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:

Killer whale Southern Resident DPS critical habitat for use in ESA/FIFRA consultations

1.2. Summary description of the data:

Critical habitat includes all marine waters within the delineated boundaries. For the inland waters of Washington state (2006 designation), the contiguous shoreline is defined by the line at a depth of 20 feet (6.1 meters) relative to extreme high water. For the coastal marine waters along the U.S. west coast (2021 revision), the contiguous shoreline is defined by the line at a depth of 20 feet (6.1 meters) relative to mean high water. See the final rules (71 FR 69054 and 86 FR 41668) for descriptions of areas excluded from this critical habitat designation. For the inland waters of Washington state (2006 designation), military areas excluded due to national security impacts were not clipped out of the data.For the coastal marine waters along the U.S. west coast (2021 revision), military areas excluded due to national security impacts (i.e., the Quinault Range and its 10 kilometer buffer) were clipped out of the data.

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

1.4. Actual or planned temporal coverage of the data:

1.5. Actual or planned geographic coverage of the data:

W: -125.677627, E: -121.789886, N: 49.002263, S: 36.3
W: -125.677627, E: -121.789886, N: 49.002263, S: 36.3
W: -125.677627, E: -121.789886, N: 49.002263, S: 36.3
W: -125.677627, E: -121.789886, N: 49.002263, S: 36.3

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:
Karrin Goodman

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:
karrin.goodman@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:

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:

- 2006-11-14 00:00:00 - Data creation process 2006. SRKW_FCH_11_14_06_NAD83.shp The areas designated include all marine waters deeper than 20 feet (6.1 meters) relative to a contiguous shoreline delimited by the line of extreme high water. A consistent 20-foot depth contour was not available at the time these data were developed. Therefore, the shoreline depicted in these data was developed from shorezone inventory linework available from the Washington Department of Natural Resources, with modifications made to delineate separate marine zones and to remove areas associated with river inlets, channels, and other waterways considered too shallow to be occupied by killer whales. The U.S. Exclusive Economic Zone available from NOAA, Washington county linework available from the Interior Columbia Basin Ecosystem Management Plan, and digital 1:24k/1:100k topographic maps depicting bridges were also used to define area boundaries. Modified Washington Department of Natural Resources shorezone linework to remove shallow water areas (e.g., small inlets) in consultation with Lynne Barre (NOAA Fisheries, killer whale critical habitat project leader). In re-evaluating the nearshore areas proposed for critical habitat, several small or shallow inlets, harbors, coves and bays, some with very narrow entrances were identified. More detailed sighting information was obtained to assist with drawing a shoreline boundary for some areas. In most cases, the whales had not been sighted within the small water bodies (e.g., Drayton Harbor, Wescott Bay, Guthrie Cove, Tulalip Bay, Port Gardner/eastern side of Jetty Island, Tacoma Yacht Club, Chapman Bay, Big Fishtrap Inlet, Gull Harbor, Rocky Bay at the mouth of Rocky Creek, Taylor Bay, Mayo Cove, Horsehead Bay, Wollochet Bay, Mystery Bay, Eagle Harbor, Jarrell Cove and Sequim Bay), so the data were modified to excise these areas in the final designation. Several small harbors where there were reports of Southern Resident killer whales at the harbor entrances (e.g., Keystone Harbor, Gig Harbor) were included in the final designation and in the data.
- 2019-07-17 00:00:00 - SRKW_FCH_11_14_06_NAD83.shp (NAD_1983_Albers) geographic transformation not necessary, unprojected -> SRKW_ch.shp (GCS_North_American_1983 wkid 4269). Geometry was not edited, attributes were not edited, metadata was edited.
- 2021-04-26 00:00:00 - The 2019 version SRKW_ch.shp (GCS_North_American_1983 wkid 4269) was converted into the standardized feature class WhaleKiller_SouthernResidentDPS_20061129 (GCS_WGS_84 wkid 4326) using the National Critical Habitat Geodatabase processing protocol. During standardization, geometry was not edited. Attributes were edited. Metadata was edited and populated using the final rule/CFR and the source SRKW_FCH_11_14_06_NAD83.shp (NAD_1983_Albers). Migrated field: "Area_Name" into "UNIT" (edited "Area 1 - Summer Core Area (Haro Strait & San Juan Islands)" to be "Area 1 - Haro Strait and

