

Chapter 8. ENVIRONMENT OVERVIEW

Environment benchmarks track progress towards Oregon’s third strategic goal, “healthy, sustainable surroundings” (see Figure 1, page 4). Oregon’s overall grade, C+, has remained the same since 1998. Individual benchmarks for environment received both very high and very low grades.

Oregon earned good grades for:

- *Air Quality (A)*. Oregon met its 2000 target for this key benchmark.
- *Land Preservation (average grade of B-)*. Forest and wetlands preservation both received an A, but agricultural land preservation received a F.
- *Stream Water Quality (B+)*
- *Instream Water Rights (A)*. More streams had water flows adequate for wildlife in the last half of the decade. (This benchmark is highly dependent on rainfall.)
- *Hazardous Waste Site Clean-Up (A)*. Both tanks and other sites.

	1998	2000	Page
KEY ENVIRONMENT BENCHMARKS			
Air Quality	A	A	63
Land Preservation Wetlands, Agricultural and Forest Lands	A	B-	64
Salmon & Steelhead	F	F	67
OTHER ENVIRONMENT BENCHMARKS			
Carbon Dioxide Emissions	F	F	68
Stream Water Quality	A	B+	68
Instream Water Rights	A	A	68
<i>Timber Harvest</i>		<i>new</i>	69
Municipal Waste Disposal per Capita	F	F	69
Hazardous Waste Site Clean-up	A	A	69
Healthy Wildlife Species	F	D-	70
<i>Marine Species at Risk</i>		<i>new</i>	70
Healthy Native Plant Species	C-	D-	70
<i>Nuisance Species</i>		<i>new</i>	71
State Park Acreage	F	F	71
AVERAGE OTHER GRADE	C+	C-	
OVERALL ENVIRONMENT GRADE*	C+	C+	

Oregon received poor or failing grades for:

- *Agricultural Land Preservation (F)*. Oregon’s agricultural land is shifting to other uses.
- *Salmon and Steelhead Preservation (F)*. Only two percent of these populations are at target levels for this key benchmark.
- *CO₂ Emissions (F)*. In 1997, CO₂ emissions were 15% higher than in 1990.
- *Municipal Waste (F)*. Pounds of municipal waste landfilled or incinerated grew from 1,519 pounds per capita in 1992 to 1,690 pounds in 1999.
- *Native Plant Species that are Healthy (D-)*. This worsened half a grade from the last report. The percentage of native plant species that were healthy decreased from the decade high of 88% in 1994 to only 80% in 1999.
- *Acres of State-Owned Parks per 1,000 Oregonians (F)*. This decreased from 31 acres per 1,000 in 1990 to 28 in 2000. The 2000 target was 35.

*The overall grade is a weighted average. Each key benchmark is given a weight of one. All other benchmarks are averaged, and that average is also given a weight of one.

NEW OR MODIFIED BENCHMARKS FOR ENVIRONMENT

New or Modified Benchmarks	Rationale
75. Percent of time that the air is healthy to breathe for all Oregonians (healthy means zero exceedances of National Ambient Air Quality Standards).	This is re-worded to be more precise and inclusive.
77. Wetland acreage as a percentage of 1985 wetland acreage: a. freshwater, b. estuarine.	This is now stratified by type of wetland. Freshwater and estuarine wetlands are fundamentally different.
78. Percentage of monitored stream sites with: a. significantly increasing trends in water quality, b. water quality in good to excellent condition.	This water quality benchmark has been expanded to focuses on the status of Oregon stream quality as well as whether stream quality is trending up or down.
80. Percentage of Oregon agricultural land in 1982 still preserved for agricultural use: a. cropland, b. other.	The agriculture land benchmark has been stratified to give a more accurate picture of different types of agricultural land.
82. Actual harvest levels as a percentage of sustainable harvest levels. a. public lands, b. private lands.	This new benchmark is based on a recommendation from the Board's <i>State of the Environment Report</i> .
85. Percentage of monitored wild native fish populations that are classified as healthy: a. salmon and steelhead populations, b. other populations.	This has been modified to be more inclusive and easier to understand.
86. Percentage of assessed marine fish stocks that are at risk.	This new benchmark is based on a recommendation from the Board's <i>State of the Environment Report</i> .
87. Percentage of at-risk plant and animal species found in areas dedicated to conservation: a. species found in streams or rivers, b. other.	This benchmark is based on a recommendation from the Board's <i>State of the Environment Report</i> .
89. Number of nuisance invasive species that are healthy.	This new benchmark is based on a recommendation from the Board's <i>State of the Environment Report</i> .

Benchmark
75

Key Benchmark

AIR QUALITY

The percentage of Oregonians living where the air meets government ambient air quality standards.

Grade
A

Oregonians are Breathing Clean Air

Contributes to Goal 3, Healthy Sustainable Surroundings

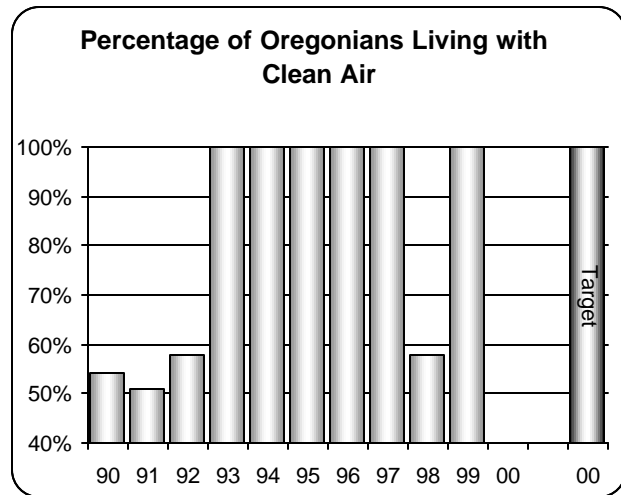
How well does Oregon balance its air quality with a thriving economy? Unfortunately, the two often conflict. For example, a strong economy brings in more people who drive more cars, which emit more pollution. Air quality is one critical aspect in the delicate balancing act between a clean environment and robust economic growth.

