Response to ISRP Preliminary Review Report

Project # 31018
Willamette Basin Riparian Project

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1. One objective of the project is to enroll about 375 landowners in the CREP covering 75 stream miles. How was this target number identified? Were the riparian sections prioritized? What proportion of total riparian mileage in the Willamette Lowlands does 75 miles represent?

The ***target figures*** are an estimate based on the operating experience of some of the Willamette basin SWCDs. We are relying on the familiarity of these program managers with our landowners, their properties, local circumstances and need, currently waiting queues of willing landowners, and the program's planning and implementation mechanisms, to factor how much ground can be covered and at what rate. As one example, we used specific installed practices from the Yamhill basin to gauge an average of total stream footage a "typical" CREP/CRP practice entails – we are using a measure of 1050 feet per treatment. Similarly, we applied the success rate a diligent technical worker enjoys in a work year in creating landowner enrollments – about 20 contracted CREP/CRP partnerships or so. Given six workers programmed to CREP/CRP-eligible part of our project over these first three years, we extrapolated the total number of landowners and stream mileage we'll cover:

20 jobs per year multiplied by 18 worker-years (six planner/technicians for three years each) = 360 total buffer treatments. We added four percent to the total to account for the initial queue of landowners we are aware of – a small fast-start factor.

375 jobs multiplied by 1050 feet/average linear stream front per job = 393,750 feet = 74.6 miles of stream front.

We are not able to calculate an exact ***proportion*** of total "lowland" streamfront that 75 miles represents, and we are not aware of comprehensive fine-grained mapping which apportions stream reaches into some sort of a "lowland" classification. But we feel safe in assuming we propose a modest amount of miles when compared to the widespread resource issue of lowland stream degradation. We are able to provide some context to understand what 75 miles represents, however. The Willamette basin contains almost 16,000 miles of total tributary length, but much of this is obviously in elevations well above our work focus area. The Willamette Restoration Strategy (WRI, February 2001) reports that the Oregon CREP program - to the date of that writing - had treated a total of 85 miles of Willamette streams since the time of the program's inception in 1998. At inception, the Oregon CREP program provided for a total state-wide target of 4000 stream miles. We envision continuation of the buffering project beyond the proposed initial three-year period, in response to the generally agreed restoration need, the landowner interest we expect to generate, and in light of these contextual numbers.

Our ***prioritization*** of work areas is relying on stream condition surveys and restoration needs that has been previously identified for specific stream reaches. Assessments of riparian condition have been made for most Willamette watersheds under the auspices of local watershed councils and other basin planning efforts (described in the Sub-basin Summary and other plans). Most of these coarse-scale and local planning efforts have illustrated that a preponderance of poor condition streamsides exist in the lower

elevations of the watersheds. These are the starting point for us in targeting our marketing of the buffer program. We are hopeful that landowner willingness – a key element of our entire work proposal – will be generated out of that focused approach, and grow as we successfully enroll initial sets of landowners in these targeted localities. The assessments typically contain both GIS images which characterize vegetation condition by plant community structure, geographical scale (width of riparian cover etc), and/or other parameters, as well as offering tabulations of quantities and qualities of ecological condition by individual stream system or other manageable planning sub-units. Though varying in their detail, these local watershed assessments characterize other riparian functions associated with channel modification, wetlands condition, flooding characteristics, water quality and the like. These parameters provide additional calibration for us to search out the most degraded and feasibly-treated stream sections, and for identifying logical sets of adjoining/adjacent landowners to work with.

2. A second objective is to enroll 125 rural and urban landowners who are CREP/CRP ineligible in riparian buffer projects along about 20 stream miles. The proposal states that these sites will be "equitably distributed" – what does this mean? Were targeted areas identified through a priority setting process or do they depend more on the identification of willing landowners? If the latter, how can the benefits to fish and wildlife be anticipated? The presentation indicated that enrollment will be distributed across watershed councils. Will this approach result in fragmented, ineffective riparian buffers across the subbasin? How will the project address the need for habitat connectivity?

