

## **APPENDIX D**

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# Key Data Sources for Shoreline Inventory Maps

## Appendix D: Final Inventory Maps and Key Data Sources.

**Table D1. Acronyms Used in Table D2.**

Acronym	Organization
CGS	Coastal Geologic Services
DOE	Department of Ecology
DNR	Department of Natural Resources
FEMA	Federal Emergency Management Agency
FSJ	Friends of the San Juans
NRCS	Natural Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
PIAT	The Pulling It All Together Project
PSNERP	Puget Sound Nearshore Ecosystem Restoration Project
SJC	San Juan County
WDFW	Washington Department of Fish and Wildlife
WFC	Wild Fish Conservancy
WSP	Washington State Parks

**Table D2. Final Inventory Maps and Key Data Sources.**

Map #	Map Title	Layer Name	Source File(s)
1	Context, Map Extents Key & Table of Contents		
2A 2B 2C	Proposed Shoreline Jurisdiction	Shoreline jurisdiction	<i>SJC_ShorelineJurisdiction_v101512</i> <ul style="list-style-type: none"> <li>• Marine shoreline jurisdiction derived from NOAA, 2010 data (<i>NOAA_Shorelines</i>)               <ul style="list-style-type: none"> <li>• Buffered landward 200 feet</li> <li>• Town of Friday Harbor excluded</li> <li>• Area at north end of Orcas Island Airport revised per DOE comment</li> </ul> </li> <li>• Lake shoreline jurisdiction derived from SJC, 2008 data (<i>Lakes</i>)               <ul style="list-style-type: none"> <li>• Lakes greater than 20 acres buffered 200 feet</li> </ul> </li> </ul>
		Lakes included in shoreline jurisdiction	<i>Lakes_SMA</i> <ul style="list-style-type: none"> <li>• Derived from SJC, 2008 data (<i>Lakes</i>)               <ul style="list-style-type: none"> <li>• Lakes greater than 20 acres</li> </ul> </li> </ul>
		Potential associated wetlands	<i>Potential_Associated_Wetlands_TWC_V2</i> <ul style="list-style-type: none"> <li>• Derived from Adamus Resource Assessment, Inc and EarthDesign, Inc in collaboration with SJC data, 2010 (<i>All_tidal_wetlands</i> and <i>Merge_wetlands_ted_mindy</i>)               <ul style="list-style-type: none"> <li>• Wetlands intersecting shoreline jurisdiction</li> </ul> </li> </ul>
3A 3B 3C	Land Ownership	Land ownership	<i>san_juan_protected_lands_v3</i> <ul style="list-style-type: none"> <li>• SJC, 2010</li> <li><i>StateParks_SanJuanCounty</i></li> <li>• WSP, 2012</li> </ul>

<b>4A 4B 4C</b>	<b>Existing Land Use Districts &amp; Environment Designations</b>	Land use districts	<i>landuse.shp</i> <i>landuse.lyr</i> • SJC, 2007
		Shoreline environment designation boundaries	<i>Shoreline_Designations.shp</i> <i>shore_designations_anno</i> <i>lake-designationsAnno</i> • SJC
<b>5A 5B 5C</b>	<b>Current Land Use</b>	Current land use	<i>Parcel_Link.shp</i> • SJC, 2010
<b>6A 6B 6C</b>	<b>Marine Shoreline Public Access</b>	Parks and open space with publicly accessible marine shoreline	<i>open_space_with_accessible_shoreline</i> • SJC, 2010 <i>StateParks_SanJuanCounty</i> • WSP, 2012
		Road ends	<i>road_ends_v2</i> • SJC, 2010
		Facilities	<i>marine_facilities</i> • SJC, 2010
		Trails and paths	<i>trails_and_paths</i> • SJC, 2010
		Other public and protected lands	<i>classification_polys_v1</i> • SJC, 2010
<b>7A 7B 7C</b>	<b>Priority Trail Corridors</b>		Note: These maps were not created as part of the shoreline master program update. These maps were created for the update of the San Juan County Parks, Trails, and Natural Areas Plan 2011-2016.
<b>8A 8B 8C</b>	<b>Surface Water System</b>	Water bodies	<i>Lakes_wb100k_region_wb_SJC_TWC</i> • Derived from SJC, 2008 data ( <i>Lakes</i> ) and DOE, 2000 data ( <i>wc100k_route_wc</i> ) • Boundaries of the water bodies in the SJC data took the place of the boundaries of the same water bodies in the DOE data
		Watercourses	<i>wc100k_route_wc</i> • DOE, 2000
		Culverts	<i>Culverts</i> • SJC, 2008 <i>Inlets_Outlets</i> • SJC, 2008
		Ditches	<i>Ditches</i> • SJC, 2008
		Tidegates	<i>Catch_Basins</i> • SJC, 2008 • Only tidegates shown
		Dams	<i>fd_dams</i> • PSNERP, 2010
<b>9A 9B 9C</b>	<b>Shoreline Modifications</b>	Marine overwater structures	<i>Overwater_Structure_Marine.shp</i> • DNR, 2007
		Armoring	<i>ArmorLineShorezone</i> • FSJ, 2009

