Crab Creek Subbasin: Telford Unit - Management Plan

Introduction

The Telford Unit of the Crab Creek subbasin (Subbasin) is located in central Lincoln County, Washington. It includes WDFW's Swanson Lakes Wildlife Area, BLM's Twin Lakes Recreation Area, BLM's recent "Blake Hall" purchase in the vicinity of the Telford Rest Area on U.S. Hwy 2, and surrounding lands.

Land Ownership

Approximate size of Telford Unit is 18 miles by 18 miles square, or roughly 324 square miles/207,360 acres. The unit is centered at the intersection of the following four sections: SE corner of Sec. 36, T 25 N, R 34 EWM; SW corner of Sec. 31, T 25 N, R 35 EWM; NE corner of Sec. 1, T 24 N, R 34 EWM; and NW corner of Sec. 6, T 24 N, R 35 EWM. From this intersection, the Telford Unit extends for 9 sections, or approximately 9 miles, in each cardinal direction (N, S, E and W.) The Telford Unit is shown in Figure 1.

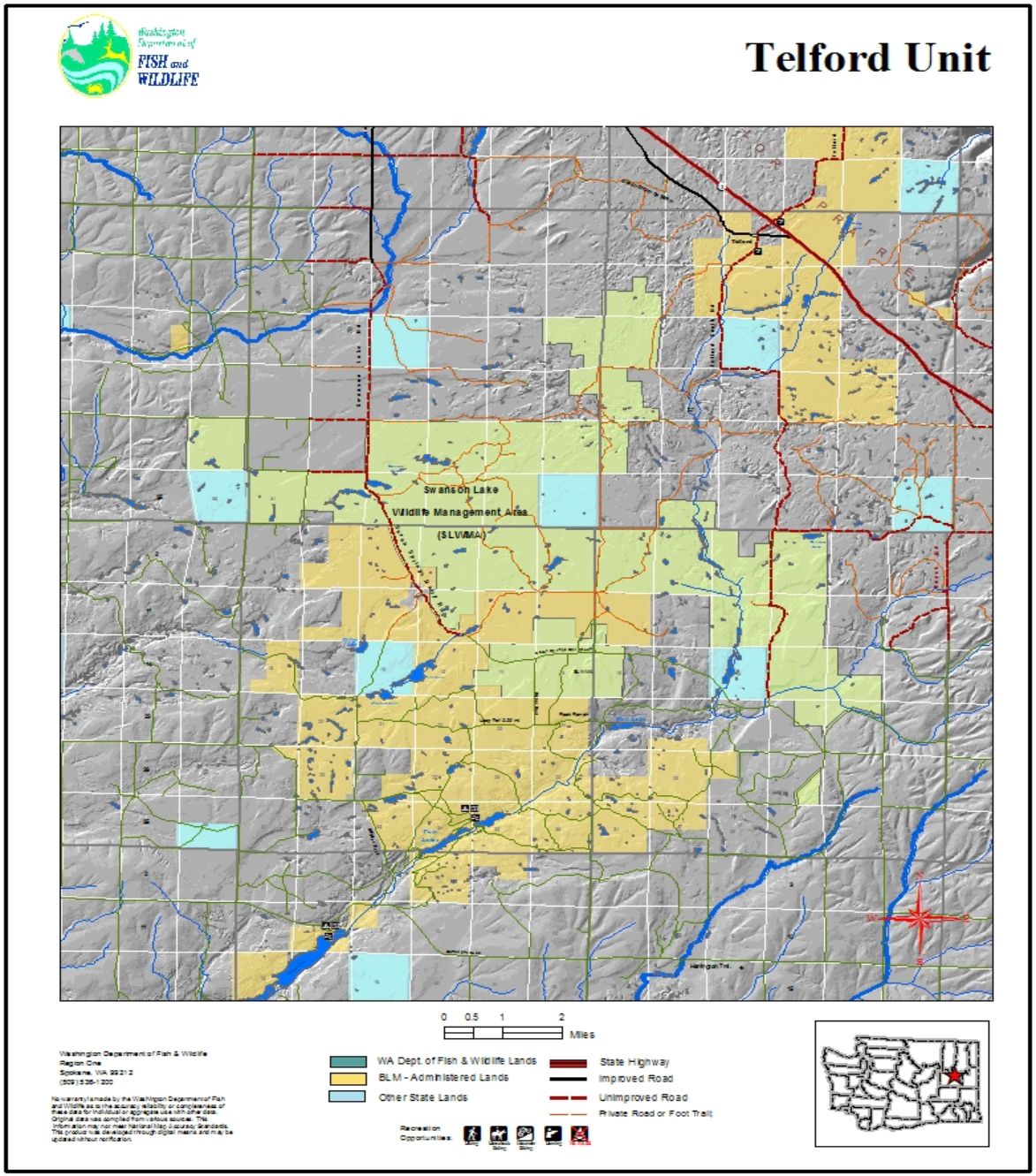

Figure 1. Telford Unit of Crab Creek Subbasin

Within the Telford Unit, approximately 20,000 acres are owned or managed by WDFW as Swanson Lakes Wildlife Area. Another estimated 30,000 acres are owned by BLM as Twin Lakes Recreation Area. Washington DNR also owns scattered units, generally full or partial sections of Sections 16 and 36 in each township. The bulk of the remainder of land is in private ownership.

Land Use
Agriculture and livestock grazing are the dominant land uses within the Telford Unit of the Crab Creek subbasin. Crops are primarily winter wheat and spring barley with summer fallow every two to three years.

Technical Overview
The process used to develop wildlife assessments and management plan objectives and strategies is based on the need for a landscape level holistic approach to protecting the full range of biological diversity at the Ecoregion scale with attention to size and condition of core areas (subbasin scale), physical connections between core areas, and buffer zones surrounding core areas to ameliorate impacts from incompatible land uses. As most wildlife populations extend beyond subbasin or other political boundaries, this “conservation network” must contain habitat of sufficient extent, quality, and connectivity to ensure long-term viability of obligate/focal wildlife species. Subbasin planners recognized the need for large-scale planning that would lead to effective and efficient conservation of wildlife resources.

In response to this need, Ecoregion planners approached subbasin planning at two scales. The landscape scale emphasizes focal habitats and associated species assemblages that are important to Ecoregion wildlife managers while specific focal habitat and/or species needs are identified at the subbasin level. To facilitate this strategy, Ecoregion planners organized two interactive wildlife planning teams consisting of Ecoregion level planners and subbasin level planners.

