

**THE 2005 ANNUAL REPORT OF THE
MONITORING AVIAN PRODUCTIVITY AND SURVIVORSHIP
(MAPS) PROGRAM
IN USDA FOREST SERVICE REGION SIX**

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INTRODUCTION

Since 1989, The Institute for Bird Populations has coordinated the Monitoring Avian Productivity and Survivorship (MAPS) Program, a cooperative effort among public and private agencies and individual bird banders in North America, to operate a continent-wide network of over 500 constant-effort mist-netting and banding stations. MAPS was designed to provide critically needed information on the vital rates (productivity or birth rate, and survivorship or death rate) of landbirds that is crucial for efforts to identify demographic causes of the severe and sometimes accelerating population declines documented for many species of North American landbirds (Robbins et al. 1989; Terborgh 1989; Peterjohn et al. 1995; DeSante 1992; DeSante et al. 1995, 1999, 2001). Such data on vital rates are also critically needed in efforts to identify management strategies to reverse such population declines (DeSante 1995, DeSante and Rosenberg 1998).

MAPS is organized to fulfill three tiers of goals and objectives: monitoring, research, and management:

The specific **monitoring** goals of MAPS are to provide, for over 100 target species, including Neotropical-wintering migrants, temperate-wintering migrants, and permanent residents: (a) annual indices of adult population size and post-fledging productivity from data on the numbers and proportions of young and adult birds captured; and (b) annual estimates of adult population size, adult survival rates, proportions of residents, and recruitment into the adult population from modified Cormack- Jolly-Seber analyses of mark-recapture data on adult birds.

The specific **research** goals of MAPS are to identify and describe: (a) temporal and spatial patterns in these demographic indices and estimates at a variety of spatial scales ranging from the local landscape to the entire continent; and (b) relationships between these patterns and ecological characteristics of the target species, population trends of the target species, station-specific and landscape-level habitat characteristics, and spatially-explicit weather variables.

The specific **management** goals of MAPS are to use these patterns and relationships, at the appropriate spatial scales, to: (a) identify thresholds and trigger points to notify appropriate agencies and organizations of the need for further research and/or management actions; (b) determine the proximate demographic cause(s) of population change; (c) suggest management actions and conservation strategies to reverse population declines and maintain stable or increasing populations; and (d) evaluate the effectiveness of the management actions and conservation strategies actually implemented through an adaptive management framework.

All of these monitoring, research, and management goals are in agreement with the USDA Forest Service's Partners-in-Flight strategy and with the Forest Service's own avian monitoring efforts. Moreover, because bird populations are excellent indicators of the health of ecological systems, they can serve as sensitive barometers of the overall effectiveness of efforts to maintain the biodiversity and ecological integrity of National Forests. Accordingly, the MAPS program was initiated in several National Forests beginning in 1992 and soon became one of the focus projects of the USDA Forest Service Partners-in-Flight program. It was expected that

information from the MAPS program would be capable of aiding research and management efforts on these National Forests to protect and enhance the forest's avifauna and ecological integrity, while allowing them to fulfill their multi-use purposes.

In USDA Region 6, six stations were established on each of six national forests (Mt. Baker/Snoqualmie, Wenatchee, Umatilla, Willamette, Siuslaw, and Fremont) in 1992. Within each forest, an effort was made to establish two or three stations in more heavily managed landscapes, two or three stations in less heavily managed landscapes of the same forest type, and perhaps one or two additional stations in other forest types of high or unique importance to landbird populations. The overall goal of the initial establishment of the MAPS program in Region 6 was to provide high quality information on the demographics of landbirds on the forests that could be used to aid research and management efforts, on all national forests in the Region, to protect and enhance the forests' avifauna and ecological integrity. With the completion of ten years of data collection during the summer of 2001 and the submission of the ensuing report (DeSante *et al.* 2002), this initial objective was accomplished.

A second objective was to provide for a comprehensive analysis of the ten years of demographic data as a function of landscape-level habitat characteristics and spatially explicit weather data. Through funding from the DoD Legacy Resources Management Program, important analytical techniques were developed and evaluated to accomplish these latter analyses and major reports on the results of such analyses were completed using data from 78 MAPS stations operated on 13 DoD installations (or groups of nearby installations) in southeastern United States (Nott 2000, 2001; Nott et al. 2003). Some of these new analytical models were then applied to data from the 36 MAPS stations on Forest Service Region Six and resulted in major new understandings of the relationships between large-scale climate cycles, including the El Niño Southern Oscillation and the North Atlantic Oscillation, and landbird productivity in the Pacific Northwest (Nott et al. 2002). In response to these reports, funding was secured through a challenge grant from the National Fish and Wildlife Foundation (federal share supplied by the USDA Forest Service) to complete additional analyses of ten years (1992-2001) of MAPS data from 36 stations located on six national forests in Region Six (and six stations on the Flathead National Forest in region One) as a function of GIS-based, remote-sensed, landscape-scale habitat data. These analyses have recently been completed (Nott et al. 2005; see executive summary at <http://www.birdpop.org/publications/NWFExecReport.pdf>).

A third objective of this work was to formulate management guidelines and conservation strategies for reversing population declines and maintaining stable and increasing populations of bird species of conservation concern in the Pacific Northwest. The formulation of these guidelines and strategies was to be achieved by modeling the population and demographic parameters such as adult population size, numbers of young, and productivity (young to adult ratio), as well as trends in these parameters, as a function of landscape-level habitat characteristics. Funding for this aspect of the work was also obtained through the above-mentioned challenge grant from the National Fish and Wildlife Foundation, and these management and conservation strategies have been completed (Nott et al. 2005). Management guidelines involve efforts to modify the habitat from characteristics associated with low population size, negative population trends, and or low productivity to characteristics associated

with high values for these parameters. Because these guidelines and strategies are based on vital rates as well as population size, they will avoid the potential pitfall of creating sink habitat, a common result of basing management only on population size.

The current objective of the MAPS Program on national forests such as those in Region 6 is to integrate the management guidelines and conservation strategies to reverse the population declines of 13 landbird species of conservation concern into new or on-going forest management actions that will be implemented on the forests. During 2005 we began integrate our avian management guidelines and strategies into management actions that have already been implemented or will be implemented during or after 2006 on the six national forests in Region Six on which we have MAPS stations. We will continue to a) monitor the effectiveness of those avian management guidelines and strategies through MAPS stations established in 2004 or 2005 within appropriately managed forests; b) look for opportunities to relocate existing “slow” stations; and (3) operate the remaining existing MAPS stations to serve as controls for the new stations sited and to monitor the effectiveness of management. However, the total number of stations operated will remain the same (e.g., six stations will be run on each of the six national forests in Region Six where stations are now being operated). We began this process in 2004 with the switching of one station in Siuslaw and have switched an additional four stations in 2005, one each at Mount Baker, Wenatchee, Willamette, and Fremont. Because Umatilla NF is still recovering from massive pest infestation we are not moving the stations in the hope of documenting widespread increases in population sizes and reproductive success of several target species.

A complete summary of the results of the MAPS Program in Region Six National Forests from 1992-2001 was presented by DeSante et al. (2002) and data from 2002-2004 was summarized by Desante et al. (2004, 2005a). This report briefly updates those reports and documents the operation of the 36 MAPS stations on six Region Six National Forests during the 2005 breeding season.

METHODS

Thirty-six MAPS stations were operated in 2005 on Region-6 National Forests, most of them in the same locations where they were first established in 1992. They were operated in accordance with the highly standardized banding protocols established by The Institute for Bird Populations for use by the MAPS Program throughout North America and detailed in the MAPS Manual (DeSante et al. 2005b) banding protocol. On each day of operation each year, one 12-m long, 30-mm mesh, 4-tier nylon mist net was erected at each of ten fixed mist-netting sites within the interior eight ha of each 20-ha station. These ten nets at each station were operated for six morning hours per day (beginning at local sunrise), and for one day in each of seven or eight consecutive 10-day periods between May 21 and August 8. The operation of stations occurred on schedule in each of the ten-day periods and was carried out by Institute for Bird Populations biologists and interns (mentioned by name in the Acknowledgments).

With few exceptions, all birds captured during the course of the study were identified to species,

age, and sex and, if unbanded, were banded with USGS/BRD numbered aluminum bands. Birds were released immediately upon capture and before being banded or processed if situations arose where bird safety would be comprised. The following data were taken on all birds captured, including recaptures, according to MAPS guidelines using standardized codes and forms:

- (1) capture code (newly banded, recaptured, band changed, unbanded);
- (2) band number;
- (3) species;
- (4) age and how aged;
- (5) sex (if possible) and how sexed (if applicable);
- (6) extent of skull pneumaticization;
- (7) breeding condition of adults (i.e., extent of cloacal protuberance or brood patch);
- (8) extent of juvenal plumage in young birds;
- (9) extent of body and flight-feather molt;
- (10) extent of primary-feather wear;
- (11) presence of molt limits and plumage characteristics;
- (12) wing chord;
- (13) fat class and body mass;
- (14) date and time of capture (net-run time);
- (15) station and net site where captured; and
- (16) any pertinent notes.

Effort data (i.e., the number and timing of net-hours on each day of operation) were also collected in a standardized manner. In order to allow constant-effort comparisons of data to be made, the times of opening and closing the array of mist nets and of beginning each net check were recorded to the nearest ten minutes. The breeding (summer residency) status (confirmed breeder, likely breeder, non-breeder) of each species seen, heard, or captured at each MAPS station on each day of operation was recorded using techniques similar to those employed for breeding bird atlas projects.

