

Port Susan Marine Stewardship Area Conservation Action Plan (2012) Progress Tracker – All Conservation Targets Compiled

Last updated 8/15/2023

This version of the Progress Tracker is both a summary of progress as of September 2022 and provides the manager guidance on how to finish and continue to manage the tracker and report on progress in the future.

Progress Legend	Progress Legend					
Color coding for each action	:					
Needs refinement/consider	No progress made; needs	Some progress made; not	Progress is on-track or			
relevance	attention	meeting targeted goals	complete			
Before tagging progress color,	review "Opportunities to Suppo	ort Progress" for actions to solici	it updates on progress to-date.			
Progress icons indicating Co	onservation Target status:					
On track; meeting or exceeding expected progress on objectives and actions						
Room for improvement; some progress made but more needed						
Little to no progress m	nade; work to do in next 10 yea	ŕS				

Conservation Target 1: F	River Delta			
Objective	Strategic Action	2012 Opportunity Rank	Resources to track and report on progress	Actions Completed To-Date
Objective 1: Increase delta complexity of approximately 100(+/-) acres between South Pass and Hat Slough and improve flood conveyance by creating a restoration project that increase freshwater inputs to the mudflats by 2020.	Strategic Action 1: Develop agreements and incentives for landowners to redistribute flood water into new distributary channels on their land by 2015.	High	Seek updates from <u>Snohomish County'</u> <u>Sustainable Lands Strategy</u> . In 2012, there were plans for the Stillaguamish Watershed Council partners to solicit interest from local delta landowners (particularly those who have known stormwater flooding issues) <u>Upcoming project to track:</u> Channel Migration Easements (Snohomish County). As of 2022, this is still a pilot program in the Lower Skykomish	Agricultural Resilience Plan Conservation District
	Strategic Action 2: Design and build appropriate (historic) distributary channels to convey flood water to 200 (+/-) acres of mudflat by 2020.	High	Seek updates <u>from Snohomish County'</u> <u>Sustainable Lands Strategy</u>	Port Susan Bay Estuary Re Project, Port Susan Bay Pro The Nature Conservancy)

Conservation Target 1: River Delt

	Action Metrics (if applicable)
n, Snohomish	
storation eserve (2012,	150 acres of estuary restored

			Upcoming projects to track: zis a ba II (2024 or 2025), Stillaguamish Tribe; Port Susan	Livingston Bay Pocket Estuary Restoration (2012, The Nature	10 acres restored
			Bay Estuary Restoration (enhancement of the 150 acres), The Nature Conservancy	Conservancy) Greenwood Creek Enhancement Project (2014, Tulalip Tribes, Snohomish County SWM, Snohomish MRC)	1 barrier culvert replaced; 250 ft of stream made accessible
				zis a ba Estuary Restoration (2017, Stillaguamish Tribe)	87 acres of estuary restored
				Kristopherson Creek Fish Passage Barrier Removal Project (2018, Snohomish Conservation District)	2 culverts replaced; 1.6 miles of stream made accessible
				Leque Island Restoration Project (2019 WA Department of Fish and Wildlife)	250 acres of estuary restored
				Martha Creek Pocket Estuary Restoration (2021, Tulalip Tribes)	.2 acres of estuary restored .1 miles of stream restored
				Lequie Island Restoration Project North (2022 WA Department of Fish and Wildlife)	26 acres of estuary restored
	Strategic Action 3: Work with the Snohomish Conservation District and WSU Snohomish County Extension Agriculture Educators to improve BMPs in new and existing channel drainage areas to meet all DOE water quality regulations by 2020.	High	Seek updates from the <u>Snohomish</u> <u>Conservation District</u> <u>Upcoming project to track:</u> Pollution Identification and Correction (PIC) Phase 3, Snohomish Conservation District Consider adding new partners and refining		Percent of property owners in new and existing channel drainage areas that received education and outreach and have implemented BMPs
			this action. There is a new funding landscape and stakeholder engagement efforts		
Objective 2: Reduce the delivery of flood water to the whole delta area to accommodate more productive agriculture that allows farmers to return a portion of their land to natural functioning conditions (either buffer or marsh). Goals for	Strategic Action 1: City of Stanwood and Snohomish County solidify wetland protection, connection, and restoration components as part of stormwater retrofits in Comprehensive Plans by 2015, to create increased water storage in agricultural fields and decrease runoff.	High	Seek updates on discussions with the <u>City</u> <u>of Stanwood</u> . Connect with Kevin Hushagen, Public Works Director, City of Stanwood <u>Project to track:</u> Irvine Slough Retrofit, City of Stanwood	Irvine Slough Retrofit (2022, City of Stanwood)	
marsh and buffers are consistent with salmon recovery plan of restoring a minimum of 315 acres of estuarine area by 2016.	Strategic Action 2: Retrofit Stanwood developments with low impact development (LID) techniques by 2020.	Medium	Seek updates on discussions with the <u>City</u> <u>of Stanwood</u> . Connect with Kevin Hushagen, Public Works Director, City of Stanwood <u>Project to track:</u> Irvine Slough Retrofit, City of Stanwood	Irvine Slough Retrofit (2022, City of Stanwood)	
	Strategic Action 1: Farm Link connects Snohomish Farm Incubator (farm hands-on	Medium	Seek updates on funding for <u>Farm</u> Incubator program		

