

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AF43

Endangered and Threatened Wildlife and Plants; Final Rule To Remove the Douglas County Distinct Population Segment of Columbian White-Tailed Deer From the Federal List of Endangered and Threatened Wildlife

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: In this action, we, the U.S. Fish and Wildlife Service, establish two distinct population segments (DPS) of the Columbian white-tailed deer (*Odocoileus virginianus leucurus*): the Douglas County DPS and the Columbia River DPS; and remove the Douglas County DPS from the List of Threatened and Endangered Wildlife. We have also determined that the Douglas County, Oregon, DPS is no longer an endangered or threatened species pursuant to the Endangered Species Act (Act) (16 U.S.C. 1531 *et seq.*), based on the best available data indicating that the Douglas County DPS has recovered. This DPS has increased from about 2,500 animals, in 1983, to over 6,000 today. The range of the population has also increased. This robust population growth, coupled with habitat acquired and protected for the population, has brought the Douglas County DPS to the point where a change in status is appropriate. This recovery has primarily been the result of habitat acquisition and management for the deer, hunting restrictions, and the application of local ordinances designed to protect the Douglas County DPS.

The delisting of the Douglas County DPS will not change the endangered status of the Columbia River DPS. It remains fully protected by the Act.

DATES: This rule is effective July 24, 2003.

ADDRESSES: The administrative file for this rule is available for inspection, by appointment, during normal business hours at the Oregon Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2600 SE. 98th Ave., Suite 100, Portland, Oregon 97266.

FOR FURTHER INFORMATION CONTACT: Cat Brown, Wildlife Biologist at the Oregon Fish and Wildlife Office (see **ADDRESSES** section) (telephone 503/231-6179; facsimile 503/231-6195).

SUPPLEMENTARY INFORMATION:

Background

The Columbian white-tailed deer is the westernmost representative of 30 subspecies of white-tailed deer in North and Central America (Halls 1978; Baker 1984). It resembles other white-tailed deer subspecies, ranging in size from 39 to 45 kilograms (kg) (85 to 100 pounds (lb)) for females and 52 to 68 kg (115 to 150 lb) for males (Oregon Department of Fish and Wildlife (ODFW) 1995). Generally a red-brown color in summer, and gray in winter, the subspecies has distinct white rings around the eyes and a white ring just behind the nose (ODFW 1995). Its tail is relatively long, brown on top with a white fringe, and white below (Verts and Carraway 1998). The subspecies was formerly distributed throughout the bottomlands and prairie woodlands of the lower Columbia, Willamette, and Umpqua River basins in Oregon and southern Washington (Bailey 1936; Verts and Carraway 1998). Early accounts suggested this deer was locally common, particularly in riparian areas along major rivers (Gavin 1978). The decline in Columbian white-tailed deer numbers was rapid with the arrival and settlement of pioneers in the fertile river valleys (Gavin 1978). Conversion of brushy riparian land to agriculture, urbanization, uncontrolled sport and commercial hunting, and perhaps other

factors apparently caused the extirpation of this deer over most of its range by the early 1900s (Gavin 1978). By 1940, a population of 500 to 700 animals along the lower Columbia River in Oregon and Washington, and a disjunct population of 200 to 300 in Douglas County, Oregon, survived (Crews 1939; Gavin 1984; Verts and Carraway 1998). These two remnant populations remain geographically separated by about 320 kilometers (km) (200 miles (mi)), much of which is unsuitable or discontinuous habitat.

Columbian white-tailed deer in Douglas County are most often associated with riparian habitats, but studies have shown that the deer uses a variety of lower elevation habitat types. Radio-tagged deer in a recent study selected riparian habitats more frequently than any other habitat type, but were also found using all the other habitat types in the study area (*i.e.*, grassland, grass shrub, oak savannah, oak-hardwood woodland, oak-hardwood savannah shrub, oak-hardwood conifer, conifer, and urban/suburban yards) (Ricca 1999). This study found that the areas of concentrated use within a deer's home range were generally located within 200 meters (m) (650 feet (ft)) of streams (Ricca 1999), which confirms earlier work (Smith 1981) suggesting that habitat type is less important than distance to a stream. Open areas (grasslands and oak savanna) are used for feeding between dusk and dawn (Ricca 1999). The diet of Columbian white-tailed deer consists of forbs (broad-leaved herbaceous plants), shrubs, grasses, and a variety of other foods such as lichens, mosses, ferns, seeds, and nuts (Lowell Whitney, Oregon State University, pers. comm. 2001).

Population estimates for the Douglas County DPS have demonstrated a fairly steady upward trend since management for the population began (see Table 1).

TABLE 1.—REVISED ANNUAL TREND COUNTS (BASED ON SPRING CENSUSES) AND POPULATION ESTIMATES (BASED ON LINEAR REGRESSION) WITH CONFIDENCE INTERVALS (LOWER AND UPPER POPULATION ESTIMATES) FOR THE DOUGLAS COUNTY DPS OF COLUMBIAN WHITE-TAILED DEER, 1975–2002 (LINDSAY BALL, ODFW, IN LITT. 2002).

Year	Annual trend count (deer/mile)	Population estimate	95% confidence intervals	
			Lower population estimate	Upper population estimate
1975	1.7	1158	333	1984
1976	1.9	1340	468	2212
1977	1.95	1522	603	2441
1978	2	1704	738	2670
1979	2.3	1886	873	2899
1980	2.3	2068	1008	3128
1981	2.2	2250	1143	3357
1982	2.1	2432	1278	3585

TABLE 1.—REVISED ANNUAL TREND COUNTS (BASED ON SPRING CENSUSES) AND POPULATION ESTIMATES (BASED ON LINEAR REGRESSION) WITH CONFIDENCE INTERVALS (LOWER AND UPPER POPULATION ESTIMATES) FOR THE DOUGLAS COUNTY DPS OF COLUMBIAN WHITE-TAILED DEER, 1975–2002 (LINDSAY BALL, ODFW, *in litt.* 2002).—Continued

Year	Annual trend count (deer/mile)	Population estimate	95% confidence intervals	
			Lower population estimate	Upper population estimate
1983	2.5	2614	1413	3814
1984	2.7	2796	1548	4043
1985	2.6	2978	1683	4272
1986	2.2	3160	1818	4501
1987	4.1	3342	1953	4730
1988	5.6	3523	2088	4958
1989	5	3705	2223	5187
1990	6.6	3887	2358	5416
1991	7.7	4069	2493	5645
1992	5.6	4251	2628	5874
1993	6.6	4433	2763	6103
1994	5.3	4615	2898	6331
1995	4.3	4797	3033	6560
1996	4.3	4979	3168	6789
1997	5.5	5161	3303	7018
1998	4.6	5343	3438	7247
1999	7.7	5525	3573	7476
2000	5.4	5707	3708	7705
2001	6.9	5888	3843	7933
2002	8.6	6070	3978	8162

