

**Big Marsh Creek  
&  
The Little Deschutes River**  
*Wild and Scenic Rivers*  
**Management Plan**

**Crescent Ranger District  
Deschutes National Forest  
Klamath County, Oregon**

# MANAGEMENT PLAN

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# INTRODUCTION

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## **Management Area Locations**

Two new management areas will be formed, one for each river corridor. The specific management area numbers will be assigned and standards and guidelines will be numbered as part of the implementation process.

The Management Plan for Big Marsh Creek Wild and Scenic River corridor applies from the headwaters to its confluence with Crescent Creek. Other management allocations overlapping or included within this area are Late Successional Reserve (NWFP), Riparian Reserve (NWFP), and Oregon Cascades Recreation Area (Congressionally designated and 1990 LRMP). Objectives for management are also found in the recreation opportunity spectrum (ROS) management emphasis and the Visual Quality Objectives for maintaining scenery (LRMP).

The Management Plan for the Little Deschutes River corridor applies from the headwaters to the private property boundary at Two River North subdivision. Other management allocations overlapping or included within this area are Riparian Reserve (NWFP), Riparian Habitat Conservation Areas (INFISH), Oregon Cascades Recreation Area (Congressionally designated and 1990 LRMP), and Mt. Thielson Wilderness (Congressionally designated). Objectives for management are also found in the recreation opportunity spectrum (ROS) management emphasis and the Visual Quality Objectives for maintaining scenery (LRMP).

## **Plan Goals**

This management plan aims to protect and enhance the resource values for which each river was designated into the Wild and Scenic Rivers System, and which contribute to the current character of the rivers. The goal is to maintain this current character with an emphasis on identifying and rehabilitating degraded resources.

The following discussion defines desired condition in fairly broad terms, presenting a vision of the desired state of particular resources in the river corridors. This discussion should serve as a basis for determining how to interpret the more specific standards and guidelines when conflicts arise or when clarity is needed. Actions that lead toward the desired conditions over the long term should be considered consistent with this plan. Actions that lead the corridors away from those conditions over the long term should not be considered consistent with this plan.

### **Big Marsh Creek**

*Scenery* – Big Marsh Creek and its environs provide a rich variety of scenic experiences, dominated by a natural-appearing landscape, where human use is evident but largely subordinate. This includes views from the marsh to middle and background views, as well as views of the creek and marsh from roads and trails. Facilities for the purpose of protecting river values are rustic in character, and blend with the natural surroundings.

*Vegetation* – A variety of native and desirable non-native vegetation can be found in the corridor, with thriving riparian communities prominent in the aquatic zones. Upstream and downstream from the marsh, riparian vegetation exhibits high species diversity, from grasses to sedges to willows, with conifer encroachment minimal. Noxious weeds and other undesired non-native species are also rarely found.

*Geology and Hydrology* – The marsh serves as a prime example of a rare high-mountain ecosystem, providing clean water, diverse habitat for thriving populations of plants, animals, and fish, and remarkable interpretive opportunities.

*Wildlife* – A diversity of wildlife (birds, mammals, and amphibians) find habitat within the riparian areas and the marsh, and in the upland forests that surround the marsh and corridor. This habitat may be constant and predictable for some species (e.g. amphibians) to carry out their complete life cycles, or it provides the transitory yet critical security necessary for some other species (such as sandhill cranes) to reproduce before moving out of the corridor. The marsh and its environs attract this variety of life because of the clean, abundant water, diversity of vegetation, and relatively low amount of disturbance by roads and other human causes.

*Fish Habitat* – Big Marsh Creek provides high quality fish habitat for native redband trout, as well as potential for bull trout habitat if the natural outflow from the marsh becomes cooler. Over time, the marsh may serve as a reservoir for cooler water as more water is retained in the water table and less water flows through directly on the surface. Historic flow patterns (i.e. no ditches) return to the marsh through active rehabilitation.

Upstream and downstream from the marsh, Big Marsh Creek contains an appropriate amount of woody material to provide channel formation, shade (for fish cover and temperature regulation), and invertebrate habitat. Habitat and stream conditions would favor native species of fish, invertebrates, etc. Within the marsh itself, fewer pieces of wood are found, but well-vegetated, overhanging stream banks offer high quality fish cover.

*Recreation* – Big Marsh creek provides opportunities for semi-primitive recreation experiences associated with wildlife watching, dispersed camping, hunting, fishing, hiking, and canoeing. Motorized access is available on roads; non-motorized transportation (e.g. hiking) are available for off-road use. On-water uses are non-motorized (canoeing, float-tubes, etc.). Opportunities for winter use such as cross-country skiing and over-snow machine travel, are available as part of the OCRA experience.

*Roads and Access* – The road system reaches key portions of the Big Marsh Creek corridor to provide for recreation opportunities and effective fire-fighting capability; yet most of the corridor is either unroaded or has a very low road density (less than 1 mile per square mile), in order to provide the highest possible wildlife habitat effectiveness and to reduce the risk of water quality degradation occurring from roads.

*Water Quality/Quantity* – Abundant amounts of water flow through the marsh to maintain it as a natural wetland system. Flows fluctuate appropriately for the season. Water table fluctuates at historic levels, which allows for historic processes to occur. The marsh dampens spring runoff and provides more even water temperatures downstream.

*Private Land* – Lands held in private ownership are managed follow State land-use law, Klamath County land-use ordinances, and other appropriate jurisdictions, so that the

river's free-flowing character and water quality are maintained at current levels. Activities, whether grazing, logging, or other agricultural practice are undertaken to reduce impacts to the riparian zone and to eliminate impacts to stream banks. Bank-side shade is provided by abundant vegetation and contributes to lower water temperatures and quality fish habitat. No new impoundment or diversions exist, and as possible using voluntary agreements and water-rights buyouts, those diversions in place at the time of the river designation are reallocated to in-stream flows.

