

June 10, 2003 Letter to County Councilman John Koster

Attachment #1 (of two attachments)

Evaluation of Snohomish County Critical Area Ordinance 30.62

RCW 36.70A.130 requires local governments to take legislative action to review and, if needed, revise their comprehensive land use plans and development regulations to ensure they comply with the requirements of the Growth Management Act (“GMA”).

Accordingly, we want to share with you the results of our preliminary evaluation of Chapter 30.62 Snohomish County Critical Area Regulations. We will preface this discussion by first stating a fundamental principle that informed our review of Chapter 30.62:

Precautionary Principle

Knowledge is imperfect, and the science of ecology is no exception. Science cannot provide a simple, declarative answer for managing complex ecological systems that have been, or will be, modified by human impacts. There is always a continuum of risk where human intervention is involved—one set of actions might give a 50% chance of protecting habitat and another might provide a 100% chance. However, at any given point in the evolution of scientific understanding, there is a prevailing wisdom or consensus that can be employed as a guide for risk management. Consistent with this principle, conservation planning should be conservative in the sense of being more willing to err on the side of protecting too much rather than protecting too little. It is more efficient and cost-effective to prevent environmental damage than to repair it later¹, and a “low risk” strategy, based upon the best available science, will provide the best chance for protecting critical areas. This basic principle of conservation biology is known as the “precautionary principle.”² WAC 365-195-920 supports this approach and advises that where cities and counties lack scientific information, local governments should take a precautionary or “no risk” approach in which development and land use activities are strictly limited until the uncertainty is sufficiently resolved. WAC 365-195-920 also advises local governments to employ an effective adaptive management program that relies on scientific methods to evaluate how well regulatory and non-regulatory actions will achieve their objectives, and can make timely programmatic changes in response to that feedback.

¹ Weiss, Edith Brown, Ed. 1992. Environmental change and international law: New challenges and dimensions. United Nations University Press, The United Nations University. 493 pages.

² Noss, Reed F. et al. 1997. The Science of Conservation Planning: Habitat Conservation under the Endangered Species Act. Island Press.

The guidelines further advise that the feedback loop from management results should operate quickly enough to be able to detect deficiencies in the program and correct them before the resource is placed at risk.

A "low risk" conservation planning strategy for critical areas should embody two principles that will ensure effective protection:

- 1) Prevent new impacts ("do no harm" and "no net loss")
- 2) Employ the "precautionary principle", i.e. the greater the uncertainty, the more conservative a habitat conservation plan should be.

One way to accommodate this precautionary principle, while still providing flexibility for project applicants, is to employ a dual-option approach that establishes conservative default protection standards while allowing flexibility for site specific plans tailored to local conditions. The precautionary principle effectively shifts the burden of proof away from those advocating protection toward those proposing an action that may be harmful; consequently, this "adaptive" approach should be governed by scientifically credible habitat management plans reviewed by state agencies.

The following recommendations for revisions to Chapter 30.62 Snohomish County Critical Area Regulations are based on the results of our evaluation:

No Net Loss Policy

While local governments have discretion to adopt critical areas regulations that may result in local impacts upon some critical areas, or even the loss of some critical areas, there must be no net loss of the structure, value, and functions of the natural systems constituting the protected critical areas.³

While Chapter 30.62.345 does declare that "mitigation shall be required for loss of area or functional value of wetlands, streams, and buffers regulated under this chapter", it does not satisfy this criterion because the ordinance nowhere establishes that mitigation must meet the "no net loss" standard. This casts doubt on many related provisions of Chapter 30.62.

For example, 30.62.350 allows certain development activities in streams, wetlands, and buffers if supported by a "mitigation plan," including private roadway crossings, bank protection and flood protection, filling of up to one acre of non-riparian Category 3 or Category 4 wetlands, and alterations to buffers. Buffer widths may be reduced to 75 percent of the total buffer area, which represents a net loss of area. 30.62.360 allows development activities in "non-riparian" Category 2 and 3 wetlands smaller than 5,000 square feet, and non-riparian Category 4 wetlands smaller than 10,000 square feet "pursuant to best management practices" (defined in 30.91B.090 to mean "management measures that are reasonable and available that mitigate adverse impacts to surface and

³ *Tulalip Tribes of Wash. v. Snohomish Cy.*, CPSGMHB No. 96-3-0029 (Final Decision & Order, Jan. 8, 1997); *Pilchuck Audubon Soc'y v. Snohomish Cy.*, CPSGMHB No. 95-3-0047 (Final Decision & Order, Dec. 6, 1995).

