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**Final  
Environmental Impact Statement/Overseas Environmental Impact Statement  
Hawaii-Southern California Training and Testing**

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## Appendix I Geographic Information System Data Sources

Table I-1: Data Sources by Feature/Layer

Feature/Layer	Applicable Figures	Data Source References
HSTT Study Area	Multiple Figures (Global)	Training Areas - Commander, U.S. Fleet Forces - U.S. Navy, Common Operating Picture (COP) SOCAL/Hawaii. Updated 11/29/2017. SDSFIE Version 2.6. Navy POC: Jonathan Crain Jonathan.crain@navy.mil
Military Installation Areas	Multiple Figures (Global)	Defense Installation Spatial Data Infrastructure (DISDI) (2010). NOTE: California and Hawaii installations from Defense Installation Spatial Data Infrastructure (DISDI) IVT dataset. Naval Base Coronado installations extracted from a SANDAG land ownership dataset. NAVBASE San Diego created with combination of SANDAG and 2000 San Diego SID. Installation areas around Pearl Harbor received from the Department of the Navy in 2006.
Military Training/Range/Operation Areas	Multiple Figures (Global)	Training Areas - Commander, U.S. Fleet Forces - U.S. Navy, Common Operating Picture (COP) SOCAL/Hawaii. Updated 11/29/2017. SDSFIE Version 2.6. Navy POC: Jonathan Crain Jonathan.crain@navy.mil
Special Use Airspace	Multiple Figures (Global)	NGA Digital Aeronautical Flight Information File (DAFIF). (2017).
Transit Corridor	Multiple Figures (Global)	Research and Innovative Technology Administration's Bureau of Transportation Statistics (RITA/BTS) National Transportation Atlas Database. (2007). National Waterway Network. <a href="https://www.bts.gov/geospatial/national-transportation-atlas-database">https://www.bts.gov/geospatial/national-transportation-atlas-database</a>
General Ocean Bathymetry	Multiple Figures (Global)	National Geophysical Data Center (NGDC) NOAA. (2008). Global Digital Elevation Model (ETOPO2). <a href="https://www.ngdc.noaa.gov/mgg/global/relief/ETOPO2/">https://www.ngdc.noaa.gov/mgg/global/relief/ETOPO2/</a>
Detailed Ocean Bathymetry/Ocean Floor	Multiple Figures (Global)	NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. (2016). <a href="http://www.ngdc.noaa.gov/mgg/coastal/crm.html">http://www.ngdc.noaa.gov/mgg/coastal/crm.html</a>
Large Marine Ecosystems	3.0-1, 3.0-2,3.64,3.6-22	NOAA-Fisheries, US LME Program, Narragansett Laboratory Kenneth.Sherman@NOAA.gov <a href="http://www.lme.noaa.gov">www.lme.noaa.gov</a>
North Pacific Transition Zone	3.0-2	Department of the Navy. (2010). (Contract N624470-08-R-1008). Norfolk, VA: Department of the Navy, Naval Facilities Engineering Command, Atlantic. Prepared by Tetra Tech, Inc., Arlington, VA.
HSTT Open Ocean Focus Area	3.0-1, 3.0-2	Department of the Navy. (2010). (Contract N624470-08-R-1008). Norfolk, VA: Department of the Navy, Naval Facilities Engineering Command, Atlantic. Prepared by Tetra Tech, Inc., Arlington, VA.

**Table I-1: Data Sources by Feature/Layer (continued)**

Feature/Layer	Applicable Figures	Data Source References
Seamount Locations	3.0-4	Data Basin. (2004). Kitchingman, A. and S. Lai. 2004. "Inferences on potential seamount locations from mid-resolution bathymetric data." <a href="https://databasin.org/datasets/1c6af28887364008969f94c7e9df796e">https://databasin.org/datasets/1c6af28887364008969f94c7e9df796e</a>
SOCAL Ocean Currents	3.0-6	Department of Navy. (2008). SOCAL MRA
Upwelling Domain	3.0-6	Department of Navy. (2008). SOCAL MRA
Hawaii Ocean Currents	3.0-7	Department of Navy. (2005). Hawaii MRA
Sea Surface Temperature	3.0-8, 3.0-9	NOAA Optimum Interpolation (OI) Sea Surface Temperature (SST) V2. (2016). NCEP/NWS/NOAA. Climate Modeling Branch W/NP24 <a href="http://www.esrl.noaa.gov/psd/data/gridded/data.noaa.oisst.v2.html#references">http://www.esrl.noaa.gov/psd/data/gridded/data.noaa.oisst.v2.html#references</a>
California Air Basins	3.2-1	California Air Resources Board. (2004). <a href="https://www.arb.ca.gov/ei/gislib/gislib.htm">https://www.arb.ca.gov/ei/gislib/gislib.htm</a>
Vessel Traffic Density	3.0-10	NOAA (2015). Vessel Traffic Data/Automatic Identification System (AIS) Data. <a href="http://marinecadastre.gov/ais/">http://marinecadastre.gov/ais/</a> ManTech (2015). Raw AIS data processed through ArcGIS 10.2 Spatial Analyst tools to create raster dataset.
San Diego Bay Eel Grass	3.3-8,3.5-2	Merkel and Associates. (2014).
Pearl Harbor Mangrove Removal Area	3.3-10	U.S. Department of the Navy. (2014). FY14 Chief of Naval Operations (CNO) environmental awards natural resources management – large installation Joint Base Pearl Harbor-Hickam: Joint Base Pearl Harbor Hickam.
Bottom Substrate Types SOCAL	3.5-5	TerraLogic GIS, and S. Copps. (2004).
Ocean Vegetation SSTC	3.5-10	Dataset received from Tierradata with no metadata. Dataset is likely from the San Diego Nearshore Mapping Program. POC: Tierradata (Rob Wolf; rob@tierradata.net).
Ocean Anchorages SSTC	3.5-10	ManTech. (2012). Digitized from NOAA Raster Nautical Chart 18772.
Ocean Substrate SSTC	3.5-10	Dataset received from Tierradata with no metadata. Dataset is likely from the San Diego Nearshore Mapping Program. POC: Tierradata (Rob Wolf; rob@tierradata.net).
Benthic Habitat Hawaii	3.5-11,3.5-13,3.5-14	Miles Anderson, Analytical Laboratories of Hawaii. (2007). Center for Coastal Monitoring and Assessment (CCMA), Biogeography Program POC: tim.battista@noaa.gov

