

Little Deschutes River Subbasin

Action Opportunities

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Little Deschutes River Subbasin Action Opportunities

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Little Deschutes River Subbasin Action Opportunities

Introduction and Purpose

Recently, the Upper Deschutes Watershed Council (UDWC) completed an assessment of the natural resources in the Little Deschutes River Subbasin (UDWC 2002). The purpose of the assessment was to use existing information to characterize historical and current watershed conditions for the subbasin and to help the UDWC and residents identify opportunities for voluntary actions to improve fish and wildlife habitat and water quality. This document uses the assessment's findings and conclusions to outline possible UDWC actions to work collaboratively with residents to improve the health of the river, streams, lakes, and surrounding wildlife habitat.

The content and focus of an action plan can vary greatly depending upon the amount of existing information, the extent of community involvement and the potential for watershed enhancement. In small geographic areas where there is extensive landowner input, action plans are typically very focused and specific. In other cases, where there is only scattered landowner involvement, action opportunities are more general because site-specific information is typically not available. In the Little Deschutes River subbasin, an area of approximately 670,000 acres with dispersed population centers, building local support is challenging. However, community-based support needs to be developed before any site-specific actions can be planned. Therefore, this action plan focuses on identifying the steps the UDWC should take to initiate this process of developing local support and building a greater knowledge of site-specific actions needed to promote watershed enhancement.

Little Deschutes River Subbasin Assessment:

Conclusions

The Little Deschutes River Subbasin is a special place. The river, streams, lakes and surrounding areas support unique fish and wildlife populations and habitats. The subbasin's communities – LaPine, Gilchrist, Crescent, Crescent Lake, and other areas – provide a high quality of life and access to unparalleled recreational opportunities.

Throughout Oregon, declining fish and wildlife populations, coupled with water quality problems, are signs that watersheds are in trouble. Despite its outstanding features, the Little Deschutes River Subbasin has not escaped these problems.

The Little Deschutes River Subbasin Assessment concluded that many of the impacts to fish and wildlife habitat and water quality in the river and surrounding uplands are concentrated in the areas of housing, roads, and other human development. Most of the human population in the subbasin is concentrated around the community centers of La Pine, Gilchrist, Crescent, and Crescent Lake. There is significant dispersed development along the lower reaches of the Little Deschutes River between the communities of Sunriver and La Pine – an area characterized by gentle topography and depressions with forested wetlands, marshes and shallow lakes. The Little Deschutes River and other streams in the area are low gradient. These streams originate in the high elevation areas in the southwest portion of the watershed where there is greater precipitation. As lower gradient floodplain areas tend to provide important wetland, fish, and wildlife habitat, the ownership pattern in the Little Deschutes River area has significant implications for natural resource management.

Assessment: Key Findings

Fuel Loading:

Having homes safe from wildfires is a concern for many residents. Fire suppression has increased the amount of dry wood in the area, creating a ready source of fuel for major wildfires.

Riparian Areas and Wetlands:

Loss of wetland and riparian areas, especially in the lower areas along the Little Deschutes River, has affected a number of resources. Water quality has been affected by the reduced wetlands that act as filters of nitrogen; the loss of streamside trees and other vegetation reduces shade that helps keep water temperatures cool. Finally, loss of wetlands and riparian vegetation has reduced important fish and wildlife habitats.

Wildlife:

Population growth and rural development have altered wildlife habitats. Loss of wetlands and streamside vegetation, in addition to other changes in the watershed, has reduced important wildlife habitat. Roads and development have impacted migrating mule deer, increasing collisions between deer and cars and altering deer migration pathways.

Fish:

There has been a significant loss of native trout and an increase in introduced brook and brown trout in the Little Deschutes River and tributaries. Loss of native trout is linked to competition with introduced species, and changes in aquatic habitat and water temperatures.

Water Quality:

Surface water suffers from unusually high temperatures in the summer, which can lead to the abnormal growth of algae and reduced fish populations. Other studies indicated that there are problems with groundwater loading of nitrogen. The use of septic systems, the high water table, and porous pumice soils all contribute to increased nitrogen loading.

Opportunities to Improve Watershed Conditions

The UDWC plays an important role in achieving a healthy watershed. The UDWC seeks to improve the Little Deschutes River Subbasin through voluntary conservation actions. This document outlines a variety of ways to achieve this, primarily through education and voluntary landowner and resident partnerships.