One major Ecoregion focal habitat type occurs in the Telford Unit Subbasin: shrubsteppe (agriculture is a cover type of concern). Note that current, broad-scale habitat qualitative data is not available and is a significant data gap. For complete information on the focal habitat selection process see Section 4.1.3 (Ashley and Stovall 2004).

Assumptions
Ecoregion and subbasin planners agreed with Lambeck (1997) who proposed that species requirements (umbrella species concept) could be used to guide ecosystem management. The main premise is that the requirements of a demanding species assemblage encapsulate those of many co-occurring less demanding species. By directing management efforts toward the requirements of the most exigent species, the requirements of many cohabitants that use the same habitat type are met. Therefore, managing habitat conditions for a species assemblage should provide life requisite needs for most other focal habitat obligate species.

Ecoregion/subbasin planners also assumed that by focusing resources primarily on interior grassland and shrubsteppe habitats, the needs of most listed and managed terrestrial species would be addressed during this planning period. Additional habitats and species assemblages will be addressed in plan updates.

Methods

Ecoprovince/subbasin planners identified a focal species assemblage (Table 3) for each focal habitat type and combined life requisite habitat attributes for each species assemblage to form a "recommended range of management conditions", that, when achieved, should result in functional habitats (Table 4). The rationale for using focal species assemblages is to draw immediate attention to habitat features and conditions most in need of conservation or most important in a functioning ecosystem. The corollary is that factors that affect habitat quality and integrity within the Ecoregion and subbasins also impact wildlife species. As a result, identifying and addressing "factors that affect focal habitats" should support the needs of obligate wildlife populations as well. Planners recognize, however, that addressing factors that limit habitat does not necessarily address some anthropogenic induced limiting factors such as affects of human presence on wildlife species.

Table 1. Crab Creek Subbasin – Telford Unit: focal species assemblage.

Shrubsteppe
Mule deer
Sharp-tailed grouse

Table 2. Focal habitat type range of management conditions.