We are allocating just one fourth of our proposed FTE to this specific aspect of the project, given it is a demonstration intended to determine and craft inventive, workable buffering options for landowners which are ineligible for the CREP/CRP programs. There are many very large properties which are potentially involved in this urban/near-urban arena – falling outside the CREP/CRP program guidelines whether due to recent farming inactivity or due to producing particular farm commodities. We have thought carefully about how to ***distribute*** our marketing and implementation of these pilot opportunities. Given the portion of the project allocated to this pilot, and the scale of the potentially treatable problem, we had to make a choice whether this demonstration can accomplish significant measurable here-and-now biological benefits in and of itself, or whether its highest initial value is as an institutional building block: in "showing a way". We think we will be able to eventually develop stronger, deeper biological benefit in future years in this arena by starting now with a broader, more fragmented pattern of treatments. We are trying to gain exposure to a greatest number of landowners. We are being mindful that finding and gaining ***landowner willingness*** probably plays a greater premium in situating treatments in this element of our project. Therefore we will try to demonstrate this at several locations up and down the Willamette – to spread the initial opportunity versus allocating the experiment in a very tight pattern in very few locations.

Despite what we see as the need to widely place this demonstration at the beginning, we have some ideas about how we might accrue more ***substantive benefit and habitat***

connectivity during our first three years, and use connectivity as a stronger primary criteria thereafter. First, we will target larger sized acreages which do provide some substantive result for our work hours and dollars spent, and geographically enable clustering of a fewer number of substantive-sized treatments in order to gain a beneficial value to the aquatic ecosystem. Therefore our estimate of an average "job size" is about 80 percent of the CREP/CRP-eligible treatments (reference response #1 above). Second, while this part of the project will work in/near the basin's population centers, we are prepared to be careful about our approach in heavily urbanized streamsides. Because these areas are typified by smaller acreages, much more numerous landowners, and more highly degraded stream systems, we recognize it will be much more difficult to coordinate and contract with groups of adjoining owners to implement a comprehensive buffer practice at a given stream reach. In turn this difficulty translates into more hard fought increments of biologically benefits under any individual implementation. Third, we are optimistic that this CREP/CRP-ineligible arena will be fruitful in sparking interest and catalyzing others' conservation and restoration actions (conducted outside the auspices of our project). This positive "copycat" activity has occurred in our operating experience with the agriculture incentive programs; we expect it here as well.

Our long term intent is indeed to cluster buffer treatments and comprehensively buffer meaningful reaches of individual streams – we strongly concur that eventual habitat ***contiguity*** is the means to gain effective biological benefit, and to provide a reliable platform for informative data collection and adaptive adjustment of our approach. We believe we have to complete a significant percentage of coverage within any given stream to generate directly attributable (cause-effect) benefits from the buffers, and to eventually interpret this activity in some measurable degree as improved fish populations. Given this comprehensive coverage requirement, we continue to advocate that a programmatic approach is worthwhile and will eventually be the best way to meet goals related to habitat continuity and ecological effectiveness of buffers.

3. The M&E efforts need to be more thoroughly explained, particularly concerning responses of the fish community to restoration activities. It is difficult to see how the efficacy of riparian techniques will be demonstrated with respect to fitness of fish. For example, what will be the involvement of fish management agencies in M&E?

Our protocols for the project's ***implementation monitoring*** are those which are followed under any conventional CREP/CRP practice – essentially a straightforward forestry "stand exam" conducted on an annual basis, plus assessments of whether maintenance, weed control, and other agreed best management practice requirements are being observed on treated localities. The plant observations are oriented to presence/absence, density, vigor, and other conventional botanical measurements for the selected species. These measurements are a routine of CREP/CRP aftercare, and as a standard follow the conventions contained in the NRCS Field Office Technical Guide (a formal set of specifications). The implementation monitoring will also compile the information necessary to develop the project's job-completion data: miles of buffer, fencing, inspection/report completions, etc.

In addition to the regular implementation monitoring associated with CREP/CRP practices, we propose to utilize our partnership of districts and councils to conduct in-stream and streamside monitoring of the **Tier-1 type** (repeated measures of shading, sediment, temperature, etc) at specific localities where our work projects occur. We have allocated considerable matching time and funds in our proposal which are forecast in the construction, maintenance, and monitoring elements of the project. We will utilize this volunteer effort and other assets in this monitoring task work. The councils and districts enjoy strong daily working relationships with the Oregon Department of Fish and Wildlife. Their biologists will be enlisted under our regular existing partnerships to advise and help us tailor this additional monitoring in order that it adequately tests the local effectiveness of the treatments, and aligns with their own biological monitoring activities in the stream systems.

