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:

Long Island Sound 2016 FISH

1.2. Summary description of the data:

This feature class resides within the BIOLOGY Feature Data Set of the Long Island Sound - 2016 ESI Geodatabase. It contains vector polygons representing sensitive biological resource data for fish in Long Island Sound. The study area includes Long Island Sound, tidal tributaries, freshwater streams, lakes, and land areas in New York and Connecticut. Vector polygons in this data set represent fish distributions, spawning and nursery areas, concentration areas, migration areas, anadromous fish runs, and harvest areas.

Species-specific abundance, seasonality, status, life history, and source information are stored in associated data tables (described in Entity Attribute Overview below) designed to be used in conjunction with this spatial data layer. This data set is a portion of the ESI data for Long Island Sound.

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: -73.9276, E: -71.7963, N: 41.987, S: 40.6881
This reflects the extent of all land and water features included in the overall Long Island Sound ESI study region. The bounding box for this particular feature class may vary depending on occurrences identified and mapped.

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:

- 2016-06-01 00:00:00 - Selection of Species: Eighty nine species of fish are represented in this atlas, but this is not intended to include all species present within the study area. Fish species depicted in this atlas include select marine, estuarine, diadromous, and freshwater species. Species of conservation interest, ecological importance, or commercial or recreational importance are emphasized. In most cases, terms to describe species abundance include the commonly used terms of rare, common, and abundant. (Citation: A Pictorial Guide to Freshwater Fishes of Connecticut)
- 2016-06-01 00:00:00 - Developing the spatial framework: The central features of the study area include Long Island Sound, one of the Nation\x92s largest estuaries, and adjacent waters. Fish polygons were created based on the natural geography of the estuarine, tidal, and fresh waters of the study area, combined with species information from published reports, field survey data (e.g. trawl and seine), and expert knowledge. The HYDROLOGY layer in this ESI digital atlas, derived from recent aerial imagery, defined the shoreline of Long Island Sound and tidal tributaries, generally up to the extent of tidal influence and/or the first barrier upstream. Rather than adopt a grid cell spatial framework, we divided the estuarine seascape of the study area into commonly used units including Eastern, Western, and Central Basins of Long Island Sound; Western and Eastern Narrows; Fishers Island Sound; Gardiners Bay; Peconic Bay; and Block Island Sound. Coastal embayments were clipped from these mainstem areas and considered as distinct estuarine units along the New York and Connecticut shores. Major tributaries such as the Connecticut River were subdivided to reflect the salinity gradient within tidal areas, and to separate tidal from non-tidal waters upstream. Some areas were delineated based on known concentrations of high-priority species using GIS data provided by regional experts (CT DEEP 2015a,b,c,d; NYS NHP 2015). Additional non-tidal fresh water bodies (i.e. lakes and streams) were adopted from the HYDROLOGY layer in cases where information was available to attribute these inland polygons with fish species (Jacobs and O\x92Donnell 2009, 2012; NYS DEC 2015 a, b). In some cases, stream polygons were developed by buffering a stream line feature to create a 10m-wide polygon. In all, the distributions of 89 fish species within the study area are represented by 614 polygons. A total of 75 sources were cited to develop the FISH layer.
- 2016-06-01 00:00:00 - Developing information for Atlantic and shortnose sturgeon: Atlantic and shortnose sturgeon (both Federal and State Endangered) were mapped to areas where they are known to occur in rivers and estuarine waters of the study

area, primarily in Connecticut River (SSSRT 2010) and certain estuarine areas. Areas where Atlantic sturgeon are known to congregate in Long Island Sound are based on GIS data provided by CT DEEP and NYS DEC staff, published literature, and expert knowledge (CT DEEP 2015c, Anderson et al. 2015, Savoy and Pacileo 2003, Waldman et al. 2013).