groundwater, and to the functions and values of critical areas”). Innovative development design (30.62.370) is another example of deviations allowed to the standards in the code (although in this case—theoretically at least—a “net improvement in the functions and values of the streams and wetlands and their buffers” is called for). It is hard to imagine how these activities could meet the “no net loss” standard even if that policy was an explicit requirement of Chapter 30.62. It is important to include this overarching standard in the regulations to guide both applicants and administrators by making clear the priorities and objectives of the regulations. Without such a statement, there is no assurance the legal standard will be met.

Recommendation:

- Adopt a policy of no net loss of areas and functions of wetlands and fish and wildlife habitat.
- Provide public notice for any proposed exceptions (including innovative design and reasonable use allowance) to the standard critical area protections in order to allow for citizen review and comment of how these provisions are applied.

Applicability

In designating the area subject to critical areas review, a safety margin is needed to accommodate mapping errors and potential wetland and stream buffers. The purpose of this provision in an ordinance is to ensure that all land within the potential buffer of a critical area is evaluated according to the Critical Areas Ordinance (“CAO”), even if the critical area feature is located on another parcel. 30.62.055 (v) requires that permit applicants identify only those critical areas located on the site and on adjacent properties within 100 feet of site boundaries. 30.62.110 (ii) requires that Habitat Management Plans apply to fish and wildlife habitat conservation areas within 200 feet of the subject property. In some cases, state agency buffer recommendations can exceed this distance.^{4 5} A conservative approach to critical areas review should be employed that will ensure that the geographic scope of that review will include the area needed to provide the most protective potential where appropriate.

Lakes and ponds under 20 acres fall into a regulatory gap between vegetated wetlands and lakes larger than 20 acres, which are protected under the Shoreline Management Act. These habitats should be designated for protection in critical areas regulations.

Although Washington Department of Fish and Wildlife (“WDFW”) has identified an extensive list of important habitats and sensitive species locations and mapped them in the Priority Habitats and Species program, the GMA goal is to maintain suitable habitat statewide for all wildlife species, not just state listed priority species.⁶ Identification of species or habitats considered sensitive or important on a smaller, local scale is the

⁴ Knutson, K. L. and Naef, V. L. 1997. Management recommendations for Washington’s priority habitats: Riparian. Washington Department of Fish and Wildlife.

⁵ DOE. 1998. How Ecology Regulates Wetlands. Pub. No. 97-112.

⁶ RCW 36.70A.020(9); 030 (5) (c); 030(14) (d) and 160

responsibility of local governments. Species of local importance are those species that are of local concern due to their population status or their sensitivity to habitat manipulation. Habitats of local concern can include “areas of high relative density or species richness, breeding habitat, winter range, and movement corridors.”⁷

Recommendation:

- Perform critical areas review for any development project that is within 300 feet from the edge of any identified Fish and Wildlife Conservation Area.
- Include a process for designating and protecting habitats and species of local importance.

Enforcement

Without strong implementation, enforcement and monitoring of local land use regulations developed through GMA planning, degradation and loss of critical fish and wildlife habitats will inevitably continue. Although development activities may be controlled carefully on the paper of the permit, actual implementation of the project may differ significantly. Any law will be effective only if it can be enforced to the fullest extent. It is not clear whether Chapter 30.85 provides for criminal penalties as an enforcement tool.

Recommendation:

- Include enforcement provisions to ensure compliance with Critical Area performance standards that include both civil and criminal penalties.

Riparian Habitat

Because riparian vegetation controls the productivity of streams in many important ways, a comprehensive system of streamside protection from headwaters to the mouths of rivers is a prerequisite for conserving and protecting fish habitat and anadromous fisheries.

