

Creating Environmental Laws That Work for Nature and People in the San Juans

It's Time to Share, Consider and Decide

INTRODUCTION

Over the past few months there has been a discussion brewing in the San Juans about how to protect the environment while providing property owners flexibility in how they use their land. The catalyst of this discussion is the proposal to revise two sets of regulations required by the State: the Critical Areas Ordinance and the Shoreline Master Program. The critical areas ordinance governs land that contains or is adjacent to wetlands, areas that affect the quantity and quality of groundwater, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. In the San Juans the Shoreline Master Program governs the marine shorelines and designated lakes greater than 20 acres in size. The San Juan County government is mandated by state law to protect the ecological health of San Juan County in addition to protecting public safety, private property rights and other important human activities like agriculture. This paper is intended to provide background information for the public as they consider the issues and to stimulate a community dialogue at the public field trips and workshops scheduled for November 9th (San Juan), 12th (Orcas) and 16th (Lopez) that advances these issues further towards solutions that work for nature and people in the San Juans.

The predominant public discussion has to some extent polarized the community into two camps. One side believes new regulations are not needed to protect the environment in the San Juans and that the proposed new regulations will unnecessarily restrict property owners' ability to use their land. The other side advocates that there is a need to revise the current regulations based on new scientific information which they believe points out that additional efforts are necessary to protect environmental health. The debate is centered on three draft proposals that cover very complex issues of tremendous importance to landowners and the long-term health of the San Juan Islands. For uplands (wetlands, geologically hazardous areas and fish and wildlife areas and aquifer recharge areas) there is a draft proposal, developed by a County Council appointed citizens committee, which can be found on the County website ([http://www.co.sanjuan.wa.us/cdp/docs/CAO/CAO%20Background\(6_9_09B\).doc.pdf](http://www.co.sanjuan.wa.us/cdp/docs/CAO/CAO%20Background(6_9_09B).doc.pdf)). For the marine shoreline there are two draft proposals. One is a County staff draft proposal for the shoreline critical areas ([http://www.sanjuanco.com/cdp/docs/CAO/SJ Shoreline EPF and CAO Amendments 6-15-09 .pdf](http://www.sanjuanco.com/cdp/docs/CAO/SJ%20Shoreline%20EPF%20and%20CAO%20Amendments%206-15-09.pdf)). The second is a related proposal by the San Juan Initiative (<http://www.sanjuaninitiative.org/documents/2009PolicyGroupReconbuffersvegetationthreatened82009.pdf>). The content from these various proposals will be described in more detail in this paper.

As an another step in a comprehensive public process that will include Planning Commission and County Council hearings, the County Council asked County staff and staff from the San Juan Initiative to develop a process to engage the community. They appointed an Oversight Committee to design and conduct the process. Members are Patty Miller (Orcas Island land owner, Eastsound Planning and Review Committee and San Juan Initiative Policy Group), Susan

Dehlendorf (San Juan Island property owner and Planning Commission member), Amy Windrope (San Juan Island property owner and San Juan Initiative staff) and Shireene Hale (San Juan property owner and County Senior Planner).

The Council set this process in motion because they are concerned that as the community becomes polarized it is harder and harder to have the substantive discussions that lead to the best solutions and build on the valid concerns of each viewpoint. The Council asked Amy Windrope and Jim Kramer, the San Juan Initiative staff, to facilitate the outreach process because of their past experience engaging people with many different viewpoints in a constructive manner.

The purpose of this paper is to articulate and clarify the issues and encourage San Juan citizens, governmental officials and scientists to engage in open dialogue to clarify concerns and attempt to find answers that work for both people and nature. The hope for the public process is that it might lead to different and better ideas as a result of broader discussion and solid thinking. The end result needs to be regulations that meet the local needs for environmental protection and property use while complying with state regulations.

Next Steps:

- Public field trips and workshops: November 9th (San Juan), November 12th (Orcas) and November 16th (Lopez). For more information on the public field trips and workshops, contact Jeff Hanson, San Juan County staff, at (360) 370-7594 or jeffh@sanjuanco.com.
- December 1: Oversight Committee revises this issue paper to reflect public concerns, suggested approaches and varying viewpoints.
- By the end of this year (2009): The County Council will determine the process for amending the Shoreline Master Program which must be completed by 2012.
- Starting in January and through the winter: Planning Commission and then the County Council will consider changes to the Uplands Critical Areas Ordinance.

Answers to the following questions are important to help the Planning Commission and County Council as they determine the best approach for both the Uplands Critical Areas Ordinance and Shoreline Master Program. These questions do not raise the only issues that will be decided as part of these updates but appear to be the most controversial ones in the community.

- How do we best apply science that fits the local circumstances of the San Juans? Where is there need for additional science?
- What approach to buffers for streams, wetlands and marine shorelines will best serve the multiple needs of San Juan County and the community?
- What uses and restrictions in buffers are necessary in wetlands, streams and marines shorelines to protect the environment and provide flexibility for the needs of property owners?
- How can we best protect the ecological functions of feeder bluffs and beaches and support property owners to protect their homes and structures?

- What flexibility with buffers is needed for special situations and for previously developed parcels?

