



SAN JUAN COUNTY, WASHINGTON

Voluntary Stewardship Program Monitoring Report



SAN JUAN ISLANDS
CONSERVATION DISTRICT

AUGUST 2019

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Acronyms

ARC	Agriculture Resources Committee
ARL	Agricultural Resource Land
BAS	Best Available Science
BMP	Best Management Practice (NRCS standards)
CAO	Critical Areas Ordinance
CARA	Critical Aquifer Recharge Area
CFU	Colony Forming Unit
eDNA	environmental deoxyribonucleic acid
GMA	Growth Management Act
ISP	Individual Stewardship Plan
NRCS	Natural Resource Conservation Service
NWI	Nation Wetland Inventory
SJCC	San Juan County Council
SJICD	San Juan Islands Conservation District
SJCLB	San Juan County Land Bank
SJPT	San Juan Preservation Trust
SVAP2	Stream Visual Assessment Protocol 2
USDA	United State Department of Agriculture
VSP	Voluntary Stewardship Program



Executive Summary

This Voluntary Stewardship Program (VSP) monitoring report summarizes the status of critical areas protection and enhancement under VSP implementation in San Juan County between January 2018, when the County's VSP Work Plan was adopted, and August 2019. It is the first report since the Work Plan was formally adopted by the Washington State Conservation Commission, and it is intended to satisfy reporting requirements to demonstrate that VSP is working to promote viable agriculture and to protect critical areas. The report is prepared in compliance with the State Advisory Committee and Conservation Commission's Policy Advisory 05-18 – Approved Work Plan Implementation and Reporting Requirements. Per that Policy Advisory, this biennial report includes a summary of how plan implementation is affecting each of the following:

1. The protection and enhancement of critical areas within the area where agricultural activities are conducted;

While it is too soon to evaluate VSP's effectiveness to protect and enhance critical areas, the SJICD has included a summary of best management practices implemented in Farm Plans since 2011 that are intended to protect critical areas where they intersect with agricultural activity. This section is found in Table 1 of this report.

2. The maintenance and improvement of the long-term viability of agriculture;

This issue is addressed broadly in the status of agricultural viability on the Section on The State of Agriculture in San Juan County (pages 11-23 of this report).

3. Reducing the conversion of farmland to other uses;

Strategies to address the conversion of farmland to other uses are discussed under The State of Agriculture in San Juan County, as well as in recommendations to the Work Group to focus VSP outreach on watersheds that have seen a significant change in stream area where it intersects with agricultural use due to land conversion (Critical Areas reporting on Stream Baseline conditions, (pages 24-29 and recommendations sections);

4. The maximization of the use of voluntary incentive programs to encourage good riparian and ecosystem stewardship as an alternative to historic approaches used to protect critical areas;

VSP outreach materials have been drafted and will be sent out by the SJICD to agricultural producers with existing farm plans, as well as distributed more broadly throughout the County to encourage Program participation. Copies of VSP Outreach Materials developed to date are included in Appendix B.



5. The leveraging of existing resources by relying upon existing work and plans in counties and local watersheds, as well as existing state and federal programs to the maximum extent practicable to achieve program goals;

As noted on page 33 of the Work Plan, implementation of VSP relies on incorporating existing relevant watershed plans, agricultural strategic actions plans, within San Juan County. Since VSP adoption, San Juan County has been working on developing its “San Juan Island Limiting Factors and Recommended Actions – Eight Basin Report”. Once approved for use, this plan will provide management goals for freshwater systems within the County. These management goals can be implemented via Individual Stewardship Plans under VSP. Similarly, the County’s nascent water quality monitoring program is integrated with the VSP water quality monitoring program, discussed on pages 31-36.

6. Ongoing efforts to encourage and foster a spirit of cooperation and partnership among county, tribal, environmental, and agricultural interests to better assure the program success;

Successful implementation of the VSP relies on a collaborative approach. As Individual Stewardship Plans are adopted for both public and private entities, these collaborative efforts will form the basis of the Voluntary Stewardship Program in San Juan County.

7. Ongoing efforts to improve compliance with other laws designed to protect water quality and fish habitat;

VSP targets outreach within priority watersheds. Once implemented, these types of management actions are anticipated to address regulatory concerns. It is too early to measure this type of progress under VSP in San Juan County, but the intent to use VSP to improve compliance with other laws to protect water quality and fish habitat is clear.

8. A description of efforts showing how relying upon voluntary stewardship practices as the primary method of protecting critical areas and does not require the cessation of agricultural activities.

Implementation of the VSP in San Juan County is in the early stages. This report reflects current efforts to implement VSP as a means to protecting critical areas while also promoting agricultural viability.

The report includes a brief overview on the state of agriculture in San Juan County, baseline conditions of San Juan County critical areas, and an overview of progress to date on the implementation of the San Juan County Work Plan. This report also establishes the framework for future monitoring reports.

Agriculture production and viability in San Juan County are relatively stable compared to some regions of the state. But vibrant agriculture is important to residents and visitors alike. The local VSP work



group identified the following goals to maintain and improve long-term agricultural viability: economic prosperity, farm retention and expansion, farm stewardship and sustainability, a supportive regulatory environment, and developing an ethic around purchasing locally produced food and products.

The SJICD, the Technical Assistance Provider of the VSP, has a long history of providing incentive based best management practices to encourage ecosystem stewardship while improving agriculture production and operations. Using cost share projects and monitoring environmental conditions across the landscape will improve critical areas protection and management over time.

The Work Plan anticipated that Individual Stewardship Plans, developed under the VSP in collaboration with the SJICD, would be the primary means of evaluating the effectiveness of the VSP in protecting designated Critical Areas. As of this writing, three ISP's have been adopted, the outreach efforts have been developed, and the SJICD has continued to implement Farm Plans. Some modifications have been made to the Farm Plan framework as the SJICD begins to work towards implementing Individual Stewardship Plans as envisioned in the Work Plan (Appendix B).

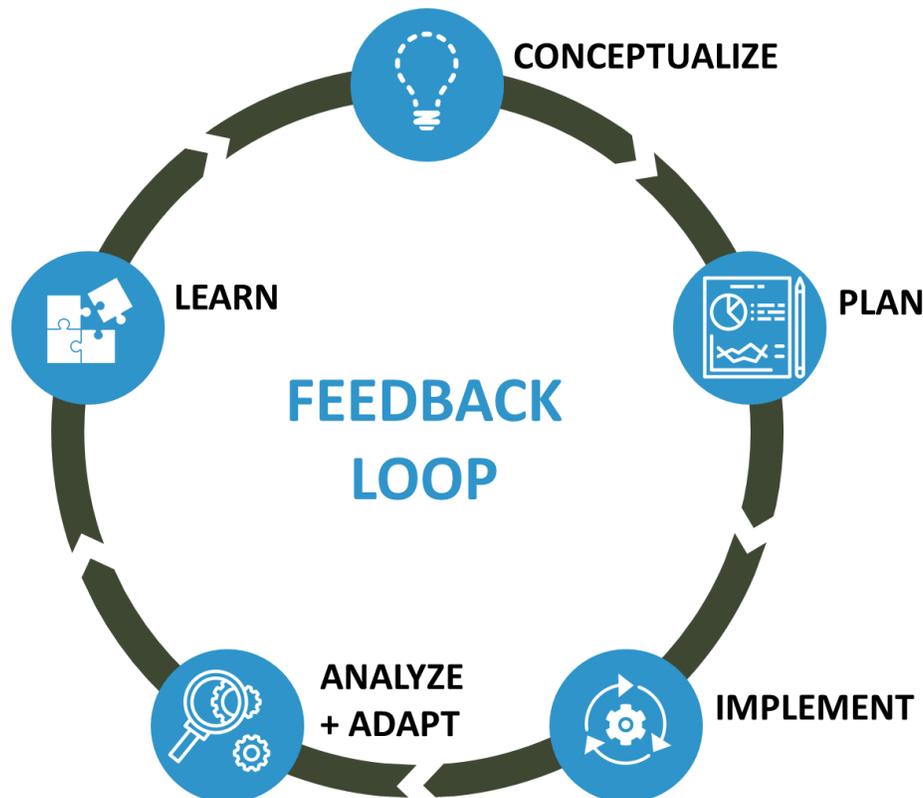
Several recommendations for program improvements are made in the "Recommendations for Future Reporting" section on page 8 & 9 and at the conclusion of the report. These recommendations are made in this 2-year report and will likely be carried forward into the 5-year report. In the 5 Year Report, the Work Group may make recommendations to amend the Work Plan. However, in this 2-year report, it is too early in the implementation phase to suggest substantive changes to program implementation as envisioned in the Work Plan. However, there are some suggestions for adaptive management of monitoring protocols based on the work accomplished to date. There are also suggestions on where to focus work efforts moving forward. This first year and a half have been dedicated to integrating VSP into the District farm planning and cost share programs, as well as developing outreach materials to solicit participation.



WHY MONITOR?

Monitoring is needed to understand whether actions taken are having the desired effect on the ground. If they aren't the actions are modified to achieve desired results. It's an on-going, iterative process.

Figure 1. The Monitoring and Adaptive Management Feedback Loop
(Adapted from the Open Standards for the Practice of Conservation)



SCHEDULE FOR FUTURE REPORTING REQUIREMENTS

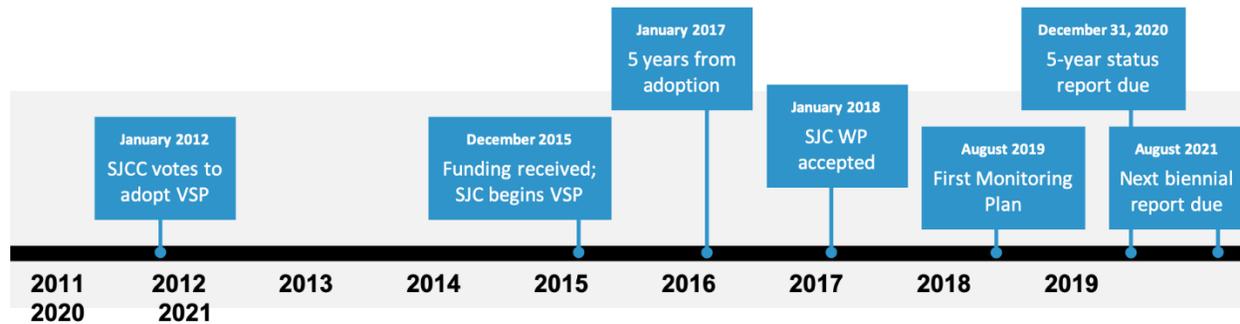
The VSP statute sets out specific monitoring and reporting requirements for all Counties participating in the Program. To clarify these reporting requirements, the Washington State Conservation Commission has published a Policy Advisory re-iterating these reporting requirements.¹ There are two primary reporting requirements specified in the statute. The first is a biennial report, and the second is a five-year status report. The statute states that each county “must conduct periodic evaluations, institute adaptive management, and provide a written report of the status and accomplishments to the County, and to the Commission.”² For San Juan County, a biennial report is due to the Washington State

¹ The Policy Advisory is accessible on-line at: <https://scc.wa.gov/wp-content/uploads/2018/10/VSP-SAC-Policy-Advisory-05-18.June-2018.implementation-reporting.amended.pdf>

² RCW 36.70A.720(1)(i)

Conservation Commission no later than August 30, 2019. San Juan County's schedule for reporting is reflected below.

Figure 2. Timeline



RECOMMENDATIONS FOR FUTURE REPORTING

The following recommendations have been reviewed and approved by the Work Group. Based on initial implementation of the VSP in San Juan County, we offer the following suggestions for Work Plan implementation:

1. Work with San Juan County Land Bank (Land Bank), WSU, and San Juan Preservation Trust, the Agricultural Guild and the San Juan County Agricultural Resource Committee to support their efforts to conserve agricultural lands in San Juan County. Target Individual Stewardship Plan development collaboratively with these organizations. This process has the potential to add approximately 4,600 acres of area to management under Voluntary Stewardship Program Individual Stewardship Plans. This represents 32% of agricultural acreage in San Juan County.
2. Send outreach materials to agricultural operators with existing Farm Plans. This is approximately 100 farm plans covering 2,380 acres in San Juan County. Work with interested agricultural operators to convert these Farm Plans to Individual Stewardship Plans under VSP.
3. Use 2016 as baseline for wetland acreage as it intersects with agricultural activity, given San Juan County's 2014 wetland map updates. [San Juan County Possible Non-Tidal Wetlands Map](#)
4. Use e-DNA sampling in freshwater systems to identify existing aquatic resource populations, rather than implementing the Stream Visual Assessment Protocol 2 (SVAP2) every 2 years. Leverage existing data collection efforts in priority watersheds. (For example, Wild Fish Conservancy has conducted e-DNA on False Bay Creek Watershed, a priority watershed on San Juan Island).
5. Partner with San Juan County and others to implement the recently completed "San Juan Islands Salmonid Limiting Factors & Recommended Actions - Eight Basin Report" once it is formally adopted by the County.



