

Ochoco National Forest Transitional Monitoring Plan

Summary of Monitoring Elements

(i) The status of select watershed conditions

1. Functioning watershed - Watershed Condition Framework
2. Water quality - Best Management Practices

(ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.

3. Stream temperature monitoring on select streams
4. Aquatic habitat monitoring on select streams
5. Fuels Arrangement and management
6. Late and old forests
7. Riparian habitats

(iii) The status of focal species to assess the ecological conditions required under § 219.9.

8. Redband trout (sensitive)
9. Columbia spotted frog (sensitive)
10. Henderson's and Wallowa needlegrass (sensitive)
11. Peck's mariposa lily (sensitive)
12. Bald eagle (indicator for large tree habitats in preferred nesting/roosting areas)
13. Golden eagle (indicator for cliff and rock habitats)
14. Snag habitat (various PAGs and structural stages)
15. Pileated woodpecker (indicator for snag habitat in old growth or late-structural stage mixed conifer)
16. Deer and elk ("MIS," goal is to provide sufficient habitat to contribute to ODFW population objectives)

(iv) The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.

17. Mid-Columbia River steelhead trout (threatened)

(v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.

18. Recreation (trails, campgrounds, day use sites, trailheads, snoparks, dispersed sites, motorized and non-motorized, summer and winter uses)

19. Recreation special uses (concessionaire, outfitters, recreation residences, events, resorts, etc.)

(vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.

20. Changes potentially associated with climate change
 - a. Disturbance events (fire, insects and disease)
 - b. Stream temperatures and flow regime changes
 - c. Vegetation and composition changes
21. Insect and Disease monitoring – forest-wide trends

(vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.

22. Contribution of the timber, range, mineral materials and recreation programs to social and economic community stability.
23. Transportation system (roads only)
24. Cultural resources
25. Invasive species management
26. Wilderness
27. Designated Wild and Scenic Rivers

(viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land.

28. Soil monitoring

Monitoring Elements – Ochoco National Forest

Selected Plan Component	Monitoring Question(s)	Monitoring Element(s) or Indicator(s)
(i) The status of select watershed conditions		
1. Objective – Functioning watershed condition	What is the status of the watersheds? Which watershed conditions are functioning properly? Which are functioning improperly? What trends in watershed function were recorded during the current monitoring period?	Trends in functioning condition for the watersheds.
2. Standard – BMPs are employed to protect water quality.	What BMPs have been implemented and are they effective at managing water quality consistent with the Clean Water Act? What corrective actions and adaptive management measures were implemented?	Results from BMP annual monitoring protocols
(ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.		
3. Goal is to maintain or enhance stream temperatures in streams on the forest.	Are watersheds functioning properly with the focus on stream temperature to support desired fish habitat, including downstream habitat? Have any trends been identified in stream temperatures in monitored streams, and what are the trends?	Stream temperature on select streams on the forest

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<p>4. Goal is to maintain or enhance stream habitat conditions in streams on the forest to provide for desired aquatic habitat for both focal and T&E species.</p>	<p>Are streams functioning properly with the focus on stream habitat to support desired aquatic habitat, including downstream habitat?</p> <p>Have any trends been identified in habitat conditions in monitored streams and what are the trends?</p> <p>What S&Gs have been followed to protect riparian habitat?</p>	<p>Habitat parameters such as riffle to pool ratios, width to depth ratios, pebble counts, bank condition, large woody debris and other parameters collected during stream surveys.</p>
<p>5. Improvement in watersheds with the select ecological condition being fuels arrangement and management.</p>	<p>Are forest fuels conditions functioning properly as determined by departure from resilient conditions?</p> <p>How many acres of the different plant association groups are properly functioning and where are they located?</p> <p>What are barriers to maintaining or improving conditions?</p>	<p>Identification of desired fuels conditions.</p> <p>Acres treated by treatment type.</p> <p>Acres treated in Wildland-Urban Interface (WUI) and outside of WUI.</p> <p>Changes in fuel arrangements within treatment units and within watersheds.</p>
<p>6. Desired Terrestrial Conditions are Properly Functioning - Status of late successional and old growth forests by plant association group (PAG).</p>	<p>What progress has been made toward maintaining and restoring resiliency in the identified PAGs?</p> <p>What are the structural stages for each PAG, with a focus on LOS?</p> <p>How far are stands departed from historical range of variation (HRV)?</p>	<p>Changes in tree abundance, tree age and size distribution, species composition and distribution.</p> <p>Compare existing conditions to desired conditions by PAG.</p>