Target: 100% in 2000

In urban areas throughout Oregon, monitors measure whether ambient air exceeds National Ambient Air Quality Standards (NAAQS) for five "Criteria Pollutants" as defined by the Clean Air Act. They are: 1) carbon monoxide, 2) nitrogen oxide, 3) lead, 4) ozone, and 5) fine particulate matter. In this system, numerous "exceedances" are required to create a violation. This benchmark currently measures "violations". *In the future, this benchmark will track exceedances, a more sensitive measure (see Appendix A).*

Urban Areas Heavily Impact Measure

Oregon met its target in 1999. There were no violations of the NAAQS standards. Portland and other metropolitan areas such as Eugene, because of their population density, heavily impact this particular measure. The lower ratings in the early 1990s and in 1998 are a result of enough "exceedances" in just one of those areas to create a violation.



Source: Oregon Department of Environmental Quality

AIR QUALITY - OREGON'S NATIONAL RANK

	1995	1996	1997	1998
OR	26th	19th	33rd	19th
WA	30th	28th	15th	40th

Source: CfED: The Development Report Card

How Oregon Compares

This comparison is a more sensitive measure than the data charted for the benchmark described above. Oregon's and Washington's rank fluctuated considerably between 1995 and 1998. A single exceedance in either state can dramatically change the state's percentage and ranking.

What Needs To Be Done

Vehicles emit approximately 75% of the carbon monoxide and cause about 40% of ground-level ozone. *Oregon Shines II* stresses the importance of controlled growth strategies that limit automobile use. New development can either be spread-out, auto-dependent, and single-use oriented or it can be compact, with mixed-use development patterns that reuse existing resources and support pedestrian, bicycle and public transit travel. In urban areas, the environmental benefits of compact growth are obvious. Economically depressed rural areas that want to encourage growth may, on the other hand, benefit economically from greater flexibility in land use laws.

The Portland area is noted for its restricted growth boundaries and high-density growth. Other programs that have contributed to Oregon's current high marks for air quality include: state enforcement of the Environmental Protection Agency's mandatory air operating permit; the federal oxygenated automotive fuel program; a Portland-area gasoline vapor recovery program designed to reduce pollution emitted from gas stations while refueling automobiles; vehicle inspection and maintenance programs; and emission certification standards (which originated in Oregon) for wood stoves.

Relevant State Agencies: Department of Environmental Quality, www.deq.state.or.us. (See *Oregon Progress Board* web site for other key players and stakeholders.)

See Also: www.epa.gov, www.orcouncil.org, www.cleanairprogress.org

Benchmark

77

Key Benchmark

WETLANDS PRESERVATION

Percentage of wetlands in 1990 still preserved as wetland.

Grade

A

Wetlands Holds Steady Throughout the 90s

Contributes to Goal 3, Healthy Sustainable Surroundings

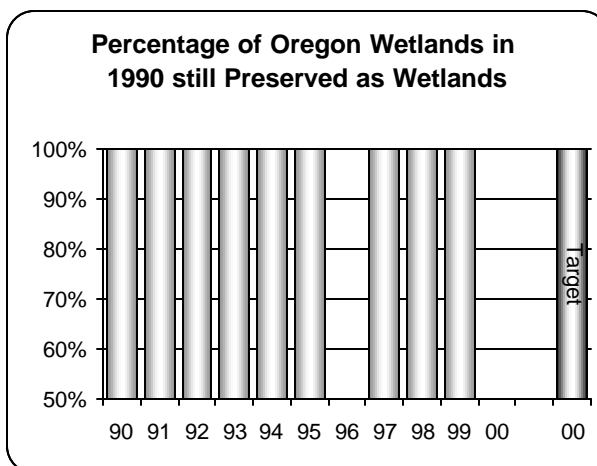
The term "wetlands" refers to both freshwater and intertidal salt marshes. The latter are called estuarine wetlands. Both kinds of wetlands represent integral facets of Oregon's natural environment. Depending on their type, they serve in many ways. They store water, reducing winter flooding and enhancing summer stream flows. They improve water quality by recycling nitrogen and phosphorous and by filtering sediment and pollutants. They stabilize stream banks and provide food and shelter to salmon and trout.

Target: 100% of 1990 Wetland Acreage

This benchmark measures the acres of wetlands that currently exist as a percentage of that which existed in 1990. This particular measure combines both freshwater and estuarine wetlands, camouflaging the issues specific to both. *In the future, this benchmark will be stratified because freshwater and estuarine wetlands are fundamentally different (see Appendix A).*

Estuarine Gains Cancel Freshwater Losses

Oregon's wetlands are holding steady at 100% of 1990 wetlands levels. According to Oregon's *State of the Environment Report 2000*, much of the original habitat is still intact due to local zoning and restoration of hundreds of acres of former *estuarine* marshes. However, freshwater wetlands receive less protection than estuarine wetlands in Oregon. The most recent study available shows that 6,877 acres of freshwater wetlands were lost in the Willamette Valley between 1982 and 1994, mostly to agriculture and rural development. Experts believe that the rate of loss for freshwater wetlands has slowed in recent decades compared to historical levels.



