WILDERNESS INVENTORY MAINTENANCE PROCESS FOR THE LAKEVIEW RESOURCE AREA BLM

Wilderness Inventory Background

Following the passage of the Federal Land Policy and Management Act of 1976 (FLPMA), the BLM initiated an inventory of lands with wilderness characteristics, as required under Section 603. In 1991, the BLM completed this comprehensive wilderness inventory covering the entire State of Oregon. Several public documents were prepared during the process which addressed lands within the Lakeview Resource Area of the Lakeview District. These included: *Wilderness Proposed Initial Inventory, Roadless Areas and Islands which Clearly do not Have Wilderness Characteristics, Oregon and Washington* (BLM 1979e), *Wilderness Review, Initial Inventory* (BLM 1979f), *Wilderness review, Intensive inventory* (BLM 1979g), *Wilderness review, Intensive inventory (*BLM 1980a), *Final Intensive Inventory Decisions* (BLM 1980b), an *Oregon Wilderness Final Environmental Impact Statement* (BLM 1989), and a *Wilderness Study Report* containing a Record of Decision (BLM 1991).

During the wilderness inventory process described above, the BLM followed guidance published in its *Wilderness Inventory Handbook* (BLM 1978) and several subsequent policy directives (BLM 1979a; 1979b; 1979c; 1979d).

The inventory handbook defined "inventory" as a distinct phase of the wilderness review process that "involves looking at the public lands to determine and locate the existence of areas containing wilderness resources that meet the criteria established by Congress. Such areas are identified as Wilderness Study Areas". The handbook also described the "key factors of wilderness character" to consider during the inventory process as being:

a) Size - at least 5,000 contiguous roadless acres of public land must exist.
b) Naturalness - the imprint of man's work must be substantially unnoticeable.
c) An outstanding opportunity for solitude or an outstanding opportunity for primitive and unconfined type of recreation must exist.

All three criteria had to be met in order for an area to be designated as a WSA (BLM 1978). This guidance was followed during the Section 603 inventory process conducted after 1978. A total of 14 wilderness study areas (WSAs) and 1 instant study area (ISA) covering approximately 486,873 acres and located completely or partially within the Lakeview Resource Area were designated during this process (BLM 1989; 1991). All WSAs are currently managed under the *Interim Management Policy for Lands Under Wilderness Review* (BLM 1995).

Lakeview Resource Area Resource Management Plan and Wilderness Inventory Guidance

The Lakeview Resource Area, BLM initiated a resource management planning (RMP) process in 1999. While this planning effort was underway, the Washington Office, BLM issued new guidance on wilderness inventory procedures, titled *Wilderness Inventory and Study Procedures Handbook H-6310-1* (BLM 2001a). The instruction memo instructed field offices to use the new guidance in *future* land use planning efforts while on-going planning efforts, such as the Lakeview RMP, were to follow existing state-specific guidance (BLM 2001b). Thus, the new handbook never applied specifically to the Lakeview RMP process. In addition, the handbook was rescinded in June 20,

2003 (BLM 2003b), prior to completion of the *Lakeview Proposed RMP/Final EIS* (BLM 2003a).

While it is understood that natural landscapes undergo change over time in response to a variety of natural and man-caused actions (i.e. wild and prescribed fire, climatic cycles, implementation of new rangeland improvement projects, roads, and vegetation rehabilitation projects, mining, etc), widespread or landscape-level human-caused change on BLM-administered lands typically occurs much slower than rapidly developing rural or urban areas. The mere passage of time is not, in and of itself, a significant or critical factor defining the need to update or maintain an inventory. The critical question to be answered is "what has changed since the last inventory"?

During the Lakeview RMP planning effort, the BLM ID team considered the need to update its wilderness inventory, but was not aware of any major changes to the public lands within the Lakeview Resource Area that had occurred since the inventory was completed in 1991 that would warrant a complete wilderness re-inventory or a need to update its wilderness inventory for all public lands within the planning area. For this reason, the BLM focused its wilderness inventory update efforts on newly acquired lands, as those lands had not been previously inventoried for wilderness characteristics (see Appendix J4, BLM 2001c).

