



Monitoring Human Impacts on Wildlife


CSS 496
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Goal of Wilderness Wildlife Management

To preserve the natural abundance and distribution of all native species and maintain natural processes such as population fluctuations.


Wildlife Indicators

Guidelines for Management of Wildlife in Wilderness

- Seek natural distribution, numbers, & interactions of indigenous species of wildlife.
- To the greatest extent possible, allow natural processes to control wilderness ecosystems and their wildlife.
- Keep wildlife wild, its behavior altered as little as possible by human influence.
- Permit viewing, hunting & fishing where (1) biologically sound, (2) legal, & (3) conducted in the spirit of the wilderness experience.

Wildlife Indicators





Impacts to Wildlife

- Human activities impacting wildlife:
 - Harvest (hunting & fishing)
 - Introduced exotic species, Stocking
 - Fire suppression
 - Campsite & trail development
 - Presence of human & stock food
 - Grazing, Mining
 - Predator Control
 - Harassment (chasing, pets, etc.)
 - Habituation



Wildlife Indicators





Impacts to Wildlife

Harassment

- Events which cause excitement and/or stress, disturbance of essential activities, severe exertion, displacement & sometimes death (Ream 1979)
- Can alter wildlife behavior, modify movement & feeding patterns.
- Can cause displacement away from traditional ranges into poorer habitat, eventually resulting in population decline.

Wildlife Indicators





Wildlife Indicators

Species Distribution

- Species shift away from human activity may indicate displacement.
- Species shift towards human activity may indicate attraction of opportunistic species.
- Large natural variation exists.
- Seasonal distribution changes.

Wildlife Indicators





Wildlife Indicators

Abundance (absolute and relative)

- Increased abundance may indicate attraction of opportunistic species.
- Decreased abundance may indicate displacement of species.
- Relative abundance is subject to high observer error.
- May require intensive sampling.



Wildlife Indicators

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Wildlife Indicators

Population Trend

- Increasing population trend may indicate attraction for opportunistic species.
- Decreasing population trend may indicate displacement.
- Population trend is easier to measure than absolute abundance.
- Requires several years of data to show trends.

Wildlife Indicators

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Wildlife Indicators

Species Diversity

Species Composition

Species Richness

respond to:

- Habitat alteration from campsite development, fire suppression, & grazing.
- Presence of human (& stock) food.
- Introduced exotic species.

Wildlife Indicators

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Wildlife Indicators

Species Diversity

- Diversity measures combine information on the number of species and abundance.
- A decrease in diversity may indicate some species have been displaced or eliminated.
- Does not reflect replacement of one species with another.
- Most practical for bird & rodent communities.
- High observer error.

Wildlife Indicators

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Wildlife Indicators

Species Composition

- A change in composition may indicate displacement of species sensitive to human presence.
- May also indicate attraction if the species present are opportunistic.
- Usually does not produce quantitative info.
- Used with bird & rodent communities.

Wildlife Indicators

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Wildlife Indicators

Species Richness (number of species)

- A decrease may indicate displacement of species sensitive to human presence.
- An increase may indicate that opportunistic species have moved into an area.
- Does not reflect the replacement of one species by another. (thus, composition should also be recorded)
- Used with bird & rodent communities.

Wildlife Indicators

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Guild-indicator Species

- Assemblages of species that use a particular class of resources in a similar way.
- Assumes that species in a guild use similar resources. (but they often use different niches)
- Must be used only in very similar habitats.
- Guilds & species should only be chosen after site-specific inventories are done.

Wildlife Indicators

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