VSP 5 Year Report for San Juan County

Report Period Ending: 12/21/2020

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Has the county work group approved the content and submittal of this report?   ☑ Yes   ☐ No

Date of Approval   12/18/2020

PROTECTION Goals

☐ The watershed work group asserts that the work plan's PROTECTION goals and benchmarks have been met during the past five years.

☑ The watershed work group asserts that the work plan's PROTECTION goals and benchmarks have NOT been met during the past five years.

ENHANCEMENT Goals

☐ The watershed work group asserts that the work plan's ENHANCEMENT goals and benchmarks have been met during the past five years.

☑ The watershed work group asserts that the work plan's ENHANCEMENT goals and benchmarks have NOT been met during the past five years.

Strategies and Performance Metrics, Benchmark Results and Monitoring

Goal: 1 - Protect Existing Wetlands	Critical Aquifer Recharge
Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 1 - Protect Existing Wetlands	Fish and Wildlife Habitat
Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 1 - Protect Existing Wetlands	Frequently Flooded
Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 1 - Protect Existing Wetlands	Geologic Hazard
Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 1 - Protect Existing Wetlands

Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)

Frequently Flooded

2 - San Juan

Goal: 1 - Protect Existing Wetlands	Wetlands
Benchmark: 1 - Identify actions taken to protect existing wetlands (e.g. fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Number of acres of wetland protected by ISP actions.	Approximately 118 acres of wetlands have been protected by ISP actions that include access control through 50,437 linear feet of fencing.	Met
Acres of wetlands in ISPs rolled up to County GIS wetland acreage layer.	Any updates to wetland boundaries are submitted to San Juan County when they are determined to be different from existing county GIS wetland boundaries.	Met

Benchmark Met?   **Comments**

☑ Yes   ☐ No   This benchmark was met by identifying fencing actions that were taken to protect existing wetlands and providing boundary updates as needed to San Juan County.

Adaptive Management?

☑ Yes   ☐ No

To be consistent with the narrative in the work plan, as well as to comply with the definition of protection (no loss in acreage or measurable degradation of the resource) we added a benchmark for wetland acreage. The original benchmark will be used, its metric is further clarified to include the Access Control (472) BMP, and additional metrics are added to include the Fence (382) BMP and to track BMPs still in operation.

Benchmark 1: Actions taken to protect existing wetlands
Metric a: Number of wetland acres protected by Access Control (472) BMP
Metric b: Linear feet of Fence (382) installed to protect wetlands
Metric c: Percent of implemented BMPs still in operation

Benchmark 2: Maintain baseline (2011) wetland acreage within agricultural areas
Metric a: Percent change in wetland acreage on farm parcels, 2011-present
Metric b: No canopy loss, no new impervious/semi-impervious gain in HRCD data.

Benchmark Monitoring

This benchmark for wetland protection is currently monitored using an accounting of BMPs implemented to protect wetlands in Individual Stewardship Plans, cost share projects, and other projects taken on by

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. We will also monitor change in

other entities in the community.

wetland acreage using San Juan County's spatial wetland data, we will quantify changes in canopy loss and impervious/semi-impervious gain using HRCD data, and we will conduct monitoring to determine if installed BMPs are still in use.

| Goal: 2 - Enhance Existing Wetland Functions | Critical Aquifer Recharge |
| Benchmark: 2 - Identify actions taken to enhance wetland functions | 2 - San Juan |

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

| Goal: 2 - Enhance Existing Wetland Functions | Fish and Wildlife Habitat |
| Benchmark: 2 - Identify actions taken to enhance wetland functions | 2 - San Juan |

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

| Goal: 2 - Enhance Existing Wetland Functions | Frequently Flooded |
| Benchmark: 2 - Identify actions taken to enhance wetland functions | 2 - San Juan |

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

| Goal: 2 - Enhance Existing Wetland Functions | Geologic Hazard |
| Benchmark: 2 - Identify actions taken to enhance wetland functions | 2 - San Juan |

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 2 - Enhance Existing Wetland Functions	Wetlands
Benchmark: 2 - Identify actions taken to enhance wetland functions	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Identify area of enhanced wetlands	Wetland enhancement work has occurred on one acre of wetland on a preserve owned by San Juan County Land Bank.	Met
2.Identify type of enhancement (See Tab E-1 for list of enhancement activities).	The type of enhancement that occurred was riparian planting as a buffer/marsh habitat.	Met
Use % veg cover as a surrogate – supplement with ISP data.	Cannot report. Assuming this means change in % vegetative cover, we do not have two datasets to compare, only 2020, which will be used as a baseline for future comparisons. Needs adaptive management.	Not met

Benchmark Met?

☑ Yes   ☐ No

Comments

This benchmark was met by identifying actions that were taken to enhance wetlands, including native plantings. However, we were unable to use percent change in vegetative cover as a metric because we do not have the datasets to compare.

Adaptive Management?

☑ Yes   ☐ No

We will use the original benchmark, however, its metrics are further clarified below to include enhancement BMPs and to track BMPs still in operation, while removing the percent vegetative cover metric. Changes in percent vegetative cover are too variable and too costly to use as a metric for this benchmark. On-the-ground assessment is necessary to evaluate enhancement actions; benchmark 2 was developed to address this need. Also, instead of having a separate wetland restoration goal, we have lumped enhancement activities with restoration activities; benchmarks reflect this change.

Benchmark 1: Actions taken to enhance and/or restore wetland functions
Metric a: Number of BMPs implemented to improve water quality, water quantity, and habitat
Metric b: Percent of implemented BMPs still in operation

Benchmark 2: Improvement in wetland condition following enhancement and/or restoration project.
Metric: Use a wetland rapid assessment protocol to monitor

trends in enhancement and/or
restoration projects if funding allows.

Benchmark Monitoring

This benchmark for wetland enhancement is currently monitored using an accounting of BMPs implemented to enhance wetlands in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes ☑ No

Changes: Current monitoring is not sufficient. If funding allows, we will also monitor change in wetland condition following enhancement and restoration projects using a rapid assessment protocol, and we will conduct monitoring to determine if installed BMPs are still in use.

Goal: 3 - Voluntarily Restore Wetlands	Critical Aquifer Recharge
Benchmark: 3 - Identity actions taken to restore wetlands (e.g. disable drainage tiles)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 3 - Voluntarily Restore Wetlands	Fish and Wildlife Habitat
Benchmark: 3 - Identity actions taken to restore wetlands (e.g. disable drainage tiles)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 3 - Voluntarily Restore Wetlands	Frequently Flooded
Benchmark: 3 - Identity actions taken to restore wetlands (e.g. disable drainage tiles)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 3 - Voluntarily Restore Wetlands	Geologic Hazard
Benchmark: 3 - Identity actions taken to restore wetlands (e.g. disable drainage tiles)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 3 - Voluntarily Restore Wetlands	Wetlands
Benchmark: 3 - Identity actions taken to restore wetlands (e.g. disable drainage tiles)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
ISPs including revised wetland area maps following successful restoration actions.	No wetland restoration BMPs have been implemented through ISPs.	Not met
Updated wetland data layer from San Juan County GIS based on above.	Wetland acreage has increased by 0.5 acres between 2011-2020, however, all changes are attributed to wetland boundary adjustments rather than restoration.	Met
Voluntary or other restoration actions (SRFB or other).	No wetland restoration BMPs have been implemented by other entities.	Not met

Benchmark Met?   **Comments**

☐ Yes   ☑ No   This benchmark was not met because there have been no actions taken to restore wetlands. Although wetland acreage has increased by 0.5 acres, the changes can be attributed to mapping adjustments rather than restoration of wetlands.

