

Puget Sound Recovery: Science, Jobs, America, Baseball and Apple Pie

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Good morning. I'd like to thank Senator Ranker for inviting me to speak today and more importantly, I'd like to thank you all of you for serving on the Senate Natural Resource & Marine Waters Committee, which I think is one of the most important committees in the Senate. Gerry O'Keefe just said this is not the ways and means committee, but when you get right down to it, Natural Resources really are the foundation of our economy. Whether its good top soil for farming, clean water for drinking or raising shellfish, minerals, timber or any other natural resource we are lucky to have in this State, these are the foundation of Washington's economy.

I joke here a little with my title today, but my goal is to tell you a little about the program I work for and to show you that Puget Sound's recovery is critical for every person in Washington, even for those of you with constituencies very far from the marine waters like Senator Morton. People who enjoy the outdoors are often called huggers are accused of caring more about trees than people, but in these very difficult and unprecedented economic times, we need dispel that myth and remember that our natural resources translate directly into money for Washington state.



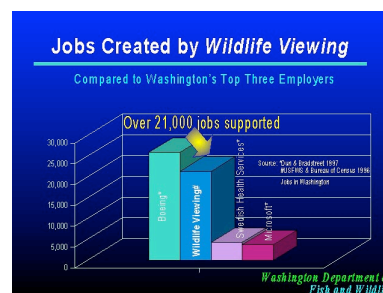
Senator Stevens asked for some dollar figures about Puget Sound so here they are. Let's start off with one of the icons of the Pacific Northwest, the killer whale. In 2001 Erich Hoyt assessed the value of the overall whale-watching industry in the Salish Sea as being worth \$66.2 million annually. Interestingly, In

Washington, whale watch visitors on large boat trips were about 30% in state, 60% from other US states, and 10% international. The data are not as robust, but in Hoyt's report he intimates that for small boat (kayak) trips, the percentage of out of state and foreign participants is even higher.

But let's back up and talk about watchable wildlife in general. These are Steller's sea lions that each weigh almost 2000 pounds and are about the size of a grizzly bear and they are around in the winter for people to watch when killer whales usually are not. In 2001, over 47% of Washington's residents participated in wildlife watching. In doing so, Washington residents spent \$979 million resulting in a total economic output of \$1.78 billion, generating and or maintaining nearly 22,000 jobs. And guess where most wildlife watching occurs – in

Washington's Rural Counties. Who are these watchers of wildlife? People call them "urban naturalists." Like this Committee they are evenly split between male and female. Most of them, 80%, are people who live in urban areas and travel to rural areas. They are well-educated people with 62% having some college education, they are at the height of their career and on average in 2001 were making a professional family wage, often with kids out of the house and their mortgage paid! These are the people who have expendable income and they are taking that money to Washington's rural counties to spend it watching wildlife.

I know I shouldn't show graphs but I'm a scientist, I can't help it. I want to re-iterate here the number of jobs produced by watchable wildlife. In this graph you can see that watchable wildlife produces over 21,000 jobs in Washington, just under Boeing and way dwarfing Microsoft as apparent in this WDFW slide.



And its not just big mammals that interest people.

These are harlequin ducks, the drake on the left and hen on the right. The Salish Sea has 172 species of birds that depend on the marine ecosystems and bird watching is one of the most popular wildlife viewing activities for Washingtonians, who have the fourth-highest participation rate in the country. 36% of Washington residents regularly participate in bird watching activities. As a side note, only 16% fish recreationally.



And it's not just about what you can see on the surface! This is a white-lined nudibranch, which is a beautiful way to describe what amounts to be nothing more than a sea slug. We have over 3000 invertebrates in our marine waters and it is the amazing creatures like these that bring people from all over the world to Puget Sound to SCUBA dive. The Washington SCUBA alliance reports that more than 15,000 divers are certified to dive here yearly in the Pacific Northwest. We have what is called the world's premier cold water diving supporting more than 1,000 dive related businesses exist in the state.

But remember these populations of Urban Naturalists and SCUBA divers are hard to see. Its not like going to a Seahawks game at QWEST field where you can count the gate receipts and add on the percentage of people buying \$8 beers and \$15 nachos. That's easy and that's what makes people think, hey, we DO need to invest in a new stadium. You don't see people watching wildlife because they are out in the woods (usually trying to be quiet) or under the water. But they are there. SCUBA divers with their \$3000 in gear and bird watchers with their \$1000 binoculars are under water or out in the woods watching birds. Investing in Puget Sound is just

as important as investing in some other infrastructure that people spend money on like a new stadium. Remember \$2 billion a year and 21,000 Washington jobs from watchable wildlife.

