

4.5 Plants & animals

4.5.1: Affected environment

Vegetation provinces

The vegetation of the Pacific Northwest is composed of a complex pattern reflecting diversity in climate, soils, relief, incidence of fire, biotic interaction, and history. Logging, agriculture, grazing, industrial development, and urbanization have greatly altered the natural pattern.

Major vegetation differences, especially those determined by regional climate, are reflected by 3 vegetation provinces:

- Forest Province,
- Shrub-Steppe Province, and
- Alpine Province.

The provinces are composed of 15 vegetation zones or zone complexes within which maturely developed soils support a specific climatic climax vegetation. A zone is a broad area of relatively uniform regional climate and typical regional topography within which one plant association is capable of becoming dominant under prevalent climatic conditions over a long period of time. In practice, however, the plant cover has been profoundly altered in most zones to where the dominant species characteristic of the zone may no longer prevail.

Numerous plant communities exist within a given vegetation zone and are called plant associations. Plant species often consist of a series of races, genetically adapted to localized ecological conditions, called ecotypes.

Pierce County

Pierce County vegetation

With minor exceptions, Pierce County was once covered with coniferous forest vegetation, much of which has been logged and/or burned during the last 160 years and replaced by second-growth conifers (usually Douglas Fir) and pioneer hardwood species.

The natural vegetation of Pierce County occurs within 3 primary vegetation zones:

- western hemlock zone (including a variant of this zone for the Puget Sound basin),
- Pacific silver fir zone and
- mountain hemlock zone.

The western hemlock zone - is the most extensive zone in the county, extending from

the subalpine forests of the Cascade Mountains to Puget Sound. Major coniferous tree species are Douglas fir (which often dominates large areas), western hemlock and western red cedar. Grand fir, western white pine and lodgepole pine occur on a more sporadic basis, although the latter two species are common on glacial drift in the western part of the County.

Hardwoods are not common except on disturbed sites or specialized habitats (along streams, for example) and they are usually subordinate to conifer species.

The most widespread hardwood species in this zone are the red alder, big-leaf maple and golden chinkapin. Black cottonwood and Oregon ash, along with red alder and big-leaf maple, are found along major water courses. Oregon oak and Pacific madrone may be found on drier sites in the western part of the County.

Understory vegetation in this zone varies substantially depending upon soils, wetness and other environmental factors. Typical vegetation associations are:

- **Douglas Fir/Creambush Oceanspray association on the driest sites** - with a typical shrub layer including California haze, creeping snowberry and salal;
- **Western Hemlock/Oregon Grape association in climax stands** - with a typical shrub layer including vine maple, red huckleberry, trailing blackberry and Pacific rhododendron; and
- **Western Hemlock/Sword Fern association on moister habitats** - with the understory dominated by many species of herbs.

The vegetation of the Puget Sound variant of the western hemlock zone in Pierce County, which extends across the lowlands of the Puget Sound basin, differs in the following respects from the above description:

- Lodgepole pine and western white pine is more widespread, with salal a very common understory species.
- Extensive groves of Oregon oak are present.
- The presence of prairies such as Spanaway Prairie, often associated with Oregon oak.
- The occurrence of many poorly drained sites with swamp or bog vegetation communities.
- The occurrence of species that are rare or not found elsewhere in the region such as juniper and paper birch.

The remaining 2 vegetation zones are subalpine.

The Pacific silver fir zone - which lies between the western hemlock zone and the mountain hemlock zone, is wetter and cooler than the western hemlock zone and receives more precipitation (snow).

Typical tree species in this variable zone are Pacific silver fir, western hemlock, noble fir, Douglas Fir, western red cedar and western white pine. Dominant understory species include huckleberry, salal, prince's pine, rhododendron and pyrola.

The mountain hemlock zone - is the highest, wettest and coldest forested zone in eastern Pierce County.

Vegetation communities are quite variable depending on local gradients in temperature, moisture, accumulation and duration of snow and geography where few tree species are dominant.

Mountain hemlock, subalpine fir and lodgepole pine are the most common tree species. Understory vegetation is quite variable ranging from wet herbaceous communities to dense shrub understories. The Pacific silver fir and mountain hemlock zones in the county extend generally from 2,000-3,000 feet to the Cascade crest.

Pierce County animals

Wildlife in Pierce County is typical of coniferous forest habitats. Big game species include Columbia black-tail deer, American elk, black bear, mountain goat and cougar. The range of these animals generally coincides with the more remote, undeveloped portion of the county.

Upland game includes pheasant, ruffed grouse, blue grouse, quail, band-tailed pigeon, Merriam's turkey, marmot and cottontail rabbit. With the exception of blue grouse and marmots, the lowlands of the western part of the county are the primary habitat of these species.

A wide variety of waterfowl, furbearers and animals of lesser significance are also found in the county. Threatened and endangered species include bald eagle, which is wide ranging, and wolverine and fisher, which occur in the dense forests of the Cascades.