Source: Oregon Division of State Lands

How Oregon Compares

The U.S. Department of Interior released a report on January 10, 2001 which concluded that the rate of overall wetlands loss nationwide has been reduced by 80% over the past decade because of federal laws and conservation programs.* This is consistent with the slowing of wetlands loss in Oregon as mentioned above.

What Needs To Be Done

Estuarine wetlands are threatened by the reduction of freshwater inflow due to consumptive demand. These ecosystems owe their unique character and productivity to freshwater inflow, which helps dilute pollution and flushes waste out of the system. Pressures on estuarine ecosystems therefore include population and tourism growth as well as nuisance species, excessive sediment and pollution runoff, and physical alterations. Freshwater wetlands suffer from continued conversion to agricultural use and continued development.

Solutions include: 1) the acquisition of regionally important wetlands; 2) strong, voluntary wetland restoration programs for private landowners; 3) more effective mitigation for wetland fills; 4) integrating wetland restoration and acquisition as part of flood prevention (as has been done in the Mississippi River valley); 5) restoring former and degraded wetlands on public lands; and 6) adopting a long term "net gain" of wetlands goal.

Relevant State Agencies: Division of State Lands, www.statelands.dsl.state.or.us. (See Oregon Progress Board web site for other key players and stakeholders.)

See Also: www.fws.gov/r3pao/level1/wetlands.htm, www.iwla.org/SOS/handbook/casestudies/landtrst.html, www.inforain.org/epb/intro.htm, www.manomet.org/Wetlands/wetlandswildlife/wetland1.htm

* Source: <http://wetlands.fws.gov/bha/SandT/SandTSummaryFindings.html>. On the same day, the U.S. Supreme Court ruled (5-4) that the federal government is not authorized to oversee activity in isolated wetlands (www.supremecourtus.gov/opinions/00pdf/99-1178.pdf). Although this may change wetlands preservation progress from the federal perspective, this decision does not affect the Oregon's legislatively mandated authority to regulate alteration of isolated wetlands.

Benchmark
80

Key Benchmark

AGRICULTURAL LANDS

Percentage of Oregon agricultural land in 1970 still preserved for agricultural use.

Grade
F

Oregon's Ag Land is Slowly Shifting to Other Uses

Contributes to Goal 3, Healthy Sustainable Surroundings

Benchmark 80 reflects Oregon's concern with matching economic, environmental and land use goals. It relates to environmental, social and economic issues. Its purpose is to monitor the amount of land in agricultural use, as the foundation of the state's agricultural economy.

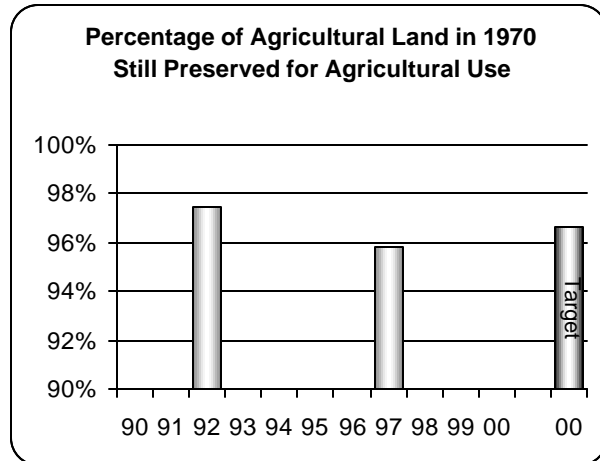
Target: 96.6% of 1970 Ag Acreage

State policy is to preserve as much agricultural land as possible. This benchmark measures the percentage of the estimated 1970 acres of agricultural land still in agricultural use. Included is crop, pasture and range land even if they are currently not in production. *This benchmark will be stratified in the future to distinguish cropland from pasture and range land (see Appendix A).*

Ag Land is Shifting

In 1992, Oregon's agricultural land base equaled 97.5% of what was estimated to be available in 1970. In 1997, that percentage dropped to 95.8%, below the 2000 target of 96.6%. In most cases the change was not controllable by any governmental agency or program. Most of the change (61.8%) is attributable to rising lake levels and a shift to forest use. Only 18.5% is attributable to urban development.

Much change is within urban growth boundaries and rural development zones for which conversion was planned under Oregon's land use program. The percentage of converted agricultural land that was prime remained stable. Statewide and in the Willamette Valley, the percentage of converted cropland that was prime has decreased.



Source: Oregon Department of Agriculture

Percentage of Ag Land Converted Yearly to Urban Development

	1982-92	1992-97
CA	.21%	.27%
OR	.06%	.07%
WA	.07%	.15%
U.S.	.08%	.12%

Source: NRI, U.S. Department of Agriculture

How Oregon Compares

These average annual rates show that between 1982 and 1997, Oregon converted agricultural land to urban development at a slower rate than California, Washington, and the nation as a whole.

What Needs To Be Done

Oregon's ability to contain growth within urban growth boundaries is a key factor influencing this benchmark. The state process envisions an orderly and strategic loss of agricultural lands as the state grows. Oregon has been relatively successful in preserving its agricultural lands (see table).

In order to strengthen this approach, Oregon should:

- Develop better data on land use shifts, both inside and outside urban growth boundaries. Much of the current data is coarse in nature. A periodic, comprehensive assessment of changes in land use and land cover is needed.
- Maximize the use of urban land by strengthening downtowns and encouraging compact development.

