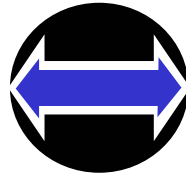




BENCHMARK	17. PROTECT AND PRESERVE WETLANDS.
INDICATOR	<i>Net loss/gain in areas identified as wetlands</i>



**SUBJECT:
WETLAND PROTECTION**

Wetlands play important roles as habitat for fish and wildlife as well as functional roles to hold floodwaters and filter runoff before it enters streams, lakes and aquifers. Wetlands are protected by certain regulations but determining their location is often difficult. This requires “wetland delineation” studies for development applications—at the property owner’s expense—to determine the presence, boundaries, and classification of actual wetlands and buffers.

Current mapping resource constraints mean that the County does not have a reliable wetland inventory database that could identify known wetlands in advance. The U.S. Fish & Wildlife Service has established a wetlands identification and mapping program called the National Wetlands Inventory (NWI). This program maps known wetlands from a variety of sources and is one standardized source for wetland identification and monitoring. However, that data is very generalized and is not updated by the Federal Government.

As a means to further implement the wetland protection objectives of the Comprehensive Plan, the County should work to integrate the information from site specific assessments as required under SCC 14.24.220 into its Geographical Information System (GIS) in order to establish a baseline of existing wetlands and better track wetland loss or gain over time.



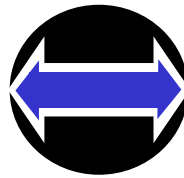
Photos of Skagit County Wetlands by Skagit Land Trust





**SUBJECT:
WATER QUALITY**

BENCHMARK	18. THE QUALITY OF SURFACE AND GROUND WATER WILL REMAIN STABLE OR INCREASE.
INDICATOR	<i>The number of Skagit County water bodies listed on the Washington State Department of Ecology's §303(d) list of Impaired Water Bodies</i>



Protection of surface waters such as streams, lakes and marine waters as well as the groundwaters of the County is one of the fundamental environmental protection goals of the Comprehensive Plan. These water resources provide not only for drinking water but fish, shellfish, wildlife and plant habitat and production, recreation, tourism and aesthetic enjoyment. They help to create and define the quality of life in the County.

These waters are also particularly susceptible to degradation from point source pollution such as leaking septic tanks, illegal dumping, and industrial discharge as well as storm water runoff, nutrient loading, erosion, and other non-point sources of pollution. Many of the problems adversely affecting these waters can be caused by poor land development, clearing and grading, or agricultural practices on nearby uplands. Other causes can be natural such as algal blooms, floods or droughts.

Water quality is influenced by many factors. But in the waters of the County, most often high temperatures, lack of dissolved oxygen, and the presence of pathogens are the primary indicators that water quality is degraded. The Washington Department of Ecology (DOE), in compliance with the Clean Water Act, operates a water quality monitoring program throughout the state and must report “impaired” water bodies that exceed adopted water quality standards and identify remedies for those problems. The impaired water bodies identified by DOE are referred to as being on the 303(d) list in reference to the citation in the Clean Water Act. The 303(d) list of impaired water bodies in the County for the last reported years (1996-1998) are shown in **Figure 18.1** and on the accompanying map in **Figure 18.2**. In many cases the water quality problems are temporary or seasonal in nature, such as a stretch of slough whose water temperature only exceeds adopted standards during the summer months. Others may have long-standing problems associated with adjacent pollution sources that are often addressed through on-going remediation.

The surface and ground waters of the County are generally of very good water quality according to the DOE. But the 303(d) list of impaired water bodies is a good indicator—and reminder—of how susceptible the water resources of the County are to degradation.

Skagit County has been collecting water quality data as part of the Watershed Scale Baseline Monitoring Plan developed for the Skagit County Agricultural Land Stream Buffer Program in 2001. Staff has been collecting water quality data at 27 sites on several streams throughout the lower agricultural areas of the Skagit and Samish River basins. The data will be used to characterize current water quality conditions and set a foundation for future comparisons.



