

Managing Campsite Impacts on Wild Rivers: Are There Lessons for Wilderness Managers?

Cole, David N. (2000). Managing campsite impacts on wild rivers: are there lessons for wilderness managers? *International Journal of Wilderness* 6(3), 12-16.

River(s): Salmon (Middle Fork), Salmon (Main)
Research Topic(s): Level of environmental impact, Monitoring recreation use/impacts
Type of Publication: Journal

1. Study Purpose

To inventory and assess campsites conditions along the Main Salmon and Middle Fork Salmon and describe any lessons learned from wild river management that may be pertinent to wilderness managers.

2. Findings

2.1. Campsite Size

- Sites along both rivers were quite large.
- Middle Fork: main campsite (median 544 m²) with a network of social trails (250 m) and satellite sites (additional 126 m²).
- Main Salmon: main campsite much larger (median 905 m²) with fewer social trails and satellite sites.

2.2. Ground Cover

- Most campsites along the Main Salmon are of a durable substrate (sand or rock).
- Most campsites along the Middle Fork are above the mean high water line and disturb more of the vegetation. Compared to control sites, the campsites show exposure of mineral soil over 36% of the median campsite.

2.3. Other Features (e.g., human waste sites, trash, ash piles, etc.)

- Despite vegetation impacts, most sites are clean, relatively undamaged, and show very few or no other features.

3. Key Discussion Points

- Differences in campsite sizes and layouts along these two rivers are likely attributable to the Main Salmon having more space below the mean high water mark for camping. Middle Fork is also used more during peak flow periods when there are fewer areas below the mean high water mark to camp.

- Campsite size compared to wilderness sites (200 m²) and some eastern rivers (200 to 300 m²) indicate the Salmon River sites more closely resemble outfitter camps in the Bob Marshall Wilderness in Montana.
- It is likely the unusually large size of campsites and network of social trails is due to large user groups consisting of “unaffiliated subgroups” (p. 15), as commonly occurs with outfitted groups.
- Due to the extreme popularity of these rivers, the impacts recorded in this study would be “even higher if management had not restricted uses and implemented education programs” (p. 15).
- Education efforts and Leave No Trace techniques have been widely accepted by river users and have been a success for reducing or eliminating certain impacts.

4. Management Recommendations

- If managers want to reduce impacts, they should consider confining all users to areas below the mean high water mark where flooding and deposits can rejuvenate these areas.
- Managers may also want to limit group size to reduce or eliminate the need for large social trail networks and satellite sites.
- Continue education efforts and Leave No Trace techniques.

5. Research Design

5.1. Study Area

Wild sections of the Main Salmon and Middle Fork Salmon Rivers.

5.2. Data Collection Instruments

Inventory and assessment methods were adapted from techniques used in wilderness areas.

5.3. Study Population

Approximately 200 campsites during 1995-96, 100 on each river section.

5.4. Sample Size

10 to 15% systematic sample – 11 campsites on the Middle Fork, 13 campsites on the Main Salmon.

5.5. List of Variables and Operational Definitions

5.5.1. Physical campsite characteristics

- Campsite area and satellite sites – center point with azimuth and distances to various points along the perimeter
- Ground cover classes – estimated percentage of area in the following classes: vegetation, litter, mineral soil, sand, and rock

- Tree damage – “none/slight, moderate (two or more nails, numerous small trunk scars, or exposed roots), or severe (numerous substantial trunk scars or girdled trunks or roots)” (p. 13-14).
- Social trails – mapped, measured length, and classified: worn, well-worn, deeply worn.
- Other features – counted fire rings, ash piles, human waste sites, scorched sand sites, and constructed structures

6. Theories Used in Study

N/A