Methow Valley
Conservation Needs Assessment

Sensitive Areas, At-risk Plants and Animals, Exotic Plants, Wildlife Corridors and Potential Buildable Areas

Pacific Biodiversity Institute

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August 2005

RECOMMENDED CITATION

Morrison. P.H. and H.M. Smith IV. 2005. Methow Valley Conservation Needs Assessment: Sensitive Areas, At-risk Plants and Animals, Exotic Plants, Wildlife Corridors and Potential Buildable Areas, Pacific Biodiversity Institute, Winthrop, Washington. 186 pp.

ACKNOWLEDGEMENTS

The Methow Conservancy initiated this project to guide their conservation efforts. Katherine Bill, executive director of the Conservancy, played a key role in the project. Methow Conservancy board members also played important roles in the project. Dana Visalli and Sandra Strieby worked for Pacific Biodiversity Institute as consultants on this project. David Stokes Ph.D. provided valuable pro bono assistance and advice with the sensitive area and species meeting and discussions. Dan Stroh provided invaluable council at several times during the project. Vicky Welch and Denny O'Callaghan assisted with project initiation and communications. And we would especially like to thank all the scientists who participated in the sensitive area and species meeting: Katharine Bill, Kim Bondi, Mark Cookson, Brian Fisher, Scott Fitkin, Don Johnson, PhD, Jennifer Molesworth, Bob Naney, Therese Ohlson, Juliet Rhodes, Peter Singleton PhD, Dave Stokes, PhD, Dana Visalli, Kent Woodruff, George Wooten.

PROJECT FUNDING

This project was funded by Pacific Biodiversity Institute, Peter Morrison and the Methow Conservancy. Prior funding for work that lead up to this project was provided by the Kongsgaard-Goldman Foundation, The Flintridge Foundation, Ann Lennartz and the Salmon Recovery Funding Board through the North Central Washington Resource Conservation and Development District.

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Introduction

In the spring of 2005, the Methow Conservancy (MC) and Pacific Biodiversity Institute (PBI) agreed to work together on a Conservation Needs Assessment (CNA) for the Methow Valley region. All data and information created by PBI for this project is intended for use as an element in conservation planning being done by the Methow Conservancy. PBI also intends to incorporate this data and information into future landscape assessments, conservation planning projects, and other environmental assessments for the region. The data described in this document was specifically designed for the Methow Conservancy's needs based on the following five tasks:

1. Location of sensitive areas, with specifics about types of sensitivity, recommended buffer size and source of data.
2. Probability of occurrence of rare and at-risk wildlife and plant species.
3. Locations and population trend estimates for exotic plant populations.
4. An analysis of wildlife movement corridors using the best available science to determine the optimal linkages for wildlife movement on both public and private land.
5. Illustrations, data and statistics on areas where development can proceed with the least impact to sensitive areas.

Research and analysis for these tasks began in May and ended in August 2005. This document describes the data products created by PBI to fulfill the above tasks.

Project Staff, Consultants and Volunteers

The following people contributed to this project:

Staff:

- Peter Morrison
- Hans Smith
- Juliet Rhodes
- Paul Brown

Consultants:

- Dana Visalli
- Sandra Strieby

Volunteers:

- David Stokes, Ph.D.
- Denny O'Callaghan
- Don Johnson, Ph.D.
- Aileen Jeffries
- Dan Stroh
- Kathleen Learned
- Vicky Welch

Sensitive Area Advisory Group Members:

- Dana Visalli – botanist (meeting facilitator)
- Dave Stokes, PhD – professor of environmental planning Sonoma State University, CA
- Katharine Bill – Methow Conservancy executive director
- Don Johnson, PhD fisheries biologist and PUD Commissioner
- Brian Fisher – USGS biologist
- Therese Ohlson – USFS botanist
- Jennifer Molesworth – USFS fisheries biologist
- Scott Fitkin – WDFW wildlife biologist
- Peter Singleton PhD – USFS PNW Research Station wildlife ecologist
- Kent Woodruff – USFS wildlife biologist
- George Wooten – Conservation NW botanist,
- Mark Cookson – WDFW, fisheries biologist, watershed planning
- Bob Naney – USFS, Forest Biologist – Okanogan and Wenatchee
- Kim Bondi - WDFW Methow Wildlife Area Manager
- Peter Morrison – PBI, executive director
- Hans Smith – PBI, conservation scientist
- Juliet Rhodes, PBI conservation assistant

History of Project Activities

Prior to 2005

Pacific Biodiversity Institute began developing information on the biodiversity and ecosystems in the Methow Valley in 1993. We aided several local conservation efforts working to protect key habitat areas and species beginning in 1993. We developed an initial index of biodiversity values and conservation priorities in 1994. This assessment of biodiversity in the Methow and the rest of the North Cascades Ecosystem was published in Wild Earth (Morrison et al 1995). We worked on mapping the roadless areas of the North Cascades Ecosystem (including the Methow Valley, from 1994-1996. This work expanded to more extensive studies of the ecological characteristics of roadless areas and other wildlands in the Methow and throughout Washington State, culminating in publication of a report, *Unprotected Wildlands in Washington State* (Morrison et al 1998). We have continued to support conservation efforts to protect wildlands in the Methow and the rest of the North Cascades Ecosystem through new analyses, and production of a wide series of maps for various wildland conservation efforts. Pacific Biodiversity Institute began collecting information on non-native plant species in collaboration with the Chewuch Neighbors in 1998 and initiated a project on the population dynamics of several important weed species in the Methow in 2000. Pacific Biodiversity Institute began collecting information on rare species in the Methow as part of our Endangered Species Information Network in 1999. We mapped riparian side channel habitats in the Methow for the Okanogan Conservation District in 2000 to aid the Washington Conservation Commission's Salmon Limiting Factors Analysis. Pacific Biodiversity Institute initiated work on mapping sensitive habitat areas in the Methow in 2002. We participated in meetings of the Methow Conservation Coalition in 2003 and 2004 and provided data products to the Methow Conservancy on sensitive areas for use in Coalition planning. We conducted a comprehensive analysis and multi-scale ecological classification of the Methow watershed to aid salmon recover

monitoring efforts in 2004 (Salmon Recovery Funding Board through the North Central Washington Resource Conservation and Development District).

May 2005

- We created a Menu of Map Options that describes an assortment of data products and formats for PBI's contracted work tasks. This document also details resources we are evaluating and incorporating into the watershed assessment.

- Created a GIS data set list that briefly describes some of the existing GIS data we will be incorporating into the watershed assessment.

- Gathered and prepared various existing GIS datasets (such as vegetation layers, NRCS soil surveys, WDFW salmon data, etc…) for use in the watershed-wide assessment. This includes projecting to a standard projection (currently UTM 10 nad27) and clipping layers to Methow Basin extent (also includes snapping all grids and resampling to a constant cell size when appropriate).

- Gathered and reviewed existing and upcoming reports / data on sensitive salmonids from various agencies and groups. Conducted a ½ day meeting with Sandra Strieby dealing with sorting out and prioritizing the usefulness of this information.

- Communicated with the Methow Conservancy about various tasks, scheduled meeting dates, and other project details. Requested data collected by the Methow Conservancy on shrub-steppe condition and riparian area condition.

- Improved sensitive areas mapping for Ponderosa Pine forests and shrub-steppe areas using a comparison of previous vegetation maps combined with newer PBI designed vegetation and land use data and additional data obtained from WDFW.

- Created "ridgelines" sensitive area map.

- Created "agricultural lands" sensitive area map.

June 2005

- Created "non-riverine wetlands" sensitive areas map.

- Created "Aspen groves / shrubby draws" sensitive areas map.

- Created "low-elevation cliffs / rocky outcrops" sensitive areas map.

- Gathered, reviewed and extracted pertinent information from all the USFS watershed planning reports for the Methow.

- Requested data from The Nature Conservancy from their Okanagan Ecoregional Plan, but was informed that they are not finished yet and we will have to wait until September or later.

- Began work on wildlife movement corridors and landscape connectivity
    - Reviewed literature
    - Contacted experts
    - Restored and reviewed earlier wildlife corridor work done at PBI
    - Explored implementation of Peter Singleton's landscape permeability models
    - Developed mule deer migration area maps

- At-risk species mapping
    - Created maps for each at-risk wildlife species based on sightings
    - Created probability maps for each -risk wildlife species based on kernel analysis of sightings
    - Created maps for each at-risk plant species based on sightings

- Communicated with the Methow Conservancy about various tasks, scheduled meeting dates, and other project details
    - Decided on State Plan North – NAD 27, survey feet as final projection for deliverable GIS data
    - Established June 30th as the inter-organization project status meeting.
    - Requested data from Dawn Woodruff regarding ownership boundaries for WA Dept of Fish and Wildlife

- Sensitive Area / At-Risk Species Meeting
    - Drafted invitation letter
    - Selected participants
    - Invited participants
    - Planning and Preparation for meeting
        - Sensitive area descriptions
        - Ecological condition class descriptions
        - Rare plant list
        - Rare animal list
        - Maps of riparian/riverine habitat and Rosgen stream channel classification
        - Maps of shrub-steppe and Ponderosa pine habitat
        - ASTER satellite mosaic maps
        - Developed presentation of maps of at-risk species
    - Conducted sensitive area meeting on June 24th

- Compiled Sensitive Area Meeting Notes
- Began review of sensitive area condition assessment data gathered from experts and enter into database.
- Began review of at-risk species data gathered from experts and enter into database.
- Gathered additional information from experts who were not able to attend the meeting.

- Contacted the Forest Service and Okanogan County Noxious Weed Board requesting updated noxious weeds data.

- Hans met with Katharine, Craig Lee, Larry Lund, and Chris Davis at the Methow Conservancy to discuss data compatibility issues and project updates / status.

- Peter and Hans met with Chris Davis at the PBI office to discuss the project and how we can work together on it.

- Gathered data from Dawn Woodruff concerning spring Chinook redds, and land ownership and easements in the Methow Valley.

July 2005

- Sensitive Areas Meeting follow up:
  - Followed up data gathering exercise with invitees that missed the actual meeting
  - Digitized all the sensitive area condition points into a geodatabase and entered the corresponding site data from the hardcopy forms.
  - Error checked and corrected/eliminated mislabeled or missing points/data forms
  - Followed up leads on data sources presented at the June meeting.
  - Met with Jennifer Molesworth to clarify sensitive area point data that she had put on the map on June 14th and to add many more riparian sensitive area condition points.

- Noxious Weed Data
  - Received data from Okanogan County Noxious Weed Board – processed this data into usable form with other weeds data for the Methow Valley
  - Received data from Rob Crandal - processed this data into usable form with other weeds data for the Methow Valley

- Sensitive Areas Map
  - Reviewed possible input data sets and formatted, processed, and included data deemed usable.
  - Ran multiple iterations of the sensitive map methodology in an attempt to devise the best mapping outcome – this process was extremely time consuming as close attention to detail over a large landscape was necessary to recognize and interpret subtle differences in outcome based on changes in input data, input data values, and the order of operation
  - Created metadata and documentation report on the methods and resulting map of sensitive areas for the Methow Valley.

- At-Risk Wildlife and Plant Species
  - Completed the probability of sightings mapping for all WDFW Heritage documented species occurring in the Methow Valley.
  - Built probability grids for wildlife guilds and for all wildlife tracked by WDFW combined.

- Converted the at-risk plant species data to a distributable form.

- Migration Corridors Mapping
  - Created digital versions of the wildlife corridors that Peter Singleton and Peter Morrison have identified.
  - Reviewed and put together for project distribution the mule deer migration corridors mapped by WDFW as part of their PHS program.

- Metadata
  - Created metadata and data documentation for all of our deliverables.

- Buildable Areas Location s and Prioritization
  - Designed a methodology for mapping buildable areas
  - Designed a methodology for prioritizing the mapped buildable areas
  - Formatted data and implemented both methodologies to design a draft map and prioritization
  - Analyzed draft results and began an iterative process of redeveloping the methodologies to get a desirable product.
  - Drafted documentation on the Buildable Areas Location s and Prioritization map

August 2005

- Revised the sensitive area map one more time to improve its accuracy and make it more usable.
- Revised the final project report to include more discussion and the reflect changes made in the data during late July and early August.
- Revised the buildable areas analysis slightly to improve its usefulness.
- Produced large format paper maps for the Methow Conservancy's use which portray the sensitive areas, sensitive area condition point data, wildlife corridors, weeds and buildable areas.
- Peter met with Katharine to go over the maps and data. Hans discussed project with Katharine.
- Revised the ridgelines map to meet specific needs noted by the Conservancy.

Task 1 - Location of Sensitive Areas

Our data products for this task include a series of maps of the sensitive areas within the Methow Valley, and a GIS point database that describes the relative ecological condition of various sensitive areas as observed by local experts. These data products represent our best attempt to adequately incorporate into a usable form the plethora of information that exists concerning local and regional habitats and landscape features.

Working definition of a Sensitive Area

For this mapping project, "sensitive areas" are defined as any area where on-site conditions adequately match the habitat or land use types listed in the Methow Conservancy's Request for Proposals for the Conservation Needs Assessment. These types include: ponderosa pine forests, shrub-steppe, riparian areas, agricultural lands, and ridgelines within the valley-bottom viewshed.

Additional sensitive area types have also been included, which were either previously focused on or discussed during 2003-2004 Methow Conservation Coalition meetings or were felt to be of importance in the Methow's natural landscape and relatively easy and efficient to map. These include: non-riparian broadleaf woodlands and shrubby draws, low-elevation cliffs, palustrine wetlands, and coniferous forests.

Other types and forms of sensitive areas certainly exist within the Methow Valley, and their absence in this CNA does not imply that they are unimportant versus those that have been included. Given the limit of resources and time for this project, the sensitive area types that were chosen were both desired by the Methow Conservancy and were relatively efficient to map.