But also remember the economics of a healthy Puget Sound are not just all about watching wildlife. Washington is one of the top commercial shellfish growing states in the country. This is a \$97 million dollar a year business. And what happens when 30% of our commercial shellfish beds are closed due to contamination from feces? That's about \$30 million dollars lost and who knows how many jobs. And what is the impact on human health? When I took this picture in south sound there were a lot of non-English speaking citizens out harvesting shellfish on the beach just beyond this sign. In British Columbia they've started making these signs multi-lingual and including warnings in Lao, Chinese, Spanish and in other languages used by non-English speaking residents. What is the cost of people getting sick from eating unhealthy shellfish in the region – the man-hours lost at work, the unpaid bills at emergency rooms? Nobody knows but I can assure you it is taxing our health care system and our economy.



So a healthy Puget Sound means jobs and income. When we lose that healthy system or fail to invest in improving its health that means loss of jobs and income. And, like it or not, we are losing jobs and money because of a faltering ecosystem. Senator Fraser asked how Puget Sound was doing and what were the trends. Gerry O'Keefe and the Puget Sound Partnership will get you actual numbers, but I can tell you that many things are not doing well. Healthy fish populations bring you this – tribal, commercial and recreational fishing. While this used to be a common sight in Puget Sound its rare now. I specifically went out during a salmon opening to try and get this picture. Lose those fish and you find yourself fishing down the food chain. These are California sea cucumbers being harvested. In Washington State we harvest almost 1 million pounds of sea cucumbers annually. Fishing down the food chain is a sign that resources once considered abundant and everlasting are disappearing.



But is not just about the loss of harvested species. We are losing amazing species like these Western Grebes, which you see here conducting their spectacular rushing ceremony. Western Grebes have declined over 95% and we don't know why. This is a dead killer whale, CA 189 that stranded on Dungeness Spit. When we necropsied this animal we found DDT and PCB concentrations ten times higher than those we know cause sub-lethal effects in both terrestrial and marine mammals. It reminds us that we are now seeing the legacy of years and years of dumping chemicals in our ocean. Now this is not good for the \$66 million whale watching

industry and it's also not good for the health of the citizens of Washington. We eat salmon just like killer whales do.

So we want a healthy Puget Sound, how do we get there? Just as Gerry O'Keefe and Chris Townsend described to you, we are fortunate to have the Puget Sound Partnership. And that Partnership, in conjunction with all of the other brainpower, knowledge, passion and other groups we have in this state is the answer. If we are going to design a healthy Puget Sound, we need to base it on a solid three-tiered approach:

1. Good science
2. Using that good science to educate the population, garner support and let them know what we need to do
3. And use that political support to make scientifically-based policy and management decisions



The program I work for is one of the organizations supporting the recovery of Puget Sound. I am on the Partnership's Science Panel but I also have a day job with the SeaDoc Society. SeaDoc has been working on designing a healthy Puget Sound and Salish Sea since 2000. We are a program of the Veterinary School at UC Davis. A private donor came to the Vet School in 2000. They were passionate about the marine waters of Washington and British Columbia and liked what we had done in California and invited us to come up and work on science needed here. The Dean of the Vet School said hey, we have people working in Africa, there's no reason why we can't work in Washington and British Columbia. These citizens made a \$1.5 million donation and we've been working here ever since. We now have an endowed position for a full-time translational scientist and a staff of 4 people. We've funded million dollars of scientific research. This is funding from private citizens that then funds regional scientists at UW and at other academic institutions and at state agencies like WDOE and WDFW. SeaDoc is a real private – public partnership where the caring public reach into their pockets to support what is important to them – Puget Sound.

As I said, we are a science-based program. We don't have any lawyers on staff and the only thing we advocate for is good science. We raise private money to fund highly targeted research that asks specific questions. We then use the results to educate people and help improve management and policy. We work on everything from killer whales to abalone. Let me give you a few examples of our work.

This is a male adult surf scoter. Scoters are long-lived ducks that winter on Puget Sound. Over the last 25 years their populations have dropped by 50% representing the largest loss of marine birds in Puget Sound. In 2006 we funded a study to see if continued hunting was impacting the



population. This was a grant to WDFW to analyze data they had collected but didn't have the manpower or the funding to analyze. Data they needed to make a better decision on management. And guess what, it showed that in at least 4 Washington Counties hunting was not sustainable. This doesn't mean that hunting was the cause for this massive decline, but it did mean that hunting was going to finish off the remaining birds because the populations had dropped so much they couldn't support the hunting pressure. These results were presented to the Fish and Wildlife Commission and just last year, hunting limits were cut in half and WDFW put in place a safety net so if the populations continues to drop below 55,000 birds, all hunting will cease. This scientifically-based decision leaves birds to hunt, (and remember that hunting generates about 6,800 jobs in Washington annually), while protecting the long term health of the population by keeping people from hunting too much. It's all scientifically based and very reasonable.



