

FRIENDS

of the San Juans



**Look inside
to find out how
you can get involved
in creating a healthy,
energy-efficient and
more sustainable
San Juan County!**

Summer 2014

FRIENDS of the San Juans 35th Anniversary Events

June 21, 2014 - 4:30 to sunset (free)

Lime Kiln Upland Hike and Orca Sing

Did you know that FRIENDS helped protect the property surrounding Lime Kiln Point from the development of 100 condominiums in 1979? Join us before Orca Sing and learn more about the history of this special place while we explore the upland trails with a naturalist. Then enjoy the Orca Sing festivities at 6. Remember to bring your picnic dinner!

June 29, 2014 - 1:30 to 3:30 (free)

Barlow Bay Beach Restoration Celebration on Lopez Island

Join our Executive Director and Board President to celebrate 19 years of community efforts to protect the bay and recent restoration efforts that benefit salmon, forage fish, eelgrass and clean water.

August 21, 2014

3:30 to 5:00 hike (free)

5:00 to 6:30 reception (\$35 adults, \$5 kids)

Annual Meeting on Orcas Island

Did you know that FRIENDS provided a density analysis that reduced the sale price of Turtleback Mountain? Join us for a naturalist-led hike up Turtleback and then come to a reception at Red Rabbit Farm to celebrate our 35th Anniversary.

September 4, 2014

Work party on Sucia Island

Come learn about the geology and nearshore habitats of Sucia Island and help us restore a surf smelt spawning beach. Boats will depart in the morning for a 3-hour workday. Reserve your spot today!

For more information and to RSVP, contact Julie Hanks at 360.378.2319 or julie@sanjuans.org



Photo: Mark Gardner



Photo: Mark Gardner



Photo: Suzana Roach - Orcas Island Photos

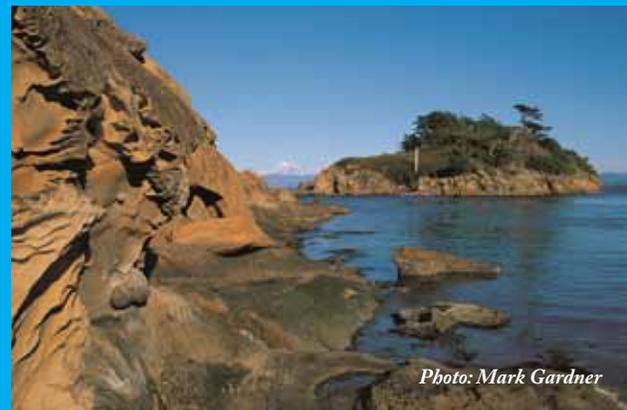


Photo: Mark Gardner

Come and play in places you helped protect & restore!

The Great Energy Challenge of the San Juan Islands

This is a pivotal time to make positive changes to improve our climate and I'd like you to join the growing, local trend to reduce fossil fuel use. Community supported agriculture is growing throughout the islands, more electric cars are on the roads and our ferries are running on bio-diesel blends. People are also increasingly commuting by bike, more homes and schools are powered by solar panels, and rebates for energy efficient upgrades are making conservation more attractive.

In addition to reducing greenhouse gases, all of these actions improve our air quality and health, save us money, and contribute to a more sustainable community. On page 3, guest writer Chom Greacen explores local energy efficiency opportunities for schools, homes and businesses. You can also read on page 9 & 10 about steps some in San Juan County are taking to prepare for rising seas. And throughout this newsletter, we celebrate islanders who are lightening their carbon footprint.

No matter how much we reduce our fossil fuel use locally, the strong demand to transport coal and tar sands oil through our waters threatens our home. The San Juans

are in the middle of the Pacific Northwest's busiest shipping corridors and the threat of a major oil spill is real. We all need to voice our concerns to state and federal decision makers. You can read more about what you can do on pages 7 & 8.

The good news is that grassroots efforts are making a difference in both energy efficiency and the fossil fuel shipping debate and this newsletter will tell you how.

I look forward to discussing these and other issues with you at one of our summer events.



Stephanie Buffum Field
Executive Director

Orcas Montessori School

With support from the Bonneville Environmental Foundation, OPALCO, Community Energy Challenge and private donors, the Orcas Montessori School installed a 9.2 kw photovoltaic solar system and efficient heating systems and lighting. School Director, Teresa Chocano, notes that "in addition to greatly improving the efficiency of our facility, participation in the Solar4RSchools Program has stimulated interest in science and helped the children discover the responsibilities and joys of the community they help create."