		Marinas, jetties, and breakwaters (snapped to parcel lines)	<i>MarinaJettyBreakwater_Snapped</i> • FSJ, 2009 • A breakwater near Point Thompson included in the original dataset was removed
		Groins (snapped to parcel lines)	<i>Groin_Snapped</i> • FSJ, 2009
		Improved boat ramps (snapped to parcel lines)	<i>ImprovedBoatRamp_Snapped</i> • FSJ, 2009
		Marine railways (snapped to parcel lines)	<i>MarineRailway_Snapped</i> • FSJ, 2009
		Moorings (buoys and floats)	<i>Moorings</i> • FSJ, 2009
		Pilings	<i>Pilings</i> • FSJ, 2009
		Dams	<i>fd_dams</i> • PSNERP, 2010
<b>10A 10B 10C</b>	<b>Septic Systems</b>	Septic systems	<i>Septic.shp</i> • SJC, 2010
<b>11A 11B 11C</b>	<b>Water Quality</b>	Category 5 waters (303[d] list)	<i>303d_list</i> • DOE, 2008
		Category 4 waters	<i>305b_list</i> • DOE, 2008 • Other category waters not shown
<b>12A 12B 12C</b>	<b>Floodplains &amp; Wetlands</b>	Floodplains	<i>sanjuan.shp</i> • FEMA, 1998
		Tidal wetlands	<i>All_tidal_wetlands</i> • Adamus Resource Assessment, Inc and EarthDesign, Inc in collaboration with SJC, 2010
		Non-tidal wetlands	<i>Merge_wetlands_ted_mindy</i> • Adamus Resource Assessment, Inc and EarthDesign, Inc in collaboration with SJC, 2010 • Areas of overlap with tidal wetlands erased
<b>13A 13B 13C</b>	<b>Marine Net Shore Drift &amp; Feeder Bluffs</b>	Net shore drift	<i>Updated_current_NSD_SJC_Feb2010</i> • CGS, 2010
		Feeder bluffs	<i>SJCshoreformFinal_PIAT_Nov2011</i> • PIAT, 2011 • Shoreform codes FB and FBE mapped
<b>14A 14B 14C</b>	<b>Shoreforms - PSNERP</b>	Current marine shoreform types	<i>fd_shoreform_change</i> • PSNERP, 2010
<b>15A 15B 15C</b>	<b>Geologic Units</b>	Geologic units	<i>geologic_unit_poly_100k</i> • DNR, 2010
<b>16A 16B</b>	<b>Soils</b>	Soils	<i>soils.shp</i> • NRCS, 2007

