

12877 Manzanita Road
Bainbridge Island
Washington 98110

6 January 2004

Land Use Committee Members
Bainbridge Island City Council

Re: Wetlands and their Buffers

This subject is as interesting to me as it is puzzling to you. What should you do with the questions raised by Larry Frazier and Steve Morse? I have some suggestions and semi-answers, based on 18 years of looking after studies at a clutch of labs studying riparian habitats and freshwater biology. Currently I'm on a technical committee for the County, confronting these same critical-area issues. Since the shoreline uprising two years ago, I've gone through some 3500 journal articles and abstracts dealing with buffer-related topics. For the Planning Commission I concluded that the supposed benefits of tidewater buffers are largely vacuous.

But wetlands are different.

Different from streams. Different enough from other waters that I agree with Larry's and Steve's suggestion that, for protection planning, wetlands might well be addressed separately from streams. Not because GMA lumps them differently but because different geography and dynamics attend them. That suggestion might be altered later, though, if it turns out that implications for landowners and oversight turn out to be about the same.

And different from each other. If there is a typical wetland on the Island it is perhaps a few acres in size, perched on shallow hardpan, dry in the summer, and dominated by alders and willows, salmonberry, sogginess, and mosquitoes. But their diversity is an important matter, for Nature and for management.

The staff has a wetland inventory, which I haven't seen. I suggest as a first step, study their map and any categories they've listed. Second, visit several. What range is there in things that matter to you--features of the wetlands and the nature of their neighborhoods? Do the three OCD neighborhood categories¹ embrace our situation and help you help landowners? Given the variety and value of nearby landscapes, do you need more classes? Also, what about classifications of wetlands themselves, based on what is there, and in what ways that matters. Never mind the people who feel compelled to

¹ In the December 31 Frazier-Morse memo to you, at page 3.

classify: Do you perceive differences that warrant varied management? You very well may. For example, just the difference between seasonal and permanent waters, their sources (storm vs groundwater), their vegetation complexes, their depths and their ratios of perimeter to volume, or other indicators of diversity may draw you to conclude, "That depends".

What are your expectations for and from wetlands? Our wetlands have ebbed and flowed with climate changes, and all are relatively recent geologically. Wetlands support few kinds of plants. However they generate lots of biomass, and most are shrinking simply by filling with decaying vegetative detritus.² What can you learn about the natural future of Island wetlands, given their current surround? Is it bad? What are the things Island wetlands are actually doing ("ecosystem functions" if you please)? Are they doing those well? If not, how much effort and money should we put into somehow supplementing those functions? If the mix of wetlands seems askew here, can it be altered? Should it be?

Now, about buffers. Please, buffers are a means to an end. If you want buffers for some reason other than helping wetlands, put them where they can do that other thing best. As the new DOE wetlands pub points out, and planners seem to have forgotten, buffers are not a universal Band-Aid. If ill-conceived or ill-designed they probably won't work, meanwhile tying up large and valuable spaces that might be well used otherwise. For instance, a circular 1-acre wetland with a 100-foot buffer actually occupies 3.4 acres.

What do I mean, they might not work? This leads into three questions: Work for what? If they do work, how wide should they be and what should they be like? If they don't work, what then?

What do we expect from buffers? Protection from the outside world. And in some cases, benefits that only the buffer can provide.

There is much talk about the goodness of buffers, drawn mostly from places that aren't like the Puget Sound country. Rather, the studies are done typically in farm country, or steep forest land, usually with deep soils and rarely with our hardpan, and typically in summer-rainfall regions. Here are some often-cited benefits from wetland buffers, and my assessment of their relevance on the Island:

Capturing sediment, driven by erosion--Concern about sediment goes back decades to rampant logging and land clearing. However the erosion

² Page 2-60 in the literature-review document mentioned by Larry and Steve, *Freshwater Wetlands in Washington State, Vol. 1, A Synthesis of the Science*, 345 pages long plus a too-broad list of related pubs. Too broad because a great number of the citations are other folks' compilations, not original research. There's a good 5-page glossary. Some of the pub is relevant to the Island. The buffer section is outstanding, though the compilers missed some cogent Northwest literature. While you're into wetlands, this pub is a premier source.