Objective 3: Work with farmers, researchers and marketers to develop profitable and environmentally sustainable	training center, including classes on regulations and ecosystem processes) graduates with Stillaguamish properties to encourage incoming farms to promote stewardship and environmentally friendly productivity techniques.		Connect with <u>Lisa Neunzig and Snohomish</u> <u>Conservation District</u> about the Incubator Resource Center		
opportunities to farm under the changing conditions in the Stillaguamish Delta.	Strategic Action 2: WSU Snohomish County Extension Agriculture and Snohomish Conservation District conduct outreach to teach environmental stewardship and productivity techniques for farmers to respond to growing demand for local food produced with good environmental stewardship techniques (and increase profitability by 10-20% overall).	Medium	 Port Susan Food and Farming Center no longer in existence Seek updates from the <u>Snohomish</u> <u>Conservation District</u> Seek updates from <u>Sustainable Lands</u> <u>Strategy</u> and <u>Community Floodplain</u> <u>Solutions</u> Consider refining strategy and adding more partners – there is a new funding landscape and stakeholder engagement efforts 	Snohomish County Agriculture Resilience Plan (2019, Snohomish Conservation District)	Number of acres of farmland that are using environmentally sustainable techniques
	Strategic Action 3: Promote local sustainable seafood harvesting options for salmon, clams and crustaceans.	Low	Investigate other existing communication materials for sustainable seafood harvesting for salmon and crustaceans <u>To track:</u> Stillaguamish Tribe's plans for Triangle Cove. As of 2022, no apparent plans for commercial shellfish aquaculture Consider adding additional context for connections to Water Quality	Shellfish Foraging Guide to Port Susan and South Skagit Bay (2014, Pacific Shellfish Institute) Port Susan Shellfish Dinner (2012, 2014, 2015, 2016, 2018, Snohomish County SWM)	N/A N/A
Objective 4: In areas that have degraded flood protection infrastructure, construct set back dikes that ensure that fields behind the setbacks will be better protected	Strategic Action 1: Evaluate areas with high salinity due to frequent tidally influenced river flooding.	None	Seek updates from the <u>Sustainable Lands</u> <u>Strategy</u>	Ag Resilience Plan, Snohomish Conservation District Groundwater study including salinity, Snohomish Conservation District	
and return a portion of the original property to tidal marsh in partnership with the Sustainable Lands Strategy (SLS), Stillaguamish River Flood Control District, and the Stillaguamish Technical Advisory Group (STAG).	Strategic Action 2: Construct set back dikes that protect property.	None	Seek updates from the <u>Sustainable Lands</u> <u>Strategy</u> Consider follow up with the Stillaguamish Tribe, The Nature Conservancy, and the Tulalip Tribes	Port Susan Bay Estuary Restoration Project, Port Susan Bay Preserve (2012, The Nature Conservancy Snohomish Co) Martha Creek Pocket Estuary Project	2012: 150 acres of estuary restored
	Strategic Action 3: Restore areas on the waterward side of the dike.	None	Seek updates from the <u>Sustainable Lands</u> <u>Strategy</u> . Consider follow up with the Stillaguamish Tribe, The Nature Conservancy, and the Tulalip Tribes	Port Susan Bay Estuary Restoration Project, Port Susan Bay Preserve (2012, The Nature Conservancy Snohomish Co) Martha Creek Pocket Estuary Project	2012: 150 acres of estuary restored

Progress has been made on 9 out of 11 strategic actions listed in the original plan. No strategic actions are characterized as "needs attention" and the acreage goal for restoration was exceeded by over double.

