Issue: Management and Conservation of Marbled Murrelets in Redwood National and State Parks

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Issue: The outlook is dire for the conservation of the federal and California state listed marbled murrelet throughout its range in the lower 48 states. Redwood National and State Parks (RNSP) are considered vital to the survival and recovery of the species. Ideas are needed on how management can reduce impacts to nesting marbled murrelets that are directly or indirectly associated with recreational activities occurring within RNSP.

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I. Background Summary

It wasn't until 1973 that the first marbled murrelet nest was discovered in an old growth redwood tree in Santa Cruz county. Further research showed that murrelets only nest in old growth trees near the coast in the southern two thirds of the species' range. The Washington, Oregon and California portion of the murrelet population was listed as threatened by the federal government in 1992 and shortly thereafter listed by the state of California. Listing was primarily due to a 90+% loss of suitable nesting habitat during the last six decades caused by extensive logging of old growth coastal forests.

A five year conservation status review of the marbled murrelet was completed in 2004 by the US Fish and Wildlife Service (USFWS). The report used existing and new research that indicated a continued steep decline in the listed murrelet population. Multiple new studies using varying techniques have shown that predation of murrelet eggs and chicks, mainly by corvids (jays, crows and ravens) is the primary cause of the ongoing murrelet population decline, particularly in murrelet nesting locations near human developments and recreation areas. Other new studies have shown that corvid densities increase and their foraging patterns change near recreational facilities. Supplemental food sources in human altered landscapes and human food waste are the reasons cited for the increased corvid densities and changed behaviors.

RNSP has been identified by the USFWS as critical to the survival and recovery of the marbled murrelet in the California/southern Oregon region because of the large extent of available suitable habitat and high proportion of murrelets nesting within the parks. Multiple, corroborating monitoring surveys within RNSP indicate a very low, unsustainable number of young are being produced within the parks and that the population is rapidly declining. Research conducted within RNSP indicate a very high rate of nest failure, most of which has been caused by corvid predation. Other recent studies have shown that corvid densities are much higher near RNSP campgrounds than in areas farther away. The recently completed analysis of recreational impacts done for the Trail and Backcountry Management Plan process identified that 90% of the parks' impacts to murrelets from corvids is due to existing recreational developments (e.g. existing campgrounds, picnic areas, trails). Human developments and practices (e.g. pastures, farms, suburbs, dumps, feed lots, highways, open trash cans, backyard bird feeders) adjacent to the park, however, also significantly contribute to the density of corvids within the parks. The USFWS wants to work with RNSP to reduce the impacts of recreational activities on nesting murrelets.

II. Summary of Recent, Local Marbled Murrelet and Corvid Research, Monitoring and Population Modeling – most monitoring programs and studies conducted by HSU, US Forest Service, USFWS and private contract researchers

A) The USFWS marbled murrelet recovery plan identified six conservation zones which extend from the USA/Canada border to southern Santa Cruz county, California. Zones 5 and 6 are thought to be "non viable" due to very small population numbers and will be extinct within the next 30 years. The USFWS expects zones 1 through 4 to be the areas where murrelets have a chance of recovering. RNSP is within zone 4 which extends from just south of Coos Bay, Oregon to the southern Humboldt County border. Zone 3 envelopes the rest of the Oregon coast and is comparable in population size to zone 4. Zone 2 covers coastal Washington and contains a smaller number of murrelets than zone 4 while zone 1 covers the Puget Sound and contains a higher number of murrelets than zone 4.

B) Zone 4 currently contains an estimated 4,500 marbled murrelets. Over 75% of the murrelets within zone 4 were counted off the coast of RNSP. Radio telemetry studies within RNSP and other murrelet nesting areas have shown that murrelets congregate at sea during the breeding season directly off the coast of the forest areas in which they nest. RNSP contains 70% of the suitable murrelet nesting habitat in zone 4 and 62% of the suitable habitat in zones 4, 5 and 6 combined.

C) At sea surveys off the coast of RNSP have calculated juvenile:adult marbled murrelet ratios of 0.0:0.02 and 0.003:0.02. For comparison, a stable population needs a ratio of 0.18:0.28. A murrelet radio telemetry study within RNSP found that between 84% and 94% of the murrelet nests found, failed (i.e. a young bird did not leave the nest). Predation by corvids was the number one cause of known nest failure. On land, murrelet monitoring surveys within the Lost Man Creek watershed within RNSP have documented

a 75% decline in murrelet detections between 1989 and 2002. Another monitoring site along the James Irvine Trail in Prairie Creek RSP showed a similar decline. Population projection models indicate that marbled murrelets have an 80-95% chance of going extinct in zone 4, and RNSP, in the next 60 years if population trends seen over the past ten years continue.