Cover Photo: Orcas Montessori students celebrate their solar power improvements!



Islanders Think Globally,

A legacy of past decisions has led to our society's current level of fossil fuel dependency. Those historical choices, whether for profit or convenience, have shaped and constrained our options and our future. It will take creative imagination, hard work, and a redefinition of "progress" for us to climb out of the deep fossil fuel hole that we find ourselves in. The obvious first step is to not dig any deeper and say NO to proposed fossil fuel export terminals and say YES to clean local energy sources. Many individuals and groups are leading the way and taking steps toward a healthier energy future. This article highlights some of the positive changes that are unfolding in San Juan County.

Our energy landscape is changing: the foundational advantage behind OPALCO's success thus far was the cheap, abundant hydropower provided by Bonneville

Power Administration (BPA). But this foundation is eroding. BPA's rates are rising, over 8% last year and likely more in the future. Legacy hydro is now limited and likely dwindling due to declining snowpack induced by climate change. This means that to meet the growing need, OPALCO will need to purchase more energy (much of it fossil fuel-based at this time) from the volatile electricity market at much higher prices, driving up collective rates for all.

OPALCO recognizes that the cheapest energy source is energy not consumed. Efficiency measures such as plugging leaks, insulating homes and installing heat pumps are examples of very cost-effective investments that save energy, lower electricity bills and displace the need for polluting coal-fired power generation.

OPALCO offers several opportunities for its members to save energy and money, like SmartHub and SnapShot. SmartHub is an energy consumption monitoring tool to help you track and understand your electricity usage. SnapShot provides a professional subsidized energy assessment. For just \$25, a local certified Building Performance Analyst will assess your home and determine where you can save the most energy and money, and also improve the health and comfort of your home. Where energy retrofits or appliance upgrades are required, OPALCO also offers rebates through BPA's Energy Efficiency Program, for insulation, windows, air sealing, duct sealing, heat pumps and appliances like refrigerators, freezers and water heaters.

Cost effective upgrades of your home or appliances may require some initial capital investments but do pay back handsomely in the long run. Recognizing the financial benefits and financing challenges of efficiency upgrades, Islanders' Bank, has a standing offer of a "Get-Connected" loan program with fixed rates of 4.5%-5% interest. The program covers loans for energy efficiency measures and renewable energy installations. For qualified low-income households, the



Janet Alderton, Orcas Island

"Our 5 kilowatt photovoltaic array came online at the end of March. I am very happy to be harvesting this energy from our sun instead of burning fossil fuel. The system will have paid for itself after ten years."

Act Locally

Opportunity Council also offers subsidized weatherization to improve energy efficiency and comfort of homes.

On the supply side, OPALCO's Member-Owned Renewable Energy (MORE) program adds voluntary contributions from OPALCO members to a green energy fund that decreases the cost of producing clean energy by other members using solar, wind, micro-hydro or other small-scale renewable resource. State and federal governments provide additional incentives and tax credits. Currently, over 130 OPALCO members are generating local renewable energy. The combined production, though currently small at about 0.27% of OPALCO's energy mix, is slowly growing. Another exciting development is community solar, a program that allows members to invest in a share of a community solar project located in a sunny spot.

The vibrant and growing local food movement is one example that not only builds our local economy and a healthier population, but also helps reduce fossil fuel consumption. According to the University of Michigan's Center for Sustainable Agriculture, an average of seven calories of fossil fuel is burned for every calorie of food we eat in the U.S. This means growing, processing, and delivering the food consumed by a family of four requires the equivalent of 930 gallons of gasoline per year. Industrial and processed food takes even more energy; grain-fed beef for instance, requires thirty-five calories for every calorie of steak and burger produced. There is often a long journey between farm and fork. Oil fuels that journey. Processed food travels an average of 1,300 miles. Eating fresh, local food is thus a delicious, wholesome way to curb fossil fuel dependency and embrace a greener energy future.

Similarly, as we source materials and production locally, we can chip away at the significant fossil fuel expended on transportation and ferry infrastructure.

Currently, tons of yard waste is burnt in the county, sending the carbon and pollution skyward. At the same time, islanders truck compost and topsoil from the mainland to compensate for our carbon-poor island soils. Thanks to a new facility

Food and Schools

School districts in San Juan County are leading the way with healthy, organic and local food programs. Organic farming requires significantly less energy and sourcing food locally saves the energy that would otherwise be used to transport that food to our plates.

L.I.F.E Garden Program (Lopez Island Farm Education)

"By observing the interaction of sun, soil, water, seed, plants and animals, students gain greater understanding of the interconnected systems of the natural world upon which human life depends," said Michele Heller, Co-founder of L.I.F.E.