The computer entry, proofing, and verification of all banding, effort, and breeding status data were completed by IBP biologists using specially designed data entry, verification, and editing programs. The critical data for each banding record (capture code, band number, species, age, sex, date, capture time, station, and net number) were proofed by hand against the raw data and any computer-entry errors were corrected. All banding data were then run through a series of verification programs as follows:

- (1) Clean-up programs to check the validity of all codes entered and the ranges of all numerical data;
- (2) Cross-check programs to compare station, date, and net fields from the banding data with those from the effort and breeding status data;
- (3) Cross-check programs to compare species, age, and sex determinations against degree of skull pneumaticization, breeding condition (extent of cloacal protuberance and brood patch), extent of juvenal plumage, extent of body and flight-feather molt, extent of primary-feather wear, and presence of molt limits and plumage characteristics;

- (4) Screening programs which allow identification of unusual or duplicate band numbers or unusual band sizes for each species; and
- (5) Verification programs to screen banding and recapture data from all years of operation for inconsistent species, age, or sex determinations for each band number.

Any discrepancies or suspicious data identified by any of these programs were examined manually and corrected if necessary. Wing chord, weight, fat content, date and station of capture, and any pertinent notes were used as supplementary information for the correct determination of species, age, and sex in all of these verification processes. The proofed, verified, and corrected banding data from each year were then run through a series of analysis programs that calculated for each species and for all species pooled at each station and for all stations pooled on each forest:

- (1) the numbers of newly banded birds, recaptured birds, and birds released unbanded;
- (2) the numbers and capture rates (per 600 net-hours) of first captures (in each year) for individual adult and young birds; and
- (3) the reproductive index.

Following the procedures pioneered by the British Trust for Ornithology (BTO) in their CES Scheme (Peach et al. 1996), the number of adult birds captured was used as an index of adult population size. As our index of post-fledging productivity we are now using “reproductive index” (number of young divided by number of adults) as opposed to “proportion of young in the catch,” which we used prior to 2004. Reproductive index is a more intuitive value for productivity, and which is comparable to other calculated MAPS parameters such as recruitment.

RESULTS

MOUNT BAKER/SNOQUALMIE NATIONAL FOREST, WASHINGTON

Within Mt. Baker/Snoqualmie National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) The Monte Cristo Lake station at 610 m; (2) the Skull Creek station at 552 m; (3) the Perry Creek station at 512 m; (4) the Bench Thin station at 354 m; (5) the Frog Lake station at 317 m; and (6) the Beaver Lake station at 299 m. Four of the stations have been in operation every year since 1992, the Bench Thin station was established in 1993. The Skull Creek station was established in 2005 in an area that was thinned in spring 2005, to monitor the post-thinning demographics of three declining species of concern at Mount Baker, Hammond’s Flycatcher, Winter Wren, and MacGillivray’s Warbler (Nott et al. 2005). This new station replaces the unproductive Murphy’s Creek Station, where few of these species were captured. All stations are on the Darrington Ranger District. Table 1 details the habitats and the 2005 operation of the Mt. Baker stations.

A total of 2151.7 net-hours was accumulated at the six MAPS stations operated on Mt. Baker National Forest in 2005 (Table 1). Of these, 1577.8 net-hours could be compared with data from 2003 in a constant-effort manner.

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The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at Mt. Baker National Forest is presented for each species at each of the six stations individually in Table 2 and for all stations combined in Table 4. A total of 480 captures of 28 species was recorded during the summer of 2005. Newly banded birds comprised 48.5% of the total captures. The greatest number of total captures (125) was recorded at the Monte Cristo Lake station and the smallest number of total captures (43) was recorded at the Skull Creek station. The highest species richness occurred at Monte Cristo Lake (19 species) whereas the lowest species richness occurred at Skull Creek and Bench Thin (9 species each).

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 3) and for all stations combined (Table 4). We present capture rates (captures per 600 net-hours) of adults and young in this table so that the data can be compared among stations which, because of the vagaries of weather and accidental net damage, can differ from one another in effort expended (see Table 1). These capture indices indicate that the total adult population size in 2005 was greatest at Monte Cristo Lake, followed in descending order by Beaver Lake, Frog Lake, Perry Creek, Bench Thin, and Skull Creek. The capture rate of young (Table 3) of all species pooled at each station in 2005 was highest at Beaver Lake and lowest at Skull Creek. The reproductive index at the stations in 2005 (Table 3), i.e., the number of young per adult, was highest at Beaver Lake (0.40), followed by Monte Cristo Lake (0.38), Perry Creek (0.33), Bench Thin (0.25), Frog Lake (0.24), and Skull Creek (0.10).

Among individual species, Swainson's Thrush was by far the most frequently captured species, followed in descending order by Rufous Hummingbird, Song Sparrow, American Robin, Winter Wren, MacGillivray's Warbler, and Dark-eyed Junco (Table 4). Overall, the most abundant breeding species at the six Mt. Baker MAPS stations in 2005 (according to adults captured/600 net hrs), in decreasing order, were Swainson's Thrush, American Robin, Song Sparrow, Winter Wren, Dark-eyed Junco, Cedar Waxwing, "Western" Flycatcher, Chestnut-backed Chickadee, and MacGillivray's Warbler (Table 4; the number of individual adult Rufous Hummingbirds captured could not be determined since the birds were not banded). The following is a list of the common breeding species (captured at a rate of at least 4.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in italics):

Monte Cristo Lake

Swainson's Thrush
American Robin
Song Sparrow
Cedar Waxwing
Common Yellowthroat

Bench Thin

Swainson's Thrush
Winter Wren
MacGillivray's Warbler
American Robin

Skull Creek

Dark-eyed Junco
Winter Wren

Beaver Lake

Swainson's Thrush
Song Sparrow
American Robin
Winter Wren
Red-breasted Sapsucker
Common Yellowthroat

Perry Creek

Swainson's Thrush
American Robin
Winter Wren
Varied Thrush

Frog Lake

Swainson's Thrush
American Robin
Song Sparrow
Winter Wren

The newly established Skull Creek station had the lowest capture rates of adults and young and the lowest reproductive index of any of the six stations at Mount Baker, which is to be expected since the area was severely thinned in spring 2005. Thus far, it appears to be effective at monitoring only one of the three target species of concern, Winter Wren, for which adult capture rates were higher than any other species at Skull Creek and were higher than at all other stations except Beaver Lake (Table 3), but no young were captured. Adult Winter Wrens are typically associated with the brush piles left behind after the thinning process. It will be interesting to see how this and the other target species respond to vegetational succession as the thinned forest develops more vertical complexity.

WENATCHEE NATIONAL FOREST, WASHINGTON

Within Wenatchee National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) The Two Point station at 1512 m; (2) the Little Rattlesnake station at 1280 m; (3) the Pleasant Valley station at 1000 m; (4) the Timothy Meadow station at 951 m; (5) the Quartz Creek 2 station at 853 m; and (6) the Rattlesnake Spring station at 817 m. Four of the stations have been in operation since 1992. The Little Rattlesnake station was newly established in 2005 in a montane area that includes a regenerating clear-cut (from 20-25 years ago) to increase our ability to monitor four species of concern at Wenatchee: Warbling Vireo, MacGillivray's Warbler, Lincoln's Sparrow, and Song Sparrow (Nott et al. 2005). This new station replaces the Deep Creek station, at which few of these target species were captured. The Quartz Creek 2 station was established in 1993 to replace the original Quartz Creek station which was discontinued after 1992 because of heavy human interference and a history of vandalism. The Quartz Creek 2 station is very close to the original Quartz Creek station but is located farther from the Quartz Creek campground. All stations are on the Naches Ranger District. See Table 5 for a summary of the habitats and 2005 operation of these stations.

A total of 2376.3 net-hours was accumulated at the six MAPS stations operated in Wenatchee National Forest in 2005 (Table 5). Of these, 1784.8 net-hours could be compared with data from 2003 in a constant-effort manner.

The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at Wenatchee National Forest is presented for each species at each of the six stations individually in Table 6 and for all stations combined in Table 8. A total of 1559 captures of 51 species was recorded during the summer of 2005. Newly banded birds comprised 68.4% of the total captures. The greatest number of total captures (355) was recorded at the Quartz Creek 2 station and the smallest number of total captures (133) was recorded at the Timothy Meadow station. The highest species richness (38 species) occurred at Quartz Creek 2 and the lowest species richness (25 species) occurred at Timothy Meadow.

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 7) and for all stations combined (Table 8). We present capture rates (captures per 600 net-hours) of adults and young in this table so that the data can be compared among stations which, because of the vagaries of weather and accidental net damage, can differ from one another in effort expended (see Table 5). These capture indices indicate that the total adult population size in 2005 was

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greatest at Quartz Creek 2, followed in descending order by Rattlesnake Spring, Two Point, Little Rattlesnake, Pleasant Valley, and Timothy Meadow. The capture rate of young of all species pooled at each station in 2005 was highest at Two Point and lowest at Timothy Meadow. The reproductive index at the stations in 2005, i.e., the number of young per adult, was highest at Little Rattlesnake (0.46), followed by Two Point (0.45), Pleasant Valley (0.42), Quartz Creek 2 (0.39), Rattlesnake Springs (0.23), and Timothy Meadow (0.21).