6. Recruit new Work Group Members to replace members who have not been active participants or who are no longer farming.

RECOMMENDATIONS FOR WORK GROUP INPUT

The following are recommendations that the SJICD intends to coordinate with the Work Group and the San Juan County Council for their approval:

1. Meet with elected officials once a year to provide program implementation updates unless the County Council requests more frequent updates.
2. Consult the Work Group regarding the changes in mapped stream area that intersects with agricultural activity. Consider targeting these areas for VSP participation and outreach.
3. Target a specific number of ISPs to be developed every quarter – begin with a goal of 3 per quarter, 12 per year.
4. Establish quarterly meetings with the Work Group tied to specific deliverables, such as ISP adoption.
5. Create a work plan and budget for program implementation.
6. Consider developing and documenting criteria for ISP prioritization; for example –watersheds that are experiencing a high rate of conversion from agricultural lands to residential.
7. Follow San Juan County’s salmon recovery strategy updates and incorporate these strategies as appropriate into ISPs.
8. Consider using changes in area of intersection of streams and agricultural use as a focus for VSP participation and outreach if it exceeds 2% within any five-year reporting period.
9. Document changes to geologically hazardous areas where they intersect with agricultural activity on each island every 10 years, as opposed to every 5 years.
10. Issue an Agriculture Viability Survey every five years rather than every two years.
11. Continue to pursue water quality monitoring where surface water intersects with agriculture practices as envisioned in the Work Plan. Provide water quality monitoring program data and results to the Work Group at quarterly meetings.
12. Water quantity is a critical indicator of watershed health and agricultural viability in San Juan County. Pursue additional water quantity monitoring using simple strategies that measure water flow and water levels in streams, ponds, wetlands and wells.
13. Discontinue reporting Group B water system water quality reporting under Critical Aquifer Recharge Area monitoring requirement #3. Group B well water quality data does not provide an indication of groundwater quality. It is collected post treatment, after filtration and the data is required to inform public health consumption. Seek options for a more relevant method of identifying groundwater contamination. It’s worth noting, however, groundwater contamination has not been identified as a resource concern within the county (other than saltwater intrusion on Lopez Island related to quantity), but understanding usage and quantity is very important to informing future management decisions.
14. Consult Work Group guidance when adding priority surface water quality monitoring sites with the limited funding available.



15. Target outreach to Priority Watersheds and look to achieve balance among the major islands (Orcas, Lopez, San Juan) on outreach efforts.
16. Recruit new Work Group Members to replace members who have not been active participants or who are no longer farming.



The State of Agriculture in San Juan County



The islands lie within the Salish Sea, which is the ancestral territory of Coast Salish native cultures. For over 9,000 years the Coast Salish people have lived in the mountains, shorelines and watersheds of the Salish Sea. They would often burn portions of the islands to maintain conditions for growing camas and other important forage species.

In the 1800s, Europeans began settling the area and established a community of farms that produced dairy, livestock, grains, peas, strawberries, cherries, plums, apples, pears, and peaches. Today, less than half the number of farms remain from the peak of 566 farms and 68,513 acres of farmland in the 1920s. Currently, only about 14,000 acres or 3.5% of San Juan County is under agriculture production.

San Juan County agriculture is characterized by its deeply rooted, island-based farm culture, as indicated by the abundance of diverse and exceptional farm products, delicious local foods, the pastoral beauty of farmland, and a commitment to sustaining and growing a resilient and vibrant local food system. San Juan County consists mostly of small farms with livestock, hay production, and community supported agriculture gardens. Due to the lack of surface water for irrigation withdrawals dryland agricultural practices are most commonly utilized.

The Work Group identified the following goals to support viable agriculture in San Juan County:

- **Economic Prosperity:** Support a thriving and viable local farm economy that increases the profitability of local farmers.
- **Farm Retention and Expansion:** Maintain and increase the number of acres and/or farms in long-term commercial agricultural production by making farmland available and increasing capacity of farmers.
- **Farm Stewardship and Sustainability:** Maintain and increase healthy agricultural natural resource systems that are adaptable to climate change.
- **Supportive Regulatory Environment:** Establish a supportive regulatory environment.
- **Agricultural Ethic:** Increase the social value of a local food system.

The overall participation goal for the VSP is to achieve and maintain participation of agricultural producers of greater than 20% by 2020 and greater than 40% by 2025.



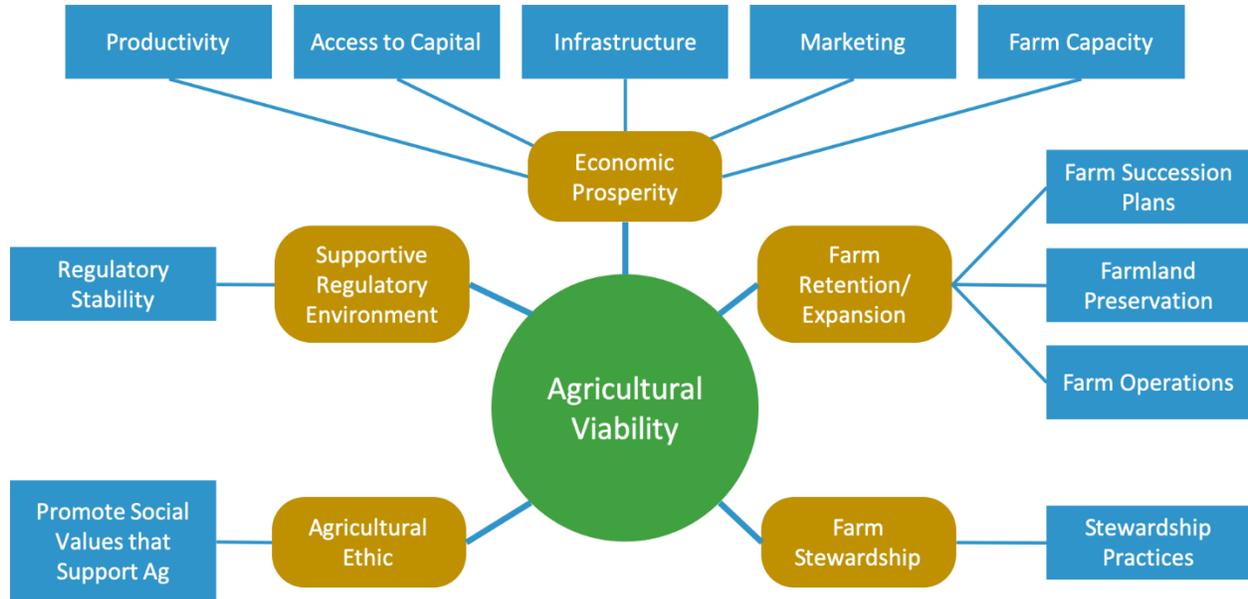
Agricultural Viability Goals:

- Economic Prosperity
- Farm Retention and Expansion
- Farm Stewardship and Sustainability
- Supportive Regulatory Environment
- Agricultural Ethic



In addition to the Participation Goal, the Work Group identified specific strategies to attain these goals:

Figure 3. Goals and Strategies to Attain Goals
 (Goals are in yellow and strategies to attain goals are in blue)



STATUS OF AGRICULTURAL VIABILITY IN 2018

Agriculture viability has not significantly changed since the VSP Work Plan was approved in San Juan County on January 16, 2018. The agriculture viability survey completed March 2017 during the development of the Work Plan is still quite relevant today. Consequently, a survey was not conducted as part of this two-year monitoring plan but will be for the five-year monitoring plan. According to the original survey however, the ability of local producers to find affordable skilled labor was one of the greatest challenges’ farmers face in San Juan County. More recently the agricultural community has identified the lack of permanent housing for farm workers as a priority, an issue that is associated with the ability to hire and retain workers. There is a lack of affordable housing in San Juan County in general. The agricultural community continues to work through the regulatory process to create more flexible and affordable housing options to support agricultural production, but this is a lengthy process, and remains a challenge. Another important issue the original survey uncovered is the average age of respondents was 63 years old, which reflects an aging population of farmers and raises a potential concern for farm succession and need for farm succession planning.

The baseline conditions for agricultural viability were established in Table 1 below reflecting Information presented from July 2011 (the date of statutory adoption of the VSP) to March 2017 gathered from several local organizations including SJICD, NRCS, the San Juan Preservation Trust (SJPT), the San Juan County Land Bank (SJCLB), local schools, and the County Assessor’s office.



Table 1. San Juan County Baseline Data

Metric	As of 2011	2011-2017	Explanation/ Data Source
Number of farm plans created	45	58	SJICD
Number of acres farm plans have served	1016	2,380	SJICD
Total number of BMPs implemented on agricultural land (NRCS & SJICD)	0 SJICD	92	SJICD & NRCS
Total linear feet of fencing installed	0 SJICD	24,262	SJICD & NRCS
Number of compost facilities installed	0 SJICD	12	SJICD & NRCS
Number of Heavy Use Areas installed	0 SJICD	16	SJICD & NRCS
Total farm acreage protected by Heavy Use Areas	0 SJICD	509	SJICD & NRCS
Number of agricultural acres protected: Acquisition	702	968	2011 Data from Growing Our Future, 2011
Number of agricultural acres protected: Conservation Easements	4,165	119	2017 Data from SJPT & SJCLB
Total acreage of land in farms (ag. activity)	14,930	13,942	2011 total from Growing Our Future (2011). 2017 total from VSP Mapping ³
Total acreage in SJC designated as Open Space-Agricultural land, 2017. (Current Use Farm and Agriculture)	Not Available	10,086	San Juan County Assessor
Number of school garden programs in the County, 2017	4	5	Local Schools, 2017; Growing our Future, 2011

Other important aspects of viability presented in Table 2, Summary Data Collected through a Local Agricultural Viability Survey Conducted in 2017, include total acres of land farmed by respondents, gross annual sales, the number of commercial farms, and the percentage of respondents who sell their goods off-island. Farmers reported on the total number of acres that they farmed in 2014, 2015, and 2016, which shows a 10% increase between 2014 and 2015. It should be noted that this is the total acreage from a subset of farmers in the County (71 respondents) and does not reflect total agricultural activity in

³ Note: there are some differences in how these acreages were calculated. The numbers are not directly comparable.



San Juan County. There were 15,669 acres in agricultural production according to the 2012 census and 18,402 acres in 2017.

Farming in San Juan County tends to be done on a relatively small scale. For example, the USDA 2012 Census states that the median size of farms in San Juan County is 26 acres with an average size of 57 acres. Statewide the median farm size is 24 acres with an average size of 396 acres. Market value of agricultural products sold in San Juan County was \$15,492 on average per farm, according to the USDA 2012 Census, while statewide the average per farm was \$244,859.

Table 2 provides a summary of results from a local agricultural viability survey conducted in early 2017 (see Appendix G of the San Juan County Work Plan and a discussion of the survey below). These indicators are being tracked to assess changes in agricultural viability in the County.

Table 2. Summary Data Collected Through a Local Agricultural Viability Study Conducted in 2017.

Respondent Type	Percentage	Total
Farms that sell goods off-island (restaurants and grocery stores)	46%	27/59 respondents
<i>Gross Annual Sales 2015</i>		
Less than \$10,000	50 %	30/59 respondents
Between \$10,000 - \$50,000	27%	16/59 respondents
Between \$50,000 - \$100,000	7%	4/59 respondents
Above \$100,000	15%	9/59 respondents
<i>Net profit 2015</i>		
Less than \$10,000	74%	42/57 respondents
Between \$10,000 - \$50,000	25%	14/57 respondents
Between \$50,000 - \$100,000	0 %	0/57 respondents
Above \$100,000	2 %	1/57 respondents
Number of acres farmed 2014 (owned and leased)	2,952	71 respondents
Number of acres farmed 2015 (owned and leased)	3,259	71 respondents
Number of acres farmed 2016 (owned and leased)	3,230	71 respondents
Number of farms that have developed business plans in last five years	44%	27/61 respondents
Average age of farmers (years)	63	71 respondents
Number of farms (including commercial and non-commercial)	59	59/71 respondents
Number of farms that are solely commercial	39	39/71 respondents



Farmers who find access to affordable farmland to be a moderate to extreme challenge	10%	6/58 respondents
Farmers who find access to equipment/farm machinery to be a moderate to extreme challenge	37%	22/59 respondents
Farmers who find access to capital to be a moderate to extreme challenge	51%	31/61 respondents
Farmers who find the cost/availability of skilled labor to be a moderate to extreme challenge	52%	32/62 respondents

**Based on Agricultural Viability Survey in San Juan County completed February-March 2017.*

Though the survey does not reflect total agricultural activity or values in San Juan County (because it is reflective of the 71 respondents), repeating the survey in the 5-year monitoring report will enable metrics to be tracked over time. This will allow interested parties to better assess any changes in agricultural success in San Juan County in the future in the context of the VSP agricultural viability goals.