We concur that a ***Tier-3 styled monitoring design***, installed early in the project life cycle, will help determines the ***linkage*** of our buffering program to ecological responses seen in the basin, relate it to the rest of BPA's Fish and Wildlife Program, and develop a clearer picture of the long term cumulative effect of our buffering activities. Our expectation is that it should be possible, and able to be demonstrated through systematic data collection, whether effective buffering is able to cause some increments of improvement in water quality and other positive aquatic habitat attributes. We assume a rigorously designed data program would illustrate the specific role a successfully implemented long term comprehensive buffer program plays in fish population improvement.

We understand the difficulty in asserting a direct cause-effect relationship between stream buffering and ***fish fitness*** in the Willamette. Nonetheless, we do believe evidence exists which supports some general conclusions about the benefits of buffering, and we are proposing to use this project to build upon the objective record. Therein, we propose to use a national research agenda specifically tied to conservation buffering to guide our Tier-3 monitoring design. At the onset of the USDA/NRCS' 1997 National Conservation Buffer Initiative, a comprehensive review of buffer effects was initiated out of concerns about the relatively limited use of buffers to date, limited laboratory and field research on buffers up to that time, variability which existed in designing and implementing buffering, and questions about what might be achievable in water quality and fish and wildlife enhancement through the greatest possible use of buffering. Data was, and is, still somewhat limited, especially information beyond individual site experiments and studies. But of that which is available, it points to some direct evidence of sediment and nutrient reductions, strong potential for buffers to more dramatically reduce these and other contaminants, and produced a great deal of indirect evidence that buffering could reduce nonpoint source pollution. It is clear that gaps in knowledge about the effects of buffers exist, and that if filled, the effectiveness of buffers could be significantly improved. Out of this review a 19-point research agenda has been constructed and published in December 2001 by the Soil and Water Conservation Society (SWCS), which points buffer proponents in directions that can help resolve the relationship of buffering to environmental health (Report of the National Conservation Buffer Workshop, 2001). These 19 research directions are grouped into the following categories:

- Understanding ecological relationships of buffers in agricultural landscapes
- Enhancing the economic acceptability and impact of buffer systems
- Evaluating the effectiveness of conservation buffer systems for nonpoint source pollution
- Interaction of in-field practices with buffers – especially tile drainage and concentrated flow
- Modeling and decision aides for multiple users
- Expanding the concept of pollution control in buffer systems
- Role of buffers in stream corridor restoration

We are not aware of a buffering-specific systemic monitoring design and data management system that exists in the Willamette basin, which would get at the question of the linkage of buffering to fish fitness. We believe this project is an appropriate platform for furthering the SWCS national research dimension in this regard, and that this buffer-specific programmatic framework will enable us to effectively tie our project's information gathering to the effect of other Willamette projects in the Fish and Wildlife Program. We feel this SWCS research agenda (which is responsive and tailored to agricultural resource lands) should provide an appropriate programmatic guide for designing, observing, and documenting – over a long period of time - the linkage between our individual and collective buffering treatments. And similarly, we would rely on its principles to develop a monitoring strategy that has as a goal determining at what level our combined buffering actions translate into improved Willamette fish populations. We believe, intuitively and as a supportable general conclusion, that there is indeed a positive relationship between effective buffers and aquatic health.

In order to do this, we propose to utilize the planning framework already incorporated into our proposal. Our project proposal contains a portfolio of to-be-determined watershed planning studies – we would, as one discreet scope of work, ***redirect*** one such study effort to design and establish a programmatic Tier-3 monitoring program for buffering in the Willamette. It is likely we would closely consult the scientific consortium which guided the SWCS buffering research agenda to help craft this monitoring system, through funded contract and/or in an peer-advisory capacity. We believe the thoughtful design of a monitoring system to understand buffering-specific benefits on fish is a complicated design issue – and in the Willamette a worthwhile research/planning project in and of itself.

3 (continued). The project, at least implicitly, seems to be relying on "active," engineered approaches to restoration. Will there be a role for more passive (i.e., operation of natural processes) restoration? How will the two modes of restoration be reconciled?

