

# FRIENDS

• *of the San Juans* •



*Protecting Critical Areas*

*Winter 2006*

# Executive Directors Report

This winter, San Juan County will begin the Critical Areas Ordinance (CAO) update process. San Juan County's existing ordinance is both out of date with current research and limited in its capacity to protect environmentally sensitive areas.

Over the next 10 months, FRIENDS will participate in the CAO process to ensure the County utilizes best available science (BAS) to protect wetlands, nearshore habitat, creeks, rivers, lakes, marine waters, landslide-prone areas, aquifer recharge zones, and flood zones. Development of a strong CAO is essential to keeping drinking water clean and available; protecting homes from floods, erosion and landslides; and preserving wetlands, fish and wildlife habitat.

FRIENDS of the San Juans will work with land managers, stakeholder groups and citizens to ensure that the CAO update includes BAS and provide long-term protection for the islands' most sensitive natural resources and habitats.

To achieve meaningful revision to the CAO, the mobilization of local citizens is required. Active participation improves the understanding of the science behind the policies and leads our community to improved regulatory and

voluntary compliance. Through community presentations, newsletter articles, outreach in local press and meetings with interested citizens, FRIENDS will help San Juan County residents participate more effectively in the public process.

This newsletter focuses on two important and timely land use issues: the upcoming Critical Areas Ordinance update process and stormwater management. You'll also read our research, law and policy updates.

Finally, a very big thank you is due to all of our members who contributed to our 2005 Annual Campaign.

And a heartfelt note of appreciation to Ralph Hahn, who began his tenure as Board President on January 1; and, kudos to outgoing Board President, Lynn Bahrych, who has so tirelessly served this community with her visionary leadership.

I appreciate all of your calls and emails. Together we are making a difference.



Stephanie Buffum Field



Friends Staff (Left to Right): Henry (Office Dog), Amy Trainer, Tina Whitman, Stephanie Buffum Field, Shannon Davis and Jana Marks.

## FRIENDS

· of the San Juans ·

### OUR MISSION

To protect the land, water, sea and livability of the San Juan Islands through science, education, law and citizen action.

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# Critical Areas Ordinance: *What It Is and Why We Should Care*

*Sixteen years ago the Washington State legislature passed the Growth Management Act (GMA), a law requiring cities and counties to create land use plans that manage development while protecting natural resources. Specific protections are required for the following critical areas: geologically hazardous areas, frequently flooded areas, critical aquifer recharge areas, wetlands, and fish and wildlife habitat.*

Article written by Carmela Alexander

San Juan County responded to this mandate by creating an Environmentally Sensitive Areas District overlay to its comprehensive plan, with regulations concerning each of the five critical areas. A few years later the legislature amended the GMA to require local jurisdictions to employ the “best available science” in land-use decision-making; that is, critical areas regulations must be formulated in light of documented research. In the absence of existing scientific data, counties must either limit development or use adaptive management, regulating the critical area and evaluating results scientifically in an ongoing “experiment” to determine the possible negative effects of development. Furthermore, the state required that anadromous fish, such as salmon, must be given “special consideration”, including the maintenance of salmon prey species.

In 2002 another amendment required counties to review comprehensive plans every seven years and revise, if necessary, in order to reassess that the ecological functions of critical areas were not being degraded by ongoing development. San Juan County is now faced with updating its ordinances to incorporate “best available science” and protection of salmon prey species.

The state does not mandate a single approach to critical areas protection. Each county or city develops its own strategies. However, critical areas must be managed in such a way that their values are preserved with “no net loss of ecological function.” Counties may protect identified critical areas and their buffer zones by non-regulatory means (conservation easements, public education, etc.) or by regulatory means (subdivision codes, clearing and grading ordinances, zoning, critical areas regulations, etc.). In order to be effective, regulation must be coupled with enforcement.

## *Deadline for San Juan County's CAO Update is Approaching Fast*

Originally San Juan County fell in the group of counties slated to review and revise their comprehensive land use plans and development regulations by Dec. 1, 2005; however, the last few years' restructuring, staff cuts, and resignations in the Community Development and Planning Department (CDPD) left the county unprepared. The state granted a one-year extension, and serious planning began in January 2006 under newly hired CDPD director Ron Henrickson and Senior Planner Elizabeth Anderson. The CDPD will draft an overall update to the Critical Areas Ordinance, perhaps tapping both expert consultants and the state's Community Trade and Economic Development Office, which offers training, facilitation, and expertise to local planners. Public input will also be sought.

Critical areas provide their benefits through a delicate balance perfected by the earth over eons. If that functioning system is destroyed, it is extremely difficult - or impossible - to recreate. Restoration is expensive and inadequate; preservation takes foresight and commitment to our own well-being and to the future of the San Juan Islands.

## *What Can You Do?*

The next ten months present a crucial opportunity for proactive measures. The county's “drop dead” date for submitting an updated Critical Areas Ordinance is December 1, 2006. With a new county government structure and a newly re-organized CDPD, informed residents will bear the brunt of oversight. Be alert and be concerned. Support regulations that recognize the irreplaceable benefits of the earth's natural processes. Comment at public hearings. Write letters to the editor. Inform neighbors. For updated information please call the FRIENDS' office, 360-378-2319.