Pierce County fish

Pierce County's streams support several species of anadromous fish including coho, chinook and chum salmon; steelhead, cutthroat and shad.

Many streams are important producers, such as South Prairie Creek, which provides spawning grounds for all of south Puget Sound's pink salmon and 70% of the Puyallup River basin's wild steelhead. Freshwater fish species include rainbow trout, cutthroat, dolly varden, eastern brook trout, whitefish, largemouth bass, perch, crappie, and catfish.

Human impact

Agriculture is a vital component of Washington's economy but has had considerable impact on the biodiversity of Pierce County. More than half the county's land base has been converted to urban development.

Despite the numerous changes in the landscape, sizable pieces of the county's natural heritage remain including Mount Rainier National Park, the Nisqually River Delta, and Tacoma's Point Defiance Park.

Pierce County faces a complex set of challenging conservation issues including:

Agricultural conversion - more than half of the western hemlock zone has been converted to agriculture, from wheat fields to vineyards. This has reduced or fragmented riparian forests and grasslands, resulting in habitat loss for imperiled species.

Housing developments - conversion of agricultural or undeveloped lands to residential use is another pressing issue. Subdivisions and ranch estates, particularly near riparian areas, threaten critical habitat by dislocating wildlife and blocking migration corridors.

Changes in fire regimes - changes in the natural fire regime have degraded plant communities in the western hemlock zone, Pacific silver fir zone, and mountain hemlock zone. More frequent fires have eliminated some forest and woodland communities. Fire suppression has encouraged encroachment of hardwoods onto coniferous forestlands.

Environmental pollutants - creates contamination from pesticides, herbicides, and other agricultural chemicals; and industrial effluents from pulp mills and aluminum plants.

Non-native and invasive species - brook trout and bullfrogs are among the invasive animal species jeopardizing the county's biological heritage. Noxious weeds displace or alter the functioning of native plant communities.

Energy development - transmission lines and wind turbines can threaten bird habitats and flyways in the region, home to a great number of raptors. Oil and gas development pose additional concerns.

Pierce County's biological richness makes it one of the state's highest conservation priorities. In recent years, a wide range of partnerships among state and federal agencies, universities, and nonprofit organizations have emerged to tackle the ecoregion's challenges. Ongoing programs work to inventory and monitor priority species; enlarge natural areas; and implement weed control and conservation planning.

Tacoma/MLK subarea

Tacoma/MLK subarea vegetation

The MLK subarea is largely urbanized and the predominant land cover type is un-vegetated urban surfaces composed of pavement and roofs, and in some areas undeveloped barren ground. Existing plant communities are predominantly young, and include a variety of habitat types including ornamental landscaping and terrestrial.

Native plant cover and its dependent wildlife species have been severely reduced and restricted to rather small, often steep-sloped or marshy areas.

Open space, greenbelt, and wildlife habitat are restricted to undevelopable lands due to steepness, unstable soil or water conditions. The relatively small area and lineal configuration of these remaining habitat areas, however, limit the type and amount of vegetation and wildlife able to exist there.

Consequently, what is found in these areas is a complex of native and invasive species of plants and animals able to withstand exposure and competition with limited territorial requirements.

Plant life is dominated by evergreen and broadleaf trees with an understory and ground cover of broadleaf shrubs, vines, herbs and grasses.

Seeping banks along the Point Defiance shoreline support a population of chain-fern. Ranging from British Columbia to South California, chain-fern is found in only a few scattered sites in Puget Sound and is listed as a sensitive plant species by the Washington Department of Ecology.

Around Point Defiance, steep slopes are backed by a considerable extent of mature upland forest approximating original conditions and providing range requirements for some larger species of wildlife.

The landscaped areas in the MLK subarea are predominantly terrestrial, although they include natural and landscaped areas in Wright and Peoples Parks. Species in these areas are predominantly nonnative trees and shrubs, ornamental herbs, and grass lawns.

These landscaped areas are important as pervious surfaces where stormwater can infiltrate. However, they represent nonpoint pollutant sources because of the chemicals commonly applied during landscape management and because of the presence of pet feces. Landscaped areas may support a variety of wildlife species, some of which may be socially undesirable - such as rats and feral cats and dogs.

Terrestrial-ruderal areas are very similar to landscaped areas, except that they are not actively managed. There is very little such land in the MLK subarea other than in outdoor storage areas, vacant lots, unused portions of commercial lots, and other exposed lands and grounds.

Terrestrial-ruderal areas tend to be dominated by nonnative herbs and shrubs such as cat's-ear (*Hypochaeris radicata*) and Himalayan blackberry, sometimes with fast-growing native trees such as red alder (*Alnus rubra*). The environmental significance of such areas is similar to that of landscaped areas.

Tacoma/MLK subarea wildlife

MLK subarea vegetation supports a variety of wildlife species including many birds, mammals, and amphibians. Due to the highly urbanized nature of the MLK subarea, mammal species are likely to primarily include species tolerant of human activity such as opossums, Pacific moles, big brown bats, Norway rats, eastern gray squirrels, deer mice, eastern cottontail rabbits, feral cats, raccoons, striped skunks, and perhaps coyotes.

