



Oceans for Everyone

A Dialogue on Seattle, the Sound and the Seas in the 21st Century

Sponsored by the
AAAS Center for Public Engagement
with Science and Technology



February 15, 2004

Prepared by
 PUBLIC AGENDA

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Seattle, the Sound and the Seas

Seattle has always depended on the sea. Even before the city was founded in the 1850s, the Indian tribes around Puget Sound lived off the water so much that salmon were characters in their folklore. Even as the airplane and the computer have reshaped the local economy, the Sound has remained a key part of local life. So the ocean has given a great deal to Seattle. Now many wonder whether the region has given too many of the wrong things back.

The State of the Sound and Oceans Today

Decades of environmental abuse are taking their toll on Puget Sound and the surrounding oceans. According to recent scientific studies:

- The population of large predatory fish in the oceans overall has been going down in recent years by as much as 90% in some instances. In Puget Sound specifically, Pacific cod is down by 92% since 1980, and now the most common sea creature in the Sound is a scavenger called the “ratfish.”
- Rockfish in the Sound are also declining at an alarming rate, with spawning potential in 2000 down approximately 90% from levels recorded between 1970-2000, while the population of certain marine bird species in Puget Sound has also dropped by 50% or more over the past 20 years. Chinook salmon in the Sound and summer chum salmon in Hood Canal are listed as “threatened” under the Endangered Species Act.
- Marine creatures in the Sound often have enlarged livers, DNA damage, abnormal sexual organs and eggs, fin erosion, and other symptoms.

Fortunately, not all the news is bad. For example, in recent years the Sound has seen:

- Fewer and smaller major oil spills.
- A substantial increase in the population of harbor seals and the return of wild Coho salmon in small but increasing numbers.
- A substantial reduction in many of the old sources of industrial pollution through regulation—even if old deposits of chemicals like PCBs continue to contaminate the sound and threaten its wildlife.

Sources of Environmental Stress

Where do threats to the Sound and oceans come from? The seas are so vast it’s hard to imagine human activities putting much of a dent in them. Even Puget Sound itself is huge—2,800 square miles with an average depth of 450 feet; home to 220 fish species, 100 sea birds and 26 marine mammals, including orca whales. In the continental United States, only the Chesapeake Bay estuary is larger.

The problem is that the human population that lives and works around the Sound is also huge. Nearly 4 million people live in the Puget Sound basin, and the population is expected to grow to 5 million by 2020. The area is the nation's second-largest container port and the Navy has operated in the Sound for generations. Commercial sales of shellfish account for more than \$100 million annually. Even weekend clammers who harvest shellfish just for fun (and for good eats) take nearly 2 million pounds of clams and oysters annually, and hundreds of thousands of pleasure boats use the sound throughout the year. All that activity is a vibrant part of local life – but it also comes at an environmental cost.

These sorts of environmental threats can best be thought of as coming from two kinds of sources, according to environmental scientists. One is from major, specific sources, such as an inadequate sewer plant overflowing or a factory without proper pollution controls dumping into a river. The other is the accumulated runoff of thousands or millions of people doing ordinary things. If your car leaves an oil puddle in the parking lot, which then gets washed into the sewer by the next rain, that's runoff pollution. And thousands of oil patches start to add up. The more people there are, the more oil patches there will be, the more storm sewers will be overloaded, and the more litter there will be to wash into the Sound.

The Washington state Department of Ecology, the Puget Sound Action Team, and many environmental groups say its runoff pollution that's the biggest problem these days. But that doesn't mean big polluters don't continue to play a major role as well. In a 2002 report, the Seattle Post-Intelligencer found 424 businesses and government agencies had violated water pollution laws since 1999. Ten of those entities had more than 70 violations, but only two of them had been fined, the newspaper reported.

And pollution isn't the only human activity that undermines marine life. Simple over-fishing is believed to be the most likely reason for the decline in the tasty and long-lived rockfish. Back in the 1970s, the average recreational fisher would catch at least one rockfish per trip; now it usually takes two or three trips to catch one.

Searching for Solutions

The question becomes, what can and should we do about the state of the Sound and the oceans? How should we address these issues? And how can science help us do this?

Science is clearly vital to understanding these sorts of problems and their potential solutions. Science, however, cannot solve all our problems by itself—it takes regular citizens, along with policymakers, public institutions and businesses, to create real change. What science can do is help us confront critical decisions more clearly, and inform our decisions.

In today's discussion, we will explore the problems facing the Sound and how citizens can work together with scientists and policymakers to address them. To help the discussion get going, we have suggested three different approaches to addressing the challenges facing Seattle, the Sound and the Seas in the 21st Century. Which do you think makes the most sense, and why? And how can science help you decide?

Approach One

Change How Seattle's Citizens and Businesses Use the Oceans

In this view, the way we live and work has created serious threats to Puget Sound and the oceans on which we depend. These waterways can only absorb so much pollution and over-fishing before irreparable damage is done. We've got to go to the cause of these problems, and that means changing the ways residents and businesses use—and too often, abuse—the oceans.

Therefore, through education where possible, and government regulation where necessary, we need to do a better job of keeping residents and businesses from polluting the Sound and oceans, and from over-fishing and otherwise damaging and depleting our waterways.