Another important factor is continued economic viability of agricultural lands, especially in high growth areas. Oregon has used Exclusive Farm Use zoning and special assessments since the sixties. Other states offer farmers income tax credits to offset local property taxes. Maintaining soil quality is another key ingredient in maintaining economic viability. Oregon's *State of the Environment Report 2000* suggests ways to improve soil health by decreasing soil erosion and increasing carbon content.

Relevant State Agencies: Department of Agriculture, www.oda.state.or.us; Department of Land Conservation and Development, www.lcd.state.or.us. (See *Oregon Progress Board* web site for other key players and stakeholders.)

See Also: www.farmland.org, www.nhq.nrcs.usda.gov/NRI

* The *State of the Environment Report* can be downloaded from the Oregon Progress Board web site, www.econ.state.or.us/opb.

Benchmark

81

Key Benchmark

FOREST LAND

Percentage of Oregon forest land in 1970 still preserved for forest use.

Grade

A

Forest Land Acreage Holds Steady Throughout the 90s

Contributes to Goal 3, Healthy Sustainable Surroundings

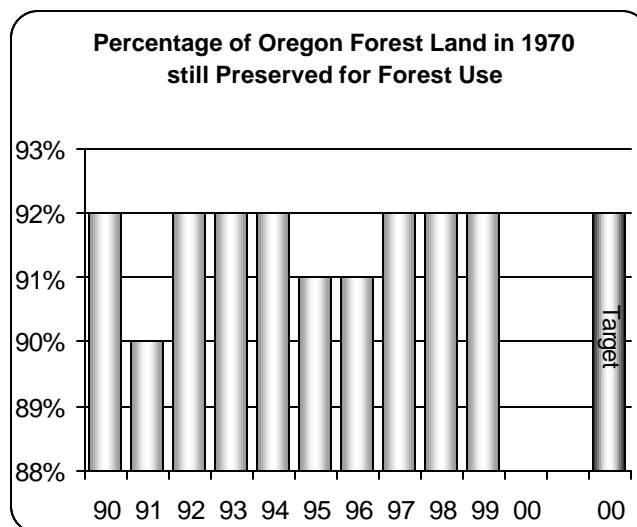
Forests, which cover nearly half of Oregon's total land area, serve Oregonians by providing a wide range of ecological and economic goods and services: fish and wildlife habitat, clean drinking water, recreation, natural beauty, timber, softening climate extremes, and a source for pharmaceuticals. Oregon's population is growing not just because of jobs, but because of the quality of life here - of which forests are an integral part. Maintaining them and their health is critical to the environmental, social, and economic well being of the state.

Target: Hold Forested Acres Constant

This benchmark measures how much forest land currently exists as a percentage of that which existed in 1970. "Forest land" is defined here as public and private land that is predominantly used for timber, watershed, wildlife or recreation. The definition covers many types of forest land. Targets were set at 92% of 1970 levels. Note that this benchmark measures quantity - not quality or health of forests.

Holding Steady at the 92% Target Level

Oregon's forest lands remain at 92% of 1970 levels. Although much progress is being made in the management of Oregon's forests, there are some concerns. Changes in the structure of eastside forests have contributed to increased insect outbreaks and more intense fires. Old growth forests are at relatively low levels, but should increase significantly under implementation of federal and state plans.



Source: Oregon Department of Forestry

PERCENT CHANGE IN FORESTLAND SINCE 1982 (non-federal land)

	1987	1992	1997
OR	(.07%)	(.07%)	(.41%)
WA	(.55%)	(1.32%)	(2.01%)
U.S.	.48%	.46%	.90%

Source: NRI, U.S. Department of Agriculture

How Oregon Compares

This data shows that non-federal forest land is increasing nationwide, decreasing in Oregon, and decreasing faster in Washington. "Non-federal" lands refer to state, county and tribal forest land. This excludes lands belonging to the U.S. Forest Service and Bureau of Land Management. About half of all Oregon's forest land is in this category.

What Needs To Be Done

Forest land is a critical environmental and economic asset for Oregon.

The *State of the Environment Report 2000* shows that (as of 1993) roughly 20% of Oregon's jobs were tied to the harvest of Oregon's renewable resources such as fish and timber. The relative share of this sector has been steadily declining, while those related to manufacturing processes which depend on or are attracted by clean water, power, and other environmental amenities (also about 20% of jobs in 1993) has been steadily increasing.

Forest practice rules in Oregon have resulted in prompt reforestation of harvested forest lands along with the protection of forest streams and other natural resources. Recent changes in federal land management emphasize protection of biodiversity on federal forest lands. However, state officials believe that in order to maintain the existing non-federal forest land base in forest uses, Oregon needs to implement policies that encourage private forest landowners to willingly invest in their forest land and that discourage the conversion of forest land to other uses.

Relevant State Agencies: Department of Land Conservation & Development, www.lcd.state.or.us; Department of Forestry, www.odf.state.or.us. (See *Oregon Progress Board* web site for other key players and stakeholders.)

See Also: www.amfor.org, www.friends.org, www.oregonforests.org, www.fs.fed.us/pnw/welcome.htm, www.friends.org, www.oregonforests.org

Benchmark

85

Key Benchmark

WILD SALMON & STEELHEAD RESTORATION

Percent of wild salmon and steelhead populations in key sub-basins that are at target levels.

