

information crossfile

A recent issue of *BioScience*, 38(7), is devoted to biological diversity conservation and contains an article by Christine Schonewald-Cox. NPS Research Scientist at the U/Cal Davis CPSU. She presents a conceptual model to show how many natural reserves have shrunk in the face of developments, human competition for resources, and changes in political ideologies. Examples from Redwoods NP in California and Organ Pipe Cactus NM in Arizona suggest that "buffer areas" outside reserves are required to maintain the integrity of natural resources and processes within the reserves.

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Nature can present some really knotty, frustrating, complex problems.

A beetle not much bigger than a grain of rice is busy chewing up the trees in a 1.4 million acre area of Oregon and parts of Washington. The Mountain Pine Beetle (*Dendroctonus monticolae*) lives in mountainous regions of Wyoming, Montana, Idaho, Nevada, California, Oregon, Washington and British Columbia and dines primarily on white, lodgepole, and sugar pines. Last year about 1.6 million acres of lodgepole, ponderosa and white pine were killed by the beetle in Oregon and Washington, according to Irai Ragenovich,

entomology group leader for the PNW region of the USFS. The current outbreak began about 20 years ago and is being contained by thinning of dense tree stands to slow the beetle's spread.

The long-term solution involves better management of lodgepole pine, white pine, and second growth ponderosa pine. The beetles thrive on old, dense stands of such trees, so managers need to keep stands thinned. In the past, forest fires have helped thin lodgepole stands and keep beetle populations down. Ironically, better forest fire fighting and prevention have helped preserve the Northwest's second growth stands and this, in turn, has helped the mountain pine beetle kill those same trees and spawn more forest fires.

Steve Woodward of the (Portland) *Oregonian* staff put together this picture of the tree-slayer.

THE MOUNTAIN PINE BEETLE

Mountain Pine Beetle
Dendroctonus monticolae

Distribution: Mountainous regions of Wyoming, Montana, Idaho, Nevada, California, Oregon, Washington and British Columbia.

Diet: White, lodgepole and sugar pines. Ponderosa pine when none of the others are available. Prefers young trees and the tops of old trees. A tree may be killed in the space of one year.

Habits: Adults excavate extensive galleries between the outer bark and sapwood. Eggs are laid singly in niches on alternate sides of the gallery. Larvae tunnel out at right angles from the main gallery and pupate for two years in cells at the end of their tunnels. Adults emerge in groups from June to September.



Area of Infestation

The Oregonian

From Oregon's Department of Fish and Wildlife comes a news release entitled "Peregrine Recovery

Takes Wing," describing the most successful summer in decades for the production of peregrine chicks in the state. Biologists estimate that at least six nests produced chicks in 1988 for a possible total of 16 additional new birds.

The Department's expenditure for peregrine recovery this year amounted to \$9,000, spent in conjunction with \$22,000 from other agencies (NPS and USFS) and the Peregrine Fund. The work dovetails with programs in neighboring Washington and California.

At Crater Lake NP, in a complicated scenario involving natural nesting, death by horned owl, and substitution of facility-born peregrine chicks into a prairie falcon nest, two chicks may have "made it" this year. (The story will be told in detail by Jim Milestone in the Winter issue of *Park Science*.) Elsewhere, the birds are being raised in hatch boxes in Hells Canyon, the lower Columbia River Gorge, and at a new site near Summer Lake in Oregon.

Department spending for the last seven years of reintroduction efforts is near \$100,000; all of this money has come from donations by Oregon state taxpayers to the Nongame Wildlife Fund on the state tax form.