

San Juan County/Watershed (WRIA 2)

Description of the Area

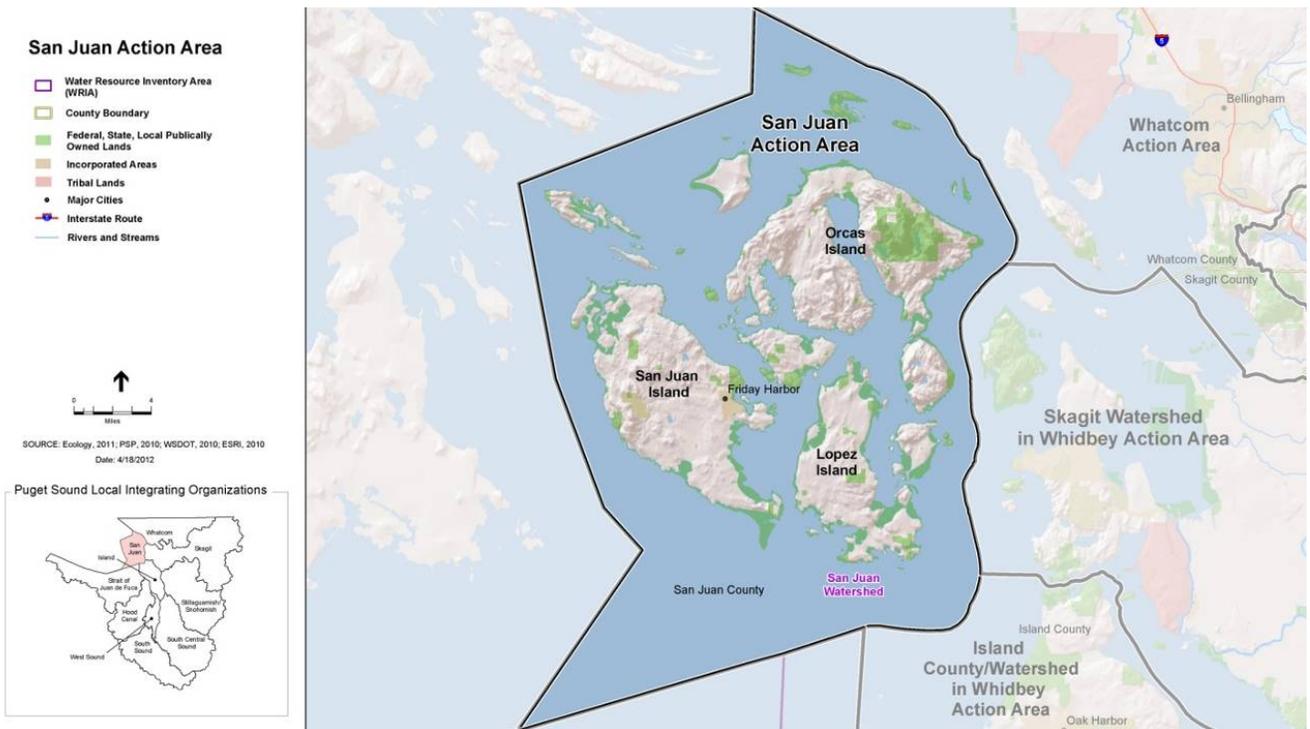
San Juan County/Watershed (WRIA 2) is in the San Juan/Whatcom Action Area and encompasses the entirety of San Juan County. Located at the nexus of the Strait of Juan de Fuca, the Georgia Strait, and Puget Sound, the 428 separate islands (at high tide) that make up this area are considered by many to be the crown jewels of Puget Sound. San Juan County has the smallest land mass of any county in Washington State, but with 408 miles of marine shoreline, has more than any other county in the contiguous United States.

Geologically, the San Juan Islands are distinctly different from mainland Washington and Vancouver Island, and are dominated by bedrock and thinner glacial deposits relative to other parts of Puget Sound. Their unique location in the crossroads of the Salish Sea gives the San Juan Islands a wide diversity of flora and fauna. High-energy tidal flows and turbulent mixing throughout the islands' channels are dominated by the surface outflows from the Strait of Georgia and the deep-water inflow from offshore Pacific waters. The islands' straits and channels link the Strait of Georgia to the Strait of Juan de Fuca, and to a lesser extent to Puget Sound. These water sources mix and contribute to the distribution of nutrients, plankton, sediment, and pollutants throughout the islands, creating a marine environment unique to the San Juan Islands. This environment includes not only turbulent straits and channels but also some quiet and protected bays.