Conservation Target 2: C	Chinook Salmon				
Objective	Strategic Action	2012 Opportunity Rank	Opportunities to Support Progress	Actions Completed To-Date	Action Metrics (if applicable)
Objective 1: Remove all project area waters from the Clean Water Act 303(d) list for nutrients and prevent agrochemicals from entering project area waters by 2017.	Strategic Action 1: Snohomish Conservation District promotes a comprehensive approach to land management for farm owners to include agriculture, habitats and water quality BMPs that incorporates education, grant funds, and other resources or partners to implement BMPs by 2015.	Very high	Seek updates from <u>Snohomish Clean</u> <u>Water District Advisory Board</u> and <u>Snohomish Conservation District</u>	Discretionary Fund for projects that reduce fecal coliforms, Snohomish County Small project landowner incentives, Snohomish County Ag Resilience Plan, Snohomish Conservation District	Number of farmers reached with comprehensive land management message. Number of farmers that implemented BMPs from comprehensive land management effort.
	Strategic Action 2: Prevent introduction of priority commercial/residential landscaping chemicals into surface waters by 2015.	High	Seek updates from <u>Snohomish</u> <u>Conservation District</u> and <u>Snohomish</u> <u>County/Camano Island ECO Net</u> Consider seeking updates from <u>Department of Agriculture</u> and <u>Department of Ecology</u>		Number of commercial and residential landowners applying landscaping chemicals. Level of top 3-5 chemicals in Mussel Watch samples.
	Strategic Action 3: Increase landowner awareness of environmental stewardship as it relates to water quality through education and outreach partnership efforts.	High	Coordinate with <u>Sustainable Land</u> <u>Strategy</u> and future activities for <u>Community Floodplain Solutions</u>	Snohomish County Financing Options for Health Onsite Seward Systems (OSS) 2016 – 2017 Lower Stillaguamish Pollution Identification and Correction Program 2017 (PIC 1, PIC 2, PIC 3) Shellfish Dinners, Snohomish County Discretionary Fund projects including pet waste and outreach, Snohomish County Port Susan Owner's Manual, WSU Snohomish County Extension	Level of awareness of landowners about environmental stewardship as it relates to water quality.
<u>Objective 2:</u> Encourage and/or maintain 90% of future growth in the lower Stillaguamish watershed	Strategic Action 1: Address vesting laws on lands critical for salmon through sun-setting or other mechanism by 2015.	Low-Medium	It is unlikely vesting laws will be revised		

within the Urban Growth Areas	Strategic Action 2: Re-visit grandfathered non-	None		
(UGAs) by 2020.	conforming lots on Ag-10 zoned lands.			
	Strategic Action 3: Local governments develop	High	Coordinate with <u>Snohomish County</u>	Discretionary Fund, Snohom
	incentive programs to encourage the		Planning and Development Services	
	maintenance of ecosystem goods and services			SWM Small Projects Funds, S
	(ex: flood storage, forest cover and clean water)		Incentive program work is now more on	County
	by 2016.		the state level	
				Grants, Snohomish Conserva
			Encourage Snohomish County to use the	District
			Conservation Priority Index model to	
			determine which parcels have highest	
			value for the identified ecosystem	
			services. Invite landowners to	
			participate in the CPI incentive program	
	Strategic Action 4: Outside of the UGA, limit	None	Consider seeking update from	
	future growth by making access to water utilities		Department of Ecology regarding	
	stricter by closing sensitive basins (where water		identification of sensitive basins.	
	rights are already over appropriated) to future			
	exempt wells.		Water code to require connection to	
			water systems when available. Q1 2023	
			potential adoption	
Conservation Target Summary: Chinoc	ok salmon			
	While some progress has been made and 3 out of 7	original strategic actio	ons are underway, there is one strategic acti	on without any progress. Ther
	addressed and over 1.7 miles of streams accessible	e to salmon, including j	uvenile Chinook.	