<b>16C</b>		Hydric soils	<i>HydricSoils.shp</i> • NRCS, 2007
<b>17A 17B 17C</b>	<b>Geologic Hazards</b>	Unstable bluffs	<i>unsbluf.shp</i> • DOE, 1978
		Erosion-prone soils	<i>erosion_haz.shp</i> • SJC, 2003
		Slopes exceeding 40%	<i>slp40.shp</i> • SJC, 1998
		Shoreline slope stability	<i>slopestab.shp</i> • DOE, 2004
<b>18</b>	<b>Liquefaction Susceptibility</b>		Note: This map was not created as part of the shoreline master program update.
<b>19A 19B 19C</b>	<b>Land Cover</b>	Land cover	<i>WA_2006.img</i> • NOAA, 2006
<b>20A 20B 20C</b>	<b>Impervious Surfaces</b>	Percent impervious	<i>wa_2006_impervious.img</i> • NOAA, 2006
<b>21A 21B 21C</b>	<b>Ecology Permitted Sites</b>	Ecology permitted sites	<i>facility.shp</i> • DOE, 2011 • Only active sites shown
<b>22A 22B 22C</b>	<b>Habitats &amp; Species - Regions</b>	Habitats and species regions	<i>phsregion_sv</i> • WDFW, 2010
<b>23A 23B 23C</b>	<b>Habitats &amp; Species - Aquatic Vegetation</b>	Outer line of eelgrass	<i>OuterLineOfEelgrass</i> • FSJ, 2009
		Bull kelp	<i>Bullkelp</i> • FSJ, 2009
		Non-floating kelp	<i>nkelplin</i> • DNR, 2001
<b>24A 24B 24C</b>	<b>Habitats &amp; Species - Birds &amp; Mammals</b>	Species observations (points)	<i>ws_occurpoint_dr</i> • WDFW, 2010 • Sensitive data excluded per WDFW policy
		Species observations (areas)	<i>ws_occurpolygon_dr</i> • WDFW, 2010
		Harbor seal haulout sites	<i>haulouts</i> • WDFW, 2010
		Seabird colonies	<i>sbirdcat_sv</i> • WDFW, 2010
		Bald eagle buffers	<i>baldeagle_bf</i> • WDFW, 2010
<b>25A 25B 25C</b>	<b>Habitats &amp; Species - Fish</b>	Fish distribution	<i>fishdist_sv</i> • WDFW, 2010
		Pacific herring adult holding areas	<i>herrhold</i> • WDFW, 2010

		Pacific herring spawning areas	<i>DocHerringSpawingGround2012</i> • WDFW, 2012
		Rocksole spawning areas	<i>rocksole</i> • WDFW, 2010
		Sand lance intertidal spawning habitat	<i>doc_sand_lance_spawning</i> • WDFW, 2010
		Surf smelt intertidal spawning habitat	<i>doc_smelt_spawning</i> • WDFW, 2010
		Forage fish spawn beaches	<i>AllSpawnFinal</i> • FSJ, 2009
26A 26B 26C	<b>Habitats &amp; Species - Shellfish</b>	Shellfish	<i>shellfish_summary</i> • WDFW, 2010
27A 27B 27C	<b>Fish Presence Probability - Juvenile Chinook Salmon</b>	Probability of presence of wild juvenile Chinook salmon	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Ck field mapped
28A 28B 28C	<b>Fish Presence Probability - Juvenile Chum</b>	Probability of presence of juvenile chum salmon	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Chum field mapped
29A 29B 29C	<b>Fish Presence Probability - Juvenile Pink Salmon</b>	Probability of presence of juvenile pink salmon	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Pk field mapped
30A 30B 30C	<b>Fish Presence Probability - Juvenile Lingcod and Greenling</b>	Probability of presence of juvenile lingcod and greenling	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Hex field mapped
31A 31B 31C	<b>Fish Presence Probability - Juvenile Surf Smelt</b>	Probability of presence of juvenile surf smelt	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Smelt field mapped
32A 32B 32C	<b>Fish Presence Probability - Juvenile Pacific Sand Lance</b>	Probability of presence of juvenile Pacific sand lance	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Lance field mapped
33A 33B 33C	<b>Fish Presence Probability - Juvenile Pacific Herring</b>	Probability of presence of juvenile Pacific herring	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • HRM_Herr field mapped
34A 34B 34C	<b>Shoreline Types &amp; Armoring</b>	Shoreline type	<i>SJ_geomorph_FishProb.shp</i> • Beamer and Fresh, 2012 • SiteType3 field mapped