Adaptive Management?

☑ Yes   ☐ No

Since no wetland restoration projects have been implemented, we decided to lump this goal with the wetland enhancement goal (see Goal 2).

Benchmark Monitoring

This benchmark for wetland restoration is currently monitored using an accounting of BMPs implemented to restore wetlands in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient; however, this goal is being lumped with the wetland enhancement goal so monitoring is addressed in Goal 2.

Goal: 4 - Protect Streams	Critical Aquifer Recharge
Benchmark: 16 - Identify actions taken to protect streams (e.g. riparian fencing)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 4 - Protect Streams	**Fish and Wildlife Habitat**
Benchmark: 16 - Identify actions taken to protect streams (e.g. riparian fencing)	**2 - San Juan**

Strategy/Metric Description

Quantify lineal feet of stream protected by ISP actions at the watershed scale.

Accomplishment

Approximately 76,940 linear feet of fencing has been documented and/or implemented through ISPs to protect streams from 2011-2020.

Status

Met

Benchmark Met?

☑ Yes ☐ No

Comments

This benchmark was met through identifying fencing used to protect streams for the entire watershed.

Adaptive Management?

☑ Yes ☐ No

Although this benchmark was met, we would like to add four new benchmarks to account for changes in water quality and stream functions as a result of stream protection measures. These benchmarks are consistent with the narrative in the Work Plan; however, they were left out of the Work Plan summary table of benchmarks and metrics. We are also adding an additional metric to track BMPs still in operation.

Benchmark 1: Actions taken to protect steams (e.g., riparian fencing)
Metric a: Lineal feet of stream protected by fencing (or other ISP actions)
Metric b: Percent of implemented BMPs still in operation

Benchmark 2: No loss of stream habitat
Metric: Human-caused tree canopy loss in riparian areas (HRCD)

Benchmark 3: Maintain stream function scores after protection measures are installed
Metric: Compare SVAP2 stream function scores before and after protection measures are installed

Benchmark 4: Maintain water quality in priority watersheds
Metric: Compare water quality from 2011 to present

Benchmark 5: Maintain scores for Benthic Index of Biotic Integrity for biologic conditions
Metric: Compare Benthic Index of

Biotic Integrity scores before and after protection measures are installed

Benchmark Monitoring

This benchmark for stream protection is currently monitored using the lineal feet of fencing used by BMPs implemented to protect streams in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. We will also use a combination of HRCD-derived data on canopy loss, SVAP2 stream function scores, water quality data, and Benthic Index of Biotic Integrity to monitor stream protection, and we will conduct monitoring to determine if installed BMPs are still in use. Water quality data from San Juan County Storm Water Program will be incorporated into future reports to inform a watershed level perspective of the impact of agricultural activities.

Goal: 4 - Protect Streams	**Frequently Flooded**
Benchmark: 16 - Identify actions taken to protect streams (e.g. riparian fencing)	**2 - San Juan**

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 4 - Protect Streams	**Geologic Hazard**
Benchmark: 16 - Identify actions taken to protect streams (e.g. riparian fencing)	**2 - San Juan**

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 4 - Protect Streams	**Wetlands**
Benchmark: 16 - Identify actions taken to protect streams (e.g. riparian fencing)	**2 - San Juan**

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 5 - Enhance Streams

Benchmark: 4 - Identify actions taken to enhance streams (e.g. riparian planting, # of fish passage barriers removed, in-stream structural enhancement activities etc.)

Critical Aquifer Recharge

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 5 - Enhance Streams

Benchmark: 4 - Identify actions taken to enhance streams (e.g. riparian planting, # of fish passage barriers removed, in-stream structural enhancement activities etc.)

Fish and Wildlife Habitat

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Change in riparian cover over time.	Cannot report. We do not have two datasets to compare, only 2020, which could be used as a baseline for future comparisons.	Not met
Change in SVAP2 element scores over time on protected stream reaches – reported by watershed.	Cannot report. SVAP2 was conducted on False Bay Creek in 2017 but has not been repeated due to loss of our water quality specialist, other staffing shortages, and COVID-19 cutbacks. Adaptive management needed to account for BMPs implemented. For example, 47 BMPs have been documented as in place and/or implemented through ISPs that enhance streams, including prescribed grazing, nutrient management, brush management, herbaceous weed treatment, stream crossing, hedgerow planting, riparian herbaceous cover, riparian forest buffer, and tree/shrub establishment.	Not met

Benchmark Met?

☑ Yes ☐ No

Comments

Based on the metrics identified to measure this benchmark, we are unable to report on change in cover because we do not have two datasets to compare. We also did not complete SVAP2. However, since the benchmark is asking for actions taken to enhance streams, we can report that 14 BMPs have been documented as in place and/or implemented through ISPs that enhance streams, including herbaceous weed treatment (6 BMPs), stream crossing (3 BMPs), riparian herbaceous cover (3 BMPs), riparian forest buffer (1 BMP), and tree/shrub establishment (1 BMP).

Adaptive Management?

☑ Yes ☐ No

Although this benchmark was met, we would like to add three new benchmarks to account for changes in water quality and stream functions as a result of stream enhancement measures. These benchmarks are consistent with the narrative in the Work Plan; however, they were left out of the Work Plan summary table of benchmarks and metrics. We would also like to adjust the existing metrics, since as currently written they are not useful in meeting the original benchmark and add a new metric to track BMPs still in operation. Also, instead of having a separate stream restoration goal, we have lumped enhancement activities with restoration activities; benchmarks reflect this change.

Benchmark 1: Actions taken to enhance and/or restore streams (e.g., riparian planting, number of fish passage barriers removed, in-stream structural enhancement activities etc.)
Metric a: Number of BMPs implemented to enhance and/or

restore streams
Metric b: Percent of implemented BMPs still in operation

Benchmark 2: Improvement in stream function scores after enhancement and/or restoration measures are installed
Metric: Compare SVAP2 stream function scores before and after enhancement and/or restoration measures are installed

Benchmark 3: Improve water quality in priority watersheds
Metric: Compare water quality from 2011 to present

Benchmark 4: Improve scores for Benthic Index of Biotic Integrity for biologic conditions
Metric: Compare Benthic Index of Biotic Integrity scores before and after enhancement measures are installed

Benchmark Monitoring

This benchmark for stream enhancement is currently monitored using a combination of spatial analysis (change in riparian cover) and SVAP2.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. We do not have multiple datasets to measure riparian cover, and furthermore, if we did, it would be hard to distinguish change as a result of enhancement versus other change agents. Instead, we will use a combination of BMPs implemented to enhance and/or restore streams in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community; SVAP2 stream function scores; water quality data; and Benthic Index of Biotic Integrity to monitor stream enhancement and/or restoration. We will also conduct monitoring to determine if installed BMPs are still in use. Water quality data from San Juan County Storm Water Program will be incorporated into future reports to inform a watershed level perspective of the impact of

agricultural activities.