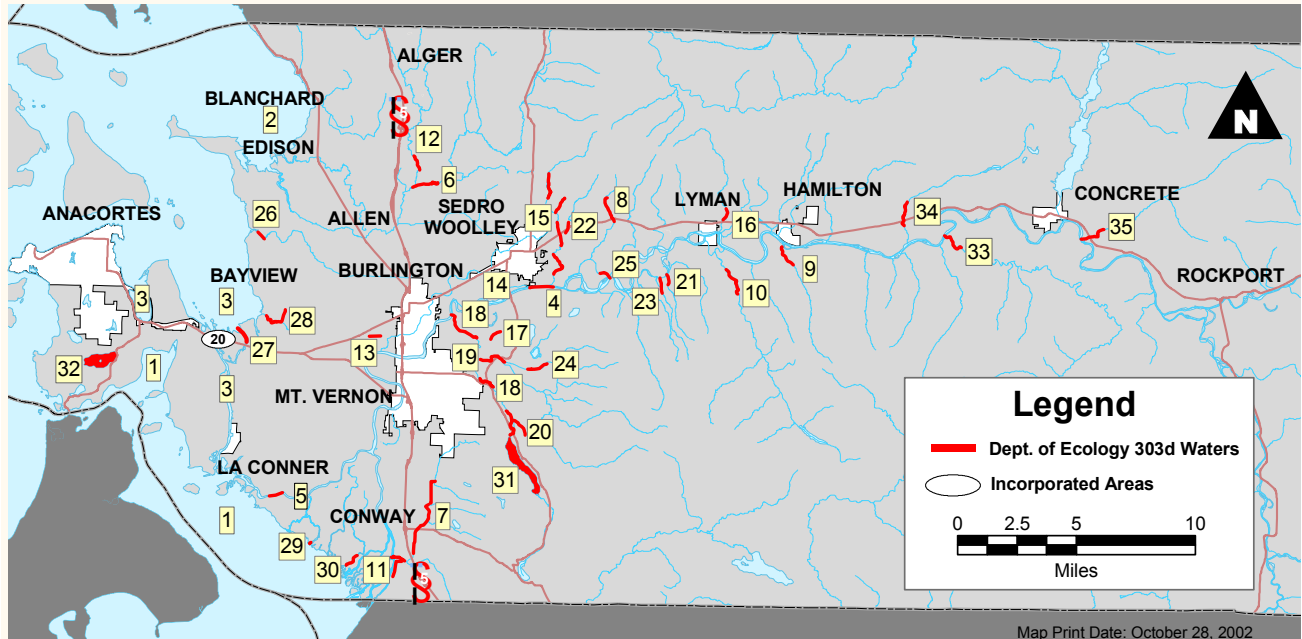


**Figure 18.1
Skagit County
303(d) Impaired Water Bodies
(1996-1998)**

Map Number	Water Body	Parameters Exceeding Standards		
		1996	1998	2002
1	Skagit Bay & Similk Bay	None	Fecal Coliform	Data Not Yet Available
2	Samish Bay	None	Fecal Coliform	Data Not Yet Available
3	Padilla Bay, Fidalgo Bay & Guemes Channel	Bis(2-ethylhexyl) Phthalate, PCB-1254	PCB-1254	Data Not Yet Available
4	Skagit River	Fecal Coliform	Fecal Coliform	Data Not Yet Available
5	Skagit River, North Fork	Fecal Coliform	None	Data Not Yet Available
6	Samish River	Fecal Coliform	Fecal Coliform	Data Not Yet Available
7	Carpenter Creek	Fecal Coliform	Fecal Coliform, Temperature	Data Not Yet Available
8	Coal Creek	None	Temperature	Data Not Yet Available
9	Cumberland Creek	None	Temperature	Data Not Yet Available
10	Day Creek	None	Temperature	Data Not Yet Available
11	Fisher Creek	Fecal Coliform	Temperature	Data Not Yet Available
12	Friday Creek	Fecal Coliform	Fecal Coliform	Data Not Yet Available
13	Gages Slough	Fecal Coliform	Fecal Coliform	Data Not Yet Available
14	Hart Slough/Brickyard Creek	Fecal Coliform	None	Data Not Yet Available
15	Hansen Creek	Fecal Coliform	Fecal Coliform, Fish Habitat, Temperature	Data Not Yet Available
16	Jones Creek	None	Temperature	Data Not Yet Available
17	Mud Lake Creek	None	Temperature	Data Not Yet Available
18	Nookachamps Creek	Fecal Coliform	Fecal Coliform, Temperature	Data Not Yet Available
19	Nookachamps Creek, East Fork	None	Temperature	Data Not Yet Available
20	Otter Pond Creek	None	Temperature	Data Not Yet Available
21	Parker Creek	None	Fish Habitat	Data Not Yet Available
22	Red Creek	None	Temperature	Data Not Yet Available
23	Sorenson Creek	None	Fish Habitat	Data Not Yet Available
24	Turner Creek	None	Temperature	Data Not Yet Available
25	Wiseman Creek	None	Temperature	Data Not Yet Available
26	Joe Leary Slough	Temperature, Dissolved Oxygen, Fecal Coliform	Temperature, Dissolved Oxygen, Fecal Coliform	Data Not Yet Available
27	Indian (Big) Slough	Temperature, Dissolved Oxygen, Fecal Coliform	Temperature, Dissolved Oxygen, Fecal Coliform	Data Not Yet Available
28	No Name Slough	Dissolved Oxygen, Fecal Coliform	Dissolved Oxygen, Fecal Coliform	Data Not Yet Available
29	Browns Slough	Fecal Coliform	Fecal Coliform	Data Not Yet Available
30	Wiley Slough	Fecal Coliform	Fecal Coliform	Data Not Yet Available
31	Big Lake	Total Phosphorus	Total Phosphorus	Data Not Yet Available
32	Campbell Lake	Total Phosphorus	None	Data Not Yet Available