In addition to basic research, we also work to convene groups to solve difficult issues. The Exxon Valdez oil spill cause unprecedented mortality in 2 groups of killer whales in Prince William Sound and will likely be the cause of the extinction of one of those pods. Such an event would be catastrophic for our endangered killer whales, the southern residents. A few years ago, thanks to NOAA support, we brought together 40 scientists from the US and Canada to create a plan to keep killer whales away from oil spills. This plan that is now a part of the Northwest Area Contingency Plan for oil spills.

Abalone are beautiful marine snails that provided food and shells for trading for local tribes since the beginning of time, only to be fished out more recently by poachers and poor management. They are now functionally extinct, meaning there are so few they can't find a mate. When the state was developing a recovery plan for abalone, SeaDoc funded some key scientific studies that created the backbone of the restoration program. We funded a study to figure out the genetics so the hatchery production would be right. We found there was a cryptic sub-species, which was important to learn so we didn't accidentally mix these two species when rearing abalone in hatcheries. We also funded an outplanting study so we now know what size abalone will best survive. These findings are being used by biologists who are now rearing them in hatcheries and releasing them in the wild. This small investment by SeaDoc helped guarantee a scientifically-based recovery program. The recovery program is now on the chopping block at WDFW, but that's another story we can talk about later. I hope the recovery program doesn't get cut because it is my dream that my children will one day be able to dive for abalone!



Derelict nets are those that are lost by fisherman. They persist underwater and continue to fish and trap and kill invertebrates like Dungeness crabs, fish like salmon, diving birds and marine mammals. The Northwest Straits Commission (NWSC) has been removing Derelict gear in Puget Sound for almost a decade. Last year they received nearly \$5 million in economic stimulus money.



This money provided jobs for nearly 35 people, hardworking people, fishermen and others, some of whom were in danger of losing their houses. The NWSC has removed thousands of nets and saved the lives of thousands and thousands of animals for decades to come. The SeaDoc Society partnered with the NWSC to analyze data they collected how long things persist in a net. You can count what you pull up in a net, but really, how long does it stay in the net and are you just seeing a snapshot of what that net has

caught over its lifetime? That's actually the case. Animals caught in the net usually only stay in the net for less than 10 days. SeaDoc developed a model to back-calculate what a net would catch and kill over time. When you pull a net as this one, you only see what it has caught over the last few weeks. With our model you can calculate what it has killed over the lifetime that net has been lost.

And guess what? It pays to remove nets. We learned that a net removal costs \$1,358, but annually each net is catching and killing an average of \$1,966 in Dungeness crab alone. That doesn't even count the salmon, lingcod or the birds and mammals. That's \$1,966 in Dungeness crab that commercial fishers can harvest and sell. That's what we call an ecologically and economically based investment in the health of Puget Sound and in the health of Washington State's economy. Jobs and money spent that returns itself in the first year and keeps on giving there after.

I've put a wildlife post about this in your package. We send these out every few months detailing a project. This is just one of the many ways we try to educate people as well as to let people know where their money is going. I've added you all to the list to receive them – they're free.

So with good science, we can educate people and create good policy and design a healthy Puget Sound. It is not a question of either-or. We can have both a healthy Puget Sound and a healthy economy. We just need to keep it as a priority and despite the difficult economic times, now is the time to do that.



Let me remind you of an example of good science, priority setting, economic value and success. This is a picture of Mercury astronaut John H. Glenn, Jr., a Senator just like all of you. He's suited in full Mercury suit. His 1962 flight in the Mercury Atlas 6 spacecraft marked America's first manned Earth-orbiting space flight. The cold war with the Soviet Union was at its height. That same year, in September during a speech given at Rice University, President Kennedy made it a national priority to develop a space program that would put Americans on the moon. From this modest technological starting point, Kennedy challenged NASA to send a man to the moon by the end of the decade.

As you all know, it happened before the decade was up. Seven years later, on July 20, 1969, Neil Armstrong and Buzz Aldrin set foot on the moon, fulfilling this direct goal along with the dreams of countless people through the ages. The successes of Apollo showed that given the motivation and funding to back it, not even the sky is the limit. If we can put people on the moon, we can design a healthy Puget Sound. This is not an aesthetic luxury we are talking about; it is a necessity for producing jobs and a healthy economy in Washington State



We just have to make it a priority.

Investing in the health of Puget Sound now will benefit the citizens and economy of Washington State for decades.

Thank you!



Photo credits:

J. Gaydos (killer whale), WDFW (graph), Unknown (white-lined dirona), J. Gaydos (shellfish warning), R. Gould (purse seiner), D. Rothaus (cucumber harvest), SeaDoc (logo), J. Evenson (surf scoter), S. Buckley (killer whales), NW Straits Initiative (derelict net being removed), NASA (J. Glenn and lunar landing)