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RIPARIAN CORRIDORS

A *riparian area* is defined as the area of transition from an aquatic ecosystem to a terrestrial ecosystem. A *riparian corridor* is the area within a boundary established along both sides of a waterway, including the riparian area and any associated wetlands. **Oregon Statewide Planning** Goal 5 requires riparian corridor regulations to be applied to those waterways identified as being *fish-bearing streams*, and any other waterways having riparian areas determined to be significant. A fish-bearing stream is one inhabited anytime of the year by anadromous or game fish, or fish listed as *threatened* or *endangered* under federal or state *Endangered Species Acts*. According to **the Oregon Department of Fish and Wildlife (**ODFW**)**, fish-bearing streams in the **2010** Medford **Urban Growth Boundary (**UGB**)** include Bear Creek, **and portions of Elk Creek, Swanson Creek, Lone Pine Creek, Lazy Creek,** Larson Creek, **Gore Creek,** and ~~Lone Pine~~ **Crooked** Creek~~ downstream of Biddle Road32~~. Due to their use by indigenous anadromous salmonids, these streams are considered "essential salmon habitat" by DSL. **Medford's Riparian Corridor ordinance was adopted on June 1, 2000 to meet the requirements of Goal 5.** See **Figure 7** for a map indicating the riparian corridors in the **2010** Medford UGB.

RIPARIAN INVENTORY AND ASSESSMENT: BEAR CREEK TRIBUTARIES

Medford completed an inventory of the tributaries to Bear Creek in the Medford UGB in June 2002. The purpose of the project was to inventory the riparian habitat along the streams and assess riparian area functions. The consultant assessed the function of the stream reaches for flood management, wildlife habitat, thermal (temperature) regulation, and water quality protection. A set of four drainage basin maps delineates the streams by "reach". Riparian reaches are segments of streams and adjacent riparian areas that have similar physical characteristics such as vegetation type, slope, geomorphic stream features (e.g., pool, riffle, or run), or land use. The riparian areas on the right and left sides of a stream are considered separate reaches. Land use changes, followed by changes in riparian vegetation, were the most common factors used to identify reaches. A minimum reach length of 300 feet was used.

The riparian function of each reach was assessed using Riparian Characterization Forms and Riparian Function Assessment Forms, which have multiple-choice questions related to its ability to provide flood management, wildlife habitat, thermal (temperature) regulation, and water quality protection. Each answer has an associated point score, and the total score for each of the four functions indicates if the level for that reach is high (intact), medium (somewhat degraded) or low (severely degraded). A set of four function (flood management, wildlife habitat, thermal (temperature) regulation, and water quality protection) maps shows the level for each of the reaches. The document and maps are viewable or downloadable as a PDF from the City of Medford website.

BEAR CREEK

Bear Creek, which traverses north/south through the center of the Medford UGB, and its riparian areas provide a particularly valuable habitat for riparian mammals, reptiles, and amphibians, and a wide variety of migratory and resident bird species. Both anadromous and resident fish species are present in Bear Creek. However, the long range potential for

preservation and maintenance of aquatic life is limited unless the water quality of Bear Creek is improved. **Bear Creek, in the entire 2010 Medford UGB, is designated a Riparian Corridor.** By implementing the provisions of Goal 5 for riparian corridors, fish populations found in Bear Creek, including winter and summer steelhead, ~~coho~~**Coho** salmon, spring and fall ~~chinook~~**Chinook** salmon, cutthroat trout, and resident rainbow trout, will continue to improve. **Figure 8** suggests measures individuals and landowners can take to help improve instream salmon and habitats.

