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**ANNUAL REPORT**  
**SHILLAPOO WILDLIFE AREA**  
BPA Project #: 2003-012-00



Prepared for:  
Joe Deherrera  
Bonneville Power Administration

Prepared by:  
Brian Calkins  
Wildlife Area Manager  
Washington Department of Fish and Wildlife

Cover Photo: Stand of native water plantain and wapato in a project wetland enhanced through work funded by BPA. Previously reed canary grass an exotic invasive plant had dominated the site.

## **INTRODUCTION:**

This report summarizes accomplishments, challenges and successes on WDFW's Shillapoo Wildlife Area funded under Bonneville Power Administration's (BPA) Wildlife Mitigation Program (BPA project #2003-012-00) during the Fiscal Year 07 contract period October 1, 2006- September 30, 2007. The information presented here is intended to supplement that contained in BPA's PISCES contract development and reporting system. The organization below is by broad categories of work but references are made to individual work elements in the PISCES Statement of Work as appropriate.

The greatest success realized during this contract period was significant positive changes in the vegetative community in several wetland basins throughout the wildlife area. This major goal is being achieved in part by new equipment and operation capability funded under the BPA contract, state capital and migratory bird stamp funds, and the past or ongoing investment of other partners including Ducks Unlimited, The Natural Resources Conservation Service (NRCS), Clark Public Utilities and others.

We continue to be challenged by requirements under the archaeological and historic preservation act necessary to protect many sensitive sites known to occur within the wildlife area. The problems encountered to date have been largely administrative in nature and those experienced this year were unforeseen and probably unavoidable. Early in the contract period, WDFW and BPA had agreed to have a BPA staff archaeologist perform the survey and reporting work. Unexpectedly, just prior to the expected start date for the surveys, the employee resigned leaving BPA's staff short handed and necessitated contracting the work with an archaeological consultant. This delay caused us to forego work on several projects that are now deferred until the next contract period. The most notable projects impacted by this unfortunate circumstance are those involving the construction or repair of fences.

## **WETLAND MANAGEMENT:**

Several improvements have enhanced our ability to move toward achieving the goal of replacing almost pure reed canary grass stands with beneficial largely native plants in wetland management basins. These have included a new tractor, disk and mower purchased with BPA funds and improvements to the South Unit pump station funded by WDFW.



Wetland disking

Disking is used as a management tool to break up matted canary grass root systems, expose them and ultimately dry and kill them. This also exposes the natural native seed bank that has been dormant in the soil for many years. Water management is also critical to the success by flooding the basins to a sufficient depth into early summer to

give the beneficial plants a competitive advantage over the canary grass. The improvements to the pump station allow a better opportunity to maintain the critical water elevations into the warmer months when the native plants naturally germinate. The basins are drawn down at that time.

The most striking change was in one wetland basin within the Vancouver Lake Unit that had been disked in the summer of 2006 and then flooded until late June of this year. This site has an established photo point illustrated below. The photograph on the cover of this report is a close up representative view of the plant community now present in over half of this basin.



2005



2007

During this contract period, we applied disking treatments (Work Element K) to approximately 69 acres of wetland basins including repeat treatments in some areas that were disked in 2006. The results of these treatments will depend upon water management during the FY 08 contract period. After attempting to utilize strictly our own equipment this year we did realize that initial treatments in some areas will require the contracting of heavier farm equipment in future years where the Canary Grass sod layer is too difficult to penetrate with our lighter equipment. When selecting equipment we had decided that purchase of much larger equipment would not be cost effective in the long-term and that smaller multi-purpose equipment was more practical for most of our operations.



Ducks Unlimited, in partnership with NRCS also completed a wetland water management structure in the South Unit, which includes the southern end of the Shillapoo Lakebed. Reestablishing native wetland plant communities in the lakebed that was drained in the 1950's for agricultural production has been the largest enhancement focus for the wildlife area for many years and this is the first completed part of that effort. The new wetland "cell" is approximately 120 acres in size and water levels will be managed utilizing a flashboard riser system. It is believed that surface runoff and groundwater will

be sufficient in this basin to maintain water levels necessary to achieve plant community objectives.