Focal Habitat Type	Recommended Range of Management Conditions
Shrubsteppe	Recommended Condition - *Diverse shrubsteppe habitat:* Mule deer and sharp-tailed grouse were selected to represent species that require/prefer diverse, dense (30 to 60 percent shrub cover less than 5 feet tall) shrubsteppe habitats comprised of bitterbrush, big sagebrush, rabbitbrush, and other shrub species (Leckenby 1969; Kufeld *et al.* 1973; Sheehy 1975; Jackson 1990; Ashley *et al.* 1999) with a palatable herbaceous understory exceeding 30 percent cover (Ashley *et al.* 1999).

Relationships between focal habitats and focal species assemblages are summarized in Figure 2. Changes in the extent and quality of Ecoregion/subbasin focal habitat conditions were compared to establish the magnitude of change that occurred in focal habitats since European settlement (circa 1850). Ecoregion/subbasin planners documented current habitat conditions, where possible, and reviewed the habitat/life requisites for each wildlife species assemblage. Focal species' habitat needs defined the range of recommended future conditions for each focal habitat type. Current habitat conditions/attributes were compared to those defined by the species assemblages to initially identify "factors that limit focal habitats." Additional factors were obtained through literature and peer review (section 4.3, Ashley and Stovall 2004).

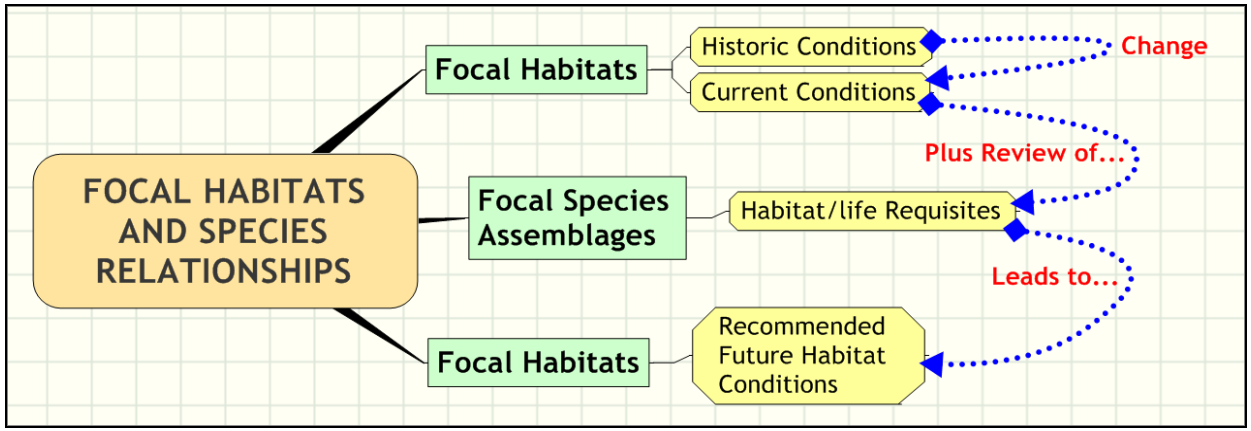

Figure 2. Focal habitats and species assemblage relationships.

Assumptions

Focal habitats are functional if a focal species assemblage's recommended management conditions are achieved. Planners also assume that the species assemblages adequately represent focal habitats.

Working Hypotheses

The working hypotheses for focal habitat types are based on factors that affect/limit focal habitats (the term, "factors that affect habitat" is synonymous with "limiting factors" for wildlife species). Ecoregion/subbasin level working hypotheses are statements that assist subbasin planners and their communities to clearly articulate a program aimed at addressing the most pressing needs in a given area. The basis for the hypothesis is the proximate or major factors affecting focal habitats as described within individual subbasin assessments and summarized in Section 4.3 (Ashley and Stovall 2004). The relationship subbasin planners are attempting to address is that between management objectives, strategies or actions, and recommended (desired future) focal habitat conditions

necessary to meet habitat and/or wildlife objectives and goals. These relationships are tested through implementation, followed by monitoring and evaluation. Ultimately, adaptive management is used to respond to the outcomes of these "tests" of "working hypotheses."

Focal habitat type hypotheses are the same for all subbasins and are derived from factors affecting the habitat. Hypotheses for subbasin focal habitat types are summarized below.