General Descriptions of Sensitive Area Types

The three major habitat types we will be attempting to map and subsequently prioritize by ecological condition throughout the Methow Valley are briefly described here. Your knowledge of both the distribution of these community types and the variety of conditions that exist within each habitat type will be useful in this process. Please review these descriptions and make note of where you know these communities to occur and the ecological conditions they are in. See the document "Levels of Ecological Condition" for ideas about assessing ecological condition.

We will also attempt to include other unique or rare habitat types found in the Methow Valley, that are not included in these three general habitat types. If you have an idea of other unique and/or rare habitat types to include in our sensitive areas mapping, please share that information at the June 24th meeting.

Steppe Communities:

- Terrestrial plant communities on xeric soils with little to no tree cover present. (Alverson, 1986)

- According to Daubenmire's *Steppe Vegetation of Washington* (1970), there can be "meadow steppe", and "shrub-steppe". Meadow steppe is characterized by grass cover dominated by wheatgrass and bluegrasses, with a rich component of broad-leaved forbs. Shrub-steppe consists of one or more layers of perennial grasses above which rises a conspicuous but discontinuous layer of shrubs, including but not limited to: big sagebrush (*Artemisia tridentata*) and bitterbrush (*Purshia tridentata*).
- Many of the component species of the "Steppe" habitats extend into the more mesic lower montane forest, including ponderosa pine forests and woodlands.

Ponderosa Pine Forests and Woodlands:

- A forest or woodland having an overstory, regardless of successional stage, dominated by ponderosa pine (Eyre 1980).
- Forest stands and woodlands that are almost pure ponderosa pine in composition. At least 90% of coniferous trees are ponderosa pine in a given area, and ponderosa pine is the only successful species regenerating. (Lillybridge, 1995).
- Woodlands are open stands of trees at least 6 m tall, with crowns often not interlocking; tree canopy discontinuous (often clumped), averaging between two-thirds and 40% overall cover (at 40% the average diameter of a tree crown equals the average distance between crowns). (NatureServe, 2005)

Riverine Ecosystems and Associated Riparian Habitats:

- Areas within the floodplain of any naturally flowing stream and/or river.
- The zone of direct interaction between terrestrial and stream systems (Gregory, S.V., 1991)
- A narrow zone of natural habitats directly associated with streamsides and/or lake shores, or similar immediately adjacent habitat. (NatureServe, 2005) Examples: forests, shrublands, meadows, swamps, and marshes.

Other Habitat Types:

- Aspen Forests and Groves (Williams, 1983)
    - POTR/SYAL (Williams, 1983)
    - POTR/CARU (Williams, 1983)
- Non-riverine wetlands – vernal ponds, depressional wetlands, isolated wetlands (Comer, P., 2005)
- Mature and old-growth montane forests – Late successional / Old-growth conifer forests (Franklin, 1981)
- Low elevation cliffs and rock outcrops – examples: Eagle Rocks, Lucky Jim Bluff, Goat Wall

Primary Sensitive Areas Map

Primary Sensitive Areas Map Classes

The sensitive areas map currently displays the following 15 classes:

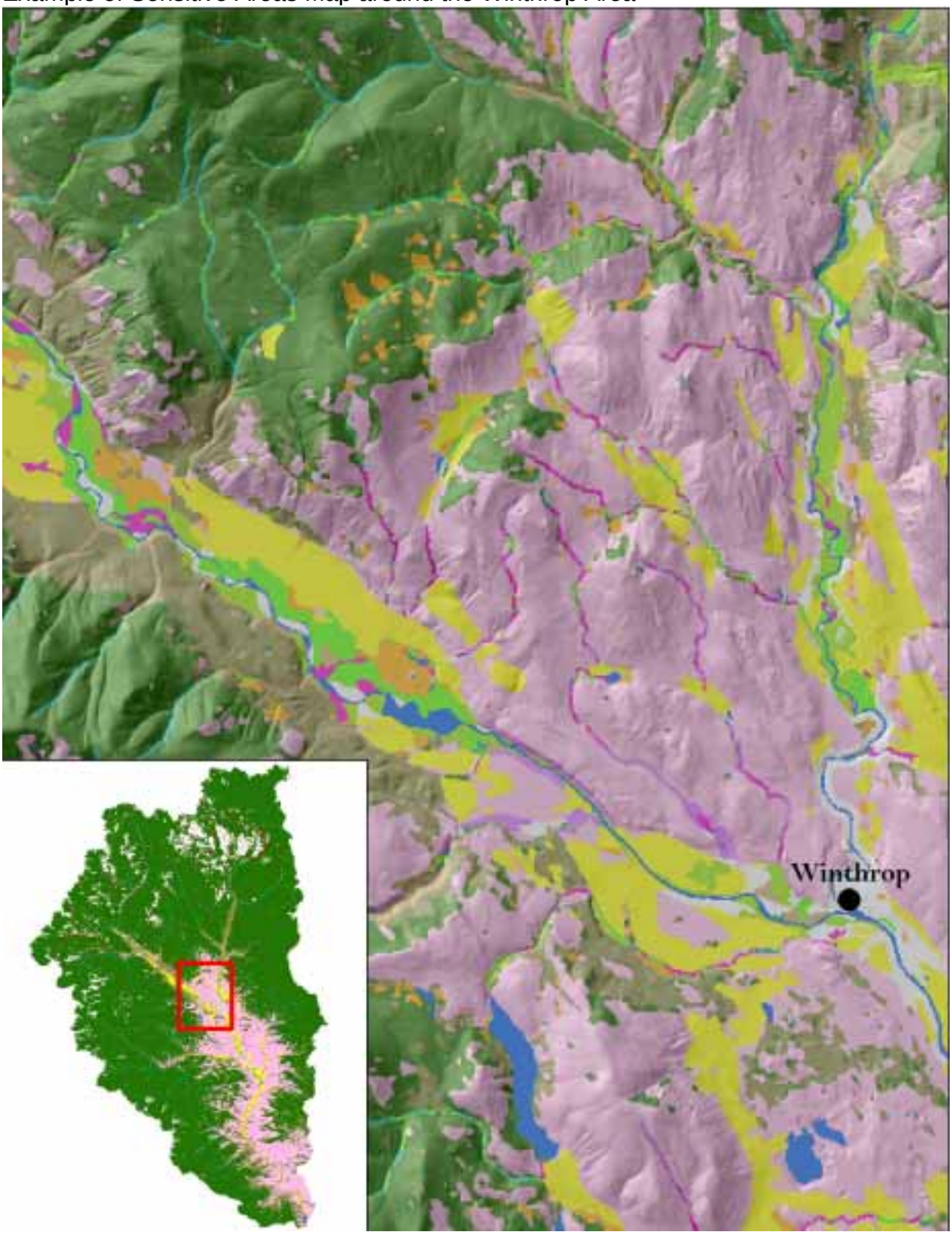
Class number	Description
1	shrub-steppe
2	ponderosa pine forest
3	agriculture
4	coniferous forest (usually montane species)
8	aspen stands / shrubby draws
99	not a sensitive area or areas that are beyond the riparian extent zone and not mapped as a riparian sensitive area type
401	water
404	riparian herbaceous vegetation
405	riparian shrubs and brush
406	riparian shrub steppe
407	riparian deciduous forest / woodland
408	riparian mixed deciduous / coniferous forest
409	riparian coniferous forest (usually montane species)
410	recently burned area within riparian extent
411	riparian ponderosa pine forest

Ridgelines, low-elevation cliffs and palustrine wetlands are not mapped in the master Sensitive Areas Map. This is because these sensitive area types can either overlap other sensitive area types (e.g. ridgelines that overlap shrub-steppe, wetlands that overlap riparian forest) or are very small inclusions within a sensitive areas (e.g. vernal wetlands in shrub-steppe habitat). These sensitive area types are mapped in their own respective GIS datasets that have been distributed along with the master Sensitive Areas Map and should be used in conjunction with the master sensitive areas GIS database.

Projection Information

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

Example of Sensitive Areas Map around the Winthrop Area



Legend


Shrubsteppe
Ponderosa Pine Forest
Agriculture
Coniferous Forest
Non-Riparian Deciduous Forest / Shrubby Draw
Not a Sensitive Area
Water
Riparian Herbaceous Vegetation
Riparian Shrubs and Brush
Riparian Shrubsteppe
Riparian Deciduous Forest
Riparian Mixed Coniferous / Deciduous Forest
Riparian Coniferous Forest
Recently Burned Area within Riparian Extent
Riparian Ponderosa Pine Forest

Input Datasets

The following data sets were use in our sensitive area mapping:

Year Developed	Dataset
2004	Upper Columbia ESU Riparian Vegetation and Land Use Map
2004	Okanogan County Assessor's Parcel Map
2004	PBI's Classified ASTER Satellite Image Mosaic (image dates: 2002-2003)
2003	WA Department of Natural Resources Major Public Lands Map
2003	Salmon and Steelhead Habitat Inventory and Assessment Program Waterbodies
2001	Okanogan National Forest Plant Association Groups Map
2000	Washington Department of Fish and Wildlife Shrub-Steppe Map
1998	US Fish and Wildlife Service National Wetlands Inventory Map
1997	Utah State University Cover Type Maps
1996	WA GAP Analysis vegetation map
1993	Okanogan County Fields Map
1990	North Cascade Grizzly Bear Habitat Mapping Project Map (based on 1986 images)

Methods of Dataset Creation

Hierarchy of input datasets

Some overlap occurred between the original data layer inputs, so a hierarchy of class assignment preferences was designed so that data from some sources overrides data from other sources. The hierarchy is as follows from top to bottom:

1. PBI's UCESU riparian vegetation and land use dataset
2. Waterbodies from SSHIAP
3. Okanogan County Assessor's Parcels (in-town parcels)
4. Non-riparian deciduous trees and shrubs from Classified 2003 ASTER satellite imagery
5. Okanogan County agricultural fields dataset
6. Ponderosa pine mapped from three input datasets
7. Coniferous Forest mapped from Classified 2003 ASTER satellite imagery
8. Shrub-steppe mapped from four input datasets

Descriptions of formatted input data layers and corresponding sensitive area class definitions

All input data was converted to ESRI GRID format with a 25 X 25 meter cell size and snapped to a common base point so that cells from different layers perfectly aligned. Data layers are described below in the order that they are listed in the hierarchy above.

UCESU Riparian Vegetation and Land Use

We reclassified all native vegetation and agriculture classes from the original UCESU map to the appropriate new sensitive areas class. Areas originally classed as non-native groups were given a value of "99" to ensure they weren't displayed as sensitive areas in the final output.

It should be noted that areas mapped as riparian ponderosa pine are often very similar to areas mapped as non-riparian ponderosa pine forests. These two classes should be considered identical for many purposes. Also, riparian shrub-steppe should be considered very similar to non-riparian shrub-steppe. For many purposes these two types may be lumped together for analysis.

Resulting sensitive area type definitions:

- **Riparian Shrub steppe** – dry, non-forested areas with limited soil / vegetation disturbances apparent. Can include native dry grasslands and meadow steppe.

- **Riparian Herbaceous vegetation** – mesic to wet herbaceous vegetation is dominant land cover with little to no trees, shrubs, or brush.

- **Riparian Shrubs and Brush** – mesic to wet shrubs and brush are dominant land cover with little to no trees (some deciduous trees may be present).

- **Riparian Deciduous Forest** – land cover is dominated by deciduous trees

- **Riparian Mixed Coniferous / Deciduous** Forest – land cover consists of a mix of coniferous and deciduous trees (over 30% composition of each in the patch).

- **Riparian Coniferous Forest** – land cover is dominated by coniferous trees

- **Riparian Ponderosa Pine Forest** – coniferous forest dominated by ponderosa pine.

- **Riparian Recently Burned area** – area appears scorched or burned by recent fire (within last 10 yrs).

NOTE: These classes were mapped only within the riparian buffer developed for the UCESU vegetation mapping project. The riparian extent zone includes all active FEMA mapped floodplains, 100-m buffers on all fish bearing streams, and 30-m buffers on all non-fish bearing streams. Therefore, for example, no recently burned areas are mapped outside of the riparian extent in the final sensitive areas map, even though recently burned areas certainly occur outside of riparian zones.

Waterbodies from SSHIAP

We created a waterbodies layer by selecting SSHIAP waterbody polygons in the "400's" group under the item heading BODYTYPE – this represents lakes, perennial ponds, and active river channels.

Resulting sensitive area definition:

Perennial waterbodies mapped by SSHIAP at a 1:24,000 meter scale as a stream, lake/pond, or sand/gravel in open water.

Okanogan County Assessor's Parcels (in-town parcels)

We created a layer of selected parcels within the towns of Winthrop and Twisp to ensure these areas were not mis-mapped as sensitive areas. Some of the input vegetation maps we used did a poor job of separating urban areas from the surrounding natural vegetation, so this layer helps to ensure these areas aren't mismapped in our final map output.

Non-Riparian Deciduous Woodlands and Shrubby Draws from Classified 2003 Aster Imagery

We selected out the deciduous forest class from the Classified 2003 ASTER Imagery Mosaic. We overlaid a mask of Okanogan NF lands (DNR MPL), Okanogan County Agricultural Lands, and the UCESU Riparian Extent to prohibit wetlands, wet meadows, and alpine parklands from being mapped within this class.

Resulting sensitive area definition:

Lowland areas outside of the riparian extent zone (see above) where deciduous forests and/or vegetation occur. These will usually be aspen forests or shrubby draws. Broadleaf vegetation along the irrigation ditches may be mapped as well. In these areas, cottonwoods, aspen, and/or deciduous shrubs are the dominant vegetation cover.

Okanogan County Agricultural Fields

We did no alterations to the Agricultural Field layer from Okanogan County.