As important as fully complying with laws, private land owners understand and value the Wild & Scenic River system. Land owners take advantage of the technical assistance available to them because their lands lie within such a corridor. Land owners willingly enter into appropriate partnerships with Federal and State agencies to maintain river values. Educational information is widely available to land owners for their use and for their distribution.

Future development occurs as appropriate to maintain water quality, free-flowing character, and other river values. State and County agencies participate in enforcement and educational programs that inform the appropriate land use decisions.

### **Little Deschutes River**

*Scenery* – The character and appearance of the Little Deschutes River will be essentially the same as it is now. Visual variety is primarily between age classes. Within the OCRA portion of the corridor, scenic experiences are dominated by a natural-appearing landscape, where human use is evident but largely subordinate. Throughout the General Forest allocation, the scenery includes more evidence of harvest activities and other human use. Vegetation management activities are unobtrusive and blend with the natural landscape. Facilities (footbridges, toilets, etc.) in place for the protection of river values are rustic in character and do not detract from the natural surroundings. The canyon walls provide a sense of seclusion and rugged outcrops break up the forest scene.

*Vegetation* – A variety of native and desirable non-native vegetation can be found in the corridor, with thriving riparian communities prominent in the aquatic zones. Riparian vegetation exhibits high species diversity, from grasses, to sedges, to willows, with conifer encroachment minimal. Riparian areas will be functioning effectively. Noxious weeds and other undesired non-native species are rarely found.

In the river terrace adjacent to riparian areas, vegetation is dominated by lodgepole forest. These forests cycle through periodic disturbances from wind, insects, and disease. Fuel loading is at levels where periodic wildland fires may occur, but would cause low or moderate damage to the forests and adjacent riparian habitats.

Moving up the slopes of the river canyon, the vegetation is dominated by coniferous forest. These forests are healthy and resilient to periodic disturbances from fire, insects, or disease. Fuel loading is at levels where periodic wildland fires may occur, but would cause low or moderate damage to the forests.

*Geology & Hydrology* –The Little Deschutes River provides water of excellent quality and has consistent flows. The Little Deschutes River Canyon, which is the longest and deepest on the east flank of the Oregon Cascades, maintains its representation/character of a classic glacial canyon with moraines and an outwash plain.

*Wildlife* – A diversity of wildlife (birds, mammals, amphibians) find habitat within the riparian areas and in the upland forests that surround the river corridor. The upper reaches of the corridor provide remoteness and solitude for those species requiring such an environment. The river and its environs attract wildlife because of its healthy riparian zone and relatively low amount of disturbance by roads and other human causes.

*Fish Habitat* – The Little Deschutes River would provide high quality fish habitat for the naturally occurring native species. The river contains an appropriate amount of woody material to provide channel formation, shade (for fish cover and temperature regulation), and invertebrate habitat. Habitat and stream conditions favor native species of fish, invertebrates, etc.

*Recreation* – The Little Deschutes River canyon provides diverse opportunities for semi-primitive and primitive recreation experiences associated with dispersed camping, hunting, fishing, and hiking. Motorized access is available on low standard roads, but off-road use emphasizes non-motorized means of transportation, such as hiking, biking, and horseback riding. On-river use emphasizes non-motorized means such as canoeing and float tubes. Winter use is generally by local forest users, particularly snowmobiling, and is encouraged to remain on roads and winter trails.

Developed recreation facilities and the management controls are at the minimum level required to protect resources. Facilities, such as toilets and interpretive sites are only expected at key locations outside the OCRA and wilderness. Use levels will remain low in the OCRA and Wilderness because of the reduced emphasis and difficult access.

Interpretive materials are available at key locations, such as the Ranger Station and Cow Camp. In addition to offering natural history information, interpretive materials educate visitors about good resource etiquette and explain some resource management activities.

*Water Quality/Quantity* – The Little Deschutes River functions as a natural stream system (dimension, pattern, and profile) having excellent water quality. Flows (e.g. peak flows, base flows, overland flows, etc.) into the Little Deschutes River are released in such a manner to allow it to maintain a stable stream channel, capable of transporting sediment supplied from its supporting watershed.

*Roads and Access* – The road system provides for recreation opportunities and effective firefighting capability. Roaded access to the OCRA portion of the river corridor is limited to the 5830300, in order to provide the highest possible wildlife habitat effectiveness and to reduce the risk of water quality degradation occurring from roads. The roads that remain open for access in the corridor are maintained to a level that allows high clearance vehicle access and prevents resource damage.

*Adjacent Private Property* – While protecting the free-flowing character of the river and the ORVs for which it was designated, management of the Wild and Scenic River corridor provides for the safety of the Two River North subdivision.

# STANDARDS AND GUIDELINES

## Big Marsh Creek and Little Deschutes River Management Areas

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This section provides the management direction for National Forest lands within the Big Marsh Creek and Little Deschutes River Wild and Scenic River boundaries. If this Management Plan does not speak to a particular issue, the Forest Service lands within the river corridor will be managed in accordance with the laws, rules, and regulations pertaining to the Deschutes National Forest and the National Forest System, to the extent that such laws and regulations are consistent with the Wild and Scenic River Act (i.e. the Deschutes Land and Resource Management Plan, as amended).

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### Big Marsh Creek Wild & Scenic River Corridor

Note: When the Plan refers to “the marsh” or “the marsh area” it is understood to mean the area between the east and west ditches, south of the snowmobile bridge, and north of the confluence of Otter Creek with Big Marsh Creek.