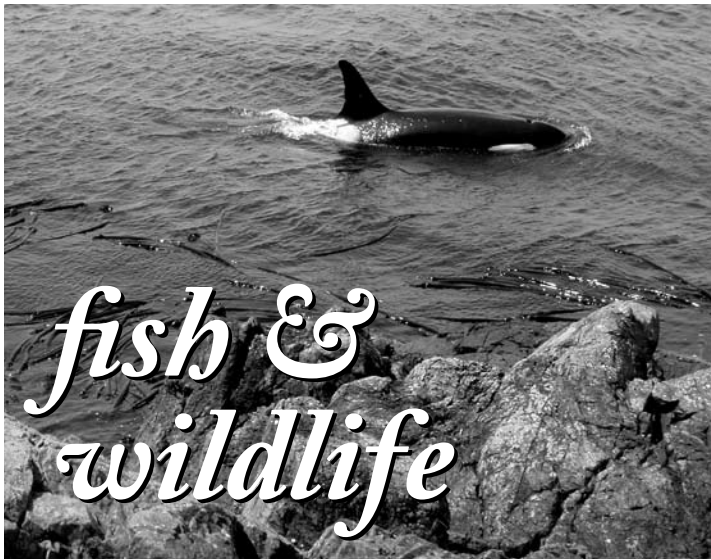


photo by Ron Keeshan

# Critical Areas (cont.)

*“To preserve our natural environment and protect the public’s health and safety,” the state of Washington has designated five types of environmentally significant critical areas: fish and wildlife habitat, wetlands, critical aquifer recharge areas, frequently flooded areas and geologically hazardous areas.*

*Critical areas fall into two overlapping categories: those that are ecologically valuable for the life-sustaining benefits they provide and those that are hazardous to human safety.*



## *Fish and Wildlife Habitat*

San Juan County’s forested uplands, beaches, and nearshore waters are a nursery and refuge for countless species. GMA guidelines require protection of the habitats of endangered species and of species of local importance.

Four years ago FRIENDS, aware of the lack of data about San Juan County’s nearshore habitat, secured grant funding for studies that would provide the groundwork for thoughtful land-use decisions. Two major studies were completed by FRIENDS in partnership with Washington Department of Fish and Wildlife, University of Washington, Department of Natural Resources, and the Marine Resources Committee. One examined the distribution of eelgrass, the underwater “forest” that has been likened to a tropical rainforest in the diversity of its denizens. Another study catalogued the spawning sites of forage fish - Pacific sand lance, surf smelt, and Pacific herring - the small

darting fish that feed Puget Sound’s endangered salmon, salmon that in turn feed the endangered Southern Resident Orcas. A third study, on kelp, is planned.



## *Wetlands*

Wetlands come in various guises - swamps, marshes, and bogs, both salt and fresh - but all perform yeoman duty as modulators of the hydrogeologic cycle. When rain pounds down, wetlands act to capture, store, and finally gently release that rainwater into aquifers and streams.

Wetlands also moderate the sometimes fierce interface between winter waves and dry land, stabilizing shorelines and protecting both wildlife habitat and human activities on land. Wetlands are ubiquitous; they can be small or large, in forest or along the shore. Currently in San Juan County wetlands are rated and regulated according to their sensitivity to disturbance, rarity, irreplaceability, and the functions and values they provide.

*Best Available Science - GMA requires local jurisdictions to employ the “best available science” in land use decision-making; that is, critical areas regulations must be formulated in light of documented research. In the absence of existing scientific data, counties must either limit development or use adaptive management, regulating critical areas.*





### *Critical Aquifer Recharge Areas*

Aquifers are water-bearing layers of rock and soil that store water underground. In San Juan County more than half the population taps these aquifers for drinking water. In order to qualify as a “critical” aquifer recharge area, the land must contribute significantly to the replenishment of groundwater or it must be highly susceptible to contamination by pollutants from the surface. Typical pollutants include petroleum products from automobiles and other machinery, fertilizers, and inadequately treated animal and human wastes.

State guidelines call for counties to evaluate the risk of contamination via several parameters. For instance, if the depth to groundwater is shallow, an aquifer is at greater risk because contaminants may not be filtered by plants and soil. Similarly, highly permeable sandy soil permits the quick infiltration of surface water, putting the aquifer at greater risk. San Juan County also faces the possibility of seawater intrusion into fresh water aquifers (see FRIENDS’ summer 2005 newsletter). Although state regulations fail to regulate seawater intrusion in the context of critical aquifer recharge areas, good planning demands that the risk of seawater contamination also be taken into account.

Doug Kelly, consulting hydrogeologist for San Juan County, is preparing a four-layer county map to delineate and characterize critical aquifer recharge areas. Each map layer will describe and score one aspect of aquifer risk: the soil permeability, the aquifer’s surficial geology (whether it is in bedrock, or not), its recharge capability, and the depth to groundwater. Scores from each map will be combined to give a susceptibility rating for each critical aquifer area.

Low Impact Development practices (see accompanying article, p. 12) benefit aquifers by retaining rainwater until it can be slowly infiltrated into the aquifer, thus filtering pollutants, bolstering drinking water resources, and forestalling seawater intrusion by increasing aquifer recharge.



### *Frequently Flooded Areas*

Streams overflow; rivers slow, broaden, and create new channels as they reach their mouths; storm waves surge over coastal areas. Flood-prone areas constitute a hazard to property and sometimes to human life. However, some frequently flooded areas also serve a valuable function as part of a natural hydrological process by which flood waters are slowed and distributed over the land allowing aquifers to be recharged.



### *Geologically hazardous areas*

Geological hazards take a variety of forms: abandoned mines that could cave in, emit noxious gases, or contaminate groundwater with poisonous metals; filled wetlands whose soils would be unstable in a seismic event; coastal bluffs and other slopes subject to landslides or erosion; or tsunami-prone lowlands and inlets. For the sake of human welfare and safety, the state requires that such areas be delineated and that development be regulated or prohibited.

# Utilizing Best Available Science in our Critical Areas Ordinance Update

By Amy Trainer, FRIENDS Legal Director

As San Juan County updates its Critical Areas Ordinance in 2006, it can take heed of the many lessons learned by other counties that have completed the update process. San Juan County must consider and substantively utilize best available science in setting habitat buffers and protection areas.

## *Shoreline Protection*

When Pierce County attempted to remove buffer protections for marine shorelines, a successful appeal to the Growth Management Hearings Board held that best available science required the shoreline buffers. Shoreline buffers are mandatory development setbacks that retain natural shoreline vegetation to protect juvenile salmon habitat and spawning grounds.