Resulting sensitive area definition:

Land mapped as agriculture by Okanogan County from high-resolution aerial photography. No designation of agriculture type is used. Some agricultural lands could be fallow or abandoned fields; some could be more recently developed into home sites.

Ponderosa Pine Forests

We combined data indicating ponderosa pine dominance from NCGB, UTST, and USFS-PAG. Output was then limited to areas classified as coniferous forest (class 1) from PBI's 2003 ASTER-classified mosaic or coniferous forest (class 9) from UCESU Riparian Vegetation and Land Use map.

Resulting sensitive area definition:

Areas where coniferous forest is dominated by ponderosa pine, with little Douglas-fir component.

Shrub-steppe vegetation

This was formed by combining the following input vegetation layers NHI, WDFW, and 2003 ASTER-classified mosaic vegetation. We removed by hand some areas mapped as shrubsteppe that were related to fires and burns in coniferous forests.

Resulting sensitive area definition:
Dry, non-forested, shrub-steppe vegetation, including native dry grasslands and meadow steppe.

Coniferous Forests
We selected out the coniferous forest class from the Classified 2003 ASTER Imagery Mosaic.

Resulting sensitive area definition:
Areas mapped as coniferous forest by 2003 ASTER classification, and are not mapped a Ponderosa Pine forest. Coniferous forests include the PIPO/PSME series forests up to alpine parkland forests.

Palustrine Wetlands Map

A map and GIS layer of palustrine wetlands was created to reflect this sensitive area type. It was kept as a separate polygon layer that one can overlay on the sensitive area map or use independently. These wetlands do in many cases overlap other sensitive area types (especially riverine/riparian margins).

Inputs

The following data were used in this map:

Year Developed	Dataset
2003	Salmon and Steelhead Habitat Inventory and Assessment Program Waterbody Map
1998	US Fish and Wildlife Service National Wetlands Inventory Map

Methods of Dataset Creation

The palustrine wetlands map is a polygon map in vector format showing the locations of non-riverine and non-lacustrine wetlands in the Methow Subbasin. This layer combines wetlands mapping from NWI and SSHIAP. SSHIAP does not specify wetland classifications beyond noting that a polygon is in the category of "Marsh, wetland, swamp, bog". NWI has rather detailed sub-classes of wetlands which can be deciphered by referring to the classification definitions under the item FWS.CODE in the original NWI metadata.

We selected out all the NWI polygons representing palustrine wetlands, and then unioned these polygons with a SSHIAP polygons layer in which we selected out only wetlands in the class of "Marsh, wetland, swamp, bog". The final dataset identifies which polygons were from NWI, and their classifications, and which polygons were from SSHIAP.

Low Elevation Cliffs Map

Low elevation cliffs are quite rare in the Methow. They provide important nest habitat for golden eagles, other raptors and some other bird species. Low elevation cliffs were mapped by

Peter Morrison after a discussion on the subject with Dana Visalli. Topographic maps and personal knowledge were use to map the major low elevation cliffs near the valley bottom.

Ridgelines in the Valley Viewshed

Ridgelines have been identified as unsuitable building sites because of the impact on viewsheds in the valley. Hans Smith mapped obvious ridgelines on private lands within the valley where home construction might cause a visual impact. This was done using topographic information and personal knowledge.

Sensitive Area Review Panel

A group of biologists, botanists and ecologists familiar with the sensitive areas and at-risk species in the Methow was invited to participate in an all day meeting to discuss sensitive areas and at-risk species. Seventeen people attended the meeting. One person participated at a later date. And several meeting attendants continued to participate in the weeks after the meeting.

Meeting participants were sent and invitation letter and a follow-up letter with four short documents to help them prepare for the meeting. These documents were: Meeting Agenda, Sensitive Areas Descriptions, Description of Ecological Condition Classes and an At-Risk Species list.

During the meeting, we focused on four major topics:

1. Review and enhancement of our mapping of three general habitat types (shrub steppe, ponderosa pine forests and woodlands, and riverine ecosystems including riparian forests and shrublands) that the Methow Conservancy has determined to be "sensitive areas" worthy of conservation attention. Attention will also be given to unique habitats such as non-riverine wetlands, cliffs and other areas that warrant special conservation attention.
2. Ranking the ecological condition for various areas within each habitat type based on field knowledge, prior studies and other information that you may have.
3. Reviewing maps and data concerning locations and population status of at-risk species in the Methow.
4. Discussing and mapping wildlife movement corridors and potential for habitat connectivity in the Methow.

Minutes from this meeting are attached to this report as Appendix A.

Sensitive Area Ecological Condition Point Database

Perhaps one of the most useful products developed in this project was a point database of information from experts on the ecological condition of sensitive areas in the Methow. This information was obtained during the sensitive areas meeting and subsequent interactions with the experts. This exercise proved to be very popular and several of the experts have been given maps, dots and sensitive area condition forms so that they continue the exercise for the next few months (or perhaps years). The database should be considered a prototype at this time. Our hope is that we can continue to add additional data to it and eventually get a very complete picture of the ecological condition of the Methow Valley.

Printouts of the data from this database are attached to this report as Appendix B.

Explanation and Metadata for the SA-points Database

At the June 24th meeting, participants were asked to mark areas with dots areas which they considered "sensitive" and in what ecological condition they thought those areas were in. This information was converted into a point GIS layer in an ArcGIS personal geodatabase. This point coverage was also converted into an ESRI shapefile.

The following fields in the database are described below:

Habitat_Type: Are the original abbreviations and habitat types as inputted from the datasheets. The following three fields, **PrimaryType, SecondType, ThirdType** were added later to enhance usage of the database. Below are the final abbreviations and their descriptions.
AS = aspen
CL = cliff, rocky outcrop, canyon
LK = lake
MF = montane forest
PP = ponderosa pine, savannah
RR = riparian/riverine
SD = shrubby draw
SS = shrub-steppe
WL = wetland, vernal pond

Condition:
1 = red dot = least favorable
2 = blue dot = between least and most favorable
3 = green dot = most favorable

Precision:
This field was meant to signify the accuracy of the location of the dot on the map. However, many participants did not enter any info. For those who did, some seemed to interpret it to signify the size of the area represented by the dot, as in "several miles." Others, understanding the original intent, marked it with "low," "high," or "very high."

Name: refers to those who participated in filling out datasheets.
KB = Katharine Bill
SB = Steve Bondi
BF = Brian Fisher
SF = Scott Fitkin
DJ = Don Johnson
JM = Jennifer Molesworth
PM = Peter Morrison
BN = Bob Naney
TO = Therese Ohlsen
KR = Kim Romain-Bondi
DV = Dana Visalli
KW = Kent Woodruff
GW = George Wooten

Levels of Ecological Condition

When assessing conservation priorities, it can be useful to rank natural communities into levels of ecological condition. For example, an unfragmented area with high native species diversity, absence of non-native species and little soil erosion often has greater conservation value than another area in the same habitat type that is fragmented, infested with weeds and has erosion problems.

We have described three levels of ecological condition in an attempt to apply this concept to sensitive areas in the Methow:

> **Condition Class 1.** This condition class represents areas that have been altered to the point where the ecological condition often deviates dramatically from baseline conditions found in areas where stressors are much less prevalent. Areas characterized by Condition Class 1 often have high amounts of bare ground and/or non-native plant cover. The structure is often significantly altered from baseline conditions. Often one or more of the structural layers (trees, shrubs, herbs, grasses, mosses & lichens, biotic crust) may be significantly altered or even missing from the community. The composition of native vegetation is skewed toward species that can survive despite regular disturbance. Species diversity of native plants is usually low and native grass species are usually absent or in

very low abundance (for a given community type). Evidence of accelerated erosion and soil compaction may be present. Hydrologic alteration may also be present. Significant direct evidence of various stress factors is usually abundant. Rare plant and animal species generally do not occur in this condition class.

Condition Class 2. This condition class represents areas that show a fairly broad range of stress ranging from high to moderately low impact from a variety of stressors. Areas characterized by Condition Class 2 usually have moderate levels of non-native plant cover. The structure of the natural community present in Condition Class 2 areas is often relatively intact when compared to baseline conditions. Usually all structural layers are present, but form and stature may be altered from baseline conditions. Soil surface conditions are often intermediate between those in Condition Class 1 and Condition Class 3. Species diversity of native plants is often moderate for that community. Non-native species are usually present, but not as common or abundant as in Condition Class 1. Native grass species are often present, but usually in low abundance for that community type. Diversity of native grass species is relatively low when compared to baseline conditions. Evidence of accelerated erosion and soil compaction may be present in isolated areas, but is not dramatic or widespread. Hydrologic alteration is absent. Direct signs of stressors may be present, but not widespread or abundant. Rare plant and animal species may be found in this condition class, but are not common. Rare species that are found in this condition class are relatively tolerant of the stressors that are present.

Condition Class 3. This condition class represents areas that show the least stress in the Methow and are the closest to representing baseline conditions. Areas characterized by Condition Class 3 have little evidence of non-native plant invasion. The composition and structure of native vegetation in this condition class correspond to the natural ranges of variation characteristic to this habitat type. Old-growth conditions may exist. Species diversity of native plants is often high relative to the community under consideration. Native grass species are usually present and often fairly abundant for the community type. Species diversity of native grass species is also often high. Soil compaction, accelerated erosion and hydrologic alteration are absent. Direct signs of stressors are usually absent. Certain rare species may only exist within this condition class and rare species are more common than in the lower condition classes.

Recommendations on Sensitive Area Buffers

Development buffers can help to protect sensitive areas. Due to the off-site impacts of many developments, a development-free buffer will aid in protection of sensitive area habitat. Except for wetlands, there are no widely accepted buffer distances for sensitive areas. With small patch sensitive areas (e.g. wetlands, aspens stands) buffers are much more important than with large patch types (e.g. Shrub-steppe, montane forest). The following are our recommendations for minimum buffer distances for the various sensitive area types:

- Shrub-steppe – depends on patch size. Small patches (less than 20 acres) should be buffered by 100 feet or more. Large patches contain internal buffering capability.
- Ponderosa pine forests - depends on patch size. Small patches (less than 20 acres) should be buffered by 100 feet or more. Large patches contain internal buffering capability.

- Riparian forests and shrublands – at least a 200 foot buffer, unless patch size is very large.
- Wetlands – at least a 300 foot buffer. Protection of the entire drainage area of vernal pools and other small wetlands is desirable, as any modification to these small, internally drained watersheds can be detrimental to wetland function, composition and structure.
- Non-riparian deciduous forests and shrubby draws – at least a 300 foot buffer. Generally these are small-patch systems and need substantial buffering from development.
- Cliffs – at least a 500 foot buffer at the base of the cliffs. This buffer will protect development from rocks falling off the cliff as well as birds (such as golden eagles) that nest in the cliffs from human disturbance.
- Coniferous forests – no buffer needed. The coniferous forests in the Methow are usually extensive, large-patch systems and need no external buffering from development. If protection of a small patch of coniferous forests is envisioned, then buffering by 100 feet would be appropriate.

Prioritization of Sensitive Areas

No assessment of ecological condition or habitat quality has been attempted other than that described above in the section on the sensitive area review panel and sensitive area condition point database. While the sensitive area condition point database provides useful information about particular locations in the watershed, it is by no means complete and should not be considered a uniform assessment of habitat condition. It should be viewed as an initial starting point and an example of the kind of information that should be collected from experts over a long-term period.

It is possible to analyze the information contained in the sensitive area maps and other tasks conducted in this project to prioritize sensitive areas based on uniform, repeatable criteria. This was not done due to the limited time, budget and scope of this project. In order to prioritize the value of one sensitive area type against another, or between one sensitive area type in one region against the same type in another region, a variety of biological and geophysical features and functions would need to be analyzed and rated for desired characteristics. An exercise such as this can be very informative and can lead to a much finer tuned Sensitive Areas Map, but such an analysis was beyond the scope of this initial project. Future landscape analysis that seeks to prioritize areas based on values deemed important to the Methow Conservancy should be explored.

Task 2 - Probability of occurrence of rare and at-risk wildlife and plant species.

We identified 49 at-risk plant species and 55 at-risk wildlife and fish species in the Methow. We also noted that there are three federally-listed salmonid fish species in the Methow. The following tables list the wildlife and plant species.