**Table I-1: Data Sources by Feature/Layer (continued)**

Feature/Layer	Applicable Figures	Data Source References
Steelhead Critical Habitat	3.6-4,3.6-22	NOAA National Marine Fisheries Service. (2005). <a href="http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html">http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html</a>
Submerged Historic Properties	3.10-1, 3.10-2, 3.10-3, 3.10-4, 3.10-5	National Oceanic and Atmospheric Administration. (2015). Automated Wreck and Obstruction Avoidance database. [Web Page] Available from <a href="http://www.nauticalcharts.noaa.gov/hsd/wrecks_and_obstructions.html">http://www.nauticalcharts.noaa.gov/hsd/wrecks_and_obstructions.html</a> .  Van Tilburg, Hans and James P. Delgado. (2017). The Unseen Landscape: Inventory and Assessment of Submerged Cultural Resources in Hawaii Camarillo, CA.  California State Lands Shipwreck Database. (2012). Department of Navy (2005). SOCAL MRA
Ports	3.11-5,3.11-8	NGA. (2016). World Port Index. <a href="https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&amp;_pageLabel=msi_portal_page_62&amp;pubCode=0015">https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&amp;_pageLabel=msi_portal_page_62&amp;pubCode=0015</a>
Shipping Routes	3.11-5,3.11-8	Research and Innovative Technology Administration’s Bureau of Transportation Statistics (RITA/BTS) National Transportation Atlas Database. (2007). National Waterway Network. <a href="https://www.bts.gov/geospatial/national-transportation-atlas-database">https://www.bts.gov/geospatial/national-transportation-atlas-database</a>
Air Traffic Control Assigned Airspace (ATCAA)	3.11-11	KAYA (FIR), FACSFAC San Diego Instruction 3120.1G (ATCAA). (2013).
Dive Sites Hawaii	3.11-27,3.11-28,3.11-29,3.11-32	Department of the Navy. (2005). Dive Sites. Marine Resources Assessment for the Hawaiian Islands Operating Area. Naval Facilities Engineering Command, Pacific Division, Pearl Harbor, Hawaii. Contract N62470-02-D-9997, CTO 0026. Prepared by Geo-Marine, Inc., Plano, Texas.
Beaches Hawaii	3.11-27,3.11-28,3.11-29	USGS. Geographic Place Names from the USGS Geographic Names Information System (GNIS).  <a href="https://geonames.usgs.gov/apex/f?p=138:1:0::::">https://geonames.usgs.gov/apex/f?p=138:1:0::::</a>
Park Locations Hawaii	3.11-27,3.11-28,3.11-29	USGS. Geographic Place Names from the USGS Geographic Names Information System (GNIS). <a href="https://geonames.usgs.gov/apex/f?p=138:1:0::::">https://geonames.usgs.gov/apex/f?p=138:1:0::::</a>
Park Areas	3.11-27,3.11-28,3.11-29	Tele Atlas North America, Inc./ESRI. (2008).
San Diego Bay Marinas	3.11-34	San Diego Department of Governments (SANDAG). (2013). <a href="https://www.sandag.org/index.asp?subclassid=100&amp;fuseaction=home.subclasshome">https://www.sandag.org/index.asp?subclassid=100&amp;fuseaction=home.subclasshome</a>

**Table I-1: Data Sources by Feature/Layer (continued)**

Feature/Layer	Applicable Figures	Data Source References
National Wildlife Refuge Areas	3.11-34	San Diego Department of Governments (SANDAG) <a href="https://www.sandag.org/index.asp?subclassid=100&amp;fuseaction=home.subclasshome">https://www.sandag.org/index.asp?subclassid=100&amp;fuseaction=home.subclasshome</a> ; USFWS, Region 1, Division of Refuge Planning. (2013).
Fishing Locations SOCAL	3.11-34	San Clemente Island GPS Reference Points. The Fishing Network. <a href="http://fishingnetwork.net/index.php?pageid=sci">http://fishingnetwork.net/index.php?pageid=sci</a>
Depth Contour (Bathymetry)	3.11-34	NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. (2016). <a href="http://www.ngdc.noaa.gov/mgg/coastal/crm.html">http://www.ngdc.noaa.gov/mgg/coastal/crm.html</a>

Notes: NGA = National Geospatial-Intelligence Agency, NOAA = National Oceanic and Atmospheric Administration, U.S. = United States, USGS = United States Geological Society, AWOIS = Automated Wreck and Obstruction Information System, NRHP = National Register of Historic Places, nm = nautical miles, OCS = Office of Coast Survey, SOCAL = Southern California