## *Water Quantity & Quality*

Jefferson County learned that it must protect its groundwater quantity and quality consistent with best available science. Goal 10 of the Growth Management Act imparted to the County the overriding responsibility to protect groundwater quality whether or not the County had officially designated seawater intrusion areas as critical aquifer recharge areas. Jefferson County had the authority and responsibility to impose some form of water conservation measures, to limit the number of new wells allowed, and to impose other measures to reduce the withdrawal of groundwater from individual wells if that withdrawal would disrupt the seawater/freshwater balance and lead to greater seawater intrusion. The exempt well allowance under Washington water law did not allow Jefferson County to avoid compliance with its mandate to protect groundwater quality and quantity under the Act.

## *Using a Valid Scientific Process*

Ferry County, in northeast Washington, chose not to adopt the Department of Fish and Wildlife's recommendations for priority habitat species or endangered, threatened or sensitive species. In an appeal to the Washington Supreme Court by concerned citizens, the court held that Ferry County could bypass the Department's recommendations as long as the County's decision was based on a sound, reasoned process that included best available science. Ferry County did not have to develop scientific information through its own means, but it is required to rely on scientific information that included characteristics of a valid scientific process.

## *Regulating Existing Activities*

The Growth Management Act requires a type of stewardship protection of critical areas and conservation of rural lands. Skagit County learned that the Act does not allow the County to prohibit pre-existing uses in critical areas. However, the Act still requires the County to reasonably regulate existing activities that best available science shows to be damaging to critical areas and their buffers.

Overall, scientific evidence plays a major role in designating and protecting critical areas. San Juan County's Critical Areas Ordinance update must utilize the best available science, must address the goals of the Growth Management Act, and must promote the Act's strong environmental and natural resource protections.

***“There must be no net loss of the structure, value, and functions of the natural systems constituting the protected critical areas.”***

*– Alan D. Copsey, Esq.,*

*Washington State Office of Attorney General*





# *Living with the Shoreline: Permitting Requirements*

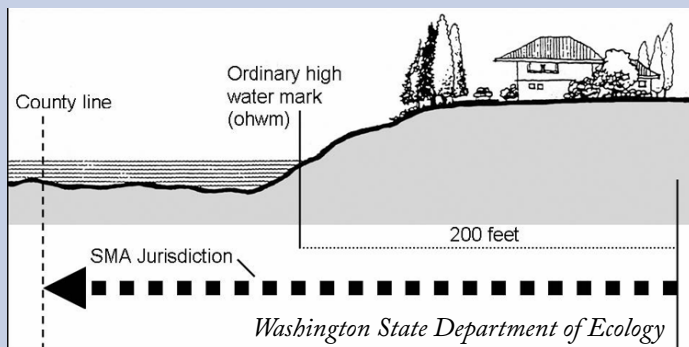
By Tina Whitman, FRIENDS Science Director

*San Juan County residents and visitors share the unique benefits and responsibilities of more miles of shoreline than any other county in the United States. Located at the confluence of Puget Sound, Georgia Strait and the Strait of Juan de Fuca, the San Juan Archipelago provides critical feeding, rearing and migratory habitat for a wide range of species including salmon, seabirds and marine mammals.*

## *Washington's Shoreline Management Act*

County, state and federal protections recognize the public importance of shoreline resources and in combination work to minimize damage from development activities.

Washington's Shoreline Management Act (SMA) was adopted by the public in a 1972 referendum "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." Compliance with the SMA is implemented at the local level with guidance from the Department of Ecology.



## *Shoreline Permitting Requirements*

At FRIENDS, we continually receive inquiries regarding shoreline development activities and associated protections. In San Juan County, virtually all shoreline development activities require pre-project planning and permitting. Any construction activity occurring on the beach requires a permit, even if the activity is out of the water at the time that it is conducted. Major saltwater activities that require a permit include: bulkheads; dredging and/or filling; boat ramps and railways; docks, piers, floats and buoys. All property owners must check with the county permit center (360-378-2354) before proceeding with any clearing, grading or construction activities along shoreline properties.



## *State and Federal Jurisdiction*

While the County is the place to start in securing permits, many shoreline and all beach activities also require environmental review and permits from the state Department of Fish and Wildlife and the Corps of Engineers. These agencies ensure adequate protections of the fish, wildlife, water and public uses of shoreline and marine resources that we all enjoy.

## *Shoreline Development Concerns*

The high benefit and value of Puget Sound shorelines to the health and beauty of the region has resulted in strong community support for shoreline protections. If you are concerned that environmental protection standards are not being upheld, contact the county code enforcement officer.

Information on the location of the potential violation, the type of activities occurring, photographs if possible and the sections of county code believed to be violated will help the county respond efficiently. A copy of the Request for Code Enforcement is now available on line: <http://www.co.san-juan.wa.us/permitcenter/pdf/CodeEnforceReq.pdf>

## *Shoreline Stewardship*

With over 400 miles of shoreline and small watershed areas, what happens on the land in San Juan County directly impacts the marine environment. Individual shoreline property owners play an important role in the stewardship of nearshore resources such as forage fish spawning beaches and feeding, resting and migrating habitat for juvenile salmon and rockfish.

*More shoreline habitat is lost from the cumulative impacts of many smaller projects than from major construction projects.*

# news updates

## New Board President

On January 1, 2006, Ralph Hahn took the helm as the President elect of FRIENDS. Since retiring as the Principal of Friday Harbor High School two years ago, Ralph has been active in a variety of community organizations. He is a member of Kiwanis, president of the San Juan Island Public Schools Foundation, Commissioner on the Island Recreation Board, and president of the San Juan County Economic Development Council. Last year, Hahn also ran for San Juan County Board of County Commissioner from San Juan Island. Hahn stated that he “believes that FRIENDS works to preserve and protect what is special to all of us — our beautiful natural environment and our unique quality of life. Who else in our community does as much?”

## Puget Sound Biodiversity Report

The Center for Biological Diversity, with assistance from FRIENDS, has recently published the results of an extensive assessment of Puget Sound biodiversity. Based on an exhaustive search of regional taxa guides, databases, and other sources, 7,013 species were identified in the Puget Sound Basin - this is more species than are found in 31 individual states - indicating that the Puget Sound is a significant hotspot for biological diversity in the United States.