Goal: 5 - Enhance Streams	Frequently Flooded
Benchmark: 4 - Identify actions taken to enhance streams (e.g. riparian planting, # of fish passage barriers removed, in-stream structural enhancement activities etc.)	**2 - San Juan**

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 5 - Enhance Streams	Geologic Hazard
Benchmark: 4 - Identify actions taken to enhance streams (e.g. riparian planting, # of fish passage barriers removed, in-stream structural enhancement activities etc.)	**2 - San Juan**

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 5 - Enhance Streams	Wetlands
Benchmark: 4 - Identify actions taken to enhance streams (e.g. riparian planting, # of fish passage barriers removed, in-stream structural enhancement activities etc.)	**2 - San Juan**

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Critical Aquifer Recharge
Benchmark: 5 - Identify actions taken to voluntarily restore streams	**2 - San Juan**

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Fish and Wildlife Habitat
Benchmark: 5 - Identify actions taken to voluntarily restore streams	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Area of stream restored over time.	No stream restoration projects have taken place.	Not met

Benchmark Met? **Comments**

☐ Yes   ☑ No   This benchmark was not met because there have been no actions taken to restore streams.

Adaptive Management?

☑ Yes   ☐ No

Since no stream restoration projects have been implemented, we decided to lump this goal with the stream enhancement goal (see Goal 5).

Benchmark Monitoring

This benchmark for stream restoration is currently monitored using BMPs implemented to restore streams in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient; however, this goal is being lumped with the stream enhancement goal, so monitoring is addressed in Goal 5.

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Frequently Flooded
Benchmark: 5 - Identify actions taken to voluntarily restore streams	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Geologic Hazard
Benchmark: 5 - Identify actions taken to voluntarily restore streams	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Wetlands
Benchmark: 5 - Identify actions taken to voluntarily restore streams	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Critical Aquifer Recharge

Benchmark: 6 - Identify actions taken to protect and enhance habitats and species of local importance

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Strategy/Metric Description	Accomplishment	Status
Area of protected habitat for species of local importance.	One wildlife protection project has taken place on farmland within San Juan County. Island marble butterfly suitable habitat patches have been protected on two farm properties. They are protected from deer browse, mowing, trampling, and insecticides year-round.	Met
Area of enhanced habitat for species of local importance.	Two wildlife enhancement projects have taken place on farmland within San Juan County. These include bluebird nest box projects on two farm properties and the previously-mentioned island marble butterfly suitable habitat patches on two farm properties.	Met

Benchmark Met?   **Comments**

☑ Yes   ☐ No

This benchmark was met through the implementation of wildlife protection and enhancement projects.

Adaptive Management?

☑ Yes   ☐ No

Although this benchmark was met, we would like to modify the existing metrics and add a benchmark to further address habitat protection/enhancement and add a new metric to track BMPs still in operation. Also, instead of having a separate habitat restoration goal, we have lumped protection and enhancement activities with restoration activities; benchmarks reflect this change.

Benchmark 1: Actions taken to protect, enhance, and/or restore habitats (excluding stream corridors)
Metric a: Number of BMPs implemented to protect, enhance, and/or restore habitats (excluding stream corridors)
Metric b: Percent of implemented BMPs still in operation

Benchmark 2: No loss of habitats
Metric: Measure canopy loss and new impervious/semi-impervious gain

Benchmark Monitoring

This benchmark for protecting and enhancing habitats is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. We will also use HRCD-derived data on canopy loss and new impervious/semi-impervious gain,

and we will conduct monitoring to determine if installed BMPs are still in use.

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance	Frequently Flooded
Benchmark: 6 - Identify actions taken to protect and enhance habitats and species of local importance	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance	Geologic Hazard
Benchmark: 6 - Identify actions taken to protect and enhance habitats and species of local importance	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance	Wetlands
Benchmark: 6 - Identify actions taken to protect and enhance habitats and species of local importance	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas	Critical Aquifer Recharge
Benchmark: 7 - Identify voluntary restoration actions	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas	Fish and Wildlife Habitat
Benchmark: 7 - Identify voluntary restoration actions	2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Identify the area affected by voluntary habitat restoration actions.	No habitat restoration projects have taken place.	Not met

Benchmark Met? **Comments**

☐ Yes ☑ No This benchmark was not met because there have been no actions taken to restore habitat areas.

Adaptive Management?

☑ Yes ☐ No

Since no habitat restoration projects have been implemented, we decided to lump this goal with the habitat protection and enhancement goal (see Goal 7).

Benchmark Monitoring

This benchmark for restoring habitats is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☑ Yes ☐ No

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas	Frequently Flooded
Benchmark: 7 - Identify voluntary restoration actions	2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas	Geologic Hazard
Benchmark: 7 - Identify voluntary restoration actions	2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas	Wetlands
Benchmark: 7 - Identify voluntary restoration actions	2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Benchmark: 8 - Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs

Critical Aquifer Recharge

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Benchmark: 8 - Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs

Fish and Wildlife Habitat

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Benchmark: 8 - Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs

Frequently Flooded

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use	Geologic Hazard
Benchmark: 8 - Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Identify the area affected.	There are eight farms with ISPs that are affected by soils that have a high risk of erosion, and two farms with ISPs that are affected by steep slopes.	Met
Collect water quality samples in priority watersheds.	Water quality was examined in six priority watersheds.	Met
Compare turbidity data over time.	Turbidity levels were not evaluated because there were no water quality samples taken near geologically hazardous areas.	Not met

Benchmark Met?

☐ Yes   ☑ No

Comments

This benchmark was not met because the metrics are not designed to measure this benchmark. The metrics do not account for actions implemented to protect GHAs, and the water quality metrics would be better addressed in a new benchmark specific to water quality.

Adaptive Management?

☑ Yes   ☐ No

Since no actions have been implemented to minimize impacts, we could increase outreach to farms where GHAs occur. However, there are simply not many farms that intersect with GHAs in this county, and no measurable water quality impact. For this reason, we will not look at water quality parameters to meet this goal. We would keep the existing benchmark but edit the metrics to account for the number of BMPs implemented and add a new metric to track BMPs still in operation. Water quality metrics will not be used.

Benchmark 1: Actions implemented in GHAs to reduce sediment or erosion, reduce landslide risks, and stabilize steep slopes.
Metric a: Number of BMPs implemented that reduce sediment or erosion, reduce landslide risk, or stabilize steep slopes
Metric b: Percent of implemented BMPs still in operation

Benchmark 2: No loss in vegetative cover in GHAs
Metric: No canopy loss, no new impervious/semi-impervious gain in GHAs

Benchmark Monitoring

This benchmark for protecting geologically hazardous areas is currently monitored using a combination of BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community; and water quality data.

Monitoring sufficient?

☐ Yes ☑ No

Changes: Current monitoring is not sufficient. We will also use HRCD-derived data on canopy loss and impervious/semi-impervious gain, and we will conduct monitoring to determine if installed BMPs are still in use.