DISCUSSION

This paper is structured into six parts to help the public understand the background on the questions posed above and move toward developing solutions. The first part lays out the regulatory background for the current update processes. The second part describes important aspects of wetlands, streams and marine shorelines in the San Juans and the functions that must be protected under state law. The third part looks at how ecological functions can be protected. The fourth describes how rights of property owners are addressed if there is a conflict with environmental regulations. The fifth part of the paper builds on the information provided to lay out the various decisions the County Council and the citizens of San Juan County face and describes aspects critical for consideration and advancement. Lastly, the paper invites your participation in discussing and advancing the proposals on these issues and describes how you can be involved and help shape the future of protecting San Juan County.

1 REGULATORY BACKGROUND INFORMATION

1.1 Why is the County changing its regulations for wetlands, streams and marine shorelines and what is required?

The County is changing its regulations for two reasons:

1. The County was required by the State to update its Critical Areas Ordinance by December 2005 under the Growth Management Act and the Shoreline Master Program by 2012 under the Shoreline Management Act.
2. Some of the County's current regulations are not working to protect the environment and some of the current regulations are confusing. This is discussed in detail in Section 1.2.

In 1972 Washington State voters approved the Shoreline Management Act (Chapter 90.58 RCW) to protect freshwater and marine shorelines through an initiative. In 1990 the State Legislature passed the Growth Management Act (Chapter 36.70a RCW). Both the Growth Management Act and the Shoreline Management Act require local governments to adopt plans and administer regulations to protect the environment while preserving property rights and supporting population growth and economic development.

The Shoreline Management Act requires the County to adopt a comprehensive management plan called the Shoreline Master Program and administer regulations in San Juan County that govern development and activities along marine shorelines and large lakes. The State Legislature amended the Shoreline Management Act in 2003 requiring all local governments to update their Shoreline Master Programs and to provide "reasonable and adequate" State funding for the updates. When updating the Shoreline Master Program, "the most current, accurate and complete scientific and technical information available that is applicable to the issues of concern" is to inform the process. (WAC 173-26-201(2) (a), RCW 90.58.100(1)) San Juan County is required to complete

this update by December 2012. Most counties take 3 years to complete their Shoreline updates.

The Growth Management Act requires a number of actions from San Juan County. San Juan County must have a comprehensive plan that defines where and how development should occur in the islands. The Growth Management Act requires the protection of Critical Areas. Critical Areas are defined as: Aquifer Recharge Areas, Fish and Wildlife Conservation Areas, Geologically Hazardous Areas, Wetlands and Frequently Flooded Areas. The County is charged with creating and implementing regulations such that they achieve no net loss of functions and value of these habitats as development occurs. The County must consider Best Available Science when determining the set of regulations necessary to protect the functions of Critical Areas.

These regulations to protect critical areas must be updated per a legislatively determined schedule. In San Juan County the regulations to protect the Critical Aquifer Recharge Areas were updated in 2008. The other critical areas ordinances (wetlands, streams, fish and wildlife habitats, etc.) were required to be updated in 2005 but have yet to be implemented. The County is required by the State to update its regulations or face economic penalties. If the County is found to be out-of-compliance with State law, it cannot apply for certain grant funds and could be prohibited from receiving some types of transportation funds that are used to repair roads and maintain or improve other essential public facilities.

The recent Anacortes Decision (WA Supreme CT 7-31-08 re Shoreline Management Act and Growth Management Act) and subsequent court decisions have determined that “critical areas within the jurisdiction of the Shoreline Management Act are governed only by the Shoreline Management Act”. Updates of critical area protections outside the Shoreline Management Act jurisdiction fall under the jurisdiction of the Growth Management Act. Thus, the process to update the regulations for wetlands and streams is part of the Critical Areas Ordinance and the regulations for marine shorelines are part of the Shoreline Master Program update.

Once the Critical Areas Ordinance is adopted by the County Council, it is deemed consistent with State law unless it is appealed by another party. If appealed, the Growth Management Hearings Board is the governing agency responsible for resolving issues. The Shoreline Master Program must receive approval by the State Department of Ecology after the County Council’s approval to become law.

1.2 What are the other reasons the County is updating its regulations?

In addition to the State requirements to update the Critical Areas Ordinance and Shoreline Master Program, the County and others have identified problems with existing regulations. For instance, a study over the last three years by the San Juan Initiative identified that the few bluffs in San Juan County that feed local beaches and bays with gravel and sand continue to be hardened by bulkheads and riprap. This study

can be found at www.sanjuaninitiative.org. Continued loss of these natural erosion sites could result in loss of beach sands and gravels as well as sediment for eelgrass beds that are critical habitat for forage fish, shellfish and many other organisms that important components of the marine food chain. The San Juan Initiative also found that property owners have done an excellent job in most cases protecting native vegetation along the marine shoreline. However, landowners and building contractors attending the San Juan Initiative public meetings frequently pointed out that current County regulations are confusing and frustrate landowners when they try to maintain their view or create access to the beach.

There is similar confusion amongst property owners about streams and wetlands on their property. It is not clear whether or not various agricultural activities are exempt and how those activities are defined. There is also confusion created by the regulations or lack of regulation for land clearing activities which can harm wetlands, streams and marine shorelines without adequate review by the County. The San Juan Initiative and other groups have identified a significant amount of illegal bulkheading. There is also a need to create a better linkage between the County requirements and the permits needed from U.S. Corp of Engineers and Washington Department of Fish and Wildlife when conducting development activities like land clearing or filling in streams, wetlands and marine shorelines.