33	Finney Creek	None	Temperature	Data Not Yet Available
34	Grandy Creek	None	Temperature	Data Not Yet Available
35	Jackman Creek	None	Temperature	Data Not Yet Available
Total Water Bodies Listed		20	34	Data Not Yet Available

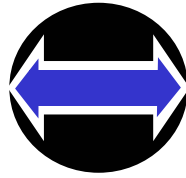


Figure 18.2
Skagit County
303(d) Impaired Water Bodies Map
(1996-1998)





BENCHMARK	19. INCREASE FLOODPLAIN PROTECTION BY REDUCING BUILDING IMPACTS IN FLOODPLAINS.
INDICATOR	<i>The number of building permits issued for areas identified as flood hazard areas</i>



**SUBJECT:
FLOODPLAIN PROTECTION**

Building homes in the floodplain should be discouraged, when alternatives are available and feasible, in order to reduce the potential for subsequent economic loss from flood events. However in a County where much of the lowlands west of the Cascades are found in floodplains it becomes an even greater challenge to balance the needs of flood-damage prevention with those of accommodating new growth, promoting a healthy agricultural economy, protecting property rights

and enabling a desirable rural lifestyle. This indicator measures the number of residential building permits issued in flood hazard areas (100 year floodplains) from 1995-2001.

The data in **Figure 19.1** indicate that the share of new housing units authorized in the floodplain compared to all units authorized in the unincorporated County grew slightly from 5% of all new units in 1995 to 7% in 2001. Overall for the past six year period floodplain units accounted for 6% of all new units issued in the unincorporated County (or on average between 40-60 homes per year). Given the size and extent of flood hazard areas in the County and the flood-proofing requirements for locating new units within these areas, the share of new units in the floodplain appears to be reasonable. However, the County should work to ensure that the impacts from the placement of new structures and associated grading and fill in the floodplain does not cumulatively cause significant increased flood elevation levels.

The County also participates in the National Flood Insurance Program operated by the Federal Emergency Management Agency (FEMA). This program includes a flood buy-out provision whereby properties subject to repetitive flood loss may be eligible for acquisition and/or relocation using federal funds. From 1997-2001 almost 50 homes subject to frequent flooding along the upper Skagit River were voluntarily removed from the floodplain under this program.