Orcas Island Farm to Cafeteria Program

"Connecting kids with food and farms is what makes it all work and nurtures healthy kids," said Madie Murray, the F2C Committee Chair, "It's a win-win all the way around... involving them in how it's grown, and teaching them what good food is, why it's good for them, how to cook it and enjoy everything about it."

San Juan Island School District's Food for Thought Program

"The Community Dinners showcase the skills of our students and encourage all facets of our island population to come together and enjoy a fresh, local meal prepared by our school district's unique Food for Thought Program" said Liz Varvaro, San Juan School District's Food Service Director.



*LIFE Garden Program.
Photo by Robert Harrison*



Orcas Island Farm to Cafeteria Program



**Rick Strachan,
Lopez Island**

“Generating more electricity from wind and solar than I can use, is to me, a way of giving back to the community.”

at Midnight’s Farm on Lopez, we can turn yard and agricultural wastes into compost right here. The operation is an example of closing the fertility and biomass transportation loop in our county. It would be fantastic to have one of these on each island.

These are beginning steps, but more is needed given what we know about the severity of the climate risks. Despite efforts to promote energy efficiency and conservation, electricity consumption is still increasing, pushing our collective power bills higher. OPALCO will soon run

out of MORE funds for new projects because voluntary contributions cannot keep pace with the rate that islanders are installing alternative energy sources. Additional members are needed to sign up to buy “green blocks” to contribute to the fund or the membership will need to endorse the move to shift from voluntary contributions to one in which everyone helps support to make local energy production happen. We, the citizens of the San Juan County, need a more systematic roadmap to a green economy and increased energy independence, as well as a commitment to invest resources in our collective green future. Perhaps it is time for a county-wide energy plan, a rate-based support for energy conservation and renewable energy program, a multi-modal transportation philosophy in planning, and an energy component in the economic development plan of the County.

A conscious shift to a sustainable energy future creates great economic opportunities and employment. A 2009 study by University of California (Berkeley) found that green energy creates more jobs per unit of energy than fossil fuels, and that displacing coal and natural gas generation by investing in energy efficiency and renewable generation can create a net employment gain of up to 4 million jobs nationwide. In Washington State, coal produces 13.4% of our electricity and 15.8% of our total greenhouse gas emissions. According to the results of the Berkley study, transforming

Washington into a coal-free state by deploying energy efficiency and renewable energy not only is environmentally responsible but also may create up to eight times more jobs.

Besides a net positive employment gain, a shift toward energy efficiency



**Katie Fleming,
San Juan Island**

“When we built our house, we incorporated as many salvaged building materials as possible – from toilets, to doors, to paint, to countertops (made from old school chalk boards). We had a good time getting creative with perfectly usable and great-looking stuff that could have just ended up in the landfill.” Katie and Jesse’s kitchen island is shown here - it was made by The RE Store’s REvision Division out of entirely salvaged materials.

and renewable energy is economically sensible for both consumers and society. Implementation of energy efficiency employs many local people, stimulates the economy, and creates disposable income for households by lowering electric bills, thus multiplying local economic benefits. Our islands still have plenty of untapped solar, wind, micro-hydro and possibly tidal energy potential. Investing in more cost-effective renewable energy is thus an economic hedge against the uncertain price increases in the future. But more aggressive steps need to be taken, and policy instruments such as incentives, codes and rate designs adopted.

So how can individuals take action?

- Participate in the various programs offered by OPALCO and other organizations.
- Sign up to be a MORE member.
- Invest in a community solar project.
- Advocate for more investment in green energy.
- Lend your support to various plans and policy that move us closer to the energy future we wish to see.
- Shop and eat locally.

We also need to reinvent and re-align our actions, relationships and values. Since the Industrial Revolution 200 years ago, modern energy has enabled and shaped the “American Dream” based on “self-made” individualism and nuclear family home ownership. In the process, we may have lost sight of the interconnectedness, with each other and the natural world that sustains us. We have grown accustomed to relating to energy resources as mere commodities: “I can consume as much as I wish as long as I can pay.” This view has led us toward climate change and other environmental woes.