All of these examples point to the need to further explore what is and isn't working and to improve the County's regulations to support land owners in using and enjoying their property in a manner that contributes to clean and adequate water, public safety, and viable fish and wildlife populations.

1.3 What activities will be governed by the proposed regulations?

The County's Critical Areas Ordinance and Shoreline Master Program regulations govern such activities as: construction, repair and remodel of homes and other structures; building or repair of docks and bulkheads; earthwork (grading, excavation or filling); management and clearing of vegetation in and adjacent to a wetland, stream or marine shoreline.

Agricultural activities currently are governed under the existing Critical Areas Ordinance and are temporarily exempt from the new regulations due to a moratorium by the State. Recommendations for regulating agriculture under Critical Areas Ordinances are being crafted by the Ruckelshaus Center for the whole state and are anticipated to be provided to the State Legislature before the end of 2009.

1.4 What authority and flexibility does the County have if the State is mandating the process and reviewing the County's decisions?

The County is required to update its regulations based on best available science for the Critical Areas Ordinance update and achieve a no net loss of habitat and ecological function for the Shoreline Master Program update. As long as the Critical Areas

Ordinance is consistent with Best Available Science, the County Council can choose how to tailor regulations that fit the environmental needs and land use patterns in the San Juans. If the any other party disagrees that the local regulations will protect ecological functions or unduly affect property rights, they can appeal the update and go through a legal process. In addition to protecting the environment, the County under the Growth Management Act must address other goals including property rights, population and economic growth, recreation and public facilities. Under the Shoreline Management Act the County must address environmental protection, uses that depend on access to the shoreline, and recreation.

1.5 What does the term Best Available Science mean and why is it so controversial?

The Growth Management Act adopted by the State Legislature requires the County to consider best available science in updating its Critical Areas Ordinance under the Growth Management Act. Best available science is described by the state as research conducted by qualified individuals using documented methodologies that lead to verifiable results and conclusions. When feasible, counties and cities are encouraged to consult with state agencies and qualified scientific experts to help identify the best available scientific information and assess its applicability to the relevant critical areas.

The use of best available science is challenging because scientific conclusions are not always clear as they apply to issues like buffer widths or vegetation management and research results and their applicability can vary based on differences such as site location, study focus and duration. This leaves the science open to interpretation and misinterpretation based on the views and interests of different people. The conclusions of science may also be in direct conflict with some people's interests either for more stringent environmental protection or for more flexibility for development.

Scientific research is complex, and is often based on study of a specific area in order to answer a specific question, leaving a gap between the scientific conclusions from research and its application. The state agencies have tried to fill this gap by asking expert panels to review the body of science, identify the most relevant research to the management issues in Washington, and develop summary guidance addressing different topics. As an example, the experts that created the Interim Nearshore Guidelines for the State (http://wdfw.wa.gov/hab/nearshore_guidelines/) concluded that marine buffer recommendations could be based on research conducted on freshwater streams and wetlands. That research identifies buffer widths from 26 to 900 feet depending on the area and the environmental function necessary. This range makes it difficult for elected officials to choose a single buffer width using the science. The entire range has a scientific basis depending on the environmental function and the area in question. Some local residents and others question whether picking averages between these wide ranges actually achieves the ecological result being sought. This example illustrates how difficult it can be to make policy decisions based on the current guidance.

Another issue with using best available science is the applicability of research conducted in other parts of the State or country to local circumstances. Some local residents question whether the scientific research applies to the low density residential and rural land use found in the San Juans. They question if residential development is or can cause significant impacts to conditions like the marine water quality surrounding the San Juans. Much of the research has been conducted in areas of more intensive urban, agricultural or forestry use. However, Island County which has very similar land uses and environmental conditions has recently conducted local research on their wetlands in addition to synthesizing existing scientific research. The Island County work was not used in developing the current proposals by San Juan County but could be considered. Their report is available at: <http://www.islandcounty.net/planning/criticalareas/BestAvailableSciencePhaseII.pdf.pdf>. It is possible to conduct scientific research in the San Juans, thus increasing the certainty of the science, but doing so would be costly and take several years. This would also be a difficult undertaking for the County at a time when budgets are extremely limited and the County is four years past the Critical Areas Ordinance deadline.

Most scientific research acknowledges uncertainty in its conclusion, even for issues that have been extraordinarily well studied. One outstanding question as the San Juan community explores these issues is the application of scientific finding: How do government agencies and private parties deal with scientific uncertainty. There are two classic approaches to uncertainty or risk. One is to presume an activity is allowed unless it can be proven to be harmful. The other is to assume activities are not allowed unless it can be proven they do not harm the environment. New approaches are aimed at risk sharing, where parties agree to what they know and do not know and the risk associated with various approaches. This can help establish a common understanding among opposing stakeholders. Importantly, this approach can lead to a process of adaptive management where stakeholders commit to learning more about unresolved scientific issues with a commitment to changing their position when faced with new facts. This approach can also stimulate very creative solutions and exciting new approaches when parties are truly committed to producing results that all parties support and desire.

Regardless of the approach taken by the County, the community's wide ranging perspective of the science creates a difficult situation for County officials that are required to consider best available science when making policy decisions. They want to know specifically where the community is comfortable with certain scientific conclusions and where there are questions and concerns. This will help shape both the immediate decisions and what a longer term effort should address.