Among individual species, Dark-eyed Junco was the most frequently captured species, followed by MacGillivray's Warbler, Chipping Sparrow, Rufous Hummingbird, Yellow-rumped Warbler, Pine Siskin, Song Sparrow, Lincoln's Sparrow, Dusky Flycatcher Nashville Warbler, American Robin, and Hammond's Flycatcher (Table 8). Overall, the most abundant breeding species at the six Wenatchee MAPS stations in 2005 (according to adults captured/600 net hrs), in decreasing order, were MacGillivray's Warbler, Pine Siskin, Chipping Sparrow, Dark-eyed Junco, Yellow-rumped Warbler, American Robin, Dusky Flycatcher, Western Tanager, Lincoln's Sparrow, Warbling Vireo, and Hammond's Flycatcher (Table 8; numbers of adult Rufous Hummingbirds captured could not be determined since these birds were not banded). The following is a list of the common breeding species (at least 8.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in italics):

Two Point

MacGillivray's Warbler
Dark-eyed Junco
Warbling Vireo
Yellow-rumped Warbler
American Robin
Lincoln's Sparrow
Dusky Flycatcher
Chipping Sparrow

Timothy Meadow

Pine Siskin
Lincoln's Sparrow
Chipping Sparrow
Townsend's Warbler
Dark-eyed Junco

Pleasant Valley

Chipping Sparrow
Yellow-rumped Warbler
Pine Siskin
American Robin
Lincoln's Sparrow
Western Tanager

Little Rattlesnake

Chipping Sparrow
Dark-eyed Junco
Yellow-rumped Warbler
Hammond's Flycatcher
MacGillivray's Warbler
Western Tanager
Hermit Thrush
American Robin
Lincoln's Sparrow

Quartz Creek 2

Pine Siskin
MacGillivray's Warbler
Yellow Warbler
Dark-eyed Junco
Western Wood-Pewee
Dusky Flycatcher
American Robin
Song Sparrow
Yellow-rumped Warbler
Cassin's Finch
Hammond's Flycatcher

Rattlesnake Springs

MacGillivray's Warbler
Dark-eyed Junco
Yellow-rumped Warbler
Dusky Flycatcher
Nashville Warbler
Western Tanager
Warbling Vireo
Hammond's Flycatcher
Chipping Sparrow
Song Sparrow
Evening Grosbeak

The newly established Little Rattlesnake station appears to be effective at monitoring at least two of the four target species of concern (Table 7). Capture rates of MacGillivray's Warbler and Lincoln's Sparrow are both adequate to effectively monitor these species in an area similar to

Timothy Meadow but receives pressure from some grazing and recreational use. Capture rates of Warbling Vireo and Song Sparrow were lower, but indicate presence of both species, and data for these species will complement those collected at other stations. Little Rattlesnake produced an excellent capture rate of 184.3 adults per 600 net-hours and had the highest reproductive index observed at Wenatchee in 2005 (Table 3), suggesting that this continuation of this station will enhance our ability to monitor target species and others at this forest.

UMATILLA NATIONAL FOREST, OREGON

Within Umatilla National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) The Buzzard Creek station at 1524 m; (2) the Buck Mountain Meadow station at 1378 m; (3) the Coyote Ridge station at 1341 m; (4) the Fry Meadow station at 1280 m; (5) the Brock Meadow station at 1244 m; and (6) the Phillips Creek station at 975 m. No stations were switched at Umatilla in 2005, in order to continue to document the dramatic, forest-wide declines that have been occurring there (Nott et al. 2005). Thus, all stations were established in 1992, and all are located on the Walla Ranger District. See Table 9 for a summary of the habitats and 2005 operation of these stations.

A total of 2218.0 net-hours was accumulated at the six MAPS stations operated in Umatilla National Forest in 2005 (Table 9). Of these, 2045.5 net-hours could be compared with data from 2003 in a constant-effort manner.

The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at Umatilla National Forest is presented for each species at each of the six stations individually in Table 10 and for all stations combined in Table 12. A total of 1213 captures of 45 species was recorded during the summer of 2005. Newly banded birds comprised 78.0% of the total captures. The greatest number of captures (330) was recorded at Buck Mountain Meadow and the smallest number of captures (127) was recorded at Phillips Creek. Species richness was greatest at Brock Meadow (35 species) and lowest at Fry Meadow (22 species).

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 11) and for all stations combined (Table 12). We present capture rates (captures per 600 net-hours) in this table so that the data can be compared among stations which, because of the vagaries of weather and accidental net damage, can differ from one another in effort expended (see Table 9). These indices indicate that the adult population size in 2005 was greatest at Buck Mountain Meadow, followed in descending order by Brock Meadow, Fry Meadow, Buzzard Creek, Coyote Ridge, and Phillips Creek. The capture rate of young of all species pooled was highest at Buck Mountain Meadow and lowest at Coyote Ridge. Productivity, i.e., the number of young per adult, was highest at Buzzard Creek (1.46), followed by Fry Meadow (1.01), Buck Mountain Meadow (0.78), Phillips Creek (0.72), Brock Meadow (0.68), and Coyote Ridge (0.48).

Among individual species, Golden-crowned Kinglet was the most frequently captured, followed by Townsend's Warbler, Swainson's Thrush, MacGillivray's Warbler, Dark-eyed Junco, Ruby-crowned Kinglet, Orange-crowned Warbler, Wilson's Warbler, and Lincoln's Sparrow (Table 12). Overall, the most abundant breeding species at the six Umatilla MAPS stations in 2005

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(according to adults captured/600 net hrs), in decreasing order, were Townsend's Warbler, Swainson's Thrush, Dark-eyed Junco, Ruby-crowned Kinglet, Pine Siskin, MacGillivray's Warbler, Wilson's and Chipping Sparrow (Table 12). The following is a list of the common breeding species (captured at a rate of at least 6.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in italics):

<u>Buzzard Creek</u>	<u>Buck Mountain Meadow</u>	<u>Coyote Ridge</u>
Townsend's Warbler	Townsend's Warbler	Townsend's Warbler
<i>Swainson's Thrush</i>	Golden-crowned Kinglet	<i>Dark-eyed Junco</i>
<i>Chipping Sparrow</i>	<i>Swainson's Thrush</i>	Orange-crowned Warbler
<i>Dark-eyed Junco</i>	Pine Siskin	<i>MacGillivray's Warbler</i>
Hermit Thrush	Ruby-crowned Kinglet	Hermit Thrush
Yellow-rumped Warbler	<i>Chipping Sparrow</i>	
	<i>Dark-eyed Junco</i>	<u>Brock Meadow</u>
<u>Fry Meadow</u>	<i>Wilson's Warbler</i>	Ruby-crowned Kinglet
<i>Dark-eyed Junco</i>	Yellow-rumped Warbler	Pine Siskin
Golden-crowned Kinglet	Western Tanager	<i>Swainson's Thrush</i>
Pine Siskin		Townsend's Warbler
Ruby-crowned Kinglet	<u>Phillips Creek</u>	<i>Wilson's Warbler</i>
<i>Lincoln's Sparrow</i>	<i>MacGillivray's Warbler</i>	<i>Lincoln's Sparrow</i>
<i>Swainson's Thrush</i>	<i>Swainson's Thrush</i>	<i>MacGillivray's Warbler</i>
Townsend's Warbler	<i>Dark-eyed Junco</i>	"Traill's" Flycatcher
		Orange-crowned Warbler

WILLAMETTE NATIONAL FOREST, OREGON

Within Willamette National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) the Mosquito Creek station at 1381 m elevation, (2) the Clearcut station at 1292 m; (3) the Fingerboard Prairie station at 1195 m; (4) the Ikenick station at 1006 m; (5) the Brock Creek station at 792 m; and (6) the Major Prairie station at 701 m. The Mosquito Creek station was newly established this year, in an area that was clear cul 20-30 years ago, to monitor landbird response to on-going successional changes and, hopefully, to better monitor three species of concern at Willamette: Swainson's Thrush, MacGillivray's Warbler, and Dark-eyed Junco (Nott et al. 2005). This new station replaces the unproductive Strube Flat station, where few of these species were captured. All other stations have been operated since 1992. The Clearcut, Brock Creek, and Major Prairie stations are on the Oakridge Ranger District and Mosquito Creek, Fingerboard Prairie, and Ikenick are on the McKenzie Ranger District. See Table 13 for details of the habitats and 2005 operation of these stations.

A total of 2518.2 net-hours was accumulated at the six MAPS stations operated in Willamette National Forest in 2005 (Table 13). Of these, 1983.8 net-hours could be compared with data from 2003 in a constant-effort manner.

The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at Willamette National Forest is presented for each species at each of the six stations individually

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in Table 14 and for all stations combined in Table 16. A total of 871 captures of 45 species was recorded during the summer of 2005. Newly banded birds comprised 52.1% of the total captures. The greatest number of total captures (191) was recorded at the Ickenick station and the smallest number of total captures (125) was recorded at the Fingerboard Prairie station. The greatest species richness occurred at Brock Creek (28 species) and the lowest species richness occurred at Major Prairie (19 species).

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 15) and for all stations combined (Table 16). We present capture rates (captures per 600 net-hours) of adults and young in this table so that the data can be compared among stations, which can differ from one another in effort expended (see Table 13). These capture indices indicate that the total adult population size in 2005 was greatest at Ickenick, followed in decreasing order by Mosquito Creek, Brock Creek, Major Prairie, Clearcut, and Fingerboard Prairie. The capture rate of young of all species pooled at each station in 2005 was highest at Fingerboard Prairie and lowest at Clearcut. The reproductive index observed at the Willamette stations in 2005, i.e., the number of young per adult, was highest at Fingerboard Prairie (0.93), followed by Mosquito Creek (0.39), Ickenick (0.36), Major Prairie (0.27), and Clearcut and Brock Creek (0.26 each).