The scientific literature confirms that riparian areas are critical for maintaining the ecological health of streams, regardless of their relative size, and that water quantity and quality in streams reflects the conditions in the watershed, including both riparian and upland areas.⁸ Riparian vegetation plays a key role in mediating interactions between aquatic and upland environments (e.g. influencing water quality, sediment and nutrient dynamics; stabilizing stream banks, recruiting large woody debris and instream habitat) and riparian areas are also important for providing migration corridors for terrestrial wildlife species. The integrity of the riparian zone, in terms of continuity and quality of

⁷ WAC 365.190.030 (9) and 080 (5)(a)(ii)

⁸ Bolton, S. and Shelberg, J. 2001. White Paper: Ecological issues in floodplains and riparian corridors. Center for Streamside Studies, University of Washington.

the vegetation, is almost as important as buffer width in protecting stream functions and the habitat values of the corridor.⁹

The standard stream buffer widths displayed in Table 30.62.310(1) are considerably less than what is supported by the best available science. The Washington Department of Fish and Wildlife (“WDFW”) management recommendations for riparian habitat include a range of conservative, default buffer widths for protecting riparian habitat areas on different stream types.¹⁰ These are broad, statewide recommendations based on the best available science and are designed to accommodate the needs of riparian associated fish and wildlife. This report has been identified as a source of the best available science concerning fish and wildlife habitat conservation areas.¹¹

As mentioned above, we acknowledge that conservative default protection standards can be modified in response to local conditions. Additionally, active management—if properly designed and implemented—has the potential to protect or restore critical area functions more quickly than simply establishing “no touch” buffers. Alterations in riparian buffer widths and uses permitted within riparian management zones should only be allowed if water quality and fish and wildlife habitat will not experience significant adverse affects. However, any departure from the standard protection should be based on habitat management plans that demonstrate how critical area functions will be protected. Such plans should be subject to review by the appropriate state agencies.

While floodplains and channel migration zones (“CMZ”) are hazardous areas for development, fish and wildlife depend on habitat created when a river is allowed to migrate. In a natural state, floodplains allow for the lateral movement of the main channel and provide storage or floodwaters, sediment, and large woody debris and generally contain numerous sloughs, side channels, and other features that provide important spawning and rearing habitat for fish and refuge areas during high flows.¹²

Table 30.62.310(1) specifies that buffers shall be measured horizontally in a landward direction from the ordinary high water mark. Note that both the WDFW management recommendations for riparian habitat¹³, and the FEMA recommendations for floodplain management¹⁴ both advise that buffer width measurement should begin at the edge of the CMZ. The CMZ is the area where migration of the active channel across the floodplain through time may eradicate or otherwise render riparian buffer strips ineffective. Riparian buffers should therefore be placed outside that portion of the floodplain that is associated with the CMZ, and buffer width measurements should begin at the outer edge of that zone when present. The objective of having a riparian buffer start at the outer edge of the

⁹ Christopher W. May and Richard R. Horner. The Cumulative Impacts Of Watershed Urbanization On Stream-Riparian Ecosystems. AWRA Riparian Ecology and Management in Multiland Use Watersheds Conference Portland OR August 28-31, 2000.

¹⁰ Knutson, K.L. and Naef, V.L. 1997. Management recommendations for Washington’s priority habitats: Riparian. WDFW.

¹¹ Washington State Office of Community Development. 2002. Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas.

¹² Timothy B. Abbe and David R. Montgomery. 1996. Large woody debris jams, channel hydraulics and habitat formation in large rivers. Regulated River: Research & Management, Vol 12, 201-221.

¹³ Knutson, K. L. and Naef, V. L. 1997.

¹⁴ FEMA — Region 10. 2002. Floodplain Management: Higher Regulatory Standards. 2nd Edition.

stream channel migration zone, instead of at the edge of the ordinary high water mark, is to ensure that even if the stream were to move away from its present location, it will be protected by properly functioning riparian buffers and the associated benefits they provide (like the supply of large wood).

Operationally, the CMZ should be equivalent to the area that a stream is expected to occupy in the time period it takes to grow a tree of sufficient size to provide geomorphic/ecological functions in the channel. On smaller streams, it may be appropriate to be concerned where the stream could move within 100 years or less. However, larger wood is needed to function in larger, high-energy channels. To be functional, recruitment trees must be very large, with root wads attached. As a consequence, on a larger stream, it may be necessary to include areas within and adjacent to the CMZ that the stream could occupy in the next 200 years or more. Type 1 streams include “shorelines of statewide significance”, which are river segments where the mean annual flow is measured at one thousand cubic feet per second or more. These are high-energy environments where large trees serve as key structural pieces to initiate logjams and the associated complex pool habitats needed to create and maintain productive floodplain fish habitat. It will take much longer to grow appropriately sized trees in riparian forest adjacent to these systems. Research conducted in the Queets River corridor demonstrates how large trees play a crucial role in floodplain and terrace formation¹⁵. Both field observations and historical evidence show that log jams can form stable structures that control local channel hydraulics and provide refugia for riparian forest development over decades, and possibly centuries (Abbe, et al. found “key member” logs greater than 1000 years old buried within the Queets River flood plain islands and terraces). In addition to forming islands, terrace and channels, large woody debris is associated with eighty percent of floodplain pools.¹⁶

The WDFW riparian management recommendations advise that riparian habitat areas should extend to the outer edge of the 100-year floodplain.