Grade

F

Wild Salmon and Steelhead Populations Precariously Low

Contributes to Goal 3, Healthy Sustainable Surroundings

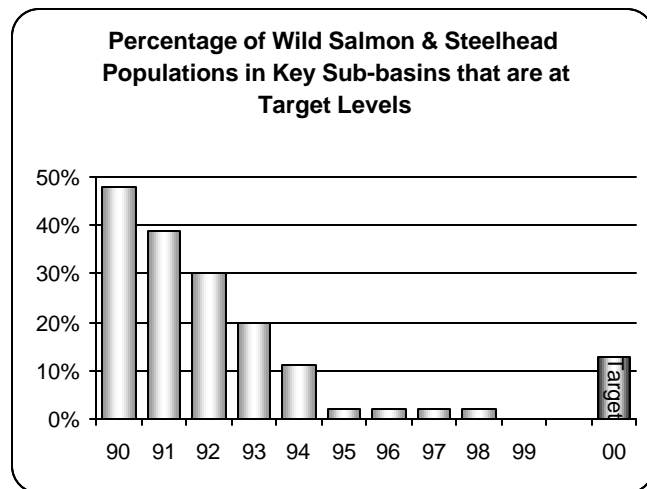
Fish, particularly salmon populations, have played a central role in Oregon's history and economy. The *State of the Environment Report 2000** (SOER) maintains that native fish populations are healthy when they can maintain themselves without human intervention; provide self-sustaining harvest levels; and remain dominant over introduced species. Salmon and steelhead are impacted by habitat and water quality degradation, harvesting, poorly-functioning dams and other barriers, hatchery fish, and adverse ocean conditions.

Targets Aim to Restore Pre-1992 Levels

Data for this benchmark were compiled from key sub-basins in Oregon. (A sub-basin is an area containing feeder creeks flowing into a big river.) *In the future, this benchmark will be revised to cover a wider array of wild fish (see Appendix A).*

Only 2% of Populations at Target Levels

The estimates shown in this chart demonstrate the precarious status of Oregon's native salmon and steelhead populations. In 1990, the state estimated that 48% of wild salmon and steelhead populations in key sub-basins were at target levels. For the four years from 1995 to 1998, only two percent of the populations are estimated to have met this standard.



Source: Oregon Department of Fish and Wildlife

How Oregon Compares

National comparator data for salmon and steelhead are difficult to find. However, the SOER provides some insight on how Oregon compares nationally for native freshwater fish overall. It states that Oregon ranks fifth in the nation in terms of number of fish species under Endangered Species Act. Of its 63 species, 14 are listed (five of the listed species are salmon and trout) and 15 more are candidate species considered at risk. This means 45% of Oregon's freshwater species have declined and are at risk. A total of 226 genetically distinct populations face significant risk of extinction.

What Needs To Be Done

Because ocean conditions are beyond Oregon's control, the state's strategy is to improve fish habitat and fish passage so that salmon and steelhead recovery will have the best possible chance given ocean conditions. A detailed implementation report of the six year old Oregon Plan for Salmon and Watersheds can be found at www.oregon-plan.org. In conjunction with this plan, over 70 watershed councils work to address the range of watershed-specific factors that impact salmon and steelhead. These councils emphasize public outreach and encourage voluntary habitat restoration. The Willamette Restoration Initiative (WRI), formed by Governor Kitzhaber in 1998, is charged with developing a strategy to protect and improve fish and wildlife habitat, enhance water quality, and properly manage floodplains in the Willamette Valley. Forest land management in Oregon is improving. The Oregon Department of Transportation identifies culverts in each coastal watershed for modification to allow easier fish passage. Oregon is working to control over-harvesting by increasing enforcement of illegal catches and targeting hatchery runs for fishing seasons. It is also changing the emphasis from hatchery production to strengthening wild fish populations. Other organizations such as the Columbia River Intertribal Fish Commission are actively working to restore native fish populations.

Relevant State Agency: Department of Fish and Wildlife, www.dfw.state.or.us; Department of State Police, www.osp.state.or.us. (See Oregon Progress Board web site for other key players and stakeholders.)

See Also: www.oregon-plan.org, www.critfc.org, www.nwppc.org, www.nwppc.org

* The *State of the Environment Report* is available on the Oregon Progress Board website, www.econ.state.or.us/opb.

76 Carbon Dioxide Emissions

Carbon dioxide emissions as a percentage of 1990 emissions.

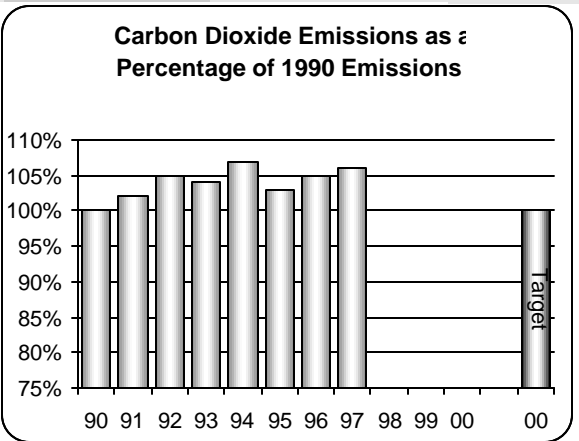
For Benchmark 75, see page 63.

Grade
F

Oregon's CO₂ Emissions Rising

Residing naturally in the environment, carbon dioxide (CO₂) results from the combustion of fossil fuels. CO₂ helps to balance both the planet's absorption of heat and its capacity to re-radiate heat back into space. Too much CO₂ causes excess heat to be trapped in the atmosphere and has been associated with global warming.

