

**Answers to Questions from the San Juan County Council
CAO and SMP Workshop, August 25th 2009**

REVIEW AND APPROVAL PROCESS:

1. The Department of Ecology (DOE) has been described as holding the ultimate "trump card" over any plan we adopt by refusing to approve it. Does DOE have the authority to indirectly dictate the contents of local plans in this way? Do local jurisdictions have any appeal process if DOE chooses not to approve their plan? How does DOE make the decision for approval? Who has the final authority within DOE on plan approval?

(Ecology) Ecology must approve all shoreline master program amendments before they take effect based on consistency with RCW 90.58.020 and applicable Guidelines. Ecology may make recommendations for changes during the approval process to achieve this consistency. Local government may accept these changes or offer alternative changes. Ecology is required by the Shoreline Management Act to implement SMP Guidelines (WAC 173-26, Part III), which establish the contents of locally prepared SMPs. Ultimately, it is the Director of the Department of Ecology's decision as to what is approved or denied. All SMP decisions by Ecology are appealable to the Growth Management Hearings Board.

(Commerce) This question and several others below appear to conflate local actions taken to comply with the Growth Management Act (GMA) with those taken to comply with the Shoreline Management Act (SMA). While these two laws are in many ways complementary, they establish distinctly different roles for state agencies. Ecology does not have authority to approve regulations adopted under the GMA. If Ecology or any other state agency believes that the county's final adopted Critical Area provisions does not meet statutory requirements, they would have to file a petition for review to the Growth Hearings Board like any other party.

2. San Juan County is on the verge of accepting a DOE grant to fund the development of our Shoreline Master Program update? Are there "strings" attached to the acceptance for this grant that would control our local process and the ultimate outcome?

(Ecology) San Juan County is required to prepare, just like over 250 other local governments across the state, a comprehensive update of its existing SMP, according to the timetable set forth in RCW 90.58.080. The only "strings" attached by accepting the grant money is the process for updating the shoreline master program. That process is set forth in WAC 173-26, Parts II and III. The grant agreement lays out the process in detail with a timeline for local adoption.

3. The Shoreline Master Program Update Grant scope of the work provides for a three-year process. Is it the intent of DOE that recipients use the whole three years to accomplish the update in totality?

(Ecology) The Shoreline Management Act requires that San Juan County complete its comprehensive update by December 1, 2012. The Act also allows for an additional year if needed. Within these parameters local government may choose its own timeline. Recipients do have the option of completing their update ahead of the three year deadline.

4. In science, proof of a negative is very difficult if not impossible to achieve. Yet many of the proposed Critical Areas Ordinance (CAO) regulations require the property owner to do no harm and an action can be prohibited unless it is possible to demonstrate that no harm is being done. In order to do this they must prove a negative. How do you reconcile these two apparently conflicting premises?

(Ecology) This question contains a false presumption, that being that a CAO prohibits action unless it is demonstrated that no harm is being done. CAOs don't work like that. CAOs typically include flexible, prescriptive protections (buffers) and opportunities for mitigation of impacts. These tools are adopted in consideration of BAS for protecting critical area functions. The presumption is that if these tools are implemented then harm to resources will be minimal.

The "no harm" standard is not inherent in CAOs or Ecology's guidance on wetland protection. A "no harm" standard would essentially preclude almost all development. Ecology's guidance includes (and admits) the possibility that harm may be done. Our buffer recommendations represent the middle range of what wetland science shows is necessary to protect functions. They have been criticized by some as being too small to protect all wetland functions. For example, most research on amphibian habitat indicates that even the largest of Ecology's recommended buffers are not large enough to fully protect amphibians.

The GMA does not require a "no harm" standard. Implementing rules, WAC 365-195-920 requires that: "Where there is an absence of valid scientific information or incomplete scientific information relating to a county's or city's critical areas, leading to uncertainty about which development and land uses could lead to harm of critical areas or uncertainty about the risk to critical area function of permitting development, counties and cities should use the following approach:

(1) A "precautionary or a no risk approach," in which development and land use activities are strictly limited until the uncertainty is sufficiently resolved; and

(2) As an interim approach, an effective adaptive management program that relies on scientific methods to evaluate how well regulatory and nonregulatory actions achieve their objectives."

(Dr. Brooks) Wetland maps used by Washington State Counties are generally based on NRCS Soil Surveys and the National Wetland Inventory. In my experience, these maps are frequently inaccurate. The cost to a landowner to have the absence of a wetland documented is generally in the range of \$1,500.00 to \$2,500.00. In some cases this can take up to a year to demonstrate that wetland hydrology does not exist during the early part of the growing season.

The Department of Natural Resources Stream inventories were developed using computer models and they are even more inaccurate – particularly for Type 4 and 5 streams (Na and Np). In the absence of a significant physical barrier, it is difficult to prove that there is no fish use when a stream is listed as fish bearing. Retyping a stream can take a year and cost \$2,500.00 to \$5,000.00 to conduct the studies and provide the documentation necessary to retype a stream. It seems far more logical and efficient for San Juan County to require that WDFW DEMONSTRATE actual fish use rather than to require the property owner to prove that there is no fish use.

5. The Thurston County remand by the Washington State Supreme Court (filed August 14, 2008) called into question the practice of ‘bright-lining’ by the Growth Management Hearings Boards (GMHB) by saying that, “... a GMHB cannot create a bright-line factor because “the growth management hearings boards do not have authority to make ‘public policy’ even within the limited scope of their jurisdictions, let alone make statewide public policy.”” Does not the DOE face the same risk of judicial rebuke if they tell local jurisdictions that they will only accept specific buffers around specific critical areas?

(Ecology) Because of the special nature of our marine and other shorelines, the Shoreline Management Act is based on a partnership between local governments and the Department of Ecology. Local Shoreline Master Programs are formally approved by Ecology – and defended if legally challenged. The “bright-line” issue does not fit with the local/state partnership structure of the SMA. The SMA explicitly recognizes that there is a statewide public policy interest in protection and management of our shorelines.

Under GMA Ecology is not in a position to accept or deny specific buffer widths. We recommend that jurisdictions adopt buffer widths that are adequately protective of wetland functions and have provided guidance to that effect.

(Commerce) Unlike the hearings boards, Ecology has been delegated authority to approve local SMPs consistent with applicable guidelines. With respect to critical area buffers, Ecology’s authority applies to amendments to SMPs that regulate critical areas that fall within the geographic jurisdiction of the SMA.

(Kyle Loring) The Department of Ecology (“Ecology”) probably does not face the same risk. The Growth Management Hearings Board is a quasi-judicial entity

that the legislature empowered for the sole purpose of interpreting statutes and regulations, and so oversteps its authority where it creates bright-line rules that would establish public policy. See Thurston County v. W. Wash. Growth Mngmt. Hrgs. Bd., 164 Wn.2d 329, 190 P.3d 38, 49 (2008). By contrast, as the Washington State Supreme Court noted in Viking Properties, Inc. v. Holm, regulatory provisions are exactly the sort of legal material that does set forth public policy. 155 Wn.2d 112, 129, 118 P.3d 322 (2005). Because Ecology is an administrative agency that directs public policy through regulations, as opposed to a quasi-judicial tribunal, it probably would not be subject to the same challenge as the Western Washington Growth Management Hearings Board in Thurston County.