Shrubsteppe Working Hypothesis: The near term or major factors affecting this focal habitat type are direct loss of habitat due primarily to conversion to agriculture, reduction of habitat diversity and function resulting from invasion of exotic vegetation and wildfires, and livestock grazing. One habitat diversity stressor is the spread and proliferation of annual grasses and noxious weeds such as cheatgrass and Canada thistle that either supplant and/or radically alter native shrubsteppe/bunchgrass communities, significantly reducing wildlife habitat quality. Habitat loss and fragmentation (including fragmentation resulting from extensive areas of undesirable vegetation) coupled with poor habitat quality of extant vegetation have resulted in extirpation and or significant reductions in shrubsteppe obligate wildlife species.

FACTORS AFFECTING THE HABITAT:

- Direct loss of shrubsteppe due, to conversion to agriculture
- Fragmentation of remaining shrubsteppe habitat, with resultant increase in nest parasites
- Fire Management, either suppression or over-use, and wildfires
- Invasion of exotic vegetation
- Habitat degradation due to overgrazing, and invasion of exotic plant species
- Loss and reduction of cryptogamic crusts, which help maintain the ecological integrity of shrubsteppe/grassland communities.
- Conversion of CRP lands back to cropland.
- Landscapes in proximity to agricultural, residential, and recreational areas may be subject to high levels of human disturbance and disproportionately support non-native species that displace and/or impact native species productivity, e.g. nest competitors (European starlings and house sparrows), nest parasites (brown headed cowbird), and domestic predators (cats and dogs).

Objectives

Biological objectives describe physical and biological changes within the subbasin needed to achieve the vision and address factors affecting focal habitats. Biological objectives for all Ecoregion subbasins are habitat based and describe priority areas and environmental conditions needed to achieve functional focal habitat types. Where possible, biological objectives are empirically measurable and based on an explicit scientific rationale (the working hypothesis).

Biological objectives are:

- Consistent with subbasin-level visions and strategies
- Based on the subbasin assessment and resulting working hypothesis
- Consistent with legal rights and obligations of fish and wildlife agencies and tribes with jurisdiction over fish and wildlife in the subbasin, and agreed upon by co-managers in the subbasin
- Complementary to programs of tribal, state and federal land or water quality management agencies in the subbasin
- Quantitative and have measurable outcomes where practical.

Biological objectives are organized into two categories: 1) protection of habitats and 2) habitat function (enhancement and maintenance). Protection objectives focus primarily on identification and protection of focal habitats through leases, easements, and acquisitions and affirmation and application of existing ordinances and environmental protection regulations. Habitat enhancement objectives focus on improving habitat function based on recommended habitat management conditions (Table 2).

In general, several assessment "tools", including Ecoregion Assessment and Conservation (ECA) data and Washington GAP protection information, were used to develop terrestrial habitat objectives.
ECA information, located in Section 3.4 and Appendix A (Ashley and Stovall 2004), is summarized below.

Ecoregion Conservation Assessments are conducted at the ecoregional scale and provide information for decisions and activities that:

1. establish regional priorities for conservation action
2. coordinate programs for species or habitats that cross state, county, or other political boundaries
3. judge the regional importance of any particular site in the ecoregion
4. measure progress in protecting the full biodiversity of the ecoregion.

ECA brings diverse data sources together into a single system. Terrestrial species and habitat information is brought together as an integrated planning resource to identify which areas contribute the most to the conservation of existing biodiversity.

ECA has no regulatory authority. It is simply a guide for conservation action across the Ecoregion that is intrinsically flexible that should not constrain decision makers in how they address local land use and conservation issues. Since many types of land use are compatible with biodiversity conservation, the large number and size of conservation areas creates numerous options for local conservation of biodiversity. Ultimately, the management or protection of the conservation priority areas will be based on the policies and values of local governments, organizations, and citizens.