2 SAN JUAN COUNTY CRITICAL AREAS –What Are We Trying To Protect and Where Are They?

2.1 Wetlands

Freshwater wetlands in the County mostly occur in bedrock depressions or in depressions underlain by glacial till, deposited and compacted by glaciers. Wetlands store water, purify water, filter runoff, abate flooding, decrease erosion and provide habitat. They act as ground water recharge and discharge sites. In addition to the hydrologic benefit of wetlands, hundreds of species of birds, fish, mammals, reptiles, and amphibians rely on wetland habitat for breeding, foraging, and cover. Wetlands provide unique habitat for species that cannot survive elsewhere. Coastal wetlands along the marine shoreline also provide important habitat and protect shorelines from flooding and erosion in San Juan County.

2.2 Streams

Most streams in the San Juans are small and only flow between late November-December and early May. There are two perennial streams of significant size on Orcas Island: Cold and Cascade creeks. Cold Creek is fed by a large spring and Cascade Creek is fed by Mountain Lake. On San Juan Island two streams run all year. These streams are San Juan Valley Creek, which starts at Trout Lake on Mt. Dallas and joins up with the drainage system for the wetlands of the False Bay watershed, and a small creek that begins at the back of Mt. Cady and drains into Garrison Bay.

The streams and their corridors are used by a wide array of wildlife including eagles, other birds and animals. Because most streams in the San Juans are seasonal, there is limited use by salmon for spawning and rearing. The mouths of the creeks where they enter marine areas are important habitat areas for a variety of fish species including threatened stocks of Chinook salmon, native char, and chum salmon. These marine and freshwater riparian areas provide critical habitat for federal or state at-risk species beyond salmon including: Marbled Murrelet, Sea Otter, Steller Sea Lion, Steelhead, Common Loon, Bald Eagle and Peregrine Falcon. These streams also provide important inputs to the marine environment in the form of insects and leaf litter. In a current study, salmon migrating to the ocean were found to have up to 20 percent of their diet supplied by insects from the land in the San Juans

(<http://www.sjcmrc.org/programs/salmon.htm>). Protecting the use of streams and their riparian buffers requires the protection of water quality, water quantity, temperature and the physical structure by maintaining trees and vegetation adjacent to the water body as well as treating stormwater runoff.

Property owners in the San Juans use streams for a variety of important purposes including irrigation, water supply and aesthetic amenities.

2.3 Marine shorelines

The information in this section is summarized from a Puget Sound Nearshore Partnership Report by Jim Johannessen and Andrea MacLennan titled “Beaches and Bluffs of Puget Sound and the Northern Straits Valued Ecosystem Component of Washington State”. The full report contains information on how beaches and bluffs are

shaped and formed and how they are affected by shoreline activities. The full report can be viewed at: http://www.pugetsoundnearshore.org/technical_reports.htm.

“Beaches and bluffs are important geological features of the Puget Sound nearshore. In Puget Sound, bluff erosion is the primary source of material that replenishes beach substrate. Beaches and bluffs also provide important habitat to numerous species dependant on the nearshore zone of Puget Sound. Shoreline modifications, including over-water structures, shoreline armoring, and marine riparian vegetation alteration can change natural processes such as erosion and sediment transport associated with beach and bluff formation.”

Most of San Juan County consists of rocky bluffs and only 35 percent are beaches and bluffs. This small percentage increases the importance that these areas have in terms of the ecological contribution they make.

All twenty-two populations of Puget Sound Chinook salmon use the nearshore zone for feeding on their way out to sea and on their return. This makes the San Juan waters and shoreline areas an essential part of the larger picture for salmon recovery in Puget Sound. Although there are no known natural Chinook spawning areas in the San Juans, multiple species of salmon from other watersheds use the islands during different stages of their life cycle. Vegetation along the marine shoreline provides food source (insects) cover and input of large wood to the shoreline and filters pollutants. Salmon arrive at the archipelago as juveniles after first spending time in the estuary of their natal river and nearby marine shorelines. Nearshore areas also protect salmon from predation. Juvenile salmon seek refuge in eelgrass, kelp and swallow water where they are more protected from predators and feed. Maintaining the food web around the islands is critical. For example, salmon rely upon the resources produced in the nearshore and species, including orca and people, rely upon and enjoy salmon. Shellfish, marine birds and other species all play an important role in the food chain and depend upon these areas for survival.

San Juan County’s marine shorelines are highly valued by local residents and visitors alike for their aesthetic beauty, fishing access to the beach and saltwater and the enjoyment of wildlife. Landowners are often interested in maintaining or enlarging their views of the water as well as access to the beach. Although the rural character is still prevalent on much of the County shorelines increasing development and redevelopment of waterfront and other properties has led to increased impacts to the nearshore environment over the last couple of decades. A recent mapping effort of the San Juan and Lopez shorelines revealed that 7.2 miles were modified in a manner that can affect natural beach forming processes.

3 HOW DO WE PROTECT THESE HABITATS?

3.1 Why are buffer and their widths so important?

The following information is from a study conducted by Dr. Paul Adamus for Island County. This study can be found at:

<http://www.islandcounty.net/planning/criticalareas/BestAvailableSciencePhaseII.pdf>.

It may be useful in understanding the important factors to consider in protecting water quality in wetlands, streams and marine shorelines in San Juan County. There are other factors that need to be considered when determining the benefits of buffers for habitat functions. This particular summary was included because it is a recent synthesis of science. There are additional summaries and scientific references on the County's website at: <http://www.co.san-juan.wa.us/cdp/default.aspx?dept=cdp&listname=CAO>.

