

Community Engagement Fellows Project Report

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In keeping with the Huxley College Mission to “address today’s environmental issues and prepare tomorrow’s interdisciplinary problem solvers,” most of my scholarship, teaching, and service involves community engagement at some level. Environmental problems affect, involve, and may be exacerbated by human communities. Accordingly, effective solutions must engage communities. Hence, I work to help students gain problem solving knowledge and experience by engaging in real problems, I conduct research toward solutions to environmental problems, and I serve local and regional “communities” in a variety of problem solving capacities. In the interest of brevity, this report focuses on two projects I have pursued during the 2015-2016 year.

(1) Population Projections for Comprehensive Planning

Twenty year population projections provide the basis for comprehensive planning in Washington State. The Washington Growth Management Act requires all counties and constituent cities to project population growth over a 20-year time horizon and then to develop comprehensive plans and associated zoning changes necessary to accommodate projected growth. The Washington Office of Financial Management (OFM) develops projections for all counties, but Whatcom County has hired planning consultants to develop alternative projections. Since I began observing in 2002, projections developed by the county’s consultants and subsequently adopted by the County and City of Bellingham have been fraught with errors resulting from invalid projection models and erroneous analysis. These errors have led to excessive urban expansion, accompanied by unneeded expenditures on public infrastructure, social degradation from peripheral development, and environmental impacts caused by development-associated habitat loss.

Population projections developed for the ongoing comprehensive plan update are particularly problematic. My work consisted of (1) reviewing errors in projections that consultants developed for Whatcom County and the City of Bellingham, (2) developing reliable projections using best practices in population biology, and (3) assessing forecast accuracy of both kinds of projections. Results show that projections being used to inform planning decisions at both County and City of Bellingham levels are inflated and unreliable. The also would be costly. For Bellingham, accommodating growth forecast in the “Multi-Jurisdictional Resolution Regarding Population and Employment Allocations” would require raising property taxes some \$110 Million to fund public services required for expanding development. There has been no attempt to quantify environmental or social costs of such growth. These costs would be particularly unfortunate if they are unnecessary because actual growth is less than adopted forecasts.

In the interest of informing such important public policy decisions, I shared results of my work with county officials, city officials, and interested citizens and citizen groups. Sharing included meetings with citizen groups, meetings with planning staff, testimony at public hearings, and submission of written documents on my work for the public record. Links to several submitted documents are listed below, accessible from city and county planning web sites that archive public participation in the comprehensive planning process. Community Engagement Fellows provided support and encouragement during this

process, which has been frustrating as public officials regularly defied objective analysis and expressed interests of their constituents.

Whatcom County:

<http://www.whatcomcounty.us/DocumentCenter/View/16187>

<http://wa-whatcomcounty.civicplus.com/DocumentCenter/View/9540>

City of Bellingham:

<https://www.cob.org/documents/planning/comprehensive-plan/2016-public-comment/0608-mclaughlin.pdf>

<https://www.cob.org/documents/planning/comprehensive-plan/2016-public-comment/0410-mclaughlin.pdf>

As the comprehensive planning process proceeds toward a conclusion by fall 2016, I continue to offer technical assistance to County and City officials. My work has provided deep personal experience in the intersection between science and public policy. In particular, the experience demonstrates the tendency for vested interests and agency culture to dictate policy even when contradicted by science. I am preparing a manuscript on this experience and lessons gained from it to share with a broader scholarly audience. The following is a link to a relevant article in a candidate journal.

<http://www.esajournals.org/doi/full/10.1890/150019>

(2) Riparian Conservation in 21st Century Whatcom County

I apply conservation knowledge and experience in in my service on the board of directors of the Whatcom Land Trust (WLT). I combine knowledge of the relevant scientific literature, knowledge of conservation conditions in our region, and lessons from my own research to inform WLT deliberations and decisions. These decisions occur in an increasingly challenging context, as our society continues to exploit ecosystems to limits of their resilience. In particular, expanding development and ongoing climatic change threaten the composition, structure, and function of our region's streams, rivers, and associated riparian environments. WLT has been slow to consider these issues fully for several reasons. After failing for several years to convince the board to put these issues on the WLT agenda, I concluded a more compelling presentation was required.

In 2016, I prepared and submitted to WLT a report that (1) reviewed the scientific literature relevant to riparian conservation, (2) summarized the development status of the Nooksack River basin and plans for future development, (3) described conservation responses needed to prevent extinction of wild salmon and other likely impacts, and (4) outlined conservation implications for WLT. At the request of other WLT board members and the executive director, I submitted my report to peer review. In May 2016, the WLT board and staff held a special meeting to discuss my report and options for WLT to respond to the conservation context and challenges it outlines. WLT will consider its options further in fall 2016. This work has potential to transform WLT and could position the organization at the center of a broad coalition of organizations, in an effort to transform relationships between human society and the natural world in Whatcom County. Please stay tuned: you may be invited to participate.

I am expanding my report into a more comprehensive analysis, which I am writing as a manuscript for submission to a scientific journal. Although this work contributes new scientific insights, its primary motivation is to engage communities in conservation. In the meantime, the executive summary of my report to WLT is copied below.

Executive Summary

In the 21st century, riparian conservation faces a new context. Watershed development is approaching, or has exceeded, levels that compromise riparian functions. Climate change threatens to compound development impacts, rendering prior conservation investments obsolete. Without substantial innovation, Whatcom Land Trust and other conservation organizations risk mission failure due to extinctions of salmon and other riparian biota. Dysfunctional rivers also would threaten public safety, impair water quality, flood agricultural operations more frequently and severely, damage public infrastructure, and increase flood protection costs. This report reviews the scientific literature on impacts of development and climate change on riparian systems. It summarizes conservation responses recommended to prevent or constrain those impacts. Then it compares the current status and planned future conditions of the Nooksack River basin relative to conservation requirements, revealing a substantial shortfall. The report concludes with a list of implications for how Whatcom Land Trust can fulfill its riparian conservation mission in the 21st century context.