In the 1930s, the Columbian white-tailed deer population in Douglas County was estimated at 200 to 300 individuals within a range of about 79 square kilometers (km²) (31 square miles (mi²)) (Crews 1939). By 1983, the population had increased to about 2,500 deer (U.S. Fish and Wildlife Service (Service) 1983). The population has continued to grow and is currently estimated at over 6,000 deer (Lindsay Ball, ODFW, *in litt.* 2002). Along with this increase in numbers, the range also has expanded to the north and west, and the subspecies now occupies an area of approximately 800 km² (309 mi²) (ODFW 1995). In 2002, the ODFW estimated that there were 8.6 deer per mile along its standard census routes, with a sex ratio of 24 adult bucks to 100 adult does, and 34 fawns to 100 does (Lindsay Ball, ODFW, *in litt.* 2002). A recent 3-year study of the population found relatively low annual survival rates for adult deer (74 percent over 3 years), although the results were within the range of white-tailed deer survival rates in other parts of the country (Ricca *et al.* 2002). Fawn survival rates in this study were on the lower extreme of rates reported for other white-tailed deer populations (Ricca *et al.* 2002); the authors of the study suggest that poor fawn survival may be linked to high deer density in Douglas County. Annual population surveys indicate that deer density has doubled in the last 20 years,

and the population may be at or near carrying capacity in portions of its range within Douglas County (Ricca 1999).

The State of Oregon has had a long history of research and active management of the Douglas County DPS of Columbian white-tailed deer. In 1927, the Oregon State Legislature established a White-tailed Deer Refuge in Douglas County. Early studies estimated a population of 200 to 300 Columbian white-tailed deer on the refuge, and an approximately equal number of Columbian black-tailed deer (*Odocoileus hemionus columbiana*) (Crews 1939). The State of Oregon (ODFW 1995) subsequently considered white-tailed deer in Douglas County to be black-tailed deer or a hybrid between the black-tailed deer and the Columbian white-tailed deer; the refuge was dissolved in 1952, and regulated hunting resumed (Gavin 1984). In 1978, Oregon recognized the white-tailed deer population in Douglas County as the Columbian white-tailed deer, and prohibited hunting of white-tailed deer in that County (Service 1983).

Since 1978, the ODFW has conducted spring and fall surveys to estimate population size, recruitment, and sex ratios (ODFW, *in litt.* 2001). Standard routes for spotlight surveys have been established along 76.4 km (47.5 mi) of road within the known range of the population (ODFW, *in litt.* 2001). The fall deer census counts both Columbian white-tailed deer and Columbian black-

tailed deer throughout Douglas County, from November 15 through December 15 in most years, on nights with suitable survey conditions. All deer observed are classified by species, sex, and age (*i.e.*, fawns, does, or bucks by antler class). This allows an estimate of fawn production going into winter (fawns per 100 adults), and in the case of black-tailed deer, the post hunting season buck survival (bucks per 100 does) (Steve Denney, ODFW, *in litt.* 2001).

The spring census is similar to the fall count. On warm, wet nights in March, the ODFW conducts a spotlight count along the standard road routes, recording both white-tailed and black-tailed deer. All deer observed are recorded and classified as either adults or fawns; this provides an estimate of overwinter fawn survival (fawns per 100 does) and population trend (expressed as deer per mile) (S. Denney, ODFW, *in litt.* 2001).

The State also implements an active research program, in coordination with us and the Oregon State University, to investigate deer habitat use and movement of radio-tagged individuals (Ricca 1999; ODFW 1995; ODFW, *in litt.* 2001). Since 1998, for example, the ODFW has been transplanting radio-tagged Columbian white-tailed deer from areas of high deer densities to Mildred Kanipe Memorial Park in northwestern Douglas County. The goals of the project have been to boost numbers of deer in the park, accelerate

range expansion to the north, to refine capture and transplanting techniques, and to move deer from areas where damage has been a concern (S. Denney, ODFW, *in litt.* 2001).

The Columbian white-tailed deer was listed as endangered by the State with the passage of the Oregon Endangered Species Act in 1987 (ODFW 1995). In 1995, the ODFW reviewed the status of the Columbian white-tailed deer in Oregon (both Douglas County and Columbia River populations) and concluded that the subspecies had recovered (ODFW 1995). At the November 1995 meeting of the Oregon Fish and Wildlife Commission, the Commissioners voted unanimously to remove the Columbian white-tailed deer from the State of Oregon List of Threatened and Endangered Species; the subspecies was placed on the State's Sensitive Species List for continued monitoring (Oregon Fish and Wildlife Commission 1995). Oregon continues to prohibit hunting of white-tailed deer in all western Oregon big-game management units (ODFW 2001).

Distinct Vertebrate Population Segment

The Douglas County and Columbia River populations of the Columbian white-tailed deer meet the requirements for consideration as distinct population segments as described in our Policy Regarding the Recognition of Distinct Vertebrate Population Segments, published in the **Federal Register** on February 7, 1996 (61 FR 4722). For a population to be considered as a distinct vertebrate population segment, two elements are considered: (1) The

discreteness of the population segment in relation to the remainder of the species to which it belongs; and (2) the significance of the population segment to the species to which it belongs.

A population may be considered discrete if it is: (1) Separated from other populations of the same taxon by physical, physiological, ecological, or behavioral factors; or (2) limited by international governmental boundaries where there are differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms. The Douglas County and Columbia River populations of Columbian white-tailed deer are discrete because they are geographically isolated from each other. Historically, this subspecies ranged from the south end of Puget Sound in Washington south to the Umpqua River drainage in Oregon (Bailey 1936). At the present time, the subspecies is found in two locations (along the Columbia River in Washington and Oregon, and in Douglas County, Oregon), which are separated by over 320 km (200 mi), much of which is discontinuous or unsuitable habitat. Columbian white-tailed deer are not migratory and appear to restrict their movements to relatively small home ranges (ODFW 1995). Laboratory research has also demonstrated that there may be a relatively large genetic difference between the Douglas County and Columbia River populations of Columbian white-tailed deer (Gavin and May 1988), which indicates a lack of gene flow between the two populations. As a result, the wide geographic gap in suitable habitat between the Columbia