35A 35B 35C	<b>“Vacant” Shoreline Parcels</b>	“Vacant” parcels intersecting shoreline jurisdiction	<ul style="list-style-type: none"> <li>• <i>Parcel_Link.shp</i></li> <li>• SJC, 2010 <ul style="list-style-type: none"> <li>· Parcels intersecting shoreline jurisdiction with an assessed building valuation of \$10,000 or less mapped</li> </ul> </li> </ul>
36A 36B 36C	<b>Parcels with Potential Nonconforming Shore Structures</b>	Parcels with one or more potentially nonconforming structures within 50 feet of the shoreline	<i>Parcels_Nonconf_Struct_50ft</i> <ul style="list-style-type: none"> <li>• Derived from SJC, 2010 data (<i>Parcel_Link.shp</i>) and SJC, 2011 data (<i>Building_Footprints.shp</i>) <ul style="list-style-type: none"> <li>· Parcels with building footprint within 50-foot shoreline buffer mapped</li> </ul> </li> </ul>
37A 37B 37C	<b>Management Areas &amp; Reaches</b>	Management areas	<i>Mgmt_Areas_Upland_Final</i> <ul style="list-style-type: none"> <li>• Created from shoreline jurisdiction dataset (see Map 2 info) <ul style="list-style-type: none"> <li>· Town of Friday Harbor shoreline and islets .5 acre or less removed</li> <li>· Area at north end of Orcas Island Airport not revised (dataset created prior to DOE comment)</li> </ul> </li> </ul> <i>Mgmt_Areas_In_Water_Final</i> <ul style="list-style-type: none"> <li>• Derived from NOAA, 2010 data (<i>NOAA_Shorelines</i>) <ul style="list-style-type: none"> <li>· Marine waters only</li> <li>· Town of Friday Harbor shoreline, islets .5 acre or greater removed</li> </ul> </li> </ul>
		Reaches	<i>Reaches_Final</i> <ul style="list-style-type: none"> <li>• Created from shoreline jurisdiction dataset (see Map 2 info) <ul style="list-style-type: none"> <li>· Town of Friday Harbor shoreline and islets .5 acre or less removed</li> <li>· Area at north end of Orcas Island Airport not revised (dataset created prior to DOE comment)</li> </ul> </li> </ul>
38A 38B 38B	<b>Ecological Function - Physical</b>	Ecological function (physical)	<i>Reaches_Final_w_scores v102512</i> <ul style="list-style-type: none"> <li>• Derived from reaches dataset (see Map 37 info)</li> </ul>
39A 39B 39C	<b>Ecological Function - Habitat</b>	Ecological function (habitat)	<i>Reaches_Final_w_scores_v102512</i> <ul style="list-style-type: none"> <li>• Derived from reaches dataset (see Map 37 info)</li> </ul>
40A 40B 40C	<b>Streams - Wild Fish Conservancy</b>	Streams	<i>sj_oi_streams</i> <ul style="list-style-type: none"> <li>• WFC, 2012</li> </ul>

<b>41A</b> <b>41B</b> <b>41C</b>	<b>Pocket Beaches,  Feeder Bluffs,  &amp; Armoring</b>	Pocket beaches	<i>SJCshoreformFinal_PIAT_Nov2011</i> • PIAT, 2011
		Feeder bluffs	<i>SJCshoreformFinal_PIAT_Nov2011</i> • PIAT, 2011 • Shoreform codes FB and FBE mapped
		Armoring	<i>ArmorLineShorezone</i> • FSJ, 2009





## APPENDIX E

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# GIS Methods for Ecological Function Scoring