#### Scenery

**Practice** – Visual quality Objectives (VQOs)

#### Standards and Guidelines

- VQO on Beales and Chinquapin Buttes, where seen from the river, will be Partial Retention. As the newly introduced Scenery Management System is adopted into current Forest Plans, the visual quality objectives would be translated, but the intent would remain to maintain a high level of scenic integrity for the background seen from Big Marsh.
- Project planning within the river corridor will use the Scenery Management System as a basis for analyzing scenic quality impacts of proposed management actions.
- Maintain views of the marsh from Forest Road 5825 by reducing screening as necessary. A site on this route may be developed into a more formal overlook, including interpretive signing.

- Where no longer needed for the management of commercial livestock grazing, range improvements such as fences and cattle guards would be removed over time and these areas rehabilitated to a natural appearance.

## **Vegetation**

### **Practice – Riparian Habitat Management**

#### **Standards and Guidelines --**

- Commercial livestock grazing shall be prohibited.
- Appropriate noncommercial methods of reducing conifer encroachment into the marsh include prescribed fire and natural flooding. Because of the wet soils, commercial harvest would be permitted only if light impact equipment (helicopter, horse logging, or other similar method) could be employed economically.
- Control spread of reed canary grass. Appropriate methods include fire, seeding, and willow staking. Use of a chemical treatment will be allowed as long as water quality is not affected.

### **Practice – Timber Management**

#### **Standards and Guidelines --**

- No programmed timber harvest shall be planned within the river corridor.
- Outside of the LSRs, vegetation management activities aim to maintain the naturalness of the area, provide scenic diversity, maintain the health of vegetation, and reduce the risk of fire.
- Appropriate methods of vegetation management include prescribed fire, commercial harvest, commercial fuel wood, and other methods that provide a benefit to the long-term protection and enhancement of the river values and that have been designed to have a minimal impact to the river values, including the free flow of water, high value water quality, and the unique vegetation found in the corridor.
- Vegetation management activities within the Big Marsh Late Successional Reserves (LSRs) will follow recommendations from the Big Marsh LSR Assessment (1997). In the Upper LSR, manage as contiguous, multi-storied stand to serve as nesting/roosting/foraging or dispersal habitat for the spotted owl. No treatments are recommended except in the case of a catastrophic event. The Lower LSR is managed as a continuous block of lodgepole, providing habitat for black-backed woodpecker, and other late successional species. No treatments are recommended in the short term; with treatments at a minimum over the long term.
- Openings should not exceed three acres in size within the river corridor, except when salvaging areas of catastrophic damage. This allows for some effective treatment in lodgepole stands using group selection methods, but must be consistent with the Visual Quality Objective of Partial Retention.

### **Practice – Fuelwood Gathering**

## **Standards and Guidelines**

- Personal fuel wood gathering is allowed for on-site use (camping). Where personal use firewood permits can be used as a tool to meet specific vegetation management objectives (such as reducing dead/down levels), firewood collection may be permitted within specific, designated areas. Post these areas before permitting such a use.

## **Geology and Hydrology**

### **Practice – Leasing and Common Variety Materials**

#### **Standards and Guidelines –**

- No use or removal of common variety materials (e.g. sand, gravel) is allowed.

### **Practice – Marsh Restoration**

#### **Standards and Guidelines –**

- Marsh restoration activities such as filling in old canals (ditches) and digging ponds will be allowed. Such projects will be evaluated under Section 7 of the Wild and Scenic River Act to determine any adverse effects to the free flowing character of Big Marsh Creek.
- Proposals that alter the bed/bank of Big Marsh Creek would be evaluated under Section 7 of the Wild and Scenic Rivers Act to determine any adverse effects to the free-flowing character of the river.

## **Wildlife**

### **Practice – Habitat Improvement**

#### **Standards and Guidelines –**

- Habitat improvement projects would be natural appearing and be compatible with other values of the setting.

### **Practice – Recreation uses**

#### **Standards and Guidelines –**

- Annual review will determine recreation impact to key nesting areas. If this review determines that recreational activities are precluding nesting of sandhill cranes, great gray owls, or other birds associated with the marsh, appropriate seasonal restrictions shall be applied. These restrictions include but are not limited to entry restrictions (such as a “CFR closure”) or road-use restrictions, which include summer and winter Off-Highway Vehicle use.

## **Fisheries**

### **Practice – Habitat Management**

#### **Standards and Guidelines –**

- Outside of the marsh (i.e. in forested areas), the desired amount of woody material in stream is more than 20 pieces per mile. Pieces should be greater than 12 inches in diameter and more than 35 feet in length. In the forested portions of Big Marsh

Creek that receive canoe use, any wood removal to provide passage must be placed to provide fish cover wherever possible.

- Habitat improvement projects would be natural appearing and be compatible with other values of the setting.
- Emphasize cooperation with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.

## **Recreation**

### **Practice – Trails**

#### **Standards and Guidelines –**

- New trail construction is allowed outside the OCRA and marsh area for the primary purpose of offering wildlife viewing and enjoyment of the river and its surroundings.
- No trail construction will be allowed on the west side of the marsh. The closed portion of Road 6030 may be maintained as a trail for foot, horse or mountain bike travel, but should be allowed to grow in with vegetation along the sides.
- Use of mountain bikes will be allowed on existing roads and trails designated for mountain bike use. Off-trail bicycle travel shall be discouraged.
- Informal user-defined trails that are displaying resource damage should be modified or closed.
- The Big Marsh Nature Trail is open to foot traffic only.
- Horses are allowed within the corridor. Within the marsh, horses must remain on designated trails or roads.
- Closed roads on the east side of the marsh should be considered for use as trails.
- Trail bridges may be constructed or reconstructed in OCRA and the marsh area for safety and resource protection. Elsewhere, trail bridges may be constructed or reconstructed for visitor convenience.