Scientific Name	Common Name	Code	Type	State Status	Federal Status	TNC Global Status	TNC State Status
Ambystoma tigrinum	Tiger salamander	AMTI	Amphibian	State Monitor		G5	S4
Ascaphus truei	Tailed frog	ASTR	Amphibian	State Monitor	Federal Candidate	G3G4	S4
Rana luteiventris	Columbia spotted frog	RALU	Amphibian	State Candidate	Federal Candidate		
Dendragapus canadensis	Spruce grouse	DECA	Bird - other			G5	S4
Lagopus leucurus	White-tailed ptarmigan	LALE	Bird - other			G5	S4
Oreortyx pictus	Mountain quail	ORPI	Bird - other			G5	S3?
Sialia mexicana	Western bluebird	SIME	Bird - other	State Monitor		G5	S3B,SZ
Tympanuchus phasianellus	Sharp-tailed grouse	TYPH	Bird - other	State Threatened	Federal Candidate	G4	S2
Athene cunicularia	Burrowing owl	ATCU	Bird - owl	State Candidate	Federal Candidate	G4	S3B,SZ
Strix nebulosa	Great gray owl	STNE	Bird - owl	State Monitor		G5	S2B,SZ
Strix occidentalis caurina	Northern spotted owl	STOC	Bird - owl	State Endangered	Federal Threatened	G3	S1
Strix varia	Barred owl	STVA	Bird - owl			G5	S5
Accipiter gentilis	Northern goshawk	ACGE	Bird - raptor	State Candidate	Federal Candidate	G4	S3.1
Aquila chrysaetos	Golden eagle	AQCH	Bird - raptor	State Candidate		G4	S3.1
Falco peregrinus	Peregrine falcon	FAPE	Bird - raptor	State Sensitive		G4	S2B, S3N
Haliaeetus leucocephalus	Bald eagle	HALE	Bird - raptor	State Threatened	Federal Threatened	G4	S3
Pandion haliaetus	Osprey	PAHA	Bird - raptor	State Monitor		G5	S4B
Ardea herodias	Great Blue Heron	ARHE	Bird - water	State Monitor		G5	S4S5B, S5N
Gavia immer	Common loon	GAIM	Bird - water	State Sensitive	Federal Species of Concern	G5	S2B,S5
Histrionicus histrionicus	Harlequin duck	HIHI	Bird - water		Federal Candidate	G4	S3
Dryocopus pileatus	Pileated woodpecker	DRPI	Bird - woodpecker	State Candidate		G5	S4
Melanerpes lewis	Lewis' woodpecker	MELE	Bird - woodpecker	State Candidate		G4	S3B
Picoides albolarvatus	White-headed woodpecker	PIAL	Bird - woodpecker	State Candidate		G5	S3
Picoides articus	Black-backed woodpecker	PIAR	Bird - woodpecker	State Candidate		G5	S3
Picoides tridactylus	Three-toed woodpecker	PITR	Bird - woodpecker	State Monitor		G5	S3
Catostomus macrocheilus	Largescale sucker	CAMA	Fish			G5	S?
Cottus confusus	Shorthead sculpin	COCON	Fish			G5	S?
Cottus rhotheus	Torrent sculpin	CORH	Fish			G5	S?
Rhinichthys cataractae	Longnose dace	RHCA	Fish			G5	S?
Boloria freija freija	Freya's fritillary	BOFR	Invertebrate	State Monitor			
Fisherola nuttalli	Giant Columbia River limpet	FINU	Invertebrate	State Candidate			
Lycaena rubida perkinsorum	Ruddy copper	LYRUPE	Invertebrate	State Monitor			
Mitoura spinetorum spinetorum	Thicket hairstreak	MISP	Invertebrate	State Monitor			
Ochlodes sylvanoides bonnevilla	Bonneville skipper	OCSYBO	Invertebrate	State Monitor			
Antrozous pallidus	Pallid bat	ANPA	Mammal - bat	State Monitor		G5	S3
Coryhorhinus townsendii townsendii	Pacific Townsend's big-eared bat	COTOT	Mammal - bat	State Candidate	Federal Candidate	G5T3T4	S1
Eptesicus fuscus	Big brown bat	EPFU	Mammal - bat			G5	S?
Euderma maculatum	Spotted bat	EUMA	Mammal - bat	State Monitor		G4	S?
Myotis californicus	California myotis	MYCA	Mammal - bat			G5	S?
Myotis evotis	Long-eared myotis	MYEV	Mammal - bat	State Monitor	Federal Candidate	G5	S3
Myotis lucifugus	Little brown myotis	MYLU	Mammal - bat			G5	S?
Myotis thysanodes	Fringed myotis	MYTH	Mammal - bat	State Monitor	Federal Candidate	G5	S3?
Myotis volans	Long-legged myotis	MYVO	Mammal - bat	State Monitor	Federal Candidate	G5	S3
Myotis yumanensis	Yuma myotis	MYYU	Mammal - bat		Federal Candidate	G5	S?
Canis lupus	Gray wolf	CALU	Mammal - carnivore	State Endangered	Federal Endangered	G4	SA
Gulo gulo	Wolverine	GUGU	Mammal - carnivore	State Candidate	Federal Candidate	G4	S3.1
Lynx canadensis	Lynx	LYCA	Mammal - carnivore	State Threatened	Federal Threatened	G5	S2
Martes americana	Marten	MAAM	Mammal - carnivore			G5	S?
Martes pennanti	Fisher	MAPE	Mammal - carnivore	State Endangered	Federal Candidate	G5	S3.1
Ursus arctos	Grizzly bear	URAR	Mammal - carnivore	State Endangered	Federal Threatened	G4	S1
Lepus townsendii	White-tailed jack rabbit	LETO	Mammal - rodent	State Candidate		G5	S?
Sciurus griseus	Western gray squirrel	SCGRI	Mammal - rodent	State Threatened	Federal Candidate	G5	S1S2
Synaptomys borealis	Northern bog lemming	SYBO	Mammal - rodent	State Monitor		G5	S3
Alces alces	Moose	ALAL	Mammal - ungulate			G5	S2S3
Hypsiglena torquata	Night snake	HYTO	Reptile	State Monitor		G5	S4

Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank
Agoseris elata	Tall Agoseris	S		S3	G4
Agrostis borealis	Northern Bentgrass	S		S1S2	G5
Alectoria nigricans	witch's hair lichen	P1		S2	G5
Botrychium ascendens	Triangular-lobed Moonwort	S	SC	S2S3	G2G3
Botrychium crenulatum	Crenulate Moonwort	S	SC	S3	G3
Botrychium paradoxum	Two-spiked Moonwort	T	SC	S2	G2
Bryoerythrophyllum columbianum	Columbian carpet moss			S2	G2G4
Carex atrosquama	Blackened Sedge	R2		S1	G4?
Carex capillaris	Hair-like Sedge	S		S1	G5
Carex chordorrhiza	Cordroot Sedge	S		S1	G5
Carex heteroneura	Different Nerve Sedge	R2		S2	G5
Carex magellanica ssp. irrigua	Poor Sedge	S		S2S3	G5T5
Carex norvegica	Scandinavian Sedge	S		S2	G5
Carex scirpoidea var. scirpoidea	Canadian Single-spike Sedge	S		S2	G5T4T5
Carex sychnocephala	Many-headed Sedge	S		S2	G4
Carex tenuiflora	Sparse-leaved Sedge	T		S1	G5
Carex vallicola	Valley Sedge	S		S2	G5
Carex xerantica	White-scaled Sedge	R2		SNR	G5
Cryptogramma stelleri	Steller's Rockbrake	S		S1S2	G5
Cypripedium parviflorum	Yellow Lady's-slipper	T		S2	G5
Draba aurea	Golden Draba	S		S2	G5
Draba cana	Lance-leaved Draba	S		S1S2	G5
Erigeron salishii	Salish Fleabane	S		S2S3	G2G3
Eritrichium nanum var. elongatum	Pale Alpine-forget-me-not	S		S1	G5T4
Gentiana glauca	Glaucous Gentian	S		S2S3	G4G5
Gentianella tenella	Slender Gentian	S		S1	G4G5
Hierochloe odorata	Common Northern Sweet Grass	R1		SNR	G5T5
Luzula arcuata	Curved Woodrush	S		S1	G5
Mimulus pulsiferae	Pulsifer's Monkey-flower	S		S2	G4?
Orthotrichum pylaisii	Pylais' orthotrichum moss			S1	G4G5
Oxytropis campestris var. gracilis	Slender Crazyweed	S		S2	G5?T5?
Packera porteri	Porter's Butterweed	R1		S1S2	G4
Parnassia kotzebuei	Kotzebue's Grass-of-parnassus	S		S1	G4
Poa arctica ssp. arctica	Gray's Bluegrass	R2		S1S2	G5T3T5
Polemonium viscosum	Skunk Polemonium	S		S1S2	G5
Polytrichum strictum	A Hair Cap Moss			S2	G5
Potentilla diversifolia var. perdissecta	Diverse-leaved Cinquefoil	S		S1	G5T4
Potentilla nivea	Snow Cinquefoil	S		S2	G5
Rubus acaulis	Nagoonberry	T		S1	G5
Salix glauca	Glaucous Willow	S		S1S2	G5
Salix tweedyi	Tweedy's Willow	S		S3	G3G4
Sanicula marilandica	Black Snake-root	S		S2	G5
Saxifraga cernua	Nodding Saxifrage	S		S1S2	G4
Saxifraga rivularis	Pygmy Saxifrage	S		S3	G5?
Spiranthes porrifolia	Western Ladies-tresses	S		S2	G4
Tayloria serrata	serrate dung moss			S1	G4
Umbilicaria cylindrica	saxicolous lichen	P2		S1	G3
Umbilicaria decussata	epilithic lichen	P2		S1	G3?
Utricularia minor	Lesser Bladderwort	R1		S2?	G5

Probability of Sighting Maps for At-Risk Species

We created probability of sighting maps for each individual species using the statewide PHS sightings point data as inputs into the USGS Animal Movement Analysis ArcView Extension. We then clipped each probability output to just the Methow Subbasin. Outputs are in ESRI Grid and shapefile formats that depict the probability of occurrence of each at-risk wildlife species. We also created a map that indicates the known locations of at-risk plant species according to the WA DNR Natural Heritage Program.

We summarized the wildlife species by species guild. Guild maps were developed for 13 guilds illustrated in the table below:

Guild Name	# of species
Amphibian	3
Bird - other	5
Bird - owl	4
Bird - raptor	5
Bird - water	3
Bird - woodpecker	5
Fish	4
Invertebrate	5
Mammal - bat	10
Mammal - carnivore	6
Mammal - rodent	3
Mammal - ungulate	1
Reptile	1

In addition to this, we also summarized all species in all guilds to create a grid and shapefile that indicates the probability of sighting any at-risk wildlife species.

Task 3 - Locations and population trend estimates for exotic plant populations

We collected information on exotic plant populations from all available sources. The following sources were identified and included in our map:

- Okanogan National Forest GIS database on weed occurrence
- Okanogan County Noxious Weed Board GIS databases on weed occurrence
- Pacific Biodiversity Institute's GIS databases and studies of non-native plant populations.
- Data collected by Rob Crandall on the occurrence of Dalmatian toadflax in a limited area of the Methow Game Range.

All exotic species were plotted on a hard copy map to illustrate the overall impact of exotic plants on sensitive areas in the Methow.

Little hard data on population trends is available. Pacific Biodiversity Institute has conducted several years of study in the Chewuch watershed and has noted that in many areas along established roadsides, some populations of exotic plants have diminished, while other species have increased. Much more data is needed on population status on a yearly basis to be able to say anything definitive about exotic plant population status trends.

Task 4 - An analysis of wildlife movement corridors using the best available science to determine the optimal linkages for wildlife movement on both public and private land

We reviewed the currently available information on wildlife movement corridors and mapping of wildlife movement corridors in the Methow. We identified one primary document (Singleton, Gaines and Lehmkuhl 2002) that specifically analyzed wildlife movement in a study area that included the Methow. We invited Peter Singleton, the primary author of this study to the Sensitive Area Meeting in June 2005. At that meeting, Peter described his study and identified on our maps the primary wildlife linkage that his study identified.

At the sensitive area meeting (both in the formal discussion of wildlife corridors and in informal discussions) Peter Morrison, Peter Singleton and Dave Stokes addressed the issues involved with wildlife movement and landscape linkages. It was determined that to do a state-of-the-art analysis specific to the Methow, that would be an significant improvement to Singleton's work would require a significant effort that was way beyond the scope of our current project.

In lieu of this, Peter Morrison mapped the most obvious landscape linkages across the valley floor based on Singleton's work, Morrison's prior work and personal knowledge and careful analysis of the final sensitive areas map, parcel data, road data, satellite imagery and topographic information. The corridors and landscape linkages that were mapped include the one that Singleton identified. They were ranked in importance: high, medium and lower. But since there are relatively few opportunities for linkage across the valley floor, even the low importance corridors should be given a fairly high conservation priority.

We also included in the GIS data products delivered to the Methow Conservancy maps of mule deer migration corridors mapped by WDFW as part of their Priority Habitats and Species program. These were mapped in the early 1990's. We also discussed mule deer migration with Bob Naney, USFS biologist, who studied mule deer migration in the Methow.

Task 5 - Illustrations, data and statistics on areas where development can proceed with the least impact to sensitive areas

The development prioritization focused on finding areas in the Methow Valley's landscape that met the following conditions.