A similar larger project in partnership with the US Army Corps of Engineers is currently in permitting and is now expected to get underway next year. This project would provide the ability to reestablish and manage for native plant communities in the remaining portions of the lakebed currently under WDFW ownership.

A third planned project has been put on hold due to a loss of grant funding. This project titled "North Basin Enhancement" (Work Element D) would have installed two ditch plugs with associated water control structures to enhance an 80-acre wetland basin in the North Unit. We will be exploring different funding mechanisms for this project.

### **GOOSE FORAGE MANAGEMENT:**

In addition to activities to improve wetland habitat, ongoing management and improvement of winter forage habitat for Canada Geese is an important focus for this wildlife area. These activities also benefit Sandhill Cranes, a state endangered species. Both Sandhill Cranes and Dusky Canada Geese are listed as "Species of Management Interest" in the Lower Columbia River Subbasin Plan. Efforts to maintain and enhance these forage habitats have been supplemented by additional labor funded by State Migratory Bird Stamp funds and the work of volunteer organizations such as The Washington Waterfowl Association.

In addition to agricultural and grazing programs under cooperative agreements with local farmers, management activities to maintain and improve these areas include pasture mowing, fertilization, reseeding pasture, and cover crops (Work Elements E through I). It should be noted that fertilization, reseeding and planting cover crops are activities that will be significantly reduced due to funding reductions under the BPA FY08 contract for this wildlife area. Fertilizing and cover crops in particular will be completely abandoned unless other sources of funds are secured to purchase materials or cost savings are realized in other budget items during the fiscal year. Weed control is another important aspect of this management but is addressed separately later in this report.

Mowing activities are conducted to reduce vegetative height and provide for new growth a condition necessary to provide for waterfowl use and suitable forage condition. Each year these activities begin in the spring and continue through late fall. Approximately 400 acres are managed with mowing as the primary management tool. Over time as enhancements are completed the need for mowing will be reduced. All significant waterfowl pasture areas were mowed and in good condition for waterfowl use going into the 06/07 winter. We expect this to be the case again this fall. In addition, approximately 200 acres of upland pasture were fertilized to enhance forage condition.

During the previous contact period we reseeded approximately 50 acres of pasture. Approximately ten acres included full workup, including soil tillage, prior to planting. The remainder was over seeded with a pasture mix. The full tillage area produced a very



good grass/legume stand that received substantial use by wintering waterfowl. The over seeded areas had mixed results. Because of these results, this year we tilled three areas



2006 pasture planting (left) and area prepared for planting in 2007 (right)

totaling approximately 50 acres to be reseeded but await final approval from BPA's environmental compliance section to plant the seed. This is likely to occur in October 2007. In addition any areas where brush removal occurred in pasture areas were over seeded with a grass legume mixture to aid in long-term control of Himalayan Blackberry in addition to providing better waterfowl pasture. Fall cover crops have not been undertaken for fall 2007 at this time primarily due to increased effort we have put into pasture replanting and wetland disking.

### **TREE AND SHRUB PLANTINGS:**

Tree plantings planned for this contract period (Work Elements S through X) got a late start, which resulted in a reduced planting effort. One site (North unit old ag site) was not planted pending the outcome of archaeological consultation and a second (Buckmire Slough) was deferred to future years due primarily to the late start date but also the need for brush clearing. The late start date was due partially to a late report from a consultant hired to do archaeological investigations in FY06. Since we could not order trees for some of the sites where approval was pending some plants were not available in suitable sizes and we were limited by time constraints as well. Special considerations were developed for the Lake River riparian planting, which limited the size of trees we could use.



Northern end of Reiger Oak site

Planting did occur at four locations and this years effort included the final phase of initial planting on one of those sites. The Reiger oak habitat site received 225 plants that supplemented earlier efforts. Some replacement of trees may be required over the next few years depending on mortality levels, but the initial planting effort is now considered complete. Other sites planted included the Lake River riparian zone, McBride Oak site and old rookery site.