It will require some re-inventing of ourselves to shift away from a fossil fuel led economy. Weaving back to the concern for future generations, our love and respect for the islands and the water, we need to redefine our relationship with energy from being consumers to being energy stewards. This means that as we use energy, we remain conscious of the impacts



Shaun Hubbard, San Juan Island

“I always turn off my car engine when I’m stopped in a safe place for more than 10 seconds – not only does it make the air healthier, but idling for just 10 seconds wastes more gas than restarting the engine on modern vehicles. This makes good money sense, and good energy sense, too!”

and interconnectedness of our actions. We shop, travel, and live with that in mind. We take ownership and participate in shaping where our energy comes from, and what our energy future will look like.

This may seem like a major life change, but in fact, we are already on our way. To many of us islanders, our culture of engaged citizenship, our empowered relationship with the land as temporary stewards, and our vibrant and growing local food movement speak to the fact that the reinvention is possible and well under way. We are already making many of the changes we wish to see.

Contributed by Chom Greacen



Chom is a clean energy advocate who lives with her husband and two children on Lopez Island where their solar panels, net-zero-energy home and abundant kale plants happily harvest the sunshine.

Photo: Mitbun

Understanding the Costs of Fossil Fuel Exports

What are the true costs of consuming fossil fuel for energy? There are many ways to think about these costs. There is the dollar amount that shows up on our utility bill, or the receipt at the gas pump – easy ones to quantify. And there are the social, economic and environmental costs - like human illness from air pollution, shellfish mortality from ocean acidification, increased flooding from sea level rise, and even potential ecosystem collapse from an oil spill - these costs are much more complex to measure. Connecting all the dots and understanding the costs and consequences of energy use is vital to changing our individual and global carbon footprints.

Expanded Shipping and Refining Proposed for the Salish Sea

Global demand for energy is driving increased fossil fuel exports in our region. On both sides of the Canadian/US border, there are large proposed transport infrastructure projects for coal, crude and tar sands oil. If approved, the combination of these facilities would add 2,655 new vessel transits per year to our crowded waters, making us one of North America's busiest fossil fuel shipping corridors. According to the recently completed VTRA 2010 Final Report: Preventing Oil Spills from Large Ships and Barges in Northern Puget Sound and Strait of Juan de Fuca, proposed

projects will increase the potential oil loss* volume in Haro Strait/Boundary Pass by 375%. FRIENDS applauds this analysis of the combined cumulative impacts from these projects and advocates for the implementation of the study's findings.

American and Canadian First Nations and non-Indigenous people are standing together in new ways to protect the health of the Salish Sea, and to prevent it from becoming a global carbon corridor. Just recently, FRIENDS and other islanders were approved as "commenters" in the review process for Kinder Morgan's application to expand their pipeline to carry tar sands oil from Alberta to Burrard Inlet in Vancouver, BC.

And because existing fossil fuel shipping likely will continue in our region, FRIENDS is also working to ensure that all ships are subject to the highest safety standards and that we prepare as fully as possible for an oil

Thom Pence, San Juan Island

"I have always been conservation-oriented and took pleasure and pride in commuting to work by bicycle my entire 30-year career. Finally, I came to realize that even driving occasionally in a car getting better than 50 mpg was still adding to our climate warming and that a greater sacrifice was needed if I was serious about helping solve this global problem. So, in 2012, I got rid of my car for good."



*Accident Exposure plus Potential Accident Frequency and then Combined with an Oil Outflow Model equals Potential Oil Loss.

spill disaster.

Are We Prepared for an Oil Spill?

Oil from tar sands (diluted bitumen) is uniquely difficult to remove after a spill because it is more corrosive than other types of oil. Concerns about our region's lack of oil spill preparedness were recently confirmed in a U.S. Senate Commerce Committee hearing. Washington State Senator Maria Cantwell questioned the nominee to lead the U.S. Coast Guard (USCG), Vice Admiral Paul Zukunft, about the threat posed by increased tar sands oil tanker traffic in Pacific Northwest waterways. The USCG acknowledged that current technology is not sophisticated enough to capture a tar sands spill as it is heavier than water and settles on the ocean bottom. "Once it settles on the sea floor, our technology is lacking in that regard," said Vice Admiral Zukunft. Senator Cantwell cited a 2010 pipeline rupture that spewed 1 million gallons of tar sands oil into the Kalamazoo River in Michigan. The clean up has cost more than one billion dollars to date, and has included dredging of the contaminated river bottom.

The Salish Sea Can't Afford an Oil Spill

A major spill would have a significant impact on Washington State's economy. Washington's waters support a huge variety of fish, shellfish, seabirds, marine mammals, and plants, including a number of species protected by the Endangered Species Act, such as Southern Resident orcas and Chinook salmon.