**Figure 19.1
Skagit County
Housing Development in the 100 Year Floodplain
(1995 – 2001)**

NEW HOUSING UNITS PERMITTED	YEAR							Total (1995-2001)
	1995	1996	1997	1998	1999	2000	2001	
Units in Floodplain	42	48	60	60	55	61	64	390
Percent of Total County Units	5%	7%	8%	6%	6%	6%	7%	6%
TOTAL COUNTYWIDE UNITS PERMITTED	925	717	711	954	937	965	860	6,069

Source: Skagit County





BENCHMARK	20. MAINTAIN GOOD AIR QUALITY.
INDICATOR	<i>Ambient air quality monitors and standards</i>



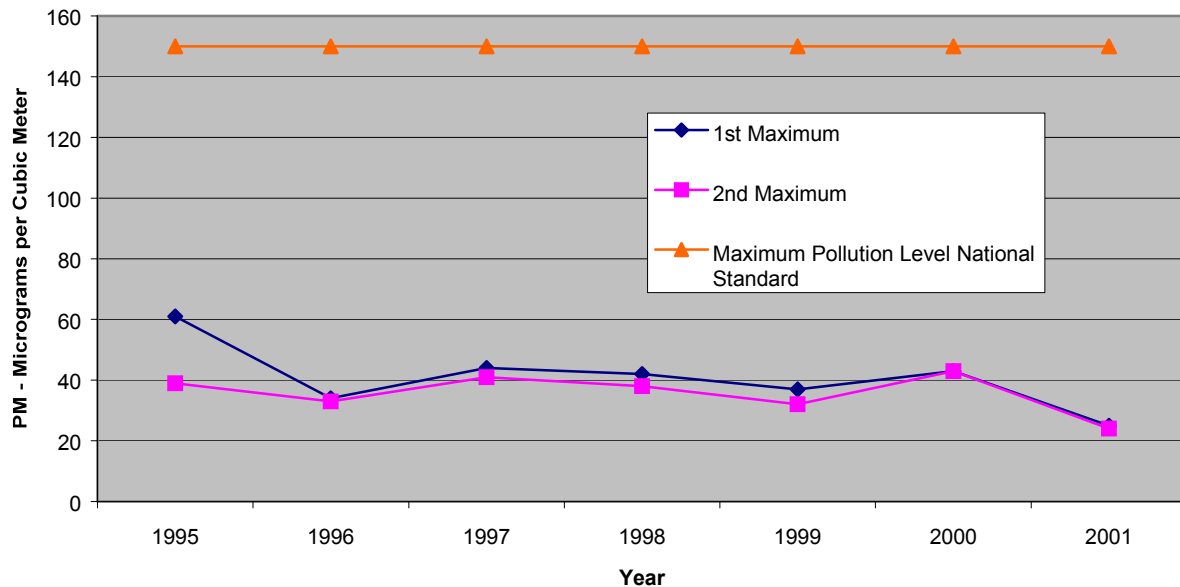
**SUBJECT:
AIR QUALITY**

Clean air and long vistas to the Cascade peaks or the bays of Puget Sound are often taken for granted in the County—at least in the sunny skies of summer. Air quality is one of the most easily noticeable environmental indicators.

The Northwest Air Pollution Authority monitors ambient air quality in the County from several different locations or stations and for several different parameters. The most significant parameters for the County are the measurement of particulate matter (PM) and Sulphur Dioxide (SO₂) emissions. Emissions for PM and SO₂ in the County from 1995-2001 are shown in **Figures 20.1 and 20.2** respectively. Particulate matter emissions result from industrial discharges as well as vehicles. Sulphur dioxide emissions are primarily from industrial dischargers such as power plants and refineries. In both cases, the levels of emissions in the County measured from 1995-2001 are well below the maximum acceptable national standards for those pollutants adopted as a part of the Clean Air Act.

The overall air quality of the County remains excellent.