The Lake River planting received 700 bare root plants including Oregon white oak, hawthorn, crabapple, serviceberry, and red elderberry. Approximately 2,000 willow cuttings were also installed along the waters edge at this site. Plant survival of the bare root stock was fair due to late planting date and difficult planting technique that led to higher than normal dehydration rates. We expect better results in future years with earlier plant dates and better experience with the planting technique.

The McBride Oak Site received 405 bare root plants including Oregon Ash, Oregon white oak, red elderberry, serviceberry, redosier dogwood, crabapple, and hawthorn. Plant survival at this site has been excellent. Some deer browse was noted but we do not feel that this will become a significant issue limiting success of the planting. Some further planting at this site is needed and may be complete in FY08.

Initial planting got underway at the old rookery site and this effort is expected to continue for another two to three years. The objective of this planting is to rehabilitate a forested wetland stand (cottonwood) in hopes to maintain it as an alternative nest site for great blue herons in the future. The site once had a rookery of over 300 nests but was gradually abandoned as the post mature trees died and fell. Planting is focused on openings in the canopy over a 40-acre area. Four hundred seventy 5-6 foot bare root trees were planted.

Maintenance activities in these plantings continued through the end of the contract period. Mowing was done to reduce plant competition, and rodent damage. Three foot by three-foot commercial tree mats and 18" tree tubes were placed around most trees to retain soil moisture and minimize rodent damage. Tree mats in particular seem to be a benefit in improving initial establishment of the plants.

## **INVASIVE SPECIES MANAGEMENT:**

Almost all field aspects of this project involve management of invasive plants. Efforts to control reed canary grass and foster reestablishment of native plant communities in wetlands are discussed above. Other plants of particular emphasis in the project area include Himalayan blackberry, poison hemlock, purple loosestrife and Canada thistle (Work Element L). Other plants of concern include tansy ragwort, milk thistle, English ivy, meadow knapweed, water speedwell, and slender flowered thistle. The latter four listed had not been noted in the project area until the last two years and control efforts were implemented early in hopes of preventing large-scale infestations.

Control of Himalayan Blackberry has been a major focus of effort over the past two years with significant progress. This activity is conducted to improve wintering waterfowl habitat and also to prepare sites for following enhancement activities such as riparian plantings (Work Elements M through O). Canada geese in particular rely on long sight distances to avoid predators and shy away from small field areas. Increasing the line of sight distances generally improves use by waterfowl and in some cases affords the opportunity to increase forage availability by replanting the areas once occupied by blackberry thickets. Our efforts this year were focused on waterfowl areas in the South



Blackberry control site adjacent to agricultural field to improve waterfowl habitat and use

Unit near Lower River Road and in two areas being prepared for future riparian plantings. After the initial clearing, diligent maintenance (spraying) is required for several years to assure long-term removal of the stands and the establishment of desirable vegetation. Other clearing also occurred along fence lines in preparation for repair work.

Poison Hemlock Control has long been a major focus on this Wildlife Area. Large stands once were rather common both on WDFW lands and in the surrounding area, which was of particular concern due to the

plant's toxicity. Again this year we believe we were able to treat all major stands and the plant is now almost hard to find in the area. It is also notable that one neighboring landowner that had not been engaged in diligent control work is now also effectively controlling this weed which will aid in our control efforts.

Two years ago a dramatic increase in the occurrence of purple loosestrife was noted in areas of the Shillapoo Lakebed in both the North and South Units. Two years of increased effort appear to have been effective. We do however expect this work to continue for some time. Increases of this plant have also become apparent on the Vancouver Lake Unit and on other properties surrounding the lake. In response we have also increased our efforts here but have learned that Clark County has changed it's control approach and is relying solely on biologicals to control the plant. It appears that this approach has not been effective. This year we did hear of a new biological that has been more effective in this type of environment and will be looking into the feasibility of a release here.