FRIENDS thinks it is premature to permit the transport of new fossil fuel cargo through our shared waters until the following occur: 1) development of a program for evaluating and implementing the 'best available technology' and most effective tools in place to clean up oil spills; 2) a risk assessment conducted jointly by the governments of Canada and the US for shipping oil sands by tanker and barge through the Salish Sea; and 3) significantly enhanced overall oil spill preparedness by the US and Canada in the Salish Sea. Prominent NOAA biologists and oil spill researchers who have participated in Exxon, Deepwater, Kalamazoo River, and

Galveston spill concur with this position.

To raise awareness and to learn about how an oil spill will behave in our waters, FRIENDS partnered with Canada's Raincoast Conservation Foundation and Georgia Strait Alliance to launch 650 biodegradable 'drift cards' along oil tanker routes that run through the Gulf and San Juan



Bruce Robinson, a Stuart Island resident shows us where he collected the drift cards.

Islands. The cards carry a simple message: this could be oil. Their recovery locations are helping to create a series of maps showing different spill scenarios. Keep on the lookout for the 4"x 6" drift cards on beaches and shores in the Salish Sea! Visit www.salishseaspillmap.org to report a card or see where they have been found.

What can you do? Contact your state and federal representatives and ask them to improve spill prevention, equipment, and personnel needed to clean up an oil spill and spills of diluted bitumen in the islands. Visit www.sanjuan.org/safeshipping to learn more about how you can help and to sign up for our e-news updates.



Building Resilient Co

Intact coastal forests, bluffs, beaches and wetlands provide a critical first line of defense against flooding and erosion rates exaggerated by sea level rise. Recent storm events on the Eastern and Gulf Coasts have demonstrated that maintaining natural, living shoreline systems, often referred to as green infrastructure, is one of the best protections against increased rates of flooding and erosion associated with rising seas. Local residents are also taking steps to improve the resilience and adaptability of our community. Below are three examples where public and private landowners are planning, protecting, and restoring shorelines for people and fish, for today and tomorrow.

Planning

In San Juan County, significant public infrastructure, such as roads, ports, stormwater outfalls and utilities, are located in areas already vulnerable to coastal erosion and flooding. By planning ahead to decrease vulnerability to a changing climate, we can find solutions that preserve precious public funds and habitat at the same time. On Shaw Island, FRIENDS, coastal geologists, Public Works Department engineers and area property owners are researching options for repairing an outdated and failing road causeway. The road provides the only access to a small neighborhood and is located on top of a historic lagoon; it is also at risk from rising sea levels. Project partners are examining how best to improve shoreline habitat for fish and wildlife and ensure safe access for residents into the future.

"We have seen the impact of rising sea levels on the county road that serves our neighborhood, and winter high tides have already resulted in there being virtually no shoulder on one side of the road. The County is faced with scores of eroding roadways, and needs to start planning for the future. We are encouraged that through the work of FRIENDS of the San Juans, creative solutions to address both access and habitat are beginning to be explored." - Jon Christofferson, Neck Point Property Owner.

Restoration

On Brown Island, shoreline landowners Mariluz Villa and Tom Reynolds have spearheaded efforts in their neighborhood to remove an unnecessary rock bulkhead and restore the beach and bluff located in front of their home. Removal of the armoring at this site, as well as restoration of native vegetation, will reconnect a degraded sediment supply and improve habitat conditions for forage fish and juvenile salmon. It will also improve the shoreline's aesthetics and increase the amount of dry beach area available for their family to enjoy, for today and into the future.

"I truly believe that beach restoration leaves a legacy that my children and grandchildren and their children will benefit from far into the future. If every one of us cared for even a small stretch of beach, the cumulative effect would impact a huge portion of the earth, similar to the way that a ripple propagates from a small pebble dropped into a pond. The beach in front of our house connects to fish, birds and mammals (including my children), contributing to their very survival. That's the kind of legacy I want to leave." - Mariluz Villa



Jon Christofferson with daughter Lisa & granddaughter Anika

mmunities

Protection

FRIENDS and the San Juan Preservation Trust are working together with interested landowners to craft conservation easements that protect shoreline portions of multiple, adjacent properties. By protecting the coastal processes that form and maintain green infrastructure, these long-term efforts will improve our islands' adaptability to the impacts associated



*Pioneering coastal engineer and San Juan resident, Wolf Bauer.
Photo: Lowell Skoog*

with rising sea levels. This simple quote, from pioneering coastal engineer and shoreline protection advocate Wolf Bauer, explains this best... *"The sand that is on your beach today will migrate along the shore and make up your neighbors' beach tomorrow."*



Mariluz Villa's niece loves to play on her aunt's beach.