Among individual species, MacGillivray's Warbler was the most frequently captured, followed by Swainson's Thrush, Rufous Hummingbird, Common Yellowthroat, Dark-eyed Junco, Song Sparrow, Chestnut-backed Chickadee, and Orange-crowned Warbler (Table 16). Overall, the most abundant breeding species at the six Willamette MAPS stations in 2005 (according to adults captured/600 net hrs), in decreasing order, were Swainson's Thrush, MacGillivray's Warbler, Dark-eyed Junco, Chestnut-backed Chickadee, Common Yellowthroat, Song Sparrow, "Traill's" Flycatcher, Red-breasted Sapsucker, and "Western" Flycatcher (Table 16; the number of individual adult Rufous Hummingbirds captured could not be determined since the birds were not banded). The following is a list of the common breeding species (captured at a rate of at least 6.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in italics):

Clearcut

MacGillivray's Warbler
Swainson's Thrush
Chestnut-backed Chickadee
Dark-eyed Junco
Hermit Warbler

Major Prairie

Swainson's Thrush
Song Sparrow
MacGillivray's Warbler
Dark-eyed Junco

Mosquito Creek

MacGillivray's Warbler
Swainson's Thrush
Hermit Warbler
Chestnut-backed Chickadee
Dark-eyed Junco
Black-headed Grosbeak
Orange-crowned Warbler

Brock Creek

Swainson's Thrush
MacGillivray's Warbler
Dark-eyed Junco

Fingerboard Prairie

Swainson's Thrush
MacGillivray's Warbler
Chestnut-backed Chickadee

Ickenick

Common Yellowthroat
"Traill's" Flycatcher
Song Sparrow
Lincoln's Sparrow
Swainson's Thrush

The newly established Mosquito Creek station appears to be effective at monitoring all three target species of concern, with excellent capture rates of Swainson's Thrush, MacGillivray's Warbler (the highest at Willamette by far), and Oregon Junco (Table 15). Mosquito Creek produced an excellent capture rate of 110.7 adults per 600 net-hours and had a reproductive index of 0.39, in both cases the second highest rates recorded at Willamette (Table 3). This suggests that the continuation of this station will enhance our ability to monitor target species and others at this forest in light of on-going successional changes at this station.

SIUSLAW NATIONAL FOREST, OREGON

Within Siuslaw National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) the Cougar Creek station at 259 m; (2) the Crab Creek station at 219 m; (3) the Homestead station at 207 m; (4) the Beaver Ridge station at 158 m; (5) the Cape Creek station at 122 m; and (6) the Salvation Meadow station at 122 m. Salvation Meadow was established in 1993 to replace the 1992 Nettle Creek station which, because of its extremely rugged terrain, was too difficult to operate. In 2004 the Cape Creek station replaced the Mary's Peak station because the latter was not in a productive area and we wanted to assess landbird dynamics in a successional habitat to more fully understand the effects of forest thinning. The new Cape Creek station is located in similar geographic terrain to Mary's Peak but was thinned in 2001. In addition, the Crab Creek station had been thinned since the 2003 season but we have left the station in place to monitor the effects of this thinning. All stations are on the Alsea Ranger District. See Table 17 for details on the habitats and 2005 operation of these stations.

A total of 2481.5 net-hours was accumulated at the six MAPS stations operated in Siuslaw National Forest in 2005 (Table 17). Of these, 2038.5 net-hours could be compared with data from 2005 in a constant-effort manner.

The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at Siuslaw National Forest is presented for each species at each of the six stations individually in Table 18 and for all stations combined in Table 20. A total of 797 captures of 27 species was recorded during the summer of 2005. Newly banded birds comprised 46.7% of the total captures. The greatest number of total captures (220) was recorded at the Cougar Creek station and the smallest number of total captures (59) was recorded at the Cape Creek station. The greatest species richness (14 species) were recorded at Cougar Creek and Salvation Meadow, and the lowest species richness (9 species) was recorded at Cape Creek.

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 19) and for all stations combined (Table 20). We present capture rates (captures per 600 net-hours) of adults and young in this table so that the data can be compared among stations which, because of the vagaries of weather and accidental net damage, can differ from one another in effort expended (see Table 17). These capture indices indicate that the total adult population size in 2005 was greatest at Cougar Creek, followed by Salvation Meadow, Homestead, Beaver Ridge, Crab Creek, and Cape Creek. The capture rate of young of all species pooled at each station in 2005 was highest at Salvation Meadow and lowest at Cape Creek. The reproductive index at the

Siuslaw stations in 2005, i.e., the number of young per adult, was highest at Crab Creek (0.48) followed by Beaver Ridge and Salvation Meadow (0.23), Cougar Creek (0.20), Cape Creek (0.18), and Homestead (0.12).

Among individual species, Swainson's Thrush was the most frequently captured species by far, followed by Wilson's Warbler, Winter Wren, Dark-eyed Junco, "Western" Flycatcher, Song Sparrow, and Rufous Hummingbird (Table 20). Overall, the most abundant breeding species at the six Siuslaw MAPS stations in 2005 (according to adults captured/600 net hrs), in decreasing order, were Swainson's Thrush, Wilson's Warbler, Winter Wren, Dark-eyed Junco, "Western" Flycatcher, and Chestnut-backed Chickadee (Table 20; the number of individual adult Rufous Hummingbirds captured could not be determined since the birds were not banded). The following is a list of the common breeding species (captured at a rate of at least 6.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in italics):

Cougar Creek

Swainson's Thrush
Wilson's Warbler
Chestnut-backed Chickadee
Winter Wren

Beaver Ridge

Swainson's Thrush
Wilson's Warbler
Winter Wren

Crab Creek

Dark-eyed Junco
Swainson's Thrush
Wilson's Warbler

Homestead

Swainson's Thrush
Wilson's Warbler
Winter Wren
"Western" Flycatcher

Cape Creek

Dark-eyed Junco
Winter Wren

Salvation Meadow

Swainson's Thrush
Wilson's Warbler
"Western" Flycatcher
Winter Wren
Song Sparrow
Black-headed Grosbeak

At Crab Creek, which was thinned in 2003, breeding population sizes declined by 34% between 2003 and 2004 but increased by 15% between 2004 and 2005. Reproductive index increased by 400% between 2003 and 2004 and by another 60% between 2004 and 2005. These figures are thus far very encouraging regarding the effects of thinning on landbird productivity, and we anticipate that population sizes will increase correspondingly, as young from previous cohorts recruit into the population. At the recently established Cape Creek station, breeding population sizes increased by 38% but productivity dropped by 42% between 2004 and 2005. It will be interesting to see whether or not these changes represent a density-dependent effect (often noted at MAPS stations) and how populations and productivity continue to respond to on-going habitat succession at this station. So far the new station has failed to effectively monitor any species of concern and the recently thinned Cape Creek is effective at monitoring a single species of concern, Winter Wren.

FREMONT NATIONAL FOREST, OREGON

Within Fremont National Forest, the six stations are located (from highest to lowest elevation) as follows: (1) The Sycan River station at 2005 m; (2) the Deadhorse station at 1944 m; (3) the Augur Creek station at 1847 m; (4) the Deer Creek station at 1724 m; (5) the Swamp Creek station at 1658 m; and (6) the Island station at 1628 m. The Deer Creek station was newly

established in 2005 in a riparian meadow slated for future management, to increase our ability to monitor two declining species of concern at Fremont: Warbling Vireo and Lincoln's Sparrow (Nott et al. 2005). This new station replaces the unproductive Cold Creek station, at which few of these target species were captured. All other stations were established in 1992 and all stations are on the Paisley Ranger District. See Table 21 for details on the habitats and 2005 operation of these stations.

A total of 1959.7 net-hours was accumulated at the six MAPS stations operated in Fremont National Forest in 2005 (Table 21). Of these, 1433.7 net-hours could be compared with data from 2005 in a constant-effort manner.

The 2005 capture summary of the numbers of newly-banded, unbanded, and recaptured birds at

Fremont National Forest is presented for each species at each of the six stations individually in Table 22 and for all stations combined in Table 24. A total of 999 captures of 49 species was recorded during the summer of 2005. Newly banded birds comprised 64.7% of the total captures. The greatest number of total captures (305) was recorded at the Deadhorse station and the smallest number of total captures (70) was recorded at the Swamp Creek station. Species richness was highest at Augur Creek (36 species) and lowest at Swamp Creek (17 species).

The capture rates (per 600 net-hours) of individual adult and young birds and the reproductive index are presented for each species and for all species pooled at each station (Table 23) and for all stations combined (Table 24). We present capture rates (captures per 600 net-hours) of adults and young in this table so that the data can be compared among stations which, because of the vagaries of weather and accidental net damage, can differ from one another in effort expended (see Table 21). These capture indices indicate that the total adult population size in 2005 was greatest at Deadhorse, followed in descending order by Deer Creek, Sycan River, Augur Creek, Island, and Swamp Creek. The capture rate of young of all species pooled at each station in 2005 was highest at Deadhorse and lowest at Swamp Creek. Reproductive index at the Fremont stations in 2005, i.e., the number of young per adult, was highest at Sycan River and Deadhorse (0.33 each), followed by Augur Creek (0.25), Deer Creek (0.20), Island (0.14), and Swamp Creek (0.07).

Among individual species, Dark-eyed Junco was the most frequently captured species, followed by MacGillivray's Warbler, Orange-crowned Warbler, Warbling Vireo, Yellow-rumped Warbler, American Robin, Lincoln's Sparrow, and Dusky Flycatcher (Table 24). Overall, the most abundant breeding species at the six Fremont MAPS stations in 2005 (according to adults captured/600 net hrs), in decreasing order, were Dark-eyed Junco, Warbling Vireo, American Robin, MacGillivray's Warbler, Yellow-rumped Warbler, Dusky Flycatcher, Lincoln's Sparrow, and Mountain Chickadee (Table 24). The following is a list of the common breeding species (captured at a rate of at least 6.0 adults per 600 net-hours), in decreasing order, at each station in 2005 (species of concern in *italics*):

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Sycan River

Dusky Flycatcher
White-crowned Sparrow
MacGillivray's Warbler
Lincoln's Sparrow
American Robin
Warbling Vireo
Yellow-rumped Warbler
Dark-eyed Junco

Deadhorse

Warbling Vireo
Dusky Flycatcher
Lincoln's Sparrow
Dark-eyed Junco
Hybrid Sapsucker
MacGillivray's Warbler
Yellow-rumped Warbler
Western Wood-Pewee
Mountain Chickadee
American Robin
Western Tanager
Wilson's Warbler

Augur Creek

Warbling Vireo
Dark-eyed Junco
Mountain Chickadee
Hermit Thrush
MacGillivray's Warbler
Western Wood-Pewee
Dusky Flycatcher
"Western" Flycatcher
Yellow-rumped Warbler

Deer Creek

Warbling Vireo
Dark-eyed Junco
MacGillivray's Warbler
American Robin
Yellow-rumped Warbler
Lincoln's Sparrow
Western Tanager

Swamp Creek

Dark-eyed Junco
American Robin
MacGillivray's Warbler
Yellow-rumped Warbler

Island

Dark-eyed Junco
Yellow-rumped Warbler
American Robin
Brown Creeper

The newly established Deer Creek station appears to be effective at monitoring both target species of concern, with excellent capture rates of Warbling Vireo (the highest at Fremont by far), and Lincoln's Sparrow (Table 23). Deer Creek also produced an excellent capture rate of 180.0 adults per 600 net-hours, the second highest at Fremont, and had an average reproductive index in comparison with the other stations (Table 23). This suggests that the continuation of this station will enhance our ability to monitor target species and others at this forest. Two additional stations may have to be moved because they do not effectively monitor species of concern.