(Dr. Brooks) The Department of Ecology frequently asserts that courts and boards have upheld their Best Available Science. To the best of my knowledge, the actual content of Sheldon et al. (2004) has not been tested in court. With respect to Ecology's demands for large buffers and other restrictions recommended on private property, I recommend that Council members read the appeal of Skagit County's CAO before the WWGMHB. Note that the board repeatedly cautions local governments to "not overstep their Constitutional Authorities when imposing restrictions on private property. The fact is that Washington State's DOE has won some and lost some and the record is mixed. Under any circumstances,

The completeness and accuracy of DOE's BAS has not been tested in the appeals court system. Please read the Supplemental Best Available Science (Brooks, 2006) and decide for yourselves if Ecology's BAS provides a complete and accurate survey of the literature regarding water quality and habitat fragmentation.

The attorneys I have discussed restricting private property for the general benefit of wildlife (not listed species) with have agreed that this action by the state (and local governments) is likely NOT CONSTITUTIONAL – but again, this has not been tested in the appeals courts. However, consider the rebuff to King County by the courts with respect to the county's requirement that portions of private property be left in a natural state as a condition of obtaining a building permit.

6. Does the DOE see that it has a role to play in providing balance between the 14 goals of the GMA or does it just represent the environmental component?

(Commerce) See response to question #1, as it is important to distinguish between Ecology's role with respect to Critical Area regulations and the GMA generally. Ecology's role under the GMA involves review and comment of locally adopted plans and development regulations. The goals of the GMA are used by local governments to guide the development and adoption of comprehensive plans and development regulations.

*(Ecology) Ecology's role in the CAO update is to provide technical assistance and BAS to help inform the local process. The County is required by GMA to **first** designate and protect critical areas.*

*The question contains a false presumption, that protection of critical areas is a goal, and on equal footing with the stated 14 goals in GMA. The GMA mandate to designate critical areas and protect their functions and values using BAS is a **requirement, not a goal**; pursuant to the admonition of the Supreme Court in *Quadrant*, goals do not override requirements. This excerpt is from the CPSGMHB in the Kent case (Case No. 05-3-0034):]*

The Board is persuaded that the City's attempt to justify its non-compliance with the GMA requirement to use BAS to protect the functions and values of wetlands by appealing to other goals of the GMAS, specifically housing, economic development, and property rights, is **clearly erroneous**.

The Board finds and concludes that the GMA requirements for designation and protection of critical areas may not be overridden by appeals to GMA goals, and that the City's attempts to do so, in Ordinance Recitals HH, II, and JJ, are **clearly erroneous**.

*See also CPSGMHB Case No. 05-3-0034 and *Quadrant Corporation, et al., v. State of Washington Growth Management Hearings Board (Quadrant)*, 154 Wn.2d 224, at 245, 110 P.3d 1132 (2005) (affirming King County analysis).]*

7. The GMA and the SMP are supposed to be part of a bottom up approach to limit sprawl and provide shoreline protection. Is the State going to set aside this approach by letting the Federal Government through FEMA and the Bi-Op preempt (dictate) this process in the shoreline?

(Ecology) The National Marine Fisheries Service has determined that the FEMA minimum standards for floodplain management are not protective of listed salmon in the Puget Sound region. Many local governments already go well beyond the FEMA minimum standards in restricting development within floodplains and taking other measures. All parties are still sorting out how compliance with the Bi-Op may intersect with habitat protection under Critical Area and Shoreline regulations. The Bi-Op adds a new dimension to actions by local governments to address habitat protection.

(Kyle Loring) The SMA does not establish a bottom-up framework. Unlike the GMA's bottom up approach, by which it establishes a framework that guides local jurisdictions in developing comprehensive plans and development regulations, the SMA "establishes a cooperative program of shoreline management between local government and the state." RCW 90.58.050. In addition, although there likely is no conflict between the Endangered Species Act's ("ESA")

implementation by FEMA and implementation of the GMA and SMA, it is possible that the ESA would govern in the event of a conflict. Thus, to the extent that certain prescriptions are appropriate under the ESA, they probably could not be ignored in favor of less protective local approaches.

(Dr. Brooks) Has the NMFS Biological Opinion been tested in the courts? Has it been peer reviewed by an INDEPENDENT EDITOR using ANONYMOUS REVIEWERS? I recommend that San Juan County critically review the Biological Opinion before adopting its recommendations.

SETBACKS AND BUFFERS:

1. Is there direct evidence that the buffer regulations currently being used in San Juan County have harmed the environment in the County?

(Fish & Wildlife) WDFW has not conducted an assessment of effectiveness of the county's current buffer regulations. However, recent scientific studies point to the decline of habitat functions and processes in the Puget Sound as a result of development activities in aquatic environments.

The Puget Sound Partnership Action Agenda Topic Paper on Habitat and Land Use Development lists major threats to habitats in freshwater, estuary, marine, and terrestrial ecosystems and their resulting impacts on ecosystem processes. These include development activities that may currently be allowed in a buffer such as vegetation removal, ornamental landscaping, timber harvest, wetland fill, and impervious surfaces. Increasing the area of impervious surface in riparian environments can alter land surface, soil, vegetation and hydrology. Impervious surface area is strongly correlated with adverse impacts on stream conditions including extensive changes in basin hydrology, channel morphology, and physio-chemical water quality (May 2003; Booth 2000).

Booth, Derek B. 2000. Forest Cover, Impervious-Surface Area, and the Mitigation of Urbanization Impacts in King County, Washington. King County Water and Land Resources Division. 18 pp.

May, C.W. 2003. Stream-Riparian Ecosystems in the Puget Sound Lowland Eco-Region: A Review of Best Available Science. Watershed Ecology LLC. 76 pp.

(Ecology) We are unaware of any direct evidence (i.e., monitoring data) that shows harm or the lack of it. There is substantial indirect evidence that our regional ecosystem is being degraded. Depleted fish stocks (both salmonids and forage), bioaccumulation of toxins in large marine mammals, low dissolved oxygen zones, amphibian population declines, water quantity and quality concerns, etc. all serve as evidence that ecosystem functions are diminishing.

There is extensive information in the scientific literature to show that the current wetland buffers in effect in San Juan County are inadequate to protect most wetland functions

See also WAC 365-195-920 requirements in response to #4 above.

(Dr. Brooks) I am unaware of any documentation describing environmental harm associated with low-density rural residential development. There are numerous cases in which fecal coliform contamination of shellfish growing areas has been traced back to poor animal keeping (horses and cattle) operations. However, to the best of my knowledge those instances have not been published.

I recommend that the County Council frame a set of questions for WDFW, WDOE and NMFS that must be rigorously answered to show harm, before new restrictions are imposed. One of those questions might be, "What specific contaminants, originating at single family residences located in low density rural residential areas, are the agencies concerned about?" Follow that with, "What are the concentrations of these contaminants in surface water runoff or sediments as a function of distance from the home?" Finally ask, "How do those documented concentrations compare with Washington State water and sediment quality criteria?"

The poor state of Washington State's fisheries in Puget Sound can have many causes, including poor harvest management in addition to water quality. I once asked a WDFW fisheries biologist what we knew about the effects of harvesting large quantities of sea cucumbers. These invertebrates are detritivores that may be very important for consuming the waste from dead plants and animals that rains down on the bottom from the water column above. His response was, we haven't studied that and simply don't know. What we do know is that the state gets income from leasing the tracts for sea cucumber harvests.

