

Appendix E

West Kitsap County Restoration Projects and Scoring Results

Restoration Projects and Scoring Results

The table below provides the scoring results from the stressor-based GIS model for 46 potential restoration projects in West Kitsap County. While GIS model results are not intended to provide project specific information, this data is intended to provide information on assessing the likelihood of success of various management strategies and on the level and type of disturbance at the site scale. Results are discussed further in the two examples below the table.

West Kitsap Nearshore Assessment

Project ID	Location	Description		Drift Cell ID	Dominant Processes	CF Site Score	DP Site Score	Drift Cell Score	CF Site Rank	DP Site Rank	Drift Cell Rank	Management Action	Comment
2	Foulweather	Assess geomorphic history of foulweather nature conservancy marsh and improve functions.	792	DC-3	Wave Deposition	0.000	0.000	1.000	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
5	Shipbuilders Creek	Remove the impacts to habitat forming processes at access area south of the mouth of Shipbuilders Creek.	807	DC-7	Wave Deposition, Fluvial Deposition, Sediment Transport, Wave Erosion	0.003	0.000	1.000	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
6	Point Julia Barge	Remove abandoned barge just north of Point Julia	807	DC-7	Wave Deposition, Fluvial Deposition, Sediment Transport, Wave Erosion	0.003	0.000	1.000	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
8	Hood Canal Floating Bridge	Evaluate effects of Hood Canal Floating Bridge on wave energy/sediment transport north of the bridge, and redesign bridge or its operations as needed	840	DC-14	Sediment Transport, Wave Erosion	0.078	0.184	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
9	Little Boston Creek	Restore tidal processes and fish access in Little Boston Creek	810	DC-8	Fluvial Deposition, Sediment Transport, Wave Erosion	0.096	0.093	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
10	Point Julia Pilings	Remove old pilings about 0.7 miles south of Point Julia.	810	DC-8	Fluvial Deposition, Sediment Transport, Wave Erosion	0.096	0.093	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
11	Martha John Creek	Protect the inlet of Martha John Creek and remove overwater structures and grounding docks at the mouth of the stream.	817	DC-9	Tidal Erosion, Fluvial Deposition	0.095	0.094	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
12	Gamble Creek Culvert	Evaluate potential impacts of culvert at the mouth of Gamble Creek, and redesign as necessary	820	DC-10	Tidal Erosion, Wave Deposition, Fluvial Deposition	0.003	0.000	2.000	1	1	2	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
30	Johnson Creek Tidal Process/Salt Marsh	Restore tidal processes, and lost salt marsh habitat at the mouth of Johnson Creek	901	DC-22	Sediment Transport, Wave Erosion	0.043	0.044	2.000	1	1	2	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
35	Scenic Beach State Park	Remove concrete foundations at base of bluff north of unnamed stream at Scenic Beach State Park and revegetate cleared riparian area with native plants.	938	DC-27	Sediment Transport, Wave Erosion	0.026	0.055	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
36	Spear-fir Lagoon/Stavis Bay	Remove intertidal fill at mouth of small lagoon between Spear-fir Lagoon and Stavis Bay and restore sediment processes	943	DC-27	Tidal Erosion, Wave Deposition, Fluvial Deposition	0.000	0.000	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
37	Hood Point	Remove groins south of Hood Point	954	DC-29	Wave Deposition	0.085	0.123	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
40	Boyce Creek South	Acquire property 1.5 miles south of Boyce Creek and remove riprap to allow sediment recruitment from adjacent bluff; remove home landward out of the intertidal zone.	962	DC-31	Fluvial Deposition, Sediment Transport, Wave Erosion	0.085	0.112	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions

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Project ID	Location	Description		Drift Cell ID	Dominant Processes	CF Site Score	DP Site Score	Drift Cell Score	CF Site Rank	DP Site Rank	Drift Cell Rank	Management Action	Comment
41	Harding Creek	Remove the abandoned home near the mouth of Harding Creek.	963	DC-31	Fluvial Deposition, Sediment Transport, Wave Erosion	0.011	0.039	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
46	Chinom Point	Protect the remaining salt marsh habitat on Chinom Point. Approach the landowner regarding restoration of lost salt marsh habitat, natural intertidal function, and natural channel morphology of the small stream on the north side of the point.	984	DC-36	Sediment Transport, Wave Erosion	0.057	0.000	1.333	1	1	1	Protect, Conserve, Restore	Processes functional at site and landscape scale - high likelihood of restoration success; restoration will improve local conditions
7	Point Julia	On Point Julia, remove the north boat ramp and associated bridge over a tidal channel; reduce total boat ramps to one; minimize the footprint of the road, parking lot, and fill; remove unused materials along the access road to encourage revegetation.	809	DC-8	Wave Deposition	0.159	0.154	1.333	2	1	1	Conserve, Restore	Processes functional at landscape scale - high likelihood of restoration success
42	Anderson Cove P pilings	Remove old railroad grade and pilings from the head of Anderson Cove. Assess impacts to Holly Road.	972	DC-33	Sediment Transport, Wave Erosion	0.120	0.121	1.333	2	1	1	Conserve, Restore	Processes functional at landscape scale - high likelihood of restoration success
43	Anderson Cove	Eradicate invasive Japanese Knotweed from Anderson Cove.	972	DC-33	Sediment Transport, Wave Erosion	0.120	0.121	1.333	2	1	1	Conserve, Restore	Processes functional at landscape scale - high likelihood of restoration success
44	Anderson Cove North Shore	Remove the county road along the north shore of Anderson Cove (traffic could be rerouted to the road immediately to the north) and revegetate the riparian zone with native plants.	972	DC-33	Sediment Transport, Wave Erosion	0.120	0.121	1.333	2	1	1	Conserve, Restore	Processes functional at landscape scale - high likelihood of restoration success
1	Foulweather Bluff Salt Marsh	Restore lost salt marsh and lagoon habitat at the spit 0.5 miles south of the Foulweather Bluff salt marsh. Restore sediment depositional processes by removing bulkheads at this spit.	787	DC-3	Wave Deposition	0.156	0.231	1.000	2	2	1	Conserve, Restore, Restore Site	Processes functional at landscape scale - high likelihood of restoration success; restoring site process may further improve restoration success
33	Nick's Lagoon Intertidal Wetlands/ Salt	Restore intertidal wetlands and salt marsh at Nick's Lagoon by removing log structures and associated fill; remove derelict boats and other refuse.	928	DC-25	Tidal Erosion, Fluvial Deposition	0.174	0.246	1.000	2	2	1	Conserve, Restore, Restore Site	Processes functional at landscape scale - high likelihood of restoration success; restoring site process may further improve restoration success
34	Misery Point	Acquire property south of WDFW Misery Point boat launch at Miami Beach to restore lost salt marsh, spit, and lagoon habitats. Restore sediment supply.	935	DC-27	Wave Deposition, Sediment Transport, Wave Erosion	0.154	0.232	1.333	2	2	1	Conserve, Restore, Restore Site	Processes functional at landscape scale - high likelihood of restoration success; restoring site process may further improve restoration success
23	Bangor Naval Station Stormwater Impacts	Minimize impacts to the photic zone and the juvenile salmonid migratory corridor by over water structures on the Bangor Naval Station.	869	DC-18	Sediment Transport, Wave Erosion	0.312	0.124	1.000	3	1	1	Restore, Enhance	Processes functional at landscape scale, but high site disturbance - moderate to high likelihood of restoration success
25	Devil's Hole Creek	Remove road and fill to restore accretion spits and intertidal lagoon at Devil's Hole Creek	872	DC-19	Sediment Transport, Wave Erosion	0.408	0.193	1.333	3	1	1	Restore, Enhance	Processes functional at landscape scale, but high site disturbance - moderate to high likelihood of restoration success
26	King's Spit P pilings	Remove old pilings north of King Spit.	879	DC-20	Sediment Transport, Wave Erosion	0.204	0.000	1.000	3	1	1	Restore, Enhance	Processes functional at landscape scale, but high site disturbance - moderate to high likelihood of restoration success
45	Holly Salt Marsh and Lagoon Habitats	Restore historic salt marsh and lagoon habitats at the community of Holly.	976	DC-34	Fluvial Deposition	0.217	0.180	1.333	3	1	1	Restore, Enhance	Processes functional at landscape scale, but high site disturbance - moderate to high likelihood of restoration success
27	King's Spit North	Investigate and reduce potential impacts from berm on north edge of King's Spit	880	DC-20	Sediment Transport, Wave Erosion	0.477	0.304	1.000	3	2	1	Restore, Enhance, Restore Site	Processes functional at landscape scale, but high site disturbance - moderate to high likelihood of restoration success; restoring site process may further improve restoration success
19	Kitsap Memorial State Park	Remove creosote bulkhead to restore sediment recruitment and riparian processes along ~1000 ft of shoreline at Kitsap Memorial State Park	850	DC-15	Sediment Transport, Wave Erosion	0.266	0.174	2.000	3	1	2	Restore, Enhance	Processes moderately functional at landscape scale and highly disturbed on the site - moderate likelihood of restoration success