The Bear Creek Greenway, a linear park that also provides valuable habitat for wildlife, was first conceived in the 1960s. The ultimate goal of the Bear Creek Greenway Foundation is the completion of the Greenway from Ashland to ~~Central Point, and eventually to~~ the confluence with the Rogue River near Gold Hill. The multi-use path, which follows the creek within the Bear Creek Greenway, was designated as a National Scenic Trail in 1975, and is part of the Oregon Recreational Trail system. In the Medford area, the path, from ~~Barnett~~ **South Stage** Road ~~north~~ to East Pine Street in Central Point near the Jackson County Expo (fairgrounds), is complete. **Additional street and off-street segments extend it to Blackwell Road.** With access points to the path at a number of major arterial streets in Medford, the path serves as a primary means to travel by bicycle or foot in a north-south direction through central Medford. ~~A missing link in the Greenway path especially important to Medford is the 6.3-mile section between Barnett Road and the city of Talent.~~

The Bear Creek riparian corridor within the Medford UGB north of ~~Barnett Road~~**the new Interstate 5 South Interchange at Highland Avenue** is highly developed to within 20 or 25 feet of the creek, but south of ~~Barnett Road~~**the interchange**, contains significant wildlife habitat and is relatively undeveloped. **Much of the corridor south of the interchange is in public ownership, including in the City's U.S. Cellular Community Park and several County-owned Greenway parcels.**

~~Medford undertook the protection of its most valuable wildlife habitat by adopting the Bear Creek (B-C) Overlay Zoning District in 1989. According to the *Medford Land Development Code*, the purpose of the Bear Creek overlay zone was to *"preserve, protect, and develop the natural beauty and distinctive character of the principal waterway for both private and public outdoor recreation and scenic use, and to protect the public health and the property values in the vicinity."*~~

~~The Bear Creek overlay zone was applied to parcels within and adjoining Bear Creek, and was intended to accomplish a number of objectives. One clearly defined objective of the overlay zone was to address the importance of wildlife habitat preservation. Other objectives included enhancing the environment, coordinating the implementation of the Bear Creek Greenway within the city, promoting stream-oriented activities, increasing the value of properties abutting Bear Creek, preventing visual and physical pollution of the creek, and restoring Bear Creek and its tributaries as a community asset. The ordinance applied a 20 or 25-foot structural setback from the top of the bank and required Site Plan and Architectural Commission review for development projects within the overlay zone. Activities within the waterway required a Conditional Use Permit. A Riparian Corridor Ordinance that meets the new requirements of Goal 5 and applies to all riparian corridors within the city, is proposed to replace the Bear Creek overlay zone. (See the following Riparian Corridor Ordinance section.)~~

LARSON CREEK

The Larson Creek stream system is another significant stream system within the UGB that has the potential to become a showcase anadromous fish-bearing stream~~s~~ system. Although needing enhancement, it still has the potential to return to a properly functioning condition.~~33~~ Many of the branches and tributaries of Larson Creek are intermittent streams that run low or under gravel during the summer months. Those that are not intermittent may be supplemented by irrigation **return flows**~~activities~~. Although impacted by urban development, the section of the creek between Bear Creek and North Phoenix Road contains some important riparian areas and wetlands, and is suitable for enhancement and restoration activities. A multi-use path has been planned along this section of the creek since the 1970s, although only~~ a~~ small section**s**~~,~~ between Black Oak Drive and ~~Murphy Road~~**Larson Creek Drive**~~,~~ ha**ve**~~s~~ been constructed.

The three forks of Larson Creek that traverse the Southeast Area were once all fish-bearing streams that provided steelhead spawning and rearing habitat. A Medford Irrigation District (MID) canal along North Phoenix Road intercept**ed**~~s~~ each fork, reducing or preventing fish **passage**. ~~It has been suggested that, if~~ **An improvement project has reconnected** the South Fork ~~were to be reconnected~~ with the Middle Fork **just east of North Phoenix Road,** ~~before reaching the canal, it would~~ enhanc**ing**~~e~~ fish passage. **The canal in this area has been piped. Larson Creek is designated a Riparian Corridor from Bear Creek to North Phoenix Road,. In addition, the South Fork is designated a Riparian Corridor from North Phoenix Road, east to the 2010 Medford UGB.**