The chart at right shows that Oregon's CO₂ emissions increased by 6% from 1990 to 1997. In 1997, 40% of Oregon's CO₂ emissions came from electrical use, 38% from transportation, and 15% from natural gas use. Reducing power consumption, relying on regional hydropower (which does not require fossil fuels) and reducing vehicle usage are the biggest opportunities Oregonians have to reduce their state's carbon dioxide emissions.



Source: Oregon Department of Energy

78 Stream Water Quality

Stream water quality index: a. increasing trends, b. decreasing trends.

For Benchmark 77, see page 64.

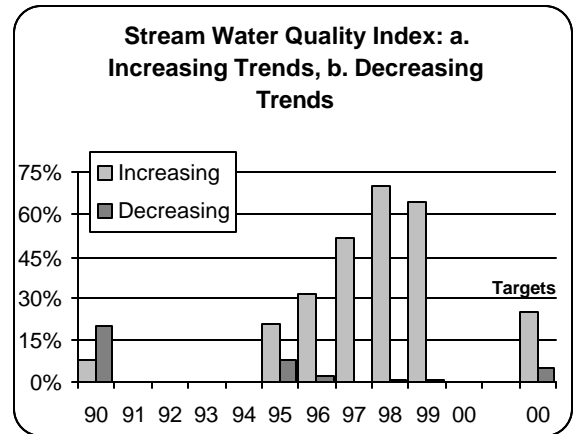
Increasing
A

Decreasing
B-

More Improving Streams, Fewer Worsening Streams

Oregon monitors its thousands of miles of streams for quality as measured by temperature, oxygen, oxygen demand, pH, total solids, ammonia and nitrate nitrogens, phosphorous and fecal coliforms (see endnote). This benchmark shows the yearly percentage of monitored streams showing both improving and worsening trends. *In the future, this benchmark will include a reading on the status of monitored streams as well as their trend of quality.*

The percentage of streams trending towards better water quality increased markedly from only 8% in 1990 to 64% in 1999. The percentage of streams trending towards worse water quality decreased from 20% in 1990 to only 1% in both 1998 and 1999.



Source: Oregon Department of Environmental Quality

79 Instream Water Rights

Percentage of key rivers meeting instream water rights: a. 9 months or more a year, b. 12 months a year.

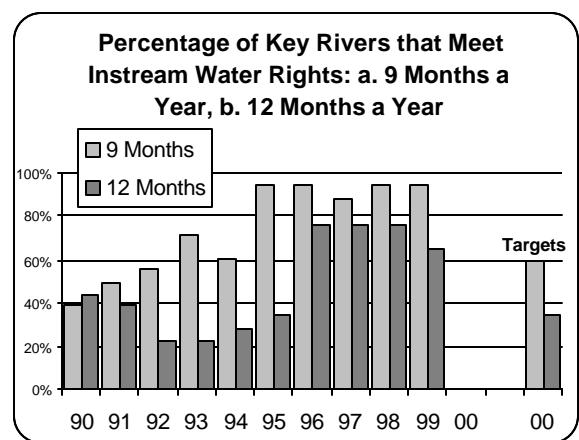
9 Months
A

12 Months
A

Water Quantity Adequate in More Streams

The right to divert water from Oregon streams (out-of-stream rights) have been issued to Oregonians for decades. Many were issued before a methodology to assess environmental impact was developed and used. In 1987, the Oregon legislature authorized a new right targeted to maintaining instream water flow adequate to support wildlife and public uses. This benchmark measures whether instream flows in selected rivers and streams are adequate for wildlife, recreation and other public uses. Performance under this benchmark is primarily influenced by climactic conditions, primarily rainfall.

The percentage of streams in which flows are adequate nine months per year increased from 39% in 1990 to 94% in 1999. Those meeting public needs 12 months per year has increased from 44% in 1990 to 65% in 1999.



Source: Oregon Water Resources Department

82
(New)

Timber Harvest

Actual harvest levels as a percentage of sustainable harvest levels.

For Benchmarks 80-81, see pages 65-66.

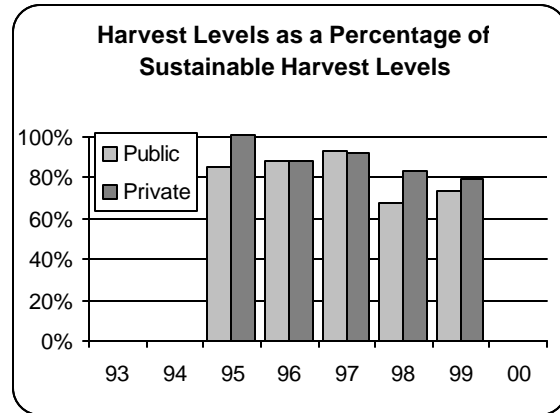
Grade
N/A

New Benchmark Addresses Sustainable Harvests

On the recommendation of the *State of the Environment Report's* Science Panel members, this benchmark has been added to address whether Oregon is harvesting its timber at a sustainable rate. The benchmark is stratified to differentiate between timber harvests on public versus private lands.

The 2000 *State of the Environment Report* states that "Current forest growth exceeds current harvest on lands that have historically been used for commercial timber production. Growth and harvest are generally in balance on private lands, while growth is significantly above harvest on state and federal lands." (*Statewide Summary*, page 30).

The chart at right shows that timber harvests are well under the maximum sustainable harvest levels (of 100%).



Sources: Oregon State University and Oregon Department of Forestry

83

Solid Waste

Pounds of Oregon municipal waste landfilled or incinerated per capita.