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20	Lofall	Remove the Lofall ferry terminal.	850	DC-15	Sediment Transport, Wave Erosion	0.266	0.174	2.000	3	1	2	Restore, Enhance	Processes moderately functional at landscape scale and highly disturbed on the site - moderate likelihood of restoration success
18	Kinman Creek	Where possible, restore riparian vegetation at the mouth of Kinman Creek and improve tidal influence to the stream.	848	DC-15	Sediment Transport, Wave Erosion	0.133	0.193	2.000	2	1	2	Conserve, Restore, Enhance	Processes moderately functional at landscape scale though site processes seem intact - moderate likelihood of restoration success; improving conditions off-site may improve likelihood of restoration success
29	Little Anderson Creek Subestuary	Remove roads in the Little Anderson Creek Subestuary	899	DC-22	Wave Deposition	0.116	0.185	2.000	2	1	2	Conserve, Restore, Enhance	Processes moderately functional at landscape scale though site processes seem intact - moderate likelihood of restoration success; improving conditions off-site may improve likelihood of restoration success
3	Driftwood Key	Explore options to restore lost riparian, salt marsh, lagoon, and intertidal habitat at Driftwood Key (Coon Bay).	795	DC-4	Tidal Erosion, Wave Deposition	0.104	0.323	2.000	2	2	2	Conserve, Restore, Enhance, Re	Processes moderately functional at landscape scale - moderate likelihood of restoration success; restoring site process may improve conditions at landscape
28	Little Anderson Creek Salt Marsh	Restore lost salt marsh habitat 0.5 miles north of the Little Anderson Creek salt marsh.	898	DC-21	Sediment Transport, Wave Erosion	0.156	0.424	1.667	2	3	2	Conserve, Restore, Enhance, Re	Processes moderately functional at landscape scale - moderate likelihood of restoration success; restoring site process may improve conditions at landscape
13	Gamble Bay	Remove old pilings, abandoned dock, and fill on the west shoreline about 1.3 miles north of the head of Gamble Bay.	1825	DC-12	Fluvial Deposition, Sediment Transport, Wave Erosion	0.025	0.038	3.000	1	1	3	Enhance	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement may be successful to improve some habitat features
14	Port Gamble Bay	Remove old section of Hood Canal Bridge from Port Gamble Bay	827	DC-12	Sediment Transport	0.015	0.038	3.000	1	1	3	Enhance	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement may be successful to improve some habitat features
31	Big Beef Creek Subestuary	Restore natural tidal influence and sediment transport in the Big Beef Creek subestuary.	909	DC-23	Tidal Erosion, Wave Deposition, Fluvial Deposition	0.042	0.049	2.333	1	1	3	Enhance	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement may be successful to improve some habitat features
39	Boyce Creek Seawall Removal	Remove wooden seawall and restore natural channel geometry at mouth of unnamed/unnumbered stream about 0.5 miles south of Boyce Creek.	961	DC-30	Fluvial Deposition, Sediment Transport, Wave Erosion	0.042	0.139	2.667	1	1	3	Enhance	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement may be successful to improve some habitat features
4	Hawks Hole Creek	Restore tidal influence, salt marsh, and spit habitats at Hawks Hole Creek	1805	DC-6	Tidal Erosion, Wave Deposition, Fluvial Deposition	0.074	0.195	2.333	1	2	3	Enhance, Restore Site Processes	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement may be successful to improve some habitat features
21	Cattail Creek	Restore salt marsh and lagoon habitat; restore fish passage at the mouth of Cattail Creek	865	DC-17	Tidal Erosion, Wave Deposition, Fluvial Deposition, Sediment Transport, Wave Erosion	0.138	0.000	2.333	2	1	3	Enhance, Create	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement or creation may be successful to improve some habitat features
22	Floral Point	Manage Floral Point remediation/restoration site to limit containment but improve riparian and sediment processes	866	DC-17	Wave Deposition	0.267	0.092	2.333	3	1	3	Enhance, Create	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement or creation may be successful to improve some habitat features
38	Boyce Creek Delta	Remove log retention structures in the tidal channels on the Boyce Creek delta and convert derelict beach house to an interpretive center or remove.	959	DC-30	Tidal Erosion, Wave Deposition, Fluvial Deposition	0.102	0.186	2.667	2	1	3	Enhance, Create	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; enhancement or creation may be successful to improve some habitat features

