

Region 1 FY 2015 Invasive Species Control Program Proposal Format

Refuge/complex name: Ankeny NWR / Willamette Valley NWRC

Project title: Peregrine Marsh Restoration: Reed Canary-Grass Restitution

Total amount requested: \$14,300

Project description: Peregrine Marsh will be a focal point of the Ankeny Hill Nature Center, a joint partnership between USFWS and Salem Audubon Society (SAS), which is a planned environmental education and interpretive center that will serve an estimated 135,000 visitors annually. The conceptual project is currently in the design phase and includes the Nature Center, parking locations, an outdoor classroom, and walking trails that will be implemented in phases beginning in 2016 with an estimated budget of \$3-5 million. Phase I will include construction of a 1000 sq. ft. outdoor classroom with a restroom that will be adjacent to the 15 acre marsh, complete with an overwater boardwalk. Since Peregrine Marsh represents managed seasonal wetland habitat within the WVNWRC it is imperative that habitat quality is high and representative of historic plant and animal communities.

With the exception of Peregrine Marsh, the Ankeny Hill site currently provides little native habitat for wildlife. Upland prairie restoration of the area immediately surrounding the Nature Center, field 27, was approved in the 2011 CCP and Refuge staff support riparian, wet-prairie, vernal pool, and other native habitats in close proximity – showcasing wildlife, flora, and restoration techniques for the education and interpretive programs. Peregrine Marsh offers the nearest term restoration opportunity that could be completed prior to the construction of the outdoor classroom in summer 2016. The marsh was originally created in the early 1990's but over the last 20+ years reed canary-grass (RCG) has become a monoculture on over 50% of the wetland, warranting a restoration prescription. Restoration will primarily address RCG eradication (i.e. chemical, mechanical) including RCG sod removal, lowering pond bottom elevations in RCG dominated zones (i.e. 6"), heavy disking to promote desiccation of rhizomes, and heavy seeding of desirable native emergent species. Restoring a diverse native plant community will increase abundance and diversity of birds, thereby contributing to overall project objectives of SAS and the Refuge.

Distinct project with well-defined objectives (10 points): This project is supported in the WVNWRC CCP by Goal 2, Objectives 2a and 2b: Maintain, enhance, and restore a diversity of wetland habitats characteristic of the historic Willamette Valley. Specifically, 50% of seasonal wetland habitat should be managed to produce moist soil plants (i.e. spike-rush, millet, smartweed spp., and water plantain) and 50% managed to produce native emergent perennials (i.e. bur-reed, wapato, sedges, rushes). Moreover, a primary goal is to have <40% cover of undesirable plants and <10% cover of invasive plants; RCG qualifies as both. Under this objective, strategies applicable to Peregrine include; maintaining heterogeneous wetland bottom topography, control invasive plants using IPM strategies (e.g. mow, disc, spray), and protecting infrastructure such as water control structures and berms.

Wetland maintenance and employment of strategies defined in the CCP has been lacking over time at Peregrine Marsh which has led to a near monoculture of RCG, yet advances in wetland restoration science over the last twenty years, and potential grant resources, provide an opportunity to restore the desired plant community. Given the annual balance of overall habitat projects, farming, and maintenance needs versus staff resources, restoring Peregrine Marsh on a one year timeline prior to construction of the outdoor classroom in summer 2016 is not possible without additional resources.

The specific project objective of this proposal is to use a variety of mechanical, chemical, and heavy earth moving equipment via Refuge staff, Partner's for Fish and Wildlife (PFW) staff, and contractors on an expedited one year timeline in preparation for Phase I construction of the Ankeny Hill Nature Center in summer 2016. First, Peregrine will be drawn down early (late April) to facilitate mobilization of mechanized equipment and promote early growth of RCG. Herbicide will be applied as early as we can access the wetland (late June). Once sufficient mortality is observed we will mow the wetland and utilize a self-propelled scraper to scalp RCG sod from highest density areas, and create heterogeneous wetland bottom topography. These deeper swales that allow positive drainage to the control structure while maximizing wetland plant diversity, contributing to education/interpretive objectives. We will also utilize an excavator to repair burrows that exist in the berm and place spoils on the toe of the berm to broaden side slopes. In the 1990's berms were often tall and steep sided and encouraged burrowing by invasive nutria. We will amend this by broadening the side slopes and decrease the height of the berm (both discouraging burrowing). Next, we will heavily disc the wetland to break up rhizomes and facilitate desiccation. Our

goal will be to disc once a month in July, August, and September. Then in late September we will broadcast a variety of native emergent seed (e.g. water plantain, bur-reed, wapato, rice cut-grass, scirpus spp., smartweed). Following seeding we will actively perform spot herbicide applications until a robust native stand is dominant throughout the site.

Potential for maximum control/Likelihood of success (10 points): Our goal is to achieve <10% cover of RCG within the first two years post-restoration via initial treatment and intensive spot herbicide applications. Permanent control of a competitive invader like RCG is nearly impossible in the absence of active management, yet our approach is designed to limit annual maintenance. A multi-faceted IPM approach that includes proper site preparation, earthwork that promotes deeper emergent habitat, annual spot herbicide treatment, and a cyclic disturbance regime (i.e. discing every 5 years) will best accomplish our goal. In fact, maintaining early succession plant communities can be an educational/interpretive topic, whereby we explain that discing mimics natural historic disturbance regimes (e.g. flooding and fire) that have been lost. This treatment strategy is optimal due to the synchronous timeline with the outdoor classroom, restored habitat for education opportunities, and long-term reduction in staff maintenance at the site.

Biological benefit to priority species or BIDEH (10 points): This project will directly support the purposes of the WVNWRC, through the enhancement of declining wetland habitats that specifically benefit migratory birds. Native seasonal wetland plant communities provide abundant food resources such as seeds and invertebrates that benefit wintering Canada geese, dabbling ducks, shorebirds, wading birds, song birds, raptors, and many species of amphibians, including red-legged frogs. Reducing RCG will allow for more diversity, increased native seed production, increased invertebrate abundance, and subsequently increased avian use, all of which will improve the overall experience of the Nature Center.

Sustainability (10 points): The desired future condition is a native dominated (<10% RCG cover) emergent seasonal wetland plant community. This will be accomplished by annual spot herbicide application and establishment of a 4-5 year discing disturbance regime to promote early succession emergent species with high seed yields and discourage RCG. These activities will be accomplished as part of normal refuge operations using existing equipment.

Monitoring to document and evaluate project success (10 points): We recently issued a SUP to volunteers (retired local professor and current Western OR University students) for collecting baseline data from Jan. to August 2015 that will be used to evaluate post-project habitat response. Refuge staff and/or these volunteers will replicate data collection methods for at least 2 years post-project. Our focus will primarily be evaluating vegetative response to restoration treatments, and specifically reduction in RCG cover, yet we will also monitor faunal use and change over time. Volunteers will sample multiple vegetation zones throughout the wetland (i.e. open water, submerged aquatic, emergent, lowland riparian) to observe birds and mammals, estimate presence and cover of plant species, and inventory aquatic invertebrates. Volunteers may sample up to 3 times per month and we will monitor at least twice per growing season post-project.

Budget:

Herbicide application and mobilization:	\$1000
Scraper/excavator operation and mobilization (1 week)	\$4500
Large tractor and discing	\$3000
Fuel	\$500
Native wetland seed	\$1300
In-house FWS expenditures (planning, layout, design, contract admin)	\$3000
Post-project monitoring	\$1000
Total	\$14,300

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