Ecoregion/subbasin planners prioritized ECA data into three conservation priority classes. The primary distinction between ECA classes is the amount of risk potential associated with those habitats. Ecoregional Conservation Assessment classifications include:

- Class 1: Key habitats mostly under private ownership (high risk potential)
- Class 2: Key habitats on public lands (low to medium risk depending on ownership)
- Class 3: Unclassified/unspecified land elements (mainly agricultural lands)

ECA data included in the subbasin assessment provided subbasin planners with a logical path to initially determine how many acres of each focal habitat to protect and where protection should occur. An integral part of this land protection process is to identify lands already under public ownership within ECA identified areas. Public ownership, key aquatic areas, vegetation zones, and rare plant communities are fine filters subbasin planners will use, to support and/or guide protection and enhancement objective efforts within the subbasin (Figure 4). This “fine filter” concept is applicable to all protection and enhancement objectives.

Washington GAP data was also used to define objectives and identify potential areas for protection based on current GAP protection status. The rationale is that lands currently not threatened by habitat conversion/destruction should continue to be protected and enhanced wherever possible. GAP protection status is summarized below and discussed in Section 3.3 (Ashley and Stovall 2004).

The “*GAP status*" is the classification scheme or category that describes the relative degree of management or protection of specific geographic areas for the purpose of maintaining biodiversity. Locations where species concentrations lie outside protected areas constitute a “gap” in the conservation protection scheme of the area. The goal is to assign each mapped land unit with categories of management or protection status, ranging from Priority 1 (highest protection for maintenance of biodiversity - includes a management plan) to Priority 4 (no or unknown amount of protection).

In general, high protection GAP status lands include wilderness areas and other highly protected sites; medium protection status lands include property owned by WDFW and Tribes, low protection sites include lands owned by WDNR, USFS, and BLM, while private lands constitute the bulk of no protection status lands.
In addition to ECA identified lands and GAP protection status areas, subbasin planners support and encourage protection and enhancement of private lands that:

- directly contribute to the restoration of aquatic focal species
- have high ecological function
- are adjacent to public lands
- contain rare or unique plant communities
- support threatened or endangered species/habitats
- provide connectivity between high quality habitat areas
- have high potential for reestablishment of functional habitats

NOTE: Neither ECA nor GAP data is presented in this management plan for the Telford Unit.

Habitat managers will work with federal, state, and local governments to strengthen and/or apply environmental guidelines and regulations to protect habitats on all lands within the subbasin regardless of ownership or protection status. Focal habitat objectives are described in Table 2. Steps to accomplish terrestrial protection and/or enhancement objectives are illustrated in Figure 3.

Table 3. Summary of focal habitat type biological objectives.

Habitat	Biological Objective *NOTE: The working horizon for accomplishing objectives is 2004-2020*	
Shrub-steppe	S1	Protect all shrubsteppe habitat classified as ECA Class 1&2 (# acres - unknown).
	S2	Enhance functionality on all shrubsteppe habitat classified as ECA Class 1&2 (# acres - unknown) to achieve habitat parameters for focal and other obligate species.
	S3	Protect shrubsteppe habitat within protected areas (GAP) and areas of private land that meet the following conditions: directly contribute to the restoration of aquatic focal species, have high ecological function, are adjacent to public land, contain rare or unique plant communities, have threatened or endangered species habitat or populations, or provide connectivity between high quality habitat areas.
	S4	Enhance shubsteppe functionality to achieve habitat parameters (GAP) for focal and other obligate species in protected areas and areas of private land that meet the following conditions: directly contribute to the restoration of aquatic focal species, have high ecological function, are adjacent to public land, contain rare or unique plant communities, have threatened or endangered species habitat or populations, or provide connectivity between high quality habitat areas.
	S5	Show an upward trend in CRP acreage and functionality.