Site does not fall within:

- floodplains (as mapped by FEMA)
- sensitive areas (as mapped by PBI – except for agricultural lands and coniferous forests)
- irrigated agriculture lands (we analyzed the 2003 ASTER data from one date in mid summer to separate irrigated agriculture lands from non-irrigated – this was an attempt to remove abandoned fields from currently used fields)
- wetlands
- where slopes exceed 30% steepness
- public lands

We then prioritized development sites based on a combined ranking of:

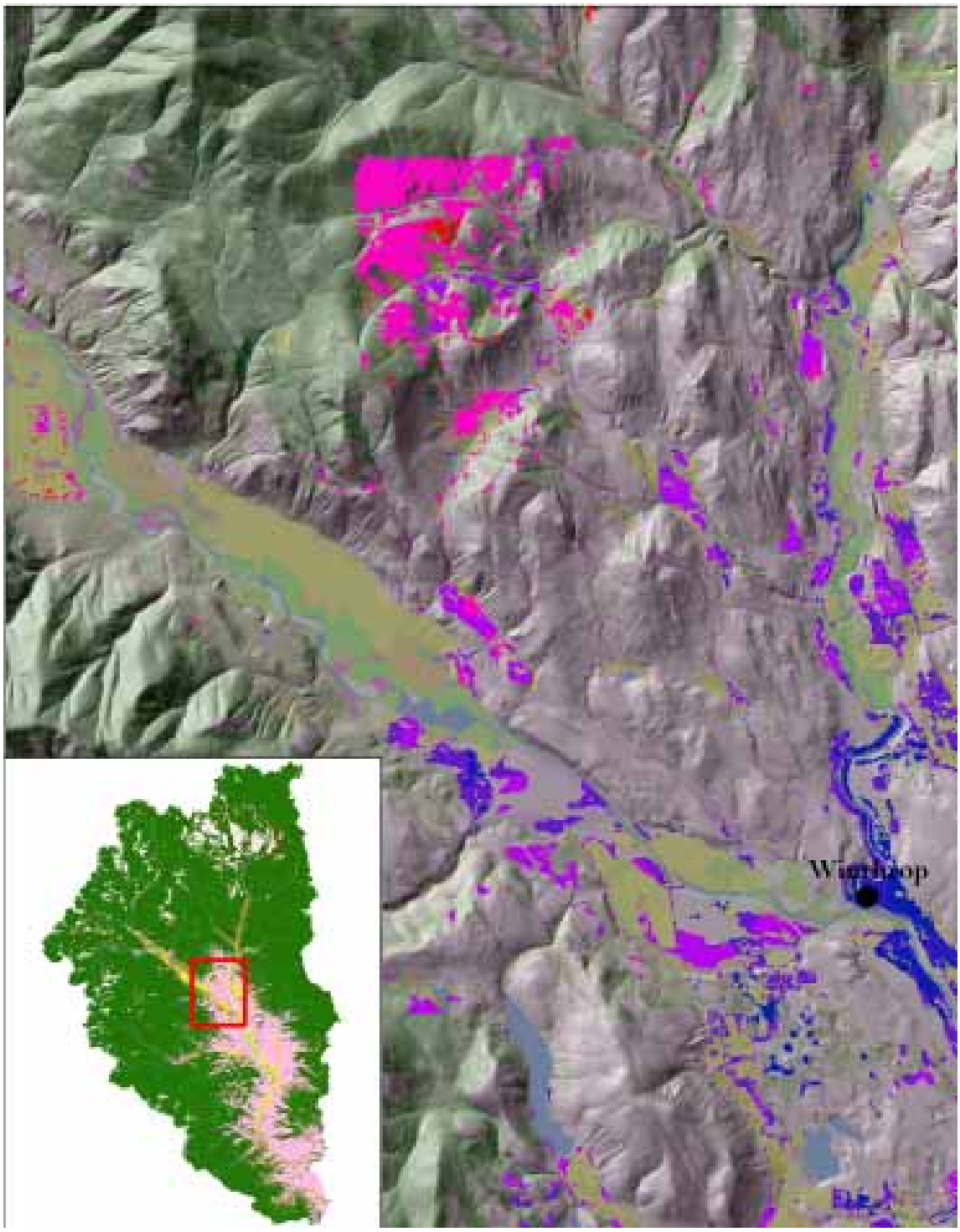
- Distance from incorporated towns (Winthrop, Twisp, Pateros)
- Distance from major road (state, county route)
- Distance from minor road (all other roads)
- Existing parcel size - used the following point system based on parcel size in acres:

acres	points
< 1	400
1 -2	350
2 - 3	300
3 - 5	250
5 - 10	200
10 - 20	150
20 - 100	100
> 100	50

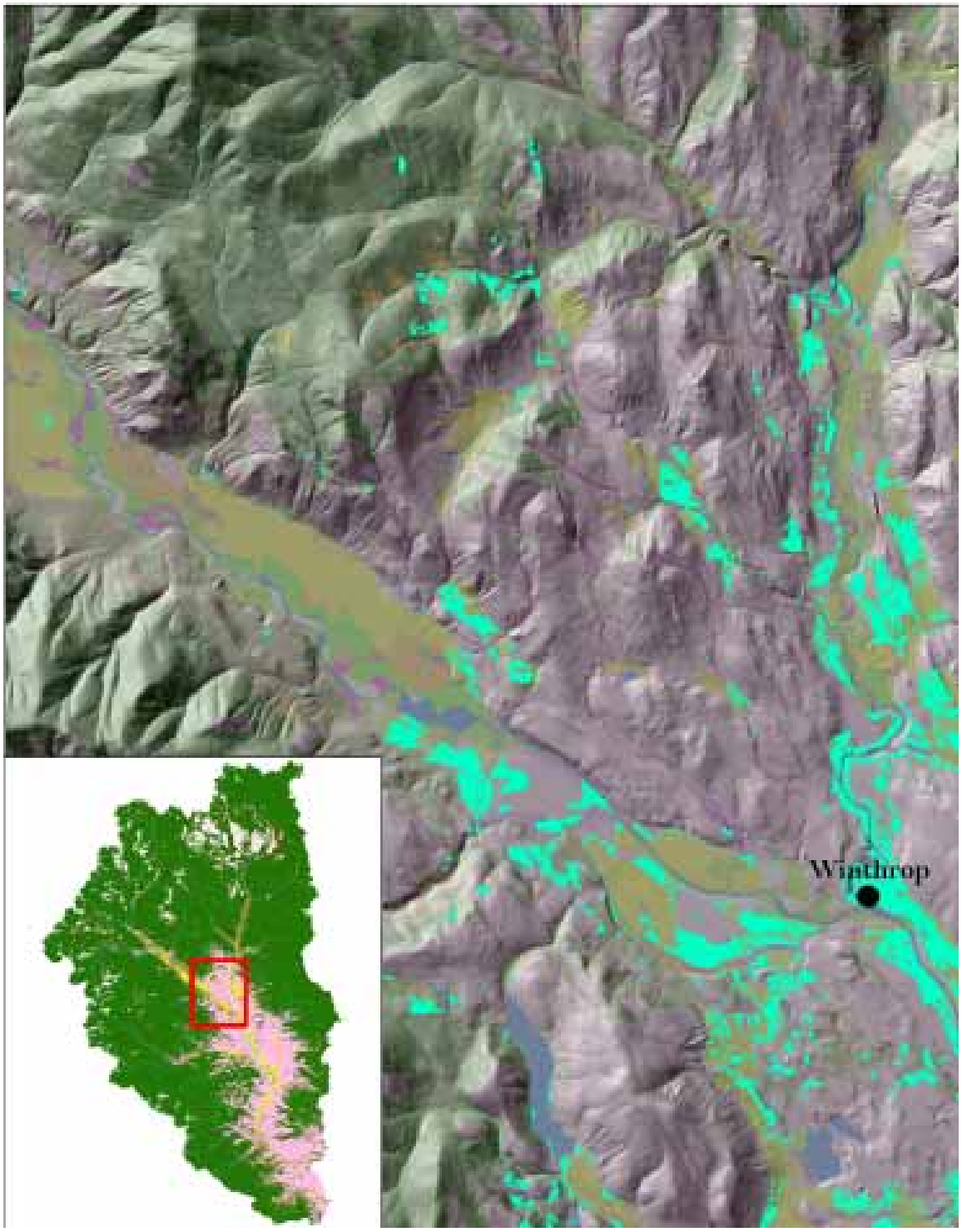
The final build-priorities data shows buildable areas ranked from most suitable for development (10) to least suitable (1) according to our pre-determined priorities.

It is important to note here that the prioritization is an adaptable and subjective process that will yield different results depending on the input values. It should be considered a draft product at this time. We will be continuing to working on improving it in the next months. The data we created is an example of one type of analysis based on our predefined input data and assumptions.

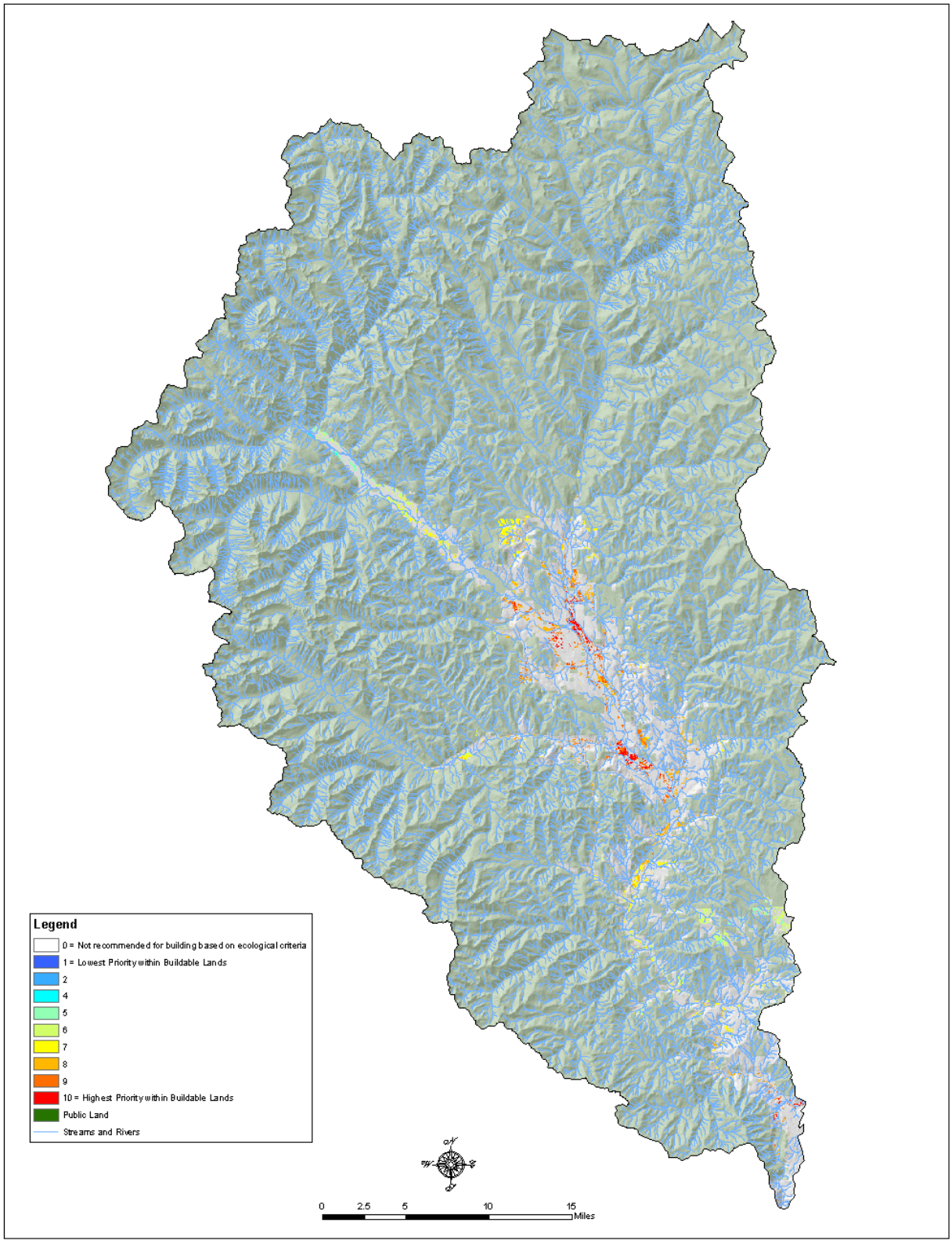
Example of the build-out prioritization displayed in the Winthrop area – priority for development increases in value from red to purple to blue.



Example of the build-out prioritization displayed in the Winthrop area – Displaying just the top 4 priority classes (7 – 10) in bright green.



Priority Areas for Development and Building in the Methow Valley



Pacific Biodiversity Institute
August 2005

Appendix A - Methow Sensitive Areas and At-risk Species Meeting Minutes

A meeting of biologists, botanists and ecologists familiar with the sensitive areas and at-risk species in the Methow was convened on Friday, June 24, 2005 at Pacific Biodiversity Institute's office on 517 Lufkin Lane, Winthrop, WA. The following minutes were recorded to capture some of the discussion at the meeting.
Note: The initials of the person speaking or presenting is used in the minutes below where appropriate.

9:10 to 9:20 AM - Welcome, introductions and explanation of agenda
Attendants:

- Dana Visalli – botanist (meeting facilitator)
- Dave Stokes, PhD – professor of conservation biology and planning Sonoma State University, CA
- Katharine Bill – Methow Conservancy executive director
- Don Johnson, PhD fisheries biologist and PUD Commissioner
- Brian Fisher – USGS biologist
- Therese Ohlson – USFS botanist
- Jennifer Molesworth – USFS fisheries biologist
- Scott Fitkin – WDFW wildlife biologist
- Peter Singleton PhD – USFS PNW Research Station wildlife ecologist
- Kent Woodruff – USFS wildlife biologist
- George Wooten – Conservation NW botanist,
- Mark Cookson – WDFW, fisheries biologist, watershed planning
- Bob Naney – USFS, Forest Biologist – Okanogan and Wenatchee
- Kim Bondi - WDFW Methow Wildlife Area Manager
- Peter Morrison – PBI, executive director
- Hans Smith – PBI, conservation scientist
- Juliet Rhodes, PBI conservation assistant

DV: Welcome and introduction to meeting
KB: MC project explanation and overview – effort to develop a mix of strategies in order to prioritize and protect the "best" habitat

9:20 to 9:50 AM - Presentation by Pacific Biodiversity Institute staff on conservation needs assessment, sensitive area mapping and ecological condition assessment (PM and HS)
PBI is conducting a watershed wide assessment of sensitive areas including these three priority habitats identified by the Methow Conservancy as important for this project:

1) Ponderosa pine
2) Shrub-steppe
3) Riparian/riverine
4) Agricultural lands
5) Ridgelines

Presentation and discussion of mapping methods:

- Ponderosa pine and shrub-steppe maps show level of coincidence from 4 or 5 different vegetation mapping sources

- Discussion about satellite imagery – vegetation mapping from TM, ETM7, or ASTER will always have systematic errors due to inherent limits of the imagery (Ponderosa pine hard to map accurately)
    - There is always a need to review and confirm mapping through people's field knowledge. This is one of the objectives of the meeting.
    - Other information besides sensitive area maps provided at the meeting:
        - ROSGEN Level 1 Stream Types displayed in map form
        - 2003 ASTER Mosaic displayed covering entire watershed

10:50 to 10:45 AM - Discussion of measures and classification of ecological condition of natural communities in the Methow

We discussed ecological condition of the various sensitive area types and ways of describing ecological condition. A handout prepared by Pacific Biodiversity Institute was passed out and discussed.