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<p>7. Riparian Habitats</p> <p>Status of riparian areas, wetlands (fens, springs), streamside management units, and flood plains</p>	<p>Are habitats being protected in accordance with LRMP S&Gs (INFISH/PACFISH)?</p> <p>What is the trend in riparian habitat conditions?</p> <p>Are restoration activities effective in maintaining/protecting riparian habitats?</p>	<p>Adherence in planning and implementation to riparian management standards.</p> <p>Changes in riparian vegetation</p>
<p>(iii) The status of focal species to assess the ecological conditions required under § 219.9.</p>		
<p>8. Redband trout</p>	<p>Are habitat conditions being provided consistent with the conservation plans and / or biological evaluations?</p>	<p>Stream Habitat Status</p> <p>Population Status</p> <p>Review of NEPA project BEs for treatment impacts</p>
<p>9. Colombia spotted frog</p>	<p>Are habitat conditions being provided consistent with the conservation plans and / or biological evaluations?</p>	<p>Stream, spring and wet area habitat status</p> <p>Population Status</p> <p>Review of NEPA project BEs for treatment impacts</p>
<p>10. Henderson’s needlegrass (<i>Achnatherum hendersonii</i>) and Wallowa needlegrass (<i>Achnatherum wallowaensis</i>)</p>	<p>What are population trends?</p> <p>What is the status of habitat condition and threats at selected sites?</p> <p>What is the status of annual invasive grasses on scabland habitats where needlegrasses occur?</p> <p>Are project design criteria specific to protecting needlegrass populations and their scabland habitats being implemented correctly and are they effective?</p>	<p>Numbers of plants in different phenological stages and habitat characteristics/threats observed at monitoring plots</p> <p>Status of needlegrass sites with and without annual invasive grasses</p>

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<p>11. Peck's mariposa lily (<i>Calochortus longebarbatus</i> var. <i>peckii</i>)</p>	<p>What are population trends?</p> <p>What is the status of habitat condition and threats at selected sites?</p> <p>Are project design criteria specific to protecting Peck's mariposa lily populations and their habitats being implemented correctly and are they effective?</p>	<p>Numbers of flowering individuals and observations on general habitat condition and disturbances/threats (collected at monitoring sites).</p>
<p>12. Bald eagle Indicator for large tree habitats in preferred nesting/roosting areas</p>	<p>Are current breeding territories being maintained and are new territories being added on the forest?</p> <p>Are nests, nest stands and winter roosting areas being protected?</p> <p>What are the trends in wintering bald eagles on the Forest?</p>	<p>Nesting surveys and nesting success rates.</p> <p>Winter bald eagle counts.</p> <p>Implementation of closures to protect nesting eagles.</p> <p>Habitat Monitoring</p>
<p>13. Golden eagle Indicator for cliff and rock habitats</p>	<p>Are standards and guidelines being followed?</p> <p>Is habitat being maintained at desired levels?</p>	<p>Habitat monitoring, nesting surveys, nest success rates, winter surveys, seasonal restrictions</p>
<p>14. Snag habitat (various PAGs and structural stages)</p>	<p>Are standards and guidelines being followed?</p> <p>Is habitat being maintained at desired levels?</p>	<p>Habitat monitoring</p>
<p>15. Pileated woodpecker Indicator for snag habitat in old growth or late-structural stage mixed conifer.</p>	<p>Are standards and guidelines being followed?</p> <p>Is habitat being maintained at desired levels?</p>	<p>Habitat monitoring, nest surveys, nest success rates</p>