957 of these species were found to be imperiled, 285 of which are critically imperiled, 272 are imperiled and 400 are vulnerable. Puget Sound species are threatened by a multitude of factors, of which habitat destruction primarily from urban and agricultural sprawl and logging is the most severe. Other causes of species imperilment include exotic species, pollution, global climate change and over fishing. Although there is an increasing focus on protection wildlife and the habitats they depend on, these threats are - if anything - growing. To read the report, go to [www.sanjuans.org](http://www.sanjuans.org)

## New Rules for On-Site Septics

The State Board of Health recently adopted new rules for on-site septic systems, extending the responsibility of the landowner to include operation and maintenance activities in addition to the current design and installation permit requirements. Local governments have also been charged with increased responsibility for the oversight of onsite septic systems, including the development of inventories, identification of potential health risk areas and encouraging landowner compliance with the new monitoring and maintenance requirements.

Cumulative impacts from old or ineffective on-site septic systems have been identified as a key water quality problem across Puget Sound and the new rules are designed to improve protection of environmental and public health.

For details on the new rule and the implementation timeline visit the Washington Board of Health Website at: [www.doh.wa.gov/ehp/ts/WW/rdc.htm#newwac246-272a](http://www.doh.wa.gov/ehp/ts/WW/rdc.htm#newwac246-272a)

## Southern Resident Orca Whales Listed as Endangered



On November 15, 2005 National Oceanic and Atmospheric Administration (NOAA) Fisheries Service designated the Southern Resident Killer Whales as “endangered” under the Endangered Species Act (ESA). A species listed as threatened is at risk of becoming endangered; an endangered species is one at risk of extinction.

Bob Lohn, regional administrator for NOAA Fisheries Service’s Northwest region stated that “by giving the whales protection under the ESA, we have a better chance of keeping this population alive for future generations.”

The Southern Resident Orca whales declined by 20% from 1996-2001. Scientific evidence attributes the current decline to high levels of bioaccumulative toxins in the Sound and in whale tissues, a population decline in their primary food source (salmon) and human disturbance from vessel traffic and noise. FRIENDS, along with several conservation groups, co-petitioned the Federal government to list the Southern Resident Orcas in 2001.

In July 2002, the National Marine Fisheries Service (NMFS) determined that the Southern Resident orcas are a discrete population in danger of extinction, but it decided they were not “significant” enough to warrant Endangered Species Act protection. In December 2002, petitioners appealed this decision and a year later a federal district judge overturned the decision not to protect the orcas. The judge stated that the Fisheries Service relied on outdated science and he ordered NMFS to make a new listing decision. “This is a remarkable step in the protection of Southern Resident Orca and the recovery of Puget Sound,” stated Stephanie Buffum Field, FRIENDS Executive Director and one of the ESA listing co-petitioners.



# news updates



## Supporting Island Trades & Wetlands

In an effort to protect wetlands and neighborhood residential character, FRIENDS participated in settlement talks with Terry Lush regarding his conditional use permit for the Island Trades business. Friends brought together Mr. Lush and concerned neighbors. As a result of settlement talks with FRIENDS, Mr. Lush agreed to restore the wetlands that were degraded on his property, site structures to create a noise barrier for neighbors to protect downstream property owners from flooding and other property impacts resulting from the disruption of the land's natural hydrology. This fall, Mr. Lush received his permit.

## Superior Court Upholds County's Conservation Design Requirements

In a landmark decision by Superior Court Judge Alan Hancock, the County's Conservation Design Requirements (CDRs), were recently upheld as a valid zoning regulation. FRIENDS submitted an amicus brief in support of the County's CDRs. The CDRs require that when a parcel of land is subdivided in certain rural, conservancy and forest zoning designations, at least 60% of the whole parcel is preserved as a residential exclusion zone. Thus, the CDRs require a developer to site the residential structures, garages, landscaping and impermeable surfaces within a minimal area of the parcel to preserve the natural resources and rural character of the land as required by the Growth Management Act.

Garrison Bay Plantation, Inc., applied for a simple land division to divide its 26.8 acre parcel into two parcels. The parcel is zoned as Rural Farm Forest, a zoning designation that is subject to the County's CDRs. In challenging the legality of the CDRs, Garrison Bay claimed that the County's CDRs were an illegal tax or fee under RCW 82.02.020, which prohibits municipalities from imposing excise taxes in the form of open space set asides unless such set asides are "reasonably necessary as a direct result of the proposed development or plat to which the dedication of land or easement is to apply." Garrison Bay also claimed that the CDRs were an unconstitutional taking, and that their substantive due process rights were violated. Garrison Bay wanted to invalidate the ordinance. The Pacific Legal Foundation and the Washington Homebuilders Association submitted an amicus brief in support Garrison Bay.

In his December 19, 2005 ruling, Hancock disagreed with Garrison Bay, et al, and held the CDRs were a valid, reasonable zoning regulation. Judge Hancock ruled that because the CDRs allow the owner of the property to remain in full control - no public use is required - the regulation was not an illegal tax or fee. Additionally, Judge Hancock ruled that Garrison Bay failed to show that the CDRs effectuated a taking of its property or violated its substantive due process rights.

## Protecting the False Bay Preserve

FRIENDS Legal Director Amy Trainer has been working since July to ensure that a proposed eight-home subdivision does not harm the False Bay Biological Preserve, adversely impact the surrounding neighborhood or diminish the regional water supply. The issues of concern include water quantity, water quality, wetlands and aquifer recharge area protection, wildlife habitat, noise and light pollution, and low impact development techniques and technologies. FRIENDS will keep you informed as the development process moves toward formal subdivision approval.

## Holding Violators Accountable

FRIENDS is working with Seattle attorney Richard Smith to hold excavator Myron Williams accountable for unpermitted dredging and filling of multiple acres of wetlands on San Juan Island. FRIENDS has charged that Williams is in violation of Section 404 of the Federal Clean Water Act.