NOTABLE ACCOMPLISHMENTS

- Seven acres of coastal salt marsh and 2 acres of a tidal lagoon have been restored in San Juan County.
- Eleven miles of surf smelt and sandlance habitat in the San Juan Islands has been documented.
- All feeder bluffs, eelgrass, kelp, forage fish, and shoreline modifications in San Juan County have been documented.
- Tidal inundation to Cascade Creek was restored with a new Buck Bay Bridge.
- The Spring Street Rain Garden demonstration project was installed.

[This figure is being updated.]



San Juan County/Watershed (WRIA 2) is affected by the “rainshadow” of the Olympic Mountains, and receives 20 to 30 inches of annual rainfall, with significant variation of rainfall patterns among the islands’ microclimates. There are no major rivers on the islands, but several small creeks flow on a year-round basis. Additionally, the Fraser River in British Columbia influences the temperature and sedimentation in area waters. Only 1% of the land is paved, and 61% is forested. Lakes and freshwater wetlands cover over 7% of the landscape.

The San Juan Islands have served as rich fishing grounds for the Coast Salish People for thousands of years. The Salish Peoples’ fishing activities were sustainable for generations, and traditional knowledge includes areas where salmon skirted the Orcas Island shoreline as vast runs returned to the Fraser and Skagit Rivers. The Coast Salish also knew where to find the best clam, mussel, and oyster beds near shore for ready harvest in season.

Historically, the economy of the San Juan Islands has shifted along with the culture, technology, and natural resources in the region. Agriculture, logging, fishing, and lime kiln operations later became the main economic drivers for the islands. In the late nineteenth century, the economy boomed with fruit, canned salmon and peas, and lime exports to the mainland. These industries began to collapse as mainland infrastructure improved and it became cheaper to deliver goods overland from the eastern part of the state than across waters. It also became much easier to can or freeze and ship salmon from the mainland, contributing to the decline of the fishing industry and associated canning operations by the mid-1900s. The cannery in Friday Harbor was canning peas when it closed in 1966.

Today, the San Juan Islands are an extremely popular summer destination, and the number of residents swells from 15,769 who live there year-round to approximately double that in the summer. In addition, over 750,000 visitors camp, moor, or stay in area lodging. Most of the area is rural, with 75% of the population living outside the “urban” areas of Friday Harbor, Eastsound, and Lopez Village. Over the past decade, population growth in the islands has been high, with a growth rate of 12% from 2000 to 2010. There are 5,700 shoreline parcels in the area, of which approximately 50% have already been developed. Some islands have no public access and few accommodate automobiles. Public access to the water is extremely limited on many islands.

The current economy is driven by residential and commercial construction, tourism, and government (including schools). Tourism is highly dependent on the clean marine and fresh waters, spectacular views, and opportunities for boating, bird watching, whale watching, and cycling. These characteristics are also highly valued by the residents and second home-owners that make the San Juan Islands their home. There is significant marine-oriented commerce including marinas, fishing, and boat building and repair. Representative marine education and research organizations include the University of Washington Friday Harbor Labs, SeaDoc Society, and Seattle Pacific University marine labs. High quality shellfish farming occurs in the area as well as a growing sustainable agricultural movement. The islands are important to the cultural heritage of the coastal Salish tribes that retain treaty-reserved rights to hunt, fish, and gather, and are attached to many cultural heritage sites.

Unique Ecosystem Characteristics and Assets

Residents of San Juan County/Watershed (WRIA 2) value the opportunities for involvement in stewardship of the islands’ ecosystem made available through numerous, long-standing efforts and organizations. Many government and non-governmental efforts are devoted to protecting this important natural resource. The San Juan Preservation Trust is the oldest private land trust in Washington State. The San Juan County Land Bank protects natural areas and is the only county-based land bank in the state. In 2007, the San Juan County Council adopted the San Juan County Marine Stewardship Area Plan, the culmination of 3 years of effort by the San Juan Marine Resources Committee, with contributions from numerous scientists, technical advisors, resource managers, community leaders, business owners, and citizens. The plan is intended to sustain the many services that the ecosystem provides for county citizens, fish and wildlife, and the economies of the county.

