

ATTACHMENT 1

Eight-Step Process for Preparing Wilderness Maps and Wilderness Legal Boundary Descriptions

Step #1 – Prioritize Wilderness Areas

Field Office Wilderness Specialists, in consultation with management and other Field Office resource specialists, will prioritize designated wilderness areas for which wilderness legal boundary descriptions and wilderness maps must be prepared. Priority may be based on any criteria the Field Office considers relevant. Examples of relevant criteria might include unresolved or contested boundary disputes, known or anticipated proposed actions near wilderness borders such as proposed mineral extraction or withdrawal, land disposal or conveyance propositions, and boundaries adjacent to private or other government lands. Field offices will send their priority lists, together with rationale, to the Cadastral Survey Section in the State Office in order that the Survey Section can compile a statewide prioritized list of wilderness areas to be legally described and mapped. The Cadastral Survey Section will write legal descriptions in the order of priority identified by Field Offices. If priorities change for any reason, Field Offices must send revised priority lists to the Cadastral Survey Section.

Step #2 – Create Annotated Maps-of-Intent

As an initial action, before the Cadastral Survey Section can commence writing a draft wilderness legal description, the Field Office Wilderness Specialist must prepare maps and explanations of intent (i.e., maps-of-intent) based on the legislative maps and any relevant portion of the written legislative record. Guidelines for the preparation of annotated maps-of-intent appear below. They are arrayed in relative sequential order.

- Field offices will furnish an annotated hardcopy “map-of-intent,” at an appropriate scale, or an electronic annotated PDF file and shape file of the intended wilderness boundary. Note on the map the natural and man-made features comprising the intended wilderness boundaries (e.g., ridgelines, washes, mountain peaks, water courses, boundary roads, power lines, ditches, canals, fences, etc.). The annotated map-of-intent should also indicate if and where the boundary is to follow public land survey system boundaries, private inholding boundaries, mining claims, utility corridors, rights-of-way, etc. This map will be used to define and depict the concise beginning and ending points of boundary segments and courses used in the wilderness legal descriptions, so provide critical explanatory notations. Information should be supplied in feet rather than meters.

- When possible, avoid the inclusion of such developments and disturbances within and adjacent to the wilderness boundary as: wildlife and livestock developments, communication sites, campsites, wells, weather stations, watershed facilities, recently seeded and/or chained areas, mining scars, old dump or landfill locations, occupancies, etc.
- The annotated map-of-intent must be accurate. For example, if a right-of way boundary is to be followed, portray the precise edge of the right-of-way boundary on the map.
- If a wilderness boundary road changes substantially in width or evolves from one type or standard of road to another (e.g., jeep to dirt, gravel to paved), the point of the change or transformation should be so noted on the "map-of-intent."
- It is preferable that cherry stem roads be squared off at the ends, unless there is a specific reason for having a cul-de-sac such as for a loop vehicle turn-around area or trailhead facility. Cul-de-sacs are more difficult to describe and monument. Specify what you need and indicate on the annotated map-of-intent.
- Whenever possible, follow the hierarchy of methods for delineating wilderness boundaries as found in Chapter II, Section B.3. of BLM handbook H-8560-1, entitled, "Management of Designated Wilderness Areas." These methods include, in descending order of desirability: 1) natural features, 2) semi-permanent manmade features, 3) previously surveyed lines or legally determined lines, 4) point-to-point, 5) a series of bearings and distances between locatable points (metes and bounds), 6) along a contour, and 7) utilizing parallels of latitude and meridians or plane coordinate systems.
- Setback distances from any wilderness boundary road will be in accordance with the Congressional boundary setback standards identified in BLM handbook H-8560-1, Chapter II, Subsection C.5, unless the designation legislation specifies explicit setback distances from a wilderness boundary road (e.g., at least 100 feet from the edge of a road). Specify setback distances from wilderness boundary roads on the map-of-intent.

When completed, the Field Office Wilderness Specialist must send the maps-of-intent to the Chief of the Branch of Geographic Sciences in the State Office.

Step #3 – Prepare 7.5 Minute Maps and Draft and Recommended Boundary Descriptions

Utilizing the annotated maps-of-intent (whether hard copy or electronic), the wilderness legislative maps found in the State Office serialized case files, and any relevant portion of the written legislative record, the State Office Geographic Sciences Section will electronically superimpose the GIS wilderness legislative boundaries and map-of-intent boundaries on 7.5 minute (1:24,000) USGS quadrangle maps. The use of 7.5 minute (1:24,000) maps is not only a condition in the H-8560-1 handbook and the standard map base used for depiction of the final wilderness boundary, but it also provides a level of detail not available on the legislative maps.