San Juan County issued a notice of violation to Myron Williams on December 15, citing multiple violations of the County Code. For failing to obtain proper permits, he is charged with the following: excavating and filling wetlands; clearing and grading more than 500 cubic yards of earth; constructing buildings; and conducting salvage yard and surface mining operations. Additionally, he failed to comply with a Stop Work Order and storm drainage standards. Mr. Williams's failure to remedy these violations may subject him to civil penalties of \$1,000 for each day of violation and criminal prosecution.

# *Winter Rain, Boon or Bane?*

## *Stormwater Management in the San Juan Islands*

Article written by Carmela Alexander

*In pre-development times, the water cycle in the islands was a slow dance. Rain fell, some on the trees and brush where leaves carried it into the plants. Some evaporated. Some fell on the earth where duff soaked it up and slowed its penetration through the soil into aquifers. Some slowly drained to wetlands or streams. The rains were an unqualified boon.*

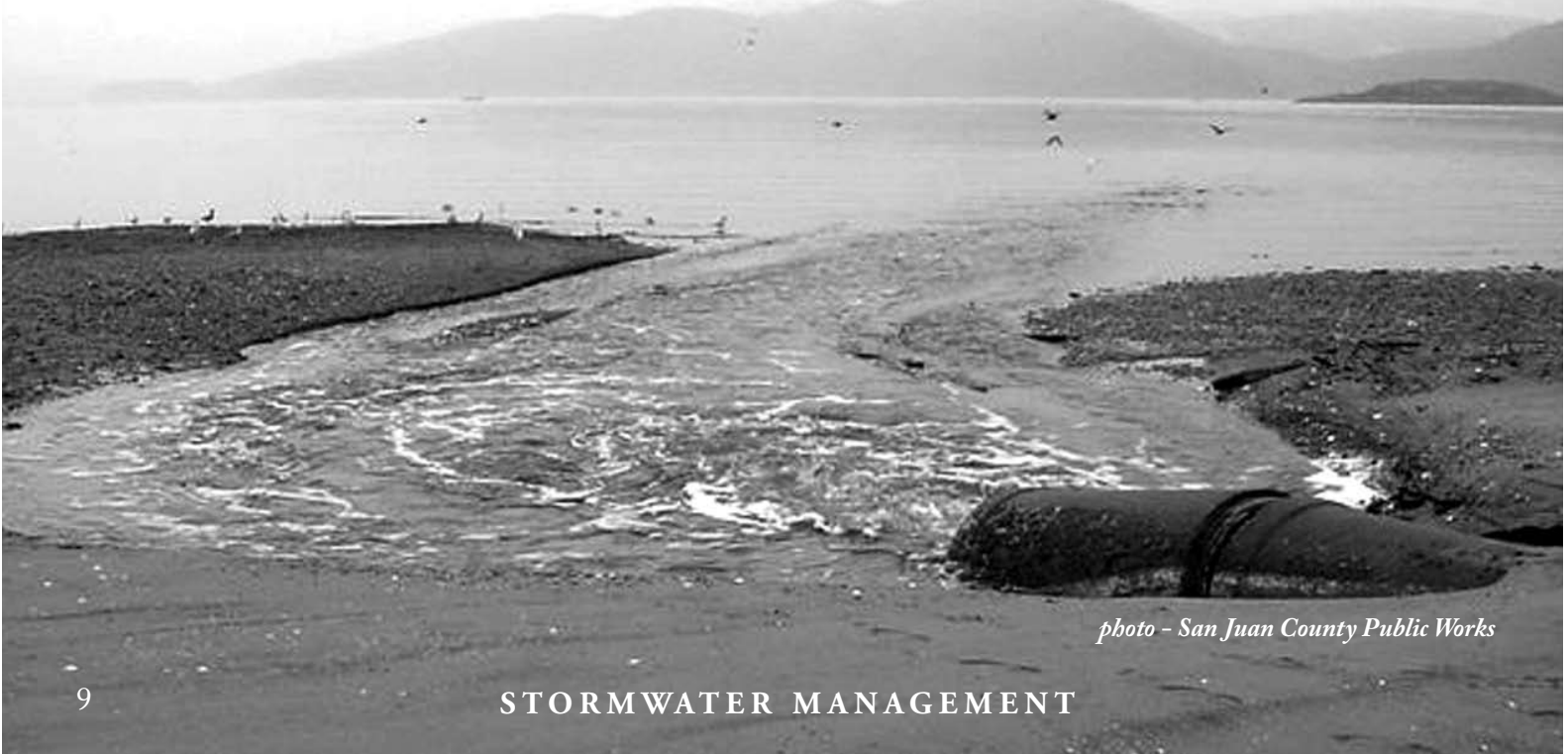
A growing population, however, brings development, which means the creation of square miles of impervious surfaces: roads, roofs, parking lots, driveways, and compacted soils. Rain courses across these surfaces, picking up sediment and pollutants as it goes, and becomes runoff, or stormwater. Pollution-tainted runoff flows into streams and wetlands, and via ditches and outfall pipes, to the shoreline.

A growing population also creates greater demand for household water. But much of the rain that once replenished streams and aquifers never reaches the soil. On undisturbed Pacific Northwest forest land, only 0.3 percent of rainfall becomes runoff. However, in developed areas around Puget Sound, approximately 30 percent of rainfall becomes runoff. In San Juan County, the figure falls in between.

The unincorporated areas of San Juan County have no coordinated stormwater infrastructure. Many private roads are poorly planned, resulting in erosion of the roadbed and sediment outflows. On county roads, runoff is handled conventionally by “collect and convey” methods: ditches and large pipes that carry stormwater, untreated, to the shoreline. **We can do better.**

*“Hydrology is the relationship between rainfall, evaporation, groundwater infiltration, and the flow of surface water.”*

Source: *Low Impact Development*, published by the Puget Sound Action Team.