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Benchmark: 8 - Identify actions implemented to reduce sediment, erosion, and landslide impacts on GHAs

Wetlands

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

Critical Aquifer Recharge

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

Fish and Wildlife Habitat

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

Frequently Flooded

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Geologic Hazard

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Identify the affected area.	There are two farms with ISPs that are affected by steep slopes, and no farms with ISPs that are affected by landslide risk.	Met
Document installation of suitable native plants, or other measures taken, as appropriate, to minimize damage.	No BMPs to stabilize steep slopes have been implemented on the two farms because they are already well-vegetated.	Met

Benchmark Met?   **Comments**

☐ Yes   ☑ No

This benchmark was not met because there were no actions taken to manage landslide risk or steep slopes. There were no ISP farms with landslide risk and the two farms with steep slopes are already well-vegetated.

Adaptive Management?

☑ Yes   ☐ No

We are removing this benchmark and goal because the goal does not protect or enhance GHAs, but rather is an agricultural viability goal. This benchmark was combined with the existing benchmark in the first GHA goal.

Benchmark Monitoring

This benchmark for minimizing damage to agricultural activities is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Since the goal does not protect or enhance GHAs, it will be removed. No further monitoring is necessary.

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Wetlands

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Critical Aquifer Recharge

Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs	Fish and Wildlife Habitat
Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs	Frequently Flooded
Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs	Geologic Hazard
Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Identify the affected area.	There are two farms with ISPs that are affected by steep slopes, and no farms with ISPs that are affected by landslide risk.	Met
Document installation of suitable native plants, or other measures taken, as appropriate, to minimize damage	No BMPs to stabilize steep slopes have been implemented on the two farms because they are already well-vegetated.	Met

Benchmark Met?   **Comments**

☐ Yes   ☑ No   This benchmark was not met because there were no actions taken to manage landslide risk or steep slopes. There were no ISP farms with landslide risk and the two farms with steep slopes are already well-vegetated.

Adaptive Management?

☑ Yes   ☐ No

We are removing this benchmark because the benchmark was combined with the revised benchmark in the first GHA goal.

Benchmark Monitoring

This benchmark for protecting geologically hazardous areas is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Since the goal is being merged with the first GHA goal, it will be removed. No further monitoring is necessary.

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs	Wetlands
Benchmark: 9 - Identify actions implemented to manage landslide risk and stabilize steep slopes	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Critical Aquifer Recharge

Benchmark: 10 - Identify the number and types of BMPs implemented to increase water storage capacity

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Identify the practices implemented and quantify increased water storage capacity to the extent possible.	Two hundred and fifty-five BMPs have been documented and/or implemented through ISPs that help to increase water storage capacity. The most numerous include Access Control (implemented 56 times), Prescribed Grazing (45 times), Heavy Use Area Protection (41), Pasture and Hay Planting (23), Irrigation System-Microirrigation (20), Grassed Waterway (13), and Pond (7), among other less frequently implemented practices. There is currently no method to determine increased water storage capacity. Needs Adaptive Management.	Not met

Benchmark Met?

☐ Yes ☑ No

Comments

This benchmark was partially met through a large number of practices implemented that help to increase water storage capacity. However, we currently have no method to determine whether an increase in water storage capacity has occurred.

Adaptive Management?

☑ Yes ☐ No

We will keep the existing benchmark but modify the metrics to better measure the number and types of BMPs implemented, since we cannot quantify increased water storage capacity, and add a new metric to track BMPs still in operation.

Benchmark 1. Actions implemented to increase water storage capacity
Metric a: Number and types of BMPs implemented to maintain groundwater recharge, enhance soil moisture and retention, maximize irrigation efficiency, retain seasonal runoff, and increase infiltration
Metric b: Percent of implemented BMPs still in operation

Benchmark Monitoring

This benchmark for protecting critical aquifer recharge areas is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes ☑ No

Changes: Current monitoring is not sufficient. We will also conduct monitoring to determine if installed BMPs are still in use.

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Benchmark: 10 - Identify the number and types of BMPs implemented to increase water storage capacity

Fish and Wildlife Habitat

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Benchmark: 10 - Identify the number and types of BMPs implemented to increase water storage capacity

Frequently Flooded

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Benchmark: 10 - Identify the number and types of BMPs implemented to increase water storage capacity

Geologic Hazard

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Benchmark: 10 - Identify the number and types of BMPs implemented to increase water storage capacity

Wetlands

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)	**Critical Aquifer Recharge**
Benchmark: 11 - Identify the number and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters)	**2 - San Juan**

Strategy/Metric Description

Quantify amount of water needed to support agricultural use, to the extent possible to protect this right, while providing sufficient water for natural hydrologic cycles.

Accomplishment

There are not enough well meters and not enough water rights to accurately quantify this use. The only quantifiable standard to measure the potential amount of water needed to support ag use is the DOE 5,000 gallon per day exempt rule. Needs adaptive management.

Status

Not met

Benchmark Met?   Comments

☐ Yes   ☑ No

No practices have been implemented to quantify agricultural use of groundwater resources, such as well meters.

Adaptive Management?

☑ Yes   ☐ No

We can modify the benchmark and metric to track any well meter installations but will not be able to report on the amount of water needed to support agricultural use, as the current metric states. We will also add a new metric to track BMPs still in operation.

Benchmark 1: Actions implemented to quantify agricultural use of groundwater (e.g., well meters, staff gauges)
Metric a: Number of BMPs implemented to quantify agricultural use of groundwater, including Monitoring Well (353)
Metric b: Percent of implemented BMPs still in operation

Benchmark Monitoring

This benchmark for quantifying groundwater usage is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient, as there are few well meters and not enough water rights to quantify agricultural use of groundwater. However, we will reexamine how to use well meter data and staff gauges as more operators install these devices. We will also conduct monitoring to determine if installed BMPs are still in use.

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)	Fish and Wildlife Habitat
Benchmark: 11 - Identify the number and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)	Frequently Flooded
Benchmark: 11 - Identify the number and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)	Geologic Hazard
Benchmark: 11 - Identify the number and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)	Wetlands
Benchmark: 11 - Identify the number and types of practices implemented to quantify agricultural use of groundwater resources (e.g. well meters)	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality

Benchmark: 12 - Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas, Swift Bay and Davis Bay on Lopez Island

Critical Aquifer Recharge

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Groundwater quality data from San Juan County Public Health Department, State Department of Health data, Group B well data.	Nitrate results were used as an indicator of long-term exposure to N contamination. Twenty-three of 244 samples detected nitrate. Four samples were above 5.0 ppm, the trigger for concern in drinking water; however, no investigation was conducted to determine if the source was agricultural.	Met

Benchmark Met?

☐ Yes   ☑ No

Comments

We analyzed and reported groundwater quality in priority watersheds, but we need a benchmark for water quality to show if it is being degraded, maintained, or improved.

Adaptive Management?

☑ Yes   ☐ No

We revised this benchmark to show if groundwater quality is being degraded, maintained, or improved, and added an additional benchmark to account for BMPs implemented that protect water quality. We also added a new metric to track BMPs still in operation.