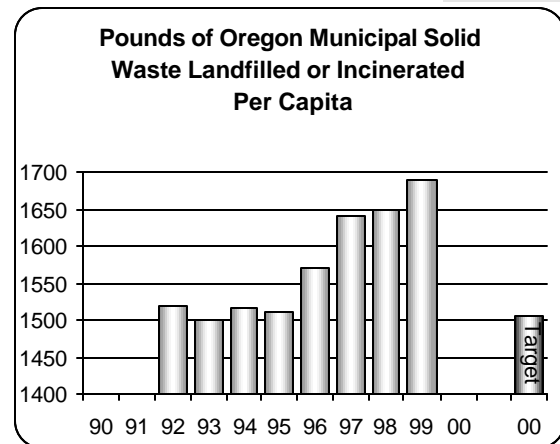
Grade
F

Oregonians Generating More and More Waste

Although this can be affected by other factors such as income, this benchmark generally reflects the extent to which Oregon minimizes municipal (not industrial) solid waste. Methods for doing this include recycling and product packaging requirements. Recycling saves energy, reduces greenhouse gas emissions and prevents emissions of many air and water pollutants.

More than three quarters of a ton (1,690 pounds) of municipal waste was landfilled or burned per capita in 1999, up from 1,519 pounds in 1992.

Most of Oregon's municipal waste is landfilled. About six percent is incinerated.



Source: Oregon Department of Environmental Quality

84

Hazardous Waste Site Clean-Up

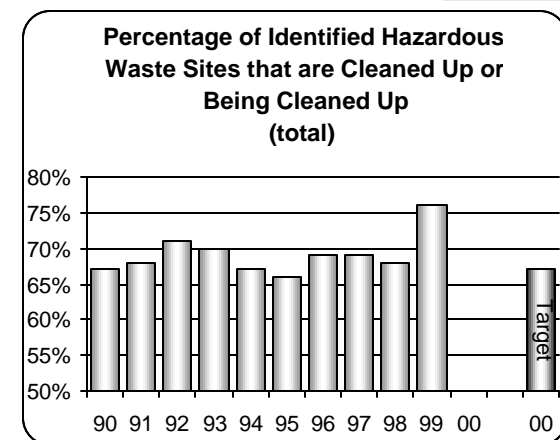
Percent of identified Oregon hazardous waste sites cleaned up or being cleaned up: a. tank, b. other hazardous substances.

Grade
A

Better Percentage of Hazardous Site Clean-up in 1999

A hazardous waste site is any tank or location where releases of one or more hazardous substances has been confirmed and where clean-up is required by the state. This benchmark measures the percentage of those identified that are being cleaned up according to plan.

The percentage of hazardous sites has improved overall from 67% in 1990 to 76% in 1999, exceeding the 2000 target of 67%. Tanks improved from 66% in 1990 to 76% in 1999 and other hazardous sites from 67% in 1990 to 73% in 1999.



Source: Oregon Department of Environmental Quality

86
(New)

Marine Species at Risk
Percentage of assessed marine species at risk.

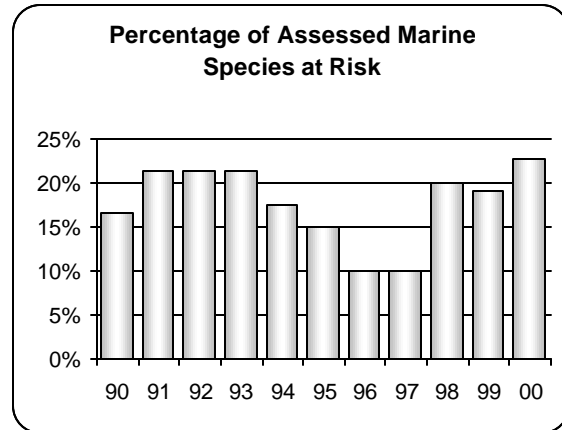
For Benchmark 85, see page 67.

Grade
N/A

Nearly 1/4 of Oregon's Marine Stocks are at Risk
Healthy marine stocks are a key ingredient of a healthy environment. Many coastal communities depend on commercial fishing and seafood processing for economic survival—as well as marine-related tourism and recreation. This new benchmark will allow Oregonians to know the number of stocks that are over-fished or at risk.

According to the *State of the Environment Report 2000*, the condition of Oregon's marine fisheries is mixed. Many stocks are in good shape, but some are threatened by over fishing and other pressures.

These data show that despite an improvement mid-decade, the percentage of marine stocks at risk has worsened from 16.7% in 1990 to 22.7% in 1999.



Source: Oregon Department of Fish and Wildlife

87

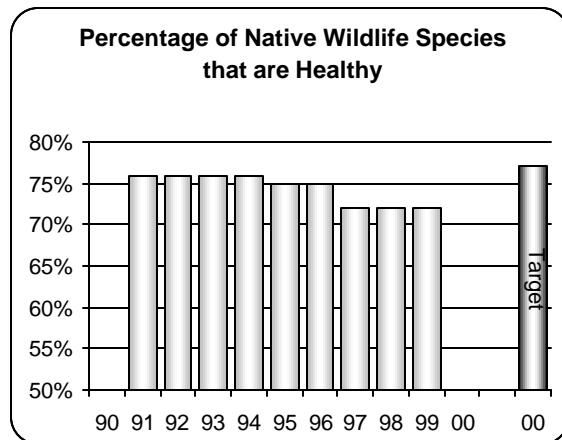
Native Fish and Wildlife
Percentage of native fish and wildlife species that are healthy.