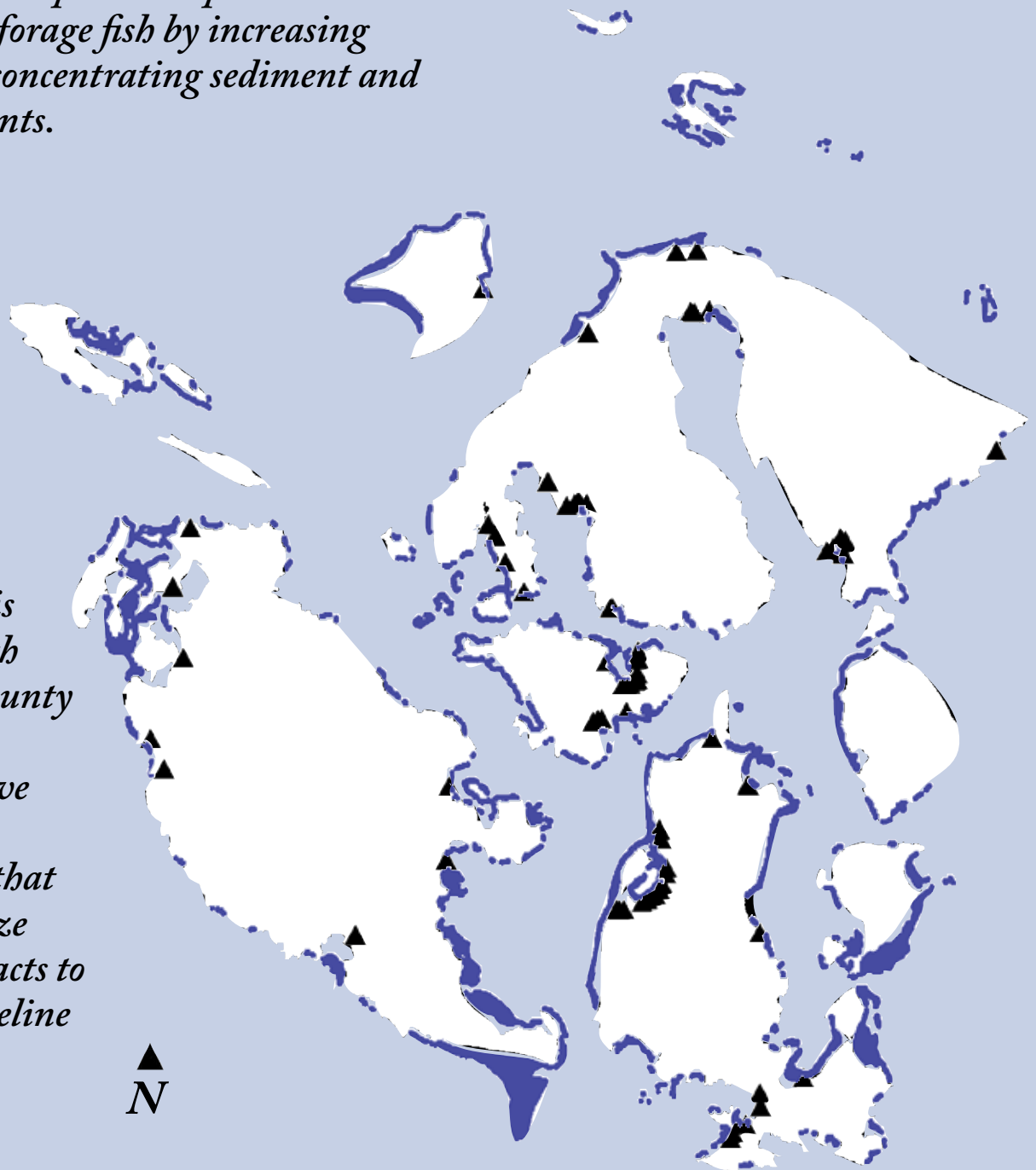
*photo - San Juan County Public Works*



# Stormwater Outfalls & Eelgrass

*Stormwater can threaten habitat for nearshore-dependant species like eelgrass and forage fish by increasing erosion and concentrating sediment and other pollutants.*

*FRIENDS is working with San Juan County to develop a comprehensive approach to stormwater that will minimize adverse impacts to priority shoreline habitat.*



## Legend

- ▲ Shoreline Stormwater Outfalls
- Eelgrass

*Preliminary outfall data courtesy of SJC Public Works.  
Eelgrass data courtesy of FRIENDS.*

# *New Stormwater Utility Created*

*On November 8, 2005 the San Juan Board of County Commissioners signed an enabling ordinance for San Juan County's first Stormwater Utility.*

Up until now stormwater has been managed piecemeal with funds from the Public Works Department road funds. However, the new utility offers the opportunity to plan a comprehensive approach to stormwater that is fiscally and environmentally sound, and that meets the requirements of the Growth Management Act.

The structure of the new utility, including decisions about funding and goals, will be created this year. In other jurisdictions stormwater utilities

are funded in various ways: by impact fees imposed as part of the permitting process or by usage fees assessed on properties that contribute to runoff. Some jurisdictions levy a parcel tax, an egalitarian way to spread the burden across all taxpayers. For instance, most residential property owners in the town of Friday Harbor, which has a stormwater utility, pay a monthly fee of \$8.25.

According to the new Stormwater Utility ordinance, its "mission includes priority for storm water and drainage management and control that, to the extent possible, uses low impact development solutions to enhance water quality, aquifer recharge, and minimizes adverse impact on the marine environment..." Jon Shannon, Director of San Juan County Public Works Department, "hopes there will be incentives for developers" who choose Low Impact Development strategies.

Decisions about funding and stormwater regulations will be made with input from stakeholders: the public, developers, and public entities, such as the port district, as well as FRIENDS and other nonprofit organizations with concerns for the environment. For instance, the Eastsound Urban Growth Area (UGA) needs a stormwater management plan that is reasonable in cost, preserves the environment, and replenishes and protects the critical aquifer recharge area on which Eastsound is located. Eastsound's plan could set an example for the whole county.