2. Are all shorelines Critical Areas?

*(Commerce, Fish & Wildlife, Ecology) It is presumed from the question, that "shorelines" refers to shorelines as defined in the SMA and "critical areas" refers to critical areas as defined in the GMA. There is nothing in the SMA definition of "shorelines" that states that all shorelines are critical areas. The SMA definition was amended in 2003 to add a Note under "**Finding -- Intent -- 2003 c 321:**" that states it is the Legislature's intent that "Shorelines of statewide significance may include critical areas as defined by RCW [36.70A.030](#)(5), but that shorelines of statewide significance are not critical areas simply because they are shorelines of statewide significance." Under the GMA, local governments are required to designate all critical areas that meet the statutory definition.*

We note there is often a great deal of overlap between areas that meet the definition of critical areas and areas regulated under the SMA. For example,

GMA rules recommend that all waters of the state be designated fish and wildlife habitat conservation areas [WAC 365-190-080(5)(iv)]. Type S, shorelines of the state, are classified as waters of the state under (WAC 222-16-030). Many geologically hazardous areas and floodplain areas also overlap with shoreline jurisdiction.

If the question is intended to clarify the extent buffers will be required along marine shorelines, it should be noted that NOAA has designated the marine nearshore waters of Puget Sound critical habitat for salmon and steelhead. This may be enough to designate these waters critical areas. (See also the Commerce response to question #6 below.) Regardless of any debate as to which marine waters are critical areas, the SMA requires adequate protection of environmental functions.

(Dr. Brooks) All marine waters are Essential Fish Habitat. However, not all shorelines are defined as critical areas simply because they are shorelines.

3. It seems that activities within any required buffer are the major real source for any degradation of the environment (e.g., use of pesticides, defoliants, ground disturbance). Wouldn't it be better to regulate activities rather than buffer widths? Couldn't inappropriate activities harm the environment no matter how wide the buffer?

(Fish & Wildlife) Both width and management are important. A riparian buffer can be thought of as a management area; the width determines both the management area boundary and what types of functions the buffer will address. Some impacts to riparian areas come from upland land uses that may not be directly captured in a buffer, but a buffer can be sized with those impacts in mind (e.g., upland development leading to increased sedimentation, stormwater runoff). Buffers that are drawn too small may not capture important functions (e.g., nesting habitat for protected birds, shade provided by riparian vegetation to manage stream temperature and recruit large woody debris for fish habitat). We agree that within any size of buffer, it is important to carefully manage activities to avoid environmental harm.

(Ecology) Regulating activities is actually what buffers do. Activities outside of a certain distance from the critical area (the buffer width) are not regulated by the CAO.

In the context of a CAO, activities are regulated within the prescribed buffer. CAOs usually designate activities as "allowed", "permitted", "regulated" or "prohibited". It is this regulatory mechanism that gives local governments the ability and authority to protect critical area functions.

Buffer Alternative 3 in Ecology's BAS document considers activities (land use intensity) in the recommended wetland buffer widths. Regulating activities

adjacent to critical areas can support reduced buffer widths if the primary concern is to protect water quality. Buffer reductions based on regulated activities are not as applicable for habitat functions. However, regulating activities can be difficult to implement and may require greater oversight. A rural stewardship plan may be a good option for addressing site-specific regulation of activities.

Inappropriate activities could harm the environment regardless of buffer width. A well-crafted CAO should provide certainty that critical areas will be protected to the greatest extent feasible.

(Dr. Brooks) This is an excellent point. I reiterate that, "It is not what you do – but how you do it that counts." All pesticides should be used in strict conformance with the U.S. EPA Label for the product.

4. What is the best available science argument for shoreline set backs (and distance of setback) for:
 - a. solid rock shore line or rock cliff;
 - b. vegetative shore of gravel, rock, and dirt where vegetation hangs over the shoreline;
 - c. small rocky, gravel, or sandy shoreline?

(Fish & Wildlife) Current best available science for riparian buffers (shoreline setbacks) is categorized by habitat function, as opposed to shoreform classification.

(Ecology) This question is answered assuming the Council wants information regarding vegetated marine riparian buffers rather than construction setbacks. The scientific review papers regarding buffers are organized by specific ecological function, not by type of shoreline. Specific conditions on each specific shoreline site may affect the widths of shoreline vegetation needed for specific ecological functions to remain intact on that site. The types of shoreline listed in the question above are only a few of many different factors (e.g. specific soil type, slope, type of vegetation, etc.) that could affect the width of the buffer needed for intact ecological functions on any specific site.

(Dr. Brooks) This is another excellent question. The underlying point is that effective environmental management is a site-specific exercise. Some people don't like that approach because it requires knowledge and the exercise of good judgment. Some people in San Juan County have argued that site specific planning is too expensive and the County doesn't have the necessary funds to hire competent staff. How do those costs compare with the lost property value imposed on the county's citizens? I suspect the cost to the county to do a good job of managing its resources would be a small fraction of the cost being imposed on property owners. It is always easy to point a finger at someone else and demand that they do something (or that they don't do something). However,

we won't make progress toward sustainable coexistence with earth until people turn those pointing fingers around and ask, "what can I do" – instead of "what I want you to do." In part, what all citizens can do is to pay for a county program that effectively manages resources. That would place the burden (and rewards) of protecting public resources on everyone rather than just rural property owners. King County has a program that finances their Conservation District. An extra levy could provide San Juan County's Conservation District with the funding necessary to monitor water quality; to educate all property owners regarding good stewardship; and to develop Critical Area Stewardship Plans for new low density rural residential development.

5. Do wetland setbacks have to be year-round or can they be seasonal, relating to wildlife or natural breeding seasons? Can there be cattle or other agricultural use during non breeding seasons that would protect the wetland values year-round?

(Commerce) Wetland setbacks are triggered by development activities. The county is not allowed under SB 5248 to amend critical area provisions related to agricultural activities.

(Ecology) Wetland and other critical area buffers should apply year-round. It would be extremely difficult to identify periods of time when wetland dependent species were not using the wetland buffer.

To protect habitat functions, it will be very difficult, if not impossible, to tailor seasonal buffers. A Rural Stewardship Plan is one option for providing more site-specific buffers. Implementing an RSP program will require technical review and monitoring by the County.

In the context of existing and ongoing agricultural practices, we recommend that these activities be exempt from the buffer provisions and that local farmers coordinate with their conservation district to create farm plans for resource protection.

However, new activities should be regulated. New activities that would alter the vegetation, soil or hydrology of a wetland are changes in land use and could impair wetland functions. For example, if trees were cut to facilitate seasonal use, the area would not return to its former function for many years

(Dr. Brooks) There is no reason that some wetlands cannot be managed on a seasonal basis. GMA requires that you protect the functions and values on a watershed basis. As I noted in the workshop, there is no reason that a Class 4 wetland that has a primary hydrologic function but little habitat function could not be used as a soccer field during the dry season. The Western Board has noted that some wetlands within a county could be used for multiple uses such as this. Remember that on a world-wide basis, something like 65% of human food is

grown in wetlands. Would you stop growing rice in Southeast Asia or in California because the crops are grown in wetlands?

6. Do we have any streams or water flows in San Juan County that are significant enough for setbacks for protecting endangered species? If so, which ones?

(Fish & Wildlife) The largest streams in San Juan County are about 15cfs or so and therefore, would not be regulated under SMA. However, the remaining streams would be designated and protected by the critical areas ordinance as fish and wildlife habitat conservation areas.