The summary below specifically mentions wetlands but many of the concepts are applicable to streams and marine shorelines.

“Undeveloped or lightly-developed upland buffers around wetlands can do much to protect the functions and natural ecological condition (health). The following are often cited as potential benefits of upland buffers:

- a. Providing an alternative to impervious surface or other land cover types that would offer little or no habitat for native wildlife and can damage other functions.
- b. Intercepting and stabilizing sediment before it fills wetlands or streams and damages their plants and animals.
- c. Intercepting and processing excessive nutrient loads before they alter native plant communities and in some cases, before they contaminate susceptible underlying aquifers and streams.
- d. Intercepting and removing minor amounts of pesticides and other toxics before they damage marine, stream or wetland plants and animals.
- e. Maintaining shade, water temperature, and microclimate along marine shorelines and in streams and wetlands as necessary to protect some of their plants and animals.
- f. Minimizing windthrow loss of trees within forested wetlands, along streams and marine shorelines.
- g. Exporting wood and other organic matter to streams and wetlands as required by some of their animals.
- h. Maintaining vegetated “permeable” connections among wetlands and stream riparian areas as required for essential movements of some wetland- or riparian-dependent animals.
- i. Reducing human access to and thus minimizing threats such as trampling of vegetation, soil compaction by off-road vehicles, and disturbance of wildlife during sensitive periods.

Where vegetation is allowed to dominate an upland area next to a wetland, that not only reduces the risk of the upland area becoming a pollution source, it also provides an opportunity for the upland area to immobilize or process the pollution it receives, thus maintaining the water quality of the adjoining wetland, stream, marine shoreline and all its functions. This is the principle behind using buffers to maintain water quality.

Vegetated buffers (also called vegetated filter strips) have been widely promoted as a best management practice for maintaining the water quality of lakes and streams, and more recently wetlands. Note that factors other than buffer characteristics can control water quality. These include underlying soils and geology, groundwater discharge or recharge rates, topography, plants and animals within a wetland, and proximity to the

ocean (Feller 2006). A buffer's effectiveness for reducing pollution is typically expressed as the percent of incoming pollution that is retained or removed."

3.2 What other characteristics of buffers are important?

The summary below specifically mentions wetlands but many of the concepts are applicable to streams and marine shorelines.

"Although discussions of buffer design typically focus mainly on the buffer's width, several other buffer characteristics can be equally or more influential with regard to the buffer's effectiveness. These include vegetation type, water source, flow pattern, slope, soil type, location of the buffer relative to major paths by which water enters the wetland, contributing area size relative to buffer size, and the amount and dosing rate of the pollutant. Effects of these characteristics are described below:

Vegetation Type: Many studies have compared grass vs. wooded buffers. Some have found grass filters (buffers) to be more effective whereas others have found wooded to be more effective, and some have found mixtures of both to be most effective (Sovell et al. 2004, Schultz et al. 2004, Lowrance & Sheridan 2005). Thus, no general conclusions can be drawn. The differences are probably explained by underlying differences in vegetation patterns, species, root structures, season, pollutant type, and/or characteristics described below that correlate with vegetation type. There are no data that indicate buffers dominated by non-native plant species are less or more effective than ones dominated by native plants. (Note: this statement is in regard to water quality not the other habitat values provided by native vegetation.)

Water Source: Vegetated buffers are more effective in protecting the quality of wetlands whose primary water source is shallow subsurface lateral flow or discharging groundwater, rather than channel flow or surface runoff. That is because pollution transported towards the wetland via subsurface routes is most likely to pass slowly through the biologically-active root zones of plants in the buffer, thus maximizing the potential uptake and processing (Bedard-Haughn et al. 2004).

Flow Pattern: Flow pattern is perhaps the most important factor influencing buffer effectiveness. Vegetated buffers are most effective in protecting the quality of wetlands in which the largest portion of incoming water enters the wetland as diffuse flow (surface sheet flow or subsurface lateral flow) rather than as flow concentrated in rills and gullies (Dillaha et al. 1989, Dosskey et al. 2002, Wigington et al. 2003). This depends on typical rainfall patterns (steady drizzle vs. concentrated in storm events, Lee et al. 2003) as well as soil type (coarser soils tend to promote infiltration and less gullyng), man-made alterations, and slope (Abu-Zreig 2001, Mancilla et al. 2005). In one study, only 9-18% of the vegetation in a buffer was actually in contact with runoff, due to the buffer's topography. Although under uniform flow the buffer could potentially remove 41-99% of sediment, the actual removal rate was 15-43% (Dosskey et al. 2001). Field surveys of a statistical sample of Island County wetlands and their buffers during 2005 found very little evidence of gullyng or channel headcutting in the buffers, which could reduce their effectiveness. An unknown proportion of wetlands are partially fed, at least during major storms, by ditches and subsurface pipes from roads,

subdivisions, or agricultural lands. Those features partially circumvent the pollution-filtering purpose of buffers.

Slope: Vegetated buffers are most effective in protecting the quality of wetlands when the buffers are in relatively flat terrain (Jin & Romkens 2001). That is because flat terrain allows water more time to move slowly downslope through the roots of the buffer vegetation (Wigington et al. 2003). Depending also on soil type, steep slopes can foster the formation of gullies and rills, short-cutting the naturally diffuse flow paths necessary for effectively purifying runoff (see Flow Pattern, above). However, the magnitude of the effect is unclear. For example, despite a buffer slope of 16%, Dillaha et al. (1989) measured 70% retention of runoff-borne sediment in buffer that was only 30 ft wide.”