### **Practice – Dispersed Recreation and Camping**

#### **Standard and Guidelines –**

- Dispersed camping sites will be inventoried using limits of acceptable change survey techniques. Sites that are displaying resource damage should be modified or closed.
- Designation of dispersed sites would be tied to LAC indicators.
- In recreation use areas, soil compaction should not exceed limits established in the Deschutes National Forest Plan for activity areas.
- The Big Marsh Nature Trail area is restricted to day-use only.

### **Practice – Off-Road Vehicle Use (ATVs)**

#### **Standards and Guidelines –**

- Motorized use, including Class 1, 2 and 3 OHVs (ATVs) shall be restricted to roads and trails designated for ATVs.

**Practice – Off-Road Vehicle Use (Snowmobiles)**

**Standards and Guidelines –**

- Motorized use over snow is permitted, except in areas found to be suffering impacts to water quality, vegetation, and/or wildlife habitat security. Periodic monitoring shall be conducted to determine if such impacts exist and corrective measures other than closure would be pursued before closures are applied. At a minimum this monitoring should occur once a year in the spring before snow-melt season.

**Practice – Boating**

**Standards and Guidelines –**

- Travel on Big Marsh Creek is limited to non-motorized boating. Efforts should be made with the Oregon State Marine Board to close the marsh to motorized watercraft if monitoring indicates increased occurrence.
- Current use of the creek from Forest Road 6020340 to Forest Road 6020 for canoeing would continue to be allowed. Moving or removal of down wood from the stream channel must be kept to the minimal extent needed to allow passage. Consider use restrictions if wood removal conflicts with meeting wood retention objectives.
- Within the marsh area, canoeing may be subject to seasonal restrictions. Based on monitoring, specific put-in and take-out locations should be identified to avoid conflicts. If needed, some areas may be identified as closed to protect specific wildlife habitats, identified through monitoring.
- From Forest Road 6020340 upstream to the headwaters, removal of instream wood or streamside vegetation for providing on-water passage is prohibited.

**Practice – Recreation Developments and/or Improvements (National Forest Lands)**

**Standards and Guidelines –**

- River corridor use should be managed to maintain the current recreation opportunity spectrum (ROS) level of semi-primitive.
- Dispersed recreation improvements would be provided to minimize site degradation. Any improvements, structures, and signs would be designed to take advantage of topography and vegetative screening. New structures that would have an adverse effect on the river's ORVs will not be allowed.
- No new facilities would be constructed within the marsh area. The need for facilities, such as restrooms outside the marsh would be tied to monitoring indicators.
- No new campgrounds would be constructed within the marsh area. Elsewhere, the need for new campgrounds would be tied to monitoring indicators.
- Within the Upper Big Marsh LSR and Lower Big Marsh LSR, new development would need to be beneficial or neutral to LSR-related values in addition to being beneficial to the river values.

### **Practice – Interpretation**

#### **Standards and Guidelines –**

- The interpretive message for the Big Marsh Wild and Scenic River Corridor emphasizes the natural undeveloped character of the area. The emphasis should inform visitors about the conservation and low-impact use of the marsh, rather than promotion of the marsh as a destination.
- Also emphasize the importance of keeping large woody debris in the stream channel (outside the marsh, which will always be expected to contain lower amounts of in-stream wood).
- On site structures such as signs and kiosks will be limited to the eastern side of the marsh, where an interpretive trail already exists. An overlook from Road 5825 would be appropriate to introduce visitors to the marsh, with more physical development appropriate.
- On the west side of the marsh, similar on-site interpretive areas should not be developed.
- Interpretive information will focus on the geologic, hydrologic, and wildlife values of the river corridor. Within the marsh area, the interpretive program will consist of the Big Marsh Nature Trail and day use area. Interpretive materials may also be made available off-site, such as at the Visitor's Center or the Ranger Station.
- Adjacent to private lands within the corridor, the interpretive message will include information about trespass and respecting private property rights. Property owners who have land within the corridor will be eligible for Federal assistance to deal with trespass and similar issues.

### **Special Uses**

#### **Practice – Outfitter/Guides**

#### **Standards and Guidelines –**

- Recreation-oriented commercial uses, such as outfitter-guides, will not be permitted within the corridor. These uses may be established if a need arises to reduce resource damage or to provide for public safety, but these instances are expected to be rare and should be initiated as a result of monitoring.

#### **Practice – Special Forest Products**

#### **Standards and Guidelines –**

- Within the marsh proper, collection of special forest products is limited to personal use only, unless river related resource benefits can be identified. In that case, a specific permit could be issued to provide that benefit. If such a permit is issued, periodic review (annually at a minimum) shall occur to validate the continued need for such permitted use.

#### **Practice – Fuelwood**

### **Standards and Guidelines –**

- Personal fuel wood gathering is allowed only for on-site use (camping), unless authorized as a means of meeting vegetation management objectives. In order to assure meeting these objectives, any personal use fuel wood gathering would be permitted only with additional controls in place (for instance, a special permit).

### **Water Quality/Quantity**

#### **Practice – Monitoring**

#### **Standards and Guidelines**

- Implement a water temperature monitoring program and establish thresholds for action. See monitoring plan.

### **Roads and Access**

#### **Practice – Road construction/road density**

#### **Standards and Guidelines –**

- New road construction within the corridor would not be allowed, unless justified by a compelling need for resource protection.
- Open road density within the corridor should not exceed 1 mile per square mile.

### **Private Land**

#### **Practice – Cooperation**

#### **Standards and Guidelines –**

- The Forest Service will work with landowners to increase overhead cover in riparian areas to help provide fisheries habitat and reduce stream temperatures.
- If monitoring indicates a need to increase the level of protection along the private lands, the Forest Service will work with Klamath County to update current zoning regulation.
- Work with landowners to adjust grazing practices to assure compliance with applicable federal, state, and county clean water laws.
- Work with landowners to accomplish fuel reduction around homes.
- Work with national forest visitors to increase awareness of private land along the corridor to reduce trespass and resource damage caused by such trespass.
- Work with landowners to prevent the spread of noxious weeds and non-native species onto Forest lands.
- Develop awareness among government and private agencies and develop stewardship roles and responsibilities.