The *Action Opportunities* identifies three action categories that will help reach the UDWC's goal of achieving a healthy Little Deschutes River Subbasin. All of these actions were identified in the Little Deschutes River Subbasin Assessment. These actions are:

Action Opportunity 1: Promote Community Awareness through Education & Public Outreach

Action Opportunity 2: Protect and Restore Key Fish and Wildlife Habitats

Action Opportunity 3: Monitor, Inventory, and Study Key Watershed Resources

The UDWC, through technical help and funding, will develop partnerships to assist landowners and others promote voluntary actions to improve water quality and fish and wildlife habitat in local areas. Actions will focus on each of the opportunity areas to pursue on-the-ground projects, public outreach and education, and monitoring.

Restoring the watershed is a big job that cannot be accomplished by one organization. It will be necessary to develop partnerships and call on resources from other organizations, local government, and state and federal agencies. A listing of organizational resources that UDWC will use to assist with voluntary watershed restoration actions is at the end of the document.

Action Opportunity 1:

Promote Community Awareness through Education Public Outreach

Education and outreach are essential for providing Little Deschutes River Subbasin residents with information needed to restore and protect the health of their watershed. Both children and adults can benefit from information on the status of the watershed's resources as well as information on the appropriate actions to protect and restore fish and wildlife habitats and water quality.

The UDWC will work closely with residents, community groups, schools and other interests to provide information on watershed issues, and engage the community in actions directed toward improving the watershed. A number of mechanisms may be used to promote community understanding and encourage appropriate actions, including workshops, newsletters and educational materials, information on technical support, and demonstration projects. Emphasis will be placed on community education and outreach in these areas:

Key Habitats for Fish and Wildlife:

- The UDWC should provide landowners and others with information about the importance of wetlands and riparian areas to water quality, fish habitat, and wildlife. The UDWC should offer workshops and technical advice to landowners to assist them in pursuing voluntary riparian and wetland restoration actions.
- The UDWC should provide landowners and others with information about the importance of habitats for wildlife species in the watershed. To achieve this, the UDWC should offer workshops and technical advice to landowners, community groups and others to assist them in pursuing voluntary wildlife habitat protection and restoration actions.
- The UDWC should educate residents and others about the status of fisheries resources and habitat. The UDWC should offer workshops and technical advice to landowners to assist them in pursuing voluntary aquatic habitat restoration actions.

Fuel Reduction:

- Through education, workshops, and other mechanisms, the UDWC should encourage private landowners and residents to create defensible space around structures. The UDWC should advise residents to remove fine fuels and needles annually from roofs and around houses to reduce the chance of spot fire ignition during wildfires.

Promote Community Understanding (Continued)

Weeds:

- The UDWC should provide landowners, community groups and other organizations with information about noxious weeds – how they threaten habitats, how to identify them, how they spread, and how to remove them.

Surface and Ground Water Quality:

- The UDWC provides a critical function by disseminating information to the public about water quality goals, study results, and implementation plans. This should link to the development of the Department of Environmental Quality's (ODEQ) TMDL (Total Maximum Daily Limit) and the associated implementation plan. The UDWC should assist the local communities on assuring that there is an open public forum during development of the TMDL, getting the stakeholders involved, assisting ODEQ develop a meaningful implementation plan, and providing the community leadership in implementing restoration actions as they are identified. The UDWC's existing Water Quality Specialist is already working closely with ODEQ throughout this process.
- The UDWC should provide landowners, community groups and other stakeholders with information regarding the importance of ground water quality and the impact of their actions on this resource. UDWC can offer workshops and technical advice to landowners to assist them in efforts to protect ground water quality. Together, UDWC and landowners can assess the potential for developing and implementing Home*A*Syst and Lake*A*Syst Programs. These are programs designed to teach homeowners and stream/lake front property owners how to conduct an inventory of their property to determine how their activities may be impacting surface and groundwater.
- The UDWC should provide landowners, community groups and other stakeholders with information about the importance of surface water quality and provide education about the actions that have an impact on this resource. The UDWC should offer workshops and technical advice to landowners to assist them in efforts to protect and restore surface water quality.

Action Opportunity 2:

Protect and Restore Key Fish and Wildlife Habitats

The Little Deschutes River Subbasin still retains many of the habitats important for diverse and healthy fish and wildlife populations. Many important habitats, such as the continuous riparian areas and wetlands along the lower river, are now reduced to fragments. Protecting these habitats, restoring priority aquatic, riparian, wetland, and upland habitats is an important and ongoing need.