In the past, mowing was our primary means of controlling weeds many areas. While this continues to be an important tool, this was the first year we had equipment available to effectively treat large areas with herbicide to control Canada thistle and other weeds like tansy ragwort in open areas such as pastures. Approximately 100 acres of high priority areas were boom sprayed in all units to improve habitat conditions. Localized spot treatments also occurred throughout the wildlife area.

## **INFRASTRUCTURE MAINTENANCE AND IMPROVEMENT:**

As noted previously, fencing projects in particular have been delayed due to unforeseeable staff and administrative complications in getting the work cleared under Section 106 consultation requirements. Fall and winter is the time of year when Wildlife Area staff has time available for fencing projects and the later approvals put us outside that window. We now have a backlog of projects that are approved and we plan to move forward with those in the 08 contract period. Some of these projects are intended to



improve grazing management while others are routine maintenance or necessary to control abuses such as off-road driving by the public. Two proposed fence sites in the South Unit were cleared to facilitate repairs and archaeological surveys.

As noted previously, the South Unit pump station was improved by WDFW this year. This involved installation of a second pump that is effective during a longer period each year. No other major repair work occurred to water management facilities. Two structures were noted that will need future repairs however. One is a minor leak around one culvert on the South Unit and the other is a Nutria Den near a structure on the Vancouver Lake Unit.

Minor clearing of limbs or brush was done as necessary along interior administrative maintenance travel routes. Gravel was also placed at several locations where vehicle or equipment traffic had, or threatened to cause damage.

### **MONITORING:**

Monitoring efforts planned for this year included continued development of a photo-point monitoring program and development and implementation of a wetland vegetation monitoring system. Progress was made in relocation of previous wetland photo points in the Vancouver Lake Unit and improving the location and other information. This included GPS coordinates for the photo taking location and description of the center target to frame the screen.

We have developed a methodology for sampling wetland vegetation that is intended solely to track changes over time and will be related to treatments applied, and water regimes. This will be used to determine treatment effectiveness and hopefully will provide information that can be used to develop specific guidelines for each individual wetland basin and predicting maintenance activities that will be required.

Sampling in each basin will begin by subjectively locating the approximate center of the basin. The location coordinates will be recorded and then three transects located 120 degrees apart will radiate from this center point. The first transect will be in a direction selected from a random number table or other means. Vegetation information will be recorded from 2 meter diameter round plots located equidistantly along each transect. The distance between plots may vary depending upon wetland size but should be such that a minimum of ten samples is recorded along each of the three transects. This sampling was expected to begin in the latter part of September but has been delayed by workload issues. The September/October timeframe has been selected for this work, as it would be most representative of the conditions for target wildlife species during the winter months. We do plan to complete sampling within a minimum of five wetlands prior to the end of October before water begins to accumulate in the basins.

BPA through a contractor also performed a HEP study on two parcels where funding from the mitigation program was used for acquisition. We believe that the report of the findings is not yet in final form and do not have the results at this time.

## **ADMINISTRATIVE, PLANNING AND OTHER ACTIVITIES:**

A substantial amount of the manager's time was spent on administrative activities. These include project planning and coordination, contracting and reporting, procuring supplies, and planning. Coordination of archaeological surveys discussed above was also a major priority.

A management plan for the Shillapoo Wildlife Area resulted from an agency wide effort by WDFW to complete plans for all of its wildlife areas across the state. The planning effort which included meetings with our advisory group and public input led to a plan which contained all of the original elements proposed to BPA for funding and only a few new items for which WDFW may have to seek funding other than from BPA to implement. Although the format of this document is slightly different, the overall plan for management of the area did not change. The wildlife area manager has requested approval to submit a copy of the current plan document to BPA.

Coordination included working with WDFW's engineering division on completing specifications and permitting for the on-site storage building. WDFW will also be developing a wildlife-viewing site adjacent to the building site with state funds.