Grade
D-

Fewer Oregon Species are Healthy
Can Oregon's natural habitat sustain native mammal, bird, reptile, amphibian and fish species? This benchmark takes into account numerous factors including state and federal Endangered Species Act (ESA) listings, projected population growth, and pressure of growing the population for resource extraction.

The percentage of Oregon's native fish and wildlife species that are healthy dropped significantly from 76% in 1991 to an estimated 72% in 1999. The drop from 1991 to 1999 reflects increased numbers of species on the ESA listings and increasing pressure on wildlife habitats. Restorations will slow this trend, but not show full benefits within the next decade.

This benchmark will be modified to reflect the percentage of at-risk plant and animal species found in dedicated conservation areas.



Source: Oregon Department of Fish and Wildlife

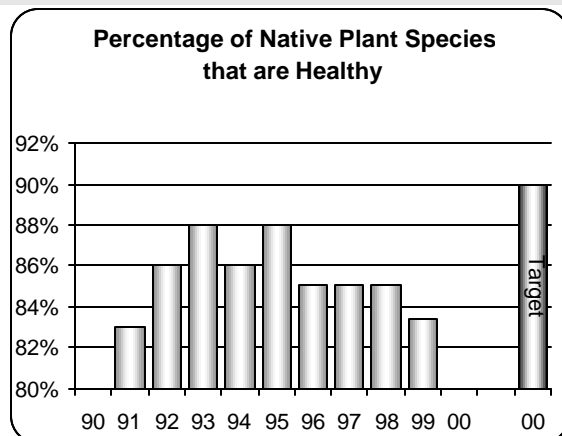
88

Native Plant Species
Percentage of native plant species that are healthy.

Grade
F

Fewer Plant Species are Healthy
This is indicator of Oregon's plant biodiversity and addresses the extent to which Oregon's natural habitats can sustain its 3,370 native plants. Biodiversity allows an ecosystem to better regenerate after a disturbance, resist invasion by exotic species, reduce erosion, purify water and ameliorate the climate. Biological diversity also supports natural resource industries that produce food, fiber, fuel, building materials, and pharmaceuticals.

Data show that in 1999, the percentage of native plant species that are healthy fell to just over 83%, down significantly from the decade high of 88% in 1993 and 1995 and eight percentage points shy of the 2000 target.



Source: Oregon Natural Heritage Program

89
(New)

Nuisance Invasive Species

Number of nuisance invasive species established in Oregon.

Grade
N/A

Nuisance Species Slowly Encroaching

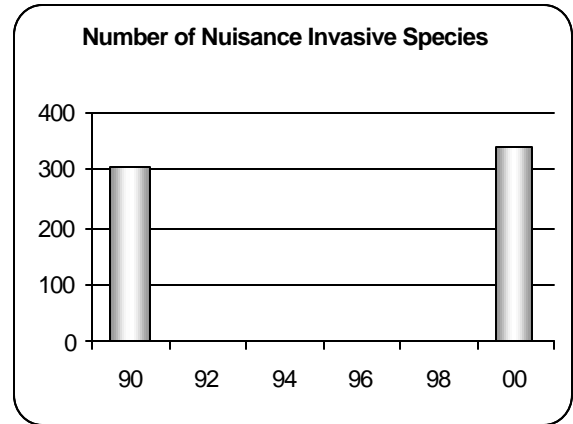
This benchmark counts all species identified as a nuisance. These are invasive organisms that pose a threat to native plants and animals across our landscapes, wetlands and estuaries. They choke out native species, introduce diseases, or may be deadly to native animals or livestock. In 1990, 305 nuisance species were established in the state. By 2000, that number had risen to 341.

Aquatic nuisance species such as hydrilla and mitten crab are often introduced by boaters, who transport vessels covered with algae and organic material into new waters.* A non-aquatic example is English ivy, which has just been declared a noxious weed by the State Weed Board.**

* www.osmb.state.or.us/ANS/ANSHome.html

**Brinckman, J. "Creepy strangler climbs Oregon's least wanted list. *The Oregonian*, 2/28/01.

Source: Oregon Department of Agriculture



90

State Park Acreage

Acres of state-owned parks per 1,000 Oregonians.

Grade

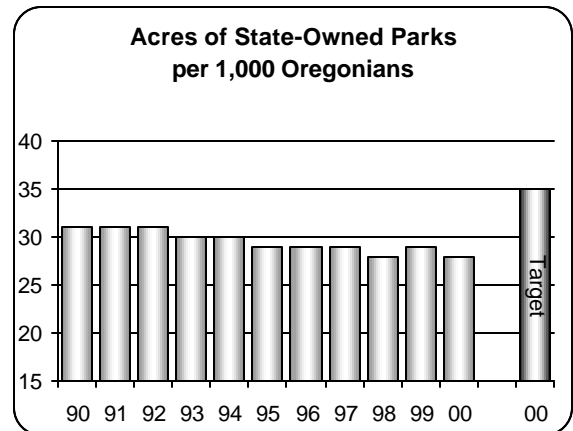
F

Population Growth Outpaces Park Expansion

This benchmark focuses on whether state park acreage is keeping up with Oregon's population growth. Park officials point out that this benchmark does not address important issues such as the state of repair of park buildings, how heavily parks are used, their success in protection "special places" and their contribution to local economies.

To maintain the status quo, the state needs to acquire more than 500 acres per year, given current population estimates. Depending on the degree to which the proposed purchases have recreational, natural, scenic and historic value—that price tag would be between \$5 and \$45 million dollars annually, according to park officials.

The number of state-owned park acres per 1000 Oregonians decreased from 31 in 1990 to about 28 in 2000.



Source: Oregon Department of Parks and Recreation