**Figure 20.1
Skagit County
Particulate Matter Emissions
(1995-2001)**

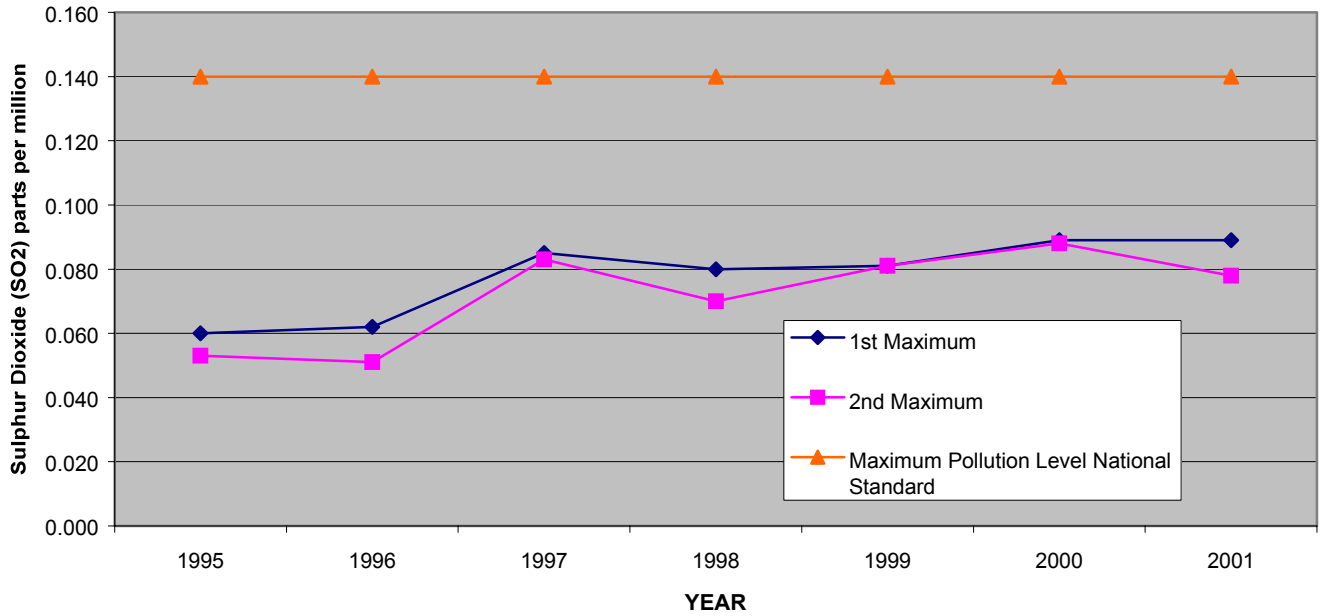


Station Source: Mount Vernon
Data Source: Northwest Air Pollution Authority





Figure 20.2
Skagit County
Sulphur Dioxide Emissions
(1995-2001)

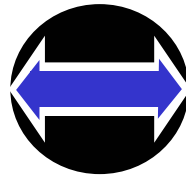


Station Source: March Point
Data Source: Northwest Air Pollution Authority



**SUBJECT:
OPEN SPACE**

BENCHMARK	21. PRESERVE SENSITIVE LANDS AND OPEN SPACE.
INDICATOR	<p><i>Indicators include:</i></p> <ul style="list-style-type: none"> • <i>Amount of land dedicated to parks and preserves</i> • <i>Acres of land enrolled in Open Space Tax Program</i> • <i>Acres of land protected in conservation easements</i>



Open space protection and the preservation of sensitive lands are both key objectives of the Environment Element of the Skagit County Comprehensive Plan. There are many different government and non-governmental agencies that play an important role in helping to protect these unique resources for future generations.

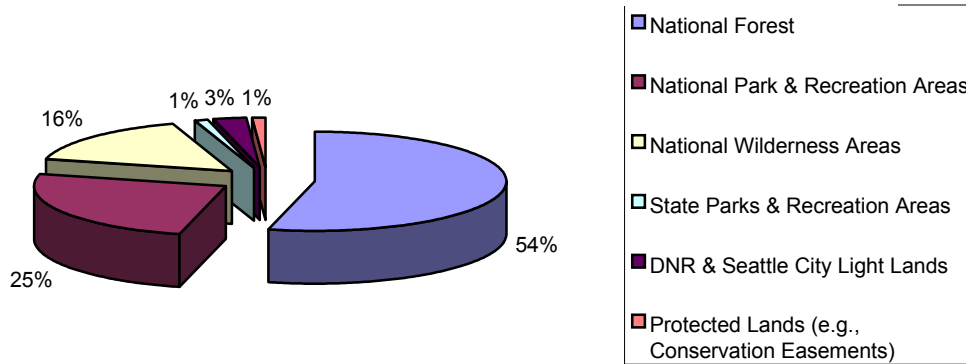
The majority of the County’s mountainous land area east of I-5 is subject to federal government jurisdiction. Most of that area is managed by either the US Forest Service or the National Park Service primarily