~~A "tread lightly" approach is also important in storm drainage planning for Southeast Medford. Riparian improvements could potentially be used to mitigate for lost riparian wetlands.~~

Recognizing that Southeast Medford is significant to the overall health of Larson Creek, the Southeast Plan of the "General Land Use Plan Element" and the Southeast (S-E) Overlay Zoning District, adopted in 1998, provide for a "Greenway" designation applied to all three forks of the creek. The overlay district provides a 50-foot structural setback **in most segments** and restrictions on activities within the setback area. Riparian and instream enhancement activities are encouraged. The vegetative cover is also encouraged to remain as close to natural conditions as possible. Healthy, lush vegetation provides not only cover from fish predation and regulation of water temperature, but also habitat for food sources (insects), and reduces stress by limiting disturbance to the fish. **Multi-use paths are planned along forks of the creek, and small segments have been constructed as of 2010.**

SWANSON CREEK

A small portion of the Swanson Creek drainage basin is within the 2010 Medford UGB. Swanson Creek, located north of Vilas Road, is a tributary to Whetstone Creek, and is perennial due to irrigation return flows. Swanson Creek is designated a Riparian Corridor from the 2010 Medford UGB, east 0.38 miles to Highway 62.

ELK CREEK

The Elk Creek drainage basin in the 2010 Medford UGB contains Elk Creek and a single remnant segment of an unnamed tributary. All reaches of the Elk Creek drainage basin are perennial due to irrigation return flows. All of the streams and riparian areas in the basin have been modified by human activity, including placement of long stream segments into underground pipes, stream channelization, removal of woody vegetation, residential, commercial and industrial development, haying, grazing and mowing for fire control. The

lower 1.5 miles of Elk Creek are piped. Elk Creek is designated a Riparian Corridor from Beall Lane (the 2010 Medford UGB), south 0.05 miles.

LONE PINE CREEK

The Lone Pine drainage basin contains Lone Pine Creek, and a number of unnamed tributaries in the upper portion of the basin. The lower reaches are perennial due to irrigation return flows. The upper reaches are intermittent. There are several large wetland areas along stream segments in the middle portion of the basin. Almost all of the streams and riparian areas in the basin have been extensively modified by human activity including placement of long stream segments into underground pipes, stream channelization, placement of stream segments in concrete channels, removal of woody vegetation, residential development, agricultural cropping, mowing for fire control and grazing. Lone Pine Creek is designated a Riparian Corridor from Bear Creek, east 1.38 miles to Highway 62.

LAZY CREEK

The Lazy Creek drainage basin contains Lazy Creek, and a number of unnamed tributaries in the upper portion of the basin. The lower reaches are perennial due to irrigation return flows. The upper reaches are intermittent. There are three large wetland areas directly above the confluence with Bear Creek. The wetlands appear to contain the original channel of Lazy Creek prior to the excavation of a new channel at some time in the past. Almost all of the streams and riparian areas in the lower reaches of the basin have been extensively modified by human activity including placement of long stream segments into underground pipes, stream channelization, placement of stream segments in concrete channels, removal of woody vegetation, residential development, golf course development, and mowing for fire control.

The upper reaches have not been as consistently modified by human activity as the lower reaches; however, a number of the upper reaches have had extensive modification due to the placement of stream segments into underground pipes, removal of woody vegetation and residential development. The highest reaches in the Lazy Creek drainage basin are in the least developed landscapes in the Medford UGB, and have been impacted only through grazing activity and construction of dirt roads. These areas have relatively undisturbed stream channels and riparian areas with intact native Oregon White Oak savanna plant communities. The stream channel is usually a willow-dominated wetland within a narrow gully. The banks of the gully have Oregon Ash and willow, and Oregon White Oak grow at the top of the bank. Lazy Creek from is designated a Riparian Corridor Bear Creek, east 1.94 miles.