Benchmark 1: Maintain groundwater quality in priority watersheds that have the greatest intersection with agricultural activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas Island, Swift Bay and Davis Bay on Lopez Island.
Metric: Compare water quality from 2011 to present

Benchmark 2: Actions implemented to protect groundwater quality
Metric a: Number of BMPs implemented to protect groundwater quality, (e.g., those that prevent nutrient runoff and infiltration)
Metric b: Percent of implemented BMPs still in operation

Benchmark Monitoring

This benchmark for groundwater quality is currently monitored using groundwater quality data from San Juan County Public Health Department.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. The water quality analysis did not trigger investigation into agricultural sources during this timeframe. We

will continue to utilize public water system water quality information and work with County Health and Community Services when needed. We will also use BMPs that protect groundwater quality, including BMPs to prevent nutrient runoff and infiltration, in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community. We will also conduct monitoring to determine if installed BMPs are still in use.

| **Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality** | **Fish and Wildlife Habitat** |
| **Benchmark: 12 - Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas, Swift Bay and Davis Bay on Lopez Island** | **2 - San Juan** |

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

| **Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality** | **Frequently Flooded** |
| **Benchmark: 12 - Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas, Swift Bay and Davis Bay on Lopez Island** | **2 - San Juan** |

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

| **Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality** | **Geologic Hazard** |
| **Benchmark: 12 - Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas, Swift Bay and Davis Bay on Lopez Island** | **2 - San Juan** |

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality

Benchmark: 12 - Analyze and report on groundwater quality in priority watersheds that have the greatest intersection with ag activity: False Bay and Garrison Bay on San Juan Island, Westsound and Doe Bay on Orcas, Swift Bay and Davis Bay on Lopez Island

Wetlands

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 15 - Minimize flood damage to agricultural properties and operations

Benchmark: 13 - Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping (inc. FEMA FIRM maps)

Critical Aquifer Recharge

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 15 - Minimize flood damage to agricultural properties and operations

Benchmark: 13 - Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping (inc. FEMA FIRM maps)

Fish and Wildlife Habitat

2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 15 - Minimize flood damage to agricultural properties and operations

Benchmark: 13 - Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping (inc. FEMA FIRM maps)

Frequently Flooded

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
The acreage of frequently flooded areas protected by ISP actions.	Five farms with ISPs intersect with Frequently Flooded Areas, totaling 13.6 acres. Three of the five FFAs are naturally protected by forest. The remaining two farms have 7.58 acres of FFA protected by 1,223 linear feet of access control fencing.	Met

Benchmark Met?   **Comments**

☑ Yes ☐ No   This benchmark was met by measuring the acreage of FFAs protected by ISP actions.

Adaptive Management?

☑ Yes ☐ No

Although we are removing this goal and benchmark, we will use the metric in the adaptive management section for the second FFA goal.

Benchmark Monitoring

This benchmark for minimizing damage to agricultural activities is currently monitored using BMPs in Individual Stewardship Plans, cost share projects, and other projects taken on by other entities in the community.

Monitoring sufficient?

☐ Yes ☑ No

Changes: Since the goal does not protect or enhance FFAs, it will be removed. No further monitoring is necessary.

Goal: 15 - Minimize flood damage to agricultural properties and operations

Benchmark: 13 - Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping (inc. FEMA FIRM maps)

Geologic Hazard

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 15 - Minimize flood damage to agricultural properties and operations

Benchmark: 13 - Measure the acreage of Frequently Flooded Areas where it intersects with agricultural activity every 5 years. (Using SJC GIS mapping (inc. FEMA FIRM maps)

Wetlands

2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	**Critical Aquifer Recharge**
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	**2 - San Juan**

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	**Fish and Wildlife Habitat**
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	**2 - San Juan**

Strategy/Metric Description	**Accomplishment**	**Status**
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	**Critical Aquifer Recharge**
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	**2 - San Juan**

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	Frequently Flooded
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	2 - San Juan

Strategy/Metric Description	**Accomplishment**	**Status**
Measure the change in impervious surface areas over time.	According to WDFW's HRCD project, a total of 0.12 acres of frequently flooded critical areas on farmland have changed due to new semi-impervious surfaces (0.12 acres on San Juan Island) and loss of tree canopy (0.04 acres in the same location on San Juan Island) between 2011 and 2019. This is due to one project in which 0.04 acres of trees were removed, and 0.12 acres of new semi-pervious surface was installed.	Met

Benchmark Met?   **Comments**

☑ Yes   ☐ No   We measured the change in impervious surface and tree canopy loss in frequently flooded areas, and both features increased. However, a measurable benchmark is necessary for this exercise to be useful.

Adaptive Management?

☑ Yes   ☐ No

To properly measure this goal, the original benchmark is reworded to make it more measurable, along with the addition of tree canopy loss. Also, an additional benchmark is needed to measure practices implemented to protect or enhance FFAs, and we added a new metric to track BMPs still in operation.

Benchmark 1: Maintain or reduce baseline impervious/semi-impervious surface area and tree canopy loss
Metric: Measure the change in impervious/semi-impervious surface areas and tree canopy loss between 2011 and present

Benchmark 2: Actions implemented to preserve natural flood control, stormwater storage, drainage, and floodplain connectivity
Metric a: Number of BMPs implemented
Metric b: Acreage of FFAs protected or enhanced
Metric c: Percent of implemented BMPs still in operation

Benchmark Monitoring

This benchmark for protecting and enhancing frequently flooded areas is currently monitored using HRCD-derived data on impervious surface change.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. We will also use change in semi-impervious surface areas, tree canopy loss, and BMPs in Individual

Stewardship Plans, cost share projects, and other projects taken on by other entities in the community; and we will conduct monitoring to determine if installed BMPs are still in use.

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	Geologic Hazard
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge	Wetlands
Benchmark: 14 - Measure the change in impervious surface area and vegetative cover in FFAs that intersect with agricultural activity over time	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels	Critical Aquifer Recharge
Benchmark: 15 - Acreage of Frequently Flooded Areas where they intersect with agricultural activity	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels	Fish and Wildlife Habitat
Benchmark: 15 - Acreage of Frequently Flooded Areas where they intersect with agricultural activity	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels	Frequently Flooded
Benchmark: 15 - Acreage of Frequently Flooded Areas where they intersect with agricultural activity	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Identify acreage/area of reconnected floodplain, by watershed.	Cannot report. A reconnected floodplain mapping layer does not exist.	Not met
Identify BMPs implemented to increase surface water storage.	No BMPs were implemented in FFAs that would increase surface water storage (such as ponds, diversions, surface drains or field ditches, or roof runoff structures).	Not met
Identify BMPs implemented to protect floodplain.	Fencing (1,223 linear feet) is used on two farms to protect the floodplain.	Met
Quantify acreage/area protected by BMPs	BMPs protect 7.58 acres of FFA on farmland with ISPs.	Met

Benchmark Met?   **Comments**

☐ Yes   ☑ No

We did not meet this benchmark because the metrics are not designed to measure this benchmark, and the benchmark is not designed to help meet the goal. We were able to account for BMPs on two farms with a small amount of FFA acreage protected, however, two out of four metrics were not met.