Conservation Target 3: E	Beaches/Forage Fish				
Objective	Strategic Action	2012 Opportunity Rank	Opportunities to Support Progress	Actions Completed To-Date	Action Metrics (if applicable)
Objective 1: Protect 100% of remaining natural shoreline. Where instances of armoring are legally permissible under the single-family exemption in State law, encourage	Strategic Action 1: Strengthen Island County's SMP to reduce hard armoring and increase Snohomish County's and Island County's enforcement by 2020 to ensure objective one is met.	Very high	Minimal opportunity for bulkhead removal identified, and minimal remaining natural shoreline exists	Shoreline parcels analysis for bulkhead removal and protection, Snohomish MRC	Number of permits approved that allow hard armoring.
soft shore armoring.	Strategic Action 2: Encourage Snohomish and Island Counties to adopt new or existing soft- shore armoring design standards.	High		Snohomish County adopted requirements to use soft-shore armoring over hard-shore armoring, 2012	Design standards adopted in Snohomish and Island Counties. Design standards adopted.
	Strategic Action 3: Implementation of education programs targeted at contractors, engineers, realtors and landowners to encourage soft shore armoring and bioengineering and raise awareness about the impacts of shoreline hardening by 2015 and prevent future armoring.	Very high		Shore Friendly workshops - 9 workshops with over 500 participants Soft-shore armoring booklet sent to landowners	Number of attendees at educational programs/workshops.

ish County	Number of acres of forest in protected status through incentive program in Port Susan MSA.
inohomish	
ation	

ere was more progress on fish passage with two culverts

	Strategic Action 4: Change Island County permitting requirements to increase permitting	High		Lounty, some targeted to re
	standards for new or enhanced hard armoring and evaluate Snohomish County permitting requirements to determine if standards for new or enhanced hard armoring are adequate.	Tiigii	LIOs getting ready to release guidance for bulkheads. 1-page recommendation report expected in mid- 2022.	Shoreline Management Act
	Strategic Action 5: Change permit requirements to shift burden of proof from permitter to landowner to require a review process that includes onsite meetings by interested parties similar to forest resources process.	Low	Strategic Action on hold due to low opportunity rank. The following action steps will be revised based on future discussions. Action Steps: 1. Provide educational workshops for permitting authorities to verify knowledge of armoring impacts, and increase scrutiny when issuing permits for new or enhanced hard armoring.	MRC hosted workshops for F Development Service Depar 2013-2014, Snohomish and I Counties
	Strategic Action 6: Protect unarmored shoreline parcels in Port Susan through acquisition.	Medium	Work with <u>Tribes</u> and others such as <u>The</u> <u>Nature Conservancy</u> and <u>Whidbey</u> <u>Camano Land Trust</u> to identify unarmored shoreline for acquisitions.	countyTringle Cove acquisit Stillaguamish Tribe
Objective 2: Enhance functionality of 25% of marine vegetated buffers, on public and private lands, by conserving existing buffers and restoring degraded habitat by 2020.	Strategic Action 1: Restore 25% of degraded buffers to functional buffers within 100 feet of the marine shoreline by 2020.	Very high	 Partner with <u>Snohomish Conservation</u> <u>District</u> to develop new grant funds for outreach, planning, and implementing riparian restoration. Work to engage with willing landowners. Work with SCD, <u>Island County and</u> <u>Snohomish County Native Plants</u> <u>Stewards</u> to explore plant donations to landowners who are interested in restoring buffers on their properties. 	Shore Friendly Assessments visits by Island County and S County to identify shore frie options.
	Strategic Action 2: Island County SMP amends public and private regulations and incentives for tree and buffer protection by 2014.	Medium	Encourage <u>Island County</u> to develop regulations and incentives for tree and buffer protection in SMP.	
	Strategic Action 3: Island and Snohomish Counties develop a comprehensive education and outreach plan to enhance marine buffers by 2020.	High		Shore Friendly Workshops

Permitting requirements changed. anning an ment, iland Jon, Linear feet of unarmored shoreline acquired. I00 site nohomish dly Acres in protected status within 100 feet of marine shoreline. Acres restored/enhanced. I00 site nohomish dly Percent of newly developed properties that comply with buffer regulations. Number of landowners who take advantage of buffer incentives. Outreach and education plan implemented. Shore Friendly outreach and education implemented.	on, nohomish Iltors	
anning an ment, ilandLinear feet of unarmored shoreline acquired.on,Linear feet of unarmored shoreline acquired.100 site nohomish dlyAcres in protected status within 100 feet of marine shoreline. Acres restored/enhanced.100 site nohomish 		Permitting requirements changed.
Dn,Linear feet of unarmored shoreline acquired.100 site nohomish dlyAcres in protected status within 100 feet of marine shoreline. Acres restored/enhanced.Percent of newly developed properties that comply with buffer regulations. Number of landowners who take advantage of buffer incentives.Outreach and education plan implemented. Shore Friendly outreach and education implemented.	lanning an ment, sland	
100 site nohomish dlyAcres in protected status within 100 feet of marine shoreline. Acres restored/enhanced.100 site marine shoreline. Acres restored/enhanced.100 site marine shoreline. Acres restored/enhanced.100 site marine shoreline. Acres restored/enhanced.100 site 	on,	Linear feet of unarmored shoreline acquired.
Percent of newly developed properties that comply with buffer regulations. Number of landowners who take advantage of buffer incentives. Outreach and education plan implemented. Shore Friendly outreach and education implemented.	100 site nohomish ndly	Acres in protected status within 100 feet of marine shoreline. Acres restored/enhanced.
Outreach and education plan implemented. Shore Friendly outreach and education implemented.		Percent of newly developed properties that comply with buffer regulations. Number of landowners who take advantage of buffer incentives.
Shore Friendly outreach and education implemented.		Outreach and education plan implemented.
		Shore Friendly outreach and education implemented.

