

Table 2: Threats and Drivers of ecosystem change in the Puget Sound Basin			
Threat/Driver category	Threat/Driver	Threat/Driver example(s)	Origin/Impact Zone
Habitat alterations	Existence of offshore, shoreline, or benthic structures; shoreline armoring/modification	Existence, operation, construction, and repair of docks, bridges, etc.	Both
Habitat alterations	Habitat alterations due to vehicle / vessel operation	Noise pollution, wakes, roads, trains	Both
Habitat alterations	Movement and storage of logs	Log booming, log grounding, floating log storage, and log rafts	Off-shore
Habitat alterations	Movement and storage of sediments	Dredging, capping, and disposal of sediments; mining	Both
Habitat alterations	Littering	Terrestrial trash, marine debris, derelict fishing gear	Both
Habitat alterations	Land uses and conversion	Conversion due to forest practices, agriculture, or urbanization; water parcel ownership; change in forest cover	On-shore
Habitat alterations	Recreation, ecotourism, human presence	Trampling or over-use of fragile or slow-growing habitats; harassment of wildlife	Both
Surface / ground water impacts	Drainage or disconnection of floodplains	floodplain loss, levees, dikes	On-shore
Surface / ground water impacts	Alteration of stream flows	Channeling, damming, withdrawing, or diverting water, lock operations, impoundments	On-shore
Surface / ground water impacts	Depletion of aquifers / groundwater	withdrawals, trend in well levels	On-shore
Pollution	Stormwater spills/discharges	Loadings, or movement from one waterbody to another, of toxics spilled into surface or ground waters. Untreated loadings of toxics from CSOs	Both
Pollution	Wastewater spills/discharges	Unintended (accidental) and intended (permitted) discharges from public treatment facilities and industrial facilities	Both
Pollution	Toxics or oil spills/discharges	Oil or other chemical spills of all sizes; discharges from vehicles, vessels, or industrial facilities, leaching or bioactivation of toxics from sediments; presence of accumulative and metabolizable toxics	Both
Pollution	Toxics in biota	PCBs, PAHs in fish, invertebrates, marine mammals, etc.	
Pollution	Discharges from boats	Sewage, greywater, bilge, or ballast discharges	Both
Pollution	Groundwater discharges of pollutants to surface waters	Faulty septic systems, resulting in loadings of toxics, nutrients, disease; Ground water discharges from industrial sites	Both
Pollution	Runoff - developed	Loadings, or movement of nutrients, pathogens, or toxics that run off from developed lands into surface waters (e.g., roadways, parking lots)	
Pollution	Runoff - Undeveloped	Loadings, or movement of nutrients, pathogens, or toxics that run off from undeveloped lands into surface waters (e.g., agricultural - herbicides)	On-shore
Pollution	Littering in marine, freshwater and upland environments	marine debris, derelict fishing gear, upland dumping	
Pollution	Activities contributing to air pollution	Atmospheric deposition, Operation of cars, boats, trains, planes, industrial activities	Both
Pollution	Influx of Toxics from Pacific Ocean	Loadings and movement of toxics entering PS from Pacific Ocean	
Artificial propagation	Aquaculture	Benthic or pelagic aquaculture, net pens	Off-shore
Artificial propagation	Hatcheries	hatchery fish releases, facilities	Both
Harvest	By-catch, accidental death	Wastage; overharvest of sensitive species; collisions	Both
Harvest	Demersal and pelagic fishing	Bottom trawling, longline, set net, spearfishing, pot fishing, gillnet, purse seine, angling	Off-shore
Harvest	Logging	harvest of timber	Both
Harvest	Hunting	Overharvest of sensitive species; disruption of natural behavior	On-shore
Species Invasion	Exotic species introduction and subsequent invasion	Conversion of mudflats to non-native marshes; overgrowing of animal pops; change in food web structure	Both
Natural drivers	Geologic hazards	Earthquakes, tsunamis, vulcanism, landslides, sinks, and rises	Both
Natural drivers	Other hazards	Storms, floods, wildfires	Both
Natural drivers	Natural changes in habitat	Naturally occurring hypoxia; changes in sediment flow	Both
Natural drivers	Natural changes in biota	Forest succession; natural algal blooms; insect infestations	Both
Natural drivers	Natural variation in climate and weather	Natural variation and changes in rainfall, snowmelt, air temperature, ENSO, PDO, Pacific NW Index	Both
Drivers of future scenarios	Climate change	changes in insect infestations, fire risk, stream flows, etc. due to climate change	Both
Drivers of future scenarios	Human population growth	changes in land use patterns, human use patterns	Both