An example of streams that warrant riparian management area protection due to fish and wildlife resource benefits include Cascade Creek, Nettle Creek, UW Creek, Crow Valley Creek, San Juan Valley Creek, Beaverton Valley Creek. Trout and coho salmon are often found in these streams. 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:

Endangered:

- *Short-tailed Albatross*
- *Brown Pelican*
- *Marbled Murrelet*
- *Taylor's Checkerspot butterfly*
- *Sea Otter*

Threatened:

- *Steller Sea Lion*
- *Steelhead*

Sensitive:

- *Common Loon*
 - *Bald Eagle*
- Peregrine Falcon*

(Commerce) Note that in addition to the GMA requirement to include BAS, the GMA requires local governments provide "special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries." GMA rules suggest that jurisdictions pay careful attention when developing a CAO to protect habitat important for all life stages. See WAC 365-195-925:

- (3) Conservation or protection measures necessary to preserve or enhance anadromous fisheries include measures that protect habitat

important for **all life stages of anadromous fish**, including, but not limited to, spawning and incubation, juvenile rearing and adult residence, juvenile migration downstream to the sea, and adult migration upstream to spawning areas. Special consideration should be given to habitat protection measures based on the best available science relevant to stream flows, water quality and temperature, spawning substrates, instream structural diversity, migratory access, **estuary and nearshore marine habitat quality, and the maintenance of salmon prey species.**

The San Juan MRC has emphasized the importance of nearshore marine habitat quality for many salmon stocks (including PS Chinook) that do not spawn in the San Juans but rely on nearshore habitat there. See: http://www.sjcmrc.org/programs/salmon_files/SanJuanWatershedProfile.pdf

“All twenty-two populations of Puget Sound Chinook salmon use this area 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. Multiple species of salmon from other watersheds use the islands during different stages of their life cycle, although there are no known natural Chinook spawning areas in the islands. Salmon arrive at the archipelago as juveniles after first spending time in the estuary of their natal river and nearby marine shorelines. At this stage in their life cycle, they are larger in size and therefore feeding on larger prey and ranging to greater depths. Maintaining the food web around the islands is critical to the salmon.”

(Dr. Brooks) This goes back to an earlier question. The Department of Fish and Wildlife (WDFW) should be required to document the actual fish use in all streams where they assert there is fish use. My recommendation is that in the absence of rigorous documentation, the county should list all streams as non fish-bearing.

7. What are possible mitigation measures for properties rendered unbuildable, and what are examples of possible Reasonable Use Exemptions?

(Ecology) Allowances must be made for property owner's who's only recourse is to build in a setback or buffer due to lot size and configuration, or the presence of critical areas and their buffers. The mitigation sequence (avoid, minimize, mitigate) should be followed. On site mitigation is preferred, but if not possible may be done elsewhere. Mitigation could include wetland or shoreline habitat restoration. Other examples where intrusion into a buffer or critical area may be necessary are emergencies, water dependent uses, public access, and utilities.

(Commerce) The Department of Commerce Critical Areas Handbook includes a sample code with sample provisions addressing Reasonable Use Exceptions (see page A-12). Commerce has also suggested San Juan County review other

locally adopted RUE provisions that provide necessary safety valve to ensure CAO provisions do not preclude all reasonable uses.

8. In San Juan County we currently have shoreline setbacks of 50 ft (with screening) and 100 ft (without screening).
 - a. Assuming the single-family residence is built and functioning to current code, how does the structure 50 feet from the shoreline affect the quality of the shoreline in its immediate vicinity? Please be specific. List the individual impacts (actual or feared) posed by such a structure and where possible quantify the individual impacts on the environment. Please identify the specific Best Available Science (BAS) upon which your answers are based.

(Fish & Wildlife) A consistent conclusion in scientific literature is the relationship between riparian buffers and habitat function. Within a range it has been shown that narrower buffers equate to diminished habitat function and wider buffers provide more habitat function (May 2003).

The relationship of the buffer width to habitat function is demonstrated in tables provided in WDFW management recommendations. Over two hundred sources of best available science are compiled in the Washington Department of Fish and Wildlife Riparian Management Recommendations specific to riparian buffers (Knutson and Naef 1997). Although, these studies are for freshwater systems, the riparian area function is similar to functions in the marine system (e.g. large woody debris recruitment, shade, nesting and migration habitat for wildlife).

A more recent source of best available science was published by the Aquatic Habitat Guidelines Working Group, a multi-state agency working group titled, Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide (Envirovision et al. 2007). In addition to the Knutson and Naef science, the Interim Nearshore Guidance includes buffer recommendations from Stream-Riparian Ecosystems in the Puget Sound Lowland Eco-Region: a review of best available science (May 2003) and riparian function and appropriate widths identified by the Forest Ecosystem Management Assessment Team (FEMAT 1993).

These sources of best available science demonstrate the relationship between habitat function and buffer width. The May 2003 best available science literature review includes minimum buffer widths of 100 feet for 80% sediment removal/erosion control and nutrient removal (water quality), 164 feet for large woody debris recruitment (habitat structure), and over 300 feet for wildlife habitat. Average reported buffer widths synthesized in Knutson and Naef (1997) and identified in the FEMAT (1993) study are a bit wider as indicated on the table below (Envirovision et al. 1997). Therefore, a 100-foot buffer will provide greater habitat

function than a 50-foot buffer, all other things being equal (such as buffer composition).

Habitat Function	May 2003 (minimum width)	Knutson and Naef 1997 (average width)	FEMAT 1993 (recommend ed width)
Sediment Removal/Filtration	98 feet	138 feet	200 feet
Erosion Control/Bank Stabilization	98 feet	112 feet	100 feet
Pollutant Removal	98 feet	78 feet	-
LWD Recruitment	164 feet	147 feet	200 feet
Shade*	98 feet	90 feet	150 feet
Wildlife Habitat	328 feet	287 feet	98-600 feet
Microclimate*	328 feet	412 feet	Up to 600 feet

*Applies to pocket streams and pocket estuaries, but not a critical habitat function on rocky shoreforms.

Forest Ecosystem Management Assessment Team (FEMAT). 1993. Forest ecosystem management: and ecological, economic, and social assessment. US Departments of Agriculture, Commerce, and Interior. Portland, OR.

Knutson, K.C. and V.L. Naef. 1997. Management Recommendations for Washington's Priority Habitats: Riparian. Washington Department of Fish and Wildlife, Olympia, Washington. Available at: <http://wdfw.wa.gov/hab/ripxsum.htm>. 181 pp.

EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Working Group. 2007. Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide. Available at: http://wdfw.wa.gov/hab/nearshore_guidelines/. 129 pp.

(Ecology) The answer provided is based on the following assumptions (1) that the term "quality of the shoreline" in the context of this question means ecological function of the marine riparian area and (2) although the term used in the question is "setback", the Council is really looking for information regarding vegetated marine riparian buffers.

A summary of information on this topic can be found in the Marine Riparian Vegetation section of the document Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide published by the Aquatic Habitat Guidelines Working Group, a multi-state agency working group http://wdfw.wa.gov/hab/nearshore_guidelines/nearshore_interim_guide_october_2007_final_draft.pdf, referenced above in the Fish and Wildlife comment.