The Cadastral Survey Section will then review the wilderness boundaries from the legislative maps and the maps-of-intent, and will identify and annotate on copies of the superimposed 7.5 minute USGS quadrangle maps, those segments of the wilderness boundary that are “unambiguous” and “ambiguous.” The word “unambiguous” in this context means that a segment is clearly tied to, or can be identified with one of the seven methods described in Chapter II, Section B.3.a. of BLM Handbook H-8560-1. The word “ambiguous” in this context means that a segment is **not** clearly tied to, or identified with one of the seven methods described in Handbook H-8560-1, **or** that the segment identified as “ambiguous” may need to be field-verified to determine the legislative intent as to features on-the-ground which are not obvious or evident on either the legislative map or the map-of-intent. “Unambiguous” and “ambiguous” segments should be identified with a number and reproducible on a standard black and white copying machine. Avoid using color codes for segment classification.

The Cadastral Survey Section will then prepare dated draft wilderness legal boundary descriptions for the “unambiguous” annotated and numbered segments acknowledged on the 7.5 minute USGS quadrangle maps, where the intent is clear. Recommended draft wilderness legal descriptions will be prepared for the numbered “ambiguous” segments of the wilderness boundary where the intent is unclear or where disturbances and other non-wilderness features occur within the wilderness area. Numbered segments will correlate with the draft and recommended wilderness legal boundary descriptions.

Further guidelines for the preparation of draft and recommended wilderness legal boundary descriptions are presented below in relative sequential order.

- The Cadastral Survey Section in the State Office will endeavor to write legal descriptions that can be interpreted by the non-surveyor, such as the Table Rock Wilderness example from Oregon. However, legal descriptions will be written unambiguously and in a manner that will be legally defensible in a court of law.
- Draft legal descriptions will attempt to eliminate most distances and bearings in favor of textual descriptions utilizing on-the-ground features. Bearings and distances will be used sparingly and only when on-the-ground features are not available.
- There will be no attempt to monument and describe every angle point of a boundary line. Monuments will be used only in areas where boundary conflicts occur or have the potential to occur.
- As the "preferred option," roads will be used as monuments rather than monumenting the entire wilderness boundary along a road. This guideline applies especially when the language in the wilderness designation legislation requires, as in the cases of the Clark, Lincoln and White Pine County Acts, that "the boundary of any portion of a wilderness area . . . that is bordered by a road shall be at least 100 feet from the edge of the road to allow public access." In rare or infrequent instances, monumenting segments of a boundary road may be necessary.

- In order to accomplish the task of preparing draft wilderness legal boundary descriptions, it is critical that all parties involved with the process communicate with each other on a regular basis. Early and consistent communication and coordination among offices is essential to success.

After the Cadastral Survey Section completes the draft and recommended wilderness legal descriptions, they will be sent by the Cadastral Survey Section to the appropriate Field Offices for review, comment and/or field verification. Cadastral Survey will include the superimposed, annotated 7.5 minute USGS quadrangle maps of the wilderness area depicting boundary “course” or “segment” numbers, and any other pertinent data Field Office personnel might need in order to follow and understand the legal description.

Step #4 – Field Review, Comment, and Verification of Draft and Recommended Boundary Descriptions and Maps and Preparation of Centerline Map

The Field Office Wilderness Specialist and other pertinent field office personnel will review and comment on the draft and recommended wilderness legal descriptions and the superimposed, annotated 7.5 minute USGS quadrangle maps to ensure the “unambiguous” and “ambiguous” segments of the wilderness boundary are correctly described. Some “unambiguous” segments of the wilderness boundary may entail on-the-ground examination by the Field Office Wilderness Specialist and others, to verify accuracy. The Field Office will coordinate with the State Office Cadastral Survey Section to resolve “ambiguous” wilderness boundary segments and recommended wilderness legal descriptions. If necessary, a Cadastral Survey Section representative will meet with the Field Office Wilderness Specialist and other pertinent personnel in the field to discuss and decide how “ambiguous” wilderness boundary segments will be legally described.

Prior to the field visit of the Cadastral representative, it may be necessary for the Field Office Wilderness Specialist to place temporary monuments at field locations within wilderness areas where there is contention or uncertainty or where positive on-the-ground identification of a boundary is needed. A few examples may be: 1) at the ends of cherry stem roads, 2) where a boundary line intersects a road, 3) where a boundary is adjacent to private lands, 4) where heavy visitation is expected such as at primary and secondary access points and trailhead facilities, or 5) where high volumes of non-wilderness recreational use (e.g. OHV, camping, etc.) occur outside but adjacent to wilderness boundaries.