Example assets include sustainable tourism; commercial and recreational fisheries for clams, crab, and spot prawns; and clean beaches and waters. Currently, no beaches in the San Juan Islands are closed to swimming; however, public beaches are periodically closed to shellfish harvest due to a naturally occurring marine biotoxin that can cause paralytic shellfish poisoning. Protected upland areas are located at Moran State Park, San Juan Historical National Park, Turtleback Mountain, Lopez Hill, University of Washington Preserves at Friday Harbor Labs and on Shaw Island, and the National Wildlife Refuge with sites throughout the islands. Yellow Island, protected by the Nature Conservancy, contains an intact prairie, a unique ecological feature on a small island. Marine resource protection areas include the Marine Preserve, National Wildlife Refuge, Bottomfish Recovery Zone, Whalewatch Exclusion Zone, and Sensitive Eelgrass Area.

The location of the San Juan Islands makes them a way-station for all 22 migrating populations of Puget Sound Chinook salmon as both juveniles and adults. Additionally, sockeye, pink, chum and coho salmon, Kokanee, steelhead, and rainbow and coastal cutthroat trout have been documented in the area. The San Juan Islands support outmigrating juvenile salmon including Chinook, coho, chum and pink, and stocks from the Fraser River, Puget Sound, east and west coast Vancouver Island, and the Strait of Georgia. Although most of the streams in the area are small and do not support salmon, a small number of coho have recently been reported spawning in Cascade Creek and possibly other streams on Orcas Island, and a few creeks support cutthroat trout and introduced runs of chum salmon.

San Juan County/Watershed (WRIA 2) provides excellent habitat for juvenile and adult salmon with over 5,000 acres of tidal wetlands, inter- and subtidal flats, eelgrass meadows along the shorelines and in the bays, and kelp beds. Tidal wetlands are highly valued due to their relative scarcity. At least 80 miles of potential forage fish spawning beaches are present. Eelgrass is found on 20% of all shorelines, and the islands contain one-third of all of the kelp in Puget Sound. Pacific surf smelt and sandlance have been documented on 11 miles of the islands' shorelines. The geology has created habitat conditions for rockfish that are not replicated anywhere else in Puget Sound. Approximately 74% of the shallow dominant rocky reef habitat in Puget Sound—consisting of boulder fields, rocky ledges, and outcroppings—is found in the San Juan Archipelago.

Local Implementation Structure and Planning Process

The San Juan Action Agenda Oversight Group is the local integrating organization (LIO) for the San Juan County/Watershed (WRIA 2). It was officially recognized by the Puget Sound Partnership's Leadership Council in June 2010. The San Juan LIO operates with two committees: accountability oversight and implementation.

The accountability oversight committee serves as the executive body for the LIO. The committee includes representatives from the following entities.

- Lummi Nation
- Swinomish Tribe
- Tulalip Tribes
- Puget Sound Partnership Leadership Council (ex-officio)

The implementation committee provides recommendations to the accountability oversight committee. The implementation committee consists of staff and volunteers from the following entities.

- San Juan Marine Resources Committee
- WRIA 6 Salmon Recovery Lead Entity
- San Juan County Director of Community Development and Planning
- San Juan County Director of Public Works
- San Juan County Environmental Health Manager
- San Juan County Water Resources Committee (community representative)

- San Juan Conservation District
- University of Washington Friday Harbor Labs
- San Juan Stewardship Network/ECO Net
- Town of Friday Harbor

In 2011, the San Juan LIO developed a prioritization framework to guide the update to the local actions in the Action Agenda. The framework formed the basis of work on the 2012/2013 and 2014/2015 updates. The group identified key gaps in its original profile, and held workshops to identify and link pressures on the ecosystem to local ecosystem benefits. Local ecosystem benefits included most, but not all, of the 2020 recovery targets (Section 1). Linkages were used to rate pressures—based on guidance from Puget Sound Partnership staff—and identify a list of pressures with a “high” significance on the local ecosystem.

For the 2014/2015 Action Agenda update, the implementation committee worked to identify near-term actions that are feasible, provide local ecosystem benefits, and are expected show significant results within the next 2-year horizon.