(Dr. Taylor) There are many impacts of building houses 50 feet from the shoreline. In order to construct a new house 50 feet from the shoreline, natural vegetation is removed and a house is constructed in the place of this vegetation. The natural vegetation which was removed provides many functions such as water quality, soil stability, sediment control, wildlife habitat (including foraging, nesting, and resting sites), microclimate, nutrient inputs, and habitat structure/large woody debris (Brennan and Culverwell, 2004). A helpful graphic depicting these functions can be seen in Figure 3 of Brennan and Culverwell (2004).

It is important to understand that existing houses would not be affected by the regulatory updates under discussion in San Juan County. The ongoing environmental impact of an existing house would include the continued reduction in functions due to the absence of or reduced native vegetation in the marine riparian area. Houses may also have additional impacts, depending on how the owner chooses to maintain the house and land, including maintenance of the onsite septic system (if the house is not on sewer). Existing houses located 50 feet from the shoreline may have the following ongoing impacts:

- Existing houses have impervious surface which allows more rapid stormwater runoff and the water flowing over the impervious surfaces will carry more pollutants into the receiving waters.*
- The property on which existing houses may have altered vegetation including lawns and other managed landscapes which (1) do not provided the same ecological functions (as described above) (2) may be maintained by practices such as the application of weed killing chemicals (herbicides), chemicals to kill unwanted invertebrate animals (pesticides), moss killing chemicals, and chemical fertilizers, and (3) may allow introduction of invasive species.*
- If the existing house is served by an onsite septic system, it is important that this be maintained in full working order. Failing septic systems can allow sewage to enter the adjacent water.*
- Existing houses may have bulkheads, which can alter natural geologic processes and can reduce the connection between the riparian area and the adjacent water (by reducing shade, woody debris inputs, and upland organic inputs).*

As I stated earlier, the regulatory update under discussion in San Juan County would not cause any changes to existing houses and associated appurtenances. If any of your constituents are potentially interested in voluntarily reducing impacts from their existing homes, a couple of resources that help them learn how to do so are the Homeowner Tips available on the Department of Ecology website <http://www.ecy.wa.gov/programs/sea/pugetsound/tips/tips.html> and the Puget Sound Shoreline Stewardship Guidebook available on the Puget Sound Partnership archives website

(Dr. Brooks) I am unaware of any published studies that answer this question. However, in general the benefits of setbacks (buffers) are greatest in the first 5 or 6 meters (see the Supplemental BAS). The additional benefits (additional proportion of a contaminant that is intercepted by a buffer) decreases quickly after that. You may get 65 to 85 percent reduction in a contaminant within five meters. You might get an additional 5% reduction in the next 50 meters of buffer. It is a little like national defense. You can be 75% safe for one billion dollars a year. It might cost 10 billion to be 80% safe and 95% safety costs ten trillion dollars. The point is that buffers impose a cost on the landowner. Where is the peer reviewed cost benefit analysis provided by state government? What we need to do is to insure that individually and/or cumulatively, residents do not exceed state water and sediment quality criteria (WAC 173-201 and WAC 173-204).

- b. Similarly for a single-family residence 100 feet from the shoreline. What does the additional 50 feet of setback quantitatively buy in the way of environmental protection?

(Fish & Wildlife) Assuming the buffer composition is the same, the additional 50 foot buffer will increase habitat function by removing more sediment, more pollutants, improving erosion control, and providing more wildlife habitat.

(Ecology) Wider marine riparian buffers have higher levels of ecological function. The relationship between buffer width and specific ecological functions are detailed in scientific literature such as:

Desbonnet, A, P. Pogue, V. Lee, and N. Wolff. 1994. Vegetated buffers in the coastal zone – A summary review and bibliography. Coastal Resources Center Technical Report No. 2064. University of Rhode Island Graduate School of Oceanography. Narragansett, Rhode Island.

(Dr. Taylor) The impacts of building a house 100 feet from the shoreline would be similar to that of constructing a house 50 feet from the shoreline (see answer to first part of question above), except that the amount of function that would be retained by a 100 foot buffer would be greater than the amount of function that would be retained by a 50 foot buffer. For example, Desbonnet and others (1994) report that 15 meter vegetated buffers (approximately 50 feet) have greater than 60% sediment and pollutant removal effectiveness while 30 meter (approximately 100 feet) vegetated buffers have approximately 70% or greater sediment and pollutant removal effectiveness. However, it is important to note that there are a number of different types of pollutants. As stated by Desbonnet and others (1994) “Relatively narrow buffers, provided they promote shallow sheet flow through the buffer area, will effectively remove coarse grained

sediments and their associated pollutants. Wider buffers, however, will be required to remove smaller-sized particles of sediment and the pollutants adsorbed to them. Pollutants in dissolved forms may require even greater buffer width to be effectively removed by chemical interactions, plant uptake, or microbial transformation.” Graphics depicting the (nonlinear) relationships between width of vegetation buffer and specific functions can be found in Desbonnet and others (1994) and FEMAT (1993) and marine riparian functions are described succinctly in Brennan and Culverwell (2005):

The guidance provided by the State of Washington Aquatic Habitat Guidelines Workgroup to assist local governments in regulatory updates is available at: http://wdfw.wa.gov/hab/nearshore_guidelines/nearshore_interim_guide_october_2007_final_draft.pdf

References Cited

Brennan, J.S. and H. Culverwell. 2004. Marine Riparian: An Assessment of Riparian Functions in Marine Ecosystems. Published by Washington Sea Grant Program Copyright 2005, UW Board of Regents Seattle, WA. 34 p.

Desbonnet, A, P. Pogue, V. Lee, and N. Wolff. 1994. Vegetated buffers in the coastal zone – A summary review and bibliography. Coastal Resources Center Technical Report No. 2064. University of Rhode Island Graduate School of Oceanography. Narragansett, Rhode Island.

Forest Ecosystem Management Assessment Team. Forest Ecosystem Management: an ecological, economic and social assessment. Report of the Forest Ecosystem Management Assessment Team. 1993-793-071. United States Government Printing Office.

(Dr. Brooks) See previous responses. Assuming that the owner is a good steward – a 50’ buffer is more than adequate. If the owner is a poor steward – then there is no buffer width that can guarantee that his or her actions will not adversely affect the environment.

9. Prescriptive buffers place the burden of environmental protection on the owner of a property even if there is little if any proof that the activity of the owner will do significant harm to the environment. An alternative approach is to set minimum buffers, define monitoring metrics, and then require mitigation if monitoring shows a problem is presenting itself. Is such an approach legally defensible? Will the Department of Ecology (DOE) accept such an approach?

(Ecology) Simply applying the bare minimum for buffer widths is a high-risk approach and environmental damage may be irreversible in the context of approved development. How would the County revise or rescind development approvals if monitoring showed that these buffers were harmful? Once a building is built, it is very difficult and expensive to move or remove it.

While it is possible to take this approach, a program with minimum buffers and required monitoring will require a much more active role from the County in ensuring that the monitoring is done and done correctly. We have yet to see such a program implemented and very few jurisdictions have the resources to devote to such a monitoring program. The most applicable example would be water quality monitoring in streams.

How would the County implement and enforce such a program with the current staff? At present, the County does not have the technical staff to implement a monitoring program.

(Fish & Wildlife) Adopting minimized buffers not supported by recent scientific literature and monitoring for the purpose of proving habitat loss is not a recommended approach to achieve no net loss of habitat. There is scientific evidence that buffers will reduce environmental harm by mitigating the unavoidable impacts of development (such as loss of vegetation and increase of impervious surfaces). We do support monitoring to determine compliance, implementation and effectiveness of adopted rules.

