

# Natural Systems

It is important to recognize natural systems within the Suquamish area. They are divided into the following areas:

1. Geologically Critical Areas;
2. Aquifer Recharge Areas;
3. Surface Water Resources;
4. Frequently Flooded Areas;
5. Plant, Fish and Wildlife Habitat Conservation Areas; and
6. Air Quality.

## **Geologically Critical Areas**

Geologically critical areas are highly susceptible to erosion, landslides, earthquakes or other geological events. Suquamish has an area of slopes greater than 30 percent in the middle of the Suquamish Village, which are considered geologically hazardous areas. See Figure 9 for building limitations and locations of critical areas.

## **Aquifer Recharge Areas**

The entire Suquamish Village is over an “aquifer recharge area of concern” as designated in the Kitsap County Comprehensive Plan, which also lies on a portion of the Suquamish Aquifer (sea-level aquifer) System. The critical aquifer recharge area for this aquifer system is to the north and west in an area approximately bounded by Gunderson, Lincoln, Bond and Miller Bay Roads. There are several wellhead protection areas that are within or adjacent to the Suquamish Village area (see Figure 10). The wellhead protection areas are specifically designed to provide water quality protection for public water supply wells through the inventory and assessment of potential chemical pollutant sources, followed by recommendations of best management practices to protect the drinking water supply. These wellheads are protected under Kitsap County’s Critical Areas Ordinances.

## **Surface Water Resources**

Wetlands, streams and shorelines make up the surface water in the Suquamish Village area. There are existing wetlands within the Suquamish Village; many of which are not identified on the County’s Wetlands Inventory listing. More studies need to be done in this area. The Suquamish Tribe has plans to perform a detailed wetland inventory for the Suquamish area.

Two major creeks in the Suquamish area that are under County monitoring include: Grovers and Cowling Creeks. Grovers Creek is a shallow gradient stream, which flows south from the headwaters near Hansville Road to the discharge at the north end of Miller Bay. This stream has many tributaries that contribute surface and ground water runoff from the hills west and to the east of the main stem. Cowling Creek is a steeper gradient stream, which flows northeast from the headwaters at Lincoln Road to the discharge at the west side of Miller Bay. This stream has many small tributaries and roadside ditches that contribute surface water, stormwater and ground water runoff from the hills and areas around Miller Bay.

## **Frequently Flooded Areas**

Frequently flooded areas are lands inundated with water during periods of high rainfall, extreme high tides or strong winds. In the Suquamish area, they lie adjacent to the shoreline (see Figure 11).

## **Plant, Fish and Wildlife Habitat Conservation Areas**

Due to the natural diversity in the Suquamish Village, there are many areas of plant, fish and wildlife habitats where conservation efforts need to be pursued. Although many of these areas still need to be recognized, Figure 12 illustrates some of these areas that have already been identified. Suquamish citizens, the Tribe and County should work to conserve these natural habitats that are vital to the community.

## **Air Quality**

In the Suquamish Village many residents utilize wood as their primary source of heat. Pollutants from several surrounding areas including Jefferson County and the City of Bremerton also influence the Suquamish Village. For these reasons, there has been a conscience effort by the Suquamish Tribe to educate residents about proper burning practices and air quality health effects in infants, children and the elderly that are directly related to particulate matter suspended in air in the Suquamish area.

Routine and analytical measurement of air quality occurred in the recent past, and currently the monitoring efforts remain unfunded and unstaffed. In the future, interested parties may resume the examination of desired and/or necessary steps for air quality monitoring. Future efforts to re-implement a monitoring program will be noted in subsequent plans.

The measurement of air quality for the Suquamish area was dependent on the Puget Sound Air Pollution Control Agency and the Suquamish Tribal Natural

Resources Department. The Puget Sound Air Pollution Control Agency operated under the 1991 Washington Clean Air Act (RCW 70.94.665). Although there were no violations of the national ambient air quality standards for the area into approximately 2002, it has been an area of concern. For these historical reasons, the Suquamish Natural Resources Department was monitoring air quality at different times of the year with a Nephelometer until 2002. This instrument was stationed at the Suquamish Youth Center, collecting particulate matter of 2.5 parts/million since 1998. The Nephelometer measures light scattering from particles which can then be used to estimate particulate matter of 2.5 (PM 2.5). The Tribe was using a conversion factor in the estimation of PM 2.5, provided by the Nephelometer manufacturer. The Suquamish Tribe Natural Resource Department considered installing a PM 2.5 filter refraction method (FRM) monitoring program in the same general location as the Nephelometer in the summer of 1999. The FRM instrument measures PM 2.5 with the filter method and this kind of sampling has a proven high degree of accuracy. The status of a future program will be investigated in future efforts.

Questions regarding burning or air quality within the Suquamish Village area can be directed to the Puget Sound Air Pollution Control Agency at (800) 552-5365 (*the reader is advised to ensure applicable program/phone numbers are still in effect at the time of proposed contact*), Suquamish Tribe Natural Resource Department at (360) 598-3311, or Kitsap County Public Works Department at (360) 337-7121.

## **Goals, Polices and Recommendations**

The following goals and policies target achieving certain components or elements of community vision and provide for specific, often adoptable or legislative, guidance to identify or accomplish actionable items (eg, projects, ordinance changes). The goals and policies should be considered by the community as overarching themes and activities in community development.

### **Goals**

- GOAL NS-1** Preserve the biological diversity in Suquamish.
- GOAL NS-2** Minimize human interference of natural systems in and around Suquamish.
- GOAL NS-3** Protect, enhance and restore aquatic habitat areas.

### **Policies**

- POLICY NS-1** The County, community and Tribe will work together to develop conservation plans for the Suquamish Village,

including upcoming Endangered Species Act (ESA) mandates.

- POLICY NS-2** Consider the impacts to shoreline habitat, conservation areas, and fish and wildlife population when issuing building permits.
- POLICY NS-3** Encourage the protection of continuous corridors of native vegetation, as feasible, and to enhance or restore wildlife habitat by transplanting or planting native vegetation in the disturbed landscape.
- POLICY NS-4** Encourage voluntary protection of species and habitats by homeowners and on public lands and through use of conservation easements, land trusts, etc.
- POLICY NS-5** Use native plants to assist in the restoration of original landscapes.