The new Stormwater Utility, mundane though it may seem, represents a golden opportunity. Your voice counts! Now is the time to educate decision-makers about LID and to encourage them to steer San Juan County toward sustainability and environmental health.



*photo - San Juan County Public Works*



# Solutions for Stormwater Management

## What Is Low Impact Development?

*Low Impact Development (LID) is an earth-friendly approach to stormwater management that encompasses a cluster of techniques. LID's goal is to preserve and mimic natural hydrology through comprehensive site planning and small-scale, scattered controls, both structural and biological.*

Article written by Carmela Alexander

LID takes a preventive approach. Imagine a new housing development in the islands. The developer reviews the total watershed management plan and then carefully examines the hydrology of the specific parcel with the goal of “zero discharge”, that is, no stormwater flowing off the property. LID options span the development process:

### *Siting*

The building envelope is limited to preserve native vegetation; sixty-five percent of the land is left undisturbed, thus increasing the desirability and value of the new homes. Houses are placed on less permeable soils leaving permeable soils available to filter stormwater.

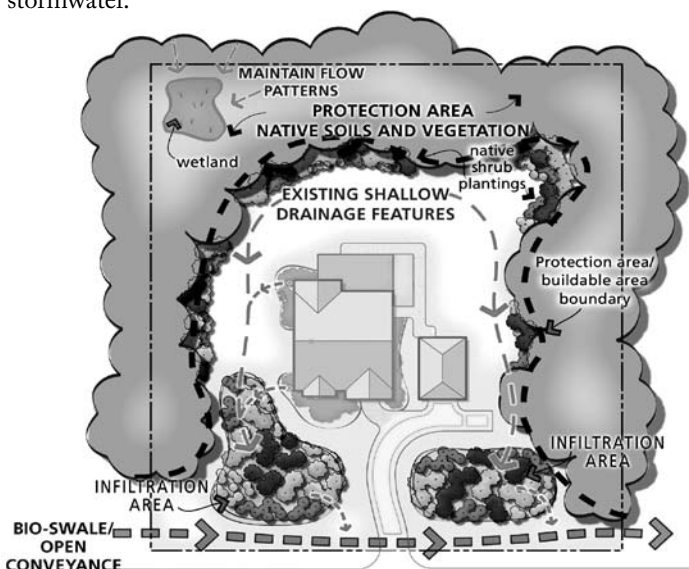


Image from AHBL Engineering, used in Puget Sound Action Team's LID Technical Guidance Manual for Puget Sound, p. 25, Figure 2.2

### *Clearing and grading*

Clearing and grading are minimized; more soil remains uncompacted by heavy equipment, and natural landforms are preserved.

### *Impervious surfaces*

Parking areas and roads are configured to minimize paved area and are narrow with no curbs or gutters. Shorter driveways are constructed of gravel or permeable asphalt, concrete, or pavers that can be interplanted with grass.

### *Construction techniques*

Foundations that minimally interrupt shallow subsurface groundwater flows are first choice. Roof areas are minimized, and rainwater that falls on the roof is captured for re-use (rainwater catchment systems) or directed to landscaped areas for infiltration into the groundwater.

### *Soil amendment*

During site preparation topsoil is saved and/or amended with compost to assure that lawns and other landscaped areas are able to assimilate stormwater.

### *Small, distributed bio-controls*

Small separate bioretention cells, or rain gardens, are created and landscaped with plants capable of withstanding occasional drought and occasional drenching. These gardens accept and filter stormwater while enhancing the beauty and desirability of the property.

In densely populated areas, rain gardens can treat the runoff from parking lots and streets. Bioretention swales, some with check dams (speed bumps for stormwater), are vegetated conveyance pathways that slow and carry the water until it can be absorbed by the earth. Urban applications of LID controls may need to be backed-up by conventional systems of “collect and convey” pipes to handle very large storm events, but the back-up systems are smaller and less expensive than without LID controls.

### *Maintenance*

Maintenance of LID stormwater controls is less demanding than the care of conventional storm drains, holding ponds, and culverts. Seasonal chores, such as weeding, replacing mulch, and pruning, keep rain gardens functioning. Pervious paving requires occasional sweeping.

Low Impact Development benefits the environment by maintaining the natural water systems that sustain us - streams, wetlands, and aquifers - while keeping water quality high and maintaining soil integrity. LID reduces negative impacts on our shorelines from stormwater outfall pipes carrying sediment and pollutants. Forested land is preserved, an aesthetic as well as ecological treasure. LID also benefits developers by reducing the costs of expensive engineered facilities. It may also reduce the costs of streets, curbs, and gutters. Grading and clearing costs (cont. p.13)

## *Solutions for Stormwater Management (cont.)*

may be less. And incentives through the permitting process may be offered in return for the public benefits provided by LID. Finally, Low Impact Development benefits local communities and county government by reducing outlays for stormwater infrastructure and maintenance. It meets federal and state mandates to protect wildlife habitat, such as San Juan County's nearshore with its fragile ecological web and endangered species. LID fosters public education and involvement in the protection of vital resources.

Low Impact Development, however, is not a magic wand that resolves all environmental issues. It will work only in the context of land use planning that addresses the issues of urban sprawl, preservation of open space, protection of critical areas, and a full assessment of water resource adequacy, for now and for the future.

The choice is ours. We can build expensive conventional stormwater management facilities or we can choose to create less expensive, more effective stormwater controls that protect OUR water, OUR environment, OUR future.

*Information for this article is derived from publications of the Puget Sound Action Team, Civil Engineering News Online, and proceedings of the 2001 conference, "LID in Puget Sound".*

### *Port LID Parking*

At the Friday Harbor airport transient parking area, instead of a fully paved parking lot, asphalt is used only directly under each plane's parking "stall". Rainwater sheets off the asphalt to grass, and then to broad, flat swales that slow the water until it is absorbed.

Steve Simpson, Port of Friday Harbor director, says in a satisfied aside, "They said it wouldn't work, but it does."