The project does indeed promote ***active restoration***. We advocate installation of buffers, stream restoration project planning and other proactive actions that are certainly not "passive" actions. (We interpret that "passive" in our context might be something like the cessation of farm practices on a plot of land and allowing the adjacent river to simply resume its reworking and dynamic forces along that particular shoreline and onto

adjacent terraces.) We agree with the reality that stream dynamism will be the only eventual way to guarantee the constant flux of habitat features/characteristics and fish/wildlife populations that are able to withstand episodic ecological stresses, and over a long term maintain themselves. However, given the state of the riparian condition in the Willamette lowlands, we are certain that providing an engineered kick-start serves two useful functions: first, we promote restoration as an positive people-oriented activity which is responsive to the strong social nexus in our proposed work area; and second, through these work relationships we provide an assertive restart/re-setting of environmental processes and features. We feel the latter is important and necessary in the habitats we are dealing with, in order to get ahead of potentially exotic species infestations (blackberries, canarygrass), avoid re-development or new human uses, among other contingencies. The work relationships will put in place the contracts, easements, and other mechanisms which provide guarantees that watershed planning projects and restoration projects will be maintained until natural processes are able to recover. A design principle which is central to these planning efforts will be to restore function versus features or single-species attributes. In our proposal we discuss the array of restoration issues which are most commonly identified as important to the various Willamette watersheds – these do include some objectives – water quantity improvement, wetland function, off-channel reconnection, and the like – which are best addressed by restoring self-sustaining functions such as increased stream flows. Over the long term we expect (and count on) dynamic processes to eventually dominate and self-regulate the affected stream reaches and aquatic habitats where our buffering treatments and other restoration projects are placed.

4. The proposal states that the restoration planning, because it takes place on rural/urban residential/agricultural private land, will place a premium on "developing socioeconomic insights": what specifically does this mean?

For our project to succeed we must develop a belief system among our land owning partners, and we are confident we have access to, and the ear of, farmers in the Willamette basin. Reluctance to participate in restoration activities with their lands may be rooted in many social and economic factors which we don't yet have complete economic solutions for, either locally or at a basin scale. We believe our more involved watershed planning and stream restoration efforts to will stall if we do not adequately understand why, and how, restoration will be compatible with the cultural and economic realities of farming.

We recognize that farmers face basic economic challenges in taking land out of production to accommodate buffers, active floodplains, meandering channels, erosive forces, or providing water for instream flows – these have to reconciled with their mortgages, their crop agreements, market vagaries, government farm policy, etc. We constantly hear their concerns and uncertainties about impacts to their eventual livelihoods and business interest if they actively bring endangered species onto their property through restoration actions.

In addition to the familiar aspects of planning projects (ecological response, physical environment, design/engineering, etc), we feel thorough study of social and economic factors is a necessary part of the tool kit to attract landowner attention and generate wide, deep belief in aquatic system restoration. We will include these insights as part of the study package in our restoration and watershed planning projects. We will specifically characterize business, administrative and legal constraints facing the farming (and private landowner) community, apply this analysis to case problem solving, and create management-applicable economic solutions in the form of testable and feasible alternatives which enable restoration work. Studies will analyze the feasibility and possible mechanisms to implement the ideas generated in the economic and social investigations.

Legal, administrative, and business challenges aside, we cannot overstate the importance of understanding the culture of farmers. Their families are built upon a belief in land clearing, land productivity, erosion control, and other traits they view as productive. There is a heritage of passing along what they build through their generations, and in not diminishing their basic economic capital – which is productive acreage. Finally, they talk to and watch each other, and follow each other's leads in a tight knit way. There is a peer acceptance that is powerfully important to them – we feel we have to resonate with many farmers, not just a few here and there.

We are cautious of buying our way there in a fee title way – land acquisitions are expensive, and we wonder if a long program of purchasing is as sustainable, or potentially as wide and deep, as somehow inventing win-win business solutions that retain farm activity/interests in more ecologically dynamic lowlands. The challenge for us is not easy: how do we encourage these folks to use their land for river "elbow room"? In what way is it appropriate and feasible to modify our farming expectations?

Conclusion

We appreciate the opportunity to respond to questions about our proposed project. Please feel free to contact us with any additional questions or further discussion of our ideas.

Additional documents submitted in response to this proposal:

Agreement of Sale
BPA Response