Progress has been made on most of the strategic actions (7 of 9) and the Shore Friendly Workshops and site visits were a success, but one strategic
related to buffers don't have associated data to track detailed progress.

Conservation Target 4: Dungeness Crab						
Objective	Strategic Action	2012 Opportunity Rank	Opportunities to Support Progress	Actions Completed To-Date	Action Metrics (if applicable)	
Objective 1: Maintain population structure by reducing take of undersized crabs by at least 50% of WDFW 2011 reported level by 2015 and reduce incidence of Dungeness crab mortality in derelict gear by 50% of WDFW 2011 levels by 2020.	Strategic Action 1: Implement comprehensive outreach plan to maintain good population structure and reduce loss of fishing gear by 2013 using WDFW crab endorsement funds.	Very High	Seek updates from with <u>Department of</u> <u>Fish and Wildlife</u> <u>Project to continue to track:</u> Crabscape cord and educational materials to crabbers	Crabber Education – Sound Water Stewards, Northwest Straits Commission, Island County MRC	Numbers of recreational and commercial crabbers with inappropriate gear.	
	Strategic Action 2: Increase enforcement efforts in Port Susan by 2015 in conjunction with statewide efforts by WDFW.	Medium	Seek updates from <u>Department of Fish</u> and <u>Wildlife</u> and <u>Stillaguamish Tribe</u>		Percent of undersized crab found in recreational and commercial catch.	
	Strategic Action 3: By 2015, conduct biennial crab pot removal in Port Susan and reduce new pot loss by 50% using WDFW funds from crab endorsement.	Medium	Seek updates from <u>Department of Fish</u> and Wildlife and <u>Stillaguamish Tribe</u>	Derelict Crab Pot Removal (2013 and 2021, Stillaguamish Tribe)	Number of derelict pots. Number of derelict pots removed. 2013, 45 crab pots and 1 crab ring removed	
Conservation Target Summary: Dungeness crab						
	There was progress on 2 of 3 strategic actions related to Dungeness crab but one has not made progress. The crabber education efforts have been a success but more enforcement work is needed.					

Conservation Target 5: Shellfish						
Objective	Strategic Action	2012 Opportunity Rank	Opportunities to Support Progress	Actions Completed To-Date		
Objective 1: Improve health of eastern soft shell clam and sand shrimp populations.	Strategic Action 1: Develop and institutionalize a Co-management Plan for Eastern soft shell clams and local data.	None	Seek updates from <u>Tulalip Tribes</u> regarding eastern soft shell population surveys Consider recontextualizing with human wellbeing, connections with water quality			
	Strategic Action 2: Develop and institutionalize a Co-management Plan for sand shrimp.	None	Consider recontextualizing with human wellbeing, connections with water quality			

c action hasn't made any progress and quantitative targets

Action Metrics (if applicable)

Objective 2: Maintain homeostatic	Strategic Action 1: Develop and implement an	None	Follow up with <u>Stillaguamish Tribe</u> on	
pH levels in Port Susan in perpetuity.	early warning pH monitoring system to trigger		the Hydro Lab water quality buoy and	
	action when TBD threshold is reached.		any progress made on real-time	
			monitoring	
			Project to track: Snohomish MRC is	
			considering real-time monitoring	
			<u> </u>	
			Consider recontextualizing this strategy	
			with other factors (temp, water quality,	
			etc.) and food web linkages. Redefine	
			objective for pH monitoring and actions	
			that would be triggered if pH threshold	
			reached.	
Objective 3: Eradicate Spartina in	Strategic Action 1: Snohomish and Island	Very high	Seek updates from <u>Stillaguamish</u>	Stillaguamish Chinook Salm
Port Susan.	County Noxious Weed Control Boards, The		Watershed Council regarding	Recovery Plan Spartina Targ
	Nature Conservancy, Stillaguamish Tribe, and		monitoring efforts and partner	2013 is "Maintain current de
	WSU Snohomish County Extension coordinate to		coordination	(0.4-2.56 solid acres). Total
	continue the monitoring and treatment of			was not deemed feasible at
	Spartina.			
Conservation Target Summary: Embed	ded invertebrates			
\mathbf{X}	More progress is needed! Only 1 of 4 strategic actic	ons are underway and a	key action related to water quality and she	llfish survival hasn't made an