Adaptation Opportunities

While it is critical to address the larger challenge of reducing carbon emissions that lead to rising seas, local restoration and protection actions can help our shorelines adapt to changing conditions. Around the world human communities are developing their own climate adaptation approaches to avoid costly expenditures and to ensure the things they value most will still be there for future generations. Such approaches include preserving and restoring naturally-vegetated shorelines and sediment supply bluffs where possible to allow beaches to slowly migrate landward with rising sea levels.

To help inform local climate adaptation efforts, FRIENDS and Coastal Geologic Services recently completed a two-year Environmental Protection Agency-funded study that identified areas in the county most vulnerable to increasing erosion and flooding. It also identifies significant opportunities to increase our county's resiliency; FRIENDS is exploring many of these with public and private landowners. Results will help develop innovative management solutions that protect both property investments and natural systems. Reports are available at sanjuans.org/NearshoreStudies.htm.

Protecting Natural Erosion for People and Fish



Exploring the sandstone china caves on Sucia Island.

The San Juans' shorelines, like the rest of those along the Salish Sea, need erosion. Not too much. Not too little. Natural erosion feeds beaches with the gravels and sands that surf smelt and sand lance eggs stick to as the young embryos turn into fish. As tides slowly wash this smaller material from the beaches to the intertidal zone, eelgrass takes root in it and sends up its shoots to create an underwater forest that nourishes an ecosystem of Pacific herring, crabs, salmon, and numerous other critters. Back on land, trees, shrubs, and groundcovers help maintain slope stability while providing insects for the Puget Sound Chinook salmon that use the San Juans as a major migration corridor on their journey to the ocean.

At FRIENDS, we work to ensure healthy shorelines for people and fish in many different ways, including protecting and restoring natural processes such as erosion on local shorelines. Here is a summary of our recent efforts.

Legislation

In 2013, FRIENDS appealed the County's Critical Areas Ordinance ("CAO") in an effort to obtain buffer protections consistent with the Best Available Science and to close numerous loopholes that permit harmful development in shorelines, wetlands, and their buffers. The Growth Management Hearings Board agreed with FRIENDS that the CAO's narrow buffers fell below scientific recommendations and that allowing new development like utilities, agriculture, and septic systems in shorelines and wetlands would cause harm. The County is currently working to address those concerns. In addition, FRIENDS appealed the Growth Board approval of other loopholes, like the absence of habitat protections for shoreline critters, and logging and vegetation cutting in buffers. Stay tuned for decisions on those appeals, anticipated in early summer.

Advocacy

FRIENDS continues to advocate to protect surf smelt spawning beaches from unnecessary bulkheads. Bulkheads interfere with natural erosion that feeds beaches, and their construction typically requires the removal of much of the trees and shrubs on the slope that supply salmon with insects they need to survive and provide shade that cools smelt eggs. Due to such anticipated impacts, FRIENDS appealed the County's approval of two neighboring bulkheads that would have fully armored a pocket beach, separating it from the gently eroding bank. This pocket beach is a documented surf smelt spawning beach and has been designated among the 3% of San Juan County shorelines that qualify as highest priority for salmon recovery due to their- its importance for species like salmon, surf smelt, eelgrass, and Pacific herring qualifies it among the top 3% of county shorelines. At the same time, it benefits from a low erosion rate – approximately 6 inches per decade. The absence of significant erosion, combined with the site's biological richness, prompted FRIENDS' appeals. **BREAKING NEWS** – On June 2nd, the Shorelines Hearings Board validated FRIENDS' appeal by denying the first bulkhead.

Conservation

Protection of healthy habitat and the coastal processes that maintain them is the most efficient and effective way to ensure that local shorelines benefit fish, wildlife and people into the future. In partnership with the San Juan Preservation Trust, FRIENDS is connecting neighboring property owners to achieve long-term shoreline conservation goals. Interest in the program has been robust, and conservation easements are being prepared to protect some of the county's most important shorelines for salmon.

Restoration

FRIENDS is conducting feasibility and design analyses for several restoration projects that will restore natural processes in the San Juans, including two coastal wetland reconnection projects; one with Washington State Parks on Sucia Island and another with private landowners on Lopez Island. FRIENDS is also working with private property owners on Orcas and Brown Islands to restore feeder bluffs and beaches by removing unnecessary rock bulkheads.