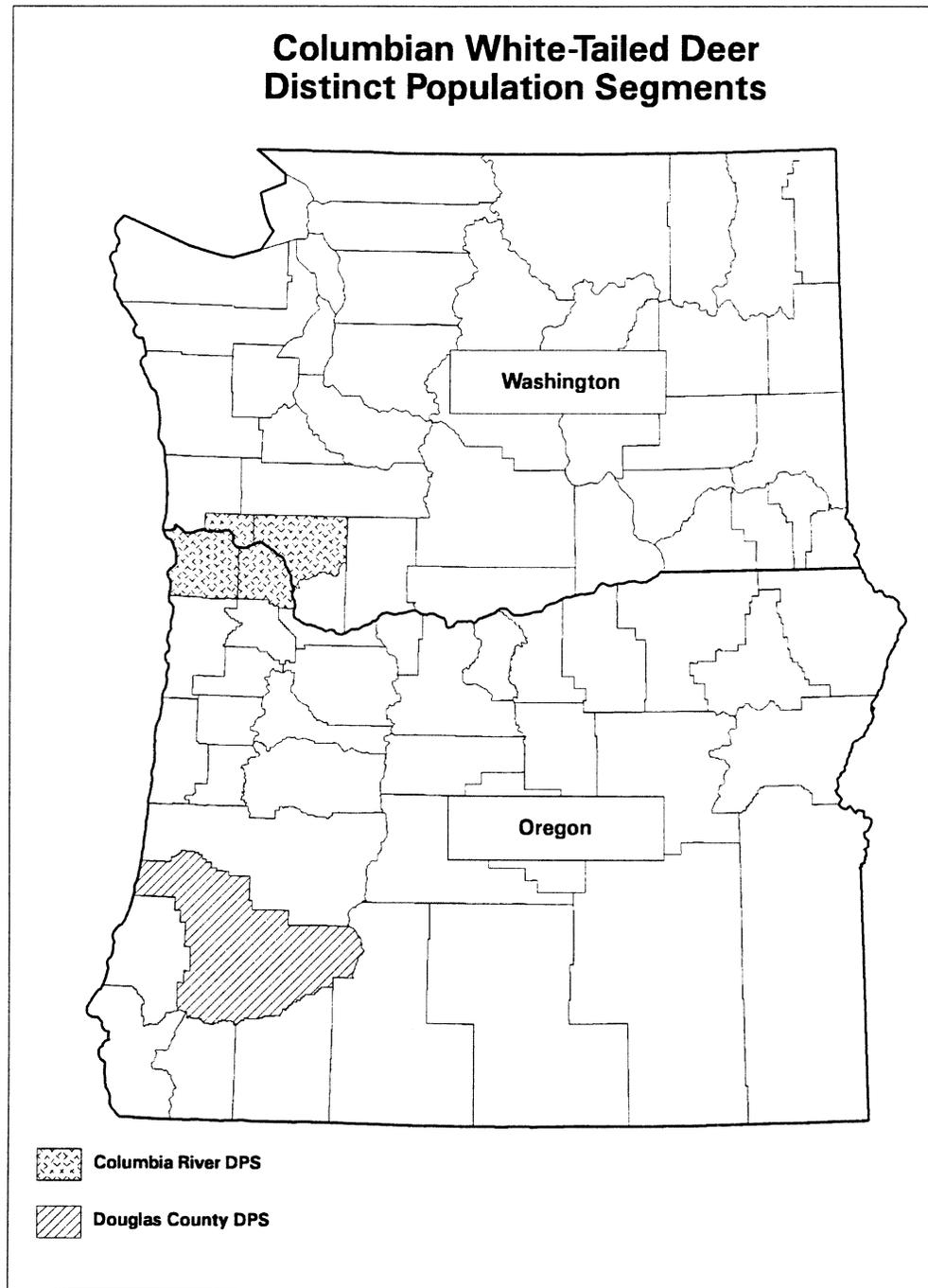
River and Douglas County populations demonstrates that this subspecies has two discrete population segments.

The following issues are considered when determining significance: (1) Persistence of the discrete population segment in an unusual or unique setting for the taxon; (2) evidence that loss of the segment would result in a significant gap in the range of the taxon; (3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; or (4) evidence that the population segment differs from other populations of the species in its genetic characteristics.

The Douglas County and Columbia River populations are considered significant under our policy based on two factors. First, the loss of either of the Douglas County or Columbia River population would result in a significant gap in the range of the subspecies. The loss of either population would substantially constrict the current range of the subspecies. Second, each population has genetic characteristics that are not found in the other population (Gavin and May 1988). Because the Douglas County and Columbia River populations of the Columbian white-tailed deer are discrete and significant, they warrant recognition as Distinct Vertebrate Population Segments under the Act. The following map illustrates the location of these two DPSs.

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Map of the Columbian white-tailed deer,
Douglas County DPS and Columbia River DPS



BILLING CODE 4310-55-C

Review of the Columbian White-tailed Deer Recovery Plan

In accordance with the Act, we appointed a team of experts (the Columbian White-tailed Deer Recovery Team (Recovery Team)) to develop a recovery plan for the Columbian white-tailed deer. We approved the original

Columbian White-tailed Deer Recovery Plan (Recovery Plan) in 1977, and the Recovery Team revised the Recovery Plan in 1983 to include the newly recognized Douglas County population (Service 1983).

Because of the distance between the Columbia River and Douglas County populations and differences in habitats

and threats, the Recovery Plan addresses the recovery of each population separately. The Recovery Plan identified the following objectives for the Douglas County population: (1) To downlist the population to threatened, the Recovery Plan recommended the maintenance of 1,000 Columbian white-tailed deer in a viable status on lands within the

Umpqua Basin of Douglas County, while keeping the relative proportions of deer habitat within the known range of the subspecies from further deterioration; and (2) to delist the population, it recommended the maintenance of a minimum population of 500 animals from the larger population, to be distributed on 2,226 hectares (ha) (5,500 acres (ac)) of suitable, secure habitat within the Umpqua Basin of Douglas County on lands owned, controlled, protected, or otherwise dedicated to the conservation of the species (Service 1983).

The Recovery Plan defined secure habitat as those areas that are protected from adverse human activities (e.g., heavy, unregulated grazing by domestic animals, clearing of woody plants) in the foreseeable future, and that are relatively safe from natural phenomena that would destroy their value to the subspecies (Service 1983). The Recovery Plan did not define secure habitat to include only publicly owned lands; rather, it provided further guidance on secure habitat by stating that local entities, including planning commissions, county parks departments, and farm bureaus, could secure habitat through zoning ordinances, land-use planning, parks and greenbelts, agreements, memoranda of understanding, and other mechanisms available to local jurisdictions (Service 1983). The Recovery Plan also recommended that private conservation organizations be encouraged to secure habitat for Columbian white-tailed deer through easements, leases, acquisitions, donations, or trusts (Service 1983).

The Recovery Plan identified a series of tasks that the Recovery Team recommended to meet the downlisting and delisting objectives for the Douglas County population of Columbian white-tailed deer (Service 1983). These tasks fall into five main categories: (1) Tracking population status; (2) Ensuring viability of the population through enforcement of existing laws and regulations; (3) Securing and protecting habitat to allow the population to increase; (4) Studying the ecology of the population and assessing the threat of hybridization with Columbian black-tailed deer; and (5) Encouraging public support for Columbian white-tailed deer restoration. Nearly all of the tasks listed in the Recovery Plan (Service 1983) have been accomplished. We provide a summary of recovery tasks, along with the status of their implementation, below.