However, Wright Park and the Habitat Corridors along the Nalley Valley at the south edge of the MLK subarea have a sufficient abundance of forest, riparian, and wetland habitat that the bird, reptile, amphibian, fish, and insect communities are likely dominated by native species.

Common birds are likely to include Canada geese, mallards, California gulls, red-tailed hawks, northern flickers, American robins, and song sparrows. Common reptiles are likely to include northwestern salamanders, long-toed salamanders, Pacific tree frogs, and bullfrogs.

Some species likely to occur in the MLK subarea have special status designations as protected species or species of concern under state and/or federal regulations. Among special status wildlife, none are currently known to breed in the MLK subarea. Suitable habitat for all species occurs in Wright Park and near the MLK subarea along the Native Habitat corridors of the Nalley Valley and Interstate 5.

4.5.2: Impacts

Both alternatives

Both alternatives will continue development or redevelopment of the lands within the MLK subarea for urban uses and activities to various intensities. Additional urban development of previously undeveloped lands or of a higher intensity of previously committed lands reduces vegetation and woodland cover, increases impervious surfaces, and removes and displaces wildlife habitat.

Urban development removes and displaces some wildlife habitats and causes some wildlife species to migrate into remaining undeveloped areas. Since most habitats are assumed to be at or near carrying capacity, displaced animals may perish or displace other animals.

Urban development or redevelopment, if not properly controlled, can fill, modify or otherwise alter wetlands and riparian areas affecting the overall numbers and variety of wildlife and waterfowl. The removal or destruction of riparian vegetation can disrupt important wildlife migration routes for some species with adverse impacts on wildlife populations.

Urban development, redevelopment, and associated construction activities, if not properly controlled, can increase peak stormwater runoff, earth erosion, and surface water siltation with adverse impacts on plant and animal populations.

Fish breeding and rearing areas located at stormwater outflows from the MLK subarea into Thea Foss Waterway and Commencement Bay are especially sensitive to siltation, particularly areas that support the hatching and rearing of

fry populations. The removal of riparian vegetation that provide cover, shade, and other supporting functions can significantly reduce the survival of young salmonid life adversely affecting the numbers that mature, migrate, and survive.

All construction activities can cause the erosion of soils that enter and pollute surface water bodies if not properly contained or managed. The degree of erosion and sedimentation will be affected by the:

- timing of construction, the degree of vegetation removed,
- amount of un-vegetated soil or fill material to be exposed to the forces of rainfall and runoff, and the
- effectiveness of on-site erosion control measures.

Alternative 1: No-action

Under a no-action alternative, the prevailing 2012 Tacoma Comprehensive Plan and Zoning Ordinance and Map would remain in effect and all MLK subarea planning and implementation policies would continue to be coordinated with these documents. The present plan and policies or no-action would result in the following:

Mixed use zoning - would remain as designated in the current zoning map including the Neighborhood Mixed Use (NRX), Residential Mixed Use (RCX), Neighborhood Commercial Mixed Use (NCX), and Hospital/Medical Mixed Use (HMX) districts that would promote development and redevelopment of existing committed lands to higher intensity buildings removing vegetation and displacing animals.

Alternative 2: MLK Subarea Plan

Alternative 2: MLK Subarea Plan will conform to the 2012 Tacoma Comprehensive Plan but amend the Zoning Map to result in the following impacts:

Mixed use zoning - will be slightly revised to retain and protect existing single-family housing stock and neighborhood in the south end of the subarea and older apartment buildings and churches adjacent to MultiCare Health Systems hospital development in the north end of the subarea. This will retain existing usable building stock and avoid potentially fragmented and ill-advised redevelopment activities with construction related clearance of vegetation and tree cover.

4.5.3: Mitigation measures

Both alternatives

Chapter 4 Environmental Element of Tacoma's Comprehensive Plan was updated in 2011 as required by the State Growth Management Act (GMA) and was adopted as part of the Tacoma Municipal Code. Chapter 4 identifies the goals, policies, guidelines, and requirements of GMA "to designate and classify ecologically sensitive and hazardous areas and to protect these areas and their functions and values, while also allowing for reasonable use of private property".

Endangered Species Act (ESA)

The Endangered Species Act of 1972 addresses the protection of rare, endangered and threatened plant and animal species. Title 77 RCW revises and reorganizes the game code of the State of Washington to clarify and improve the administration of the state's game laws. Title 75 RCW addresses food fish and shellfish management in the State of Washington. Chapter 13.08 of the Official Code of the City of Tacoma addresses the maintenance, preservation and conservation of open space lands within the city.

State Environmental Protection Act (SEPA)

Tacoma ordinances, including the building code, subdivision, and shoreline management regulations, were developed to comply with the provisions of the State Environmental Policy Act (SEPA), Chapter 43.21C of the Revised Code of Washington (RCW).