Field Office Wilderness Specialists may use wooden or steel stakes or both (e.g., rebar below ground with wooden lathe and flagging above ground). The Cadastral Survey Section representative may make minor adjustments to some temporary monuments placed by the wilderness specialists to assure they are in the intended location. For example, the Cadastral representative may adjust the location of a temporary monument to ensure it is precisely 100 feet from the edge of a road. The Cadastral representative will then determine the location of the temporary monuments for use in writing the wilderness boundary legal description. In some areas, such as adjacent to a private land boundary, an official cadastral survey may be necessary.

Some “ambiguous” boundary segments may be changed to “unambiguous” upon field examination. For example, a boundary road may have to be examined in the field to determine the type and standard of the road and the appropriate set back distance prescribed in Chapter II, Section B.3.a. of the H-8560-1 handbook. Some “ambiguous” segments of the wilderness boundary may require more intensive field verification by the Wilderness Specialist, and others utilizing the superimposed 7.5 minute USGS quadrangle maps. Materials such as aerial photographs, MTPs, copies of grazing and mineral files, etc. may be used to verify and resolve “ambiguous” wilderness boundary segments. Regardless of how the on-the-ground information is recorded (e.g., notes on the 7.5 minute maps, photographs, field logs, etc.), references should always relate back to identified “ambiguous” boundary segments on the superimposed USGS quadrangle maps.

It may be difficult to satisfactorily clarify and resolve some “ambiguous” wilderness boundary segments during the field verification process. Nevertheless, the best clarification for revision of the recommended wilderness legal boundary description must be provided to the State Office Cadastral Survey Section.

While in the field, the Field Office Wilderness Specialist, the Cadastral Survey representative and others may become aware of “significant management problems” within “unambiguous” and “ambiguous” wilderness boundary segments that Congress may not have been aware of, such as roads, pipelines, mining activities, dumps, and other disturbed areas, as alluded to in Chapter II, Section A.2.d. of the H-8560-1 handbook. These situations should be documented and, if necessary and appropriate, an alternative boundary should be identified and submitted to the State Office Wilderness Coordinator. A written explanation or justification for the alternative boundary is required. In some cases, the inclusion of photographs or a portion of a 7.5 minute map may help illuminate problems and recommendations.

After Field Office review of draft and recommended wilderness legal descriptions, the Field Office Wilderness Specialist and other appropriate personnel, shall provide written review comments to the Cadastral Survey Section. The written response should present additional pertinent information to assist Cadastral in completing the final legal description, identify areas of concern, and any “points,” “courses” or “segments” needing clarification and/or further field verification. The adjusted annotated 7.5 minute USGS quadrangle maps should be returned to Cadastral Survey together with the written review comments.

At this juncture in the wilderness legal description process, the centerline of all wilderness boundary roads for each wilderness will be determined by GPS coordinates and displayed on an annotated electronic centerline map prepared by the Field Office Wilderness Specialist or other appropriate field office personnel. The purpose of this centerline map is to establish forever the precise location of wilderness boundary roads that may “shift” or “drift” over time as ground conditions and natural and cultural features change. The centerline map prepared at this point in time will “lock in” precise locations of roads as close to the date of wilderness designation as possible. The width of the wilderness boundary roads will be measured by field office personnel at a representative point for each road segment and recorded as uniform for that entire segment on the annotated electronic centerline map. This annotated electronic centerline map will be separate and apart from the wilderness legal boundary description and final wilderness map(s),

but will be placed, together with these documents, in the serialized wilderness case file in the BLM Nevada State Office.

Step #5 – Revise Draft and Recommended Legal Descriptions and Maps

After reviewing field office comments on the draft and recommended legal boundary descriptions and the adjusted annotated 7.5 minute USGS quadrangle maps, the Cadastral Survey Section will revise as necessary, the draft and recommended legal descriptions for “unambiguous” and “ambiguous” wilderness boundary segments to conform with adjusted annotated 7.5 minute USGS quadrangle maps. Cadastral will also review the annotated electronic centerline map submitted by the field office, for comparison of true road locations with the road locations shown on USGS quadrangle maps. If true road locations depicted on the annotated centerline map vary appreciably from the USGS quadrangle maps, it may be necessary for Cadastral Survey to further revise the wilderness legal descriptions as well as the adjusted annotated 7.5 minute USGS quadrangle maps. Revision dates for “unambiguous” and “ambiguous” segments will be noted on the revised wilderness legal boundary descriptions and on the USGS quadrangles.