GORE CREEK

Gore Creek is located in the Bear Creek South drainage basin. It is perennial due to irrigation return flows. It has been extensively channelized, and its riparian areas have been modified by construction of apartments, warehouses, parking lots, agricultural cropping and grazing. The lowest reach near Bear Creek, once containing black cottonwood, willow and Oregon Ash, has been rerouted. Gore Creek is designated a Riparian Corridor from Bear Creek, southwest 0.82 miles to the railroad tracks.

CROOKED CREEK

The Crooked Creek drainage basin contains Crooked Creek and a single tributary, Hansen Creek. All of the reaches are perennial due to irrigation return flows. All of the streams and riparian areas in the basin have been modified by human activity including placement of long

stream segments into underground pipes, stream channelization, removal of woody vegetation, residential and industrial development, haying, golf course development, and mowing for fire control. The lower one half mile of both Crooked and Hansen Creeks are piped. Riparian areas in this basin have limited woody vegetation. Crooked Creek is designated a Riparian Corridor from Bear Creek, southwest 2.24 miles to South Stage Road (the 2010 Medford UGB).

RIPARIAN CORRIDOR ORDINANCE

As noted in the "Water Quality" section, to comply with Goal 5 requirements for –riparian corridors, specific regulations must be adopted in the Medford *Land Development Code*.

Per the Medford *Land Development Code*, the purposes of establishing riparian corridors are:

(1) To implement the goals and policies of the "Environmental Element" and the "Greenway" General Land Use Plan (GLUP) designation of the *Medford Comprehensive Plan* and achieve their purposes.
(2) To protect and restore Medford's waterways and associated riparian areas, thereby protecting and restoring the hydrologic, ecologic, and land conservation functions these areas provide for the community.
(3) To protect fish and wildlife habitat, enhance water quality, control erosion and sedimentation, and reduce the effects of flooding.
(4) To protect and restore the natural beauty and distinctive character of Medford's waterways as community assets.
(5) To provide a means for coordinating the implementation of the Bear Creek Greenway and other greenways or creek restoration projects within the City of Medford.
(6) To enhance the value of properties near waterways by utilizing the riparian corridor as a visual amenity.
(7) To enhance coordination among local, state, and federal agencies regarding development activities near waterways.

~~The objectives of Medford's proposed Riparian Corridor Ordinance include:~~
~~To protect and restore Medford's waterways and associated riparian areas, thereby protecting and restoring the hydrologic, ecologic, and land conservation functions these areas provide for the community.~~
~~To protect fish and wildlife habitat, enhance water quality, control erosion and sedimentation, and reduce the effects of flooding.~~
~~To protect and restore the natural beauty and distinctive character of Medford's waterways as community assets.~~
~~To provide a means for coordinating the implementation of the Bear Creek Greenway within the City of Medford.~~
~~To enhance the value of properties near waterways by utilizing the riparian corridor as a visual amenity.~~

When reviewing development applications for properties containing a riparian corridor, the approving authority ~~will~~ **must** consider how well the proposal satisfies these objectives. As required by Goal 5, the ordinance provides for a riparian corridor boundary of 50 feet, measured from the top-of-bank along both sides of waterways with an average annual flow of less than 1,000 cubic feet per second (cfs) and identified as being fish-bearing streams, or other waterways having riparian areas determined to be significant.

To sustain and enhance Medford's existing wildlife habitats, both aquatic and terrestrial, it is important to identify and designate areas as riparian corridors, greenways, wetlands, and other open space preserves. These areas will not only sustain wildlife habitat, but also satisfy the requirements for its protection as mandated by Goal 5. Preserving the existing natural corridors is critical to the preservation and enhancement of wildlife for several reasons. For terrestrial wildlife, particularly those species that require large home ranges, connecting corridors are an essential habitat element, as they permit access into areas that may be otherwise too small to use if isolated. For less transient species, corridors are important in the long-term as they allow movement between populations, providing for genetic exchange and more healthy individuals.