- 2016-06-01 00:00:00 - Developing information for alewife, blueback herring, American shad, and other diadromous species: Alewife and blueback herring (collectively known as river herring), and American shad are anadromous fish that once supported large commercial and recreational fisheries on the Atlantic Coast, but have become depleted due to barriers to migration, habitat loss, and overfishing. Spawning runs were mapped using published information from NYS DEC and CT DEEP as well as knowledge from regional experts (Benway 2015, CRASC 2015; Greene et al. 2009; Hattala et al. 2011; Jacobs and O\x92Donnell 2009, 2012; Savoy et al. 2004; Young 2013). River herring runs were mapped to the first known barrier such as a dam or impassable gradient, unless a fish passage facility is known to exist. If the run went beyond the water features in the ESI HYDROLOGY layer, then it was mapped using stream line features and buffered to create a 10m-wide polygon feature. These areas are designated with "Spawning Area" and " Nursery Area" mapping qualifiers to emphasize these important life history stages. Tidal rivers and embayments that are important to early life stages of river herring and were included as nursery areas. River herring pre-spawning movements in certain rivers were mapped as migration areas. Timing of migration and spawning was based on published life history summaries. Other diadromous (migratory) species in the study area include American eel, striped bass, sea lamprey, hickory shad, and sea-run brown trout. These species were mapped using published information from CT DEEP, NYS DEC, and other sources.
- 2016-06-01 00:00:00 - Developing information for Long Island Sound mainstem areas: Major sources of information for fish in Long Island Sound include the published reports from the Long Island Sound Trawl Survey, conducted by Connecticut\x92s Marine Fisheries Division in Old Lyme, CT (Gotschall and Pacileo 2015, Gotschall et al. 2000). A recent study by The Nature Conservancy is based on these trawl survey data, and reports results on a per-species basis (Anderson et al. 2015). These sources were used to attribute fish species to the spatial framework polygons for Long Island Sound.
- 2016-06-01 00:00:00 - Developing information for coastal embayments: For the coastal embayments on the New York shore, NYSDEC staff provided Western Long Island (WLI) beach seine data for 1984 to 2013 that was used to develop species lists and concentrations for individual bays (NYS DEC 2014b). The WLI surveys are conducted from May to October and sampling stations are fixed locations based on accessibility. Bays surveyed include Little Neck Bay, Manhassett Bay, Hempstead Harbor, Oyster Bay, Stony Brook Harbor, Port Jefferson Harbor, and Peconic Bay. Trawl survey data were also provided for Peconic Bay (NYS DEC 2014a), and results were used to identify fishes and invertebrates common to that estuary. New York Department of State has designated certain areas as \x93Significant Coastal Fish and

Wildlife Habitat\x94, and published assessments with information on fish, invertebrate, and wildlife species present (NYDS 2015). These narratives were used to supplement fish survey data for many areas, especially coastal embayments and shoals. For the coastal embayments and tidal tributaries on the Connecticut Shore, results of the Connecticut Beach Seine Surveys, Inshore Surveys, and other site-specific sources were applied (Molnar and Howell 2015, Howell 2015, Benway 2015).
- 2016-06-01 00:00:00 - Developing information for freshwater fishes in New York: Two state-listed freshwater fish species, the banded sunfish (NY state threatened), and swamp darter (NY state threatened), occur in the portions of the Peconic River system on Long Island and was mapped using New York State Natural Heritage Program data (NYS NHP 2015). Other fish species in freshwater streams, lakes, and ponds of Long Island were mapped using information published by New York Dept. Environmental Conservation (NYS DEC 2015 a, b), and also in the Bronx River (Rachlin et al. 2007, Bronx River Alliance 2015). Seasonality was described using published summaries of life history parameters.
- 2016-06-01 00:00:00 - Developing information for freshwater fishes in Connecticut: State freshwater fish species within the study area that are either listed or special concern in Connecticut include the banded sunfish (CT state special concern), blueback herring (CT state special concern), American brook lamprey (CT state endangered), bridle shiner (CT state special concern), and rainbow smelt (CT state endangered). These species were mainly mapped using GIS data from Connecticut\ x92s Natural Heritage Program (CT DEEP 2015), supplemented with other sources (CT DEEP 2015a; Jacobs and O\x92Donnell 2009, 2012). Other fish species in freshwater streams, lakes, and ponds of Connecticut were mapped using information published by Connecticut\x92s Dept. of Environmental Conservation and other sources (CT DEEP 2015e, Jacobs and O\x92Donnell 2009, 2012; Jacobs et al. 2004). Seasonality was described using published summaries of life history parameters.

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/47212

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

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

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.