DISCUSSION

Populations of many species of landbirds breeding on six national forests in Region 6 declined substantially and often significantly between 1992 and 2001. The decline for all species pooled over all six national forests was a substantial -1.5% per year. Declines were most pronounced on Siuslaw, Willamette, and especially, Umatilla National Forest where avian populations have declined by nearly 50% since 1992. Productivity also declined on Region 6 National Forests during this period, and productivity appears to be an important factor in driving population trends for many declining species in the region. For many species, especially Neotropical-wintering migrants, the trend in global climate during the 1990's, as characterized by a 5% per annum decrease in the March-May El Niño/Southern Oscillation Precipitation Index, appears to have contributed to the decreasing trends in productivity (Nott et al. 2002) which, in turn, have

likely contributed to the population declines. For most declining species, however, low overall productivity (regardless of the productivity trend) or low average survival rates (or both), that are unrelated to climate, appear to provide the major cause(s) of the population declines. We suspect that the ultimate environmental cause for these deficient vital rates, especially low productivity, relates to habitat loss and/or degradation.

The population declines in landbirds that we have documented on Region Six national forests, especially those that appear to be caused by low productivity on the breeding grounds, are potentially within the ability of the U.S. Forest Service to correct. As mentioned above, a major objective of the MAPS program on Region Six national forests was to provide for a comprehensive analysis of the ten years of demographic data as a function of landscape-scale habitat characteristics and spatially-explicit weather data. These analyses have now been completed, and management guidelines and conservation strategies to reverse the population declines and maintain stable or increasing populations of landbird species of conservation concern have been formulated (Nott et al. 2005). These management strategies will involve efforts to modify the habitat from characteristics associated with low productivity to characteristics associated with high productivity (for species for which low productivity is driving the population decline), and monitor the effects of existing management on adult populations and productivity. A similar analysis has been completed for DoD Military Installations (Nott *et al.* 2003) and active management to reverse population declines has begun on these installations.

At Siuslaw, two stations were altered in 2004 to help understand population dynamics as related to forest thinning practices, and four more stations (one each at Mount Baker, Wenatchee, Willamette, and Fremont) were altered in 2005. Thus far our objectives are being met at all five of these altered stations. Because of the large defoliation-driven declines at Umatilla, no changes were made so as to continue to document recovering population dynamics at each station there. The current objective of the MAPS Program on Region 6 National Forests is to implement these strategies in an adaptive management framework to reverse population declines of landbird species of conservation concern into new or on-going forest management actions. We have begun this process and look forward to monitoring the effectiveness of those avian management strategies in Region Six National Forests in future years.

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Table 1. Summary of the 2005 MAPS program on Mount Baker National Forest.

Station		No.	Major Habitat Type	Latitude-longitude	Avg Elev. (m)	2005 operation		
Name	Code					Total number of net-hours ¹	No. of periods	Inclusive dates
Monte Cristo Lake	MCLA	11144	Wet open meadow, riparian alder corridor, dense mixed coniferous forest	48°03'03"N,121°25'57"W	610	322.7 (300.0)	7	6/07 - 8/04
Skull Creek	SKCR	11265	Steep well drained managed hemlock forest	48°07'49"N,121°24'15"W	552	380.0 (n/a)	7	6/04 - 8/02
Perry Creek	PECR	11143	Dense mixed coniferous forest, riparian alder corridor	48°03'49"N,121°30'58"W	512	420.0 (276.2)	7	6/05 - 8/03
Bench Thin	BETH	11908	Thinned mixed coniferous forest, dense mixed coniferous forest	48°10'05"N,121°26'43"W	354	380.7 (380.7)	7	6/02 - 7/31
Frog Lake	FRLA	11139	Dense mixed coniferous lacustrine forest	48°12'30"N,121°34'33"W	317	364.7 (344.7)	7	5/31 - 7/30
Beaver Lake	BELA	11141	Semi-wet dense mixed coniferous forest, wet open swampland, beaver pond	48°09'47"N,121°26'50"W	299	283.7 (276.3)	7	6/03 - 8/01
ALL STATIONS COMBINED						2151.7(1577.8)	7	5/31 - 8/04

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2004 are shown in parentheses. The Skull Creek station began operations in 2005 so has no comparable hours to 2004.

Table 2. Capture summary for the six individual MAPS stations operated on Mount Baker National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Monte Cristo Lake			Skull Creek			Perry Creek			Bench Thin			Frog Lake			Beaver Lake		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Ruffed Grouse								1										
Rufous Hummingbird		16			13			17			9			7			5	
Red-breasted Sapsucker	2			1			2									2		2
Hairy Woodpecker	1			2		1	1			1								
Western Wood-Pewee	1																	
Traill's Flycatcher	2												1					
Hammond's Flycatcher													1		1	1		
Western Flycatcher	1			1						3				1	1	1		
Warbling Vireo	2						1						2					
Steller's Jay	3						2						1					
Chestnut-backed Chickadee	2						1						2		1	1		
Brown Creeper				3			1											
Winter Wren	5		1	4	1	2	4		2	4	2		6	1	2	6	2	4
Golden-crowned Kinglet													2					
Swainson's Thrush	6		18	2			9		12	4		13	10		23	11	1	24
American Robin	8		6	2			5		4	4			4	1	6	5		3
Varied Thrush							3						1			2		
Cedar Waxwing	7																	
Orange-crowned Warbler	4		1															
Yellow Warbler	4																	1
MacGillivray's Warbler	3						1			4		6						
Common Yellowthroat	3	1	3													2		
Wilson's Warbler	2		3															
Western Tanager													1					
Spotted Towhee										1		1						

Table 2. (cont.) Capture summary for the six individual MAPS stations operated on Mount Baker National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Monte Cristo Lake			Skull Creek			Perry Creek			Bench Thin			Frog Lake			Beaver Lake		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Chipping Sparrow													1					
Song Sparrow	13		7				4		3				5	1	2	16		12
Dark-eyed Junco				7		4				2								
ALL SPECIES POOLED	69	17	39	22	14	7	34	18	21	23	11	20	37	11	36	48	8	45
Total Number of Captures		125			43			73			54			84			101	
Number of Species	18	2	7	8	2	3	12	2	4	8	2	3	13	5	7	11	3	5
Total Number of Species		19			9			14			9			15			12	

Table 3. Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Mount Baker National Forest in 2005.

Species	Monte Cristo Lake			Skull Creek			Perry Creek			Bench Thin			Frog Lake			Beaver Lake		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Red-breasted Sapsucker	1.9	0.0	0.00	1.6	0.0	0.00	1.4	1.4	1.00							4.2	0.0	0.00
Hairy Woodpecker	1.9	0.0	0.00	3.2	0.0	0.00	0.0	1.4	und. ¹	0.0	1.6	und. ¹						
Western Wood-Pewee	1.9	0.0	0.00															
Trail's Flycatcher	3.7	0.0	0.00										1.6	0.0	0.00			
Hammond's Flycatcher													1.6	0.0	0.00	2.1	0.0	0.00
Western Flycatcher	1.9	0.0	0.00	1.6	0.0	0.00				3.2	1.6	0.50	1.6	0.0	0.00	2.1	0.0	0.00
Warbling Vireo	3.7	0.0	0.00				1.4	0.0	0.00				1.6	1.6	1.00			
Steller's Jay	3.7	1.9	0.50				0.0	1.4	und.				1.6	0.0	0.00			
Chestnut-backed Chickadee	3.7	0.0	0.00				1.4	0.0	0.00				3.3	0.0	0.00	2.1	0.0	0.00
Brown Creeper				1.6	3.2	2.00	0.0	1.4	und.									
Winter Wren	1.9	7.4	4.00	6.3	0.0	0.00	4.3	1.4	0.33	6.3	0.0	0.00	4.9	6.6	1.33	8.5	6.3	0.75
Golden-crowned Kinglet													1.6	1.6	1.00			
Swainson's Thrush	24.2	1.9	0.08	3.2	0.0	0.00	17.1	1.4	0.08	12.6	3.2	0.25	23.0	1.6	0.07	44.4	4.2	0.09
American Robin	14.9	3.7	0.25	3.2	0.0	0.00	10.0	0.0	0.00	4.7	1.6	0.33	9.9	0.0	0.00	10.6	6.3	0.60
Varied Thrush							4.3	0.0	0.00				1.6	0.0	0.00	2.1	2.1	1.00
Cedar Waxwing	13.0	0.0	0.00															
Yellow Warbler	3.7	3.7	1.00													2.1	0.0	0.00
MacGillivray's Warbler	3.7	1.9	0.50				0.0	1.4	und.	6.3	1.6	0.25						
Common Yellowthroat	5.6	0.0	0.00													4.2	0.0	0.00
Wilson's Warbler	1.9	3.7	2.00															
Western Tanager													1.6	0.0	0.00			
Spotted Towhee										1.6	0.0	0.00						
Chipping Sparrow													1.6	0.0	0.00			
Song Sparrow	11.2	14.9	1.33				2.9	4.3	1.50				6.6	3.3	0.50	16.9	21.2	1.25

Table 3. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Mount Baker National Forest in 2005.