## **Little Deschutes River Wild & Scenic River Corridor**

### **Scenery**

**Practice** – Visual quality Objectives (VQOs)

**Standards and Guidelines** –

- Project planning within the river corridor will use the Scenery Management System as a basis for analyzing scenic quality impacts of proposed management actions.
- Consider providing views to the river from access roads where possible.
- Reduce screening along roads by treating lodgepole thickets (thinning or other appropriate means).
- Where no longer needed for the management of commercial livestock grazing, range improvements (i.e. fences, cattle guards) should be removed and areas rehabilitated to a natural appearance.

### **Vegetation**

**Practice** – Riparian Habitat Management

**Standards and Guidelines** –

- Commercial livestock grazing shall be prohibited.

**Practice** – Timber Management

**Standards and Guidelines** –

- No programmed timber harvest will be scheduled within the corridor.
- Vegetation management activities will aim to maintain the naturalness of the area, provide scenic diversity, maintain the health of vegetation, and reduce the risk of fire. Appropriate methods include prescribed fire, commercial harvest (including salvage) commercial fuel wood, or other methods that have a minimal impact to the river values and that provide a clear benefit of the long-term protection and enhancement of the river values.
- Fuel loads should be reduced wherever possible to reduce imminent susceptibility to catastrophic wildfire.
- Created openings should not be more than 3 acres in size, except when salvaging areas of catastrophic damage.

**Practice** – Fuelwood

**Standards and Guidelines** –

- Personal fuel wood gathering is allowed only for on-site use (camping), unless authorized as a means of meeting vegetation management objectives. In order to assure meeting these objectives, any personal use fuel wood gathering would be permitted only with additional controls in place (for instance, a special permit).

## **Geology and Hydrology**

**Practice** – Leasing and common variety materials

**Standards and Guidelines** –

- No use or removal of common variety materials (e.g. sand, gravel) is allowed.

**Practice** – In-stream projects

**Standards and Guidelines** –

- Proposals that alter the bed/bank of the Little Deschutes River would be evaluated under Section 7 of the Wild and Scenic Rivers Act to determine any adverse effects to the free-flowing character of the river.

## **Wildlife**

**Practice** – Habitat Improvement

**Standards and Guidelines** –

- Habitat improvement projects would be natural appearing and be compatible with other values of the setting.

## **Fisheries**

**Practice** – Habitat Management

**Standards and Guidelines** –

- The desired amount of woody material in the stream will be greater than 20 pieces per river mile. To provide the best long-term habitat, these pieces should be greater than 12 inches in diameter and more than 35 feet in length where available. In lodgepole pine stands the desired diameter may not be abundant and so taking the next largest sizes would be appropriate. Stands adjacent to the river may be managed to assure long-term availability of woody material for future recruitment.
- Habitat improvement projects would be natural appearing and be compatible with other values of the setting.
- Emphasize cooperation with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.
- Monitor changes to bank stability and cover that result from discontinued grazing.

## **Recreation**

**Practice** – Trails

**Standards and Guidelines** –

- New trail construction is allowed outside the OCRA and Wilderness for the primary purpose of offering wildlife viewing and enjoyment of the river and its surroundings.
- Within the OCRA, new trail construction would be provided where necessary to reduce resource damage.

- Use of mountain bikes would be limited to roads and trails designated for mountain bike use. Off-trail bicycle travel should be discouraged.
- Existing non-system trails in the Mt. Thielson Wilderness may be evaluated for inclusion into the trail system, especially those that have minimal current resource impacts.
- Informal user defined trails and other existing non-system trails that are displaying resource damage should be modified or closed.
- Any roads in the corridors being closed should be considered for use as trails.
- Trail bridges may be constructed or reconstructed in wilderness and OCRA for safety and resource protection. Outside of the OCRA and the wilderness, trail bridges may be constructed for visitor convenience.

**Practice – Dispersed Recreation and Camping**

**Standards and Guidelines –**

- When demand for dispersed camping sites is such that resource damage and adverse effects to the scenic quality of the corridor are occurring, campground development may be considered, but in limited locations, most likely the current site of Cow Camp.
- Dispersed recreation sites should be inventoried using Limits of Acceptable Change survey techniques. Sites that are displaying resource damage that are adversely affecting the quality of the corridor's ORVs should be modified or closed. Designation of dispersed sites would be tied to monitoring indicators.
- Dispersed camping set backs will be 25 feet from the water's edge. Barriers such as logs may be placed where necessary.
- Within recreation use areas, soil compaction should not exceed currently established Deschutes NF limits for activity areas. This is generally considered 20 percent of the activity area.

**Practice – Off-Road Vehicle Use (ATVs)**

**Standards and Guidelines –**

- Motorized use, by Class 1, 2 and 3 ATVs shall be restricted to roads and trails designated for ATVs and/or snowmobiles.

**Practice – Off-Road Vehicle Use (Snowmobiles)**

**Standards and Guidelines –**

- Motorized use over snow is permitted, except in areas found to be suffering impacts to water quality, vegetation, and/or wildlife habitat security. Periodic monitoring shall be conducted to determine if such impacts exist and corrective measures other than closure would be used before closures are applied. At a minimum this monitoring should occur once a year in the spring during snow-melt season.

**Practice – Boating**

**Standards and Guidelines –**

- Travel on the river would be limited to non-motorized boating.
- Removal of instream wood or streamside vegetation for on-water use would be prohibited.