On September 24, 2013, the County Council endorsed and forwarded the list of near-term actions recommended by the implementation committee to the accountability oversight committee for review and approval. On September 25, 2013, the accountability oversight committee approved the document in principle, but asked that near-term actions be combined or tiered by priority so that a maximum of four near-term actions are applied to each key pressure. On October 2, 2013, the implementation committee presented a revised list of near-term actions, based on these recommendations. Final comments from members of both committees were integrated and the final list was submitted for Partnership review in October 2013.

Pressures

The San Juan LIO identified the following three pressures as having a high level of significance on the local ecosystem.

- Major oil spills
- Runoff from built environment (including septic systems)
- Shoreline development (including armoring)

Local Near-Term Actions

The table below presents the local near-term actions for San Juan County/Watershed (WRIA 2). Each local near-term action is listed with an identification code—which includes the area abbreviation and a number—followed by a description of the action. The performance measures represent important, measureable, dated components of implementing each action. The owner(s) column presents the entity or entities responsible for implementation of the near-term action (or as specified below), with the primary owner being responsible for tracking and reporting progress toward completing the action. The final columns provide regional context for the local actions, identifying the pressure that each action is intended to reduce and the primary sub-strategy to which it is most closely linked as well as other sub-strategies that the LIO associates with the action. Local near-term actions are also listed in Section 3 in the context of their primary sub-strategies.

Three of the near-term actions related to oil spill prevention are outcomes of a marine manager’s workshop held at the University of Washington Friday Harbor Labs in November 2012 that convened local, state, federal, and Canadian agencies and non-government organizations responsible for oil spill prevention and readiness. Three other near-term actions reflect the legislative priorities of the San Juan County Council, adopted November 27, 2012.

Local Near-Term Actions in San Juan County/Watershed (WRIA 2)

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJI1	Coordinate actions and prepare to respond to major oil spills (Near-Term Major Oil Spills Action I).	<ul style="list-style-type: none"> • By December 2015, update the Trans-boundary Inter-local Agreement between San Juan County and Islands Trust to include a jointly developed Washington and British Columbia report on Recommendations for Wildlife and Natural Resource Damage Assessment and Restoration. • By December 2015, implement a Marine Specimen Bank to establish baseline data that would be useful for future marine resource damage assessments. Coordinate with WDFW and Ecology. Include participation in the Mussel Watch Program. • Through 2016, maintain Islands Oil Spill Association local oil spill readiness and response programs with the ability to initiate first response to a major oil spill. This program will be tracked with training, workshops, equipment, and annual # of responses to any oil spills. Includes the Vessel of Opportunity Program with 13 vessels currently trained (2013). For each year, Islands Oil Spill Association plans to train 70 people, by holding at least 12 trainings or drills/year. Also, by December 2014, plan to train three additional volunteer vessels in Vessel Assist (Vessel of Opportunity) Program, and by December 2015, plan to train three more. 	LIO (reporter) <i>San Juan County Council, Islands Oil Spill Association, San Juan County Marine Resources Committee</i>	<ul style="list-style-type: none"> • Major oil spills 	C8.2 (C8.3, C8.1)

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJ12	Integrate and define parameters for responses to increased vessel traffic and potential vessel spills (Near-Term Major Oil Spills Action II).	<ul style="list-style-type: none"> • Monitor the results of Coast Guard Authorization Act of 2010 and the Coast Guard and Maritime Transportation Act of 2012. • By December 2015, work with Ecology, tribes, state representatives, and the Governor to identify San Juan County as a staging area to ensure that equipment for the 4- and 6-hour planning standards are resident in San Juan County. • By December 2014, complete feasibility assessment for Particularly Sensitive Sea Area study. Implement the study to communicate what important ecological and cultural values are present in the Salish Sea and how they would be negatively affected by vessel traffic if not well managed. • Identify risks to environmental and cultural resources and the probability of risks from large-scale shipping traffic with potentially hazardous cargo and/or propulsion fuel. • Provide citizens, local groups, eco-tourism operators, and decision makers with information about experiences of similar communities. • Demonstrate a successful alternative to reduce both probability and consequences of an oil spill in the Salish Sea. 	LIO (reporter) <i>San Juan County Council (Trans-boundary agreement), Friends of the San Juans</i>	<ul style="list-style-type: none"> • Major oil spills 	C8.2
SJ13	Implement the Marine Stewardship Area Monitoring Plan to track key species (Near-Term Major Oil Spills Action III).	<ul style="list-style-type: none"> • By December 2015, identify and prioritize indicator species to track in relation to oil spills. 	San Juan County Marine Resources Committee <i>UW Friday Harbor Labs, Salmon Recovery San Juan Lead Entity, intertidal monitoring by citizens and students</i>	<ul style="list-style-type: none"> • Major oil spills 	D4.2