Species	Monte Cristo Lake			Skull Creek			Perry Creek			Bench Thin			Frog Lake			Beaver Lake		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Dark-eyed Junco				11.1	0.0	0.00				3.2	0.0	0.00						
ALL SPECIES POOLED	102.3	39.0	0.38	31.6	3.2	0.10	42.9	14.3	0.33	37.8	9.5	0.25	62.5	14.8	0.24	99.4	40.2	0.40
Number of Species	17	8		8	1		8	8		7	5		14	5		11	5	
Total Number of Species		17			8			12			8			14			11	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 4. Summary of results for all six Mount Baker National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Ruffed Grouse		1				
Rufous Hummingbird		67				
Red-breasted Sapsucker	7		2	1.4	0.3	0.20
Hairy Woodpecker	5		1	0.8	0.6	0.67
Western Wood-Pewee	1			0.3	0.0	0.00
Traill's Flycatcher	3			0.8	0.0	0.00
Hammond's Flycatcher	2		1	0.6	0.0	0.00
Western Flycatcher	6	1	1	1.7	0.3	0.17
Warbling Vireo	5			1.1	0.3	0.25
Steller's Jay	6			0.8	0.6	0.67
Chestnut-backed Chickadee	6		1	1.7	0.0	0.00
Brown Creeper	4			0.3	0.8	3.00
Winter Wren	29	6	11	5.3	3.3	0.63
Golden-crowned Kinglet	2			0.3	0.3	1.00
Swainson's Thrush	42	1	90	19.5	2.0	0.10
American Robin	28	1	19	8.6	1.7	0.19
Varied Thrush	6			1.4	0.3	0.20
Cedar Waxwing	7			2.0	0.0	0.00
Orange-crowned Warbler	4		1			
Yellow Warbler	5			0.8	0.6	0.67
MacGillivray's Warbler	8		6	1.7	0.8	0.50
Common Yellowthroat	5	1	3	1.4	0.0	0.00
Wilson's Warbler	2		3	0.3	0.6	2.00
Western Tanager	1			0.3	0.0	0.00
Spotted Towhee	1		1	0.3	0.0	0.00
Chipping Sparrow	1			0.3	0.0	0.00
Song Sparrow	38	1	24	5.6	6.4	1.15
Dark-eyed Junco	9		4	2.5	0.0	0.00
ALL SPECIES POOLED	233	79	168	59.7	18.7	0.31
Total Number of Captures		480				
Number of Species	26	8	15	25	15	
Total Number of Species		28			25	

Table 5. Summary of the 2005 MAPS program on Wenatchee National Forest.

Station		No.	Major Habitat Type	Latitude-longitude	Avg Elev. (m)	2005 operation		
Name	Code					Total number of net-hours ¹	No. of periods	Inclusive dates
Two Point	TWPO	11147	Dry grazed montane meadow, open disturbed mixed coniferous forest	46°57'42"N,120°55'30"W	1512	385.0 (351.7)	7	5/30 - 7/28
Little Rattlesnake	LIRA	11264	Douglas fir woodland with bisecting stream, montane meadow, young regenerating clearcut	46°44'35"N,121°05'16"W	1280	420.0 (n/a)	7	6/03 - 7/31
Pleasant Valley	PLVA	11148	Wet open meadow, riparian alder corridor, open spruce forest, dense mixed coniferous forest	46°56'55"N,121°18'25"W	1000	392.7 (356.7)	7	6/04 - 8/01
Timothy Meadow	TIME	11145	Wet alder/huckleberry marshland, open spruce woodland, mixed coniferous forest	47°04'47"N,121°15'29"W	951	386.0 (332.3)	7	6/02 - 7/30
Quartz Creek 2	QCR2	11902	Riparian alder river-bottom, open mixed coniferous forest, beaver ponds, open shrubland	47°01'19"N,121°08'15"W	853	390.7 (358.8)	7	6/01 - 7/29
Rattlesnake Spring	RASP	11149	Riparian alder/aspen grove, chaparral, mixed coniferous forest	46°48'20"N,121°03'09"W	817	402.0 (385.3)	7	6/05 - 8/02
ALL STATIONS COMBINED						2376.3(1784.8)	7	5/30 - 8/02

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2004 are shown in parentheses. The Little Rattlesnake station began operations in 2005 therefore has no comparable hours to 2004.

Table 6. Capture summary for the six individual MAPS stations operated on Wenatchee National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Sharp-shinned Hawk													1					
Vaux's Swift													1					
Black-chinned Hummingbird		1																
Calliope Hummingbird		6			1						1						20	
Rufous Hummingbird		45			3			4			3			25			11	
Unident. Selasphorus Hum.								1			1							
Williamson's Sapsucker													2					
Red-naped Sapsucker				1									1			2		1
Downy Woodpecker										1								
Hairy Woodpecker				1														
Northern Flicker				1						1								
Olive-sided Flycatcher	1																	
Western Wood-Pewee							2						4		6	3		3
Hammond's Flycatcher	2			10		1	5		3	2		2	6		2	4		5
Dusky Flycatcher	8		4										10		5	15		8
Western Flycatcher	1																	
Unidentified Flycatcher														5				
Cassin's Vireo	1																4	
Warbling Vireo	13		3	2						2			4		1	9		4
Red-eyed Vireo													2					
N. Rough-winged Swallow													2					
Mountain Chickadee	6		1	1			2		1								2	
Chestnut-backed Chickadee	2						3			5		2	2					
Red-breasted Nuthatch	3			3			3						1				2	
House Wren	3			2			1						5		3	1		1

Table 6. (cont.) Capture summary for the six individual MAPS stations operated on Wenatchee National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Golden-crowned Kinglet	3			1			1		1	2			3		3			
Ruby-crowned Kinglet										2								
Townsend's Solitaire																	1	
Swainson's Thrush	1			4		1	1						4		3			
Hermit Thrush	5		1	8		3	2			1						1		1
American Robin	7		1	6			7		5	1			10		1	3		2
Cedar Waxwing										1			1			2		
Orange-crowned Warbler	7			12			2			1			6			5		
Nashville Warbler	10		2	3									1			25		3
Yellow Warbler							1			3			11		10			
Yellow-rumped Warbler	14	1	1	12		1	19		6	4		2	13		1	18		4
Townsend's Warbler	5		3	5			6		1	6			2			1		
Black-and-white Warbler													1					
MacGillivray's Warbler	36		34	13		4	2			1			19		26	29	1	26
Wilson's Warbler							1			5			3					
Western Tanager	5			9			6						2			15		2
Chipping Sparrow	17		4	37		9	21		1	12		2	3		2	7	1	1
Fox Sparrow	1																	
Song Sparrow	3		3	3		1	3			6		8	22	1	16	8		11
Lincoln's Sparrow	13		7	10		3	10		8	12		11	3		1			
White-crowned Sparrow							2		1				7		6			
Dark-eyed Junco	26	1	7	51		17	24		4	6		4	13		7	22		15
Black-headed Grosbeak	1			2									3		1	4		1
Lazuli Bunting	4																	
Brown-headed Cowbird				2									1		1			

Table 6. (cont.) Capture summary for the six individual MAPS stations operated on Wenatchee National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Cassin's Finch	8												7		1	1		
Pine Siskin	3			2			11			19		2	47		2	2		
Evening Grosbeak				3			5			2			3			6		
ALL SPECIES POOLED	209	54	71	204	4	40	140	5	31	95	5	33	226	31	98	192	33	88
Total Number of Captures		334			248			176			133			355			313	
Number of Species	29	5	13	26	2	9	24	2	10	22	3	8	36	3	20	26	4	16
Total Number of Species		32			28			26			25			38			28	

Table 7. Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Wenatchee National Forest in 2005.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Sharp-shinned Hawk													1.5	0.0	0.00			
Vaux's Swift													0.0	0.0	0.00			
Williamson's Sapsucker													1.5	1.5	1.00			
Red-naped Sapsucker				0.0	1.4	und. ¹							1.5	0.0	0.00	3.0	0.0	0.00
Downy Woodpecker										0.0	1.6	und. ¹						
Hairy Woodpecker				1.4	0.0	0.00												
Northern Flicker				0.0	1.4	und.				0.0	1.6	und.						
Olive-sided Flycatcher	1.6	0.0	0.00															
Western Wood-Pewee							3.1	0.0	0.00				13.8	0.0	0.00	7.5	0.0	0.00
Hammond's Flycatcher	0.0	3.1	und. ¹	12.9	1.4	0.11	7.6	1.5	0.20	4.7	0.0	0.00	9.2	0.0	0.00	10.4	0.0	0.00
Dusky Flycatcher	10.9	1.6	0.14										13.8	6.1	0.44	25.4	1.5	0.06
Western Flycatcher	1.6	0.0	0.00															
Cassin's Vireo	1.6	0.0	0.00													6.0	0.0	0.00
Warbling Vireo	23.4	0.0	0.00	2.9	0.0	0.00				3.1	0.0	0.00	6.1	0.0	0.00	11.9	3.0	0.25
Red-eyed Vireo													3.1	0.0	0.00			
N. Rough-winged Swallow													3.1	0.0	0.00			
Mountain Chickadee	6.2	4.7	0.75	0.0	1.4	und.	3.1	0.0	0.00							0.0	3.0	und. ¹
Chestnut-backed Chickadee	0.0	3.1	und.				4.6	0.0	0.00	6.2	4.7	0.75	1.5	1.5	1.00			
Red-breasted Nuthatch	1.6	3.1	2.00	4.3	0.0	0.00	3.1	1.5	0.50				0.0	1.5	und. ¹	1.5	1.5	1.00
House Wren													6.1	3.1	0.50	1.5	0.0	0.00
Golden-crowned Kinglet	3.1	1.6	0.50	1.4	0.0	0.00	3.1	0.0	0.00	1.6	1.6	1.00	3.1	1.5	0.50			
Ruby-crowned Kinglet										3.1	0.0	0.00						
Townsend's Solitaire																1.5	0.0	0.00