**Practice – Recreation Developments and/or Improvements**

**Standards and Guidelines –**

- The need for new facilities, such as restrooms and potential campgrounds must be tied to monitoring indicators. Cow Camp should be considered the most likely location for any such development. Site-specific analysis would be necessary before an actual decision were made to place any development at Cow Camp.
- No campground or day-use area development should be considered in the portion of the corridor within the OCRA and wilderness. However, in the OCRA, small scale development such as vault toilets, horse corrals, fire pits and similar facilities may be appropriate as a response to needs that arise from monitoring.
- Any improvements, structures, or signs would be designed to take advantage of topography and vegetative screening. New structures that would have an adverse effect on the river's ORVs should not be allowed.

**Practice – Interpretation**

**Standards and Guidelines –**

- The interpretive message for the Little Deschutes Wild and Scenic River Corridor emphasizes the natural undeveloped character of the area. The emphasis should inform visitors about the conservation and low-impact use of the canyon, rather than promotion as a destination.
- Also emphasize the importance of keeping large woody debris in the stream channel (outside the marsh, which will always be expected to contain lower amounts of in-stream wood).
- On site interpretive structures such as signs and kiosks will be limited to the area in or near Cow Camp. The upper portions of the corridor should not contain similar on-site interpretive.
- Interpretive information will focus on the geologic and hydrologic values of the river corridor, as well as providing a strong stewardship message.
- Winter-use interpretive programs would emphasize means of minimizing impacts water quality, wildlife, and vegetation.

**Water Quality/Quantity**

**Practice – Monitoring**

**Standards and Guidelines –**

- Implement a water temperature monitoring program that establishes thresholds for action.

- Utilize “No Trace” program for educating recreationists on resource protection and proper disposal of waste.

### **Roads and Access**

#### **Practice – Road Density**

#### **Standards and Guidelines –**

- Forest Roads 5830300 and 5835300 are essential to the river corridor use and management. These roads should remain open. Any resource damage associated with these access routes should be solved by other means than road closure. Other roads may be closed as particular reasons for doing so arise.
- New road construction within the corridor would not be allowed, unless justified by a compelling need for resource protection.
- Road density within the corridor will not exceed 2 miles per square mile, which is currently considered the minimal amount as long as Roads 5830300 and 5835300 remain open.
- Unless necessary to meet other resource needs (e.g. to allow winter, over-snow logging), these roads will not be plowed out in the winter.

#### **Practice – Road Maintenance**

#### **Standards and Guidelines –**

- Road maintenance on Road 5830300 will be the minimal level needed to maintain adequate drainage and to provide other resource protections (such as avoiding sediment delivery to streams). The intent of this low maintenance level is to preserve the aesthetic character and sense of remoteness created by the current winding road.
- Road maintenance on Road 5835300 should also be minimal, with the intent to preserve current access.

### **Adjacent Private Property**

#### **Practice – Fuels Management**

#### **Standards and Guidelines –**

- Fuel treatments are appropriate within areas adjacent to the private land, with the intent of creating a defensible space type buffer zone around the urban interface. Large-scale fuelbreak treatments that create large openings are not appropriate in the river corridor, however.

#### **Practice – Vector Control**

#### **Standards and Guidelines –**

- Chemical treatments such as vector (mosquito) control are not appropriate within the river corridor unless a direct public health threat is established, and unless an appropriate means of control can be used to minimize the impact to river values, including water quality and vegetation.

# MONITORING PLAN

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This section identifies activities that will be conducted to assess the progress and results of implementing the River Plans. This monitoring program ensures that effects of projects and activities on river values remains within acceptable levels.

The monitoring and evaluation in this plan are based upon the Limits of Acceptable Change concept (LAC) whenever possible. LAC is based on the premise that change to the ecological and social conditions of an area will occur as a result of natural and human factors. The goal of management is to keep the character and rate of change due to human factors within acceptable levels that are consistent with plan objectives. These limits tie closely with protection and enhancement of the each river's outstandingly remarkable values.

The LAC system places its primary emphasis on the desired resource condition, rather than on how much use an area can tolerate (i.e., carrying capacity). The management challenge with this approach is one of deciding what changes should occur, how much change will be allowed, what management actions are needed to guide and control it, and how managers will know when the established limits are being reached. Therefore this emphasis does not aim to prevent all human-caused change in the corridors, but rather it focuses concern on specific indicators that reflect the carrying capacity in more more practical terms.

For each river value to be monitored, one or more key indicators are selected that will allow managers to keep attuned to changes in the ecosystem or social setting. For each key indicator, a threshold is set. This is the value that determines the amount of change that is either desired or that will be accepted before river management objectives are no longer being met. In this manner, indicators and thresholds provide managers with information to determine if the resource values and opportunities they are managing are actually being provided. The standards serve as 'triggers' that cause predetermined management actions to be implemented when the limit is being approached.

For each indicator and standard, a "Actions if Not Met" column lists the likely action that would be triggered if a particular threshold is reached. Sampling methods provide an example of how the indicator might be measured, but these sample methods can and should be changed as better means become available.

Additional monitoring is identified in this section that provides resource inventories or baseline data that is necessary to establish thresholds. River Plan implementation must include the final development of these thresholds where none exist yet.

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
Water Quality	<b>Big Marsh:</b> Temperature (from outlet of marsh to confluence w/ Crescent Cr). <b>Little Deschutes:</b> Temperature	Temperature and pH levels meet or exceed state water quality standards.	Determine whether there is a cause attributable to human activity or if the cause is a natural occurrence. If the change stems from management activities, conduct remedial actions that will correct the change back to within state standards.	Continue monitoring temperature from existing temperature sites on Big Marsh Cr. and Little Deschutes. <b>Monitor using established protocol according to ODEQ to meet State Standards for water temperature for salmonid spawning and rearing.</b>
	<b>Both:</b> Petroleum presence	No detectable amount.	Limit snowmobiles to existing trails.	Take water samples at least three times during snowmobile use season. Location should be determined by winter use patterns, with an emphasis on monitoring areas with the greatest amount of use.