for recreational uses—although multiple uses, including timber harvest, are allowed. In the Skagit Valley and associated uplands, there is significantly less public land holdings but the agricultural resource land minimum lot size of 40 acres and the agricultural settlement patterns create a significant amount of open space. Other non-governmental entities such as non-profit land trusts and conservation organizations have also contributed to purchasing conservation easements or outright purchase of sensitive lands such as wetlands and riparian corridors along salmon-bearing streams. The County has more than one-half million acres of land now either designated for conservation or open space uses. The County’s database of public open space lands shown in **Figure 21.1** indicates the variety and amount of open space available in the County. It establishes a baseline from which to measure future gains or losses of protected open space and sensitive lands. The County also operates the Open Space Tax Program, which allows property owners to receive lower tax rate assessments on rural properties, which meet the criteria for open space status. The data and maps shown in **Figures 21.2 and 21.3**, respectively, illustrate the current amount of private lands that voluntarily utilize the “current use” open space tax program. Approximately 110,000 acres are currently enrolled in some form of open space taxation category.

All of these programs, agencies and activities have combined to protect well over one-half million acres of open space lands in the County.

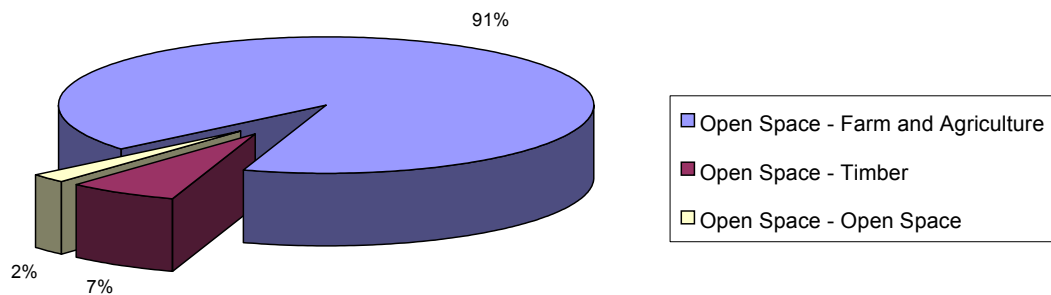


**Figure 21.1
Skagit County
Public Open Space of Regional/State-wide Importance & Protected Lands
(2001)**



Source: Skagit County GIS, Skagit County Data Consortium

**Figure 21.2
Skagit County
Open Space Tax Program
Enrolled Acres**

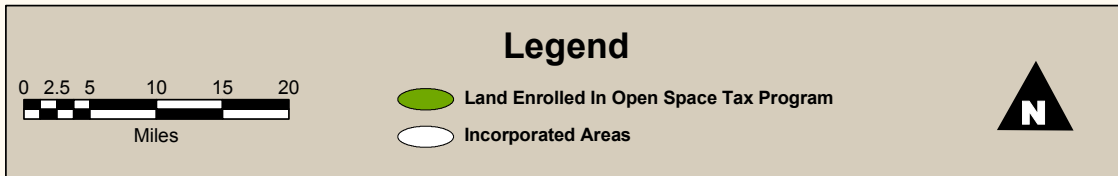
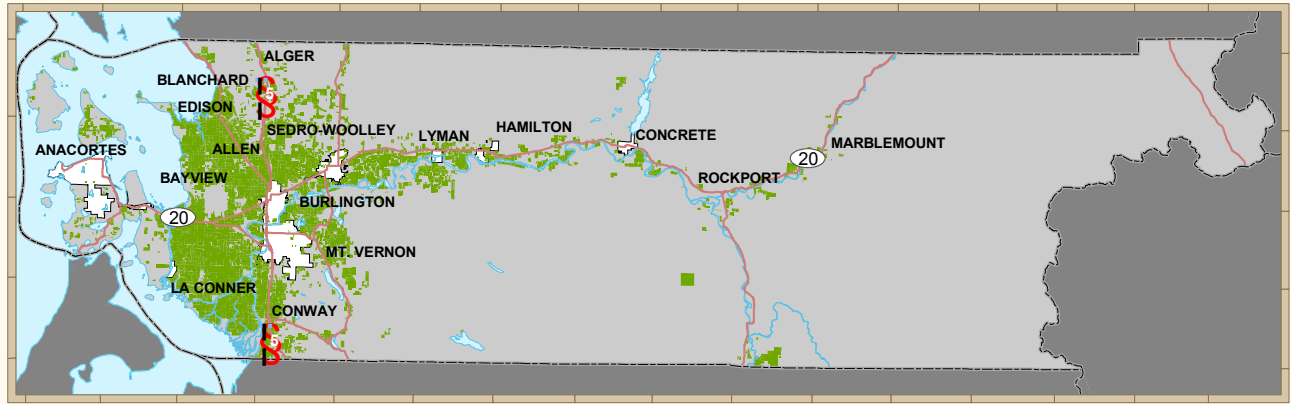