In addition to the factors summarized above for protecting water quality the Island County study also identifies the factors critical to protecting habitat functions. These are available at:

<http://www.islandcounty.net/planning/criticalareas/BestAvailableSciencePhaseII.pdf>.

4 PROPERTY RIGHTS ISSUES

4.1 Will new regulations stop all use of my property? What happens if the existing use of my property does not meet new regulations?

There are two legal mechanisms important to understand in answering these questions: a reasonable use exception for critical areas and a nonconforming use or structure exception that applies countywide.

The reasonable use exception typically included in local government critical area ordinances provides an exception of the regulations in order to prevent an unconstitutional taking of private property by the government. Typically reasonable use exceptions allow an area of a property to be developed for its intended use even if it is not consistent with the buffer or critical areas regulations. Local governments have wide discretion in developing appropriate reasonable use standards. However, state agencies and others have expressed concern that if the exception standards are too flexible they may allow significant impacts to the environment.

The Citizens Committee recommends the following development be allowed on lots largely or completely in a critical area, where a reasonable use exception is necessary.

For lots less than two (2) acres in size	5,490 sq. ft. of developed area including the driveway
For parcels two (2) acres to less than five (5) acres in size:	8,710 square feet of developed area including the driveway
For parcels five (5) acres to less than fifteen (15) acres in size:	10,890 square feet of developed area including the driveway
For parcels 15 or more acres in size:	10,890 square feet of developed area in addition to a driveway

Nonconforming use or structure regulations apply when a use or structure was established lawfully before a new regulation was adopted and the use or structure is not consistent with the new regulation. An example is a home that was built 20 feet from shoreline and then a regulation is passed that requires homes to be set back 50 feet from the shoreline. Under the current County regulation, a nonconforming use or structure can be maintained and in some cases expanded. Specific to the example, the house that is 20 feet from the shoreline can be maintained and possibly expanded provided it does not go closer to the shoreline and other legislated restrictions are satisfied (such as size of footprint, percentage of lot coverage, amount of impervious surface, etc.)

If the County increases the required buffers on wetlands, streams and marine shorelines it will mean more existing homes will be classified as legal, non-conforming structures and owners of small lots next to streams, wetlands and shorelines may have to apply for a reasonable use exception in order to build a new home.

Some people believe the County is too restrictive in its interpretation of reasonable use and allowances for nonconforming uses. Others believe the County should be more restrictive. However, at a minimum, the County will need to show how provisions for non-conforming structures and uses, and reasonable use work within an overall regulatory scheme to achieve the state standards and guidelines for protection.

In addition to the nonconforming and reasonable use provisions, the citizen's committee recommended an option for property owners to apply for a Critical Areas Stewardship Plan (CASP) that would allow a site specific approach rather than compliance with the standard buffer requirements. At a minimum the CASP must provide equal protection of the water quality, habitats, functions, processes and values found on or associated with the site, when compared to the protection afforded by meeting the prescriptive requirements of the Critical Areas Ordinance. The property owner would be responsible for developing this plan in consultation with a qualified professional, and proposed actions must be supported by the Best Available Science. When available, qualified San Juan County staff may assist landowners with these plans. The County Planning Director would be responsible for reviewing and approving the plans and may seek technical assistance from the San Juan County Conservation District; the Washington Departments of Fish and Wildlife, Natural Resources, or Ecology; or other qualified professionals. This section does not apply to agricultural activities because they are exempt from County Critical Area requirements.

5 HOW DO WE FIND SOLUTIONS TO THE ISSUES DESCRIBED ABOVE?

5.1 How do we best use existing science? Where is there need for additional science?

What should be used from the State and Federal guidance? How should the work from Island County and other local science be incorporated? Should the County invest in additional scientific research?

5.2 What approach to buffers for streams, wetlands and marine shorelines will best serve SJ County?

The following section describes current buffer regulations and what is being considered. The second section discusses a variety of approaches that others have used to try to achieve the desired outcomes for the ecological health and landowner needs.

a. What are the current buffer regulations and what is being considered?

Buffer widths vary by the type of area and the classification of its sensitivity. For example wetlands have Classes 1-4 that are intended to represent their sensitivity to human impacts and the level of ecological value they have. Class 1 is the most sensitive and ecologically valuable whereas Class 4 is felt to be the least sensitive to human impact. Similarly, streams are distinguished by the presence of fish or their absence. All the streams in San Juan County have been mapped except for those on Lopez Island. Not all wetlands and streams have been identified and documented by the County but those that have can be viewed on County maps available at: <http://www.gartrellgroup.net/sjparcelsearch/sjcinteractive.cfm>.

The table below shows: 1) the current County buffer requirements, and 2) what is being proposed by the County citizen committee and County staff.

Type of Area	Current County Regulations	Citizen Committee/County Staff Proposal
Wetlands		
Class 1	150 feet	180 feet
Class 2	75 feet	180 feet
Class 3	50 feet	90 feet
Class 4	35 feet	30 feet
Streams		
Fish bearing		150 feet
Non Fish bearing		100 feet
Marine Shorelines		
With Trees	50 feet	100 feet
Without Trees	100 feet	100 feet

b. Other approaches

There are three basic types of buffer regulations that have been used by other local governments: variable-width, fixed-width, or some combination. The following

information comes from the report *Best Available Science for Wetlands in Island County* prepared for Island County in 2007 and written by Dr. Paul Adamus.