D) Monitoring reports have indicated that most corvid populations have dramatically increased in the west in recent years. Recent studies in Jed Smith and Prairie Creek campgrounds in RNSP showed that Steller's jays are 3 to 7 times more common near the campgrounds than in areas farther away (i.e. 0.5 miles). Both campgrounds are within suitable marbled murrelet nesting habitat. Similar studies in California state park campgrounds in Santa Cruz county near marbled murrelet nesting habitat showed that Steller's jays are 9 times more common and ravens 7 times more common in campgrounds than in areas farther away.

III. *Short Term Management Options to Reduce Corvid Predation of Nesting Marbled Murrelets Within RNSP

* Above and beyond what is already being done or is proposed in the Trail and Backcountry Management Plan.

PLEASE NOTE – An effectiveness monitoring program should be a part of any of these management options. The basic measurement standard would be changes in corvid densities.

A) Education -

1. Increase interpretive roving at food waste "hotspots", i.e. all frontcountry campgrounds, picnic grounds and major trailheads in or near marbled murrelet habitat.
2. Place larger, more noticeable signs at food waste hotspots.
3. Highlight food management message in all visitor publications.
4. Put large, highly visible displays in all visitor centers.
5. Ensure that every campfire program contains a short food management message.
6. Establish food management/corvid/murrelet issue as a permanent part of the two education centers' curriculum.
7. Hold a training session(s) for all current RNSP staff and annually thereafter for all new and seasonal staff. Could be made a part of bear management training.

B) Existing Visitor Use Developments –

1. Install some sort of food trap at spigot drains in campgrounds to make food waste inaccessible to corvids.
2. Complete installation of wildlife proof equipment (i.e. trash receptacles and food storage containers).

3. Eliminate all or a portion of areas available for dispersed backcountry camping on Redwood Creek gravel bars. A previous management option offered during the Backcountry Management Plan process was to eliminate dispersed camping downstream of the Bond Creek/Redwood Creek confluence. This area is surrounded by one of the biggest blocks of contiguous murrelet nesting habitat and the radio telemetry study has shown that the area contains much of the nesting murrelets captured off the coast of RNSP.
4. Close, either during the murrelet breeding season (March 24 to September 15) or permanently, certain isolated, existing picnic areas, trailheads, trails, park roads and/or backcountry camps in and/or near marbled murrelet nesting habitat.

C) Proposed Visitor Use Developments –

1. Use adaptive management before, during and after the installation of proposed developments described in the Trail Plan. Conduct corvid surveys in a proposed development area before, during and after the development has been constructed. If corvid densities significantly increase after installation of the development, close it.
2. Eliminate some proposed developments that allow visitors access to murrelet nesting areas that are currently inaccessible to park visitors.

D) Enforcement –

1. Establish a non punitive "crumb patrol" as was developed in Santa Cruz county state parks. Basically, either park staff or volunteers "cite" offenders or offending campsites with a printed notice that teaches visitors about food management.
2. Cite visitors who flagrantly feed wildlife or dump garbage.

E) Lethal Corvid Control –

1. Establish a lethal corvid control program in food waste hotspots as was developed in Santa Cruz county state parks. Trap-euthanasia would be the preferred method over shooting. Shooting may be considered in back country situations. A monitoring program would be mandatory to determine effectiveness.

F) Community Outreach –

1. Initiate a collaborative program with neighboring park communities, particularly Orick, Klamath, Crescent City and Hiouchi, to address the problems of food waste management and supplemental feeding of corvids in these communities.
2. Identify and target particularly problematic developments (e.g. dumps, open livestock feed, un-maintained recreation areas) adjacent to the parks which provide significant food sources for corvids.
3. Target schools serving students who live near the parks for education programs.

IV. *Long Term Management Options to Reduce Corvid Predation of Nesting Marbled Murrelets Within RNSP

A) Second Growth Forest Management –

1. Increase emphasis on accelerating second growth forest growth adjacent to suitable murrelet nesting habitat areas that are away from human development in order to provide additional nesting areas for murrelets distant from corvid saturated habitats (i.e. upper Redwood Creek and Mill Creek acquisition areas). Caveat – forest management techniques should not attract corvids by opening up forest canopies too much and thus increasing berry producing shrub growth.

B) Large Visitor Developments –

1. Permanently close or move out of old growth any large, front country campgrounds or picnic areas.
2. Permanently close Newton Drury Parkway, Cal Barrel Road, Howland Hill Road and/or Walker Road to public, motorized vehicular traffic and provide shuttle bus service instead.

C) Education, Enforcement and Outreach Programs

1. Continue education, enforcement and outreach programs for long term. These programs cannot cease until murrelets are declared recovered.