Source: Skagit County GIS





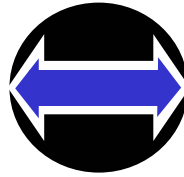
Figure 21.3
Skagit County
Open Space Tax Enrollment Map





**SUBJECT:
RECYCLING**

BENCHMARK	22. INCREASED RECYCLING OF SOLID WASTE STREAM.
INDICATOR	<i>Municipal solid waste recycling rates</i>



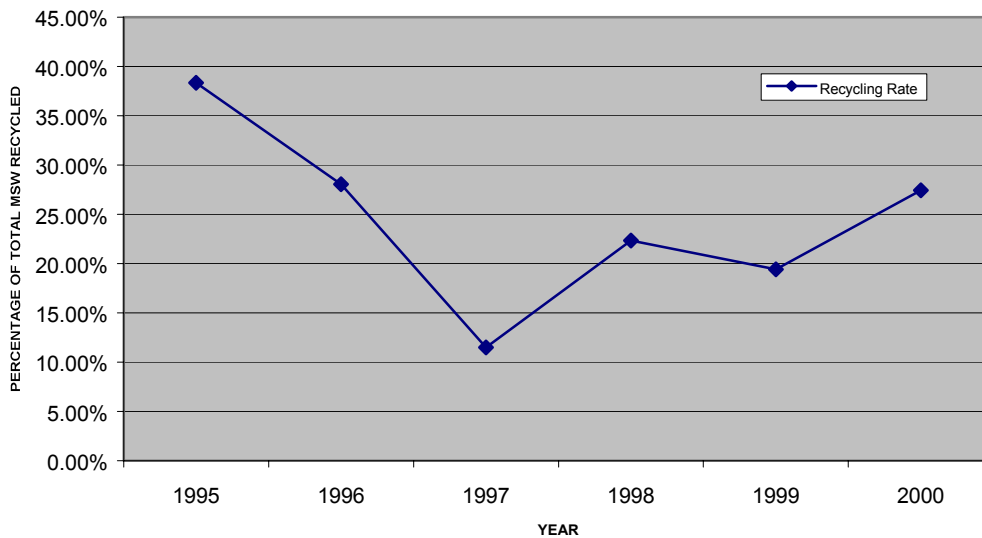
As population growth increases so too does consumption of goods. Inevitably the disposal of those goods or their by-products occurs in landfills, which are costly to construct, operate and maintain and are potential threats to contaminate groundwater. Separating out as many recyclable items as feasible out of the solid waste stream flow is a vital strategy to reduce the amount of solid waste destined for landfills.

Data from the Washington Department of Ecology (DOE) reports the total amount of solid waste generated in the County from 1995 to 2001 and the effective amount of that solid waste stream that was recycled.

The data illustrated in **Figure 22.1** indicate that the County's effective recycling rate declined from 38 % in 1995 to 27% in 2001 (although there are some reporting gaps in the data, according to DOE). The total amount of recyclable materials collected declined from 39,180 tons in 1995 to 30,324 tons in 2001. The range of recyclable materials extends from aluminum cans to yard waste. The largest recycling sectors by volume were paper, ferrous metals, food waste, aluminum, used oil, glass containers, non-ferrous metals, and tires.

Skagit County should pursue measures to stimulate the use and benefits of recycling.

**Figure 22.1
Skagit County
Municipal Solid Waste (MSW) Recycling
(1995-2000)**



*Skagit River Steel and Recycling did not report in 1997.
Source: Washington State Department of Ecology

** Waste Management began to report 2000.

