

## Methods

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The process of compiling this information began in January 1999 with a letter and one-page questionnaire sent to administrators of each of the 625 wildernesses in the NWPS. Over the next year, three additional wildernesses were designated, bringing the total that we surveyed to 628. We sent the questionnaire to 34 BLM field offices and resource areas responsible for administration of the 134 BLM wildernesses. We sent the questionnaire to 360 FS ranger districts responsible for the 400 FS wildernesses, to 64 FWS refuges responsible for the 71 FWS wildernesses, and to 44 NPS parks responsible for the 44 NPS wildernesses. (Note that additional wildernesses have been designated since we completed information collection on January 1, 2000, and that these numbers total more than 625 wildernesses due to 21 wildernesses that are managed by two different agencies.)

The questionnaire asked whether any recreation baseline data had ever been collected in any of the wildernesses managed by that office, either by the management agency or by someone else (such as an academic institution). We described the types of data we were interested in: (1) campsite impact data, (2) trail impact data (described as data on trail impact—not a prescriptive trail log that notes trail locations that need work), and (3) wilderness visitor data (described as information about the visitors and their trips—not data on amount of use). If respondents stated that no data of any of the three types had ever been collected, we accepted that response. From the BLM we received nine “no data” responses. We received 29 “no data” responses from the FS, 40 from the FWS, and seven from the NPS. However, a substantial number of people did not respond to our questionnaire. Moreover, after interviewing many of those who responded that they had data, we concluded that their data did not meet our criteria for inclusion.

We conducted phone interviews with all the administrators who either responded that they had data or who did not respond to our questionnaire. Between March 1999 and January 2000, we conducted 15 interviews with the BLM, 331 with the FS, 22 with the FWS, and 37 with the NPS. Ultimately, we conducted phone interviews with managers of every wilderness in the NWPS, except those who indicated on the questionnaire that they had no data. In all cases we asked to speak with the person most familiar with wilderness management. In the BLM, we spoke with recreation and wilderness planners, as well as with State office wilderness coordinators. In the FS, we spoke most frequently with district recreation and wilderness managers, but also with planners, foresters, resource officers, trail personnel, district rangers, and occasionally forest staff. In the FWS, we spoke

with refuge managers and assistant managers, and occasionally with someone with recreation or wilderness in their title. In the NPS, we spoke most frequently with resource management specialists, but sometimes with district or wilderness rangers and occasionally with a planner, science advisor, naturalist, or superintendent.

In each interview, we began by establishing whether data met our criteria for inclusion. Sometimes data were collected in such a nonsystematic manner that we decided not to include them. However, for this criterion we erred on the side of inclusion and simply noted that the sample was an opportunistic one. There were two other common reasons for excluding data. First, in many wildernesses, trails are inventoried and information is collected on the location of existing improvements (for example, drainage devices or bridges) and segments that need maintenance or improvement. We only included trail studies if they had data on recreation impacts on trails. Relatively few wildernesses have such data.

Second, many wildernesses have systematically collected data on amount of recreation use but have no baseline data on visitor characteristics. Data on amount of wilderness recreation use, prior to 1995, are compiled in Cole (1996). For purposes of this report, however, we only included wilderness visitor studies if they had data on more than amount of use. Our criteria for campsite data were less stringent than for trail and visitor data. We included wilderness campsite studies even if the only data collected were campsite locations. Virtually all wildernesses had maps of the locations of the trails in their official trail system.

In addition to interviewing agency managers, we searched for data that had been published in such outlets as journals, proceedings, theses, and reports. For this purpose, we conducted extensive literature searches. Many publications were located by examining the literature cited in other papers and reports. We also had access to the library of the Aldo Leopold Wilderness Research Institute, including the personal collections of early wilderness scientists Bob Lucas and George Stankey. Ultimately, we located over 300 publications that contained baseline data about wilderness campsite impacts, wilderness trail impacts, or wilderness visitors. We undoubtedly missed a few relevant publications but believe we have captured almost all of the relevant studies published by 2000. When there were multiple publications from the same study, we included more than one publication if they were substantially different. In the tables that follow, if there are multiple publications from the same study, they are treated as if there were multiple studies. Consequently, the number of studies is inflated somewhat. Readers specifically interested in the Boundary Waters Canoe Area Wilderness should consult the

bibliography of research compiled by Lime and others (1990). Although we use the term “monitoring data” throughout this report, much of this data has been collected in research projects.

For each type of baseline data, we collected information about when the studies were conducted, how the data are stored, and where they are stored. We asked questions about the survey sample. Sometimes data were collected across the entire wilderness. In other cases, data were only applicable to a portion of the wilderness or to a specific situation (such as visitors to heavily used trailheads or campsites that are highly impacted). We also asked questions about the type of data that were collected (for example, photopoints, condition classes, or detailed measures). This detailed information should be helpful both to characterize the types of studies that have been conducted across the NWPS and to provide the specifics of a particular study in a wilderness of interest.