There are opportunities and challenges for farming in San Juan County. Challenges include geographic isolation and lack of access to reliable markets; high production costs; lack of available infrastructure; an aging farmer population; mineralized glacial deposited soils which make productive farming a challenge; lack of large flowing rivers and streams; and limited groundwater sources. The small size of farms can be a limitation in terms of large-scale crop production, but small farms can also be a benefit with greater diversity of enterprises, potentially increasing resiliency. Other opportunities for farming in San Juan County include a natural environment that sustains viable agriculture, a long growing season, a moderate climate, and the demand for local products. The geographic remoteness of San Juan County also has its benefits. San Juan County is a GMO-free county and the remoteness allows San Juan County to farm without concern of contamination from non-GMO farming enterprises.

Agricultural viability in San Juan County requires maintaining resilient natural resource systems by implementing best management practices, building infrastructure, keeping farmland in production, providing technical assistance and educational opportunities, supporting access to trained labor, encouraging a profitable market for agricultural products, and providing a supportive regulatory framework.





LOCAL PROGRESS IN AGRICULTURE AND VSP

In April of 2019, a consortium of interested parties met to discuss collaborative ways to protect and preserve farmland under land preservation organization ownership in San Juan County. The name of this initiative is the San Juan County Conservation Agriculture Round Table. Participants include the San Juan County Land Bank, WSU Extension, Lopez Community Land Trust, San Juan Islands Conservation District, San Juan County, San Juan Preservation Trust, Agricultural Resources Committee of San Juan County, and the San Juan Islands Agricultural Land Guild.

The San Juan County Land Bank manages over 600 acres of lands on which agricultural activity takes place. They also hold easements over 1,000 acres of additional lands on which agricultural activities occur. These properties all include critical areas, including streams, wetlands, and critical aquifer recharge areas. Some of these lands include areas managed for habitats and species of local importance, including the Island Marble Butterfly and the Western Bluebird. The Land Bank has expressed an interest in working with the San Juan Island Conservation District to develop Individual Stewardship Plans for their lands on which agricultural activities and critical areas intersect. This includes four properties on San Juan Island (King Sisters Preserve, 58 acres, Zylstra Lake, 180 acres, Beaverton Marsh, 60 acres plus extensive contiguous conservation easements; (the private property owner to the west of this conservation easement has also expressed interest in developing an Individual Stewardship Plan on their 20 acre parcel, such that their lands would be managed consistently with the



adjacent Land Bank properties). This property owner is also interested in pursuing a voluntary wetland restoration plan); and the Frazer Homestead at 63 acres. Two properties on Orcas Island include Coffelt Farm (189 acres) and Fowler's Pond (40 acres). Potential properties on Lopez Island include the Weeks Wetland (6 acres) and RR Bar Ranch.

Similarly, the San Juan Preservation Trust, a private conservation organization, manages 800 acres of preserved lands and approximately 2,000 acres of easements which support grazing lands, hay and pasture, market gardens and orchards and vineyards. The San Juan Preservation Trust has also expressed an interest in developing Individual Stewardship Plans for their lands that support agricultural production and critical areas. In total the SJPT manages approximately 3,000 acres of land on which agricultural activities occur.

By developing Individual Stewardship Plans for these properties, nearly 4,600 additional acres could be protected under the Voluntary Stewardship Program's Individual Stewardship Plans. This is over 30% of the agricultural lands in San Juan County. In addition, agricultural operators on Lopez Island and Orcas Island who collectively manage over 500 acres under current Farm Plans within VSP priority watersheds have expressed an interest in developing Individual Stewardship Plans under VSP. One of these property owners is interested in having a flow gauge installed in the stream on their property; a flow gauge already exists at the mouth of this stream within the West Sound watershed on Orcas Island. Installing a flow gauge upstream, and monitoring flows, would meet both VSP Water Quality Monitoring Program goals as well as salmon recovery efforts and San Juan County Surface Water Monitoring Program goals.

Working with existing private agricultural operators on lands that they currently manage can be much more efficient than working with public agencies on lands leased for agricultural operations, particularly if no farm infrastructure is in place. For this reason, the SJICD also intends to contact agricultural operators with existing farm plans to gauge their interest in developing Individual Stewardship Plans under VSP.

In June 2019 the San Juan County Work Group met to discuss current status of the Program. The Work Group is supportive of the Land Bank and the Preservation Trust managed properties participating in VSP. The Work Group expressed an interest prioritizing lands for Individual Stewardship Plan participation by VSP priority watersheds, as well as a mix of public and privately held lands. They also expressed an interest in having an annual Work Plan to target specific properties for participation and having regularly scheduled updates on progress to date. The next steps are to identify agricultural operators with existing Farm Plans in VSP Priority Watersheds, and target VSP outreach materials to these individuals. In addition, the SJICD will continue to implement Individual Stewardship Plans for those property owners who do not currently operate with a management plan. As of this writing, three Individual Stewardship Plans have been developed under VSP, and has made some changes to the language of the Farm Plans to reflect integration with VSP (see Appendix B).

The 2020 Monitoring Report anticipates including summaries of Individual Stewardship Plans developed within the County.



The following section provides an overview of the efforts of various members of the agricultural community in relation to the work that they have completed towards supporting the San Juan County VSP agricultural viability goals established in the 2018 VSP Work Plan. The goals listed below are taken from Table 10 Agricultural Viability Goals, Agricultural Viability Strategies, and Agricultural Viability Indicators of the Work Plan.

AGRICULTURAL RESOURCES COMMITTEE

The Agricultural Resource Committee (ARC) of San Juan County is a volunteer group of farmers, food artisans and agricultural organizations with a mission to protect and restore agricultural resources in San Juan County (SJC). In recognition of the importance of agriculture for food security, land stewardship and island identity the county formed the Agricultural Resource Committee (ARC) in 2005 and has continued to fund a part time committee coordinator. The ARC advocates for agricultural land and economic opportunities, amplifies the voice of farmers and advises the San Juan County Council on agricultural policy and emerging issues.

The ARC has been involved with the Voluntary Stewardship Program since its inception. The past ARC coordinator and current chair participated in the VSP Work Group meetings. Direct involvement with the VSP continues to be in the ARC Work Plan.

Regarding the VSP Agricultural Goals the ARC's work dovetails with the VSP goals in multiple ways. The ARC actively works to coordinate and enhance collaboration between the various agencies and organization which support agriculture in San Juan County. This is done through convening a yearly agriculture organization retreat and by having representatives from the organizations serving on the ARC. Through this supporting role the work of the ARC touches on all the stated VSP ag goals. The three VSP goals that the ARC works on directly are:

- Supportive Regulatory Environment
- Farmland Preservation
- Agricultural Ethic

SUPPORTIVE REGULATORY ENVIRONMENT

The primary function of the ARC is to advise the county council on agricultural policy. This work directly supports the VSP goal of a "supportive regulatory environment". The main focus over the last year has been the Comprehensive Plan update and the following has been accomplished:

- New Agricultural Vision section submitted and adopted
- Revisions and additions to Economic Development Element submitted
- Draft Agricultural goal and policy recommendation for Land Use Element to be submitted in September 2019



FARMLAND PRESERVATION

The ARC seeks to enact land use policy which preserves farmland and working farms. We have also been directly involved in the current conversation about agricultural lands owned by conservation organization or protected by conservation easements. The county does not have an articulated vision as to the priorities for agricultural lands and the ARC is seeking to change the ethic from protecting viewsheds to protecting working landscapes.

AGRICULTURAL ETHIC

The ARC strongly advocates for farmers as stewards of a working agricultural landscape. Agriculture is part of our island culture. We incorporate this understanding into our policy suggestions and try to articulate the importance of agriculture for “rural character”.

SAN JUAN ISLANDS AGRICULTURAL GUILD

The San Juan Island Agricultural Guild is working on several projects that directly support the VSP Agricultural Viability Goals:

ECONOMIC PROSPERITY GOAL: MARKETING

Island Grown in the San Juans is a membership branding program that celebrates the quality, bounty, and benefits of food and products grown, raised, made or gathered in San Juan County, Washington.

From July to December of 2018, over 5,500 maps and 1,500 guides have been distributed through the following outlets: Lopez, San Juan and Orcas Chambers and farmers markets, visitor centers in Bellingham and Anacortes, 16 restaurants and businesses in San Juan County, San Juan County Art Fair, five San Juan County events, and 14 farm stands. 81 ag-related businesses listed their business in the guide and/or map. Surveys were sent to the 81 vendor participants who listed in the map/guide to gauge effectiveness of the program, 35 responded. Results include:

- 40% of participants said they would definitely list again at a \$70 list price
- 46% of participants were undecided about listing based on \$70 list price
- 14% of participants would not list again based on a \$70 list price
- Effectiveness is still in the early stages with the guides and maps only being distributed since end of June of 2018.
- 44% of participants felt the guide and map provided moderate marketing value to their business. 20% felt it provided no value. 36% of participants did not know



AGRICULTURAL ETHIC GOAL: SOCIAL VALUES

The same *Island Grown in the San Juans* program has received a 2019 Lodging Tax grant to create an Eat Island Grown Campaign that celebrates our history of agriculture and where to find heritage tastes today. The campaign will focus on local farmers that practice sustainable land stewardship that will preserve island resources and the pastoral landscape. The campaign kicks off in June of 2019, focusing on the food categories that have a lot of available local product: lamb, pork, mixed vegetables, fruits (apples, plums, and pears), and beverages.

ECONOMIC PROSPERITY GOAL: INFRASTRUCTURE

In 2018, the San Juan County Food Hub working group, consisting of representatives from ag organizations, farmers and buyers, tested software that would meet the needs of buyers wanting an easier way to purchase island produced food and producers wanting to expand to more local markets. In 2019, the Ag Guild is soliciting San Juan County farmers to commit to a pilot that will launch an Inter-Island food purchasing system through the Puget Sound Food Hub. As of May 2019, there are 8 farms committed to begin a pilot that will define costs, policies and procedures of a San Juan County Food Hub.

Brickworks Event Center is owned by the Ag Guild and has a commercial kitchen. The kitchen is available to Island Grown members at a nominal cost of \$25 for 6 hours in order to encourage value-added products or food service.

- 3 producers create value-added jams and candy to be sold retail.
- 5 up-coming chefs that use island products create food and beverages that they sell during the farmers market, other area events, and pop-ups at Brickworks.

FARM RETENTION AND EXPANSION GOAL: FARMLAND SUCCESSION

The Ag Guild is in the third year of a USDA Beginning Farmer Rancher Development Grant with partners: Whidbey Conservation District, WSU San Juan County Extension, Northwest Agriculture Business Center, and Organic Farm School. Our role is to connect farmers with 10 years or less experience with farmland lease options in San Juan County.

From September 1, 2017 to August 30, 2018 the program received queries from a total of **54 unique qualified Beginning Farmers (BF)** from throughout the country with interest in learning more about potential farming opportunities in San Juan County and Whidbey Island. Of those:

- 7 BFs contacted SJIAG in Year 1, and 31 in Year 2
- 16 contacted Whidbey CD
- 12 decided not to pursue farming in SJC or on Whidbey Island due to incompatibility with farm business goals, lack of funding, lack of sufficient experience, smaller markets and difficulty delivering to markets.
- 8 new farmers bought or leased land
- 2 existing farmers expanded operations through lease or purchase of farmland



- 2 existing farmers improved farming success other than land purchase or lease.
- 30 qualified BF's were supported to prepare to start or expand farming, 24 are still engaged in ongoing support to purchase or lease land.
- Extensive engagement and interviews with 20 farmland owners to identify goals, timeline for transition, and suitability of land for specific farming enterprises. Worked with San Juan Preservation Trust to establish conservation easement on 10 acres of farmland on Lopez that the Trust currently owns.

WSU EXTENSION

ECONOMIC PROSPERITY GOAL

In terms of the number of people reached, WSU has offered over 12 stand-alone workshops since 2016, as well as continuing the San Juan Islands Agricultural Summit which reaches 120 to 170 participants annually. Eighty-one percent of Ag Summit survey respondents indicated that they had made a change to their operation based on information learned at a previous Summit. WSU estimates that it reached 130 unique beginning farmers with training programs and workshops in 2016 and 2017. It established a farmer mentor program with 9 pairs of beginning farmers and established farmers. This work was done collaboratively with the San Juan Islands Agricultural Guild and the San Juan Islands Conservation District.