Therefore, we should do things like:

- Educate citizens about the importance of recycling, maintaining their septic systems, and which fish to avoid eating so that the stock stays healthy.
- More aggressively monitor, regulate and fine businesses that pollute the waters or overfish them, and create protected coastal areas to keep them clean and allow them to recover from past abuses.
- Enact zoning and housing regulations that will slow population growth and the over-development of coastal regions.

How can science inform this choice?

One way is by investigating the greatest sources of pollution and the effects of over-fishing, thus pinpointing the problems we need to address.

Those who like this approach often say:

"Stopping pollution at its source by changing the ways in which people and businesses behave, and reducing over-fishing, stops the problem at its source."

Those who do not like this approach often say:

"This approach overly restricts individuals and businesses, making Seattle a less appealing place to live."

Approach Two

Invest in Technologies and Infrastructure to Solve Problems Facing the Waterways

Rather than trying to micro-manage the ways in which people live and work in our region, a better approach is to invest in the technologies and infrastructure that are needed to keep our waterways clean and healthy despite our growing population.

For example, our septic treatment plants are too old and too few for today's Seattle. And we haven't kept up with the best and newest technologies to filter out pollutants. Even so, if it weren't for the technological and infrastructure investments we've made in the past, the pollution levels in the Sound and oceans would be unimaginably greater. We need to continue these investments today.

Of course, no one is advocating blindly throwing money at the problem. Investments like these need to be carefully targeted so they'll have a significant impact. Moreover, careful investments in technology and infrastructure will help the economy by creating new jobs to put them in place, as well as by keeping Seattle resident- and business-friendly.

Therefore, we should do things like:

- Upgrade old septic treatment facilities and build new ones to handle the increasing population.
- Give businesses tax breaks and other incentives to invest in new technologies that minimize pollution.
- Build more public transportation to decrease the auto pollution that affects our waters as well as our air.

How can science inform this choice?

One way is by helping us identify and develop the technologies that will have the greatest impact on reducing pollution.

Those who like this approach often say:

"By investing in technology and infrastructure, we can keep the Sound and Oceans healthy without excessively restricting individuals and businesses."

Those who do not like this approach often say:

"Why spend all this money to clean up the problem, when the responsible thing to do is to stop creating it in the first place?"

Approach Three

Accept Some Environmental Stress so that Seattle can Remain a True Port City

Sure we need to curb the most excessive sources of pollution by individuals and businesses. And if they will work and we can afford them, we should invest in some technologies to help keep the Sound and oceans cleaner. But if we over-regulate or divert too much of our budget, we risk losing something essential. We will lose our ability to support what Seattle has always been—a thriving port city.

The point we have to remember is that port cities always provide a measure of stress to the natural environment, and at least some of this is unavoidable—unless we want to change our traditional identity and economy. Besides, people need to remember how vast and resilient the oceans are. Too much of the anxiety about them is of the “sky is falling” variety. If we manage our natural resources properly, they can take the inevitable stresses that come with a being a major port city.

In sum, we should not let anxieties over the environment make us forget what Seattle is all about.

Therefore, we should do things like:

- Support local industries like fishing, cargo ships, and recreational boating that are natural to Seattle as a port city through things like tax breaks and port improvements.
- Improve marine safety by requiring higher standards and “best practices” of all who use the waterways, and upgrading Seattle’s emergency response capabilities on the Sound.
- Protect the ways in which indigenous people use the oceans, such as whaling.

How can science inform this choice?

One way is by telling us how to better manage ocean resources, so, for example, the fishing industry can survive without overly depleting fish stock.

Those who like this approach often say:

“If Seattle is to remain Seattle, it means staying actively involved with the Sound and the oceans, and accepting that some environmental stress is a natural part of life.”

Those who do not like the approach often say:

“Seattle needs a healthy natural environment, and may have to change some of its traditional practices to remain a viable port city in the 21st century.”

Choicework in Brief: Options to Consider

Approach One Change How Seattle's Citizens and Businesses Use the Oceans

What should we do?

Through education & regulation change behaviors and practices.

- Educate citizens
- Regulate businesses
- Enact zoning regulations to slow growth and sprawl

Science can inform this choice by:

Investigating the greatest sources of pollution and the effects of over-fishing.

Those who like this approach often say:

"Stopping pollution at its source by changing the ways in which people and businesses behave, and reducing over-fishing, stops the problem at its source."

Approach Two Invest in Technologies and Infrastructure

What should we do?

Invest in the technologies and infrastructure that are needed to keep our waterways clean and healthy despite our growing population.

- New, improved septic treatment plants
- Incentives for businesses to use new technologies to curb pollutants
- Expand public transportation

Science can inform this choice by:

Helping to identify and develop the technologies that will have the greatest impact on reducing pollution.

Those who like this approach often say:

"By investing in technology and infrastructure, we can keep the Sound and Oceans healthy without excessively restricting individuals and businesses."

Approach Three Accept Some Environmental Stress so that Seattle can Remain a True Port City

What should we do?

Manage our natural resources properly, so that they can take the inevitable stresses that come with a being a major port city.

- Support local industries that use the waterways
- Improve marine access and safety for everyone
- Protect indigenous peoples' use of the waters

Science can inform this choice by:

Telling us how to better manage ocean resources.

Those who like this approach often say:

"If Seattle is to remain Seattle, it means staying actively involved with the Sound and the oceans, and accepting that some environmental stress is a natural part of life."

NOTES



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