1. *Tracking population status.* Tasks in this first category have been fully implemented. The ODFW, with our

funding, has surveyed the population yearly since 1978. Data collected include spring and fall trend counts, estimates of overall population size, recruitment, and sex ratios. Surveys indicate that the population has grown from about 2,500 animals in 1982 to about 6,000 in 2002 (Service 1983; Lindsay Ball, ODFW, *in litt.* 2002). The Recovery Plan included a model to estimate the minimum population size necessary to avoid extinction; using this model, the Recovery Team concluded that a population of 500 deer in Douglas County could be considered safe from the potentially deleterious effects of inbreeding (Service 1983). The most recent estimate of the overall population of the Douglas County DPS is over 6,000 deer (ODFW, *in litt.* 2001).

2. *Ensuring viability of the population through enforcement of existing laws and regulations.* Tasks concerning enforcement of existing laws to protect the Columbian white-tailed deer have been fully implemented. It is currently illegal to take Columbian white-tailed deer under State law (ODFW 2001), and as proscribed in section 9 of the Act. Our biologists have coordinated with our agency's Law Enforcement Special Agents and our National Fish and Wildlife Forensics Laboratory in Ashland, Oregon, to refer illegal take cases to the Oregon State Police, which has successfully prosecuted a number of Columbian white-tailed deer poaching cases (Sgt. Joe Myhre, Oregon State Police, pers. comm. 2001). See additional discussion under Factor D, below, for more detail. We have also engaged in section 7 consultations with Federal agencies for those actions which were determined to have the potential to affect Columbian white-tailed deer.

3. *Securing and protecting habitat to allow the population to increase.* Since 1978, over 2,830 ha (7,000 ac) have come into public ownership and are being managed in a manner that is compatible with the needs of Columbian white-tailed deer (see full description of these parcels in Factor A, below). This acreage includes the North Bank Habitat Management Area (NBHMA), managed by the Bureau of Land Management (BLM), and Mildred Kanipe Memorial Park. Smaller parcels owned by Douglas County and The Nature Conservancy (TNC) also provide secure refugia for deer. In addition, Douglas County has used its authorities to conserve the Columbian white-tailed deer. The Douglas County Comprehensive Plan (Douglas County Planning Department (DCPD) 2000a), county zoning ordinances (DCPD 2000b), and the Douglas County Deer Habitat Protection Program (DCPD 1995), also have been

essential in protecting open space and rural agricultural landscapes used by the deer.

The Recovery Plan recommended that we and the ODFW develop a long-term management plan for the Douglas County population of Columbian white-tailed deer (Service 1983). Although a single, population wide plan has not been prepared, this task has been accomplished, in part, through site-specific management plans for the NBHMA (BLM 2001), Douglas County's Habitat Protection Program for the Columbian white-tailed deer (DCPD 1995), and Mildred Kanipe Memorial Park (Douglas County Parks Department 2001a).

4. *Studying the ecology of the population and assessing the threat of hybridization with Columbian black-tailed deer.* Several tasks in the Recovery Plan recommended research on the ecology of the population. A substantial amount of research has been conducted by the ODFW and the Oregon State University (Smith 1981; ODFW 1995; Ricca 1999; Whitney 2001). The BLM used information from these studies to develop the NBHMA management plan, the largest property managed for the deer. Laboratory studies and field observations have been used to gauge the extent of hybridization between Columbian white-tailed deer and Columbian black-tailed deer in Douglas County (Gavin and May 1988; Kistner and Denney 1991; ODFW 1995); none of these studies has indicated that hybridization is a threat to the population.

5. *Encouraging public support for Columbian white-tailed deer restoration.* The final set of tasks in the Recovery Plan deals with providing the public with information about the Columbian white-tailed deer restoration program. This task continues to be implemented by our biologists and the ODFW. The ODFW has produced informational materials on the deer population in Douglas County for the public and landowners. Our staff and the ODFW also provide information and recommendations to private landowners who have Columbian white-tailed deer on their property.

Recovery plans are intended to guide and measure recovery. The Act provides for delisting whenever the best available information indicates that a species, subspecies, or distinct population segment is no longer endangered or threatened. The Douglas County DPS population is robust and expanding, and substantial habitat has been protected by Federal acquisition and Douglas County's zoning and open space regulations. The recovery plan calls for

500 deer on 5,500 acres of secure habitat. There are currently over 6,000 deer and over 7,000 acres of secure public lands managed to benefit the deer, plus zoning and other regulations and plans protecting additional habitat. It is not feasible, absent considerable expense, to demonstrate that 500 specific deer live entirely within secure lands managed for their benefit, as most deer move between public and private lands. However, the overall population increase and amount of secure habitat, as discussed previously, indicate that these recovery goals have been met. Accordingly, as discussed below in the listing factor analysis, we believe that the improved status of the Columbian white-tailed deer in Douglas County justifies its removal from the List of Endangered and Threatened Wildlife. We have reached this conclusion with the concurrence of the Recovery Team (Recovery Team, *in litt.* 2001).

Previous Federal Action

On March 11, 1967, the Columbian white-tailed deer was listed in the **Federal Register** as an endangered species under the Endangered Species Preservation Act of 1966 (32 FR 4001). At that time, the subspecies was believed to occur only along the Columbia River, whereas the population in Douglas County was believed to be hybridized with the Columbian black-tailed deer (ODFW 1995). On March 8, 1969, we again published in the **Federal Register** (34 FR 5034) a list of fish and wildlife species threatened with extinction under the Endangered Species Conservation Act of 1969. This list again included the Columbian white-tailed deer. On August 25, 1970, we published a proposed list of endangered species, which included the Columbian white-tailed deer, in the **Federal Register** (35 FR 13519) as part of new regulations implementing the Endangered Species Conservation Act of 1969. This rule became final on October 13, 1970 (35 FR 16047). Species listed as endangered on the above-mentioned lists were automatically included in the Lists of Endangered and Threatened Wildlife when the Endangered Species Act was enacted in 1973. In 1978, the State of Oregon determined that white-tailed deer in the Roseburg area belonged to the Columbian subspecies (ODFW 1995). This determination resulted in that population being considered as endangered, together with the Columbia River population.

On May 11, 1999, we published a proposed rule to remove the Douglas County DPS of the Columbian white-tailed deer from the List of Endangered and Threatened Wildlife; in the same

notice, we also proposed to establish two distinct vertebrate population segments of the subspecies (the Douglas County and Columbia River populations) (64 FR 25263). We accepted public comments until July 12, 1999. We reopened the public comment period on November 3, 1999, to allow peer review of the proposed rule (64 FR 59729) until November 18, 1999. We opened the public comment period again from December 29, 1999, through January 13, 2000, in order to provide three peer reviewers an opportunity to review previous public comments, and to accept any new public comments on the proposed rule (64 FR 72992).

In response to significant new information, on June 21, 2002, we published a supplemental proposed rule to establish the Douglas County DPS and the Columbia River DPS, and to remove the Douglas County DPS from the Federal list of Endangered and Threatened Wildlife (67 FR 42217). We accepted public comments until August 20, 2002. During the public comment period we also solicited and received independent peer review of the supplemental proposed rule. We held a public hearing on the supplemental proposal to delist the Douglas County DPS on July 30, 2002, in Roseburg, Oregon.