In relation to agricultural viability indicator #8, number of research projects, WSU currently maintains 5 active projects (Conservation District No Till Drill; WSU engaged 14 farms in research and demonstration between 2017 and 2018 including wire worm and click beetle research, pasture management, crop variety evaluation and small grain production). This work was completed in partnership with the San Juan Islands Conservation District.

FARMER CAPACITY (AG VIABILITY STRATEGY)

WSU offered two-part farm business planning courses with NABC in the fall of 2017 reaching 5 participants.

In terms of ability to access capital, the Orcas Coop established a County-wide Farm Fund. Two San Juan County Producers received Value Added Producer Grants after attending workshops by WSU and NABC to enhance value added products. This effort was completed collaboratively with the Orcas Coop, WSU, and NABC.

Regarding the number of producers that have access to food processing facilities, the Lopez Taproot facility continues to build capacity for local food processing.

San Juan Islands Agricultural Guild, WSU and WSDA partnered on Food Hub outreach and listening sessions in 2018 reaching 49 stakeholders in three meetings. SJI Ag Guild has continued with targeted outreach and is moving forward with evaluating options for online ordering software.



San Juan Transport has expanded capacity in Friday Harbor for storage and aggregation of product.

The number of farms has increased from 2012 to 2017 (from 274 to 316) per USDA data.

The Lopez Family Resource Center launched a gleaning program to expand access to local agricultural products.

Annual Farm Tours, held on each island in September, have continued to provide public educational opportunities. This effort is collaboratively sponsored with the San Juan Islands Conservation District and the San Juan Islands Agricultural Guild.

PARTICIPATION SINCE VSP ADOPTION

San Juan County's Voluntary Stewardship Work Plan was adopted by the Washington State Technical Panel in January of 2018.

The overall participation goal of the County's Work Plan is to have more than 20% of agricultural producers in San Juan County participate in ISPs by 2020, and more than 40% participating by 2040. As of this writing, three ISPs have been adopted. In order to track goal attainment, the SJICD will report on:

1. The total # of agricultural producers in San Juan County.
2. The percentage of those producers who are participating in VSP (those who have an ISP)
3. The percentage of agricultural producers whose agricultural activities intersect with critical areas.

The first step in participating in the VSP was for the SJICD to develop outreach materials that explain what the VSP is, how it works, and how to participate in the Program. Once agricultural producers express an interest in participating, they will meet with SJICD staff to develop an Individual Stewardship Plan for their property. Once completed, the ISP will serve as the formal mechanism for documenting participation in the VSP.

A general one-page overview of VSP was developed in October of 2018 and reviewed and approved by the Work Group and Council. In addition, the SJICD has been working with their Board to develop a more targeted overview for participation to agriculture producers during the summer of 2019.

Once outreach materials are developed and approved by the Work Group, the plan is for the SJICD to email and or mail out these materials to agricultural producers who have current farm plans (approximately 100 agricultural producers). The intent is to work with this group of stakeholders at the outset and expand participation in the VSP through this community. In addition, these outreach materials will be emailed or sent to all participants on the San Juan County Farmers and Food Producers email list (approximately 250). Finally, the SJICD will coordinate with the San Juan Islands Agricultural Guild and the San Juan County Agricultural Resources Committee to distribute VSP outreach materials to as many potential participants as possible. The number and type of outreach activities will be documented by SJICD staff.



In addition, SJICD staff will continue to provide an annual update on the VSP at San Juan County's annual Agricultural Summit, held during the first quarter of each calendar year. SJICD staff will continue to keep the County Council apprised of the progress of the VSP and will provide outreach materials at all agricultural workshops and events throughout San Juan County each year. Finally, the SJICD is responsible for coordinating and implementing the Agricultural Viability Survey. The first survey was completed in January of 2017.



Critical Areas: Baseline Monitoring

2011 Date of Adoption versus Current data

In January of 2018 San Juan County's Work Plan was adopted by the state Technical Panel. This section of the Monitoring Report documents Critical Areas metrics in San Juan County at the time of VSP Adoption and compares that baseline data to the time of Work Plan Adoption (2018 but using data collected between 2016 and 2017). Where significant changes have occurred the reason for these changes is noted.

Looking at the data over time allows the Work Group to understand how and why various metrics have changed during this timeframe. This, in turn, sets the stage for discussion of these metrics as the basis for the County's 5-year Work Plan Reporting Requirement, due to the legislature by December 31, 2020.

ACREAGE OF WETLAND

In 2011 San Juan County was amid its Critical Areas Ordinance updates. At that time, critical areas mapping was being updated to meet the Growth Management Act requirements. A Best Available Science document, covering all Critical Areas, was researched and produced to document the scientific and literature basis for Critical areas ordinance updates (Adamus et al, 2011). Part of that document included an update on wetland science and mapping in San Juan County.

During the 1980's San Juan County, like many counties nationally, relied on a national data base, the National Wetland inventory (NWI ⁴), to identify potential wetland areas on the ground. The NWI maps were a useful tool but were known to be inaccurate and had no ground-truthing. In 1993 San Juan County hired a qualified wetland consultant to provide limited ground truthing to test the accuracy of its wetland mapping. This produced the 1993 Wetland Inventory. Although more accurate than NWI alone, these maps were still known to have some inaccuracies. In addition, technology had been updated, and as a part of the County's Critical Areas Ordinance updates an effort was made to use the latest technology, as 'best available science' under GMA to provide an update to San Juan County's wetland mapping.

The new mapping is based on the following data layers:

- Color aerial imagery (June 2008 County color ortho-photos)
- LiDAR
- New soils maps – focusing on dominantly hydric soils and partially hydric soils

⁴ <https://www.fws.gov/wetlands/data/mapper.html>



- Previous wetland mapping (this included 1991 Wetland Inventory, 1993 Wetland Inventory and NWI)

The mapping undertaken as a part of this update resulted in a 52% increase in the area of mapped wetland in San Juan County. This area includes ‘possible non-tidal wetlands’, ‘possible tidal wetlands’, NWI data, as well as the 1993 Wetland Inventory data. A complete list of the data layers included in the map update is included in Appendix 2A-1 of San Juan County’s Best Available Science (BAS) document⁵.

San Juan County adopted Adamus’ recommended approach to wetland mapping as part of its 2014 Critical Areas Ordinance updates. The County wetland mapping on-line also includes a partial data layer for NWI. The County maintains these data layers, which are updated periodically. They are accessible on-line at: <https://sjcgis.maps.arcgis.com/>

As a part of this VSP biennial monitoring report, an attempt was made to quantify the area of agricultural use as it existed in San Juan County in 2011, and to map the area of intersection of wetlands mapped in 2011 as well.

To quantify the area in agricultural use, a 2009 data layer, published in a 2011 report entitled: “Growing Our Future: An Agricultural Strategic Action Plan for San Juan County, WA” was used. This study identified 652 parcels comprising 13,891 acres of land in San Juan County’s Agricultural Resource Lands designation (Growing Our Future, 2011). Although this study tracked agricultural use slightly differently than the analysis undertaken for VSP, this acreage is remarkably similar to the acreage of agricultural activity documented in 2017 as a part of San Juan County’s VSP Work Plan⁶. That document recorded 13,942 acres of land on which agricultural activity was taking place.

The total acreage of wetlands mapped in San Juan County, per Adamus in 2011 is shown in Table 3 below. For comparison, the 1993 Wetland Inventory Acreage is also included.

Table 3. Wetland Acreage in San Juan County, 1993, 2011, 2016

Island	1993 Wetland Inventory Acreage	1993 – Number of Wetlands	2010 Wetland Inventory Acreage	2010 – Number of Wetlands	2011 Wetland acreage that intersects with ag use	2016 Wetland acreage that intersects with ag use
Lopez	1,012	228	1,333	554	572	685
San Juan	1,785	503	2,838	1,012	414	888
Orcas	1,158	339	1,942	868	129	304
Shaw	185	61	105	70		18

⁵ San Juan County Best Available Science Synthesis. 2011. Prepared by Adamus Resources Assessment Inc, Herrera and The Watershed Company. Adopted 5/24/2011. Reference No: 100814.

⁶ Growing Our Future analyzed agricultural lands differently than the VSP analysis. This study documented land use by category, including both ‘commercial’, ‘fallow’, and ‘forestry’ based on 2009 NRCS data. It also looked at Comprehensive Plan Land Use designations. The 13,891 acres of land is the land in Agricultural Resource Lands as designated by the County’s Comprehensive Plan at that time.



All Islands					1,115	1,910
County Total	4,140	1,131	6,218	2,504	1,115	1,910

In developing the San Juan County VSP Work Plan the following, data from 2016 were used. The following table shows the comparison in mapped wetland acreage between 2011 and 2016. Note that mapped wetland acreage as it intersects with agricultural activity is not directly comparable between years, due differences in how the data were aggregated in 2011 versus 2016. What the comparison shows is that, given the change in wetland mapping adopted by San Juan County in 2014, it does not make sense to use 2011 data as baseline to track the change in wetland acreage as it intersects with agricultural activity over time. Rather, we suggest using 2016 as baseline data for wetland area as it intersects with agricultural activity. This data was used as the basis of the San Juan County VSP Work Plan, adopted in January of 2018, and represents the most accurate information available.

Table 4. Mapped Wetlands Intersecting with Agricultural Activity 2011 versus 2016

Island	2011 – Wetland Acreage intersecting with Ag Activity (in acres)	2016 – Wetland Acreage intersecting with Ag Activity (in acres)
Lopez	572	685
San Juan	414	888
Orcas	129	304
Shaw	No data	18
All Islands	1115	1,910

RECOMMENDATION

Because of the change in map methodology between 2011 and 2016, we recommend that the 2016 data for wetland acreage be used as the baseline data set against which to measure future wetland acreage data.

LINEAL FEET OF STREAMS

As part of the Work Plan process, streams, where they intersect with agricultural use, were mapped. Streams in San Juan County are designated as ‘aquatic Fish and Wildlife Habitat Conservation Areas’ to protect their functions. There are no freshwater systems in the County that exceed 20 cubic feet per second of flow (the regulatory threshold for regulation under the State’s Shoreline Management Act, RCW 90.58). The stream data layer has not changed since 2011. San Juan County’s streams were ground-truthed and typed by the Wild Fish Conservancy between 2003 and 2009. The Work Plan identified the following data:

Table 5. Lineal feet of Streams 2011 versus 2016

Island	2011 Streams (miles)	2016 Streams (miles)
Lopez	18	18



VSP MONITORING REPORT
CRITICAL AREAS: BASELINE MONITORING

Island	2011 Streams (miles)	2016 Streams (miles)
Orcas	10	10
San Juan	24	23
Shaw	Not Analyzed	2
Stuart	Not Analyzed	No streams mapped
Waldron	Not Analyzed	.63
TOTAL	54 (rounded)	53 (rounded) Detailed data by lineal foot of stream area is also provided by watershed and island in Appendix D, Table D-9 of the Work Plan

Data for both the Work Plan (using 2016 data) and for 2011 was aggregated by island and watershed. This data was further analyzed to identify significant changes to lineal feet of stream in priority watersheds where streams intersects agricultural lands. Note that agricultural use in 2011 was defined and mapped using the data from the study Growing Our Future (2011) and is not directly comparable to the mapping of agricultural use in 2016, as previously noted. The following changes were observed.

Table 6. Observed Changes 2011 versus 2016

Island	2011 - Stream area in lineal feet (w/ag intersection)	2016 – Stream area in lineal feet (w/ag intersection)
Lopez	94,605	93,385
Orcas	50,828	62,804
San Juan	128,643	121,521
Shaw		11,376
Waldron		3,331
TOTAL	286,125	280,440 lineal feet (approximately 53.11 miles)

The following tables show the breakdown of stream mapping by island and watershed.

Table 7. Lopez Island--Streams and agricultural use, 2011 versus 2016

Lopez Island Watersheds	Lineal feet of stream mapped as intersecting with Ag lands 2011	Lineal feet of stream mapped as intersecting with Ag lands 2016
Davis Bay (VSP Priority Watershed)	51,965	45,628
Fisherman Bay	1,104	1,854
Hughes Bay (VSP Priority Watershed)	5,665	2,556
Hunter Bay	8,874	8,658
Lopez Sound	8,035	14,543
Shoal Bay	817	2,783
Swift Bay (VSP Priority Watershed)	14,969	14,007
Upright Channel	3,176	3,317
Total		93,385



There were significant differences in the mapping of Orcas watersheds between 2011 and 2016. Only three watersheds were mapped in 2011, whereas in 2016 eight watersheds were mapped.