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
	<b>Sediment Delivery</b>	<p>No net increase in number of crossings</p> <p>Limited sediment delivery to streams and tributaries.</p> <p>No increase <b>to riparian area road densities</b></p>	Identify source of sediment delivery and change the alignment if physically and economically feasible. Otherwise, close and restore the road to eliminate to sediment source..	<p>Annual surveys of current condition of stream crossings in the corridors.</p> <p>Perform Wolman pebble counts using USFS (2000) established protocol at pool tails below road crossings. (Big Marsh Creek 6020) (Little Deschutes River 5830-200 Identified in (Houslet 2001).</p>
<b>Scenic Resources</b>	Projects, activities or modifications which alter landform, vegetation, water, or character within the viewshed as seen from the river and high use areas.	<p>Activities within river corridor and viewshed would be evaluated on how well they meet VQOs for river corridor and viewshed.</p> <p>Contrasts created by new management activities would not be allowed if they attract the attention of the casual observer within the characteristic landscape. Short-term impacts such as those created by trail building or prescribed fire would be allowed. Outstandingly remarkable scenic values will be preserved.</p>	Management actions or developments (or proposed developments) not consistent with Wild and Scenic River classifications or scenic resource management objectives will be modified (i.e. screened) or proposals rejected.	<p>Individual projects will be analyzed on a case by case basis to ensure protection of outstandingly remarkable values.</p> <p>Long-term scenic integrity monitoring will be conducted through the use of photo points at key areas within the corridor. Photos will be updated and reviewed every ten years.</p>

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
<b>Vegetation</b>	<p>Amount of riparian habitat and wetlands.</p> <p>Proper functioning ecological condition as indicated by vegetative cover and streambank condition.</p> <p>Conifer encroachment.</p> <p>Species diversity.</p>	<p>Riparian vegetation would be managed to maintain or enhance vegetative diversity, biomass, and percent cover at desired level. Specific thresholds will be determined during baseline monitoring to comply with Forest Plan direction.</p> <p>No loss of vegetation caused by motorized over snow use unless along an exiting route.</p>	<p>Remove or eliminate source of impacts (i.e. close campsites, roads, trails, etc.) if inventory assesses extent of impact is unacceptable.</p>	<p>Conduct baseline riparian/wetland resource inventory and photo inventory, starting in 2002. Continue to reassess at 5-year intervals. If funding is limited, at a minimum identify areas of resource damage. Visually monitor recreation and other sites annually for resource damage. If funding allows, establish formal monitoring plots in high use areas</p> <p>Water table monitoring within the Big Marsh (height of channel to surface water). Record number of days water is found on surface of marsh.</p>
	<p>Upland Vegetation: Stand progression towards desired conditions.</p>	<p>Within LSRs, follow criteria for developing appropriate treatments in LSRA.</p> <p>See Big Marsh Watershed Analysis for vegetation objectives.</p>		<p>During project planning, survey vegetation noting species present and condition and soil conditions at project locations. Stand density, snag counts, size and decay classes will be recorded.</p>

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
	Populations of noxious weeds and undesirable species.	Prevention, reduction, and eradication of noxious weeds.	<p>Implement short-term prescriptive activities to restore natural condition or biodiversity.</p> <p>Control, restrict, or mitigate human caused activities as necessary.</p>	<p>Survey likely areas on regular basis to determine presence of unwanted vegetation. Heavily used recreation sites should be surveyed yearly. Where possible, enlist private landowners to survey their property for these conditions.(</p>

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
<b>Fish Habitat</b>	<p>Rearing habitat and pool quality</p> <p>Large woody material</p>	<p>Avoid decrease in the inventory habitat type and extent on mainstem and major tributaries, maintain habitat quality and quantity at least at inventory levels.</p> <p>Avoid decrease in the amount of large woody debris that meets minimum standard.</p>	<p><i>Identify cause of degradation to quality and quantity of habitat and mitigate or eliminate impact.</i></p> <p><i>For example, if continued boating along lower Big Marsh Creek leads to excess removal of large wood from the stream, boating may be eliminated if necessary to maintain large wood at appropriate levels.</i></p> <p>Create additional habitat when possible through habitat improvement opportunities.</p>	<p>Fish habitat cover and will be assessed every 10 yrs using the R6 stream survey protocol.</p> <p>In the forested section of Big Marsh Creek used by canoes, annual surveys of new wood recruitment need to be performed during spring of each year. Channel spanning wood will be manipulated to ensure canoe passage and maintain fish habitat for redband trout.</p>
	<p>Little Deschutes: Stream bank stability and cover.</p>	<p>No loss of stream banks and cover provided by banks.</p>	<p>Implement more aggressive restoration actions, such as willow/aspen planting where appropriate. If loss can be attributed to human use, redirect that use away from impacted areas.</p>	<p>Once every three years for the next 10 years, surveys and assessment should be conducted to determine the recovery of stream bank stability and cover along the Little Deschutes River no longer open to grazing.</p>

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
<p><b>Wildlife</b></p>	<p>Populations of major species Amount and combination of habitat type</p> <p>Evidence of intrusions on key nest sites.</p> <p>Evidence of loss of winter habitat security.</p>	<p>Negative change in river corridor use by selected species (i.e. neotropical birds, big game, listed species)</p> <p>No substantial human-caused change in mix of habitat types within the corridor.</p> <p>No substantial evidence of human entry during seasons of concern.</p>	<p>Identify cause of change. If human-caused, correct practices or activities.</p> <p>Closure of area to eliminate the conflict.</p>	<p>Conduct wildlife surveys on five year basis to correspond with habitat surveys, starting in 2001. Count and record all nests, raptors, and waterfowl sightings on regularly scheduled surveys.</p> <p>GIS mapping of habitat type and extent using aerial photography interpretation. Establish baseline year and replicate survey every five years.</p> <p>Identify key areas of concern and then make at least annual walk through surveys of these areas to determine if encroachment occurred. Samples in winter use areas would be expected more often in order to determine any changes to habitat use by specific species, such as wolverine, American marten, etc.</p>