Adaptive Management?

☑ Yes   ☐ No

Since the current benchmark is not helpful, and the metrics have been condensed and moved to the second FFA goal's benchmark, this benchmark and goal will be deleted.

Benchmark Monitoring

This benchmark for the acreage of frequently flooded areas was measured by reconnected floodplain (which is not mapped so it does not exist), and BMPs for water storage and floodplain protection.

Monitoring sufficient?

☐ Yes   ☑ No

Changes: Current monitoring is not sufficient. However, this goal is being deleted so no further monitoring is necessary.

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels	Geologic Hazard
Benchmark: 15 - Acreage of Frequently Flooded Areas where they intersect with agricultural activity	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels	Wetlands
Benchmark: 15 - Acreage of Frequently Flooded Areas where they intersect with agricultural activity	2 - San Juan

Strategy/Metric Description	Accomplishment	Status
Goal and Benchmark do not apply to this Critical Area.		N/A

Goal Results

Goal: 1 - Protect Existing Wetlands	Wetlands
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☑ Yes ☐ No   We used the number of wetland acres protected by   ☐ Yes ☑ No
fencing BMPs to determine if this goal was met. About 47
acres of wetlands have been protected through exclusion
fencing.

Goal: 1 - Protect Existing Wetlands	Critical Aquifer Recharge
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes ☐ No   ☐ Yes ☐ No

Goal: 1 - Protect Existing Wetlands	Frequently Flooded
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes ☐ No   ☐ Yes ☐ No

Goal: 1 - Protect Existing Wetlands	Geologic Hazard
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes ☐ No   ☐ Yes ☐ No

Goal: 1 - Protect Existing Wetlands	Fish and Wildlife Habitat
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes ☐ No   ☐ Yes ☐ No

Goal: 2 - Enhance Existing Wetland Functions	Wetlands
	2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☑ Yes ☐ No   We used the area and type of enhancement actions in   ☑ Yes ☐ No
wetlands to determine if this goal was met. About 1 acre
of wetlands has been enhanced through one project in the   Although this goal was met, we are
county.   changing the language to be inclusive
of restoration actions and removing
the separate wetland restoration goal
(Goal 3).

Goal: Enhance and/or restore
wetland functions related to water
quality, water quantity, and habitat

Goal: 2 - Enhance Existing Wetland Functions   **Critical Aquifer Recharge**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 2 - Enhance Existing Wetland Functions   **Frequently Flooded**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 2 - Enhance Existing Wetland Functions   **Geologic Hazard**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 2 - Enhance Existing Wetland Functions   **Fish and Wildlife Habitat**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 3 - Voluntarily Restore Wetlands   **Wetlands**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☑ No   No actions have been taken to restore wetlands. Although   ☑ Yes   ☐ No
                       wetland acreage has increased by 0.5 acres, the changes   Since no wetland restoration projects
                       can be attributed to mapping adjustments rather than   have been implemented, we decided
                       restoration of wetlands.   to lump this goal with the wetland
                                                                                     enhancement goal (see Goal 2).

Goal: 3 - Voluntarily Restore Wetlands   **Critical Aquifer Recharge**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 3 - Voluntarily Restore Wetlands   **Frequently Flooded**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 3 - Voluntarily Restore Wetlands   **Geologic Hazard**
                                                          2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**
☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 3 - Voluntarily Restore Wetlands

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 4 - Protect Streams

Wetlands

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 4 - Protect Streams

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 4 - Protect Streams

Frequently Flooded

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 4 - Protect Streams

Geologic Hazard

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 4 - Protect Streams

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**

☑ Yes   ☐ No   We used the lineal feet of streams protected to determine
if this goal was met. There is approximately 76,940 linear
feet of fencing used to protect streams in our watershed.

Adaptive Management?

☐ Yes   ☑ No

Goal: 5 - Enhance Streams

Wetlands

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 5 - Enhance Streams

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 5 - Enhance Streams	Frequently Flooded
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 5 - Enhance Streams	Geologic Hazard
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 5 - Enhance Streams	Fish and Wildlife Habitat
	2 - San Juan

Goal Met?   **Comments**

☑ Yes   ☐ No   Although neither of the two metrics identified for measuring this benchmark and goal could be used to determine if this goal was met, if we use the number of BMPs implemented to account for stream enhancement, we can say that the goal was indeed met. We will use adaptive management to address problems with the benchmarks.

Adaptive Management?

☑ Yes   ☐ No

Although this goal was met, we are changing the language to be inclusive of restoration actions and removing the separate stream restoration goal (Goal 6).

Goal: Enhance and/or restore streams

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Wetlands
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Critical Aquifer Recharge
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Frequently Flooded
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity	Geologic Hazard
	2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 6 - Voluntarily Restore Streams where they Intersect with Agricultural Activity

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   No actions have been taken to restore streams.

Adaptive Management?

☑ Yes   ☐ No

Since no stream restoration projects have been implemented, we decided to lump this goal with the stream enhancement goal (see Goal 5).

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Wetlands

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Frequently Flooded

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Geologic Hazard

2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 7 - Protect and Enhance Habitats and Species of Local Importance

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**

☑ Yes   ☐ No   We used the number of habitat protection and enhancement projects to meet the goal.

Adaptive Management?

☑ Yes   ☐ No

Although this goal was met, we are changing the language to be inclusive of restoration actions and removing the separate habitat restoration goal (Goal 8).

Goal: Protect, enhance, and/or restore habitats and species of local importance

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas

Wetlands

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas

Frequently Flooded

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas

Geologic Hazard

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 8 - Encourage Voluntary Restoration of FWHC Areas

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☑ No   No actions have been taken to restore habitat areas.   ☑ Yes   ☐ No

                                                                                                    Since no habitat restoration projects
                                                                                                    have been implemented, we decided
                                                                                                    to lump this goal with the habitat
                                                                                                    protection and enhancement goal
                                                                                                    (see Goal 7).

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Wetlands

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Frequently Flooded

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Geologic Hazard
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   This goal was not met because there were no actions taken to minimize impacts on water quality or fish and wildlife habitat by upland agricultural use.

Adaptive Management?

☑ Yes   ☐ No

Although we did not meet this goal, more research is needed to determine if geologically hazardous areas on farmland are causing sedimentation, erosion, and landslide hazards. We will use GIS to identify GHAs on farmland, reach out to operators to better understand the issue, and use resource evaluations in the ISP planning process to determine if agricultural use is causing impacts.

Goal: 9 - Avoid and minimize the impacts of sedimentation, erosion, & landslide hazards on water quality and fish and wildlife habitat by upland agricultural use

Fish and Wildlife Habitat
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Wetlands
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Critical Aquifer Recharge
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Frequently Flooded
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Geologic Hazard
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   We used the fact that no actions were implemented to manage landslide risk and stabilize steep slopes. This goal does not protect or enhance GHAs, but rather is an agricultural viability goal.

Adaptive Management?

☑ Yes   ☐ No

We are removing this benchmark and goal because the goal does not protect or enhance GHAs, but rather is an agricultural viability goal.

Goal: 10 - Avoid and minimize damage to agricultural activities due to erosion, landslides, or other naturally occurring geologic events.