Discussion of ecological condition for Riparian Areas

JM: Are natural processes at work and functioning within historical parameters (floods, fire, river meandering)? Are certain species present? Are disturbance regimes present and allowed to operate? Are rivers free to meander?

Shrub-Steppe

GW: Are weeds absent or present? Poa bulbosa, pine & doug fir encroachment, cheat grass, presence/absence of certain species are all factors. History of land use/palatability/grazing lack of fire – indicator of unhealthy system?

TO: shrub-steppe – one of the most endangered ecosystems globally; have to be careful when managing w/fire to not actually enhance weed populations

Ponderosa-Pine

KW: no weeds/disturbances, healthy bunchgrass, big, old trees, no logging or grazing, water source nearby, some reproduction, processes working – species & structure, openness/park-like qualities, 7-15 yr. fire intervals, snags, defective trees, woodland 25% canopy cover (transition zone?)

Other Types: i.e. non-riverine wetlands (vernal ponds, lakes), low elev. cliffs, aspen stands, shrubby draws

Salmon: MC uses "redd layers" – GIS, where the redds are – may coincide w/ healthy biological processes

JM: USFS – Data Gap from the mouth of Methow to Mazama, mainstream – lack of species inventory & surveys

10:45 AM to 12:20 PM - Review of sensitive areas maps, identification of other sensitive areas and ecological condition ranking of sensitive areas.

For this part of the meeting, we had three tables and a computer workstation that contained maps of the sensitive area types:

1. shrub-steppe habitat
2. ponderosa pine forest habitat
3. rivers, riparian forest and shrub habitat

The meeting participants gathered around the tables which and helped review the sensitive area mapping, added to and ranked sensitive habitat types. Participants with expertise in multiple habitat types visited multiple tables. Detailed maps and related documents were available.

Reviewing and putting points on the maps

During the meeting, several map corrections were noted, but there were very few improvements to the maps mentioned at the meeting by the experts. The experts were advised to put their emphasis on sensitive areas without respect for ownership, as we want a valley-wide assessment.

Ecological Condition Points

Red = cond. 1 = worst, degraded

Blue = cond. 2 = medium, pluses & minuses

Green = cond. 3 = best

Yellow = other sensitive area

Big fluorescent green dots = at-risk species sighting

1:00 to 2:45 PM - Review and discussion of at-risk species in the Methow

We discussed the distribution, population status, history of at risk wildlife species in the Methow. We passed out and discussed a list of at-risk species tracked in the WDNR and WDFW Heritage databases and known to occur in the Methow Valley. We also displayed maps that showed the location and probability of sighting an at-risk species. Participants discussed each species and filled in forms and mapped sightings not currently contained in the state databases.

Someone asked whether the list should include pygmy short-horned lizard.

PS: brought up issues regarding the PHS sighting data and subsequent occurrence probability maps.

- Reliability - what does it really tell you?

- Focus on features (nests/territories)

- Data Gaps: what are sightings depicting? PHS data is variable in what is being depicted and not necessarily verifiable.

- Habitat modeling might be more appropriate in determining species occurrence probabilities given problems with sighting data. Movement and corridors analyses would be better to focus on this than sighting data.

Others: thought that the sighting data was useful in determining what species are present in the Methow and the general areas that they appear to be using.

Everyone: agreed that you can't use the sighting data to prioritize specific parcels of land (except perhaps for certain plant species).

Someone: Might help to have a list and spatial data for the more common species which are good indicators of intact habitats, especially plants (i.e. lady-slippers)

Discussion of feature data vs. sighting data:

The value of accessible sightings data may be species specific. It may be more useful to focus on territories and nests instead of sightings for carnivores and birds, whereas sightings of amphibians and reptiles have more meaning in terms of usable habitat.

2:45 to 2:55 PM - Discussion of wildlife movement corridors and landscape connectivity

Peter Singleton and Dave Stokes both discussed wildlife movement, landscape permeability and wildlife corridors. PS discussed briefly his work in looking at landscape permeability for large carnivores in the Pacific Northwest. He discussed the possibility of doing this at a finer scale for the Methow.

2:55 to 3:05 PM - Synthesis, conclusions and additional insights

We briefly summarized the conclusions of the meeting and discussed the need for more meetings like this and more opportunities for experts to put down information about their sightings and observations in a way that others can benefit from their knowledge.

Appendix B - Sensitive Area Points Data

The following fields in the database are described below:

Habitat_Type: Are the original abbreviations and habitat types as inputted from the datasheets. The following three fields, **PrimaryType, SecondType, ThirdType** were added later to enhance usage of the database. Below are the final abbreviations and their descriptions.
AS = aspen
CL = cliff, rocky outcrop, canyon
LK = lake
MF = montane forest
PP = ponderosa pine, savannah
RR = riparian/riverine
SD = shrubby draw
SS = shrub-steppe
WL = wetland, vernal pond

Condition:
1 = red dot = least favorable
2 = blue dot = between least and most favorable
3 = green dot = most favorable

Precision:
This field was meant to signify the accuracy of the location of the dot on the map. However, many participants did not enter any info. For those who did, some seemed to interpret it to signify the size of the area represented by the dot, as in "several miles." Others, understanding the original intent, marked it with "low," "high," or "very high."

Name: refers to those who participated in filling out datasheets.
KB = Katharine Bill
SB = Steve Bondi
BF = Brian Fisher
SF = Scott Fitkin
DJ = Don Johnson
JM = Jennifer Molesworth
PM = Peter Morrison
BN = Bob Naney
TO = Therese Ohlsen
KR = Kim Romain-Bondi
DV = Dana Visalli
KW = Kent Woodruff
GW = George Wooten

Levels of Ecological

Primary Type	Condition Rank	ID:
AS	2	316

Second Type

Tertiary Type

Habitat Type
AS

Location:
aspens east of Riser Lake

Site Description:
nice aspen stand, recovering from grazing

Precision
very high

Date Observed
2005

Other Comments:

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
AS	3	216

Second Type

Tertiary Type

Habitat Type
ASPEN

Location:
Approx. 2 mile up Cub Creek on N. side (southern exposure)

Site Description:
Aspen woodland w/ extrensive snowberry/shrub understory

Precision
+-5 acres

Date Observed
July 2004

Other Comments:
drought, developemnt - portion of larger (80 acres?) private parcel currently undeveloped

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
AS	2	74

Second Type
WL
Tertiary Type

Habitat Type
WL

Location:
Gunn Ranch (Goldman)

Site Description:
2-3 condition; aspen

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
CL	3	25

Second Type

Tertiary Type

Habitat Type
RO

Location:
Twisp Clinic (Bill White) - bedrock bald overlooking Twisp River

Site Description:
put. land long ridge habitats continue; some past grazing; close to town

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
CL	3	215

Second Type

Tertiary Type

Habitat Type
RO

Location:
8-mile drainage

Site Description:
Cliff habitat long stretch of stream; deep canyon w/ rather large THPL grove mid way

Precision

Date Observed
June 2005

Other Comments:

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
CL	3	76

Second Type

Tertiary Type

Habitat Type
RO

Location:
Patterson Mtn.

Site Description:

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
KB		

Primary Type	Condition Rank	ID:
CL	3	87

Second Type
AS
Tertiary Type

Habitat Type
RO

Location:
North of Fawn Creek Rd. (USFS land)

Site Description:
aspens, bitterroot

Precision

Date Observed

Other Comments:

Name	Phone	Email
KB		

Primary Type	Condition Rank	ID:
CL	2	219

Second Type
AS
Tertiary Type
WL
Habitat Type
RO, WL

Location:
below Red Shirt mine road on public land (?)

Site Description:
aspens; mini canyon w/ rocky knob/walls w/ deciduous veg. In bottom. Coyote den

Precision
10 acres?
Date Observed
Oct 2004

Other Comments:
grazed, I think

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
CL	3	217

Second Type
PP
Tertiary Type
SS
Habitat Type
RO

Location:
Follow road from Homestead/Spring approx. 3/4 mi. to hilltops

Site Description:
interspersed w/PIPO, SS; meadows; bitterroot habitat, some rocky knobs, scattered apsen in swales

Precision
20 + acres
Date Observed
Spring 2004

Other Comments:
Kim Romain-Bondi to Sarah Schrock there as well

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
CL	2	97

Second Type
SD
Tertiary Type

Habitat Type
CL, CA, SD

Location:
Pipestone

Site Description:
2-3 condition; cliffs, canyon, talus

Precision

Date Observed
Jun 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type
CL

Condition Rank
3

ID:
85

Second Type
SD

Tertiary Type

Habitat Type
RO, SD

Location:
Wenner Lakes

Site Description:
aspens

Precision

Date Observed

Other Comments:

Name	Phone	Email
KB		

Primary Type	Condition Rank	ID:
CL	2	73

Second Type
WL
Tertiary Type

Habitat Type
SD, WL

Location:
Peter's Puddles & associated drainage

Site Description:
1-3 condition

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
CL	2	218

Second Type
WL
Tertiary Type

Habitat Type
RO

Location:
Alta Coulee

Site Description:
interesting: cliffs; potholes relatively good cond.

Precision
several miles
Date Observed
1998

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
CL	3	108

Second Type
WL
Tertiary Type

Habitat Type
CA, WL, CL

Location:
Alder Creek

Site Description:
alder, coulee; unroaded; deep canyon

Precision
several miles
Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
LK	3	75

Second Type
AS
Tertiary Type
SD
Habitat Type
LK, SD

Location:
Aspen Lake

Site Description:
aspens

Precision

Date Observed
Jun 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
MF	3	213

Second Type

Tertiary Type

Habitat Type
Cedar Grove

Location:
Cow Creek in Cub Cr. Drainage

Site Description:
THPL grove about 1 mile in length surrounded by PIPO/PSME dry forest

Precision

Date Observed
2003

Other Comments:
Cattle access in headwaters is a problem.

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
PP	3	59

Second Type

Tertiary Type

Habitat Type
PP

Location:
West of Jack Cr., S. of Wolf Cr.

Site Description:
[blue dot, but wrote 3 for condition]; Unlogged, ungrazed PIPO/PSME stand involves FS/State game

Precision

Date Observed
1995

Other Comments:
likely needs to be thinned & burned or at least burned. 450-500 yr. PIPO, 600 yr. PSME

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
PP	2	45

Second Type

Tertiary Type

Habitat Type
PP

Location:
Stean Property

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email
KB		

Primary Type
PP

Condition Rank
2

ID:
58

Second Type

Tertiary Type

Habitat Type
PP

Location:
Winthrop Trail, Lynx Lane

Site Description:
2-3 condition; Big healthy trees, nice understory that benefitted from past thinning; will need thinning/fire to maintain

Precision

Date Observed
June 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
PP	3	23

Second Type

Tertiary Type

Habitat Type
PP/SS

Location:
Wolf Creek

Site Description:
Open PIPO slope on RNA & adjacent

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	2	70

Second Type

Tertiary Type

Habitat Type
PP

Location:
Pearrygin Creek

Site Description:
Series of PIPO monitoring plots established in the 1950's all treatments. Some old growth, but overgrazed

Precision
DNR Land

Date Observed
2003

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	3	180

Second Type

Tertiary Type

Habitat Type
PP

Location:
S. of First Butte Lookout

Site Description:
Unlogged, ungrazed park-like stand worth noting

Precision

Date Observed
1996

Other Comments:

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
PP	2	51

Second Type

Tertiary Type

Habitat Type
PP

Location:
Driveway Butte

Site Description:
Fairly good condition on slope; recently burned

Precision

Date Observed
2004

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	3	146

Second Type

Tertiary Type

Habitat Type
PP

Location:
Honeymoon Creek on trail toward N. 20 mile Lookout

Site Description:
Higher elev. dry big old pine; some good unlogged old growth pine

Precision

Date Observed
1994 or 1995

Other Comments:

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
PP	3	34

Second Type

Tertiary Type

Habitat Type
PP

Location:
Smith Canyon

Site Description:
The best ecological condition habitat I know. Pine savannah/B.bush/Bunchgrass; no weeds, good forbs, large pine

Precision

Date Observed
1998

Other Comments:

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
PP	1	126

Second Type

Tertiary Type

Habitat Type
PP

Location:
Cougar Creek

Site Description:
hammered

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	3	191

Second Type

Tertiary Type

Habitat Type
PP

Location:
North Twentymile Peak slope

Site Description:
[used blue dot, but wrote 3 for condition] past logging & some grazing but functional

Precision

Date Observed
1996

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	1	127

Second Type

Tertiary Type

Habitat Type
PP

Location:

Site Description:
30% pine. Edge of PP-savannah. Forest is very good condition, but understory moderate

Precision

Date Observed
2004

Other Comments:

Name	Phone	Email
BF		

Primary Type
PP

Condition Rank
3

ID:
10

Second Type

Tertiary Type

Habitat Type
PP

Location:
between 1st & 2nd Creek

Site Description:
small patch of very good old growth PIPO, some trees over 6' DBH

Precision
good

Date Observed
2000

Other Comments:

Name **Phone** **Email**
PM

Primary Type
PP

Condition Rank
3

ID:
12

Second Type

Tertiary Type

Habitat Type
PP

Location:
Little Buck Mt.

Site Description:

Precision

Date Observed
6/23/05

Other Comments:

Name **Phone** **Email**
KW

Primary Type	Condition Rank	ID:
PP	3	0

Second Type

Tertiary Type

Habitat Type
PP/SV

Location:

Site Description:
The very best remnant low elevation pine block left.

Precision

Date Observed

Other Comments:
Very valuable for migrant birds. Gray flycatcher habitat.

