

will likely continue to use trap-and-transplant operations, which may also be a useful tool to manage specific problem deer. Establishing a third population in the Willamette Valley before delisting the Douglas County DPS, is not necessary. A review of the threats to the Douglas County DPS (see the Summary of Factors Affecting the Species section, below) shows that it no longer requires the protection of the Act; therefore, delisting the Douglas County DPS is warranted.

Issue 3: In its comments, the ODFW provided recommendations on additional research projects for the Douglas County DPS. Among the research projects the State would like to see carried out: Additional genetic studies to elucidate affinities among the Douglas County DPS, the Columbia River DPS, and the Idaho white-tailed deer; a new habitat mapping program for the Douglas County DPS; and new research on parasite and disease levels and their effects on the Douglas County DPS.

Our Response: Continued research is likely to be needed for future management of the Douglas County DPS and is appropriate for the State to lead, because the State will assume management responsibility for the population after delisting.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations promulgated to implement the listing provisions of the Act (50 CFR part 424) set forth the procedures for listing, reclassifying, or removing species from listed status. We may determine a species to be an endangered or threatened species because of one or more of the five factors described in section 4(a)(1) of the Act; we must consider these same five factors in delisting species. We may delist a species according to section 424.11(d) if the best available scientific and commercial data indicate that the species is neither endangered nor threatened for the following reasons: (1) The species is extinct; (2) The species has recovered and is no longer endangered or threatened; and/or (3) The original scientific data used at the time the species was classified were in error.

After a thorough review of all available information, we have determined that the Douglas County DPS is no longer endangered or threatened with extinction. A substantial recovery has taken place since its listing in 1978, and none of the five factors addressed in section 4(a)(1) of the Act currently threatens the

continued existence of the subspecies in Douglas County. These factors, and their relevance to the Douglas County DPS, are discussed below.

A. The present or threatened destruction, modification, or curtailment of habitat or range. The Recovery Team recognized conversion of habitat to rural residential homesites and intensive livestock grazing as the prime threats to Columbian white-tailed deer habitat in Douglas County (Service 1983). A large area of habitat used by the deer has been protected, which has contributed to the Douglas County DPS's recovery. Since 1978, over 2,830 ha (7,000 ac) have come into public ownership within the range of the Douglas County DPS. This acreage includes the BLM's NBHMA and Douglas County's Mildred Kanipe Memorial Park. In addition, several smaller parcels owned by the county and private landowners provide important refuge or hiding cover for deer.

The largest publicly owned parcel that provides habitat for deer is the NBHMA. The NBHMA, formerly the Dunning Ranch, was previously managed as a working cattle ranch. It was acquired by the BLM in 1994 through a land exchange (BLM 1998) specifically to secure habitat for the deer since it lies within the Douglas County DPS's core habitat. The NBHMA is located east of Roseburg in the North Umpqua River Basin and is characterized by four distinct habitat types: Grasslands and oak savannah (29 percent); hardwood/conifer forest (52 percent); oak woodlands (17 percent); and other habitat such as rock outcrops, riparian areas, and wetlands (2 percent) (BLM 1998). As many as 348 Columbian white-tailed deer have been estimated to occur on the NBHMA (S. Denney, ODFW, pers. comm. 2001). No active management occurred at the NBHMA in the period between its acquisition in 1994 and the completion of a management plan in 2001; this lack of management has resulted in a decline in habitat quality (BLM 2000). Thatch (rank vegetation) has built up in grassland areas, and invasion of undesirable shrub species, cedar encroachment in meadow areas, and conifer seedling establishment in oak woodlands have contributed to the decline in habitat quality by inhibiting forb production for deer forage, and by reducing the availability of preferred cover (BLM 1998). Even with this decline in habitat quality, the site continues to provide habitat for over 300 deer in the core of the Douglas County DPS's range. The delay in initiation of management activities

resulted from the need to develop and approve a management plan for the parcel. A final management plan was approved in June 2001 (BLM 2001).

Management objectives identified in the final NBHMA management plan include: (1) Increased availability, palatability, and nutritional quality of deer forage and browse; (2) maintenance of mature oak, shrub, and herbaceous vegetation components; (3) control of noxious weeds; and (4) development of water sources (BLM 2001). Livestock grazing, prescribed burning, thinning, and timber management are some of the management tools that will be used to achieve these objectives (BLM 2001); these activities will be scheduled to avoid sensitive periods (such as fawning and nursing) for the deer (Service 2001).

Livestock grazing and prescribed burning will be used to increase the abundance of desirable forage plants, and thinning in oak woodlands and removal of encroaching conifers will provide more preferred open canopy hiding cover for the deer (BLM 2001; Service 2001). Heavy unregulated livestock grazing can be considered a threat to the Columbian white-tailed deer (Service 1983); the BLM recognizes that livestock grazing as a tool to improve deer habitat will have to be managed carefully on the NBHMA (BLM 2001). Poorly managed grazing can lead to the introduction or spread of non-native plant species, soil erosion and compaction, and reduction of desirable deer forage plants. However, the BLM will use livestock grazing as a tool to reduce thatch and annual grasses in favor of native perennial vegetation that the deer prefer, particularly in areas that are inaccessible to equipment used for mowing or seed drilling (BLM 2001). In the final management plan for the NBHMA, the BLM has stated that it will manage cattle herd dynamics, seasonal rotation, and stocking rates to enhance habitat for the deer (BLM 2001).

The final management plan also calls for development of water guzzlers (small mechanized watering trough), development of springs, pond construction, stream rehabilitation, and wetland enhancement to increase the use of habitats that are lightly used by the deer at present due to limited water availability (BLM 2001). This, in conjunction with forage and habitat improvement, should increase the carrying capacity of the NBHMA for Columbian white-tailed deer and would likely result in a better distribution of animals across the management area (Service 2001).

Implementation of the NBHMA final management plan will improve habitat quality for the deer (Service 2001). In