Fish and Wildlife Habitat
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Wetlands
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Critical Aquifer Recharge
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Frequently Flooded
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Geologic Hazard
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   We used the fact that no actions were implemented to manage landslide risk and stabilize steep slopes. While the goal involves avoiding activities that increase erosion, the benchmark and metrics involve taking action to address risk.

Adaptive Management?

☑ Yes   ☐ No

This goal is very similar to the first GHA goal, in that it involves avoiding activities that cause erosion. We are removing this goal because the first part can be addressed through the first GHA goal, and the second part referring to feeder bluffs, does not apply to VSP. From the Work Plan (page 27) "agricultural activity in the marine shoreline in San Juan County is subject to regulatory review in compliance with the Shoreline Master Program."
https://sccwagov.app.box.com/s/z4xzvoo5c54dz3hnkb3ixxc79rwsx7iu

Goal: 11 - Avoid activities that increase the natural rate of erosion, while protecting naturally occurring and beneficial ecological processes, such as feeder bluffs

Fish and Wildlife Habitat
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Wetlands
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Critical Aquifer Recharge
2 - San Juan

Goal Met? ☐ Yes ☑ No

Comments

While the large number of BMPs implemented is likely to protect groundwater recharge, there is no benchmark for the second part of the goal, to prevent degradation of groundwater. Additionally, although this is a protection goal, the benchmark is geared toward measuring enhancement since it expects an increase in water storage capacity rather than maintenance of it.

Adaptive Management? ☑ Yes ☐ No

We revised this goal to only refer to groundwater storage functions and created a new goal to address groundwater quality.

Goal: Protect and maintain groundwater recharge to support groundwater storage functions

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Frequently Flooded
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Geologic Hazard
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 12 - Protect and maintain groundwater recharge and prevent the degradation of groundwater resources due to agricultural activities

Fish and Wildlife Habitat
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)

Wetlands
2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)

Critical Aquifer Recharge

2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☑ No	We used the fact that we are unable to quantify the amount of water needed at the watershed scale to support agricultural use.	☑ Yes ☐ No

This is a complex goal that addresses the important need of quantifying agricultural use of groundwater; however, we have been unable to access the tools necessary to accurately estimate this use. We will continue to encourage actions such as well meter installations and staff gauges to quantify use and will reevaluate how to use that data as more of it becomes available. Given that this goal also directs us to balance competing needs for water, we will also address it further under agricultural viability.

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)

Frequently Flooded

2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)

Geologic Hazard

2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 13 - Protect groundwater resources that support agricultural activities and balance competing needs for water while preserving natural hydrologic functions and their related ecological processes (e.g., water quality, and water quantity)

Fish and Wildlife Habitat

2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality

Wetlands

2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality	**Critical Aquifer Recharge**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☑ No	Although as written, we have accomplished the goal of prioritizing watersheds, we need to use the water quality data to determine if it is being improved, i.e., an enhancement goal.	☑ Yes ☐ No

We are revising this goal to include some of the water quality degradation language that was removed from the first CARA goal.

Goal: Prevent the degradation of groundwater resources due to agricultural activities, with priority given to watersheds with known contaminant problems

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality	**Frequently Flooded**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality	**Geologic Hazard**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 14 - Prioritize watersheds with known contaminant problems for management that protects and improves water quality	**Fish and Wildlife Habitat**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 15 - Minimize flood damage to agricultural properties and operations	**Wetlands**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 15 - Minimize flood damage to agricultural properties and operations	**Critical Aquifer Recharge**
	2 - San Juan

Goal Met?	**Comments**	**Adaptive Management?**
☐ Yes ☐ No		☐ Yes ☐ No

Goal: 15 - Minimize flood damage to agricultural properties and operations

Frequently Flooded
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   The acreage of FFAs does nothing to minimize flood damage to agricultural properties. Furthermore, this goal does not protect or enhance FFAs, but rather is an agricultural viability goal.

Adaptive Management?

☑ Yes   ☐ No

We are deleting this goal because it does nothing to protect or enhance FFAs.

Goal: 15 - Minimize flood damage to agricultural properties and operations

Geologic Hazard
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 15 - Minimize flood damage to agricultural properties and operations

Fish and Wildlife Habitat
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge

Wetlands
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge

Critical Aquifer Recharge
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☐ No

Adaptive Management?

☐ Yes   ☐ No

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge

Frequently Flooded
2 - San Juan

Goal Met?   **Comments**

☐ Yes   ☑ No   Although a change in impervious surface can indicate changes in FFAs, it does not provide information on how these areas may be protected or enhanced. This goal needs an additional benchmark to measure practices implemented to protect or enhance FFAs.

Adaptive Management?

☑ Yes   ☐ No

Since we did not meet this goal, we will work on increasing outreach to operators in FFAs to better target those areas. Additionally, for the next reporting period, we hope to have more time to fully analyze HRCD results to understand where the changes have occurred, and the kinds of changes that occurred.

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge

Geologic Hazard

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 16 - Protect and enhance Frequently Flooded Areas for habitat and groundwater recharge

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels

Wetlands

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels

Critical Aquifer Recharge

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels

Frequently Flooded

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☑ No   Reporting on the acreage of FFAs does nothing to preserve these functions. A benchmark is needed to account for practices that preserve these functions.   ☑ Yes   ☐ No

We are deleting this goal and moving all its elements to the second FFA goal's benchmark.

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels

Geologic Hazard

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Goal: 17 - Preserve natural flood control, stormwater storage, and drainage, and floodplain connectivity, including flood channels and/or high-flow channels

Fish and Wildlife Habitat

2 - San Juan

Goal Met?   **Comments**   **Adaptive Management?**

☐ Yes   ☐ No   ☐ Yes   ☐ No

Participation Strategies and Performance Metrics

Enter your best estimate of the number of Producers in the County watersheds: 150

Goal: 18 - Participation Goal: Maintain and Improve Ag Viability Over Time

Benchmark: 17 - Achieve and maintain participation of agricultural producers of greater than 20 percent by 2020.

Strategy/Metric Description	Accomplishment	Status
Percent of agricultural producers participating in VSP.	To date, 20 ISPs have been written since 2018, when the CD started writing ISPs in place of Farm Management Plans. We are on track to achieve the participation goal of 20 percent (or 30 ISPs) by the end of this biennium, which is our contractual obligation with San Juan County.	Met
Percent of agricultural acres of farms participating that intersect with critical areas.	Five percent of the total farm acres in the county have ISPs (counting from 2018 to 2020).	Met

Goal: 18 - Participation Goal: Maintain and Improve Ag Viability Over Time

Benchmark: 18 - Achieve and maintain participation of agricultural producers of greater than 40 percent by 2025.