Habitat protection actions will involve working with landowners on voluntary actions to conserve habitat values into the future. There are a variety of approaches for protecting key areas, many of which offer significant tax and other incentives to the willing landowner. Restoring aquatic, riparian/wetland, and upland areas, in concert with habitat protection efforts, is essential for resilient fish and wildlife populations, and also for high quality water. Restoration actions can focus on a variety of actions to restore habitat quality. Examples include planting native vegetation along the riverbanks and adding logs or other natural materials in the river to enhance fish habitat quality.

River and Stream Habitats:

- The UDWC should work with Oregon Department of Fish and Wildlife (ODFW) to develop and help implement voluntary Habitat Improvement Plans for private lands in the Little Deschutes. The plans would identify needs based on habitat surveys, volunteer capability, and available programs for projects. The UDWC should act as a clearinghouse for information on habitat improvement programs such as ODFW's Access and Habitat Program. In addition, the UDWC should develop information packages and provide information to landowners on issues such as permitting and working with contractors.
- UDWC should seek landowners who are willing to implement fish habitat restoration demonstration projects on their lands. Through site visits and tours, these projects will serve as examples of effective voluntary stream restoration actions.
- Building on the habitat improvement plans and landowner demonstration projects, the UDWC should seek landowners who can work cooperatively on voluntary stream and river restoration projects. Where possible, the UDWC will seek projects that can integrate riparian restoration actions with stream enhancement activities – such as, combining riparian planting / fencing with in-channel log placements.

Protect and Restore Habitats (Continued)

Riparian Areas and Wetlands:

- The UDWC should seek landowners who are willing to implement riparian and wetland habitat restoration demonstration projects on their lands. Through site visits and tours, these projects will serve as examples of voluntary riparian restoration actions.
- Voluntary protection and enhancement of the riparian zones and wetlands can also be achieved through long term planning and protection. The UDWC should work with the local land conservancy and county, state, and federal agencies to pursue efforts at a broader scale to protect riparian areas through voluntary measures such as conservation easements.

Wildlife Habitats and Forested Areas:

- The UDWC should seek landowners who are willing to implement wildlife habitat restoration demonstration projects on their lands. Through site visits and tours, these projects will serve as examples of voluntary wildlife habitat restoration actions.
- By developing partnerships among homeowners and land management agencies, the UDWC should create strategic fuel reduction zones using mechanical fuel reduction treatments.
- Building on the fuel reduction zones and landowner demonstration projects, the UDWC should seek landowners who can work cooperatively on voluntary wildlife and fuel reduction projects. Where possible, the UDWC will seek projects that can integrate fuel reduction with wildlife habitat enhancement.

Action Opportunity 3:

Inventory, Monitor, and Study Key Watershed Resources

The Little Deschutes River Subbasin Assessment used existing information to characterize the status of the subbasin's resources. No new field inventory information was collected to examine fish and wildlife habitat or water quality. In order to prioritize and plan future restoration actions, it may be necessary to collect specific resource information. In addition, monitoring the current conditions and trends in water quality will require a coordinated and ongoing effort.

This section outlines opportunities for resource inventories, studies, and monitoring. All of these information-gathering efforts will benefit from voluntary support from watershed residents and others.

Key Habitats for Fish and Wildlife:

- The UDWC should conduct a riparian and wetland inventory and mapping survey using aerial photography and systematic field checks throughout the watershed. After obtaining permission from cooperative landowners and agencies for land access, the UDWC will use this inventory to identify type, extent, and condition of wetlands/riparian areas in the watershed. Where appropriate, the riparian/wetland mapping should include flood plain areas.
- Site-specific information is needed to focus aquatic habitat restoration projects, especially within private land holdings. The UDWC should provide the leadership and community organization needed to develop a useable habitat assessment and habitat improvement inventory. UDWC volunteers can conduct the survey with willing landowners to facilitate ready transfer of information and develop communication and trust with the local community. Agency specialists (ODFW, USFS) could provide the necessary technical expertise and quality control over the process.
- In cooperation with the County, the UDWC should analyze current development and potential trends to identify if an undeveloped corridor along the east-west axis of the Little Deschutes River Subbasin can be identified and maintained.

Fuel Reduction:

- The UDWC should conduct, in cooperation with the Oregon Department of Forestry, fuel load surveys on public and private lands.

