



NATURAL RESOURCES DEFENSE COUNCIL

Via Electronic and overnight mail

September 20, 2010

Public Comments Processing  
Attn: FWS-R6-ES-2010-0047  
Division of Policy and Directives Management  
U.S. Fish and Wildlife Service  
4401 N. Fairfax Drive, Suite 222  
Arlington, VA 22203

To Whom It May Concern:

**Re: Comments on Whitebark Pine (*Pinus albicaulis*) 90-Day Petition Finding and Initiation of Status Review**

On behalf of the Natural Resources Defense Council (“NRDC”) and our more than 650,000 members, we submit the following comments on the U.S. Fish and Wildlife Service’s (“FWS”) positive 90-day petition finding and notice of initiation of status review for whitebark pine (*Pinus albicaulis*). See *Endangered and Threatened Wildlife; 90-Day Finding on a Petition to List Pinus albicaulis (Whitebark Pine) as Endangered or Threatened*, 75 Fed. Reg. 138 (July 20, 2010).

We are pleased that FWS has found that listing whitebark pine under the Endangered Species Act, 16 U.S.C. §§ 1531, *et seq.*, may be warranted. These comments provide additional information supporting NRDC’s petition to list whitebark pine as an endangered species. This new information strengthens the evidence that this species is not adequately protected by existing regulatory mechanisms and is in danger of extinction in all or a significant portion of its range.

**I. New research indicates whitebark pine is severely endangered in the Greater Yellowstone Ecosystem**

Since our initial petition was filed, a new report, funded by the U.S. Forest Service and NRDC, was published that demonstrates the dramatic decline of whitebark pine in one of its most important strongholds in the Northern Rocky Mountains. This report systematically assessed the entire 20 million acre Greater Yellowstone Ecosystem, documenting that over 80% of the area’s whitebark pine currently has medium to high levels of mortality (MacFarlane et al. 2010, attached). This study represents the most comprehensive regional survey of whitebark

pine within its global range. Using an innovative aerial survey approach, the researchers were able to distinguish between varying degrees of the extent and intensity of whitebark pine mortality. Over 50% of the area surveyed showed high rates of mortality and another 30% showed medium rates of mortality. Ten percent of the entire Greater Yellowstone Ecosystem had low rates of mortality and only 5% showed no evident mortality.<sup>1</sup>

Additional research on whitebark pine in the Greater Yellowstone Ecosystem lends further support to the fact that the current mountain pine beetle attacks are outside the historical disturbance level in the area (Logan et al. 2010). Furthermore, whitebark pine lacks the ecological resiliency and host defenses of other pines experiencing mountain pine beetle infestation, such as the lodgepole pine. The combination of this new research indicates that whitebark pine is already highly endangered at a local level. Similar conditions throughout the remaining range of whitebark pine supports a finding of endangered at the species level.

## **II. The Committee on the Status of Endangered Wildlife in Canada recommended whitebark pine be added to the Species at Risk Act**

Earlier this year, Canada's scientific committee on endangered wildlife concluded that whitebark pine qualified as endangered under the country's Species at Risk Act (COSEWIC 2010). The assessment was based on a summary report that estimates the population decline rate of whitebark pine in Canada is 56% over 100 years with some areas such as the Canadian Rocky Mountains and Waterton Lakes National Park reaching 78-97% decline over 100 years, respectively (Auchuff, personal communication). COSEWIC's conclusion states:

This long-lived, five-needled pine is restricted in Canada to high elevations in the mountains of British Columbia and Alberta. White Pine Blister Rust alone is projected to cause a decline of more than 50% over a 100 year time period. The effects of Mountain Pine Beetle, climate change, and fire exclusion will increase the decline rate further. Likely, none of the causes of decline can be reversed. The lack of potential for rescue effect, life history traits such as delayed age at maturity, low dispersal rate, and reliance on dispersal agents all contribute to placing this species at high risk of extirpation in Canada

(COSEWIC 2010).

## **III. Recent research on seed predation and seed dispersal supports whitebark pine as an endangered species**

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<sup>1</sup> The survey's significance has national implications as well, since it represents an improvement in the characterization of the cumulative amount and intensity of mortality of whitebark pine compared to the standard Aerial Detection Survey technique commonly used by the U.S. Forest Service and other agencies to survey forest health. To the extent that ADS or other survey techniques have been employed in other areas within whitebark pine's range, FWS should consider that these surveys, too, may not adequately reflect the cumulative amount and intensity of mortality, which in many places is already thought to be quite high.