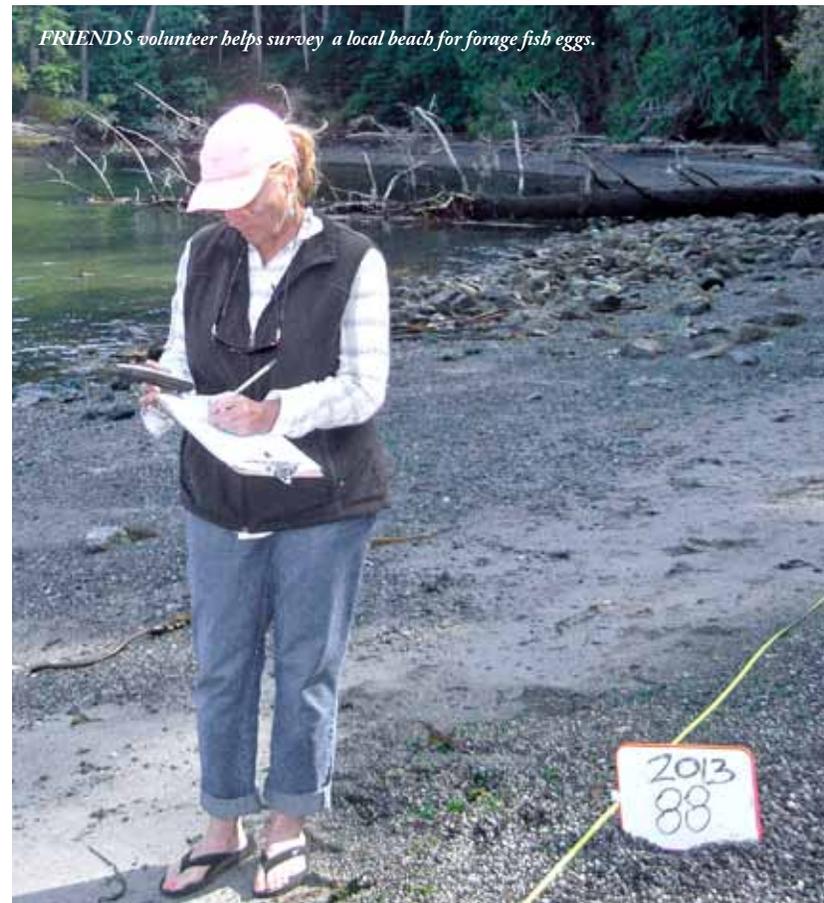
Research

In partnership with the Washington Department of Fish and Wildlife and Salish Sea Biological, FRIENDS recently completed a study of the vertical extent, or range of tidal elevations used by surf smelt for spawning. That study found that the majority of incubating surf smelt eggs are located in the upper third of the beach, with 30% of the eggs located above mean higher high water, some all the way to the toe of the bank. These findings underscore the importance of protecting spawning sites from known negative impacts of shoreline vegetation removal and hard armoring.

Habitat mapping

Over the past year, FRIENDS' staff and volunteers have surveyed 95 local beaches and found incubating surf smelt eggs at seven previously undocumented sites on Lopez, Orcas, San Juan, Stuart and Sucia Islands. These small fish play a key role in marine food webs – surf smelt eat plankton, and everything else (fish, marine mammals and seabirds) eats surf smelt. Since shoreline development can harm spawning habitat, local and state rules provide special protections for beaches that have been documented to contain forage fish eggs. FRIENDS will continue to survey for eggs over the next year at currently undocumented beaches.

FRIENDS volunteer helps survey a local beach for forage fish eggs.





Before



After

Removing Toxins from Local Waters

Nominate a Beach for Debris Removal

A regional effort to clean up Puget Sound beaches is currently underway. The Northwest Straits Commission is working in partnership with the Dept. of Ecology's Washington Conservation Corps (WCC) to clean up sites where large amounts of marine debris have accumulated. In 2013, the WCC received funding to hire recently returning military veterans. Two specialized all-veteran crews will travel the state's shoreline to remove persistent solid materials such as plastics, Styrofoam, derelict fishing gear, automotive tires, and preservative-treated wood debris. If you would like to nominate a beach for clean up, please contact Paul Argites at argites@nwstraits.org or 360-853-5387.

FRIENDS is working to remove derelict creosote-treated wood from San Juan County shorelines. Creosote, a wood preservative used for more than a century to treat telephone poles, railroad ties, piers, docks and floats, contains more than 50 known carcinogens including toxic polycyclic aromatic hydrocarbons (PAHs). When exposed to ultraviolet light or sunshine, the chemicals in creosote become more toxic and more likely to leach from the wood. These chemicals leach into water and sediments where they accumulate and impact marine habitats and species. Studies show that creosote causes high mortality in herring eggs and reduces juvenile salmonid growth and damages their immune systems. A piling that contains creosote can leach toxins throughout its lifetime.