The intent of the SEPA adopted in 1971, and amended in 1983 and 1984, was to ensure that environmental values are considered, in addition to technical and economic considerations, when local governmental decisions are made or interpreted in regards to environmental impacts.

Accordingly, the 2011 Tacoma Comprehensive Plan Chapter 4 Environmental Element update defined critical environmental characteristics given special protection within the Tacoma urban growth area. The plan allocated land uses accounting for the physical characteristics of the land and the land's ability to support, without harm to the environment, suggested land use developments.

Growth Management Act (GMA)

GMA, and subsequent minimum guidelines published by the Washington State Department of Commerce (DOC), defined critical areas to

include fish and wildlife habitat conservation areas.

Washington State critical or priority habitat and species (PHS)

In accordance with the provisions of ESA and GMA, the Washington State Department of Fish & Wildlife (WDFW) developed minimum guidelines for classifying and designating critical or priority habitat and species (PHS).

Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance.

Priority species include State Endangered, Threatened, Sensitive, and Candidate species; animal aggregations (e.g., heron colonies, bat colonies) considered vulnerable; and species of recreation, commercial, or tribal importance that are vulnerable.

Priority habitats are habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type (e.g., shrub-steppe) or dominant plant species (e.g., juniper savannah), a described successional stage (e.g., old-growth forest), or a specific habitat feature (e.g., cliffs).

In general, areas of priority habitats of greater importance to fish or wildlife tend to have one or more of the following characteristics:

- Habitat areas that are larger are generally better than areas that are smaller,
- Habitat areas that are more structurally complex (e.g., multiple canopy layers, snags, geologically diverse) are generally better than areas that are simple,
- Habitat areas that contain native habitat types adjacent to one another are better than isolated habitats (especially aquatic associated with terrestrial habitat),
- Habitat areas that are connected are generally better than areas that are isolated,
- Habitat areas that have maintained their historical processes (e.g., historical fire regimes) are generally better than areas lacking such processes.

There are 20 habitat types, 152 vertebrate species, 41 invertebrate species, and 10 species groups currently in the PHS List constituting 17% of Washington's approximately 1,000 vertebrate species and a fraction of the state's invertebrate fauna.

Pierce County priority habitat and species (PHS)

WDFW has identified a list of most important habitats and species and management recommendations that may be employed to protect and preserve critical habitat areas, along with maps that identify the location of critical habitats within Pierce County.

The species and habitats for Pierce County were developed using the distribution maps found in the Priority Habitat & Species (PHS) List (<http://WDFW.wa.gov/hab/phslist.htm>). Species distribution maps depict counties where each priority species is known to occur as well as other counties where habitat primarily associated with the species exists. Two assumptions affect the distribution maps:

- There is a high likelihood a species is present in the county, even if it has not been directly observed, if the habitat with which it is primarily associated exists.
- Over time, species can naturally change their distribution and move to new counties where usable habitat exists.

Distribution maps in the PHS List were developed using the best information available. As new information becomes available, known distribution for some species may expand or contract. WDFW periodically reviews and updates the distribution maps in the PHS List.

PHS List in Pierce County Habitats

Aspen stands
Biodiversity areas and corridors
Herbaceous balds
Old-growth/mature forest
Oregon White Oak woodlands
West side prairie
Riparian
Freshwater wetlands and fresh deepwater
Instream
Puget Sound nearshore
Caves
Cliffs
Snags and logs
Talus

Species	WA	US
Fishes		
Pacific Lamprey		Co
River Lamprey	Ca	Co
White Sturgeon		
Pacific Herring	Ca	Co
Longfin Smelt		
Surfsmelt		

Bull Trout/Dolly Varden	Ca ¹	T ³
Chinook Salmon	Ca	T ³
Chum Salmon	Ca	T ³
Coastal Res./Searun Cutthroat		Co
Coho**		T
Kokanee		
Pink Salmon		
Rainbow Trout/Steelhead/Inland	Ca ¹	T ³
Redband Trout		
Sockeye Salmon	Ca	T ³
Pacific Cod	Ca	Co
Pacific Hake	Ca	Co
Walleye Pollock	Ca	Co
Black Rockfish	Ca	
Bocaccio Rockfish	Ca	E
Brown Rockfish	Ca	Co
Canary Rockfish	Ca	T
Copper Rockfish	Ca	Co
Quilback Rockfish	Ca	Co
Redstripe Rockfish	Ca	
Yelloweye Rockfish	Ca	T
Yellowtail Rockfish	Ca	
Lingcod		
Pacific Sand Lance		
English Sole		
Rock Sole		

Amphibians

Cascade Torrent Salamander	Ca	
Larch Mountain Salamander	S	Co
Van Dyke's Salamander	Ca	Co
Oregon Spotted Frog	E	Ca
Western Toad	Ca	Co

