) and butterfish (*Peprilus triacanthus*). American sand lance was not mapped in Massachusetts, but is a critical prey species for the roseate tern. Additional species present in the AOI but not included in the atlas are cunner (*Tautoglabrus adspersus*), fourspot flounder (*Paralichthys oblongus*), grubby (*Myoxocephalus aeneus*), Gulfstream flounder (*Citharichthys arctifrons*), northern pipefish (*Syngnathus fuscus*), northern sand lance (*Ammodytes dubius*), sea raven (*Hemitripterus americanus*), smallmouth flounder (*Etropus microstomus*), smooth dogfish (*Mustelus canis*), and spotted hake (*Urophycis regia*).

- 2016-01-01 00:00:00 - Step 5, Fish species not included in this atlas: Two estuarine and marine fish species of importance in Massachusetts and Rhode Island coastal waters but not included in the atlas are Atlantic menhaden (*Brevoortia tyrannus*) and butterfish (*Peprilus triacanthus*). American sand lance was not mapped in Massachusetts, but is a critical prey species for the roseate tern. Additional species present in the AOI but not included in the atlas are cunner (*Tautoglabrus adspersus*), fourspot flounder (*Paralichthys oblongus*), grubby (*Myoxocephalus aeneus*), Gulfstream flounder (*Citharichthys arctifrons*), northern pipefish (*Syngnathus fuscus*), northern sand lance (*Ammodytes dubius*), sea raven (*Hemitripterus americanus*), smallmouth flounder (*Etropus microstomus*), smooth dogfish (*Mustelus canis*), and spotted hake (*Urophycis regia*).

Hemirhamphys americanus), smallmouth flounder (*Etropus microstomus*), smooth dogfish (*Mustelus canis*), and spotted hake (*Urophycis regia*).

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.2. Name of organization of facility providing data access
- 7.2.1. If data hosting service is needed, please indicate
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:**

**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/51701>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

## **7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

### **7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

### **7.2. Name of organization of facility providing data access:**

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

[https://response.restoration.noaa.gov/esi\\_download](https://response.restoration.noaa.gov/esi_download)

### **7.3. Data access methods or services offered:**

Data can be accessed by downloading the zipped ArcGIS geodatabase from the Download URL (see Distribution Information). Questions can be directed to the ESI Program Manager (Point Of Contact).

### **7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

## **8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to*

*identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**

Office of Response and Restoration - Seattle, WA

**8.3. Approximate delay between data collection and submission to an archive facility:**

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*