San Juan Islands (summer core area)" for standardization) Dropped fields: FID, Area_Num, Species, CH_Status, Notes (the note "Department of Defense site exclusions are not depicted - consult Federal Register notice for specific sites." was moved to metadata for consistency with other feature classes), AreaSqM, AreaSqMile
- 2021-07-26 00:00:00 - Data creation process 2019 - 2021. SRKW_Coastal_CH_Final_2021-07-26.shp For 2021 ch revision only, Pacific Ocean data. Step 1 - Select the California - Oregon - Washington length of the CUSP shoreline and clip the streams, rivers, enclosed bays, and other shoreline intrusions so that they align with the shoreline north and south of these openings in order to simplify the shoreline. Split the California length from the Oregon - Washington length. Shoreline irregularities caused by intrusions like tributaries and enclosed bays were removed to avoid the unbalanced affect they would have on the TIN surface interpolation process. Step 2 - Select 200 m isobath from the Carowall bathymetry data set and create a separate layer. Then clip off parts of it north of the US-Canada maritime border and south of latitude 36 deg 18'. This is a selection of an isobath that will be used later to delineate the seaward extent. Step 3 - Convert bathymetry polygons in bathpy_or.shp and bathpy_wa.shp into isobath lines for Washington and Oregon, using the features to lines tool. Bathymetry polygons need to be separated into their component upper and lower value isobaths in order to be used to interpolate a surface from which the 6.1 m isobath can be generated. Step 4 - Combine the CUSP shoreline for Oregon and Washington with the 10 m isobath along those two states. Manually adjust any gaps in a way consistent with the position and direction of the isobaths before and after the gaps. This prepares the isobaths so that a TIN interpolation may be run on them. Step 5 - Use the Oregon and Washington contour layers, which contain 0 and 10 m isobaths, to generate a TIN surface using ArcGIS spatial analyst, then use the spatial analyst contour tool to generate a 6.1 m isobath from that TIN surface. This produces the shoreward extent along the Oregon and Washington coast, at a depth of 6.1 m. Step 6 - Extract the 5 and 10 isobaths along California's coast from Contour_5m.shp and combine it with the California segment of the CUSP shoreline. This prepares the isobaths so that a TIN interpolation may be run on them. Step 7 - Use the layer with combined CA CUSP shoreline (0 m) and the 5 m and 10 m isobath layer to generate a TIN surface using ArcGIS spatial analyst, then use the spatial analyst contour tool to generate a 6.1 m depth isobath from that TIN surface. This produces the shoreward extent along the California coast at a depth of 6.1 m. Step 8 - Where the 6.1 m isobath intrudes into rivers, bays, and other outlets that lead to the sea (Strait of Juan de Fuca, Columbia River, San Francisco Bay), intrusions were cut off in front of the waterway by drawing a line from the part of the 6.1 m isobath north of the waterway's entrance to the part of the isobath south of the waterway's entrance. For the Strait of Juan de Fuca, this cut was made from Cape Flattery to Tatoosh Island, then from Tatoosh Island to the US – Canada maritime border on a bearing to Bonilla Point, on Vancouver Island, Canada. For the Columbia River, this cut was made from the seaward end of jetty on the northern side of the river to the seaward