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Project ID	Location	Description		Drift Cell ID	Dominant Processes	CF Site Score	DP Site Score	Drift Cell Score	CF Site Rank	DP Site Rank	Drift Cell Rank	Management Action	Comment
15	Port Gamble Log Mill	Remove intertidal fill, armoring, log storage debris, and pilings at the Port Gamble Log Mill to restore intertidal habitat	829	DC-12	Tidal Erosion, Wave Deposition, Fluvial Deposition, Sediment Transport, Wave Erosion	0.275	0.458	3.000	3	3	3	Enhance, Create, Restore Site P	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; restoring site process may improve conditions at landscape
16	Port Gamble Point	Remove intertidal fill and armoring of jetty/breakwater to restore sediment processes at Port Gamble Point. Restore riparian zone.	830	DC-12	Tidal Erosion, Wave Deposition, Fluvial Deposition, Sediment Transport, Wave Erosion	0.396	0.569	3.000	3	3	3	Enhance, Create, Restore Site P	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; restoring site process may improve conditions at landscape
17	Kitsap County Park	Remove east boat ramp at Kitsap County Park on Salsbury Point, revegetate riparian zone with native plants	838	DC-13	Sediment Transport, Wave Erosion	0.141	0.264	3.000	2	2	3	Enhance, Create, Restore Site P	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; restoring site process may improve conditions at landscape
24	Bangor Naval Station Restoration	Minimize stormwater impacts from impervious surfaces on Bangor Naval Station	864	DC-17	Fluvial Deposition, Sediment Transport, Wave Erosion	0.365	0.259	2.333	3	2	3	Enhance, Create, Restore Site P	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; restoring site process may improve conditions at landscape
32	Seabeck Sediment/Tidal Process	Remove road fill and structures on historic spit feature at Seabeck to restore sediment and tidal processes	923	DC-24	Wave Deposition	0.180	0.462	2.333	2	3	3	Enhance, Create, Restore Site P	Processes at landscape scale have been altered - likelihood of restoration success lower unless landscape processes restored; restoring site process may improve conditions at landscape

Application to Two Restoration Sites

Two potential restoration projects were examined, one in Kitsap Memorial State Park and the other at Devil’s Hole Creek (Table E-1; Figure E-1). Although we highly recommend direct site assessment of these recommendations, the Assessment scoring results suggest that the management actions described below would result in measureable improvement of habitat conditions.

Table E-1. Matrix of recommended restoration strategies for two sample projects

Proposed Project Site	Recommended Restoration Strategy	Controlling Factors Disturbance Score	Drift Cell Processes Scores
Kitsap Memorial State Park	Restore, Enhance	Overall CF Score: High	Overall Drift Processes: Medium Longshore Transport: High Fluvial Deposition: Medium Tidal Processes: Low
Devil’s Hole Creek	Conserve, Restore	Overall CF Score: Medium	Overall Drift Processes: Low Longshore Transport: Low Fluvial Deposition: Medium Tidal Processes: Low