In addition to the above reports, research on whitebark pine seed dispersal and predation has been published since the submission of our petition that further supports the species' endangerment. For example, recent studies show that whitebark pine seed predation by red squirrels increases with greater whitebark pine mortality (McKinney and Fiedler 2010). Squirrel abundance is actually lowest in whitebark pine dominated forests and increases in mixed conifer settings. Therefore, as whitebark pine declines, red squirrel abundance increases as does seed predation. This research suggests that the decline of whitebark pine may actually be further facilitated by increased seed predation by squirrels.

At the same time that seed predation is increasing, seed dispersal in declining whitebark pine forests may be jeopardized by the loss of the tree's obligate seed disperser, the Clark's nutcracker. Scientists have found that a threshold level of whitebark pine trees is needed to sustain the seed dispersal mutualism with Clark's nutcracker (McKinney et al. 2009). They estimate this threshold to be 1000 cones/ha and found that the occurrence of Clark's nutcracker, seed dispersal and whitebark pine regeneration were lowest in areas that fell below this threshold. The combined effect of increased seed predation by squirrels and the loss of seed dispersal by Clark's nutcracker threaten to speed up the decline of whitebark pine.

#### **IV. Recent research on white pine blister rust supports whitebark pine as an endangered species**

The most recent research on white pine blister rust has recently been compiled in the latest edition of *Forest Pathology* (issue enclosed). Included in this journal are reports of the distribution and spread of blister rust in relation to whitebark pine and other tree species. Additionally, the research articles review and explore complicating factors such as the mountain pine beetle outbreak and climate.

In addition to the journal review, a recent study examining the role of climate on plant pathogens including white pine blister rust indicates that climate change will lead to decreased tree health and conditions that favor highly damaging pathogens (Kleijunas et al. 2009). For example, although blister rust is adapted to cool, moist climates, research indicates that blister rust may be adaptable to variable climates including warming ones (McDonald 1996 as cited by Kleijunas et al. 2009).

Furthermore, while many species of trees are currently affected by mountain pine beetles, survey data demonstrates that whitebark pine has the most mortality of any of the five-needle pines with mortality being documented in each of the U.S. states where whitebark pine occurs (Gibson et al. 2008). Additionally, although white pine blister rust infects all nine species of North American white pines, whitebark pine is the most susceptible to infection despite a low level of natural resistance (Snieszko et al. 2007). Finally, recent research confirms that white pine blister rust facilitates whitebark pine's susceptibility to infection by mountain pine beetles (Bockino 2008).

**V. US Fish and Wildlife should designate critical habitat for whitebark pine**

The geographic range and biogeophysical features that determine the distribution of whitebark pine are well documented (Tomback et al. 2001). Moreover, the designation of critical habitat provides unique protections unavailable to species through other parts of the ESA. *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059, 1070 (9th Cir. 2004); *Sierra Club v. U.S. Fish and Wildlife Service*, 245 F.3d 434,441-42 (5th Cir. 2001). Thus, designating critical habitat for whitebark pine within its current range is both prudent and determinable. 16 U.S.C. § 1533(b)(3)(D)(6). In addition to designating essential habitat within the current range of whitebark pine, FWS should also designate currently unoccupied habitat that may be colonized by whitebark pine in the future as the result of a range shift due to climate change.

Critical habitat designations are one of the only mechanisms in the ESA that allow for the protection of unoccupied habitat, and this has long been recognized by the Service as one of the advantages of the critical habitat process. *See, e.g.,* Designation of Critical Habitat for the Tidewater Goby, 65 Fed. Reg. 69693, 69701 (Nov. 20, 2000) (noting that “critical habitat may provide benefits toward recovery when designated in areas currently unoccupied by the species.”).

Such designations are particularly important where, as here, large portions of a species current range is predicted to become uninhabitable due to climate change while other areas, may become suitable habitat or be the subject of potential reintroduction sites. In the case of whitebark pine, areas further to the north or, potentially, at high elevations, that are currently unoccupied for the species may, in fact, be essential to its conservation. FWS should make an effort to identify and designate these areas as part of its protection of the species under the ESA.

Thank you for considering these comments.

Very truly yours,



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Senior Scientist

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