Reptiles

Pacific Pond Turtle (Western Pond Turtle)	E	Co
Sharptail Snake	Ca	Co

Birds

Common Murre	Ca	
Marbled Murrelet	T	T
Western grebe	Ca	
W WA nonbreeding concentrations of Loons, Grebes, Comorants, Fulmar, Shearwaters, Storm-petrels, Alcids		
W WA breeding concentrations of Comorants, Storm-petrels, Terns, Alcids		
Great Blue Heron		
Brant		
Cavity-nesting ducks: Wood Duck, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Hooded Merganser		
W WA nonbreeding concentrations of Barrow's Goldeneye, Common Goldeneye, Bufflehead		
Harlequin Duck		
Waterfowl concentrations		

Bald Eagle	S	Co
Golden Eagle	Ca	
Northern Goshawk	Ca	Co
Peregrine Falcon	S	Co
Mountain Quail		
Sotty Grouse		
W WA nonbreeding concentrations of Cheradridae, Scolopacidae, Phalaropodidae		
Band-tailed Pigeon		
Yellow-billed Cuckoo	Ca	Ca
Spotted Owl	T	E
Vaux's Swift	Ca	
Black-backed Woodpecker	Ca	
Pileated Woodpecker	Ca	
Oregon Vesper Sparrow	Ca	Co
Purple Martin	Ca	
Streaked Horned Lark	E	Ca
Mammals		
Dalls' Porpose		
Gray Whale	S	
Harbor Seal		
Orca (Killer Whale)	E	E
Pacific Harbor Porpose	Ca	
California Sea Lion		
Steller (Northern) Sea Lion	T	T
Roosting concentrations of Big-brown Bat, Myotis bats, Pallid Bat		
Townsend's Big-eared Bat	Ca	Co
Western Gray Squirrel	T	Co
Western Pocket Gopher	T	Ca
Cascade Red Fox	Ca	
Fisher	E	Ca
Marten		
Wolverine	Ca	Ca
Columbian Black-tailed Deer		
Mountain Goat		
Elk		
Invertebrates		
Geoduck		
Butter Clam		
Native Littleneck Clam		
Manila Clam		
Olympia Oyster	Ca	
Pacific Oyster		
Dungeness Crab		
Pandalid shrimp (Pandalidae)		
Johnson's Hairstreak	Ca	
Mardon Skipper	E	Ca
Puget Blue	Ca	
Valley Silverspot	Ca	Co
Taylor's Checkerspot	E	Ca

State = S-sensitive, Ca-candidate, T-threat, E-endangered

Federal = Co-concern, Ca-candidate, T-threat, E-endangered,

Source: Washington Department of Fish & Wildlife (WDFW) Priority Habitats & Species List <http://wdfw.wa.gov/conservation/phs/>

1 - Upper Columbia Spring run of Chinook Salmon is Endangered

2 - Lower Columbia Species of Concern - Puget Sound

3 - Bull Trout only

4 - Steelhead only

5 - Ozette Lake Endangered - Snake Lake

Chapter 4 Environmental Element of Tacoma's Comprehensive Plan

Chapter 4 Environmental Element of Tacoma's Comprehensive Plan complies with the GMA/DOC guideline requirements.

Consequently, both alternatives will invoke the ordinance as a means of protecting the critical environmental attributes and thereby the associated wildlife habitat of lands that are presently within corporate boundaries and the MLK subarea.

The ordinance defines critical areas to include wetlands and anadromous fish-bearing waters in accordance with the guidelines defined by the Washington State Department of Commerce (DOC) under the environmental protection provisions of the GMA.

Under the provisions of the CAO, sites may be developed that contain sensitive areas like wetlands, drainage corridors, and riparian wildlife habitat only when Tacoma officials determine that all significant environmental concerns and hazards have been eliminated or ameliorated. Such sites can only be developed with no more impact than a similarly unaffected site.