(Dr. Brooks) This is the approach that I recommended to Jefferson County. Ecology objected strenuously. On Monday, I will forward the entire exchange between myself and Ecology regarding the Supplemental Best Available Science.

10. One of the ways to insure that an occupied structure is having minimal impact on the environment is to identify appropriate monitoring metrics (canaries in the mine shaft) and to measure them over time to see if they are adversely trending. Water quality, nitrate levels, critter counts and pollutant analyses are but a few potential candidates. Does this approach make sense? If so what are the canaries appropriate for the uplands as well as the shoreline?

(Dr. Brooks) I suspect that San Juan County could initiate a watershed water quality monitoring program through the Conservation District for about \$100,000.00/year. That would not include "critter counts" because invertebrate taxonomy is expensive. However, the U.S. EPA has sponsored numerous "Stream Keeper", "Stream Watch" and "Watershed Watch" programs that rely on citizen inventories of freshwater invertebrates. Collecting and identifying invertebrates is not a trivial pursuit. However, it can be fun and rewarding and the results can be used to monitor the health of your streams.

- a. Can our well-educated residents do/fund BAS locally and if properly accredited will it be accepted by state agencies?

(Ecology) Yes. This approach was taken by Island County and supported by Ecology. The work done in Island County regarding wetlands may be very applicable to San Juan County.

Ecology's wetlands Best Available Science and guidance recommendations were developed at the request of local jurisdictions. King County and Island County are the only comparable jurisdictions that have done their own BAS review.

(Dr. Brooks) Designing and implementing studies intended for publication is a demanding exercise. However, San Juan County appears to have a number of scientists who could help in this effort. I have conducted numerous detailed studies for U.S. and Canadian governments that have provided a basis for regulatory programs. Two of those studies are attached to give readers a sense of what is generally required by governments in support of regulatory programs. WDFW has a history of developing science in support of its regulatory programs. The Sediment Management Unit is a good example. The Wetlands Unit is almost unique in its aversion to conducting rigorous science in support of its regulatory guidance for local governments.

- b. Specifically for the Eastsound UGA, is there an opportunity for self-monitoring the outflow into East Sound Bay that can assure us of continued health of our ecological systems? In other words, instead of using the decades old model of regulation and enforcement, can we go to new paradigm whereby we collectively commit to monitoring our own ecology, running our own test programs and when and if we have proof of concerns, then make ordinances that actually are relevant to on the ground problems.

(Ecology) Monitoring in concert with regulation is a good strategy for resource protection. Adaptive management is based on the premise that monitoring will inform management decisions and that when necessary, management will change in response to the monitoring results. Stewardship by shoreline property owners will be vital to success in protecting shoreline habitat. Stewardship can be fostered while also meeting the regulatory requirements to update land use regulations under the GMA and SMA. Regulations then become the backstop to protect functions and values of habitat.

(Commerce) The requirement in the GMA is to include best "available" science. It is important to use information that is available about impacts that are already known. On monitoring: State agencies have long supported the use of a monitoring and adaptive management approach for agricultural activities. [We note above there is a temporary ban on amending critical area provisions related to agricultural activity.] The agencies do not recommend applying this approach to development activity because once habitat is cleared and replaced with impervious surface and development there is no effective way to adapt should

negative changes be discovered. Another perspective to consider is that recommended habitat regulations serve to prevent cumulative habitat losses over time. The effects of many small changes to habitat are not often observable within short time frames and small areas, though they become clear and apparent when observed over long periods of time over wider areas.

(Dr. Brooks) You could and this approach is highly recommended. However, monitoring is not free.

11. It has been suggested that San Juan County should develop a program to monitor water quality, indicator species and habitats, to identify any impacts occurring as a result of residential and commercial land development. How would one go about doing this, how many years of data would be needed before conclusions could be reached, and approximately how much would this cost?

(Ecology) The County would need to have staff with the technical expertise to review the areas of concern (i.e., stormwater specialist, wetland biologist, fish and wildlife biologist) or would need to contract with a third party to conduct the monitoring program and review permit applications. Currently, the County does not have any technical staff with expertise in these disciplines.

It is difficult to give a precise answer as to how many years of monitoring would be needed to reach conclusions. The longer the monitoring period and the more data collected, the more confidence you have in the results. Several years of data would be necessary to detect trends with any reliability.

Monitoring can be costly and to provide meaningful data needs to be done well. In lieu of monitoring, presumptive measures (e.g., adequate buffers, mitigation) may be used to protect critical areas.

(Dr. Brooks) We know a great deal about the structure of invertebrate communities and you could start gaining insight into the health of your surface waters and sediments after the first year of monitoring.

12. The proposed Uplands CAO and Shoreline Management Plan update will significantly impact the Eastsound Village UGA. In Eastsound we have many low-level meandering wetlands backed up by an airport overlay with a storm water facility running down the middle. We have large amounts of land set aside for conservation, schools and parks. Our GMA planning requires us to absorb 50% of future Orcas growth into the UGA. Arguably we have just enough land to do this. How can we be expected to accommodate the required growth if new wetlands, stream and shoreline buffers remove a significant amount of land inventory from higher density development? Eastsound is envisioned to be a walking village with people living and working in close proximity,

capable of absorbing growth to prevent sprawl to outlying areas. Are we to put aside all the work we have done to define our UGA because we now cannot accommodate growth and the environment? Does this make sense based upon the non-specificity of our BAS to the Eastsound UGA? What does the law say in this regard?

(Ecology) What analysis has the County done to demonstrate that it cannot accommodate this growth? Have the wetlands been rated and buffers applied? Has buffer averaging been considered? Have innovative design techniques, such as clustered development, TDR's, etc. been applied?

Referring back to our answer for #6 in the Review and Approval section, GMA says that the land speaks first. Local governments are required to first designate and protect critical areas.

(Commerce) San Juan County took into consideration the presence of critical areas in establishing the boundaries of the Eastsound UGA. See Eastsound UGA 2007 Land Supply Analysis. Portions of the UGA with high concentrations of critical areas are zoned at low densities.

13. Does the DOE have a role to play in providing balance between the 14 goals of the GMA or does it just represent the environmental component?

(Commerce) Ecology's role under the GMA involves review and comment of locally adopted plans and development regulations. The goals of the GMA are used by local governments to guide the development and adoption of comprehensive plans and development regulations.

(Ecology) See answer to REVIEW AND APPROVAL PROCESS #6

(Dr. Brooks) WDOE, WDFW and NMFS are regulatory agencies charged with a mission to protect natural resources. From that point of view they are "one-dimensional." Read Frank Easter's review of the Supplemental BAS, which was forwarded in the documentation I previously provided for the record. Mr. Easter is the State Resource Conservationist with NRCS. He has 35 plus years of experience in putting Conservation on the Ground. His comment that regulatory agencies like WDFW, NMFS and WDOE rarely present balanced analyses is worthy of note. WDOE has claimed that protection of Critical Areas is a requirement of GMA whereas the other goals are just goals. I don't know of anyone outside WDOE who agrees with that assessment. Read the Skagit decision discussed in the documentation I forwarded to you.

14. San Juan County is the only county in the state that has passed a real estate excise tax for purchasing and setting aside significant amounts of land for non-development / permanent preservation. Because of

programs such as the SJC Land Bank and the San Juan Preservation Trust approximately 10% of our shoreline and significant uplands acreage will never be developed. Is it not appropriate to take these set-asides into account when we specify other buffers, a buffer credit if you will?