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
PP	3	22

Second Type

Tertiary Type

Habitat Type
PP

Location:
Mills Flat

Site Description:
Pine savannah - some big old trees mostly weed free - unlogged in places

Precision

Date Observed
June 2005

Other Comments:

Name	Phone	Email
KW		

Primary Type | **Condition Rank** | **ID:**
PP | 3 | 1

Second Type

Tertiary Type

Habitat Type
PP

Location:
Confluence of Gold Cr. & S. Fork

Site Description:
Exc. cond. large PIPO; no grazing, no weeds, good structure, no invasives

Precision
Private parcel for sale

Date Observed
2005

Other Comments:

Name | **Phone** | **Email**
GW

Primary Type	Condition Rank	ID:
PP	3	33

Second Type

Tertiary Type

Habitat Type
PP

Location:
Grouse Hollow, Gold Cr.

Site Description:
Ungrazed; few weeds; good structure; 2 recent burns; 1 fire line is only bad thing.

Precision

Date Observed
2000

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	2	47

Second Type

Tertiary Type

Habitat Type
PP

Location:
Streams E. of Mission in Libby Cr. Drainage

Site Description:

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
PP	2	46

Second Type

Tertiary Type

Habitat Type
PP

Location:
Wenner Lakes

Site Description:
Widely spaced trees, age class diversity

Precision

Date Observed

Other Comments:

Name	Phone	Email
KB		

Primary Type	Condition Rank	ID:
PP	3	35

Second Type

Tertiary Type

Habitat Type
PP

Location:
Middle Fork Gold Creek

Site Description:
Pine/Fir pinegrass open, parklike old growth

Precision

Date Observed
1995

Other Comments:

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
PP	3	11

Second Type

Tertiary Type

Habitat Type
PP

Location:
Little Buck Mt., south face

Site Description:
Some of the best ecological condition pine habitat I am aware of. 200 acres or so - mid slope surrounded by logging & grazed

Precision

Date Observed
6/23/05

Other Comments:
No weeds, unlogged, lightly grazed

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
PP	2	200

Second Type

Tertiary Type

Habitat Type
PP/SV

Location:
SE of Poorman Creek

Site Description:
Pine Savannah becomes mixed conifers on N. aspect. Some remaining large trees w/ few weeds on edge of habitat.

Precision

Date Observed
2001

Other Comments:

Name	Phone	Email
BF		

Primary Type
PP

Condition Rank
2

ID:
190

Second Type
AS

Tertiary Type

Habitat Type
PP

Location:
Eightmile drainage

Site Description:
Old-growth trees & aspens

Precision

Date Observed

Other Comments:
needs thinning & less cows & fire

Name
SF

Phone

Email

Primary Type
PP

Condition Rank
3

ID:
68

Second Type
CL

Tertiary Type

Habitat Type
PP, CL

Location:
Alta Lake

Site Description:
[used blue dot, but wrote 3 for condition] unlogged; burned last about 70 yrs near bottom; some Acer macrophyllum & Juniperus scopulosum

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
PP	2	60

Second Type
SS
Tertiary Type

Habitat Type
PP/SS

Location:
Benson Creek

Site Description:
private & NF land; some pristine patches, some openings; still not too overgrown w/conifer

Precision

Date Observed
1996

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
RR	2	183

Second Type

Tertiary Type

Habitat Type
RR

Location:
Confluence near MC office

Site Description:
harlequin ducks, salmon holding

Precision

Date Observed
June 2005

Other Comments:
Potential trail is a threat, bad spot for a bridge, channel is very dynamic here

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	142

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
dike blocking off extensive side channel

Precision

Date Observed

Other Comments:
good potential for restoration

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	18

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email

Primary Type	Condition Rank	ID:
RR	1	130

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email

Primary Type	Condition Rank	ID:
RR	3	7

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email

Primary Type	Condition Rank	ID:
RR	1	131

Second Type

Tertiary Type

Habitat Type
RR

Location:
above Balky Hill Rd.

Site Description:
Stream confined. Floodplain not connected.

Precision

Date Observed
Spring 2005

Other Comments:
BOR is looking at area for restoration project.

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
RR	2	53

Second Type

Tertiary Type

Habitat Type
RR

Location:
Lower Chewuch

Site Description:
Good condition, but processes are compromised.

Precision

Date Observed
2000

Other Comments:
JM: Heavy use by spring chinook & steelhead.

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
RR	2	143

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision
low

Date Observed

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	67

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
potential restoration site - side channel reconnection

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	55

Second Type

Tertiary Type

Habitat Type
RR

Location:
Libby Creek above Hwy. 153

Site Description:
Birch. Excellent, dense deciduous thicket. Lower portion diked & overgrazed

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
RR	2	185

Second Type

Tertiary Type

Habitat Type
RR

Location:
3 miles up E. Chewuch, below red church buildings

Site Description:
Old homestead w/ impressively restored cottonwood galleries & aspen woodlands. Some side channels & swales/wetlands, though little floodplain.

Precision

Date Observed
July 2004

Other Comments:
WDFW cons. Easements & WDFW ownership. Homes built all around in '04/'05.

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
RR	3	511

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
excellent riparian forest, steelhead spawning and chinook rearing

Precision
high

Date Observed
2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	144

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
riprapped MVID pushup dam

Precision

Date Observed

Other Comments:
steelhead and chinook spawning

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	29

Second Type

Tertiary Type

Habitat Type
RR

Location:
Below Buttermilk ???

Site Description:
Riparian in good condition. Mixture of cottonwood & river birch. Stream is incised & floodplain is becoming isolated

Precision

Date Observed
2003

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
RR	3	5

Second Type

Tertiary Type

Habitat Type
RR

Location:
Twisp Rvier between Buttermilk & War Creek

Site Description:
Cottonwood/mixed deciduous. Others in matrix. Good condition, but threatened

Precision

Date Observed
2003

Other Comments:
Development & diking - watch trend.

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
RR	2	41

Second Type

Tertiary Type

Habitat Type
RR

Location:
Stokes Ranch

Site Description:
Riparian vegetation in good condition, but significant amount of weeds. Extent of riparian limited by agricultural fields.

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
BF		brianf@nwi.net

Primary Type	Condition Rank	ID:
RR	2	42

Second Type

Tertiary Type

Habitat Type
RR

Location:
Lower Bear Creek

Site Description:
Cottonwood overstory, good shrub component

Precision

Date Observed

Other Comments:

Name	Phone	Email
BF		

Primary Type | **Condition Rank** | **ID:**
RR | 3 | 6

Second Type

Tertiary Type

Habitat Type
RR

Location:
Mouth of Alder Creek

Site Description:
Fantastic jungle of water birch, big cottonwoods, willow, alder, flooded timber; side channels - wetlands

Precision

Date Observed
6/20/05

Other Comments:

Name | **Phone** | **Email**
KW

Primary Type	Condition Rank	ID:
RR	1	118

Second Type

Tertiary Type

Habitat Type
RR

Location:
Texas Creek

Site Description:

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
RR	1	119

Second Type

Tertiary Type

Habitat Type
RR

Location:
Cow Creek

Site Description:

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
RR	1	139

Second Type

Tertiary Type

Habitat Type
RR

Location:
Gold Creek mainstream

Site Description:
Spring chinook spawning. See USFS Survey Report. LWD decreasing, barriers, road encroachment.

Precision

Date Observed

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	43

Second Type

Tertiary Type

Habitat Type
RR

Location:
Gold Creek, South Fork

Site Description:
Red cedar. Mixed ownership (mostly private). 200 yr old unburned cedar along Gold Cr., s. fork

Precision

Date Observed

Other Comments:
2-3 condition

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
RR	1	115

Second Type

Tertiary Type

Habitat Type
RR

Location:
South Fork Gold Creek

Site Description:
Steelhead. Culvert barrier on S. Fk. Gold & Rainy Cr.

Precision

Date Observed
June 2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	120

Second Type

Tertiary Type

Habitat Type
RR

Location:
French Creek

Site Description:

Precision

Date Observed
May 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
RR	2	184

Second Type

Tertiary Type

Habitat Type
RR

Location:
Grizzly Mtn. Rd.

Site Description:
Outrageous cottonwood gallery forest along active floodplain of Methow. Some private landowners clearing ski trails & building houses & ponds.

Precision

Date Observed
June 2005

Other Comments:
Condition 3/2. Yellow-breasted chat.

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
RR	3	149

Second Type

Tertiary Type

Habitat Type
RR

Location:
Pete Creek - Rendezvous/W. Chewuch

Site Description:
[Green dot, but wrote 2 for condition] Awesome upland riparian along Pete Creek - Veery's water birch, etc.

Precision

Date Observed
May 2005

Other Comments:
Doug Devin, owner of lower portion, won't ensure protection according to neighbors.

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
RR	1	132

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
Riverine floodplain/springs. Silver transit area. Broad floodplain w/ cottonwood forest, springs

Precision

Date Observed
June 2005

Other Comments:
livestock grazing limiting riparian veg.

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	501

Second Type

Tertiary Type

Habitat Type
RR

Location:
Witte Road side channel

Site Description:
high quality side channel

Precision
high

Date Observed
2005

Other Comments:
needs protection - high priority for easement

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	303

Second Type

Tertiary Type

Habitat Type
not ss

Location:
Morrison/Jeffries property

Site Description:

Precision

Date Observed
2005

Other Comments:
riparian forest along ditch

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	3	318

Second Type

Tertiary Type

Habitat Type
RR

Location:
riparian forest at PM/AJ property

Site Description:
very nice, diverse riparian forest, good structure and compostion, no grazing, good understory

Precision
very high

Date Observed
2005

Other Comments:
rare plants too

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	3	319

Second Type

Tertiary Type

Habitat Type
RR

Location:
east of PM/AJ property

Site Description:
same as 318

Precision
very high

Date Observed
2004

Other Comments:

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	3	320

Second Type

Tertiary Type

Habitat Type
RR

Location:
east side of Chewuch River Parcel # 3521260103

Site Description:
great riparian forests, wetlands, beaver ponds -some of the best in the Chewuch

Precision
very high

Date Observed
1998

Other Comments:

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	2	302

Second Type

Tertiary Type

Habitat Type
not ss

Location:
Morrison/Jeffries property

Site Description:

Precision

Date Observed
2005

Other Comments:
riparian forest along ditch

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	1	500

Second Type

Tertiary Type

Habitat Type
RR

Location:
intake of Barcley Ditch on Methow river

Site Description:
push up dam, reducing wetland side channel habitat and large woody debris

Precision
very high

Date Observed
2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	502

Second Type

Tertiary Type

Habitat Type
RR

Location:
across from smoke jumpers base

Site Description:
cottonwood forest, good recruitment and spawning

Precision
high

Date Observed
2005

Other Comments:
potential for easement

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	503

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
side channel blocked by dike

Precision
high

Date Observed
2005

Other Comments:
good restoration project and easement

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	505

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
cottonwood forest and sidechannel floodplain

Precision
high

Date Observed
2005

Other Comments:
high priority for easement

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	504

Second Type

Tertiary Type

Habitat Type
RR

Location:
up river from Twisp

Site Description:
extensive side channel and good riparian forest

Precision
high

Date Observed
2005

Other Comments:
high priority for easement

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	506

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
extensive riparian forest

Precision
high

Date Observed
2005

Other Comments:
side channels and spawning

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	65

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
good holding and spawning area for steelhead and chinook

Precision
high

Date Observed

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	321

Second Type

Tertiary Type

Habitat Type
RR

Location:
east side of river - east of PM/AJ property

Site Description:
riparian forests in good shape, no grazing for years now

Precision
very high

Date Observed
2005

Other Comments:

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
RR	2	507

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
side channel with springs, cottonwood forest

Precision
high

Date Observed
2005

Other Comments:
affected by grazing

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	54

Second Type

Tertiary Type

Habitat Type
RR

Location:
above Vanderpool/Goat Creek

Site Description:
Spruce/Doug fir. High gradient stream channel w/ springs & bull trout area

Precision

Date Observed
May 2005

Other Comments:
LWD removal & grazing reduce suitable spawning

Name	Phone	Email
JM	996-4010	jmolesworth@fs.fed.us

Primary Type	Condition Rank	ID:
RR	3	160

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email

Primary Type	Condition Rank	ID:
RR	2	66

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:
cattle grazing is removing all understory

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	2	510

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
good riparian forest and brush

Precision
high

Date Observed
2005

Other Comments:
side channels cut off, dikes - this dot represents several parcels up and down stream

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	508

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
side channel blocked by dike

Precision
high

Date Observed
2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	1	509

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:
side channel blocked by dike

Precision
high

Date Observed
2005

Other Comments:

Name	Phone	Email
JM		

Primary Type	Condition Rank	ID:
RR	3	172

Second Type

Tertiary Type

Habitat Type
RR

Location:

Site Description:

Precision

Date Observed

Other Comments:

Name	Phone	Email

Primary Type	Condition Rank	ID:
RR	3	161

Second Type
AS
Tertiary Type
WL
Habitat Type
RR

Location:
below outlet to Patterson Lake

Site Description:
deciduous riparian. Aspen woodlands, wetland veg., beaver activities, regulated flows.

Precision

Date Observed
May 2005

Other Comments:
Wolf Cr. Ditch company nuked the beaver ponds in '05.

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
RR	3	150

Second Type
WL
Tertiary Type

Habitat Type
RR, WL

Location:
Tawlks/Foster Suspension Bridge

Site Description:
cottonwood riparian, beaver ponds. Impressive/extensive beaver ponds throughout cottonwood & mixed conifer/deciduous riparian & spring creeks w/ amaz

Precision

Date Observed
May 2005

Other Comments:
ing chinook spawning activity. MC, NDFW & ONF protected 1/2 of both banks between suspension & Weeman bridges. Developemnt imminent elsewhere.