The FEMA publication referenced above includes regulatory land-use ideas that seek to better balance the needs between floodplain development and maintaining the natural and beneficial functions of the floodplain.

Protection of floodplain processes and function is consistent with WAC 365-195-925 (3), which requires special consideration to maintenance of fish habitat to “preserve or enhance anadromous fisheries.” This approach goes beyond protection of physical habitat elements to focus on system-wide ecological processes that create and maintain these habitat elements. Simply put, *if you don't save the processes, you won't save the parts.*

¹⁵ Timothy B. Abbe and David R. Montgomery. 1996. Large woody debris jams, channel hydraulics and habitat formation in large rivers. *Regulated River: Research & Management*, Vol 12, 201-221.

¹⁶ Silver, Jill, *Personal Communication*. “The quote is on page 5: Pool Inventory.... ‘G. Pess and P. Kennard (Pess 1996) found that about one-half of all the pools and 80% of the total pool area in floodplain channels is associated with wood debris jams.’ These were attachments to Hoh Tribe SEPA Comments of 9/3/96 for SEPA File NO. 95-063002... Pess, George. 1996. Summation of pool forming factor data collected on lower Elk Creek, October 7, 1995.

WAC 365-195-925 (3) provides guidance on protection measures necessary to preserve or enhance anadromous fisheries pursuant to RCW 36.70A.172, citing in particular "...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" and "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. "

Everything else being equal, the science applicable to local conditions is preferable for protecting the functions and values of critical areas. Anadromous fish stocks exist because of local adaptation and homing. Therefore, local governments must give special consideration to those habitats and ecological processes that support the unique life history strategies of individual fish stocks within their jurisdictions. The conservation, protection and recovery of anadromous fisheries will ultimately depend on protecting these reproductively isolated, self-sustaining populations ("stocks") which are the ultimate building blocks of any fisheries conservation strategy.

Anadromous fish stocks are finely adapted to the characteristics of individual river/stream systems. Because the flow regime and floodplain functions (overbank flooding, erosion/deposition of sediments) of each individual river system determine its channel shape and the range of physical habitats it can support, including the riparian vegetation and biological communities occurring within the river and its valley, the individual hydrographic signature of each river/stream system should be protected and restored where feasible.

Recommendation:

- Use integrated, watershed-based approaches to management of stream network; provide functional riparian buffers on all channel types.
- Use the standard buffer widths recommended by Washington Department of Fish and Wildlife.
- Protect fish and wildlife habitat associated with the 100-year floodplain and measure riparian buffers from the outer edge of the channel migration zone when present.
- Establish scientifically credible administrative procedures for modifying standard buffers based on knowledge of local watershed characteristics and site-specific information.
- Base buffer design on knowledge of watershed characteristics, stream processes (channel types), and needs of "priority" fish and wildlife species.
- Require that riparian buffers be maintained in natural condition and require a building setback of at least 15 feet from the edge of any buffer to protect riparian integrity.

- Limit stream bank stabilization and shoreline modifications and require soft-armoring methods for any stabilization projects.

Habitat Management Plans

30.62.110 requires a habitat management plan prepared in consultation with WDFW for areas with which critical species listed as endangered or threatened under state or federal law have a primary association, and for saltwater-related habitat meeting the definition of an estuarine wetland. As noted above, we believe any departure from the critical areas standard protection requirements should be governed by habitat management plans. As part of the PHS system, the WDFW has published a series of documents intended to represent the best available science for managing and protecting sensitive species and habitats (including riparian habitat). While site-specific adjustments or modifications to these recommendations will often be required, the WDFW recommendations are intended to represent the best available science from which to create habitat management plans.

Recommendation:

- Use agency-reviewed habitat management plans to govern any site-specific plan that deviates from the critical areas protection standards.
- Require that WDFW management recommendations serve as the basis for habitat management plans.
- Provide public notice to allow citizens to review such plans.