Resource Data Development and Maintenance

The BLM has maintained or updated its information or datasets on resource conditions and man-made disturbances/developments in response to changes on the landscape since 1991 that are relevant to assessing the key factors of wilderness character described above. Beginning in 1996, the BLM staff started developing a digital geographic information system (GIS) database in anticipation of initiating the Lakeview RMP. The database included a large number of individual, resource-specific datasets that were used for the creation of maps, development of management alternatives, and impact analyses contained in the Draft and Final RMP/EIS documents. These datasets included:

Roads and motorized trails from the ground transportation (GTRN) and Facility Asset Management System (FAMS)
Fences from grazing allotment boundaries (GRA)
Wilderness Study Area (WSA) boundaries
Recently acquired parcels with wilderness characteristics
Rangeland Improvement Project System (RIPS)
Utility Corridors
Rock pits and other mining disturbances
Non-native seedings
Wildfires, prescribed fires, and fuel treatments
Land ownership (LLI)
Raptor habitat
Big game habitat
Sagegrouse habitat and lek site locations
Pygmy rabbit habitat

Since the RMP was completed in 2003, many of the above datasets have continued to be updated and maintained to support RMP and project implementation. In addition, new datasets have been developed that are important for on-going land management and wilderness inventory update

activities. These include:

- Pasture boundary fences (GRA)
- Wilderness inventory unit boundaries
- Ecological Site Inventory (ESI) – existing vegetation
- Water developments:
  - Reservoirs
  - Waterholes
  - Wells
  - Water troughs
  - Pipelines
  - Wildlife guzzlers
- Signs
- Photos points and associated field photos

All of the above datasets have been maintained or updated as needed since 2003. This is documented further in the metadata (data about the data) for each dataset. A metadata record has been created for each of these datasets which documents: 1) when the data was collected, 2) how it was collected, 3) who collected it, 4) what kind of attributes are associated with it, 5) what format and projection the data is stored in, and 6) when it was last updated. One *must* review the metadata for each dataset in order to fully understand the data. Further, this metadata is considered an integral part of the administrative record for both the road analysis and wilderness character determination processes.

New Information

In April 2005, the Oregon Natural Desert Association (ONDA) provided the BLM with an inventory report containing numerous proposed new wilderness study areas, based on information their staff or members had collected (ONDA 2005). The document also contained maps, photos, and photo logs. ONDA submitted two supplemental sets of digital photos and photo logs in 2007 specifically regarding two of their 2005 wilderness proposals.

Current Wilderness Inventory Guidance

The *Land Use Planning Handbook H-1601-1* (BLM 2005) describes the current policy on how the BLM is to address new citizen wilderness inventory information and provides some criteria to use when reviewing new information specifically during the land use (resource management) planning process. In addition, the Oregon/Washington State Office, BLM has issued draft guidance on how to maintain its wilderness inventory under Section 201 of FLPMA (BLM 2008). This constitutes the current guidance on wilderness inventory in effect at this point in time.

Road Inventory Maintenance

Since roads form the majority of wilderness inventory unit boundaries, it is important to understand how the BLM's road and transportation network data was originally created and how it continues to be maintained on an on-going basis. Currently, the Lakeview Resource Area has about 2,500 miles of roads identified for active management within its transportation plan network. Another 2,500 miles of roads, trails, and other routes are estimated to exist that are not contained within the transportation plan (BLM 2003a).

Transportation system planning data (ie. road number, road name, road class, number of lanes, surface type, surface condition, etc.) were originally gathered by the BLM from field survey work. Road attribute data were originally entered into the Facility Information Management Systems (FIMS) database in the early-1990's. Road linework was originally captured in GIS from 7.5 minute topographical maps by the U.S. Geological Survey (USGS). The USGS digitized road lines from these maps and made the data available to other federal agencies in Oregon beginning in the mid-1990's.