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJI4	Expand and maintain Derelict Vessel Compliance Program (Near-Term Major Oil Spills Action IV).	<ul style="list-style-type: none"> By 2015, obtain funding to expand program to six jurisdictions. Additional jurisdictions suggested by DNR include Jefferson, Island, Kitsap, Snohomish, Whatcom, and Mason. 	San Juan County <i>PSP</i>	<ul style="list-style-type: none"> Major oil spills 	C8.1
SJI5	Control and mitigate stormwater runoff (Near Term Run Off Action I).	<ul style="list-style-type: none"> Improve county stormwater permit review process and existing codes. <ul style="list-style-type: none"> Between 2014 and 2016, actions in process and codes should include pre-disturbance site review and follow-up site visits for at least 50% of properties permitted. The Town of Friday Harbor will continue existing permitting and pre-review for 100% of site disturbance development to ensure compliance with sediment control and water runoff issues. Friday Harbor will also conduct follow-up site visits of largest disturbed sites to review applicants' compliance with the town's Storm Water Technical Manual for at least 10% of all sites. <ul style="list-style-type: none"> By December 2014, the Town of Friday Harbor is investigating feasibility and engineering for waterfront stormwater vault containing Ecology-approved cartridge filters. By December 2015, the Town of Friday Harbor will construct a waterfront stormwater vault containing Ecology-approved cartridge filters. 	LIO (reporter) <i>San Juan County CDPD, Town of Friday Harbor</i>	<ul style="list-style-type: none"> Runoff from the built environment (including sewage) 	C2.2 (C2.3)
SJI6	Fully implement the Onsite Sewage System Operation and Maintenance Program Plan (Near-Term Run Off Action II).	<ul style="list-style-type: none"> 100% of systems in sensitive areas to remain in compliance with current inspections. Between 2012 and 2016, 75% of alternative systems countywide to have inspections. Between 2012 and 2016, 60% of gravity systems countywide to have inspections. 	San Juan County Health Department	<ul style="list-style-type: none"> Runoff from the built environment (including sewage) 	C5.1

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJ17	<p>Provide technical and financial assistance, outreach, incentives, education and natural resource planning on a voluntary basis to interested residents to improve stormwater management and reduce polluted runoff and nutrient loading into the marine environment (Near-Term Run Off Action III).</p>	<ul style="list-style-type: none"> • Complete 30 voluntary farm management plans, provide cost-share funding to implement 50 BMPs. • Provide education and outreach to at least 200 residents. • Publicize BMPs at the San Juan County Department of Health and Community Services, San Juan County CDPD, and Town of Friday Harbor permit center. 	<p>LIO (reporter)</p> <p><i>San Juan Islands Conservation District, Green Shores for Homes, Friends of the San Juans, San Juan County CDPD, San Juan County Public Works Stormwater Utility, Town of Friday Harbor, Department of Health and Community Services, WSU Extension</i></p>	<ul style="list-style-type: none"> • Runoff from the built environment (including sewage) 	<p>C2.5 (C2.2 C2.3, C2.4, C3.1, C7.1, D5.1, D5.3)</p>

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJ18	Devise monitoring and management plans for priority and/or focus basins (Near-Term Run Off Action IV).	<ul style="list-style-type: none"> By January 2014, implement an annual strategic monitoring plan to measure levels of fecal coliform, heavy metals, persistent organic pollutants, and polycyclic aromatic hydrocarbons in priority basins. In the first year post-implementation, monitor 100% of priority basins, with monitoring actions ongoing after 2014. In 2012 and 2013, evaluate data collected and revise sampling plans based on results. Revisions may include changes in priority basins, sampling procedures, constituents, and frequency. By June 2014, prepare management plans for focus basins to manage existing runoff from public streets and lots. Develop mitigation strategies for ferry parking lots. 	<p>San Juan County Public Works Stormwater Utility</p> <p><i>San Juan County Stormwater Committee, San Juan County Water Resources Committee, San Juan Marine Resources Committee, Town of Friday Harbor, San Juan Islands Conservation District</i></p>	<ul style="list-style-type: none"> Runoff from the built environment (including sewage) 	D4.2 (B2.1, C2.3, C2.4)