Summary of Comments on the Supplemental Proposed Rule

We summarized and responded to comments on the 1999 proposed rule and subsequent comment period reopenings in the supplemental proposed rule published in June 2002. We will not repeat those comments and our responses here. In the June 21, 2002, supplemental proposed rule and associated notifications, we requested all interested parties to submit factual reports or information that might contribute to the development of a final rule. We contacted appropriate Federal and State agencies, county governments, scientific organizations, and other interested parties and asked them to comment. We also requested peer review from three independent scientists. We published newspaper notices in the Roseburg, Oregon, *News-Review*, and in *The Oregonian*, of Portland, Oregon, on June 21, 2002, which invited general public comment. We received 16 written comments, including those of 1 Federal agency, the State of Oregon, 3 county and municipal governments, 3 peer reviewers, and 8 individuals or groups; at the public hearing, we received 7 oral comments. Of the comments received, 22 supported and 1 opposed the proposed action.

Comments received during the comment period are addressed in the following summary. Comments of a similar nature are grouped into three general issues.

Issue 1: We received seven comments concerning the post-delisting monitoring plan. Commenters recommended continuation of the ODFW's population trend surveys, and also suggested that the monitoring plan include tracking of predation and disease occurrence in the Douglas County DPS, as well as an assessment of habitat quality on managed parcels. Commenters also recommended that the post-delisting monitoring period extend beyond the minimum requirement of 5 years, saying that 10 years may be more appropriate.

Our Response: Section 4(g) of the Act requires us to implement a system, in cooperation with the State, to monitor the status of delisted recovered species for a minimum of 5 years. We are working closely with the State to develop and implement an effective post-delisting monitoring plan for the Douglas County DPS. The monitoring program will include spring and fall census counts, analysis of key population parameters, tracking of disease levels, and an assessment of habitat protection efforts. The duration of the post-delisting monitoring plan has not yet been determined, but will not be less than 5 years post delisting, as required by the Act. See the Monitoring section of this final rule, below, for more information.

Issue 2: We received five comments regarding the need for a translocation program. Two of the commenters suggested using a trap-and-transplant program to alleviate the effects of overcrowding in portions of the Douglas County DPS's range. One commenter requested that we postpone delisting until a third population (in addition to the Douglas County and Columbia River populations) had been established via translocation from the Douglas County DPS in the Willamette Valley. Two of the peer reviewers offered views on translocation. One advised that translocation is appropriate for establishing new populations, but would not be a useful method to achieve density reduction in the existing population; the other reviewer stressed that the fate of translocated deer should be followed to determine the efficacy of such a program.

Our Response: Translocation is likely to be an important component of the management of the Douglas County DPS after delisting. In order to augment the Douglas County DPS in the northern portion of its current range, the State

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

October 2001, the BLM began implementing the management plan by conducting a controlled burn to remove thatch on 162 ha (400 ac); subsequent monitoring shows that the burn was successful, and new forage plants have sprung up in the burn zone (Ralph Klein, BLM, pers. comm. 2001). In 2002, the BLM implemented several habitat improvements, including prescribed burning, mowing, water developments, stream restoration, interior fence removal, and noxious weed control (District Manager, BLM, *in litt.* 2002). We will continue to track the implementation of the NBHMA management plan through annual monitoring reports from the BLM, and as part of the post-delisting monitoring program.

The management plan also provides for a range of recreational opportunities within the NBHMA (nonmotorized trail use, hunting, and a boat ramp) (BLM 2001). In our Biological Opinion on the management plan, we concluded that these activities are compatible with management for Columbian white-tailed deer and other special status species, because the potential increase in public use that may result is not anticipated to negatively impact the deer, and the large amount of escape cover and forage areas available will provide an ample amount of refuge where disturbance may be avoided (Service 2001).

Mildred Kanipe Memorial Park, managed by the DCPD, is the second largest parcel of publicly owned land (445 ha) (1,100 ac) within the range of the Douglas County DPS; it lies about 16 km (10 mi) north of the NBHMA. Ms. Kanipe left the ranch to Douglas County in her will and directed the County to manage it as a wildlife refuge and working ranch (Kanipe 1983). Park activities, including recreation (equestrian and hiking trails), timber harvest, farming, and grazing are guided by the provisions in Ms. Kanipe's will, a new management plan, and the Douglas County Farm Lease program (Kanipe 1983; Douglas County Parks Department 2001a; Douglas County Parks Department 2001b). Ms. Kanipe's will states that the ranch is to be used for park purposes and includes a number of conditions relating to its management as a park: (1) No hunting or trapping is allowed; (2) all animals, birds, and fish are protected as in a refuge, provided that the county, for park purposes, may plant and permit fishing in the ranch ponds; (3) trapping and hunting of predatory animals is allowed in the event that they become a nuisance and harmful to domestic and wild animals both within the park and on adjoining lands; (4) the County may

establish a limited picnic ground and associated parking facilities, but no motorized vehicles are permitted within the park except as may be required for park construction and maintenance; (5) pasture lands are to be cared for and continued in grass, and equestrian trails shall be permitted; and (6) no timber shall be cut or harvested except as may be necessary, and even then, only upon a sustained yield basis with all revenue from timber cutting used by the county in capital improvements upon the park (Kanipe 1983). The current farm lease at the park allows the lessee to graze sheep and cattle at the ranch. The terms of the lease include provisions to maintain pasture quality, minimize soil erosion, eradicate noxious non-native plants, and protect native wildlife and watercourses (Douglas County Parks Department 2001b). The annual farm lease provisions are reviewed and approved by the ODFW biologists (M. Black, ODFW, pers. comm. 2001).

Douglas County has prepared Coordinated Resource Management Plan Recommendations for Mildred Kanipe Memorial Park; a Steering Committee has been established, which includes representatives from our staff, local environmental and recreation groups, the Douglas County Parks Advisory Board, and individuals with forestry and range expertise (Douglas County Parks Department 2001a). The management plan covers a wide range of issues, including recreation, wildlife, grazing, timber management, and riparian conservation (Douglas County Parks Department 2001a).

Since 1998, the ODFW has conducted three translocations of marked Columbian white-tailed deer to the park. Of the 18 deer transplanted to the park, 7 are known to have died. Of those that died, one was an accidental death, two were killed by vehicles, one is suspected to have died of natural causes, two were likely the result of predation, and one was most likely an illegal kill (M. Black, ODFW, pers. comm. 2001; S. Denney, ODFW, pers. comm. 2001). The survivors have remained in or near the park, and at least two radio collared does have been observed with fawns (S. Denney, ODFW, *in litt.* 2001). In 2001, 25 deer were counted in the park (S. Denney, ODFW, pers. comm. 2001).

Between the years of 1996 and 2002, the ODFW implemented 23 enhancement projects to improve habitat for Columbian white-tailed deer on private property in Douglas County; most of the projects focused on improving riparian habitat conditions (Lindsay Ball, ODFW, *in litt.* 2002). These projects resulted in over 66 acres

of stream-side habitat improvements for deer.