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
<b>Cultural Resources</b>	Cultural Resource Site Integrity	No significant cultural resource is being irreparably damaged by human use or eroded by natural forces to the point that it is in danger of being lost.	Conduct damage assessment and develop treatment or mitigation plan to eliminate sources of loss. Execute plans made.	Visit sensitive sites at least annually..
<b>Recreation Experience</b>	Key indicators and standards to be established with implementation of Limits of Acceptable Change (LAC) inventory, survey and analysis. .	Established by user/visitor expectation survey and landowner survey to establish “carrying capacity” or acceptable levels of use.	A combination of indirect (information, education, signing, site design, etc.) and direct (enforcement patrols, site closures, seasonal restrictions, permits, etc.) management actions and controls would be utilized emphasizing in-direct methods first.  If above methods are not effective, use may need to be limited through use of permits or other more direct methods of visitor control, especially within Big Marsh, and the wilderness.	Conduct LAC survey and develop monitoring program, repeat every ten years. First survey should be in 2002.
	Quality of Experience  Potential items most likely to be included are conditions of congestion, use levels, safety hazards, reported incidents of conflict such as site competition, vandalism, and trespass.	Numbers of encounters with other recreationists (groups) per day.  Numbers of reported conflicts, trespass/vandalism reports or safety incidents recorded annually.  Recreation visitor counts, trail user counts, vehicle counts.  Number of days campsite and parking area capacity exceeded		

VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
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<p><b>Dispersed Recreation Sites</b></p>	<p>Soil Stability Vegetative loss Tree damage Human waste Litter New sites Distance between sites</p>	<p>Impacts to dispersed use areas (camping, trailheads, etc.) will be based on subjective judgment regarding erosion, vegetative change, facility damage, and accumulation of litter as follows:</p> <p>Light: Previous ground vegetation intact allowing natural erosion to occur. Facility damage and litter is not evident. The site has experienced only minimal physical changes.</p> <p>Moderate: Vegetative growth is somewhat retarded allowing minor abnormal erosion to occur. Traces of litter can be found within and adjacent to the site. Minor vandalism, repairable by maintenance, is occurring on facilities such as tables. Physical changes to the site could include: minor tree limbing, movement of rocks and semi-stationary facilities.</p> <p>Heavy: Use area vegetation is gone but adjacent vegetation still intact. Abnormal erosion within the site is correctable through maintenance. Major littering is evident within and adjacent to the site and can be corrected through maintenance. Major vandalism, repairable by maintenance, is occurring on facilities and physical features such as tables, rocks, trees and other site protection facilities. Physical changes to the site could include: moderate tree limbing, beginning tree root exposure, trails radiate from site, human caused changes to the layout of the use area. All impacts to camp and dispersed use areas could be resolved through routine maintenance.</p>	<p>Use basic site protection measures, harden sites to maintain important sites if necessary between moderate and heavy standards. Campsites or day use areas which have received extreme impacts will be rehabilitated and closed until levels of impacts have been mitigated to at least moderate levels. Other actions could include: increased user education efforts, seasonal closures, site or access restrictions, etc.</p> <p>Management actions and controls would be utilized emphasizing indirect methods first, for example:</p> <ol style="list-style-type: none"> <li>1. Increased user education in “minimum impact” camping techniques (signs, brochures, increased management patrol presence, etc.).</li> <li>2. Campsite rehabilitation.</li> <li>3. Use barriers to control traffic.</li> <li>3. Campfire ban.</li> <li>4. Designated campsites.</li> <li>5. Close areas to overnight camping.</li> </ol>	<p>Inventory and assess all existing and proposed sites within the river corridors upon approval of this plan.</p> <p>Remeasure and assess all sites once every three years, or when conditions indicate need.</p> <p>Utilize feedback from routine patrols and biological/wildlife monitoring programs.</p>
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VALUE	KEY INDICATOR	STANDARD TO MEET	ACTION IF NOT MET	SAMPLE METHODS
<p><b>Roads and Trails</b></p>	<p>Road erosion and damage related to roadside vegetation and facilities.</p> <p>Occurrence of accidents on roads to indicate safety problems.</p> <p>Trail erosion and damage related to trailside vegetation and bare ground.</p> <p>Conflicts between trail users (i.e. hikers, horses, bikes).</p>	<p>Confine motorized use to designated roads. Maintain roads to established federal or state standards.</p> <p>Maintain trails to established federal or Forest standards. Prevent multiple trail or trail networking using indirect methods. Trail use and design will be in keeping with Recreation Opportunity Spectrum (ROS experience level and visual management standards.</p> <p>Evaluate user made trails for damage to resources, especially for trails potentially being used by ORVs.</p>	<p>Increase road maintenance frequency. Reconstruct/relocate roads, improve bridges, parking areas, trails, and related facilities to resolve unlawful access, resource damage, and road safety problems. Closure of unauthorized roads and trails where resource damage is taking place.</p> <p>Develop, maintain, and replace signing as needed.</p> <p>Increase trail maintenance frequency. Reconstruct/relocate trails to reduce trail networking and encourage appropriate use. Keep trail maps and information current.</p> <p>Actively close trails where unauthorized OHV use is taking place.</p>	<p>Monitor routine road maintenance needs annually. Utilize feedback from visitor contact. Monitor any accident reports on forest roads to identify safety problems.</p> <p>Monitor routine trail maintenance needs annually. Establish monitoring points along high use trails to measure trail depth, width, and drainage. Remeasure points and map inventory trails every five years.</p>