Inventory, Monitor, and Study (Continued)

Surface and Ground Water Quality:

- The UDWC should encourage state and local agencies to implement follow-up studies on water quality and linkages to pollution sources. Specifically, there may be a need to investigate further the linkage between individual septic systems and surface water quality.
- The aquatic habitat surveys should incorporate water quality issues such as canopy cover, streambank erosion, and riparian area widths.
- The ODEQ is conducting an intensive study that will address information gaps relevant to temperature, dissolved oxygen, and nutrients. Other data gaps should be identified for possible UDWC cooperative monitoring after following the completion of the ODEQ study.
- The UDWC should include the major contaminants identified by the ODEQ study in the existing long-term water quality monitoring program. These monitoring parameters may include temperature, nutrients, and bacteria.
- The ODEQ study is not addressing bacterial concentrations in the Little Deschutes River. Although the primary concern with septic systems is leaching of bacteria, pathogens, and nutrients to groundwater, there is a potential for contamination of surface waters with nonfunctional systems. The UDWC should consider monitoring fecal bacteria indicators in surface waters along the urban/suburban boundary. Volunteers can readily conduct a study of bacterial contamination with assistance from qualified professionals from ODEQ or the local public health agencies.

Organizational Resources:

Support for Voluntary Watershed Restoration Actions

Upper Deschutes Watershed Council (UDWC)

The Upper Deschutes Watershed Council is a 501(c)3 non-profit organization founded by landowners, ranchers, environmental interests, local citizens, and representatives from local governments and agencies. The UDWC is committed to fostering stewardship of the Upper Deschutes River basin through cooperative, voluntary efforts with watershed landowners, residents and other stakeholders. The locally-led approach assures that a balance of interested and affected persons within the watershed are at the table to craft effective management strategies for our watershed resources. Using watershed assessments and action plans to evaluate and prioritize projects, the UDWC focuses on developing a coordinated and integrative approach to protecting and enhancing watershed health.

Deschutes Resources Conservancy (DRC)

The Deschutes Resources Conservancy (DRC) is a non-profit organization whose goal is to improve water quantity and quality in the Deschutes River subbasin. The DRC supports projects in the subbasin, from tributary headwaters to the Columbia River, that result in sustainable economic and environmental benefits. Transactions include working with landowners to secure voluntary conservation easements, water rights trades or purchases, and irrigation system improvements.

Oregon Water Trust (OWT)

Oregon's Instream Water Rights Law allows water right holders to donate, lease, or sell some or all of their water rights for transfer to instream use. Oregon Water Trust (OWT), a private, non-profit group, negotiates voluntary donations, leases, or permanent purchases of out-of-stream water rights to convert to instream water rights in those streams where acquisition will provide the greatest potential benefits for fish and water quality. OWT has completed instream leases on a number of streams in the Deschutes Basin. These water rights are held in trust for the people of Oregon by the Oregon Water Resources Department.

Oregon Watershed Enhancement Board (OWEB)

The Oregon Watershed Enhancement Board funds and supports voluntary actions that strive to enhance Oregon's watersheds. OWEB administers a grant program that awards more than \$20 million annually to support voluntary efforts by Oregonians seeking to improve watershed conditions. In addition to project funding, OWEB assists landowners and watershed councils through technical assistance and guidance on watershed assessment and monitoring.

Support for Voluntary Restoration Actions (Continued)

Oregon Department of Forestry (ODF)

Oregon Department of Forestry enforces the Oregon Forest Practices Act on all forest lands not federally owned. The Forest Practices Act contains guidelines to protect fish bearing streams during logging and other forest management activities. These guidelines include stream buffer zones and riparian management areas, as well as, road maintenance and construction standards and other topics.

ODF also provides technical assistance to non-industrial forest landowners concerning insects, diseases, harvest techniques, and reforestation. ODF works with forest landowners to develop timber management plans and administer federal cost-share programs to encourage good forest management practices.

Oregon Department of Environmental Quality (ODEQ)

The Oregon Department of Environmental Quality (ODEQ) is responsible for monitoring and maintaining air and water quality. This responsibility includes implementing the 1972 Federal Clean Water Act and enforcing state water quality standards for protection of aquatic life and other beneficial uses. DEQ is instrumental in designating 303 (d) water quality limited streams and in developing TMDLs in those streams.

The Clean Water Act requires each state to set Total Maximum Daily Load allocations (TMDL) for each water body on the 303(d) list. TMDLs are an analytical process for describing the maximum amount of pollutants (for example, temperature, bacteria, and nitrogen) from all sources that may enter a specific water body without violating water quality standards. Collection of water quality data is a component of the development of TMDLs. Oregon Department of Environmental Quality (ODEQ) data collection efforts concentrate on collecting additional data for parameters already included on the 303(d) list. Monitoring has begun in the Little Deschutes River subbasin, with TMDL development in 2002.