One parcel on private property provides protection for Columbian white-tailed deer habitat in perpetuity. In 1992, TNC purchased the Oerding Preserve at Popcorn Swale, a 14-ha (35-ac) site which is managed primarily for the endangered rough popcorn flower (*Plagiobothrys hirtus*) (Service 2000). The management objective at the preserve is to restore the native wet prairie (TNC 2001), but the preserve also provides some suitable foraging habitat for deer. Surveys have detected about 20 Columbian white-tailed deer on the parcel (S. Denney, ODFW, pers. comm. 2001).

Douglas County has implemented land-use plans and zoning ordinances that apply to private lands to protect habitat and assist in deer recovery (DCPD 2000a). These protective measures include retention of existing land uses that maintain essential habitat components. Minimum lot sizes for farm use and timberlands, as well as building setbacks along riparian zones, have been established to ensure maintenance of habitat and travel corridors (ODFW 1995; DCPD 2000a).

Douglas County's Columbian White-tailed Deer Habitat Protection Program was established in 1980 (DCPD 2000a). The County, in conjunction with the ODFW and us, identified the range of habitat with the greatest density of Columbian white-tailed deer, and 29,743 ha (73,495 ac) were designated as Essential Habitat Areas (DCPD 1995). Potential conflicting uses within the Essential Habitat Areas were identified as: (1) Residential development in native riparian habitat; (2) additional livestock development in lowland river valleys; and (3) brush clearing, aimed at creating and improving pastures for livestock, that removes cover for deer (DCPD 2000a). To address these concerns, 96.5 percent (28,553 ha) (70,555 ac) of the resource lands (agricultural or farm/forest) within the Essential Habitat Area are subject to a minimum parcel size of 32 ha (80 ac); any land division requests of less than 30 ha (75 ac) must be reviewed by the ODFW (DCPD 2000a). Land zoned as nonresource lands within the Essential Habitat Area (3.5 percent) is limited to single family dwellings, and rural residential development is limited to 0.8 ha (2 ac) and 2 ha (5 ac) lots (DCPD 1995; DCPD 2000a). Another component of Douglas County's program to preserve habitat for the subspecies is a 30-m (100-ft) structural development setback from streams to preserve riparian corridors within the Essential Habitat Area (DCPD 2000a).

Douglas County's application of zoning to protect Columbian white-tailed deer has been an essential factor in the Douglas County DPS's recovery. The county has succeeded in limiting development and maintaining low human densities in the core of the deer population's range. The maintenance of open space on private lands significantly enhances the value of small publicly owned parcels used by the deer, such as Whistler's Bend County Park. Whistler's Bend County Park is directly south of the NBHMA, across the North Umpqua River. The park is 71 ha (175 ac) in size and has a population of about 100 Columbian white-tailed deer (S. Denney, ODFW, pers. comm. 2001). The park is managed for human recreation needs (DCPD 2000a), but also provides hiding cover for deer, which make forays onto adjacent private lands to forage in the pastures and suburban yards surrounding the park (S. Denney, ODFW, pers. comm. 2001). Small parcels such as this park function as important refugia for deer that meet many of their foraging requirements on adjacent private lands (Recovery Team, *in litt.* 2001).

Since management actions began, the Douglas County DPS population has increased, and its range has expanded. In the 1930s, the Columbian white-tailed deer population in Douglas County was estimated at fewer than 300 individuals within a range of about 79 km² (31 mi²) (Crews 1939). By 1983, the population had increased to about 2,500 deer (Service 1983). The population has continued to grow and is currently estimated at over 6,000 deer (Lindsay Ball, ODFW, *in litt.* 2002). Along with this increase in numbers, the range also has expanded to the north and west, and the subspecies now occupies an area of approximately 800 km² (309 mi²) (ODFW 1995).

B. Overutilization for commercial, recreational, scientific, or educational purposes. The white-tailed deer is a popular big-game animal. Past overutilization was considered a threat to the Douglas County DPS, and was one of the several factors leading to its listing as endangered.

Currently, the State of Oregon does not permit any hunting of white-tailed deer in western Oregon (ODFW 2001), and measures have been taken to reduce accidental shooting of white-tailed deer. For example, at present, black-tailed deer hunting is allowed on the NBHMA, but is limited by special permit only, usually 25 permits or fewer, and is limited to 1 or 2 weekends of the general deer season. Pre-hunt training on deer identification is mandatory to

prevent the accidental shooting of white-tailed deer. This has resulted in hunting having no significant impacts to the Douglas County DPS population in this area (Service 2001).

Recreational hunting and the possession of loaded firearms are not permitted in Douglas County parks, with the exception of limited waterfowl hunting in some reservoir parks. Therefore, deer hunting is prohibited at Mildred Kanipe Memorial Park and at Whistler's Bend County Park (J. Powers, pers. comm. 2001). Ms. Kanipe's will also states that no hunting or trapping is to be allowed in the park (Kanipe 1983). TNC also prohibits hunting on the Oerding Preserve in order to maintain a refugia for Columbian white-tailed deer (TNC 2001).

With the delisting of the Douglas County DPS, the Oregon Fish and Wildlife Commission, with input from the ODFW, will be responsible for determining whether a sport hunting season is justified. State guidelines direct the ODFW to manage wildlife populations to assure population health for present and future generations of Oregonians to enjoy (ODFW, *in litt.* 2001). Initially, the ODFW intends to focus its efforts on expanding the range of the Columbian white-tailed deer with a trap and relocation program (ODFW, *in litt.* 2001). A recreational hunt could be considered as another tool to reduce population densities and improve herd health in selected areas (ODFW, *in litt.* 2001). The population currently numbers more than 6,000 deer, a number considered large enough to withstand some level of regulated harvest (ODFW, *in litt.* 2001).

Poaching, or illegal hunting, of Columbian white-tailed deer has been documented in the Douglas County DPS (Ricca 1999; ODFW, *in litt.* 2001). During a recent 3-year study, 3 deer, out of 64 marked, were believed to have been taken by poachers (Ricca 1999). The Oregon State Police actively prosecutes poachers in Douglas County; cooperation among the Oregon State Police, the ODFW, our local biologists, and our National Fish and Wildlife Forensics Laboratory has resulted in many successful cases. In each of the past 3 years, the Oregon State Police has successfully prosecuted three to five poaching cases. Nine of these illegal kills were proved to be intentional poaching, whereas four were cases of misidentification (*i.e.*, confusion with legally hunted black-tailed deer) (Sgt. J. Myhre, pers. comm. 2001). This low level of illegal hunting is not considered a threat to the survival of the population (ODFW 1995).