Conservation Target 6: Shorebirds						
Objective	Strategic Action	2012 Opportunity Rank	Opportunities to Support Progress	Actions Completed To-Date	Action Metrics (if applicable)	
Objective 1: Maintain quality and quantity of mudflats and intertidal marsh by allowing habitat migration in the face of sea level rise (in perpetuity).	Strategic Action 1: Set back dikes in delta areas with failing infrastructure to restore a portion of delta habitat (overall goal is a minimum of 315 acres by 2016) and offer increased protection to agricultural lands.	Medium	Seek updates from <u>Sustainable Lands</u> <u>Strategy</u>	Port Susan Bay Estuary Restoration Project, Port Susan Bay Preserve (2012, The Nature Conservancy Snohomish Co) Livingston Bay Pocket Estuary Restoration (2012, The Nature Conservancy Island Co) Zis a ba Estuary Restoration (2017, Stillaguamish Tribe)	2012: 150 acres of estuary restored 2012: 10 acres restored	
	Strategic Action 2: Limit future development in floodplain migration area.	Medium	Seek updates from <u>Stillaguamish Tribe</u> on current protection of floodplain area in Port Susan		Acres of land converted to development in floodplain.	

	рН levels in Port Susan.
on et from nsity range Fradication chat time.	<i>Area of</i> Spartina <i>infestation in Port Susan. Also consider using <u>eelgrass mapper</u></i>
progress.	

Objective 2: By 2014, orchestrate	Strategic Action 1: Ensure that Snohomish and	Medium		Near-term action project (Chrys	Number of volunteers trained for readiness in	
local, State, and Federal response to	Island Counties have personnel or volunteers			Bertolotto, WSU Ext Beach Watchers)	the event of a major oil spill for Snohomish and	
mitigate unintended damages from	trained and coordinated in response in response				Island Counties.	
spill response related impacts to	tactics to the standards/levels of high risk spill			WSU recorded trainings		
intertidal habitats.	areas.					
				Snohomish MRC geographic response		
				plan updates		
Conservation Target Summary: Shorebirds						
There was progress on 2 of 3 strategic actions related to shorebirds. While shorebirds also benefit from the delta restoration efforts including setting back dikes, there hasn't been progress on limiting development in the floodplain.						

Additional Actions Completed in Port Susan

In addition to the progress made towards the strategic actions identified for each Conservation Target, additional work has been advanced within Port Susan that expands beyond the original objectives and strategic actions identified in the 2012 CAP. In particular, actions related to climate change, water quality, human wellbeing, and sea level rise fall outside of the objective and strategic action structure of the CAP but are nonetheless important to track. These actions include:

- The Nature Conservancy (TNC) Port Susan Bay Restoration:
 - TNC is working to restore key ecological processes to 150 acres of estuarine tidal habitat in Port Susan through the construction of distributary and blind tidal channel excavations. To accomplish this, TNC tested a novel approach in August 2022 to use explosives to create tidal channels as opposed to more traditional excavation methods. This method leads to reduced disturbances to the surrounding ecosystem during construction and leads to decreased project costs.
- United States Geological Survey Coastal Habitats in Puget Sound (CHIPS) Project:
 - o Led by USGS researcher Dr. Eric Grossman, the CHIPS project is an effort to model the transport of sediment and contaminants in coastal waters throughout Puget Sound. The project examines the movement of sediment from river systems into coastal areas and the effects sediment has on water quality, submerged vegetation, and habitat quality.
- Washington Sea Grant Sea Level Rise Projections:
 - Washington Sea Grant has led efforts to model sea level rise across Washington shorelines. This effort has provided local resource managers with information on projected sea level rise values and management options to adapt to expected future conditions.
- Snohomish County Stillaguamish Watershed Vulnerability Assessment
 - Snohomish County is developing a vulnerability assessment for communities in the Stillaguamish Watershed to better understand the challenges facing individuals and communities considering anticipated climate impacts. This work will examine how restoration activities contribute towards enhancing the resilience of communities in the watershed.

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