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<p>16. Deer and elk</p> <p>Goal is to provide sufficient habitat to contribute to ODFW population objectives.</p>	<p>Are standards and guidelines being followed?</p> <p>Is habitat being maintained at desired levels?</p> <p>What factors could be contributing to disturbances and diminished habitat effectiveness?</p>	<p>Habitat Effectiveness Index</p> <p>Distance banding/disturbance modeling</p> <p>Elk Nutrition Model</p> <p>Effectiveness of seasonal motorized access restrictions.</p>
<p>(iv) The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.</p>		
<p>17. Mid-Columbia River Steelhead Trout</p>	<p>Are habitat conditions being provided consistent with the Recovery plans or with regional direction?</p>	<p>Stream Habitat Status</p> <p>Population Status</p> <p>Review of NEPA project BAs and BOs for treatment impacts</p>
<p>(v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.</p>		
<p>18. Recreation goal - settings and opportunities provide high visitor satisfaction, meeting current and future public demands in sustainable ways. This includes developed recreation, dispersed recreation, motorized and non-motorized uses, and summer and winter uses</p>	<p>Are the current recreation settings and opportunities moving toward desired recreation settings and opportunities?</p> <p>What is the trend in visitor use and satisfaction?</p> <p>Are water and soil resources being protected from recreational uses?</p>	<p>Recreation opportunity spectrum: acres, location, and distribution (mapped).</p> <p>Satisfaction levels from USDA Forest Service national visitor use monitoring survey results by single administrative unit, every 5 years new data are collected.</p> <p>Developed recreation can be reported annually due to concessionaire reporting and field patrol logs kept by field-going staff.</p> <p>OHV compliance</p>

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<p>19. Special Use Authorizations Opportunities for recreation provided through special use authorizations.</p>	<p>Are people satisfied when using the forest through permits including recreation events, resorts, outfitter guides services and recreation residences and are permit holders providing a good quality experience?</p>	<p>Percent compliance with terms of permit, visitor satisfaction based on number of permits issued and survey results when required.</p>
<p>(vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.</p>		
<p>20. Climate change may be impacting the plan area in a variety of ways including but not limited to:</p> <ul style="list-style-type: none"> · Extent, duration, and severity of disturbance events such as fire, insects and disease; · Changes in stream flow and temperature regimes and timing of flows; · Changes in vegetation composition and structures. <p>(See Fisheries, Watershed Conditions, Vegetation, Fuels, Insects and Disease, Invasive Species monitoring elements)</p>	<p>What are the plan area vulnerabilities?</p> <p>What stressors are impacting the plan area?</p> <p>Are there trends in stressors and if so, how are they affecting the plan area?</p> <p>Are timing and amount of stream flows changing in select watersheds?</p> <p>Is stream temperature being affected?</p>	<p>Changes in disturbance events such as fire, insects and disease.</p> <p>Changes in timing and amounts of stream flows and stream temperatures.</p> <p>Changes in vegetation location, composition and structure.</p>