Oregon Water Resources Department (OWRD)

The Oregon Water Resources Department regulates water use in the Deschutes River subbasin. Guidelines for appropriation of water (ORS 537) determine the maximum rate and volume of water that can be legally diverted from the streams in the subbasin. OWRD also acts as trustee for instream water rights issued to the state of Oregon and held in trust for the people of the state. Oregon's water law requires that all diverted water be used beneficially and without waste.

Oregon Department of Transportation (ODOT)

The Oregon Department of Transportation maintains public highways that cross streams in the Deschutes River subbasin. Under initiative through the Oregon Plan for Salmon and Watersheds, efforts to improve protection and remediation of fish habitat impacted by state highways are ongoing.

Support for Voluntary Restoration Actions (Continued)

Oregon Department of Agriculture (ODA)

The Oregon Department of Agriculture oversees several programs that address soil, water, and plant conservation in the Deschutes River subbasin. Soil and Water Conservation Districts and Coordinated Resource Management Planning (CRMP) are under the administrative province of the ODA. Soil and Water Conservation Districts develop long-range and annual plans of work to address local resource issues. The CRMP group addresses watershed management issues within specific subbasins and develops stream restoration goals and objectives.

Oregon Department of Fish and Wildlife (ODFW)

Oregon Department of Fish and Wildlife has worked with public agencies and private landowners to improve existing practices through planning processes and direct habitat improvement projects in the subbasin.

ODFW Riparian Fencing:

ODFW has received grants from the Restoration and Enhancement program, Oregon Watershed Enhancement Board, and the National Wildlife Heritage Foundation to cost share fencing projects to improve riparian areas and fish habitat on both private and public lands. ODFW has cost shared fencing projects with private landowners on a number of streams in the Deschutes River Basin.

ODFW Diversion Screening:

An active program is underway to screen diversions to prevent fish from being stranded and dying in canals. Screening has been completed at diversions in the Deschutes River Basin. Progress is ongoing to cost share and install additional screens on private lands. Funding for screens are available through tax credits, OWEB and other sources.

ODFW Instream Habitat Structures:

ODFW has worked with landowners in the subbasin to place boulder and log instream structures to increase habitat diversity and provide cover and rearing habitat.

County Soil and Water Conservation Districts (SWCD)

The Deschutes and Klamath County Soil and Water Conservation Districts work with farmers and ranchers to develop farm conservation and resource management plans. The SWCD administers grants and projects to encourage conservation work on private lands in the Deschutes River subbasin. SWCDs provide local leadership for the USDA Environmental Quality Incentive Program. SWCDs make available Natural Resources Conservation Service technical assistance within their jurisdiction.

With oversight and funding from ODA, the SWCD is the local management agency for management plans to address agricultural water quality problems as required by State Senate Bill 1010.

Support for Voluntary Restoration Actions (Continued)

County Planning Departments

The Deschutes and Klamath County Planning Departments regulate land use on the county level. County comprehensive land use plans establish land use policies, zoning ordinances, and maps defining urban growth boundaries, forest, agricultural and industrial lands according to statewide goals. They address protection of water bodies, ground water, natural areas, and fish and wildlife resources. These plans have helped minimize impacts to big game habitat, particularly deer and elk winter range.

Deschutes County: Regional Problem Solving

There is regional problem solving process in place for south Deschutes County (LaPine area) to address septic problems associated with 13,000 residential plats from the 1960's and 1970's. At least 1,800 of these lots have shallow water tables and building on them would create a groundwater pollution problem. Deschutes County has acquired a piece of BLM land to provide alternate buildable parcels for those private landowners with undeveloped plats with high water tables to trade for their unbuildable lots.

Natural Resources Conservation Service (NRCS)

The Natural Resources Conservation Service is the federal agency within the U.S. Department of Agriculture (USDA) that provides financial, technical, and educational assistance to implement conservation practices on privately owned land. Using this help, farmers and ranchers in the Deschutes River Basin apply practices that reduce soil erosion, improve water quality, and enhance forestland, grazing land, and wildlife habitat. USDA funded cost-share programs are funded through the Commodity Credit Corporation (CCC) and administered by the Farm Service Agency (FSA); NRCS provides technical support for these programs. All USDA incentive and cost-share programs require landowner participants to develop a conservation plan for the practice, inspection of the project site to determine that the practice has been installed as planned, and an annual status review. If a landowner installs a practice and does not maintain or continue that practice as outlined in the conservation plan, he is required to pay back the cost-share monies and pay an additional penalty.

References

UDWC. 2002. Little Deschutes River Subbasin Assessment. Prepared for UDWC by Watershed Professionals Network.