Other than sport hunting, we do not anticipate an appreciable demand for Columbian white-tailed deer for commercial or recreational purposes. There may be a small demand for deer for research. Scientific studies, permitted under section 10(a)(1)(A) of the Act, have resulted in the take of as many as 40 deer during 1 year from the Douglas County DPS (Kistner and Denney 1991). These permitted takings have not had measurable impacts on population trends in the Douglas County DPS. Once the Douglas County DPS is delisted, the ODFW will administer scientific taking permits based on the merits of the proposed research and with consideration of the effects to the population (ODFW, *in litt.* 2001).

We believe that ample protections are in place under State law and regulations, and thus overutilization is unlikely to be a threat to the population in the future. Our proposed monitoring plan (see the Monitoring section, below) will track the status of the Douglas County DPS for at least 5 years following delisting, which would alert us to any new threat of overutilization.

C. Disease or predation. No known epizootic (epidemic in animals) diseases have affected the Douglas County DPS, although several studies have documented the incidence of bacterial and parasitic infections. For example, in a recent study, disease was determined to have contributed to the deaths of adult deer in poor nutritional condition. Of 29 adult deer that died during a 3-year study, 28 percent died of a combination of disease and emaciation (Ricca 1999; Ricca *et al.* 2002). Necropsies revealed pneumonia, lungworms, and high levels of ectoparasite infestation; none of these diseases would have been likely to kill an otherwise healthy adult deer, but in combination with a poor nutritional state (as evidenced by emaciation), these diseases were likely a factor in the cause of death (Ricca 1999; Ricca *et al.* 2002). Diseases noted in fawn necropsies also included pneumonia and occasional instances of bacterial or viral infections (Ricca 1999). An earlier study by the ODFW found moderate to high levels of internal and external parasites on adult deer and fawns, with low levels of viral diseases communicable to livestock (Kistner and Denney 1991).

High internal parasite loads have been considered an indication of high deer densities (ODFW, *in litt.* 2001), and recent research has found evidence that some Columbian white-tailed deer in Douglas County are suffering poor health resulting from high density (Ricca 1999). Delisting the Douglas

County DPS would allow more management flexibility, such as hazing to disperse the deer to reduce or prevent large deer concentrations, or a regulated harvest, which could reduce the density of deer, resulting in improved herd health.

Deer hair-loss syndrome has been a concern in the Columbia River DPS, but has not been prevalent in the Douglas County DPS. This syndrome appears to be caused by a combination of internal and external parasites; internal parasites such as *Dictyocaulus viviparus* and *Parelaphostrongylus* spp. invade the lungs of infected deer, resulting in a low-grade pneumonia (Washington Department of Fish and Wildlife (WDFW) 1999; Biederbeck 2002). The pneumonia infection may suppress the deer's immune system, making infected deer more susceptible to external parasites. The disease is not necessarily fatal, but hair loss can result in death due to hypothermia in winter (WDFW 1999; Biederbeck 2002). Spotlight surveys by the ODFW noted 2 deer, out of 329 counted, with obvious hair loss problems (ODFW, *in litt.* 2001). Two marked deer on the NBHMA are known to have died with hair loss; an infected fawn was noted, but is not known to have died from the disease (ODFW, *in litt.* 2001). Deer hair-loss syndrome is not currently considered to be a threat to the Douglas County DPS, but the post-delisting monitoring program will include tracking the incidence of this disease.

In August 2001, a probable case of adenovirus, a viral disease, was identified through laboratory analysis in a Columbian white-tailed deer fawn in Douglas County. It is likely that the fawn contracted the disease while being held in a rehabilitation facility. This would be the first known incidence of this disease in white-tailed deer (Dr. Beth Valentine, Veterinary Diagnostic Laboratory, Oregon State University, *in litt.* 2001; Dr. Terry Hensley, D.V.M., U.S. Department of Agriculture, Veterinary Services, pers. comm. 2001). Adenovirus infection is potentially fatal to young deer, which may succumb to respiratory failure, hemorrhagic syndromes, or acute diarrhea and dehydration caused by the disease (Dr. T. Hensley, pers. comm. 2001). The disease has been previously detected in mule deer (*Odocoileus hemionus*) in northern California. An outbreak in the 1990s caused widespread mortality, but appears to have had no long-term effect on the population in California (Tapscott 1998). Therefore, we have determined that adenovirus is not a significant threat to the Douglas DPS. However, since its existence had been

confirmed in the Douglas County DPS, the post-delisting monitoring program will include tracking the incidence of this disease.

Predation is known to be a leading cause of death in white-tailed deer populations (Halls 1978). Ricca *et al.* (2002) studied survival of Columbian white-tailed deer fawns, and found that predation was the most frequent known cause of death for fawns in his study. Bobcats (*Lynx rufus*) were the dominant predator, and researchers found some evidence of predation by red foxes (*Vulpes vulpes*) and domestic dogs (Ricca *et al.* 2002). Coyotes (*Canis latrans*) are frequent predators of white-tailed deer elsewhere (Halls 1978), but recent research (Ricca *et al.* 2002) found no evidence of fawns killed by coyotes in Douglas County. The apparent absence of coyote predation may be due in part to the Wildlife Services predator control program at the U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS). Douglas County contracts with APHIS, Wildlife Services, to conduct predator control. The program focuses mainly on coyotes, but also responds to fox, bobcat, and cougar (*Puma concolor*) complaints (Stan Thomas, District Supervisor, APHIS, Wildlife Services, pers. comm. 2001). The purpose of the program is to protect sheep and cattle ranching operations in the area, but it may also provide incidental benefits to the Douglas County DPS by reducing the number of potential predators on fawns. In summary, disease and predation are not considered threats to the Douglas County DPS.

D. Inadequacy of existing regulatory mechanisms. The lack of adequate Federal, State, or local regulatory mechanisms for protecting habitat and controlling take was largely responsible for the decline of the deer. Columbian white-tailed deer in Douglas County have recovered because Federal, State, and local governments have exercised their authorities to protect the subspecies and its habitat.

For example, the State of Oregon currently prohibits hunting of all white-tailed deer in western Oregon (described in Factor B, above). Delisting would provide the State with the flexibility to allow some regulated harvest to reduce population density if necessary to improve herd health.

Douglas County also provides important regulatory protection for Columbian white-tailed deer habitat on private lands through its Comprehensive Plan and Deer Habitat Protection Program (DCPD 1995; 2000a). The Comprehensive Plan addresses Oregon's Statewide Planning Goals.

Goal 5 requires local governments to conserve open space and protect natural and scenic resources for future generations; Douglas County's Columbian White-Tailed Deer Habitat Protection Program, which is described in more detail under Factor A, was established in 1980 under Goal 5 (DCPD 2000a). Statewide planning Goals 3 and 4 provide guidelines to maintain the rural landscape in Douglas County by protecting agriculture, timber, and transitional (farm/forest) lands. These goals were also incorporated into Douglas County's Columbian White-tailed Deer Habitat Protection Program, and also provide a measure of protection for deer habitat (DCPD 2000a). Douglas County's zoning and planning ordinances and county park designations are recognized in the Recovery Plan as valid methods to secure habitat, and will provide continuing regulatory protection of Columbian white-tailed deer habitat unless changed through a public process.