“Variable-Width Buffer Approach

The variable-width approach is a case-by-case strategy that probably is the most consistent with what scientific literature says about buffer effectiveness. This approach usually involves consideration of site-specific factors such as wetland type, adjacent land use, vegetation, soils, slope, and wildlife species – measuring and analyzing these in some cases with detailed protocols and formulas that are believed to predict buffer effectiveness. By taking into consideration relevant site-specific factors prior to determining the appropriate buffer width, this approach helps ensure that the buffer is adequate to protect a wetland without being any larger than is necessary. However, this approach is time-consuming, costly to implement, and provides a less predictable outcome. It requires either that the landowner hire a consultant to conduct the necessary analysis, or that County staff conduct the analysis. In either event, the staff must have appropriate training and expertise to conduct or review the analysis. This approach also does not provide much predictability. Landowners have no idea how large a buffer may be required until considerable time and money are invested in the analysis. Using a case-by-case, variable-width approach can also result in attempts to manipulate the site-specific data, lead to frequent haggling with applicants, and create the perception that buffer widths are determined in an arbitrary and capricious manner.

Fixed-Width Approach

By contrast, a fixed-width approach provides predictability and is less expensive to administer. This is the approach currently used by the County [Island County]. Such buffers are often intended to protect just one feature or function of a wetland. The downside of this “one-size-fits-all” approach is that it results in some buffers being too small to adequately protect wetland functions, and some buffers being larger than necessary to protect wetland functions. Over time, this inequity may erode support for the buffer program. Frustrated landowners can point to the “over-regulation” of those buffers that are larger than necessary, while environmentally minded citizens can point to those buffers that are smaller than needed to protect wetland functions. It also is difficult to determine an appropriate standard width, because no single size buffer can be demonstrated to protect all wetland types adequately in all situations unless that standard width is very large. Furthermore, it is difficult to argue that a fixed-width approach includes the best available science since the scientific literature clearly recommends different buffer widths based on a variety of different factors.

Combined Variable- and Fixed-Width

There are several ways to modify a standard, fixed-width approach to incorporate some of the varying factors that contribute to buffer effectiveness. In theory, some drawbacks of the fixed-width approach can be lessened by utilizing a wetland, stream and marine shoreline rating system that designates an area into different categories (or assigns habitat function scores across a continuum) based on specific characteristics. Then, different buffer width standards can be assigned to each category or habitat score range. This approach provides predictable widths, yet allows some tailoring of buffer widths

to characteristics of a specific wetland. This is the approach adopted in the new Island County wetland regulations.

Another way to tailor a fixed-width approach is to address site-specific factors by having different standard widths based on the likely intensity of adjacent land use. A buffer regulation could require a larger buffer width for adjacent land uses with intense impacts and a smaller buffer width if the impacts from adjacent land uses are low. This approach can be combined with a wetland, stream and marine shoreline rating system to provide a more scientifically defensible regulatory approach. However, it must be recognized that land uses often change. If a land use requiring only a narrow buffer is subsequently converted to another more-intensive use, some structures just outside the original narrow buffer might need to be removed and/or vegetation may need to be planted to widen the buffer, and this is generally not practical.”

Island County adopted the third option described above for wetland buffers in 2007. The following three tables show Island County’s regulations for 1) special case buffers, 2) habitat buffers and 3) water quality buffers.

Island County Table 1: Special Case Buffers for Specific Wetlands Types				
Land Use Intensity	Bog	Coastal Lagoon Wetland	Delta Estuary Wetland	Other Estuarine Wetlands
Low	125 ft	100 ft	40ft	30 ft
Moderate	190 ft	150 ft	90ft	55 ft
High	250 ft	200 ft	125ft	90 ft

Island County Table 2: Habitat Buffers					
Land Use Intensity	Habitat Functions Score				
	50 or higher	42-48	39-41	32-38	Less than 32
Low	150 ft	125 ft	100	75 ft	Use Other Tables
Moderate	225 ft	175 ft	150	110 ft	
High	300 ft	200 ft	175	150 ft	

Island County Table 3: Water Quality Buffers						
Land Use Intensity	Wetland Category					
	Wetland Outlet	A	B	C	D	E
Low	Yes	40 ft	35 ft	30 ft	25 ft	20 ft
	No	75 ft	50 ft	40 ft	35 ft	25 ft
Moderate	Yes	90 ft	65 ft	55 ft	45 ft	30 ft
	No	105 ft	90 ft	75 ft	60 ft	40 ft
High	Yes	125 ft	110 ft	90 ft	65 ft	40 ft
	No	175 ft	150 ft	125 ft	90 ft	?? f

While the San Juan County citizen’s committee did not evaluate Island County’s solution for applicability here, it did discuss the options described above. In large part due to the significant limitation of San Juan County resources, the draft ordinance proposed fixed-width buffers. However the proposal does allow individual property owners to develop site specific critical area stewardship plans (CASP) and does allow for buffer averaging provided certain restrictions and criteria are met based on what is known from science about what is necessary to protect ecological functions.