Strategy/Metric Description	Accomplishment	Status
Percent of agricultural producers participating in VSP.	We have not met this benchmark yet because it is designed to increase participation by 2025.	Not met
Percent of agricultural acres of farms participating that intersect with critical areas.	We have not met this benchmark yet because it is designed to increase particpation by 2025.	Not met

Critical Area Monitoring

Monitoring Activity: High Resolution Change Detection from 2011 to 2019

Included Critical Area(s):

Frequently Flooded

Input datasets used | Wash. Department of Fish & Wildlife (WDFW) High Resolution Change Detection (HRCD) data: NAIP 3-ft (~1-m) imagery is used to identify areas experiencing 1) loss of tree canopy and 2) new impervious/semi-pervious surfaces. In addition to polygons, which show the locations of change, attributes provide details on causes (i.e. natural vs. anthropogenic) and types (i.e. canopy loss, impervious surface gain) of change observed, as well as the proportion of each polygon which changed. For change polygons which experienced less than 100% change, there is some spatial uncertainty as to where the change occurred within the polygon; approximately 12% of the changed area has this spatial uncertainty (not captured by the accuracy below). HRCD data does not show tree canopy growth over time – only loss.

Year of map/imagery for comparison with 2011 baseline   2019

Spatial accuracy of least accurate input layer   3   Units for spatial accuracy   Feet

Classification accuracy of least accurate input layer   100

Field verification of overall accuracy: Ommission   0.1

Field verification of overall accuracy: Commission   0

Field verification of overall accuracy: Kappa

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations | The HRCD work has shown that very little land cover change is happening on farm parcels in San Juan County. It is too soon to fully understand whether VSP implementation has contributed to this observation, but we generally believe that this trend is not related to VSP implementation.

Adaptive Management needed?   ☑ Yes   ☐ No

Proposed Monitoring | We will continue to use HRCD as a supplement to field observations. However, we understand that very little land cover change is happening in San Juan County, and that this trend is likely to continue.

Included Critical Area(s):

Geologic Hazard

Type of data	Other, explain:	Stormwater Monitoring

Timeframe/season for field sampling or data collection (e.g., summer only, annually, monthly)	quarterly, focus on storm events

Desired accuracy of the Analysis	1	Observed mean	0
Number of samples drawn from existing data	0	Observed standard deviation	0

What statistical test was performed? (Ex. t-test, ANOVA, time series, regression, etc.)	ANOVA

Is the observation statistically significant? ☐ Yes ☐ No

Did the underlying data meet statistical test assumptions (e.g., normality)? ☑ Yes ☐ No

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations	2012-2018 SJI Conservation District conducted stormwater monitoring under contract from the San Juan County Stormwater Utility, including an initial pilot program and follow-up surveillance. Water quality was generally good, with some variation in pH due to background conditions, and somewhat high levels of fecal coliform/e. Coli. No analysis was done to determine sources, but where livestock was an obvious factor and landowners were willing, the District assisted with management changes. In 2019, with staff changes, revision to the stormwater monitoring program, and then the onset of COVID, the District suspended water quality monitoring.

Adaptive Management needed? ☑ Yes ☐ No

Proposed Monitoring	For both surface and ground water quality monitoring, we will change to focus on priority watersheds with more robust sampling for stream health parameters with field testing, annual visual assessments using rapid wetland assessments and SVAP, and sampling for benthic invertebrates at key locations. We will also develop a volunteer monitoring program that includes landowners and students for additional sites.

Included Critical Area(s):

Critical Aquifer Recharge

Type of data	Other, explain:	Groundwater samples for nitrate from SJC water availablity certificates, 2011-20

Timeframe/season for field sampling or data collection (e.g., summer only, annually, monthly) | none, random |

Desired accuracy of the Analysis		Observed mean	
Number of samples drawn from existing data	244	Observed standard deviation	

What statistical test was performed? (Ex. t-test, ANOVA, time series, regression, etc.)

Is the observation statistically significant?   ☐ Yes   ☐ No

Did the underlying data meet statistical test assumptions (e.g., normality)?   ☐ Yes   ☐ No

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations

Lab results from water quality samples for building permit approval through SJC HC&S entered into a database between 2011 and 2017, when data collection stopped. Nitrate results were evaluated to determine if groundwater was being impacted by long-term exposure to nitrogen contamination. Results indicated that 23 of 244 samples detected nitrate. Four samples were above 5.0 ppm, the trigger for concern in drinking water. No investigation was conducted to determine if the source is agricultural.

Adaptive Management needed?   ☑ Yes   ☐ No

Proposed Monitoring

For both surface and ground water quality monitoring, we will change to focus on priority watersheds with more robust sampling for stream health parameters with field testing, annual visual assessments using rapid wetland assessments and SVAP, and sampling for benthic invertebrates at key locations. We will also develop a volunteer monitoring program that includes landowners and students for additional sites.

Monitoring Activity: BMPs implemented to protect or enhance critical areas

Included Critical Area(s):

Wetlands

Critical Aquifer Recharge

Frequently Flooded

Geologic Hazard

Fish and Wildlife Habitat Conservation Areas

Type of data	Other, explain:	Implementation monitoring of BMPs

Timeframe/season for field sampling or data collection (e.g., summer only, annually, monthly)	Throughout the year, as ISPs are written and/or cost share projects implemented

Desired accuracy of the Analysis [ ]   Observed mean [ ]

Number of samples drawn from existing data [ ]   Observed standard deviation [ ]

What statistical test was performed? (Ex. t-test, ANOVA, time series, regression, etc.)	No

Is the observation statistically significant?   ☐ Yes   ☐ No

Did the underlying data meet statistical test assumptions (e.g., normality)?   ☐ Yes   ☐ No

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations	N/A. This entry on implementation monitoring was entered by mistake. For implementation monitoring, see Benchmark Monitoring section.

Adaptive Management needed?   ☐ Yes   ☑ No

Monitoring Activity: SVAP2

Included Critical Area(s):

Frequently Flooded

Fish and Wildlife Habitat Conservation Areas

Timeframe/season for field sampling or data collection (e.g., summer only, annually, monthly)

Before and after BMPs are implemented

Desired accuracy of the monitoring _____   Number of samples/sites _____

Observed mean _____   Observed standard deviation _____

What statistical test was performed? (Ex. t-test, ANOVA, time series, regression, etc.)

Is the observation statistically significant?   ☐ Yes   ☐ No

Did the underlying data meet statistical test assumptions (e.g., normality)?   ☐ Yes   ☐ No

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations

SVAP2 was conducted on False Bay Creek in 2017 but has not been repeated due to loss of our water quality specialist, other staffing shortages, and COVID-19 cutbacks.

Adaptive Management needed?   ☐ Yes   ☑ No

Monitoring Activity: Change in wetland acreage

Included Critical Area(s):

Wetlands

Input datasets used | wetland polygon layer from San Juan County GIS

Year of map/imagery for comparison with 2011 baseline | 2020

Spatial accuracy of least accurate input layer | | Units for spatial accuracy |

Classification accuracy of least accurate input layer |

Field verification of overall accuracy: Ommission |

Field verification of overall accuracy: Commission |

Field verification of overall accuracy: Kappa |

Briefly describe the outcome of the monitoring and why VSP implementation/lack of implementation contributed to the observations | Map math was used to determine change between 2011 and 2020 for wetlands on farm parcels. Although wetland acreage has increased by 0.5 acres, these changes are attributed to mappping changes where boundaries have been adjusted, rather than enhancement or restoration activities.

Adaptive Management needed? ☐ Yes ☑ No