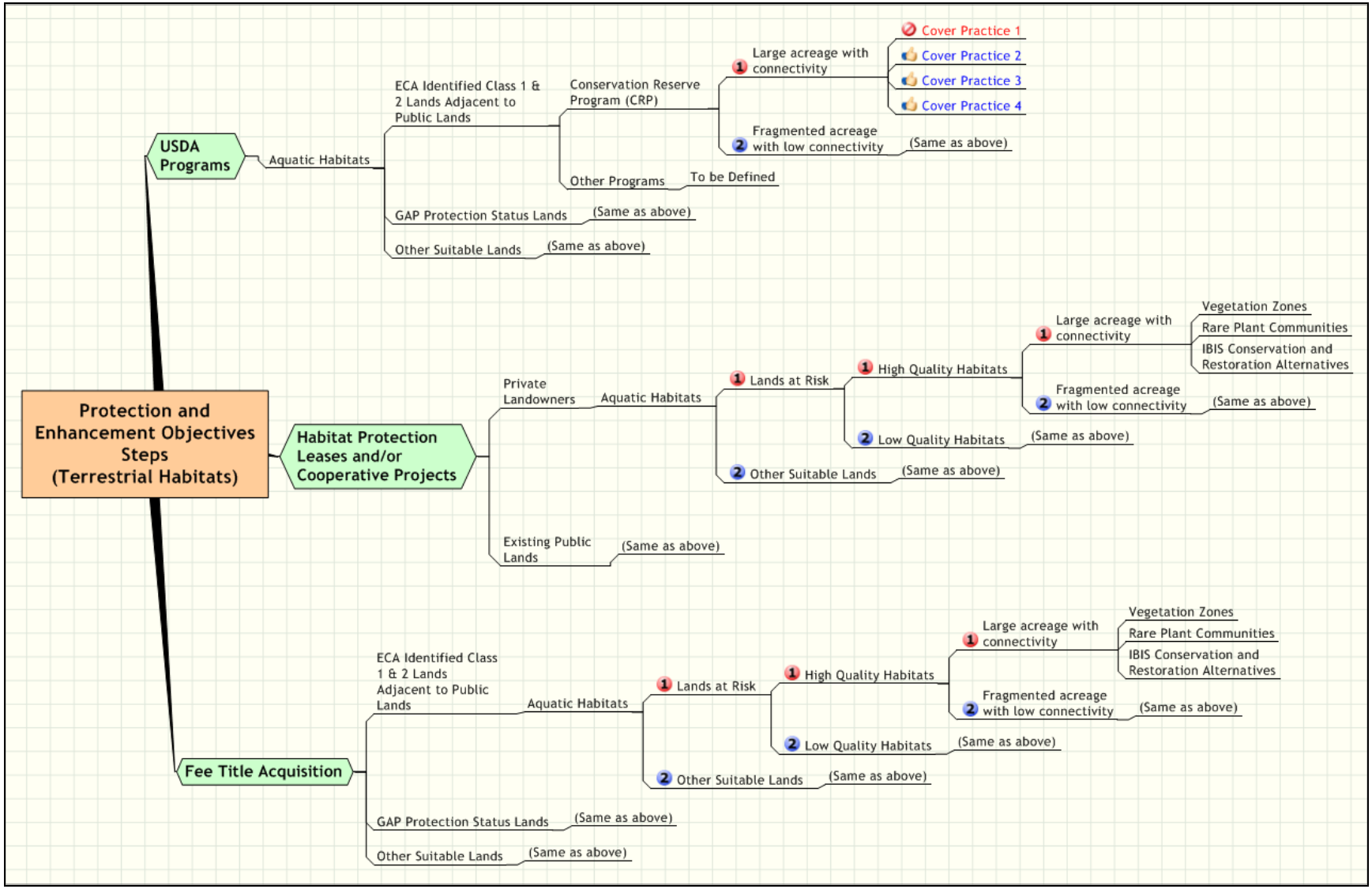

Figure 3. Terrestrial habitat protection and enhancement objectives steps and priorities.

Strategies
Strategies are sets of actions to accomplish the biological objectives that take into account not only the desired outcomes, but also the physical and biological realities expressed in the working hypothesis. Strategies are not projects but instead are the guidance for development of projects as part of the implementation plan and will be used as a basis for Northwest Power Conservation Council recommendations to the Bonneville Power Administration regarding project funding.

Strategies support focal habitat objectives derived from working hypotheses. Strategies that identify high value habitats, protect habitat through easements, leases, or acquisitions, and/or uphold existing protection regulations/measures contribute towards addressing factors that caused the direct loss of focal habitats. In contrast, focal habitat enhancement strategies to increase habitat function include:

- direct habitat manipulation
- weed control activities
- improved grazing management
- enhanced silviculture practices
- cooperative habitat enhancement agreements with federal, state, tribal, local government, and private entities.