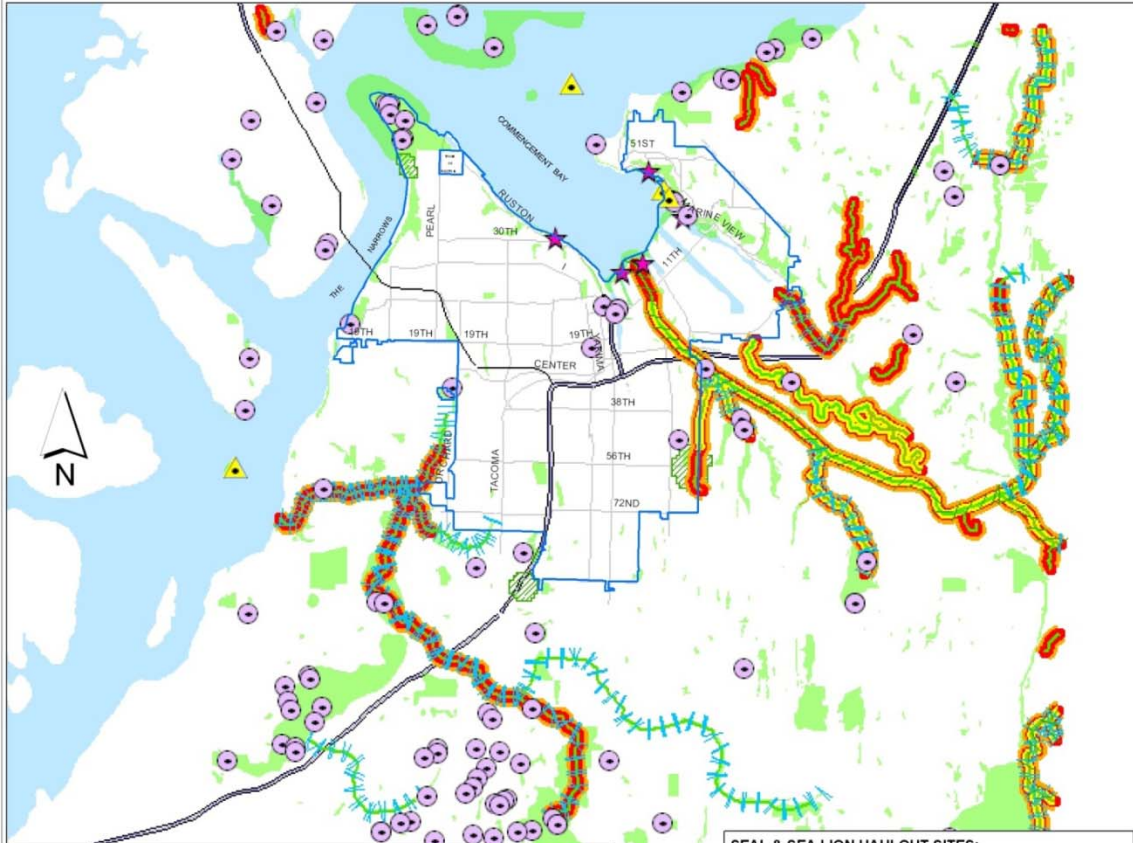
Tacoma may impose mitigation measures restricting or eliminating development in areas outside of the sensitive area portion of the site if necessary in order to protect the sensitive portion of the site. The ordinance defines procedural measures safeguarding sensitive areas, including the authority to require special studies and assurances should Tacoma officials deem appropriate.

Fish and wildlife habitat conservation areas

- Chapter 4 Environmental Element indicates it is possible to accommodate development needs and, yet, retain important vegetation. Where significant wooded areas occur, innovative development techniques that cluster dwellings and maximize the acreage of undisturbed areas will be an appropriate alternative. Such projects can be designed to provide a green space buffer or vegetated habitat that will provide important functions for wildlife. Where existing vegetation is removed, extensive landscaping will be installed in appropriate locations.

Critical Fish & Wildlife Habitat Areas

Environmental Policy Element



Legend

- | | | | |
|--|-------------------------------|--|-------------------------------------|
| | Seal & Sea Lion Haulout Sites | | City Boundary |
| | Wildlife Heritage (HRTG) | | Anadromous Fish Spawning |
| | Seabird Colonies | | Anadromous Fish Rearing |
| | Bull Trout | | Anadromous Fish Presence |
| | Resident Fish Presence | | Anadromous & Resident Fish (PHS) |
| | | | Salmonid Stock Status (SaSI) |
| | | | Rare Plants/Endangered Ecosystems |
| | | | Priority Habitats and Species (PHS) |

SEAL & SEA LION HAULOUT SITES:

Haulout sites for harbor seals, Steller sea lions, California sea lions, and northern elephant seals.

WILDLIFE HERITAGE (HRTG):

Sites of non-game species of concern, state and federal listed species including those designated as endangered, threatened, sensitive, candidate, and monitor.

SEABIRD COLONIES:

Breeding seabirds contained in 'Catalog of Washington Seabird Colonies' by Steven M Speich, et al, published August 1989 by NOAA.

STREAMNET GIS DATA:

Anadromous Fish Presence, Anadromous Fish Rearing, Anadromous Fish Spawning, Bull Trout, Anadromous & Resident Fish PHS, Resident Fish Presence, and Salmonid Stock Status (SaSI).

RARE PLANTS/ENDANGERED ECOSYSTEMS:

Rare plant species populations and endangered ecosystems.

PRIORITY HABITATS AND SPECIES (PHS):

Known use areas of priority habitats and species. Priority habitats are areas that support diverse, unique and/or abundant communities of fish and wildlife.

This map was funded in part through a cooperative agreement with the National Oceanic and Atmospheric Administration with funds appropriated for the Coastal Zone Management Act of 1972 through a grant to the Washington Department of Ecology. The views expressed herein are those of the authors and do not reflect the views of NOAA or any of its sub-agencies.



City of Tacoma
Tacoma Economic Development Department



NOTE: This map is for reference only.



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Created By: TEDD, GIS ANALYSIS & DATA SERVICES

While the city will be considerate of general flora and fauna values, it will also recognize the significance of specific specimen trees. Protection of these trees, particularly those of historic merit or outstanding size, is intended.