Table 8. Orcas Island--Streams and agricultural use, 2011 versus 2016

Orcas Island Watersheds	Lineal feet of stream mapped as intersecting with Ag lands 2011	Lineal feet of stream mapped as intersecting with Ag lands 2016
Eastsound	14,375	5,757
Presidents Channel (Priority Watershed)	6,492	6,897
West Sound (Priority Watershed)	41,937	27,892
Deer Harbor (Priority Watershed)		765
Doe Bay (Priority Watershed)		3,334
G&G Coves (Priority Watershed)		4,007
North Shore Orcas		274
Raccoon Point		1,738
Total	62,804	50,828

Table 9. San Juan Island--Streams and agricultural use, 2011 versus 2016

San Juan Island Streams/watersheds	2011 lineal feet of stream mapped w/ag intersection	2016 lineal feet of stream mapped w/ag intersection
False Bay (Priority Watershed)	73,555	72,146
Friday Harbor	12,472	7,433
Garrison Bay (Priority Watershed)	17,655	11,019
Griffin Bay	4,925	6,946
Haro Strait	10,490	10,025
Juan de Fuca	6,714	5,944
Mitchell Bay	119	80
San Juan Channel	1,767	6,322
Westcott Bay	59	269
Unidentified	886	1,336
TOTAL	128,643	121,521

When looking at this data, it is important to note that the changes in lineal feet may be due to a variety of reasons but are primarily attributed to a conversion from agricultural use to other uses, mostly residential. This is illustrated in a parcel-scale analysis of two of the watersheds where agriculture lands have been reduced in the Westsound Watershed on Orcas and the Garrison Bay Watershed on San Juan Island (Note: This change may be the result of administrative changes in the way the data is managed):





Figure 4. VSP Streams Westsound, 2011



Figure 5. VSP Streams Westsound, 2016

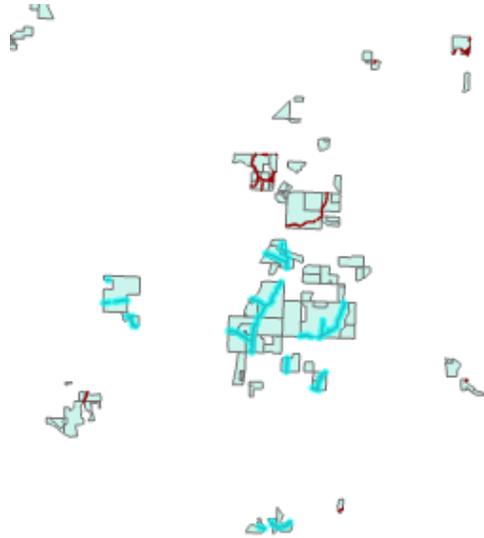
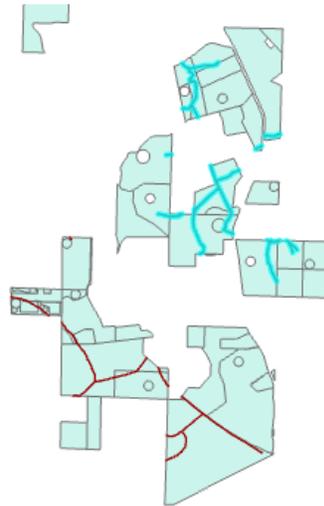


Figure 6. VSP Streams Garrison Bay, 2011



Figure 7. VSP Streams Garrison Bay, 2016



RECOMMENDATIONS

- It may be worth considering using the above data to target VSP outreach in watersheds that are experiencing a significant level of conversion from agricultural use to other uses. This issue should be discussed with the Work Group.
- As part of the adopted San Juan County VSP Work Plan, the SJICD committed to conducting Stream Visual Assessment Protocol 2 (SVAP2) monitoring on a portion of False Bay Creek every two years and comparing the differences in the scores. False Bay Creek is a priority watershed under San Juan County's VSP. As part of monitoring in 2019, a portion of False Bay Creek was sampled using SVAP2. Due to a lack of restoration actions or changes in practices there has been no significant change to SVAP2 scores in the portion of the reach that was sampled between 2017 and 2019. The system has been ditched since at least 1894 to facilitate agricultural use of the valley. Riparian conditions are not optimal for salmonids or other aquatic species and improving the structure and function of the riparian zone remains an on-going effort for local conservation groups. Management recommendations of the riparian zone are not likely to change significantly based on results of SVAP2 every 2 years. Implementing SVAP2 is expensive, time consuming, and requires securing land-owner access, which can be difficult at times. (In 2019 access was denied to 4 stream reaches that we had previously sampled in 2017).

Therefore, rather than using SVAP2 every two years, we suggest the use of Environmental DNA (eDNA) to determine which aquatic organisms are present in the system to understand species richness within each system.

Environmental DNA (eDNA) is the genetic material of an organism that is found in the environment. Organisms release the DNA into the environment in the form of secretions, mucous (slime), feces, urine, hair, gametes, or carcasses. These substances slowly degrade in the aquatic environment but can be collected in appropriately timed water samples.

eDNA testing was developed to improve monitoring of native and invasive species presence and absence. Fish and other aquatic organisms release DNA into the environment. The potential presence of individual species can be detected by collecting water samples in the field and processing the filtered water in the lab. DNA is extracted from the water samples and identified using genetic markers that are unique to each species⁷. The Wild Fish Conservancy has been collecting eDNA samples in False Bay Creek, and these data could be obtained at little to no cost to the VSP Program. This would save money and provide valuable data on False Bay Creek. (There has been discussion as to which species are present in the system. Use of this data could answer that question definitively). Use of this data is also consistent with "...leveraging of existing resources by relying upon existing work and plans...to achieve program goals."⁸

⁷ Information on eDNA was derived courtesy of a FAQ sheet provided by Cramer Fish Sciences.

⁸ VSP Policy Advisory 05-18 at page 3. Consideration #5.



We therefore recommend the use of eDNA data in False Bay moving forward, as opposed to implementing SVAP2 every 2 years.

INTERSECTIONS WITH HABITATS & SPECIES OF LOCAL IMPORTANCE

Habitats and species of local importance have not yet been addressed under adopted VSP Individual Stewardship Plans. This is a metric that we plan to track in the future, as ISPs are developed that address management of habitats and species of local importance. For example, several parcels in the False Bay Creek watershed support experimental plots planted to support the Island Marble Butterfly, a species of local importance that was proposed for listing under the Endangered Species Act in 2018⁹. These plots could also be installed with cooperative agricultural operators in other portions of the False Bay Creek watershed under Individual Stewardship Plans developed in cooperation with the SJICD, and the US Fish and Wildlife Service. The San Juan Preservation Trust already operates under such an agreement and has expressed an interest in developing Individual Stewardship Plans for its properties on which agricultural use and critical areas are management concerns.¹⁰

SURFACE WATER QUALITY

San Juan County initiated a pilot stormwater monitoring program in 2009 to identify sources of water pollution to local freshwater and marine resources. After three years of pilot monitoring activities conducted 2012–2015, the SJICD continued surface water monitoring on an annual basis to provide additional data characterizing water quality in creeks and waterways in six focus areas on San Juan, Lopez, and Orcas islands:

- San Juan Island: False Bay, Garrison Bay, and Westcott Bay
- Orcas Island: Eastsound
- Lopez Island: Fisherman Bay (which does not intersect with agriculture) and Mud Bay

The SJICD built off of this monitoring program to develop its VSP Water Quality Monitoring Program, incorporated as part of Appendix E of the San Juan County Work Plan. The Water Resource Monitoring Network included as a part of that appendix is aspirational, but is intended to be implemented over time as funding and access become available.

⁹ Federal Register, Volume 83, No. 71, April 12, 2018. Proposed Endangered Status for Island Marble Butterfly and Designation of Critical Habitat.

¹⁰ Dean Dougherty, San Juan Preservation Trust, conversation with Jennifer Thomas, Water & Land Natural Resource Consulting, May, 2019.



The County's stormwater monitoring during 2017–2018 expanded the number of surface water monitoring sites and included four storm events (October 2017–March 2018) and two dry weather events (February and April 2018).¹¹ All the sampling sites are identified in the maps below.

¹¹ The summary of the County's Stormwater Monitoring Program is taken from 2017-2018 Data Report for the San Juan County Stormwater Monitoring Program prepared for San Juan County Public Works Department by Stillwater Sciences, Berkeley California, dated December 2018, Final Report.