Question for Public Discussion:

San Juan County Council is interested in knowing if there is public support for developing and administrating a tailored approach similar to Island County where buffer widths are based on the sensitivity of the wetland, stream and marine shoreline, the intensity of the land use and other site characteristics. This approach will cost more and require more technical resources to develop and administer but can be better adjusted to site conditions to produce results for both for the property owner and the environment.

5.3 Uses within buffers: What uses and restrictions in buffers are necessary in wetlands, streams and marines shorelines to protect the environment and provide flexibility for the needs of property owners?

The current proposal for wetland buffers defines buffers as native vegetation, duff, logs, and snags. The following exceptions are currently allowed within this natural buffer area.

- a. Trails, stairs or raised walkways for pedestrian use, not exceeding five feet in width, providing they are constructed of non-treated wood, are designed to sheet

flow runoff into adjacent vegetation, and are designed to minimize soil erosion and impacts on water quality.

- b. Non-structural improvements and maintenance that do not damage the wetland or buffer.
- c. Replacement of non-native vegetation with native vegetation.
- d. Restoration or enhancement designed to protect soil, water, vegetation or wildlife that meets applicable State and Federal requirements.
- e. Exceptions and exemptions allowed under 18.30.110.C, D, & E.
- f. Fences.
- g. Wildlife viewing structures less than 200 square feet in size.
- h. Legal structures and uses existing on (the date these requirements are adopted), that are located within a wetland buffer, may continue in accordance with 26SJCC 18.40.310 and 18.80.120, and in addition the developed area within a buffer maybe expanded up to 25%, provided the expansion does not further encroach toward the wetland. All development occurring after the above effective date shall count toward this 25% maximum.
- i. Orchards and gardens provided no chemicals are used.

There are two issues with this list of uses 1) does it provide for all the activities that land owners want and, 2) will the environmental processes, functions and habitats be protected if all these uses are allowed.

5.4 Armoring and Bulkheads: How can we best protect the ecological functions of feeder bluffs and beaches and allow property owners to protect their homes and structures?

The San Juan Initiative is recommending a new standard for placement of hard shore armoring along beaches and bluffs. The new standard would only allow the placement or replacement of hard shore protection if the main structure, accessory dwelling structures, roads, septic systems and driveways are shown to be threatened by erosion in a three year time frame and no other alternative to protect the structure exists. This new standard has been discussed through nine public workshops and was supported by land owners and other community members who participated in the workshops.

The rationale for these recommendations is based on the protection of marine shoreline processes. The following summary in the recent report, *Marine Forage Fishes in Puget Sound*, Technical Report 2007-03 for the Puget Sound Nearshore Partnership, provides an explanation of the impacts from shoreline armoring.

“Shoreline armoring may be the primary threat to surf smelt and sand lance spawning habitat. Armoring affects spawning habitat by physical burial of the upper intertidal zone during the course of creating or protecting human infrastructure and activities. Prior to detailed studies of forage fish spawning habitat, it was presumed that the upper third of the intertidal zone could be sacrificed to development without concern. This high beach zone did not appear to support any biological resources. The

sheltered bays of the inland waters so important to spawning forage fish have also been the shorelines of highest interest for commercial and residential development.”

The report also says, “Armoring also blocks, delays or eliminates the natural erosion of material onto the beach and its subsequent transport. These processes maintain forage fish spawning substrate on the upper beach. Although beaches may appear to be stable, their sediment is in constant motion, driven by prevailing wind and waves. The sand and gravel making up forage fish spawning substrate moves along the shoreline and eventually off into deep water, and must be replaced by new material entering the shoreline sediment transport system. A lack of constant supply of new sand and gravel, primarily derived from eroding shoreline bluffs, may lead to coarsening, lowering of the beach elevation, and thus long-term degradation of spawning habitat.”

The change in beach substrate can affect other microbial organisms that feed fish and other species.

This San Juan Initiative recommendation is intended to increase the protection of these critical ecosystem processes. The County Council is considering this recommendation in the update of the Shoreline Master Program and deciding whether to adopt them in the near future or wait and consider them with the full update required within the next three years.

5.5 Flexibility: What more flexibility with buffers is needed for special situations?

The citizen’s committee recommended an option for property owners to apply for a Critical Areas Stewardship Plan that would allow a site specific approach rather than compliance with the standard buffer requirements. Are the Critical Areas Stewardship Plan (CASP), Reasonable Use, and Nonconforming Structures/Uses sections of the code adequate to ensure?

- a) No previously developable parcel becomes undevelopable as a result of these new regulations?
- b) Property owners maintain reasonable flexibility to maintain, repair, and remodel existing conforming structures and maintain uses?
- c) A conduit is in place for property owners who want to create a site-specific plan to develop their property that may contain unique or complex development challenges?

If this process is not sufficient to meet the needs of the property owner and protection of the environment, what specific changes should be included in order to ensure these things while still complying with state law and protecting our critical areas?

6 HOW DO I GET INVOLVED AND HELP THE COUNTY MAKE THE BEST DECISIONS FOR THE ENVIRONMENT AND FOR PRIVATE PROPERTY OWNERS?

You are encouraged to send us your comments, questions, and suggestions by November 18th, attend the public workshops and/or provide your perspective, questions and suggestions directly to Planning Commission and County Council members. Public workshops will be facilitated to foster a community dialogue that advances these issues. This is a unique opportunity to better understand the ecological nature of San Juan County and what the people who live here value and care about. The staff, committee charged with engaging the public and the Council look forward to the opportunity converse with citizens of the County.

Comments should be sent to:

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