After completing the revised legal descriptions for all segments of the wilderness boundary, the Cadastral Survey Section will send revised wilderness legal descriptions to the appropriate Field Office for final review, comment and/or field verification. Cadastral will again include revised annotated 7.5 minute USGS quadrangle maps of the wilderness area depicting “course” or “segment” numbers, and any other pertinent data Field Office personnel might need for final review and confirmation of the legal descriptions and maps.

Step #6 – Final Review, Approval, and Reporting of Legal Descriptions and Maps and Centerline Document

Upon receipt of the revised legal boundary descriptions and the revised annotated 7.5 minute USGS quadrangle maps, the Field Office Wilderness Specialist and other appropriate personnel will conduct a final review and confirm these materials. If there are still discrepancies, the Field Office will need to communicate and coordinate these with the State Office Cadastral Survey Section for rectification. Once confirmed, the Field Manager will formally approve and transmit these materials to the Cadastral Survey Section in the State Office via memorandum stating the materials have been reviewed, confirmed and approved by the Field Manager.

When the Cadastral Survey Section receives the memorandum from the Field Manager, the Cadastral Survey Section will review the revised wilderness legal descriptions one last time for accuracy of content and correctness of form. The Cadastral Survey Section will work closely with the NSO Geographic Sciences Section to prepare the final wilderness maps that precisely illustrate legally described “courses” or “segments” of wilderness boundaries that correlate unerringly with the final legal descriptions.

When everything is completed and in the correct order, the Chief of the Cadastral Survey Section

will formally approve (i.e., sign and date) both the final wilderness legal descriptions and the final wilderness maps. The Chief will also at this time record one unit of accomplishment in the Management Information System under 1210 Program Element “BX,” Manage Public Land Records (Records created or updated), for each wilderness area legal description formally approved.

Step #7 – Assembly, State Director Certification and Submittal of Wilderness Map Packets

With assistance from the State Office Cadastral Survey Section and the Geographic Sciences Section, the State Office Wilderness Coordinator will then assemble the wilderness map packet in accordance with instructions in the H-8560-1 handbook. The wilderness map packet will contain a single certification signature sheet, and a final wilderness legal boundary description and final wilderness map(s) for each designated wilderness within the geographic area covered by designation/enabling legislation. For example, there were ten wilderness areas designated in the Black Rock Desert – High Rock Canyon Emigrant Trails National Conservation Act of 2000. Accordingly, a single wilderness map packet will be assembled for the geographic area covered by that act containing final wilderness legal descriptions and final wilderness maps for all ten wilderness areas.

The wilderness map packet will then be certified, signed and dated by the State Director. After certification, the State Office Wilderness Coordinator, with assistance from the State Office Branch of Geographic Sciences, will assemble no less than ten reproduced sets of the wilderness map packet. Six sets of the reproduced wilderness map packet, as specified in the H-8560-1 Handbook, will be sent to the Washington Office by “return receipt requested” registered mail. The Washington Office number of wilderness map packets includes those to be sent to the Congressional committees. Since the Wilderness Act and each of Nevada’s wilderness designation/enabling acts require that final wilderness legal descriptions and final wilderness maps shall be on file and available for public inspection, it is necessary to have a file copy plus a library or review copy of each wilderness map packet for both the State Office (two sets) and the Field Office (two sets).

Step #8 – Secure Wilderness Map Packets and Make Available For Public Inspection

The last step in the wilderness legal boundary description and wilderness map process is to ensure that the wilderness map packets are safely kept in secured areas and are available for public inspection. In the State Office, the Wilderness Coordinator is responsible for making certain that the pertinent portion of a wilderness map packet (i.e., a final wilderness legal boundary description and final wilderness map(s) for each designated wilderness) is placed in each appropriate serialized wilderness case file. A second wilderness map packet will be in the possession of the State Office Wilderness Coordinator and will be placed in a flat map file.

In the Field Office, the Wilderness Specialist will be responsible for safely filing and securing sets of the wilderness map packets. These sets must not be lost, misplaced, discarded or destroyed. One map set must be permanently reserved in an area known to staff and

management and must be available for public inspection. The other map set will be in the possession of the Field Office Wilderness Specialist and stored in a safe, secure area.

As soon as possible after wilderness map packets are secured, the State Office Wilderness Coordinator shall submit a formal request to the State Office Chief of the Branch of Geographic Sciences (Geographic Sciences Section) to prepare and submit to the USGS, final wilderness boundary maps. Should the USGS choose to accept them, wilderness area boundaries could be identified on future versions of 1:24,000 scale USGS topographical quadrangles.