

Influence of Recreation Trails on Breeding Bird Communities

Scott Miller, Richard Knight and Clint
Miller. 1998. Ecological Applications
8:162-9.

Bird Communities

Trail v. No Trail

These birds were found to be significantly more abundant in areas away from trails in grasslands of City of Boulder Open Space

Grasslands

Western Meadowlark



Photo by George Jameson

Vesper Sparrow



Photo by Chan Robbins

Grasshopper Sparrow



Photo by Chan Robbins

Bird Communities

Proximity to Trails

Grasslands

The grasshopper sparrow and the western meadowlark showed increasing abundance with increasing distance from trails.

Western
Meadowlark



Photo by George Jameson



Grasshopper Sparrow

Photo by Chan Robbins

Bird Communities

Trail v. No Trail

These birds were found to be significantly more abundant in areas away from trails in forests of City of Boulder Open Space

Forests

Photo by Jim Stasz

Townsend's Solitaire



Chipping Sparrow

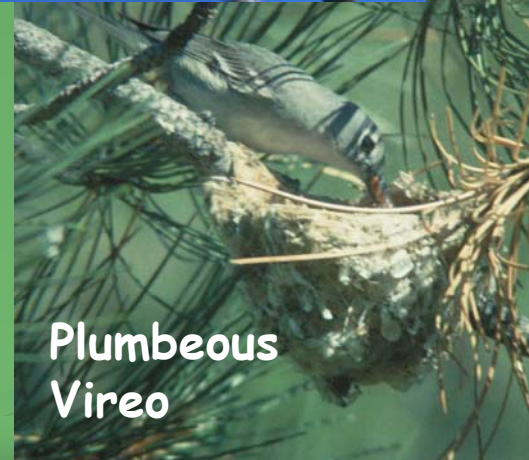


Photo by Jim Stasz

Western Wood-peewee



Plumbeous Vireo



Pygmy Nuthatch



Bird Communities

Forests

Proximity to Trails

These species showed increasing abundance with increasing distance from trails.

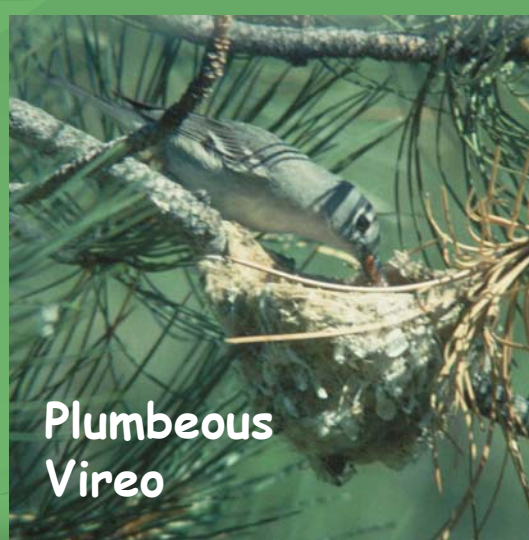
Chipping Sparrow



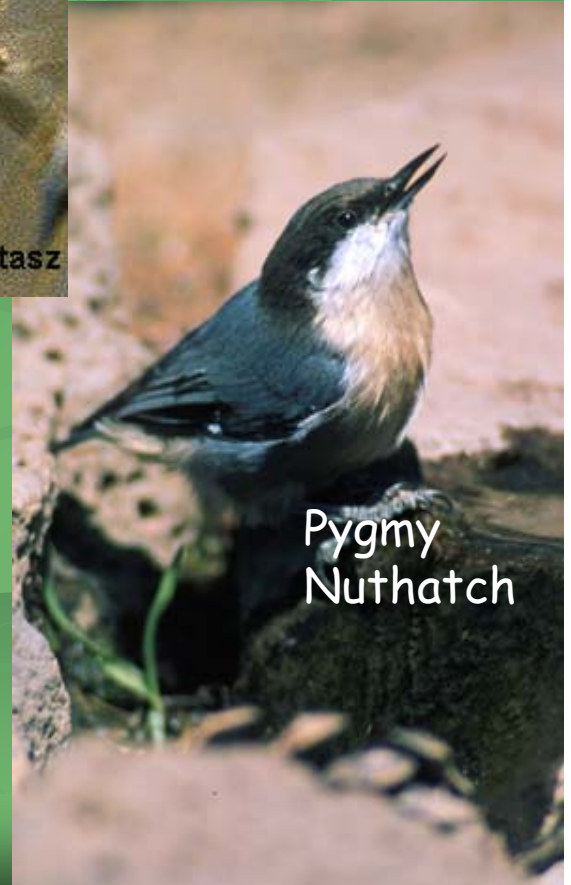
Western Wood-peewee



Plumbeous Vireo



Pygmy Nuthatch



Bird Communities

Positive Response to Trails

Forests

The American Robin was found to be significantly more abundant in forested areas near trails.

The robin was the only species found in greater abundance with increasing proximity to trails.



Photo by Peter S. Weber

Bird Communities

Positive Response to Trails

The Black-billed Magpie and the House Finch were detected only along grassland and forest trails.



Nest Placement, Predation and Parasitism

- In grasslands, nests less likely to occur near trails v. away from trails
- In grasslands and forests, nest survival increased with increasing distance from trail. (Nest failure higher near trail).
- Cowbird parasitism was higher near trails for solitary vireos.

Findings from Miller, Knight and Miller

- Trails affected the composition of bird communities in forests and grasslands
 - Some species avoid trails/some prefer
 - Nest predation increased
 - Nest parasitism increased (in forests)
- "Zone of Influence" approximately 75 meters (246 feet) from the trail for most species

Findings from Miller, Knight and Miller

- Sensitivity to trails could be caused by the outright disturbance of the trail, or the intensity of human disturbance.
- Most likely both.