Table 7. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Wenatchee National Forest in 2005.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Swainson's Thrush	1.6	0.0	0.00	4.3	1.4	0.33	1.5	0.0	0.00				4.6	4.6	1.00			
Hermit Thrush	6.2	3.1	0.50	8.6	2.9	0.33	1.5	1.5	1.00	1.6	0.0	0.00				1.5	0.0	0.00
American Robin	12.5	0.0	0.00	8.6	0.0	0.00	13.8	0.0	0.00	1.6	0.0	0.00	13.8	1.5	0.11	6.0	0.0	0.00
Cedar Waxwing										1.6	0.0	0.00	1.5	0.0	0.00	3.0	0.0	0.00
Nashville Warbler													0.0	1.5	und.	23.9	14.9	0.63
Yellow Warbler							1.5	0.0	0.00	4.7	0.0	0.00	16.9	6.1	0.36			
Yellow-rumped Warbler	14.0	7.8	0.56	15.7	1.4	0.09	24.4	13.8	0.56	7.8	0.0	0.00	12.3	7.7	0.63	26.9	3.0	0.11
Townsend's Warbler	7.8	1.6	0.20	7.1	0.0	0.00	6.1	3.1	0.50	9.3	0.0	0.00	3.1	0.0	0.00	1.5	0.0	0.00
MacGillivray's Warbler	56.1	18.7	0.33	12.9	5.7	0.44	0.0	3.1	und. ¹	1.6	0.0	0.00	23.0	16.9	0.73	38.8	11.9	0.31
Wilson's Warbler							1.5	0.0	0.00	6.2	1.6	0.25	4.6	0.0	0.00			
Western Tanager	7.8	0.0	0.00	12.9	0.0	0.00	9.2	0.0	0.00				1.5	1.5	1.00	17.9	4.5	0.25
Chipping Sparrow	10.9	15.6	1.43	47.1	5.7	0.12	29.0	4.6	0.16	15.5	4.7	0.30	4.6	0.0	0.00	9.0	1.5	0.17
Fox Sparrow	1.6	0.0	0.00															
Song Sparrow	3.1	3.1	1.00	1.4	4.3	3.00	3.1	1.5	0.50	6.2	4.7	0.75	13.8	23.0	1.67	9.0	3.0	0.33
Lincoln's Sparrow	12.5	7.8	0.63	8.6	5.7	0.67	10.7	7.6	0.71	18.7	4.7	0.25	0.0	4.6	und.			
White-crowned Sparrow							3.1	0.0	0.00				4.6	6.1	1.33			
Dark-eyed Junco	26.5	20.3	0.76	22.9	50.0	2.19	7.6	29.0	3.80	9.3	3.1	0.33	15.4	9.2	0.60	28.4	10.4	0.37
Black-headed Grosbeak	1.6	0.0	0.00	2.9	0.0	0.00							4.6	0.0	0.00	6.0	0.0	0.00
Lazuli Bunting	6.2	0.0	0.00															
Brown-headed Cowbird				1.4	1.4	1.00							1.5	0.0	0.00			
Cassin's Finch	6.2	6.2	1.00										10.8	0.0	0.00	1.5	0.0	0.00
Pine Siskin	3.1	1.6	0.50	2.9	0.0	0.00	16.8	0.0	0.00	31.1	0.0	0.00	64.5	7.7	0.12	3.0	0.0	0.00
Evening Grosbeak				4.3	0.0	0.00	7.6	0.0	0.00	3.1	0.0	0.00	4.6	0.0	0.00	9.0	0.0	0.00

Table 7. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Wenatchee National Forest in 2005.

Species	Two Point			Little Rattlesnake			Pleasant Valley			Timothy Meadow			Quartz Creek 2			Rattlesnake Spring		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
ALL SPECIES POOLED	227.5	102.9	0.45	184.3	84.3	0.46	162.0	67.2	0.42	136.8	28.0	0.21	270.3	106.0	0.39	253.7	58.2	0.23
Number of Species	24	16		20	13		21	10		19	9		30	18		24	11	
Total Number of Species		26			23			22			21			33			25	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 8. Summary of results for all six Wenatchee National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Sharp-shinned Hawk	1			0.3	0.0	0.00
Vaux's Swift	1			0.0	0.0	und. ¹
Black-chinned Hummingbird		1				
Calliope Hummingbird		28				
Rufous Hummingbird		91				
Unident. Selasphorus Hum.		2				
Williamson's Sapsucker	2			0.3	0.3	1.00
Red-naped Sapsucker	4		1	0.8	0.3	0.33
Downy Woodpecker	1			0.0	0.3	und.
Hairy Woodpecker	1			0.3	0.0	0.00
Northern Flicker	2			0.0	0.5	und.
Olive-sided Flycatcher	1			0.3	0.0	0.00
Western Wood-Pewee	9		9	4.0	0.0	0.00
Hammond's Flycatcher	29		13	7.6	1.0	0.13
Dusky Flycatcher	33		17	8.3	1.5	0.18
Western Flycatcher	1			0.3	0.0	0.00
Unidentified Flycatcher		5				
Cassin's Vireo	5			1.3	0.0	0.00
Warbling Vireo	30		8	7.8	0.5	0.06
Red-eyed Vireo	2			0.5	0.0	0.00
N. Rough-winged Swallow	2			0.5	0.0	0.00
Mountain Chickadee	11		2	1.5	1.5	1.00
Chestnut-backed Chickadee	12		2	2.0	1.5	0.75
Red-breasted Nuthatch	12			1.8	1.3	0.71
House Wren	12		4	1.3	0.5	0.40
Golden-crowned Kinglet	10		4	2.0	0.8	0.38
Ruby-crowned Kinglet	2			0.5	0.0	0.00
Townsend's Solitaire	1			0.3	0.0	0.00
Swainson's Thrush	10		4	2.0	1.0	0.50
Hermit Thrush	17		5	3.3	1.3	0.39
American Robin	34		9	9.3	0.3	0.03
Cedar Waxwing	4			1.0	0.0	0.00
Orange-crowned Warbler	33					
Nashville Warbler	39		5	4.0	2.8	0.69

Table 8. (cont.) Summary of results for all six Wenatchee National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Yellow Warbler	15		10	3.5	1.0	0.29
Yellow-rumped Warbler	80	1	15	16.9	5.6	0.33
Townsend's Warbler	25		4	5.8	0.8	0.13
Black-and-white Warbler	1					
MacGillivray's Warbler	100	1	90	22.0	9.3	0.43
Wilson's Warbler	9			2.0	0.3	0.13
Western Tanager	37		2	8.3	1.0	0.12
Chipping Sparrow	97	1	19	19.7	5.3	0.27
Fox Sparrow	1			0.3	0.0	0.00
Song Sparrow	45	1	39	6.1	6.3	1.04
Lincoln's Sparrow	48		30	8.3	5.1	0.61
White-crowned Sparrow	9		7	1.3	1.0	0.80
Dark-eyed Junco	142	1	54	18.4	20.7	1.12
Black-headed Grosbeak	10		2	2.5	0.0	0.00
Lazuli Bunting	4			1.0	0.0	0.00
Brown-headed Cowbird	3		1	0.5	0.3	0.50
Cassin's Finch	16		1	3.0	1.0	0.33
Pine Siskin	84		4	19.9	1.5	0.08
Evening Grosbeak	19			4.8	0.0	0.00
ALL SPECIES POOLED	1066	132	361	205.5	74.2	0.36
Total Number of Captures		1559				
Number of Species	48	8	27	43	30	
Total Number of Species		51			45	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this location in this year.

Table 9. Summary of the 2005 MAPS program on Umatilla National Forest.

Station		No.	Major Habitat Type	Latitude-longitude	Avg Elev. (m)	2005 operation		
Name	Code					Total number of net-hours ¹	No. of periods	Inclusive dates
Buzzard Creek	BUCR	11151	Disturbed coniferous forest, successional alder scrub	45°50'14"N,117°56'56"W	1524	374.3 (349.0)	7	5/29 - 8/03
Buck Mountain Meadow	BMME	11155	Montane meadow, dense coniferous forest	45°40'43"N,118°06'54"W	1378	384.0 (344.8)	7	5/27 - 8/01
Coyote Ridge	CORI	11154	Successional disturbed mixed coniferous forest	45°44'48"N,118°10'16"W	1341	376.7 (341.5)	7	5/28 - 8/02
Fry Meadow	FRME	11153	Montane meadow, coniferous forest	45°47'36"N,117°50'29"W	1280	326.3 (307.3)	7	5/31 - 8/05
Brock Meadow	BRME	11152	Montane meadow, coniferous forest, riparian willows	45°49'01"N,117°51'53"W	1244	392.7 (338.8)	7	5/30 - 8/04
Phillips Creek	PHCR	11156	Riparian willow/alder, dry chaparral, open mixed conifer/oak forest	45°35'08"N,118°01'43"W	975	364.0 (364.0)	7	5/26 - 7/31
ALL STATIONS COMBINED						2218.0(2045.5)	7	5/26 - 8/05

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2004 are shown in parentheses.