(Ecology) These programs and lands are an important and valuable part of any strategy to protect critical areas. They may also fit into the context of mitigation banks or in lieu fee programs. As such, they may be valuable to the County as they demonstrate achievement of “no net loss” of ecological function.

Typically, restoration and mitigation are required to be commensurate with authorized impacts or “in-kind. Thus those protected areas that also meet the definition of critical areas may be applicable as mitigation for impacts. Ecology would be happy to work with the County to explore this option in greater detail.

(Fish & Wildlife) WDFW applauds these local efforts. The shoreline inventory and characterization to be done for the SMP update process may put these efforts into context. There are still areas of the shoreline not permanently protected that have important habitat functions for fish and wildlife. Without protection of these areas, the cumulative effects of impacts from development could be significant.

(Dr. Brooks) Perhaps San Juan County could identify these preserved lands as a mitigation bank that could be used to mitigate projects that may affect critical areas. I do not know what the legal implications of that approach would be, but it might be worth investigating.

15. Dr. Brooks recently stated that buffers of only a few feet may be adequate to protect Critical Areas. What scientific study is this based on, and is that study applicable to year round runoff from impervious and less pervious areas (e.g. smooth, turf grass lawns) associated with residential and commercial development?

(Dr. Brooks) The studies and the data substantiating buffers of a few meters are fully discussed in the Supplemental Best Available Science (Brooks, 2006). Full citations for each study are provided in the list of references.

TAILORED APPROACH:

1. Does San Juan County have to have a ‘one size fits all’ approach to shoreline set-backs and buffers? What are examples of variable approaches?

(Ecology) San Juan County allows a minimum setback of 50-feet if a treeline is present, and up to 100-feet if not. The County SMP also allows for administrative

reductions if lesser environmental impact or visual impact, or based on setbacks of neighboring homes. Lastly, reductions may be allowed through a shoreline variance. Note that there is a distinction between “setbacks” and “buffers”.

For wetlands, Buffer Alternative 3 in Ecology’s BAS document provides a range of buffer widths based on the wetland category and functions and the adjoining land use. A similar approach may be appropriate for shoreline buffers.

(Fish & Wildlife) Recommended widths for protected areas and buffers are derived from known fish and wildlife needs and riparian habitat functions demonstrated in scientific literature (see Table III-7-9, Envirovision et al. 2007). Variable width buffers can allow for greater flexibility, account for variation in site conditions and land management practices, and potentially achieve desired ecological goals while minimizing undue losses to landowners. However, there are no generally accepted criteria for the establishment of variable width buffers. To ensure no net loss of function, variable buffers must be closely linked to the shoreline inventory and an analysis so that the most important shoreline processes and habitat areas receive the greatest protection via buffers. Where buffers will be smaller, other enhancements may be necessary to avoid cumulative loss of function. Therefore, any application of variable riparian widths must first include site-specific and watershed-level studies. (Envirovision et al. 2007)

Two examples of variable approach to buffer widths include the City of Shelton Critical Areas Ordinance (SMC 21.64) <http://www.codepublishing.com/wa/shelton.html>; and the City of Renton draft Shoreline Master Program (<http://rentonwa.gov/business/default.aspx?id=15508>).

The City of Shelton has adopted a stream-reach-based buffer based on ecological functions provided by stream segments. The City of Renton draft Shoreline Master Program includes vegetation conservation buffer standards by reach. Vegetation buffers are approved by the reviewing official as an alternative to the Standard Vegetation Conservation Buffer for development sites that implement water-oriented use and public access.

(Dr. Brooks) Ecology has advised that their recommendations include many options that can be used to tailor buffers. Please be advised that in my 20 years experience dealing with these issues, exercising those options quickly becomes time consuming (a year or more) and expensive (several thousands of dollars to the property owner).

- 2. It seems that buffers on riparian areas are accepted to be tailored based upon the classification of streams, wetlands, etc. While these could still be argued to be prescriptive in each case, doesn’t this form a basis for approval of shoreline buffer tailoring?*

(Ecology) Yes. Buffers may be tailored to meet the requirement for no net loss of ecological functions.

(Fish & Wildlife) Buffers tailored by water type are derived from known fish and wildlife needs and riparian habitat functions demonstrated in scientific literature (Knutson and Naef, 1997; Envirovision et al. 2007). There is a scientific relationship between buffer width and habitat function. We are unaware of science demonstrating buffer widths by shoreform.

(Dr. Brooks) Yes – as long as the concept of MINIMUM BUFFER WIDTHS (in the absence of a showing of harm) are imposed.

3. How much support would San Juan Count be made to provide in order to get a tailored buffer setback policy approved by the Department of Ecology?

(Ecology) It is unclear what is meant by “support”. Part of the SMP update process, for which Ecology provides funds, is to inventory and characterize the shoreline. Through the SMP process, the County could develop a tailored buffer approach based on the information from their shoreline inventory and the scientific information available regarding buffers.

(Dr. Brooks) The Western GMHB has made it clear that you can tailor your own program to fit your local needs and environment. If the County Council fails to balance the goals of GMA, that is their decision, which cannot be blamed on WDOE. The bottom line is that you don’t need to follow Ecology’s recommendations. However, your tailored program must be based on your own BAS; it must protect the functions and values of your WATERSHEDS; and if you opt for a program that depends on a showing of harm, then you have to have a credible monitoring program.

4. If FEMA approves SJC’s tailored approach, would DOE likewise approve SJC’s tailored approach?

(Ecology) Conceptually a tailored approach is reasonable if not practical. However, until the details are reviewed Ecology cannot say it will approve them. FEMA’s review is based on ESA standards. The SMA requires a broader range of issues that must also be addressed such as water dependent uses and public access.

5. You have been provided with several studies that are being used to craft a tailored approach to buffers (see buffer memo (8-17-09)). Are you aware of any other studies that provide guidance on the sizing of buffers based on different site characteristics?

(Fish & Wildlife) There is an extensive body of literature that would inform decisions regarding buffer requirements. Many of these can be found in the references sections of the following two documents:

Brennan, J.S., and H. Culverwell. 2004. Marine Riparian: An Assessment of Riparian Functions in Marine Ecosystems. Published by Washington Sea Grant Program. Copyright 2005, UW Board of Regents, Seattle, WA. 34 p
<http://www.wsg.washington.edu/research/pdfs/brennan.pdf>

Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide published by the Aquatic Habitat Guidelines Working Group, a multi-state agency working group
http://wdfw.wa.gov/hab/nearshore_guidelines/nearshore_interim_guide_october_2007_final_draft.pdf (cited earlier as Envirovision et al. 2007)

(Dr. Brooks) Read the Supplemental Best Available Science AND critically read the studies being used to support your developing CAO. Not all of the county's recommendations are consistent with the conclusions reached in the studies. Also make sure that the intended use of the studies in San Juan County is consistent with the intended use of the studies in the jurisdiction where they were conducted.

FEMA SPECIFIC QUESTIONS:

1. Is FEMA receptive to a proposal from SJC for a tailored approach (such as the proposal from the San Juan Initiative) as a mechanism for protecting resources and functions as identified in the Biological Opinion? In lieu of a prescriptive buffer would a tailored approach be considered?