Figure 8. San Juan Island 2012-2018 Monitoring Sites

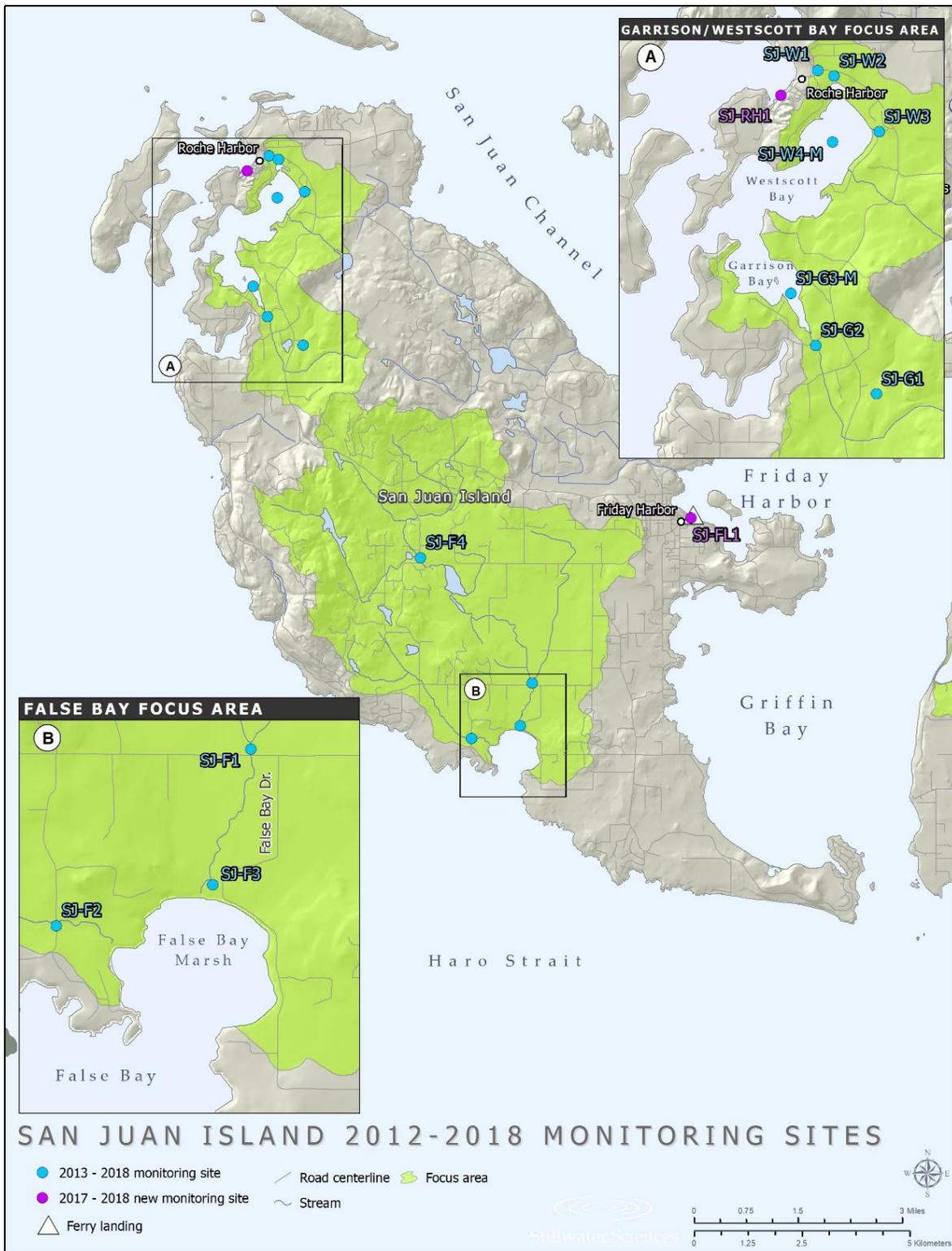


Figure 9. Lopez Island 2012-2018 Monitoring Sites

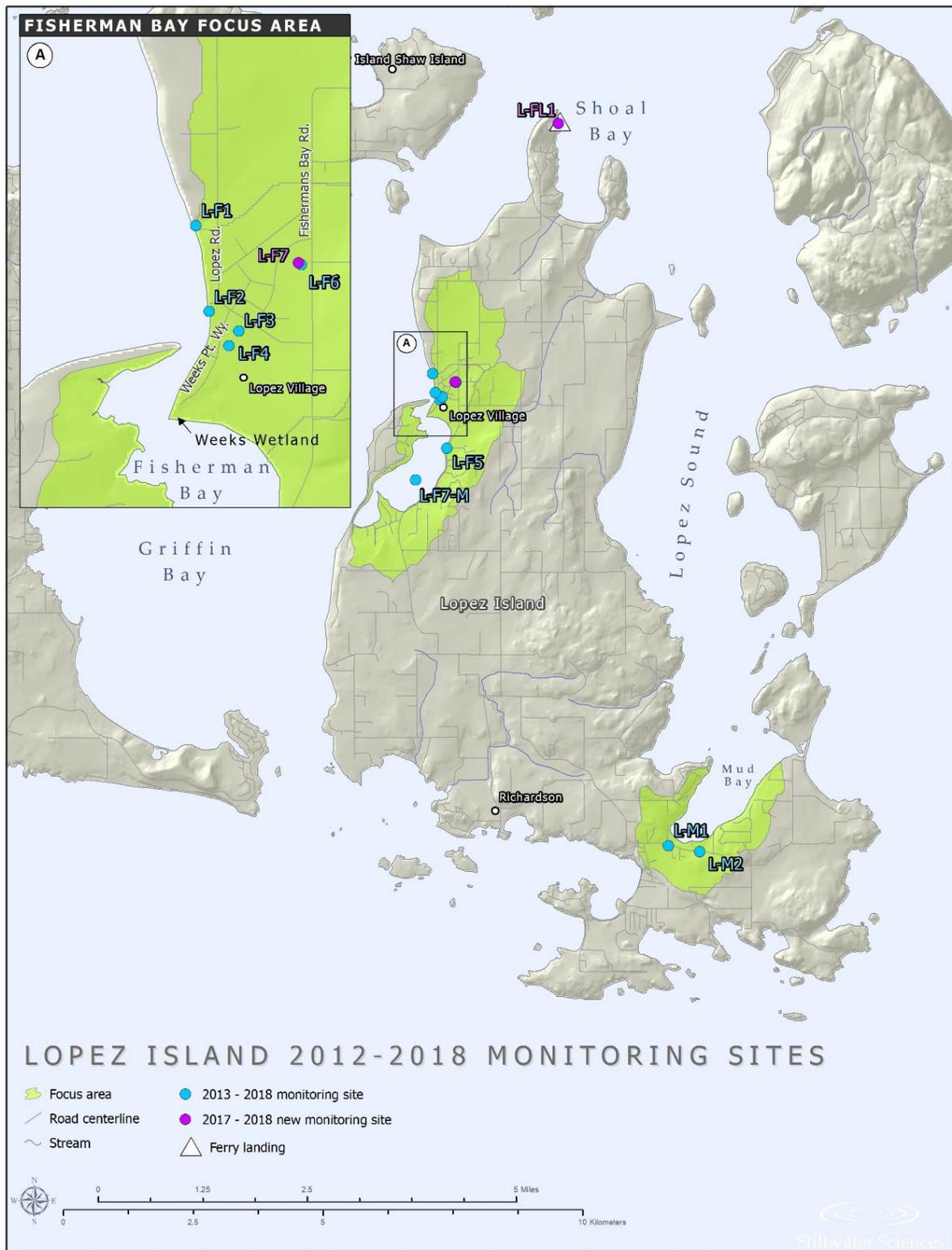
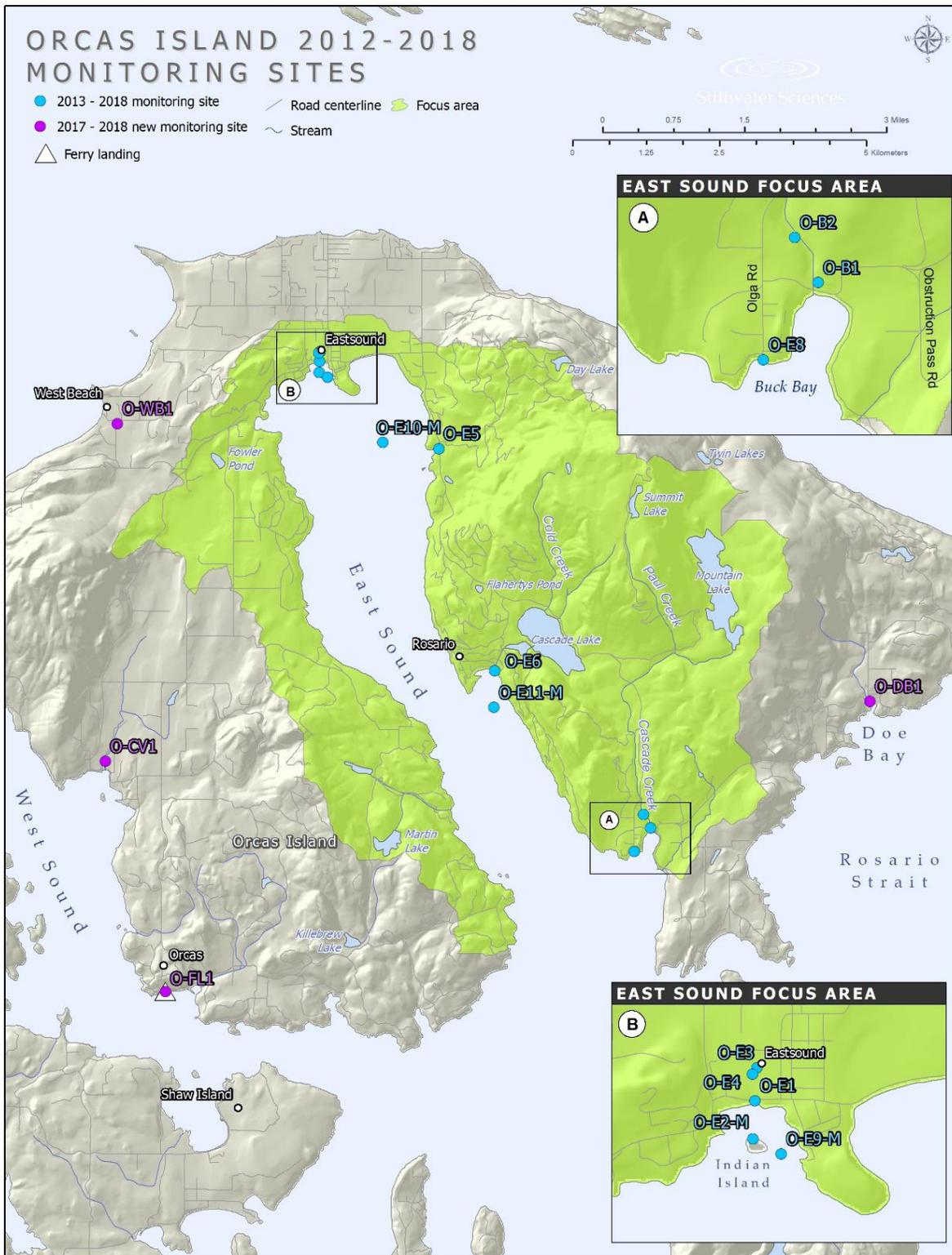


Figure 10. Orcas Island 2012-2018 Monitoring Sites



WATER QUALITY MONITORING RESULTS

VSP surface water quality parameters tested in the field are temperature, dissolved oxygen, conductivity, pH, and turbidity. Water chemistry parameters tested are: NO₂ + NO₃ nitrogen, total nitrogen, total kjeldahl nitrogen, total phosphorous (TP), bacteria (i.e., total coliform, E. coli).

Water quality data between the focus areas included in the pilot monitoring program indicates that in general, False Bay, Westcott Bay, Fisherman Bay, and Eastsound focus area sites exhibited frequent high bacteria concentrations. The Garrison Bay focus area exhibited relatively low pH, with the median value across all storm events falling just below the WSDOE water quality objective of 6.5 s.u. In general, results from the monitoring sites added in Year 5 (2017–2018) fell within the range of values measured at other sites during prior years and for all monitoring parameters.

Nutrient concentrations in San Juan County during 2013–2018 were low to moderate compared with values measured in Puget Sound Phase 3 monitoring and reported in three national databases of monitored stormwater concentrations. Total nitrogen and total phosphorus were generally higher during storm events than during dry weather events.

In contrast to other water quality constituents, fecal coliform and *Escherichia coli* results from 2013–2018 indicate that bacteria levels are generally elevated in stormwater in San Juan County. Bacteria concentrations, expressed as colony forming units (CFUs), were significantly lower during dry weather events than during storm events across all monitoring sites and all years.

The Mud Bay focus area was sampled infrequently during 2013–2018 due to lack of consistent flow at Site L-M2. Samples collected at Site L-M2 exhibited generally low pH and high median total nitrogen (albeit with a low sample size), with moderate levels of other measured constituents.

Monitoring sites in the Garrison Bay focus area exhibited relatively high dissolved oxygen, with few measurements falling below the WSDOE lowest 1-day minimum of 8 mg/L. This focus area also exhibited the most consistently low bacteria concentrations measured during 2013–2018, with only occasional occurrences of fecal coliform above the WSDOE freshwater maximum of 100 CFU/100 mL during storm events. In addition, Garrison Bay exhibited low nutrient levels. pH values were relatively low, with multiple storm and dry weather instantaneous measurements below the WSDOE minimum value of 6.5.

The Westcott Bay focus area storm event and dry weather samples occasionally exhibited low pH, and high turbidity (>100 mg/L). Except for two measurements of 7.4 mg/L, this parameter generally met the WSDOE 1-day instantaneous minimum of 8.0 mg/L during all storm and dry weather events. Westcott Bay monitoring sites also exhibited high bacterial concentrations, with numerous elevated values across multiple sites during storm events. Nutrient concentrations for the Westcott Bay focus area were moderate relative to other focus areas except for one elevated TP measurement (> 1,000 ug/L).¹²

¹² Stillwater Sciences, 2018.



RECOMMENDATION

For 2019 and into the future surface water quality will be broken out by the County monitoring stormwater at urban points of discharge and SJICD monitoring surface water within the priority watersheds that intersect with agriculture production. Coordination between the County and SJICD will be ongoing to share data and avoid duplication of efforts.

CRITICAL AQUIFER RECHARGE AREAS

All of San Juan County is mapped as a critical aquifer recharge area. To protect critical groundwater recharge resources, the San Juan Islands Conservation District is participating in the following water quality and quantity goals and objectives:

CARA Goals:

- Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities.
- Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (water quality, water quantity).
- Prioritize watersheds with known contaminant problems for management that protects and improves water quality.

WORK PLAN CARA OBJECTIVE #1: RECHARGE

Maintain or improve groundwater recharge to support groundwater storage functions including stream base flows and wetland hydroperiods in their natural hydrologic cycles.

1. ID the # and types of BMPs implemented to increase water storage capacity

- **Results:** One water storage facility has been completed since 2016.

CARA BENCHMARK #2

2. ID the # and type of actions taken to quantify agricultural use of water (using Farm Plans and ISPs)

- **Results:** No actions have been taken to quantify water use since 2016.



CARA BENCHMARK #3

3. Analyze and report on groundwater quality from Group B water systems in priority watersheds

- **Results:**

- (a) San Juan Island: False Bay, Garrison Bay

- False Bay has eight Group B water systems registered within the basin. There were 38 water quality samples tested from 2016 to present. Five samples tested positive for total coliform, and one sample reported conductivity level as an issue.
 - Garrison Bay has four Group B water systems registered within the basin. There were 16 water quality tests completed from 2016 to present which reported no exceedances in any of the tests.

- (b) Orcas Island: West Sound and Doe Bay

- West Sound has five Group B water systems registered within the basin. There were 33 water quality samples tested from 2016 to present. Six samples tested positive for total coliform.
 - Doe Bay has one Group B water system registered within the basin, which completed seven water quality tests from 2016 to present. There were no exceedances reported in any of the tests.

- (c) Lopez Island: Swift Bay and Davis Bay

- Swift Bay has two Group B water system registered within the basin, which completed 12 water quality tests from 2016 to present. There were no exceedances reported in any of the tests.
 - Davis Bay has two Group B water system registered within the basin, which completed 13 water quality tests from 2016 to present. Four samples tested positive for total coliform.

- **Analysis:**

Agriculture can cause groundwater contamination through the discharge of livestock waste, application of chemicals, and fine sediments from over grazing of livestock. Pollutants from agriculture activities that could infiltrate into groundwater include fecal coliform, phosphorus, nitrogen, metals, pathogens, sediment, pesticides, salt, trace elements (e.g. selenium). While there has been the presence of total coliform in 18% of the samples tested since 2016, it is quite difficult to identify the source and whether it is related to agriculture. It is worth noting the presence of total coliform were in isolated incidents and no chemicals or metals have been identified in any of the samples taken in the priority basins.