end of the jetty on the southern side of the river. Monterey Bay was not cut because it is a very broad bay above a very deep sea channel that whales frequently enter. For San Francisco Bay, this cut was made from where the 6.1 m isobath begins to veer into the bay, off Bonita Point, then down toward Gorman Island, where it connects with the isobath as it emerges from the bay and begins to turn south along the California coast. Diversions upstream or into enclosed bays, often caused by channel flow or dredging, are not seen to be representative of SRKW critical habitat just on account of their depth. ...continued...in next entry...
- 2021-07-26 01:00:00 - ...continued from previous entry... Data creation process 2019 - 2021. SRKW_Coastal_CH_Final_2021-07-26.shp For 2021 ch revision only, Pacific Ocean data. Step 9 - Modify the 6.1 m isobath to conform with the detailed CUSP shoreline. Original isobaths of 5 and 10 m depths that were used to generate the TIN surface (and from it the 6.1 m isobath) along the California coast sometimes crossed over the actual CUSP mainland shoreline. Because the CUSP shoreline is considered more accurate than the bathymetric data, its position takes precedence over the location of the bathymetry and the isobath was adjusted to pass around the shoreline in areas where it otherwise would cross over the shoreline. This adjustment was made anywhere the TIN-generated isobath intersected the coastline of the mainland. A horizontal buffer of 6.1 m, was added to keep the isobath at a horizontal distance away from the shore equal to the depth of SRKW critical habitat at its shoreward extent as a margin of error. Inaccuracies of original bathymetry resulted in locations where the bathymetric isobaths appear to cross over the coastline of the mainland. Moving the inshore isobath to a position seaward of these crossovers prevents orca habitat from appearing to include upland areas, and a slight buffer along these areas that pushes the isobath further out removed the assumption that SRKW habitat would go right up to the shoreline. Step 10 - Combine the 200 m isobath, representing the seaward extent, with the 6.1 m isobath, connecting them together in the north along the US-Canada maritime boundary, and in the south along the 36 deg 18' latitude (Point Sur), then convert these lines into a polygon. This polygon represents the coastal extent of SRKW critical habitat. Step 11 - Split this polygon along 4 latitudes: Cape Meares, OR (45 deg 29' 12" N); California - Oregon Border (41 deg 59' 55" N); Cape Mendocino, CA (40 deg 26' 19" N); Pigeon Point (37 deg 11' 00" N) to create 5 polygons. These latitudes represent the locations where SRKW critical habitat is divided into 5 different areas. Step 12 - Split the northernmost polygon, between the US – Canada border and Cape Meares, using the 50 m isobath from the Washington and Oregon bathymetry data sets. This will create 2 zones, an inshore zone from 6.1 m to 50 m depths and an offshore zone from 50 m to 200 m depths. This division represents two distinct SRKW critical habitat areas. Step 13 - Clipped out the excluded Quinault Range Site (QRS), and a 10 km buffer, for all areas that were not within the Olympic Coast National Marine Sanctuary (OCNMS).
- 2021-08-16 00:00:00 - Added 2021 revision data (coastal marine waters, Pacific Ocean) to the 2006 designation data (Washington inland waters, Puget Sound). Note: topology is not coincident at the boundary where these two datasets were merged (

near Cape Flattery). Topology could be repaired. SRKW_Coastal_CH_Final_2021-07-26.shp (GCS_WGS_1984 wkid 4326) and the feature class WhaleKiller_SouthernResidentDPS_20061129 (GCS_WGS_84 wkid 4326) were combined and converted into the feature class WhaleKiller_SouthernResidentDPS_20210802 (GCS_WGS_84 wkid 4326) using the National Critical Habitat Geodatabase processing protocol. Archived 2006 feature class. During standardization, geometry was not edited. Attributes were edited. Metadata was edited and populated using the final rule/CFR and the source SRKW_Coastal_CH_Final_2021-07-26.shp (GCS_WGS_1984 wkid 4326). Migrated field: "AREA_NAM" into "UNIT" (edited values for standardization purposes). Dropped all other fields.

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:
- 1.3. Is this a one-time data collection, or an ongoing series of measurements?
- 1.4. Actual or planned temporal coverage of the data
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 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
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location

- 8.2. Data storage facility prior to being sent to an archive facility
- 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/72880

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:

7.3. Data access methods or services offered:

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):
Portland, OR

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.