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
RR	3	400

Second Type
WL
Tertiary Type

Habitat Type
RR

Location:
across Twisp River Rd from Welch's (below Buttermilk Bridge 2 miles)

Site Description:
cottonwood riparian and beaver pond wetland, awesome dynamic struturally diverse wetlands

Precision

Date Observed
summer 2004

Other Comments:
great blue heron rookery (3 nests in 2004) has easement on it next to Jenning CE which is next to USFS river access

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
SS	3	309

Second Type

Tertiary Type

Habitat Type
ss

Location:
Wildlife Area

Site Description:
excellent ss

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	1	305

Second Type

Tertiary Type

Habitat Type
ss

Location:
West Chewuch Road

Site Description:

Precision

Date Observed
2005

Other Comments:
very old field - weedy

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
SS	3	307

Second Type

Tertiary Type

Habitat Type
ss

Location:
top of Eagle Rocks

Site Description:
excellent lithosol plant community

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	3	308

Second Type

Tertiary Type

Habitat Type
ss

Location:
hill top

Site Description:
excellent lithosol plant community

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	3	310

Second Type

Tertiary Type

Habitat Type
ss

Location:
N slope Patterson Mt

Site Description:

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	3	311

Second Type

Tertiary Type

Habitat Type
ss

Location:
Patterson Mt W Slope

Site Description:

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	3	312

Second Type

Tertiary Type

Habitat Type
ss

Location:
Patterson Mt S Slope

Site Description:

Precision

Date Observed
2005

Other Comments:
horned lizard site

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	3	313

Second Type

Tertiary Type

Habitat Type
ss

Location:

Site Description:
outstanding higher elev ss

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	2	317

Second Type

Tertiary Type

Habitat Type
SS

Location:
PM/AJ property

Site Description:
SS hillside - some good condition some not so good

Precision
high

Date Observed
2005

Other Comments:
LINDAL present

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
SS	1	304

Second Type

Tertiary Type

Habitat Type
ss

Location:
West Chewuch Road

Site Description:

Precision

Date Observed
2005

Other Comments:
very old field - weedy

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
SS	3	314

Second Type

Tertiary Type

Habitat Type
ss

Location:
Riser Lake area

Site Description:
good lithosolic ss just s of Riser Lake

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	2	50

Second Type

Tertiary Type

Habitat Type
SS

Location:
French Creek

Site Description:
was really nice; now roaded & developed; irreversible?

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	1	111

Second Type

Tertiary Type

Habitat Type
SS

Location:
Pucket Canyon

Site Description:
heavily overgrazed - most shrubs are hedged; weeds dominant

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
SS	2	63

Second Type

Tertiary Type

Habitat Type
SS

Location:
Lower Alder Creek

Site Description:
weedy & overgrazed; hills have some good pastures

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
SS	2	62

Second Type

Tertiary Type

Habitat Type
SS

Location:
S of Highway 20, N of Finley

Site Description:
weed levels are moderate, perennial grasses are well established over most of area

Precision

Date Observed
2000

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
SS	2	173

Second Type

Tertiary Type

Habitat Type
SS

Location:
between Loup & Red Shirt mine

Site Description:
SS owned/grazed by Vic Stokes; best bunchgrasss community in rangeland I've seen

Precision

Date Observed
Oct 2004

Other Comments:
overgrazing, weeds

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
SS	2	49

Second Type

Tertiary Type

Habitat Type
SS

Location:
Balky Hill

Site Description:
condition improving; important sharp-tail grouse habitat/reintro site

Precision

Date Observed
Jun 2005

Other Comments:

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
SS	2	306

Second Type

Tertiary Type

Habitat Type
ss

Location:
DV property

Site Description:

Precision

Date Observed
2005

Other Comments:
river terrace ss in fair to good condition

Name	Phone	Email
DV		

Primary Type	Condition Rank	ID:
SS	2	48

Second Type

Tertiary Type

Habitat Type
SS

Location:
Texas Creek

Site Description:
good condition; mixed ownership; few roads

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	3	301

Second Type

Tertiary Type

Habitat Type
ss

Location:
mid slope on morrison's hill

Site Description:

Precision

Date Observed
2005

Other Comments:
diverse ss with tall AGSP - few weeds

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
SS	2	71

Second Type

Tertiary Type

Habitat Type
SS

Location:
unnamed creek N. of Cow Creek

Site Description:
state ownership; diverse shrubs & slopes unroaded

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	3	2

Second Type

Tertiary Type

Habitat Type
SS

Location:
Sumner property

Site Description:
bitterroot

Precision

Date Observed
2003

Other Comments:

Name	Phone	Email
KB	996-2870	katharine@methowconservancy.com

Primary Type	Condition Rank	ID:
SS	2	61

Second Type

Tertiary Type

Habitat Type
SS

Location:
Libby Creek-Miller Canyon (SE)

Site Description:
1-2 condition

Precision

Date Observed
6/21/05

Other Comments:

Name	Phone	Email
DJ		

Primary Type
SS

Condition Rank
2

ID:
186

Second Type

Tertiary Type

Habitat Type
SS

Location:
Signal Hill Road

Site Description:
large acreage owned by Howard Johnson family; large pasture around barn & house; otherwise aspen,SS; impressive almost weed-free grassland-dom. SS

Precision
400+ acres

Date Observed
Apr 2005

Other Comments:
Ponderosa woodland too; development/subdivision

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
SS	1	121

Second Type

Tertiary Type

Habitat Type
SS

Location:
Big Buck/Dead Horse Lake

Site Description:
area is heavily grazed; whitetop, knapweed, chichory; spotted knapweed & last yr's toadflax coming in; BRTE CEDI aslo abundant

Precision

Date Observed
6/23/05

Other Comments:
Over last 10 yrs, there has been a considerable & alarming increase in aggressive weedy spps.

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
SS	1	110

Second Type

Tertiary Type

Habitat Type
SS

Location:
Riser Lake

Site Description:
heavily impacted - lots of weeds

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
SS	1	300

Second Type

Tertiary Type

Habitat Type
ss

Location:
top of morrison's hill

Site Description:

Precision

Date Observed
2005

Other Comments:
toadflax patch in degraded ss

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
SS	3	152

Second Type

Tertiary Type

Habitat Type
SS

Location:
Before First Creek; above Cub Cr. - N. side

Site Description:
way cool grass-dominated SS - weed free in '03; partly in MC easement

Precision
100+ acres

Date Observed
Summer 2004

Other Comments:
whitetop & toadflax on adjacent properties

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
SS	1	116

Second Type

Tertiary Type

Habitat Type
SS

Location:
above Bill Shaw Rd.

Site Description:
1-2 condition

Precision

Date Observed
Apr 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
SS	1	248

Second Type

Tertiary Type

Habitat Type
SS

Location:
Balky Hill, Lehman property

Site Description:
heavily grazed - to bare dirt

Precision

Date Observed
6/24/05

Other Comments:

Name	Phone	Email
KR		

Primary Type	Condition Rank	ID:
SS	3	4

Second Type

Tertiary Type

Habitat Type
SS

Location:
above Riser Lake-Lewis Butte (Nof Devin's)

Site Description:
balsamroot/lupine/bitterbrush very rich on both sides of Devin property

Precision

Date Observed
~ 4 yrs. ago; dot

Other Comments:
4-wheelers starting to run slope

Name	Phone	Email
TO	996-4019	tohlson@fs.fed.us

Primary Type	Condition Rank	ID:
SS	3	151

Second Type

Tertiary Type

Habitat Type
SS

Location:
Bondis' backyard in Hoot-n-Holler

Site Description:
weed-free w/ trippy grasslands, forb diversity, bitterbrush chaos; needs fire!

Precision

Date Observed
6/28/05

Other Comments:
building on 3, 2.5 lots

Name	Phone	Email
SB		

Primary Type	Condition Rank	ID:
SS	2	37

Second Type

Tertiary Type

Habitat Type
SS

Location:
Winthrop game range

Site Description:
toadflax is coming in N end of alfalfa & swell between ridge & forest; is small & controllable at this time; Otherwise, there is some very nice intact

Precision

Date Observed
May/Jun 2005

Other Comments:
steppe cheatgrass & other more common weeds present but not as much a threat now.

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
SS	3	3

Second Type

Tertiary Type

Habitat Type
SS

Location:
west Patterson Mtn.

Site Description:
more SS than shows on map

Precision

Date Observed
Jun 2005

Other Comments:
Steve Bondi adds: Awesome SS (Sun Mt. mules graze portion)

Name	Phone	Email
SF	996-3996	

Primary Type	Condition Rank	ID:
SS	1	109

Second Type

Tertiary Type

Habitat Type
SS

Location:
Fuller & surrounding near Boesel; corner of Bear Ck & Stud Horse

Site Description:
sizeable toad flax population high on hill; Lots of other weeds. Heavy browsing by deer

Precision

Date Observed
6/24/05

Other Comments:

Name	Phone	Email
KW		

Primary Type	Condition Rank	ID:
SS	3	148

Second Type

Tertiary Type

Habitat Type
SS

Location:
private land adj. to LBHS

Site Description:
w/ ponds

Precision

Date Observed

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	3	21

Second Type

Tertiary Type

Habitat Type
SS

Location:
Watson Draw

Site Description:
some weeds, one road

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	2	56

Second Type
PP

Tertiary Type

Habitat Type
SS, PP

Location:
Wolf Creek trailhead approach

Site Description:
some old-growth pine; mixed ownership; beautiful views; highly diverse species & landscape

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
SS	2	72

Second Type
WL
Tertiary Type

Habitat Type
SS, VP

Location:
2 mi. N of Leecher Park

Site Description:
w/ ponds; open benches w/ bedrock & vernal ponds & some aspen

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
WL	2	81

Second Type

Tertiary Type

Habitat Type
WL

Location:

Site Description:
Wetland stringer - cattle use area - it is getting weedy. Sulfur cinquefoil coming in. Moose using wetland.

Precision

Date Observed

Other Comments:

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
WL	3	84

Second Type

Tertiary Type

Habitat Type
VP

Location:
pond along road on private land (Bill White property)

Site Description:
unusual spp.; Sagittaria spp. & Runnunculus inamoerus

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
GW		

Primary Type	Condition Rank	ID:
WL	2	86

Second Type

Tertiary Type

Habitat Type
WL

Location:
Sybil Macapia's place up Texas Creek

Site Description:
good condition - she keeps horses out

Precision

Date Observed
2003

Other Comments:

Name	Phone	Email
TO		

Primary Type	Condition Rank	ID:
WL	1	98

Second Type

Tertiary Type

Habitat Type
WL

Location:
off Texas Creek

Site Description:
last time I visited, it was in poor condition; completely overgrazed by cows

Precision

Date Observed
2000

Other Comments:

Name	Phone	Email
BF		

Primary Type	Condition Rank	ID:
WL	2	77

Second Type

Tertiary Type

Habitat Type
WL

Location:
Mission Ponds

Site Description:
Beaver ponds. Condition decreasing

Precision

Date Observed
April 2005

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
WL	3	234

Second Type

Tertiary Type

Habitat Type
VP

Location:
DNR/WDFW between Peter's Puddles & Blethen's old place

Site Description:
Many vernal ponds (dry in drought), sandhill cranes, spade foots, short-eared owls.

Precision

Date Observed
June 2005

Other Comments:
Weeds, cattle

Name	Phone	Email
JM		

Primary Type
WL

Condition Rank
2

ID:
79

Second Type

Tertiary Type

Habitat Type
RR

Location:
Beaver Creek

Site Description:
Condition improving. Beaver pond restoration

Precision

Date Observed
Aug 2004

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
WL	1	315

Second Type

Tertiary Type

Habitat Type
WL

Location:
Riser Lake

Site Description:
Riser Lake and wetlands

Precision
very high

Date Observed
2005

Other Comments:
lots of weeds, impacted by years of grazing

Name	Phone	Email
PM		

Primary Type	Condition Rank	ID:
WL	2	38

Second Type

Tertiary Type

Habitat Type
WL

Location:
Pete Creek - Diamond T

Site Description:
old ??? ??? w/ emergent ???

Precision

Date Observed
Summer/Fall 2004

Other Comments:

Name	Phone	Email
BN	997-9744	

Primary Type	Condition Rank	ID:
WL	2	80

Second Type
AS
Tertiary Type

Habitat Type
VP/WL

Location:
Stean Property

Site Description:
2-3 condition; Aspen

Precision

Date Observed
2005

Other Comments:

Name	Phone	Email
KB		

Primary Type	Condition Rank	ID:
WL	2	181

Second Type
AS

Tertiary Type

Habitat Type
WL

Location:
Gunn Ranch Valley

Site Description:
Aspen and wetlands

Precision

Date Observed
Summer 2005

Other Comments:
2+ condition

Name	Phone	Email
BN	997-9744	

Primary Type	Condition Rank	ID:
WL	2	78

Second Type
LK
Tertiary Type

Habitat Type
WL, LK

Location:
Black Pine Lake & ponds

Site Description:
beaver ponds

Precision

Date Observed

Other Comments:

Name	Phone	Email
DJ		

Primary Type	Condition Rank	ID:
WL	3	17

Second Type
RR
Tertiary Type

Habitat Type
WL, RR

Location:
South end of Big Valley Heath Property

Site Description:
Side channels, ponds, healthy veg.

Precision

Date Observed
June 2005

Other Comments:
Under threat of development

Name	Phone	Email
SF		

Primary Type	Condition Rank	ID:
WL	2	214

Second Type
RR
Tertiary Type
SD
Habitat Type
WL, VP, RR, SD

Location:
Sun Mt. Beaver ponds & downstream to Patterson Lk.

Site Description:
2-3 condition; also Chickadee area

Precision

Date Observed
June 2005

Other Comments:

Name	Phone	Email
SF		