Tacoma's existing wildlife habitats are valuable for propagating and sheltering wildlife populations and for sustainable biodiversity, education, recreation and aesthetics. Wildlife habitats will undoubtedly be impacted by development; however, mitigation will be required.

Habitat improvement will be encouraged to intentionally improve the overall processes, functions and values of critical habitats, including wetland, stream and aquatic habitats. Such actions may or may not be in conjunction with a specific development proposal, and include, but not be limited to, restoration, creation, enhancement, preservation, acquisition, maintenance and monitoring.

Habitat improvement includes actions to acquire and preserve key natural areas that remain; and to improve existing environmental conditions, such quality or other supporting factors, or increasing the number or diversity of species.

Tacoma and developers will work with state and federal agencies and land owners to identify, locate and protect habitats of endangered or threatened species. Development practices such as clustering, retention of native vegetation and protection of wetlands, ponds, streams and other water features will be encouraged to protect habitats.

Conservation issues - Fish and wildlife habitat conservation areas may contain priority species and priority habitats that may include a seasonal range or habitat element with which a given species has a primary association. These areas may include other critical ecosystems susceptible to alterations such as:

- slopes;
- landslide areas;
- geologically hazardous areas;
- shorelines, stream corridors and wetlands;
- natural resource areas; and
- these critical ecosystem's associative transitional areas or buffers.

Alteration of these critical ecosystems may reduce the likelihood that the species will survive or reproduce. Activities allowed in fish and wildlife habitat conservation areas must be consistent with the species classification

located there and any applicable State and Federal guidelines or standards, including Best Available Science with special consideration given to anadromous fisheries.

Standards for development in these areas must be in accordance with the requirement for development in the underlying zone or critical area classification.

Habitat zones - are areas locally designated and mapped that depict high quality, relatively undisturbed natural open spaces that provide valuable functions and values beyond the individual natural habitats that may be contained within the zone. It is intended that the mapped Habitat Zone will include areas of biological diversity that are an important community resource.

Identification of the habitat zone will assist land owners, city officials and citizens in determining priority areas for protection, enhancement and restoration. Initially, the Habitat Zone will include areas that are designated as Wetlands and/or Streams of Local Significance.

Other areas as they are identified, designated and mapped will be added, including Habitats of Local Importance which are areas that include a seasonal range or habitat element with which a given species has a primary association, and which, if altered, may reduce the likelihood that the species will remain and reproduce over the long-term. These might include areas of high relative density or species richness, breeding habitat, winter range and movement corridors.

These might also include habitats that are of limited availability or high vulnerability to alternations, such as cliffs, talus, and wetlands. An assessment of the biological diversity and habitat value will be needed to designate these areas.

The Habitat Zone may also include other areas where habitat protection is desired, including corridors upon completion of a biological diversity assessment. Development proposals within the designated Habitat Zones will be subject to greater scrutiny to ensure valuable habitats are protected. Enhancement and restoration activities will be prioritized and directed to areas within the designated Habitat Zones.

Habitat Corridors have been designated of the steep, undisturbed slopes overlooking the Nalley Valley and within the Interstate 5 corridor immediately south of the MLK subarea.

Tacoma Chapter 4 Environmental Element policies - the following policies support and strengthen the city's intent relative to fish and wildlife habitat conservation areas.

E-FW-1 Wildlife and Natural Environment

Support and enforce laws, regulations and programs designed to protect wildlife and natural resources.

E-FW-2 Retain Vegetation

Encourage the retention of native vegetation and the installation of landscaping designed to complement local wildlife and native vegetation and help mitigate the loss of wildlife habitat areas that results from development.

E-FW-3 Landscaping Stabilization

Ensure that sufficient and appropriate native landscaping be installed to stabilize and beautify areas and improve habitat where extensive removal of vegetation has occurred.

E-FW-4 Specimen Trees

Encourage the identification and preservation of specimen trees of historic merit and/or outstanding size.

E-FW-5 Removal of Native Vegetation

Discourage the indiscriminate removal of native vegetation to preserve green space and protect habitats.

E-FW-6 Innovative Development Techniques

Encourage innovative development techniques such as clustering to maximize the amount of open space and preserve habitats.

E-FW-7 Habitat Protection

Identify, locate and protect habitats of endangered, threatened, priority or sensitive species.

E-FW-8 Maintain Habitat Diversity

Encourage the preservation of large blocks of land around critical areas to ensure maximum habitat diversity.

E-FW-9 Strengthen Habitat Connections

Encourage actions which protect and improve natural resources in both the upper and lower areas of the Puyallup River watershed and strengthen connections within and between them.

E-FW-10 Integrate Development Projects

Promote the integration of development projects into their surrounding environments, promoting a "greenbelt natural corridor" for movement and use by species.

E-FW-11 Estuary Ecosystem

Promote a functioning and sustainable ecosystem with a diversity of habitat types in the industrialized estuary of the Commencement Bay environment.

E-FW-12 Protect in Perpetuity

Encourage the protection of habitat improvement project sites in perpetuity.