In 1999, the Oregon/Washington State Office, BLM GIS staff took a copy of the USGS digital road dataset for Oregon and added a series of additional attributes to create a new corporate, state-wide GIS theme called ground transportation (GTRN). In 2001, the GTRN theme for the Lakeview Resource Area was updated with road numbers from existing transportation plan maps. Other attribute fields were subsequently populated by linking directly to the FIMS database (using the road number as the link field) and copying over other attribute values from FIMS.

Since 2001, the BLM has been updating its road datasets at multiple levels. In 2003, at the national level, the FIMS transportation data was moved into a new database called the Facility Asset Management System (FAMS) which contains data on all of BLM's facilities.

In 2005, the Oregon/Washington State Office BLM updated the majority of the route linework and attributes within GTRN for Lake and Harney Counties as part of the "Oregon All Roads" project which was funded by the State of Oregon. This update added, removed, and/or replaced route lines based on newer digital ortho photography. However, this effort relied on the field office to verify the accuracy of the updates.

During the same timeframe, the Lakeview Resource Area, BLM initiated a comprehensive update of the GTRN dataset. This update process compared existing route lines within GTRN with recent (1994, 2000, 2003, 2005, and 2009) rectified digital orthophoto quads (DOQs) of the Lakeview Resource Area. The DOQs and the route linework were viewed on a computer screen using GIS software technology. BLM staff digitized many potential new routes using a "heads-up" digitizing process (the DOQs are displayed as a backdrop on the computer screen and new route lines on digitized using the computer mouse). BLM staff also noted locations where existing road lines were no longer visible on the DOQ. The BLM then created field maps and went to the field to verify the presence, surface type, and overall condition of each route. In addition, the field inventory was used to document the presence or absence of evidence of past mechanical maintenance or improvements for a given route. Photos were taken in various locations to supplement the photos provided by ONDA. The field inventory results were recorded on field maps or, in some cases, were collected using global positioning system (GPS) technology. This field data (both linework and attributes) were then used to update the GTRN master dataset.

The Washington Office has also commissioned a condition assessment study for all roads in the BLM's transportation system (ie. FAMS database) with a maintenance Level of 3, 4, or 5. Between 2005 and 2007, approximately 60% of these roads in the Lakeview Resource Area had detailed condition assessments completed in the field and the results entered into the FAMS database. This updated FAMS attribute data has been automatically linked to the lines stored in GTRN on a weekly basis. This condition assessment process is expected to continue into the future, depending upon funding.

All roads that are part of the BLM's official transportation plan have been entered into the FAMS and GTRN datasets. Those routes that are currently not part of the transportation plan are contained only in the GTRN dataset. (These other routes include state and federal highways, county roads, roads on state and private lands, and other roads and trails on BLM lands).

Wilderness Inventory or Evaluation Process

In conducting the current wilderness evaluation for lands within the Lakeview Resource Area, BLM followed the existing draft guidance for maintaining its wilderness inventory (BLM 2008). An inter-disciplinary (ID) team reviewed the existing wilderness inventory information contained in the BLM's wilderness inventory files, previously published inventory findings (BLM 1979e; 1979f; 1979g; 1980a; and 1980b), and ONDA's wilderness information (document, maps, photos, and photo logs). The ID team then reviewed the resource data described above to determine if additional data update or field inventory was needed. If data updates were determined to be necessary, they were completed prior to completing the evaluation. At a minimum, the road data update described above was completed prior to conducting a wilderness evaluation in a given area. (This included field inventory, updating road data attributes, and capturing additional road photos). BLM staff compiled existing photos or took additional photos of field conditions within a given unit and prepared a photo log to supplement the photos provided by ONDA. All of this information was compiled into an inventory file for a given area.