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<p>21. Insects and Disease - Insects and diseases are an integral disturbance agent in the forest ecosystem; however, the goal is to prevent epidemics outside the normal range of disturbance.</p>	<p>What are the extent of outbreaks and infestations? What are the trends? Are trends related to causal events or conditions and what are those? Are areas identified as vulnerable showing evidence of outbreaks and infestations and which agents are they? What are the responses to insects and disease related to fire impacts?</p>	<p>Acres of stands affected by and vulnerable to the various disturbance agents (insects and diseases). Effectiveness of treatments for bark beetle mitigation and mistletoe infections.</p>
<p>(vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities. Note - This is supposed to be related to questions and associated indicators addressing the plan contributions to communities, social and economic sustainability of communities, multiple use management in the plan area, progress toward meeting desired conditions and objectives related to social and economic sustainability. Ecosystem services are mentioned in this description in the handbook. (We can be selective if want to reduce the amount of land allocations)</p>		
<p>22. Desired condition: Contribution of the timber, range, recreation, forest products and mineral materials programs to social and economic community stability.</p>	<p>What are the annual timber targets? What are the special forests products and what are the trends in their use? What are the recreation special use permits and what are the trends of their use? What are the mineral material products and what are the trends to their use?</p>	<p>Levels of production of multiple uses including timber, special forest products, mineral materials and recreational visits, and what are the economic benefits? Qualitative economic effects on the surrounding communities from recreational uses.</p>

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<p>23. Transportation System – Goal - to plan, operate and maintain a safe and economical transportation system providing efficient access for the movement of people and materials involved in the use and protection of NFS lands.</p>	<p>Are road densities meeting forest-wide and allocation specific guidelines?</p> <p>How many miles of roads have been constructed?</p> <p>How many road miles have been closed?</p> <p>How many road miles have been decommissioned?</p>	<p>Miles of open roads per by 6th field watershed (aka 12th field).</p> <p>Miles of roads closed per year</p> <p>Miles of roads decommissioned per year</p> <p>Miles of roads constructed per year</p> <p>Miles of roads maintained per year</p>
<p>24. Cultural Resource Goal - to provide for the protection and preservation of prehistoric and historic sites, buildings, objects and antiquities of local, regional or national significance.</p>	<p>Are significant historic and prehistoric sites and properties being maintained, stabilized, and repaired according to preservation standards?</p>	<p>Status of select historic and prehistoric sites and properties.</p>
<p>25. Invasive Species (botany) Management</p> <p>Goal: invasive species are being managed to reduce or eliminate the impacts to native plant communities.</p> <p>(2005 Regional ROD amendment to LRMP and Deschutes / Ochoco Invasive Plant EIS)</p>	<p>Are invasive plant species being treated and are invasive plant populations being reduced in treated areas?</p>	<p>Population trends in select treated sites.</p>

Selected Plan Component	Monitoring Question(s)	Monitoring Element(s) or Indicator(s)
<p>26. Goal: Preserve the Wilderness character. Allow for natural processes and provide opportunities for solitude, challenge, and inspiration and within these constraints to provide for recreational, scenic, scientific, educational, conservation and historical uses.</p>	<p>Is the wilderness character being preserved and protected?</p> <p>Are the physical / biological, managerial and social settings of each Wilderness Resource Spectrum (WRS) maintained consistent with the standards for wilderness management?</p> <p>Wildernesses –</p> <ul style="list-style-type: none"> • Black Canyon • Bridge Creek • Mill Creek 	<p>Wilderness Performance Program Score Card</p>
<p>27. Goal: Maintain the Wild, Scenic, or Recreation River character of streams designated by Congress as Wild and Scenic Rivers.</p>	<p>Are we protecting the outstandingly remarkable values of the Congressionally designated rivers?</p> <p>Have Section 7(a) reviews been conducted when instream work is planned?</p> <p>Have River Management Plans been completed?</p> <p>Designated rivers: North Fork Crooked River (recreation and scenic corridors)</p>	<p>Change to the 3 characteristics affecting Wild and Scenic Rivers: free flow, water quality, and outstanding remarkable values.</p> <p>Change to ORVs or status of ORVs based on planning analysis.</p> <p>Status of River Management Plans.</p>
<p>(viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land.</p>		
<p>28. Goal: To maintain or enhance long-term soil productivity.</p>	<p>Are management activities being implemented so that they do not substantially and permanently impair the productive capacity of the land?</p>	<p>Extent of detrimental soil disturbance within activity areas.</p>