Rather than focus solely on acquisitions as the major protection strategy, subbasin planners examined a number of alternate strategies from which preferred strategies were identified i.e., easements, leases, and acquisitions, existing/new environmental regulations, USDA programs (CRP and CREP), cooperative projects and programs, and research. The rationale behind this flexible approach is to simultaneously employ a variety of non-prioritized conservation “tools” to accomplish subbasin objectives in order to make the most of habitat protection/enhancement opportunities. For example, in addition to using acquisitions as a habitat protection tool, habitat managers will concurrently examine whether habitat objectives can be achieved all or in part on extant public lands, through leases and easements with private landowners, with USDA programs, and/or through cooperative projects/programs.

Subbasin planners also recognized the efficacy of focusing future protection efforts around large blocks of extant public lands and adjacent private lands. Clearly, a multi-tiered, flexible, cooperative approach to protecting wildlife/aquatic habitats and associated species is key to the success of any long-term habitat protection/enhancement plan.

Table 4. Focal habitat strategies.

Habitat Type	Obj.	Strategies Note-Strategies are not prioritized and will be implemented based upon available opportunities.)
Shrubsteppe	S1	1-Use easements, leases, and acquisitions to protect habitat 2-Uphold existing land use and instream work regulations (e.g. critical area ordinances, etc.) that limit shrubsteppe habitat impacts. 3-Identify jurisdictions with inadequate land use regulations, and work to strengthen existing or pass new regulations that better shrubsteppe habitat from development that leads to its loss or degradation. 4-Identify and protect wildlife habitat corridors/links
	S2	1-Assist in long-term development and implementation of a Columbia Plateau (or Crab Creek Subbasin) Comprehensive Weed Control Mgmt. Plan. 2-Restore shrubsteppe functionality by providing vegetation structural elements through reestablishment of native plant communities where practical and cost effective. 3-Identify and protect wildlife habitat corridors/links. 4-Restore viable populations of shrubsteppe obligate wildlife species where possible. 5-Work with USDA programs (e.g. CRP) to maintain and enhance habitat quality. 6-Develop habitat protection leases and/or cooperative habitat development, protection, and maintenance projects on private and/or existing public lands. 7-Acquire critical shrubsteppe wildlife habitat.
	S3	See Strategies for Objective S1
	S4	See Strategies for Objectives S2 and S5
	S5	1-Increase individual landowner enrollment in CRP, and seek additional funding sources consistent with current CRP guidelines to increase individual landowner enrollment in programs that achieve similar goals. 2-During re-enrollment, convert CRP land to more functional species compositions 3-Enroll areas with documented wildlife damage and areas directly adjacent to high-quality wildlife habitat into CRP using cover practice 2, 3, or 4.

Focal Habitat Description/Review

Shrubsteppe

Shrubsteppe in the Telford Unit is co-dominated by shrubs and perennial bunchgrasses with a microbiotic crust of lichens and mosses on the surface of the soil. Dominant shrubs in the Telford Unit are sagebrush of the following species: Wyoming, rigid, and three-tip. Bitterbrush and rabbit brush are also present. Understory bunchgrasses were historically dominated by three species: bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. A variety of native forbs also compose a portion of the understory.

A cryptogamic crust of lichens and mosses grows between the dominant bunchgrasses and shrubs. Without disturbance, particularly trampling by livestock, this crust often completely covers the area between vascular plants. Most of the native grasses and forbs are poorly adapted to heavy grazing and trampling by livestock. Overgrazing eventually leads to replacement of bunchgrasses with cheatgrass and other invasive grasses. Other exotic weeds, such as Canada thistle, St. John's wort, and toadflax have also invaded shrubsteppe habitat.

USDA's Conservation Reserve Program provides significant amounts of grassland habitat that varies greatly in habitat quality and function. Newer CRP fields often contain planted species that are part of the shrubsteppe species assemblage, including Wyoming big sage. Habitat quality on these short-term/high protection grasslands is based largely on the cover practice (CP) selected by the land operator. CPs 2 through 4 provides the most habitat diversity and greatest benefits to wildlife.

Note: Acreage/types of CRP existing within the Telford Unit is not presented in this management plan.

Throughout much of the Telford unit, agricultural crops have replaced shrubsteppe, while competition from introduced weed species such as cheatgrass, knapweed, and Canada thistle severely altered shrubsteppe communities. Over-grazing also leads to replacement of native vegetation by exotic annuals.