Unit Boundary Determination Process

At the beginning of the evaluation process for a given area, the ID team identified routes within and outside of the evaluation area that, based upon field knowledge and professional opinion, they believed would likely meet the wilderness road criteria. A route analysis was conducted for each of these routes. This analysis is documented in both ID team meeting notes and road analysis forms contained in the wilderness evaluation files. Most of the routes determined to be roads through this process are part of BLM's current transportation system identified within the FAMS and GTRN databases. This means they have a specific purpose, an assigned road number, an assigned maintenance level, and a condition class rating.

Historically, most of the routes in the Lakeview Resource Area (whether in the transportation plan or not) were created, at a minimum, by mechanically blading or grading to remove existing vegetation and push large rocks off to the side of the route. Many of these existing routes were created specifically to access areas where range improvement projects (ie. fences, waterholes, wells, pipelines, etc.) were subsequently constructed. This resulted in the creation of a relatively straight, vegetation-free, natural surface with small berms along portions of these roads. In some locations, roads were constructed to a higher standard and have additional features such as large rock berms, drainage ditches or wings, culverts, and distinct side cuts traversing up hillsides. The exact construction date for some of these roads is not known, but is frequently tied to the construction date of range improvement projects in the area. Construction dates for range improvements are stored separately in the BLM's Rangeland Improvement Project System (RIPS) database.

Maintenance records for most routes in the resource area do not exist prior to 1990. It is likely that most routes have had only minor maintenance (i.e. spot blading or rocking of short segments) or have not needed maintenance since the time they were originally constructed. As a result, some

constructed routes have some herbaceous and/or short, shrubby vegetation growing in the route median. The presence of this vegetation does not, in and of itself, indicate a lack of regular or continuous use or otherwise make the route impassable to vehicles.

Other routes in the resource area have been created solely by vehicles driving off-road and creating "two-tracks" where the vehicles have crushed the vegetation in the wheel tracks, but relatively tall vegetation remains in the median. These routes do not meet the wilderness inventory definition of a road and can be very difficult to distinguish from a route that was originally constructed and has not recently been maintained based solely on the presence of vegetation in the median.

For this reason, the BLM ID team documented the presence or absence of mechanical construction (paving, blading, gravel, roadside berms, and cut and fill), improvements (culverts, stream crossings, bridges, gates, cattle guards, drainage features, and barriers), and recent maintenance activities on the road analysis forms based on recent field visits or professional knowledge of the route. Some of these features are also documented in the photos taken along a given route.

Some of the interior routes that were not identified as boundary roads during a given evaluation may have also been mechanically improved or maintained at some point in the past and may be maintained in the future, as needed. Most are in a useable condition by two-wheel drive, high-clearance vehicles, but during the field review, relatively regular and continuous use was not as evident and other supporting information about their use was not identified in the field or in the ID-team meetings, so they were not identified as boundary roads for wilderness inventory purposes.

Routes that were determined to meet the wilderness inventory definition of a road were used, along with the boundaries of developed rights-of-way associated with utility lines/corridors and major highways, and non-federal ownership boundaries, to define the boundaries for inventory units that were subsequently evaluated for wilderness characteristics by the ID team.

Wilderness Character Evaluation

Following the determination of unit boundaries described in the preceding section, the ID team then evaluated a given unit to determine if changes have occurred since the original wilderness inventory was completed that would cause the area to now meet all of the wilderness character criteria of:

a) Size - at least 5,000 contiguous roadless acres of public land.
b) Naturalness - the imprint of man's work must be substantially unnoticeable.
c) An outstanding opportunity for solitude or an outstanding opportunity for primitive and unconfined type of recreation must exist.

All three criteria have to be met in order for an area to have wilderness character. If an area is determined to meet all of the criteria, then supplemental values are also documented.

The evaluation for each unit is documented in both ID team meeting notes and in individual wilderness character writeups (Forms 1 and 2) prepared for each unit. This documentation is contained in the wilderness inventory files and is made available to the public upon request.

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