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJI9	Increase use of BMPs, reduce shoreline armoring, and increase vegetative cover by making information and assistance available to landowners, contractors and consultants (Near Term Shoreline Action I).	<ul style="list-style-type: none"> By 2016, make ongoing technical assistance (BMPs or no net loss) available through pre-application site visits to 100% of shoreline permit applicants, with a goal of applicants avoiding hard armoring or implementing soft armoring techniques. This will leverage efforts underway via EPA grant funding for Green Shores and Washington Sea Grant (June 2014) and shoreline workshops coordinated by Friends of the San Juans and San Juan Islands Conservation District. By 2016, research and identify candidate sites for restoration of native vegetation, trees, and ground cover to target salmon recovery regions. By 2016, engage with 50 voluntary shoreline property owners in priority areas. Complete feasibility analysis with seven property owners with two to three projects moving forward for full project development. 	LIO (reporter) <i>Green Shores for Homes, Friends of the San Juans, San Juan County CDPD, Town of Friday Harbor</i>	<ul style="list-style-type: none"> Shoreline development (including shoreline armoring) 	B1.3 (B1.1)
SJI10	Salmon recovery, habitat protection and restoration (Near Term Shoreline Action II).	<ul style="list-style-type: none"> Between 2014 and 2016, target funding to highest priority salmon recovery projects, as listed in the San Juan Salmon Recovery three-year work plan for WRIA 2. Projects include acquisition and conservation easements, and protection and restoration actions. Identify landowners who are willing and restore shorelines and habitats affected by armoring. Between 2014 and 2016, engage six shoreline landowners. By 2016, commence shoreline restoration on four properties. 	San Juan County Lead Entity for Salmon Recovery <i>Green Shores for Homes, Friends of the San Juans</i>	<ul style="list-style-type: none"> Shoreline development (including shoreline armoring) 	A6.1

	Near-Term Action	Performance Measures	Owner(s) ¹	Pressure(s)	Regional Sub-Strategy
SJI11	<p>Continue to develop a voluntary program providing alternatives and incentives for best management practices to avoid hard armoring and to maintain native vegetation (Near Term Shoreline Action III).</p>	<ul style="list-style-type: none"> • Ecosystem outcome goal: No new hard armoring in 2015 and 2016. • In 2015, engage 24 shoreline landowners, 16 contractors, and 30 realtors. • Conduct separate annual workshops for contractors and realtors/shoreline landowners. • Between 2014 and 2016, conduct 12 advisory visits to shoreline landowners. • Develop maps, checklists, or other usable information materials specifically tailored to conditions in the San Juan Islands. • Continue updating website; reach 50 views per month. • Develop website-based catalogue of examples. • Annual tour of “best alternatives” sites. 	<p>Green Shores for Homes</p> <p>San Juan County <i>CDPD, Friends of the San Juans</i></p>	<ul style="list-style-type: none"> • Shoreline development (including shoreline armoring) 	<p>B2.3 (B2.1)</p>
SJI12	<p>Continue development of Salmon Recovery Adaptive Management and Monitoring Plan (Near Term Shoreline Action IV).</p>	<ul style="list-style-type: none"> • By June 2014, draft Adaptive Management and Monitoring Framework for Chinook including narrative (document) and Miradi files. Finalize results chains, develop monitoring priorities, draft monitoring framework. Results will also inform the Marine Stewardship Area Monitoring Plan. • In 2015, start monitoring implementation. 	<p>LIO</p> <p><i>San Juan County Lead Entity, San Juan County Marine Resources Committee</i></p>	<ul style="list-style-type: none"> • Shoreline development (including shoreline armoring) 	<p>D4.2 (A6.3)</p>

¹ Where secondary owners were identified, they are shown in italics after the primary owner.

² Where secondary regional sub-strategies were identified, they are shown in parentheses after the primary sub-strategy.

BMP = best management practice; CDPD = Community Development and Planning Department; DNR = Washington State Department of Natural Resources; EPA = U.S. Environmental Protection Agency; LIO = Local integrating organization; PSP = Puget Sound Partnership; WDFW = Washington Department of Fish and Wildlife; WRIA = Water Resources Inventory Area; WSU = Washington State University; UW = University of Washington.