E. Other natural or manmade factors affecting its continued existence. There are a number of other threats to the survival of individual Columbian white-tailed deer in Douglas County. These include road kill, hybridization with black-tailed deer, emaciation, conflicts with private landowners, and fire.

Road kill is one of the major sources of mortality for white-tailed deer in the United States (Halls 1978). Ricca *et al.* (2002) concluded that road kill was the second most frequent cause of death in his study; they determined that five deer (17 percent of marked adult deer) over a period of 3 years were killed by vehicle collisions. Apparently, the incidence of road kill is fairly constant. Almost 20 years earlier, Smith (1981) found car collisions to be the second most frequent cause of death for deer in Douglas County. Although road kill is a major source of mortality for the Douglas County DPS, it has not been a limiting factor for population growth (D. Jackson, ODFW, pers. comm. 2001).

Hybridization between Columbian white-tailed deer and Columbian black-tailed deer has long been suspected to occur, and probable hybrids have been observed in Douglas County for many years (ODFW 1995). Biologists from the ODFW have noted evidence of hybridization (*i.e.*, deer with physical characteristics of both white-tailed and black-tailed deer), but concluded that the rate of cross-breeding is not a threat to the continued existence of the Douglas County DPS (Kistner and Denney 1991). Gavin and May (1988) conducted laboratory analyses of muscle samples from Columbian white-tailed

deer and Columbian black-tailed deer in Douglas County and found no evidence of hybridization between the two subspecies.

Emaciation, which may be the result of poor forage quality, was determined to be the leading cause of death in a recent study. During 3 years of research on marked deer, Ricca (1999) found that 28 percent of the deer that died during the study were emaciated and diseased (see disease discussion in Factor B, above). This finding is also consistent with an earlier study (Smith 1981). High deer density may result in poor habitat quality through overuse of habitat resources (Ricca 1999). Management actions to reduce deer density or increase habitat quality could reduce the incidence of emaciation. Active habitat management (prescribed burning) to improve forage quality has begun at the NBHMA®. Klein, *pers comm.*, 2001; District Manager, BLM, *in litt.* 2002).

With growth of the deer population, deer-human conflicts have increased. From 1996 to 2000, the ODFW recorded 249 complaints from private property owners with deer depredation problems (ODFW, *in litt.* 2001). Resident suburban deer can cause serious damage to croplands, gardens, and ornamental plantings. Conflict ensues because under the Act it is illegal to "take" listed deer, which includes such actions as hazing or harassing to disperse the deer, even where serious continued damage is occurring. Delisting the Douglas County DPS allows more flexibility in development and implementation of a management plan to control and enhance deer populations, while fostering better relationships with landowners and more effective long-term conservation.

Fire has historically played a large part in shaping habitat for Columbian white-tailed deer in Douglas County. Although fire may have negative short-term impacts on habitat, deer distribution, and numbers, the long-term effects can be beneficial by removing decadent brush, promoting the growth of nutritious vegetation, and maintaining the oak/grassland habitat that the deer prefer (Halls 1978; BLM 2000). Columbian white-tailed deer evolved with the occurrence of fire in the ecosystem, and prescribed burning is one of the key management prescriptions for restoring and maintaining habitat quality for the deer at the NBHMA (BLM 2000; Service 2001). The occurrence of a large-scale devastating wildfire is unlikely. The growing human population of Douglas County demands active fire suppression on public and private lands which, will

likely convey some protection for the deer.

We have carefully assessed the best scientific and commercial information available concerning the past, present, and future threats faced by the Douglas County DPS. On the basis of this evaluation, we conclude the threats that caused the Douglas County population of Columbian white-tailed deer to decline no longer pose a risk to the continued survival of the DPS, and its removal from the List of Endangered and Threatened Wildlife is appropriate. The population is robust, and protection of abundant habitat used by the deer in Douglas County justifies delisting the DPS. During the public comment period on the supplemental proposed rule, we asked for review from three independent peer reviewers. All three peer reviewers agreed that the data support our decision to delist.

In accordance with 5 U.S.C. 553(d), we have determined that this rule relieves an existing restriction and good cause exists to make the effective date of this rule immediate. Delay in implementation of this delisting would cost government agencies staff time and monies on conducting formal section 7 consultation on actions that may affect a species no longer in need of the protection under the Act. Relieving the existing restriction associated with this listed species will enable Federal agencies to minimize any further delays in project planning and implementation for actions that may affect the Douglas County DPS of Columbian white-tailed deer.

Effects of the Rule

Promulgation of this final rule will affect the protection afforded to the Douglas County DPS under the Act. Taking, interstate commerce, import, and export of deer from the Douglas County DPS are no longer prohibited under the Act. In addition, with the removal of the Douglas County DPS from the List of Endangered and Threatened Wildlife, Federal agencies are no longer required to consult with us under section 7 of the Act to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of the deer in Douglas County, Oregon.

Harvest and permitted scientific take will be regulated by the State of Oregon, and will be considered in the context of potential effects to population stability (ODFW, *in litt.* 2001). Biological data such as sex ratios, age, reproductive status, and health status (*i.e.*, parasitism and bacterial infections) from individual deer taken through legal harvest or the issuance of special permits will be

available to inform future management. Delisting the Douglas County DPS is expected to have positive effects in terms of management flexibility to State and local governments. Deer densities in selected areas may be reduced by management actions. Individual deer could be controlled by hazing, and targeted individuals could be removed where repeated severe damage to agricultural crops, gardens, or ornamental plantings was documented. Thus, delisting will allow managers greater flexibility to take actions to reduce overcrowding in selected areas, which could result in a healthier deer population.

The delisting of the Douglas County DPS of Columbian white-tailed deer will not change the endangered status of the Columbia River DPS of this subspecies. It remains fully protected by the Act.

Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than 5 years for all species that have been recovered and delisted. The purpose of this requirement is to develop a program that detects the failure of any delisted species to sustain itself without the protective measures provided by the Act. If, at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing.

A monitoring plan is being developed for the Douglas County DPS. The plan will be designed to detect changes in the status of the population, and will be comprised of three components: (1) Monitoring population size and other key population parameters; (2) tracking the incidence of disease in the herd; and (3) periodic assessment of habitat protection efforts in the Douglas County DPS's range.

The three components of the plan will likely be addressed as follows: (1) We will work with the ODFW to continue spring and fall population surveys; data from these surveys will allow us to assess key population parameters including population size, trend, recruitment, and distribution. (2) Data on the incidence of disease will be gathered to follow trends in contagious diseases in the herd, particularly those diseases that have a potential to become epizootic (*e.g.*, adenovirus and deer hair loss syndrome). Additional research into potential epizootic diseases may be conducted, when warranted, in cooperation with other agencies during the monitoring period. (3) Habitat protection efforts will be assessed in a

Dated: July 1, 2003.

Steve Williams,

Director, Fish and Wildlife Service.

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