E-FW-13 Benefit Injured Resources

Encourage actions to restore various habitat components of the Commencement Bay ecosystem that benefit natural resources injured by releases of hazardous substances.

E-FW-14 Commencement Bay Habitat Planning

Encourage habitat preservation and improvement actions within Commencement Bay that reflect the historical functions and current physical conditions of the estuary, the needs of a variety of selected species or groups of species, the consideration of strategically located habitats in the estuary, the concept of diversity on an ecosystem basis, and bay-wide planning and siting criteria.

E-FW-15 Improve Altered Habitats

Encourage the improvement of habitat along the edges of shorelines and creeks, migration corridors, and productive areas that have been altered by past shoreline activities.

E-FW-16 Sustainable Habitat

Encourage acquisition, preservation and restoration of remaining sustainable habitat and improvement of existing habitat corridors.

E-FW-17 Diversity of Habitat Types

Encourage, through restoration, a diversity of sustainable habitat types and species within the Commencement Bay ecosystem to improve fish and wildlife resources.

E-FW-18 Performance Standards

Encourage design and performance standards that promote source control and habitat restoration efforts.

E-FW-19 Integrate Improvement Actions

Encourage the integration of habitat improvement actions with other regulatory efforts, including environmental remediation, source control, and site development actions, as well as long range planning activities.

E-FW-20 Habitat Improvement Actions

Encourage new development to provide or incorporate habitat improvement actions as appropriate.

E-FW-21 Locating Habitat Improvement Actions

Focus habitat improvement actions on sites with low possibilities of contamination.

E-FW-22 Public Access

Encourage public access provisions in all habitat improvement projects where such access will complement, not disrupt, the habitat improvement action.

E-FW-23 Superfund Cleanups

Encourage the integration of habitat improvement actions into source control and sediment remedial actions as part of federal and state Superfund cleanups.

E-FW-24 Private Conservation Efforts

Encourage community based or nonprofit local and regional trusts and private conservation

efforts.

E-FW-25 Cleanup Coordination

Promote coordination among diverse cleanup and regulatory programs and agencies.

E-FW-26 Strengthen Working Relationship

Strengthen working relationships among citizens, agencies, tribes, and companies to plan and implement bay-wide habitat improvement efforts.

E-FW-27 Habitat Zones

Adopt a Habitat Zones map to identify locally important habitat areas in order to provide greater scrutiny and review of development proposals and to identify priority areas for restoration and enhancement programs and activities.

E-FW-28 Habitats of Local Importance

Establish regulations that will provide greater protection to areas designated as habitats of local importance.

Source: Chapter 4 Environmental Element, Tacoma Comprehensive Plan 2011

Mitigation

Mitigation sequencing identifies preferred options to use when the proposed activity cannot be avoided or minimized to cause the least amount of impact. Mitigation sequencing is listed in the order of preference.

- Avoiding the impact by not taking a certain action;
- Minimizing the impact by limiting the degree of the action, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Minimizing or eliminating the hazard by restoring or stabilizing using approved engineering or other methods;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the proposed action;
- Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; or
- Monitoring the impact and taking appropriate corrective measures.

Specific mitigation measures for wetlands and geologically hazardous areas are included in Tacoma's development regulations.

Alternative 2: MLK Subarea Plan

In addition to the mitigation measures listed under both alternatives, Alternative 2: MLK

Subarea Plan will also implement the following measures to mitigate impacts on plant and animal conditions:

28: Greenways - designate a system of coordinated open spaces, conservation corridors, greenways and green streets to link MLK parks and community facilities, and connect the MLK district to adjacent neighborhoods, the Prairie Line Trail, UW Tacoma and the Thea Foss Waterway.

29: Community gardens - plant community or pea patch gardens on vacant sites as well as other available lands within MLK to restore habitat, grow healthy foods for local use, and improve visual appearances, in some cases to serve as temporary uses on sites waiting for redevelopment.

32: Native habitat - plant street trees, reforest open spaces, remove invasive species, and promote use of native and drought resistant plants to restore wildlife habitat in and around MLK's public facilities and within MLK's green, urban, and parkway street corridors.

33: Stormwater - develop rain gardens, green roofs and walls, bio-filtration swales, and other green development features in and around the MLK subarea's public facilities and within the MLK area's green and urban streets as well as in new project developments.

34: Brownfields - identify all known sites of hazardous materials including former gas stations and laundries, develop appropriate mitigation strategies, and create a funding source for proactively mitigating the sites to support redevelopment.

4.5.4: Unavoidable adverse impacts

Under both alternatives, SEPA, GMA, ESA, and Tacoma environmental regulations will protect sensitive vegetation and wildlife habitat within the MLK subarea. Under these mitigating measures, no significant unavoidable adverse impacts are anticipated.

However, Alternative 2: MLK Subarea Plan will better preserve and protect existing single-family neighborhoods and vegetation cover; develop green streets with habitat value; establish design guidelines, encourage green building proposals; establish greenways and community gardens; and restore native habitat in parks and open spaces.