GEOLOGICALLY HAZARDOUS AREAS

Geologically Hazardous Areas are classified in accordance with SJCC 18.35.060. Areas that fall within this classification include landslide-prone areas and erosion hazard areas.

Landslide hazards are generally steep or unstable slopes with any of the following characteristics:

- Slopes in excess of 15 percent;
- Pervious soil layers overlying semi-pervious to impervious soil layers; and
- Evidence of springs or groundwater seepage to the surface.

Erosion hazard areas are characterized by soils identified in the USDA Soil Survey of San Juan County, Washington (USDA, 2009), as having a high risk of erosion.

The purpose of VSP is not necessarily to prevent landslides or erosion, but to avoid or minimize negative environmental or agricultural impacts which may result from erosion. Erosion is a naturally occurring process that can have many benefits to the natural environment by providing the habitat disturbance regime many species depend on.

There are 841 acres of mapped Category I and II Geologically Hazardous Areas that intersect with agricultural activity in San Juan County. The process of documenting baseline conditions of mapped Geologically Hazardous Areas where they intersect with agricultural use is on-going. The Geologically Hazardous Areas maps are based on national soils data; this means that mapped overlaps are generally accurate, but at a very high level. San Juan County's Work Plan made a commitment to document these areas in order to establish baseline conditions of the intersection of mapped Geologically Hazardous areas and agricultural activity as they relate to the Geologically Hazardous Areas goals identified in the Work Plan. Those goals are:

- To reduce erosion
- To reduce landslide risk
- To avoid soil compaction
- Water Drainage – to ensure that unstable slopes are not irrigated where doing so could adversely affect agricultural activity.

To document current agricultural activity that is mapped as intersecting with Geologically Hazardous Areas, farms were visited on Orcas and Lopez Island during the summer of 2019.

The mapped Geologically Hazardous Areas on those properties are not currently in agricultural production, nor does management of these areas adversely affect existing agricultural activity. The purpose of identifying Geologically Hazardous Areas where they intersect agricultural activity was to identify and document the effects of management of these areas on agricultural activities and the goals identified to protect agricultural activity from erosion and landslide risk as noted above. To date, appropriate baseline sites have not yet been identified. As a result, the SJICD is still in the process of establishing relevant baseline sites. Once appropriate sites have been identified and documented, these



sites will be revisited every 5 years, and changes in baseline conditions will be reported. However, both the agricultural operators on Orcas Island and on Lopez Island whose properties are mapped as intersecting with Geologically Hazardous areas have expressed interest in participating in VSP by developing Individual Stewardship Plans for their properties.

FREQUENTLY FLOODED AREAS

San Juan County defines Frequently Flooded Areas as “lands subject to a one percent or greater chance of flooding in any given year” (SJCC 18.20.060). San Juan County adopted 2016 FEMA FIRM (Flood Insurance Rate Maps) in 2018 to identify “Special Flood Hazard Areas” within the County. The intent is to protect the public health and safety as it intersects with agricultural activity within these areas.

Because the FEMA FIRM Maps were adopted so recently, there has been no change in the mapped extent of agricultural activity as it overlaps with Frequently Flooded Areas in San Juan County.

This metric will be re-analyzed in the 2020 report.

CHANGES IN IMPERVIOUS SURFACE AREA IN VSP PRIORITY WATERSHEDS – HIGH RESOLUTION CHANGE DETECTION MODEL - 2015

San Juan County’s VSP Work Plan made a commitment to analyzing the change in impervious surface area over time using Washington Department of Fish and Wildlife’s High Resolution Change Detection Model. San Juan County’s GIS Department mapped the following changes in the County’s VSP Priority watersheds for 2015. Overall, the changes in cover were well below the Work Plan determined threshold of 5% at which point further analysis would be triggered.

Island	Watershed	Total acreage in Watershed	Total Acres of Change in Watershed	% of Watershed that has undergone change	Change in impervious surface in acres	Percent Change in Impervious Surface due to land cover development
Lopez	Davis Bay	5,054	18.48	0.37%	4.37	0.07%
Lopez	Swift Bay	1,794	4.78	0.27%	0.98	0.05%
Orcas	Deer Harbor	1,715	4.43	0.26%	1.05	0.06%
Orcas	Doe Bay	3,661	11.01	0.30%	1.38	0.04%
Orcas	G & G Coves	3,305	10.72	0.32%	5.24	0.16%
Orcas	President Channel	2,858	5.46	0.19%	0.74	0.03%
Orcas	West Sound	6,860	23.29	0.34%	2.15	0.03%
San Juan	False Bay	11,608	31.27	0.27%	8.18	0.07%
San Juan	Garrison Bay	1,861	4.44	0.24%	1.27	0.07%



Assuming that HRC data is available for 2020, this analysis will be repeated in collaboration with San Juan County's GIS Department and WDFW.

CLIMATE CHANGE RESILIENCE

San Juan County's Work Plan included Climate Change Resilience goals. As stated in the Work Plan:

"The San Juan County VSP addresses climate change for several reasons. Protecting the functions and values of Critical Areas and maintaining agricultural viability will require being aware of projected climate change impacts and taking actions that build the resilience of Critical Areas and agriculture in the face of those changes. Climate change is a key stressor that could otherwise undercut some of the advances made through the VSP in the coming decades."

Work Plan goals related to Climate Change Resilience include the following.

GOALS

- Protect and enhance wetland functions related to water quality, water quality, and habitat in the context of a changing climate.
- Protect and enhance stream functions where they intersect with agricultural activity in San Juan County in the context of a changing climate.
- Avoid and minimize impacts of sedimentation, erosion, and landslide hazards on water quality, habitat, and agricultural, due to changing precipitation patterns.
- Protect groundwater resources that support agricultural activities in the context of a changing climate that could otherwise impact water availability.
- Minimize flood damage to agricultural properties and operations and preserve natural flood control and stormwater storage and drainage patterns in the context of a changing climate.

With the effects of human caused climate change being questioned or misunderstood by some, and the predicted trajectories of climate science models becoming increasingly validated, e.g. increased frequency of extreme weather events, increased overall moisture in the earth's atmosphere, increased drought, and glaciers receding much faster in the last 10 years than in recorded history, etc., the effort needed on a global scale to reverse the effects have not yet begun. But on a local scale VSP is addressing these effects and building resilience to climate change. All of the quantitative natural resource elements as well as qualitative agricultural viability efforts being monitored within this report demonstrate the agriculture community and SJICD are leading the way to sequester carbon, restore ecosystem functions, and increase food security now and for future generations of San Juan Islands residents.



SJC Work Plan

Adopted January 2018

San Juan County's Work Plan was adopted in January of 2018. The Work Plan establishes the Critical Areas goals, objectives, benchmarks and metrics. It informs the Conservation District, who is the Technical Assistance provider of the Voluntary Stewardship Program what they should monitor, when and how. It is the road map to Voluntary Stewardship implementation. This monitoring report is written to satisfy the direction provided in the Work Plan. It also establishes thresholds that trigger adaptive management and review of various monitoring metrics. Critical Area Goals from the Work Plan are summarized below, along with results where relevant. While it is early in the implementation process, the intent of this section is to re-iterate the critical areas goals of the Work Plan, and report on progress to date in meeting these goals. This Monitoring Report also establishes the framework for future monitoring reports.

When the Work Plan was adopted in January of 2018, it was anticipated that Individual Stewardship Plans would provide the primary metric for VSP participation. The SJICD has made changes to the language of the Farm Plans to integrate the VSP process into the Farm Planning process. (See Appendix B). As of this writing, three Individual Stewardship Plans have been adopted, and the SJICD continues to develop and implement Farm Plans, consistent with NRCS processes. In addition, the SJICD intends to mail VSP outreach materials to those agricultural producers with existing Farm Plans (approximately 250 agricultural producers). Based on response to these outreach materials, the SJICD could then begin to formally adopt Individual Stewardship Plans by providing a critical areas overlay to existing Farm Plans, consistent with the Individual Stewardship Plan template developed in the VSP Work Plan.





WETLAND GOALS

GOAL: Protect Existing Wetlands

Work Plan Wetland Goal 1-1 Identify actions taken to protect existing wetlands.

Identify actions taken to protect existing wetlands.



Monitor stewardship

The number of acres of wetland protected by Individual Stewardship Plan actions (e.g. fencing livestock out of wetlands).

Results

There have been seven fencing projects completed under Farm Plans that exclude livestock from wetlands and surface waters since 2016.



Monitor effects

The area of wetland, in acres, protected by these actions, by watershed and island.

Results

29.3 acres of wetland were protected by fencing since 2016

GOAL: Enhance Existing Wetlands

Work Plan Wetland Goal 2 – Identify actions taken to enhance wetland functions

Identify actions taken to enhance wetland functions.



Monitor stewardship

Identify the area of enhanced wetland (by acreage – using ISPs or through other means/e.g. SRFB or Land Bank projects). Identify the type of enhancement.



Monitor effects

Map and document change in the % of native vegetative cover in wetlands using WDFW's HRCD with an overlay of SJI Wetlands data layer.

Results

No wetland enhancement projects have been funded by SJICD since 2016.



GOAL: Voluntarily Restore Wetlands

Work Plan Wetland Goal 3 – Identify actions taken to restore wetlands.

Identify actions taken to restore wetlands.



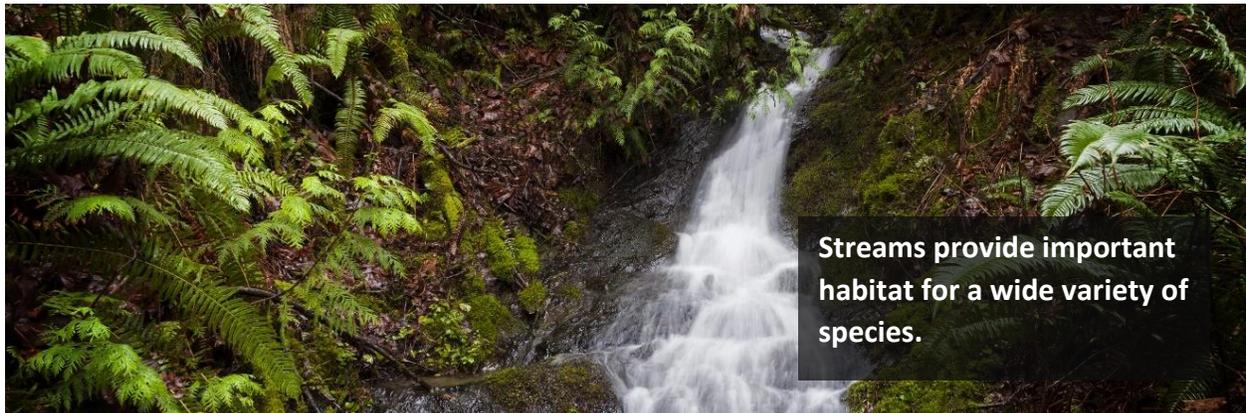
**Monitor
stewardship**

Identify Individual Stewardship Plans that specifically address wetland restoration or enhancement.

Results

As of this writing, no Individual Stewardship Plans specifically address wetland restoration or enhancement. However, a number of agricultural operators who manage wetlands have expressed an interest in developing such plans. As these plans are adopted, this metric will report on the actions taken to restore and enhance wetlands as well as the acreage of wetlands voluntarily restored and/or enhanced by island and watershed.





STREAM GOALS

GOAL: Protect Existing Streams

(San Juan County's streams are protected as aquatic Fish and Wildlife Habitat Conservation Areas.)

Work Plan FWHCA Goal 1: Protect Existing Streams.

Identify actions taken to protect streams (e.g. riparian fencing)



Monitor effects

Lineal feet of stream protected by fencing (or other actions – per ISPs)

Results

SJICD has funded one 0.2 acre riparian replanting project on lower False Bay Creek on San Juan Island. The False Bay Watershed is a VSP Priority Watershed.

GOAL: Enhance Streams

Work Plan FWHCA Goal 2: Enhance Streams.

Identify actions taken to enhance streams (e.g. riparian planting projects, etc.)



Monitor

None to date

Results

None to date

GOAL: Voluntarily Restore Streams

Work Plan FWHCA Goal 3: Voluntarily Restore Streams where they intersect with ag activity.

Identify actions taken to protect streams (e.g. riparian fencing)



Monitor

None to date

Results

None to date



FISH AND WILDLIFE HABITAT AREAS GOALS

GOAL: Protect and Enhance Habitats and Species of Local Importance

Work Plan FWHCA Goal 4: Protect and Enhance Habitats and Species of Local Importance

Identify actions taken to protect and enhance habitats and species of local importance.