(FEMA) FEMA is receptive to any approach that meets the minimum standards of the NFIP and the minimum performance criteria of the BiOp. FEMA's model ordinance is a suggested option for a community to be able to adopt an ordinance that provides a "safe harbor" for compliance with the performance standards of the BiOp. However, FEMA is also developing a checklist that a community can use to show how their current (or amended) rules, ordinances, and procedures under their permitting system comply with the performance standards of the BiOp. If neither one of these options are chosen then compliance with the ESA must be demonstrated on a permit by permit basis.

This demonstration may be through one of several methods:

- a) Avoidance/ Denial of the permit*
- b) Habitat Assessment with appropriate mitigation if necessary*
- c) Section 7 permit if there is a Federal Nexus*
- d) Section 10 permit (HCP) after consultation with services initiated by applicant or local government*
- e) Section 4d approval for a program or a project*

2. Are there examples of jurisdictions that have chosen to not meet FEMA requirements and thereby forego access to FEMA flood insurance, federal disaster funds, and/or other FEMA programs?

(FEMA) FEMA maintains a list of communities that are sanctioned because they do not participate in the NFIP and have Special Flood Hazard Areas (SFHA) identified within the jurisdictional boundaries of the community. In Washington there are 12 communities that are identified as non-participating. Many of these communities have been sanctioned for failure to adopt the FIRM into their local Flood Damage Prevention Ordinance (or similar ordinance). Friday Harbor is one of those communities.

While the NFIP is a voluntary program there are consequences for the decision to not participate in the program.

- a) *No Federally back flood insurance is available*
- b) *Some forms of disaster assistance would also not be available in the SFHA.*
- c) *Grant programs would not be available for projects in the SFHA.*
- d) *No Federally regulated loans would be available for structures located in the SFHA*

3. What are the consequences of SJC not meeting the September 2011 deadline for compliance with the FEMA Biological Opinion?

(FEMA) If SJC does not meet the deadline for showing compliance with the BiOp, then SJC runs the risk of being suspended from the NFIP unless each flood hazard development permit demonstrates a showing of compliance under 44CFR 60.3 (a)(2) which states that a community must ensure all other federal, state, and local permits are obtained. We have commonly referred to this as door number 3.

SJC also runs the risk of an enforcement action from NMFS if a development is determined to be a "take".

SJC also runs the risk of 3rd party lawsuits for not complying with the ESA.

4. The NMFS/FEMA biological opinion (Bi-Op) requires specific terrestrial shoreline setbacks in order to protect endangered salmon and Orcas. There are a number of questions regarding the proposed regulations that need answers.

(Dr. Brooks) It is recommended that San Juan County critically review the Biological Opinion of NMFS for its application to the county.

- a) *Is it true that San Juan County is defined to be in a flood plain primarily because tides can exceed the high water mark during*

storm surges? Does such a definition make sense given our rocky topography and the fact that for most of the properties this represents a vertical band of land only several feet wide above the high water mark impossible to build on?

(FEMA) FEMA has identified SFHA for much of SJC through an approximate study. The SFHA is identified using an approximate delineation of the landward extent of a 1% annual chance event.

b) What is the Base Flood Elevation (BFE) in San Juan County?

(FEMA) The BFE for SJC depends on the location of the property throughout the county. Many areas of the islands have protected harbors while others have open fetches that can produce varying BFE's through SJC. SJC residents have traditionally been able to contact the USACE Seattle district and for a nominal fee they will calculate a BFE using Mean Lower Low Water (MLLW) as the basis for any elevations.

c) Is it true that the Bi-Op only applies to San Juan County because of the flood plane definition?

(FEMA) The BiOp applies to the implementation of the NFIP in any participating community in the Puget Sound Region. SJC as a participating member of the NFIP is therefore subject to the BiOp. However, the BiOp provides a "path to compliance" with the ESA. The ESA applies to everyone in some form or fashion. Therefore, communities not participating in the NFIP may still be subjected to ESA related lawsuits or compliance actions by the services should they choose not to follow the recommendations in the BiOp.

d) What is the recommended value of the shoreline buffer in the Bi-Op?

(FEMA) The Errata Sheet #2, Issued, May 14, 2009 was unclear on the source for the buffer. The original BiOp gave the source of the buffer as the WDNR 2007 stream typing system and WDFW 1997 stream buffer guidelines. FEMA is unfamiliar with how these apply to marine shorelines. FEMA is looking to NMFS to provide clarification.

e) How were the values of the buffers determined? Please be specific and quote the BAS used.

(FEMA) The original BiOp gave the source of the buffer as the WDNR 2007 stream typing system and WDFW 1997 stream buffer guidelines. FEMA is unfamiliar with how these apply to marine shorelines. FEMA is looking to NMFS to provide clarification.

- f) There are a number of errors with Flood Insurance Rate Maps (FIRM). Right now a property owner must bear the burden of proving the maps to be wrong. This can place significant financial burden on a property owner due to no fault of the owner. Is anything being done to rectify this problem?

(FEMA) FEMA has begun remapping the nation with the Map Modernization program and is continuing to map communities through a follow on program called Risk MAP.

Each community is sequenced for a mapping update based on priorities and information that is available. If SJC is interested in getting new maps we would need to set up a scoping meeting to determine what information is available and what the priorities for SJC are for areas to be mapped.

Meanwhile a property owner can apply for a Letter of Map Amendment or a Letter of Map Revision to have a structure of portion of a property removed from the designated SFHA.

- g) Page 2 of the Bi-Op says, "In order to qualify for the program [National Flood Insurance Program (NFIP)], communities must adopt land use controls as restrictive as the minimum criteria established by FEMA." It goes on to say, "To encourage communities to participate in the program, the NFIA prohibits federally-regulated banks or lenders or federal agencies, from providing loans or other financial assistance for acquisition or development within the flood-hazard (flood plains) of non-participating communities..." At a recent meeting of the San Juan Initiative Policy Board, a representative of NOAA said that if San Juan County did not adopt the shoreline buffers as proposed in the Bi-Op (or demonstrate that the buffers chosen were biologically equivalent), San Juan County could be found Endangered Species Act (ESA) non-compliant and banks could not make loans on properties in the jurisdiction. Is this true? Please explain one way or the other.

(FEMA) As stated above, participation in the NFIP is voluntary, consequences for non-participation include the inability for a federally regulated lender to extend, offer, or renew a loan in the SFHA.

- h) When will the model ordinance encompassing the recommendations of the Bi-Op be finalized?

(FEMA) FEMA has drafted a model ordinance that complies with the minimum performance criteria of the NFIP, Washington State floodway laws, and the performance criteria of the NFIP BiOp. FEMA has established a focus group to

ensure that the model ordinance is a document that is able to be implemented at the local level in communities of varying capabilities with implementing the NFIP. The focus group has held 2 meetings and a third is tentatively scheduled for late September. Once the focus group provides their latest comments on the model ordinance, the checklist, and our three regional guidance documents (CRS Natural and Beneficial Functions Credits, Habitat Assessment and Mitigation, and NFIP-ESA Floodplain Mapping) FEMA will do a semi-formal consultation with NMFS to ensure that the products comply with the performance standards of the BiOp. Once FEMA receives comments from NMFS, we will release the information to all 122 affected communities. FEMA intends to hold several workshops throughout the Puget Sound and even commits to provide individual technical assistance to any community that requests it for adopting the model ordinance or portions thereof to meet door number 2.