## *Low Impact Development and Green Building in San Juan County*

*What is Green Building? Green buildings and their surrounding landscapes are designed, constructed, and operated to minimize short and long-term negative impact on the environment. Green building practices incorporate: energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials, and improved indoor air quality.*

### *Low Impact Development and Green Building Resources in San Juan County*

**The Eco-Building Guild** is a group of San Juan County building trades professionals (architects, contractors, builders, and more) who are implementing LID/Green Building practices. Beginning this spring, the Conservation District will host a series of seminars on specific LID techniques for building professionals and landowners. Contact the San Juan County Conservation District at 378-6621 for more information.

**The Green Ground LID Development Program** offers one-on-one consultations to landowners in the False Bay Watershed who want to protect natural resources on their property before clearing vegetation or building a home. Contact the Conservation District at 378-6621 for more information.

**Green Building News & Links:** Contact Cathie Wier, Navigating Our Future, cathiew@eusers.com, website: [www.navigatingourfuture.org/greenbuildnews.htm](http://www.navigatingourfuture.org/greenbuildnews.htm)

**Living with the Shoreline:** A Stewardship Guide for San Juan County Property Owners. Landowners have an important role to play in maintaining healthy shoreline resources in San Juan County. For information on local shoreline habitats, conditions and resources available to landowners, please contact Tina Whitman at FRIENDS of the San Juans, 378-2319, [tina@sanjuans.org](mailto:tina@sanjuans.org).

**"A Place in the Islands, How Private Landowners Shape The Future of the San Juans."** The San Juan Preservation Trust. Contact Kathleen Foley, 378-2461 [kathleenf@sjpt.org](mailto:kathleenf@sjpt.org).

**LID Resource Guide: Puget Sound Action Team**  
(800) 54-SOUND, PSAT Local Liaison - Hilary Culverwell,  
(360) 676-2233, [hculverwell@psat.wa.gov](mailto:hculverwell@psat.wa.gov).



*Since 2003, FRIENDS has been promoting low impact development and green building in San Juan County. Below is a list of builders, architects, designers, landscapers, engineers and alternative energy system providers who have been active participants in local Low Impact Development and Green Building efforts. While this is not a complete list of all who provide ecological services in the islands, it is a start.*

## **Sustainable Design and Construction**

**The Shelterra Group LLC**, 378-1960  
Ken Christison - kmchristison@centurytel.net

**Miller and Company**, 378-6803  
Gary Miller - satya@rockisland.com

**Natural Home Builders**, 376-6642  
Gulliver Rankin - info@naturalhomebuilders.com

**White Construction**, 376-3346  
Jonathan White - jonwhite@rockisland.com

**Mitrebox Construction**, 468-3712  
Bill Lewis - Billygoat@rockisland.com

**Green Horizon Builders**, 376-0307  
Matthew Maher - greenhorizonbuilders@yahoo.com

**On the Level & Mudd Partners**, 468-3074  
Pamela Pauly sbpp@rockisland.com

**A-1 Builders**, (360) 734-5249  
Rick Dubrow - rdubrow@a1builders.ws

## **Site Analysis, Architecture & Engineering**

**Richard Hobbs** FAIA, 317-5024  
rhobbs@rockisland.com

**Whole Systems Design**, (425) 348-0707  
Farouk Seif - fseif@antiochsea.edu

**CopeWorks**, 378-3063  
Kathy Cope - kcope@rockisland.com

**Greene Partners**, 468-3655  
Nancy Greene - nancy@greenepartners.com  
Todd Kegerreis - todd@greenepartners.com

**Soundesign**, 468-3635  
Tom Froning - soundesign@rockisland.com

**2020 Engineering**, (360) 671-2020  
Mark Buehrer - 2020@2020engineering.com

## **Environmental Consultants**

**Northwest Concepts**, 376-4066  
Michael Budnick - nwc@rockisland.com  
Site analysis, landscape preservation and restoration

**Native Landscapes**, 376-5436  
Steve Stanzione - steve@nativelandscapes.net

## **Environmental Consultants (cont.)**

**Bellwether Perennials**, 468-3531  
Jenny Harris - site assessment and native plant, landscape evaluation

**Rozewood Environmental Services**, 468-4448  
Scott Rozenbaum - rozewood@rockisland.com  
Wetlands, soils & ponds - assessment, delineation and management.

**Coastal Geologic Services**, (360) 647-1845  
Jim Johannessen - coastalgeo@comcast.net  
Beach and nearshore assessment, restoration and monitoring.

**Greenbelt Consulting**, (360) 341-3433  
Elliott Menashe - elliot@greenbeltconsulting.com  
Site assessment, shoreline vegetation, water, soils management.

**Sustainable Building Advisor**, 376-8269  
Steve Hussey - steve.hussey@sustainablebuildingadvisor.com  
Green building advisor. Firewise landscaping.

**Hamilton Resource Management, Inc.**, 378-3642  
Will Hamilton - hamilton@rockisland.com  
Forest assessment, planning and management.

## **Renewable Energy Systems**

**Rainshadow Solar**, 376-5336  
Eric Youngren - eric@rainshadowinc.com

**PurRain**, 376-2552  
Michael Durland - michael@rockisland.com  
Rainwater Catchment

**Mead Biofuel**, 376.4855  
Mart Mead - marty@meadbiofuel.com

## **Other Resources:**

**Interior Design**, 468-4718  
Jan Scilipoti - inshelter@yahoo.com

**Lopez Community Land Trust**, 468-3723  
Sandy Bishop - lopezclt@lopezclt.org

**OPAL Community Land Trust**, 376-3191  
Lisa Byers - opalclt@opalclt.org


**San Juan Public Works**, 370-0503  
Helen Venada - venada@rockisland.com

**“Some things that are extraordinarily beautiful lie right on our doorstep. Are they worth keeping? It will take lots of FRIENDS to keep them.”**

**-Ron Keeshan**  
*FRIENDS member since 1996*



*photo by Ron Keeshan*

  
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