Monitor participation

Individual Stewardship Plans—with areas of protected habitat for species of local importance where this habitat intersects with ag.

Results

There have been no habitat improvement projects funded by the SJICD since 2016.

GOAL: Encourage Voluntary Restoration of Fish and Wildlife Habitat Conservation Areas

Work Plan FWHCA Goal 5: Encourage Voluntary Restoration of Fish and Wildlife Habitat Conservation Areas.

Identify actions taken to restore habitats and species of local importance.

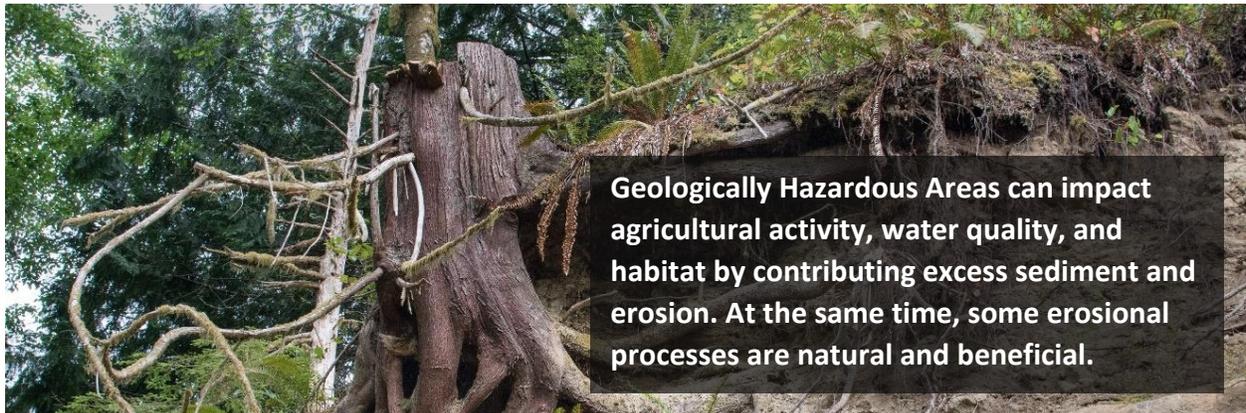


Monitor participation

Voluntary restoration projects.

Results

SJICD is not aware of any agriculture producers completing habitat improvement projects within San Juan County. There have been multiple restoration projects completed throughout the County since 2016. While SJICD is supportive of these efforts, they are not specifically tracking them unless they occur under the direction of Individual Stewardship Plans implemented under the VSP.



GEOLOGICALLY HAZARDOUS AREAS GOALS

GOAL: Avoid & Minimize the Impacts of Sedimentation, Erosion & Landslide Hazards

Work Plan Geologically Hazardous Area Goal-1: Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by agricultural use.

Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs.



Monitor effects

Identify the area(s) affected. Collect water quality samples in priority watersheds. Compare turbidity data over time.

Results

There are 841 acres of mapped Category I and Category II Geologically Hazardous Areas in San Juan County that intersect with agricultural activity. Documenting baseline conditions per page 71 of the Work Plan is in process.

GOAL: Avoid and Minimize Damage to Ag Activities

Work Plan Geologically Hazardous Area Goal- 2: Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Identify actions implemented to manage landslide risk and stabilize steep slopes.



Monitor stewardship

Document the installation of suitable native plants or other measures taken to minimize damage. Document stormwater protection actions taken.

Results

There have been no SJICD funded projects to reduce landslide risks or stabilize steep slopes since 2016.

GOAL: Avoid Activities that Increase Natural Rate of Erosion

Geologically Hazardous Area Goal- 3: Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs.

Identify actions implemented to manage landslide risk and stabilize steep slopes.



**Monitor
stewardship**

Identify the affected area(s). Document actions taken to minimize damage or protect naturally occurring ecological processes related to erosion. What LID/Stormwater BMPs have been implemented?

Results

Generally, agriculture within the County does not occur on steep erosive slopes and producers are avoiding production in these areas.





Critical Area Aquifer Recharge Areas provide vital groundwater storage that is needed to support agriculture and habitat in the islands.

CRITICAL AQUIFER RECHARGE AREA GOALS

GOAL: Protect and Maintain Groundwater Recharge and Prevent Degradation due to Agricultural Activities

Work Plan Critical Areas Goal- 1: Identify the number and types of BMPs implemented to increase water storage capacity.

Identify the practices implemented to quantify increased water storage capacity to the extent possible.

- 

Monitor participation ID the practices implemented to the extent possible. Use ISPs to measure the following participation activities:

 - # of participants implementing BMPs that aim to maintain or improve groundwater recharge
 - Acreage of ag activities that occur on CARAs in SJ
 - # of practices to enhance soil moisture and retention
 - # of practices to maximize irrigation efficiency
 - # of practices to retain seasonal runoff and increase infiltration
- 

Monitor stewardship ID the practices implemented to the extent possible. Use ISPs to measure the following stewardship activities:

 - # of storage systems for rooftop catchment or other seasonal runoff# of participants using soil conservation BMPs
 - # of water level measuring systems for wells, ponds, and streams
 - # of rain gauges and weather stations installed
- 

Monitor effects ID the practices implemented and quantify increased water storage capacity to the extent possible. Use ISPs to measure the following effects:

 - # of water use measurements
 - # of water meters installed, implemented, and monitored to quantify water use related to ag activity
 - # of water level measurements



Results – # of acres with soil and irrigation BMPs
 There have been no efforts to quantify water use in the County since 2016, and SJICD has not funded any water storage facilities in that time.

GOAL: Protect Groundwater Resources that Support Ag Activities

CARA – 2: ID the # and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters).

ID the # and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters).

 **Monitor stewardship** ISPs
Results SJICD has not funded any projects that quantify agricultural use of groundwater since 2016.

GOAL: Prioritize Watersheds with Known Contaminant Problems

CARA – 3: Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity which are identified in the Work Plan as: False Bay and Garrison Bay on San Juan Island; West Sound and Doe Bay on Orcas Island; Swift Bay and Davis Bay on Lopez Island

Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity.

 **Monitor effects**
 Analyze groundwater quality data from San Juan County Public Health Department, State Department of Health data, and Group B well data. ISPs; County water quality data – summarize priority watersheds; State water quality data – summarize for priority watersheds.

Results **San Juan Island: False Bay, Garrison Bay**

- False Bay has eight Group B water systems registered within the basin. There were 38 water quality samples tested from 2016 to present. Five samples tested positive for total coliform, and one sample reported conductivity level as an issue.
- Garrison Bay has four Group B water systems registered within the basin. There were 16 water quality tests completed from 2016 to present which reported no exceedances in any of the tests.

Results **Orcas Island: West Sound and Doe Bay**

- West Sound has five Group B water systems registered within the basin. There were 33 water quality samples tested from 2016 to present. Six samples tested positive for total coliform.
- Doe Bay has one Group B water system registered within the basin, which completed seven water quality tests from 2016 to present. There were no exceedances reported in any of the tests.





Results

Lopez Island: Swift Bay and Davis Bay

- Swift Bay has two Group B water system registered within the basin, which completed 12 water quality tests from 2016 to present. There were no exceedances reported in any of the tests.
- Davis Bay has two Group B water system registered within the basin, which completed 13 water quality tests from 2016 to present. Four samples tested positive for total coliform.





FREQUENTLY FLOODED AREAS GOALS

San Juan County defines Frequently Flooded Areas as “lands subject to a one percent or greater chance of flooding in any given year” (SJCC 18.20.060). San Juan County adopted 2016 FEMA FIRM (Flood Insurance Rate Maps) in 2018 to identify “Special Flood Hazard Areas” within the County. The intent is to protect the public health and safety as it intersects with agricultural activity within these areas.

Because the FEMA FIRM Maps were adopted so recently, there has been no change in the mapped extent of agricultural activity as it overlaps with Frequently Flooded Areas in San Juan County.

This metric will be re-analyzed in the 2020 report.

Changes in impervious surface area within priority watersheds are discussed above.

GOAL: Minimize flood damage to agriculture properties and operations

FFA – 1: Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping including FEMA FIRM maps).

Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping including FEMA FIRM maps).

Monitor This will be completed in the subsequent 5-year reports

Results To be completed in the 5-year reports

FFA – 2: Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time.

Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time.

Monitor Change in impervious surface area was analyzed using Washington Department of Fish and Wildlife’s High-Resolution Change Detection Model. San Juan County’s GIS Department mapped the County’s VSP Priority watersheds for 2015.



Results Overall, the changes in cover (provided above on page 42) were well below the Work Plan determined threshold of 5% at which point further analysis would be triggered.

GOAL: Preserve natural flood control, stormwater storage, & drainage & floodplain connectivity

FFA – 3: Acreage of Frequently Flooded Areas where they intersect with ag activity.

Measure the acreage of Frequently Flooded Areas where they intersect with agricultural activity.

- 

Monitor participation ID BMPs implemented to increase surface water storage
Results None
- 

Monitor stewardship ID BMPs implemented to protect floodplain
Results None
- 

Monitor effects Quantify acreage/area protected by BMPs
Results None



Summary and Conclusions

The most significant task to date has been the development and acceptance of the Work Plan. We are in the process of rolling out program implementation. Since adoption of the Work Plan SJICD has accomplished following to date:

- Developed two outreach flyers to solicit participation in the program (Appendix B)
- Implemented 8 outreach events
- Began program participation
- Updated SJICD Farm Plan and Checklist templates to include elements required in ISPs, see Appendix B
- Provided a monitoring report documenting changes in critical areas from 2011 to the time of VSP Work Plan Adoption and participation and stewardship activities implemented under farm plans or other means since 2011.
 - This report provides a framework for analysis in preparation for the 5-year plan and may suggest some updates to baseline data collection.
 - Specifically:
 - *Wetland acreage*. Data layers changed between 2011 and 2016; we suggest using 2016 as baseline moving forward
 - *Stream lineal feet*. Incorporate Wild Fish Conservancy’s most recent updates to Type F streams into the County’s GIS hydrographic data layer.
 - *Use of SVAP2 every 2 years*. We recommend implementing SVAP2 every 5 years. Suggest use of eDNA testing to establish fish baseline in priority watersheds.
- Provided an update on the state of agriculture in San Juan County in 2019.

CHALLENGES

- **Staff turnover.** SJICD replaced the Executive Director shortly after the Work Plan was approved and lost the Water Quality Program Manager and a Natural Resource Planner in late-2018. These changes are significant to a small agency with only eight permanent employees. Turnovers of key positions requires patience, understanding for the time needed to recruit, hire, and train new employees.
- **Limited funding to administer the program.** The Work Plan sets ambitious goals for participation through the creation of ISPs and extensive monitoring protocols to track and report on every 2 and 5-years. The Work Group does; however, set work priorities to be most relevant for informing program goals and decision makers.
- **Rolling out a new program that is not well understood by the community we serve.** It takes time and targeted outreach particularly when SJICD does not have a Community Outreach Coordinator. It’s ambitious but we have a plan to bring significant agricultural areas into VSP under Individual Stewardship Plan development.



- **There is concern/mistrust/fear about regulations and how VSP works, as compared to the CAO.** This can be best addressed by working with individual agricultural operators to develop Individual Stewardship Plans and educating them that ISP's will only replace Farm Plans in name, not function. On-going and continuous outreach regarding program implementation is needed. Targeting about 12 Individual Stewardship Plans per year is an achievable goal.
- **Educating potential participants about the benefits of program participation.** Why should they care? This happens most effectively through one on one meetings. To date agricultural producers have shown some interest in the program. We expect this will increase as participation increases.
- **Need to manage and maintain a well-functioning Work Group.** The volunteer Work Group is composed of busy people. So, it is important their time be spent on relevant issues for them to provide critical feedback on. Suggest developing a quarterly schedule for each year, with specific input needs from the Work Group highlighted. (E.g. # of farm plans/Individual stewardship plans to be completed by quarter, # of outreach materials and events, refining outreach strategies to target priority watersheds, for example).
- **Need to re-hire the water quality monitoring program position within SJICD.** A monitoring plan was proposed, that leverages the existing county stormwater monitoring program data. Nonetheless, SJICD will continue to participate in the county-wide surface water quality monitoring program and implement VSP water quality monitoring as proposed in the Work Plan.
- **Target VSP priority watersheds** for installation of staff gauges and other water quality and flow monitoring efforts that will contribute to overall knowledge of county freshwater systems.
- **Need concerted outreach efforts** to inform producers of progress and successes with the program.

Even with its challenges VSP proves to be an important land management tool for the benefit of agricultural producers as well as maintaining functional critical areas and habitats.