Because of creosote's impacts to fish and human health, the Washington Department of Natural Resources (DNR) has operated a creosote removal program since 2004. FRIENDS recently partnered with DNR to identify and remove unnecessary creosote pilings from local waters and beaches. Last December, in partnership with the Tulalip Tribe and WDNR, FRIENDS removed a derelict dock and 26 creosote pilings from Lopez Island's Barlow Bay. This removal benefits the site's spawning and rearing habitat for forage fish and outmigrating juvenile salmon.

This year, over 50 local residents have contacted FRIENDS about removing additional creosote, including pilings, abandoned docks and beached creosote logs. DNR will oversee the first round of removals, planned for fall of 2014. If you have unwanted creosote on your shoreline property, please contact Tina Whitman at FRIENDS (360-378-2319 or tina@sanjuans.org) or Chris Robertson at DNR (360-854-2808 or christopher.robertson@dnr.wa.gov).

Come visit our restoration Open House at Barlow Bay, June 29, 1:30-3:30. Restoration included removal of a derelict dock, creosote pilings, and recovery of forage fish spawning beaches.

FRIENDS *News Updates*

Sharing our Project Results



The Salish Sea Conference

This May, FRIENDS presented results from many of our projects at the biennial Salish Sea Ecosystem Conference in Seattle. The conference brought together British Columbia and Washington State scientists, Tribes, resource managers, policy makers, educators and students to share recent scientific findings.

Climate Change Legal Class

This April, FRIENDS' Staff Attorney, Kyle Loring, presented Healthy Shorelines: A Legal Framework for Adapting Naturally to Rising Seas at a continuing legal education course on climate change in Seattle.

Shoreline Science Forum

Science Director, Tina Whitman, also presented results from our forage fish habitat surveys and cumulative impacts to armoring at a shoreline science forum. The workshop was sponsored by the Puget Sound Partnership, Washington State Sea Grant and Futurewise.

Legal Interns

Mike Weber... Mike was born and raised in Wichita, Kansas. He received his undergraduate degree in Geography and Natural Resources & Environmental Sciences from Kansas State University. Mike currently lives in Portland, Oregon, where he just completed his first year at Lewis & Clark Law School. He intends to specialize in Environmental Law.

Alaina Reukauf... Alaina is originally from Buffalo, NY but received her Bachelor's degree in International Studies and History from the University of Richmond. Before entering Emory School of Law last fall, she spent a year off working for BMW before travelling through southern and eastern Africa. Alaina is excited to see and explore the west coast for the first time and as an avid Free Willy fan, can't wait to see the whales.



FRIENDS of the San Juans

MISSION: To protect the land, water, sea, and livability of the San Juan Islands through science, education and advocacy.

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San Juan Island - Bill Watson
Lopez Island - San Olson, Ken Burtness & Dixie Budke
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Can just one person really make a difference?

Yes! Individual choices, repeated millions of times, matter.

We can all be part of the movement toward a healthy, energy-efficient, and more sustainable society. We hope you draw the same inspiration that we do from the articles and sustainability stories found throughout this newsletter.

As individuals, FRIENDS staff and board are dedicated to reducing our carbon footprints. Among us, there are multiple hybrid car drivers, bicycle commuters, owners of solar power systems, local food growers/purchasers, and even a builder of a new net-zero home.

As an organization, we want to do more. To kick-start our energy conservation program, FRIENDS plans to upgrade as many of our office's lights to LEDs as possible and research other ways our organization can reduce energy use.

David Bill, Lopez Island

Midnight's Farm turns yard and agricultural wastes into compost. This operation reduces transportation costs and conserves energy. It would be fantastic to have one of these on each island.



We hope you are also inspired to take action to address pollution, climate change and our community's health. As you take your own steps toward reduced fossil fuel use, please share them with us and we will post them on our Facebook page.

Thank you!

The Staff and Board of FRIENDS of the San Juans

Save the Date!

FRIENDS of the San Juans' 35th Anniversary Summer Events ...

June 21 – Lime Kiln Upland Hike and Orca Sing

June 29 - Barlow Bay Beach Celebration

August 21 - Hike up Turtleback and Annual Meeting at Red Rabbit Farm

September 4 - Work party on Sucia Island

For more information, see page 1, or contact Julie Hanks at 360.378.2319, julie@sanjuans.org

Photo: Chris Teren



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