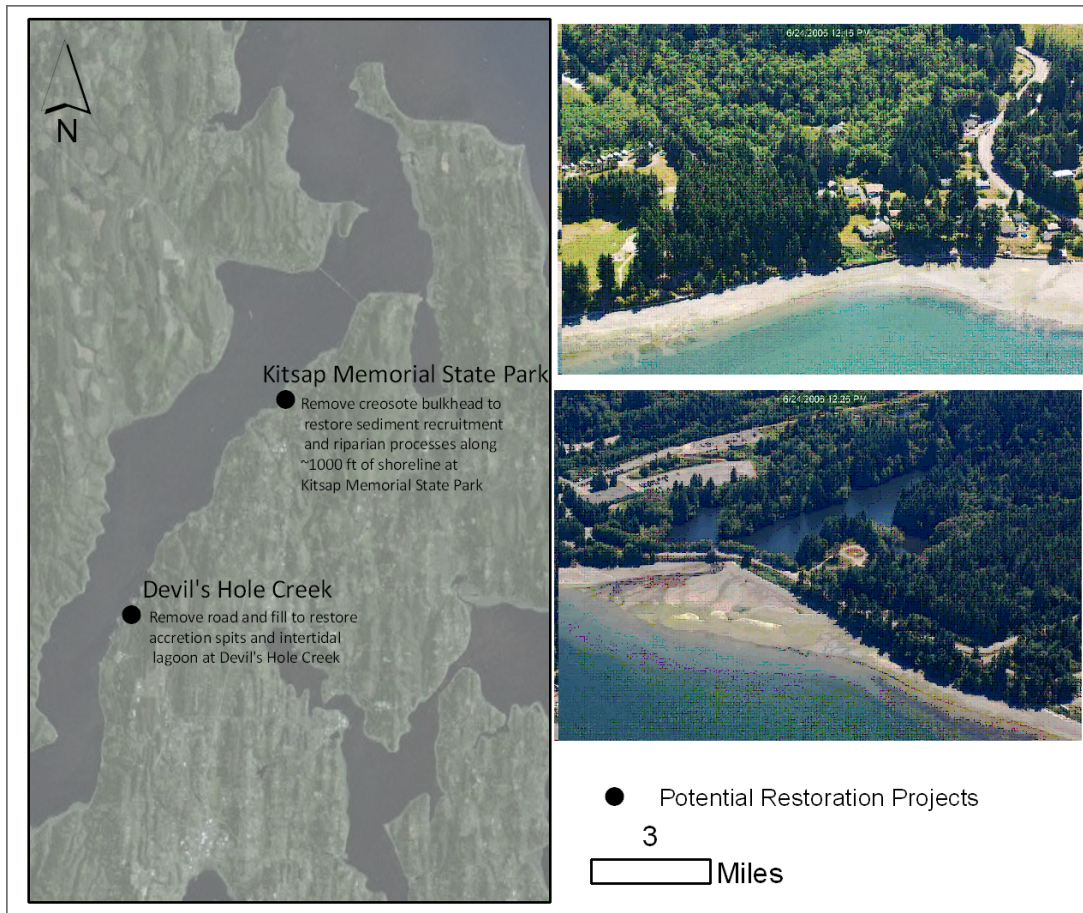


Figure E-1. Potential Restoration Sites in Kitsap County: Kitsap Memorial State Park (top) and Devil’s Hole Creek (bottom). While Devil’s Hole Creek sits in a relatively unaltered landscape, Kitsap State Park

does not. Therefore, the types of restoration activities that may be met with success in Devil's Hole differ from those in Kitsap.

Kitsap Memorial State Park

The proposed restoration project at Kitsap Memorial State park would remove creosote bulkhead, with the objective of restoring sediment recruitment and riparian processes along 1000 ft of shoreline.

The site itself is located within a drift cell with moderately disturbed processes and within a highly disturbed site. At such sites, restoration and enhancement of processes would likely have the greatest success because the natural habitat forming processes would support long term maintenance of the habitats at this site and perhaps adjacent sites. The proposed project to remove creosote bulkhead on this sediment transport beach would be a direct activity impacting the site. However, for the removal of the bulkhead to have a positive and maintaining impact, it would be wise to examine the other disturbances within the highly disturbed drift cell to assure maintenance of processes.

Devil's Hole Park

The proposed project in Devil's Hole Creek would remove road and fill to restore accretion spits and intertidal lagoon.

The project would take place in an area that has relatively low disturbance to the landscape processes with the exception of fluvial processes, and a moderately impacted site controlling factors score (Table E-1). The proposed restoration activity to remove a road to enhance the fluvial processes and would likely enhance the habitat forming processes here . Additionally, the action would improve the sediment delivery in the entire drift cell.