Table 10. Capture summary for the six individual MAPS stations operated on Umatilla National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Buzzard Creek			Buck Mountain Meadow			Coyote Ridge			Fry Meadow			Brock Meadow			Phillips Creek		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Calliope Hummingbird		1			2			2						1				1
Rufous Hummingbird					8						1			2				2
Red-naped Sapsucker				2			1			1			3					1
Hairy Woodpecker				2									1					
Northern Flicker													1					
Traill's Flycatcher											1		3		5			
Hammond's Flycatcher				4		1						1	2					
Gray Flycatcher													2		1			
Dusky Flycatcher	4		1	1			5						3					
Western Flycatcher	1																	2
Unidentified Empidonax Fl.					2													
Cassin's Vireo	1						3						2					
Warbling Vireo	2		4	1			3			2			4	1	1	2		
Gray Jay				1		1												
Black-capped Chickadee													1			8		2
Mountain Chickadee	2			4			2			2		2	4					
Chestnut-backed Chickadee	2			2		1	1			3		1	4			5		
Red-breasted Nuthatch	2		1	2		1				5			3			1		
Brown Creeper	2			5			1			1					1	1		
Winter Wren	1			11		2				1			3		1	3		1
Golden-crowned Kinglet	61		1	107		9	6		2	78		2	31	1	1	2		
Ruby-crowned Kinglet	4	1		11			2		2	7			26		1			
Townsend's Solitaire							1											
Swainson's Thrush	6		4	13		9	2		3	4		4	10		7	7		13
Hermit Thrush	3		5	4			4		5				1			1		
American Robin							1						4		1	3		2

Table 10. (cont.) Capture summary for the six individual MAPS stations operated on Umatilla National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Buzzard Creek			Buck Mountain Meadow			Coyote Ridge			Fry Meadow			Brock Meadow			Phillips Creek		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Varied Thrush													1					1
Gray Catbird										1								
Orange-crowned Warbler	6			4			16		2				12		2	5	1	
Nashville Warbler	2			1			1											
Yellow-rumped Warbler	5		2	11		2	2			2			8		2			
Townsend's Warbler	17		4	26		10	8		4	7		1	25		2	4		
MacGillivray's Warbler	3			3		1	4		6	4		1	12	1	5	26		16
Wilson's Warbler	7		1	10		5							10		12			
Western Tanager				6			1	1	2	2								2
Spotted Towhee																		5
Chipping Sparrow	8		1	5		7	2											
Fox Sparrow							1		1	1			2					
Song Sparrow													4		5	1		
Lincoln's Sparrow				3						8	1	7	8		14			
Dark-eyed Junco	13	1	4	10		2	7	1	2	12	1	7	3			8		
Black-headed Grosbeak	1												1			1		
Lazuli Bunting				1									4					
Cassin's Finch				1														
Red Crossbill				1														
Pine Siskin	1			12	1	2				12			14		2			
ALL SPECIES POOLED	154	3	28	264	13	53	74	4	29	153	4	26	212	6	63	89	4	34
Total Number of Captures		185			330			107			183			281			127	
Number of Species	23	3	11	29	4	14	22	3	10	19	4	9	32	5	17	21	3	5
Total Number of Species		24			32			23			22			35			23	

Table 11. Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Umatilla National Forest in 2005.

Species	Buzzard Creek			Buck Mountain Meadow			Coyote Ridge			Fry Meadow			Brock Meadow			Phillips Creek		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Red-naped Sapsucker				1.6	0.0	0.00	1.6	0.0	0.00	1.8	0.0	0.00	1.5	0.0	0.00	1.6	0.0	0.00
Hairy Woodpecker				1.6	1.6	1.00							1.5	0.0	0.00			
Northern Flicker													1.5	0.0	0.00			
Trail's Flycatcher													10.7	0.0	0.00			
Hammond's Flycatcher				7.8	0.0	0.00				1.8	0.0	0.00	1.5	1.5	1.00			
Gray Flycatcher													1.5	1.5	1.00			
Dusky Flycatcher	6.4	0.0	0.00	1.6	0.0	0.00	6.4	1.6	0.25				1.5	3.1	2.00			
Western Flycatcher	0.0	1.6	und. ¹													3.3	0.0	0.00
Cassin's Vireo	0.0	1.6	und.				3.2	1.6	0.50				0.0	3.1	und. ¹			
Warbling Vireo	4.8	1.6	0.33	1.6	0.0	0.00	4.8	0.0	0.00	3.7	0.0	0.00	7.6	0.0	0.00	1.6	0.0	0.00
Gray Jay				0.0	1.6	und. ¹												
Black-capped Chickadee													1.5	0.0	0.00	4.9	8.2	1.67
Mountain Chickadee	3.2	0.0	0.00	3.1	3.1	1.00	0.0	3.2	und. ¹	5.5	0.0	0.00	3.1	3.1	1.00			
Chestnut-backed Chickadee	0.0	3.2	und.	3.1	1.6	0.50	0.0	1.6	und. ¹	0.0	5.5	und. ¹	3.1	3.1	1.00	1.6	6.6	4.00
Red-breasted Nuthatch	3.2	0.0	0.00	3.1	0.0	0.00				3.7	3.7	1.00	4.6	0.0	0.00	1.6	0.0	0.00
Brown Creeper	0.0	3.2	und.	0.0	7.8	und.	1.6	0.0	0.00	0.0	1.8	und.	1.5	0.0	0.00	0.0	1.6	und. ¹
Winter Wren	0.0	1.6	und.	4.7	12.5	2.67				0.0	1.8	und.	1.5	3.1	2.00	1.6	4.9	3.00
Golden-crowned Kinglet	3.2	94.6	29.50	31.3	117.2	3.75	4.8	4.8	1.00	22.1	121.4	5.50	6.1	44.3	7.25	1.6	1.6	1.00
Ruby-crowned Kinglet	4.8	3.2	0.67	15.6	1.6	0.10	3.2	0.0	0.00	12.9	0.0	0.00	26.0	13.8	0.53			
Townsend's Solitaire							1.6	0.0	0.00									
Swainson's Thrush	14.4	0.0	0.00	25.0	0.0	0.00	4.8	0.0	0.00	11.0	0.0	0.00	18.3	0.0	0.00	16.5	0.0	0.00
Hermit Thrush	8.0	0.0	0.00	4.7	1.6	0.33	8.0	3.2	0.40				0.0	1.5	und.	0.0	1.6	und.
American Robin							1.6	0.0	0.00				7.6	0.0	0.00	4.9	1.6	0.33
Varied Thrush													0.0	1.5	und.	1.6	0.0	0.00

Table 11. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Umatilla National Forest in 2005.

Species	Buzzard Creek			Buck Mountain Meadow			Coyote Ridge			Fry Meadow			Brock Meadow			Phillips Creek		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Gray Catbird										1.8	0.0	0.00						
Orange-crowned Warbler	1.6	6.4	4.00	1.6	4.7	3.00	9.6	17.5	1.83				9.2	12.2	1.33	3.3	4.9	1.50
Yellow-rumped Warbler	8.0	1.6	0.20	10.9	4.7	0.43	3.2	0.0	0.00	3.7	0.0	0.00	4.6	9.2	2.00			
Townsend's Warbler	16.0	12.8	0.80	34.4	7.8	0.23	11.2	4.8	0.43	9.2	3.7	0.40	18.3	19.9	1.08	3.3	3.3	1.00
MacGillivray's Warbler	0.0	4.8	und.	3.1	1.6	0.50	9.6	3.2	0.33	5.5	1.8	0.33	13.8	7.6	0.56	29.7	21.4	0.72
Wilson's Warbler	6.4	6.4	1.00	12.5	1.6	0.13							18.3	3.1	0.17			
Western Tanager				9.4	0.0	0.00	6.4	0.0	0.00	3.7	0.0	0.00				3.3	0.0	0.00
Spotted Towhee																1.6	6.6	4.00
Chipping Sparrow	14.4	0.0	0.00	15.6	0.0	0.00	3.2	0.0	0.00									
Fox Sparrow							0.0	1.6	und. ¹	1.8	0.0	0.00	3.1	0.0	0.00			
Song Sparrow													7.6	1.5	0.20	1.6	0.0	0.00
Lincoln's Sparrow				0.0	4.7	und.				12.9	5.5	0.43	15.3	6.1	0.40			
Dark-eyed Junco	12.8	14.4	1.13	14.1	4.7	0.33	11.2	3.2	0.29	23.9	3.7	0.15	3.1	1.5	0.50	8.2	4.9	0.60
Black-headed Grosbeak	0.0	1.6	und.										1.5	0.0	0.00	1.6	0.0	0.00
Lazuli Bunting				1.6	0.0	0.00							0.0	6.1	und.			
Cassin's Finch				1.6	0.0	0.00												
Red Crossbill				1.6	0.0	0.00												
Pine Siskin	1.6	0.0	0.00	18.8	0.0	0.00				22.1	0.0	0.00	21.4	0.0	0.00			
ALL SPECIES POOLED	109.0	158.7	1.46	229.7	178.1	0.78	95.6	46.2	0.48	147.1	148.9	1.01	217.0	146.7	0.68	94.0	67.6	0.72
Number of Species	15	15		25	16		18	11		17	9		29	20		19	12	
Total Number of Species		22			28			21			20			33			21	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 12. Summary of results for all six Umatilla National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Calliope Hummingbird		7				
Rufous Hummingbird		13				
Red-naped Sapsucker	8			1.4	0.0	0.00
Hairy Woodpecker	3			0.5	0.3	0.50
Northern Flicker	1			0.3	0.0	0.00
Traill's Flycatcher	3	1	5	1.9	0.0	0.00
Hammond's Flycatcher	6		2	1.9	0.3	0.14
Gray Flycatcher	2		1	0.3	0.3	1.00
Dusky Flycatcher	13		1	2.7	0.8	0.30
Western Flycatcher	3			0.5	0.3	0.50
Unidentified Empidonax Flycat.		2				
Cassin's Vireo	6			0.5	1.1	2.00
Warbling Vireo	14	1	5	4.1	0.3	0.07
Gray Jay	1		1	0.0	0.3	und. ¹
Black-capped Chickadee	9		2	1.1	1.4	1.25
Mountain Chickadee	14		2	2.4	1.6	0.67
Chestnut-backed Chickadee	17		2	1.4	3.5	2.60
Red-breasted Nuthatch	13		2	2.7	0.5	0.20
Brown Creeper	10		1	0.5	2.4	4.50
Winter Wren	19		4	1.4	4.1	3.00
Golden-crowned Kinglet	285	1	15	11.4	62.8	5.52
Ruby-crowned Kinglet	50	1	3	10.6	3.2	0.31
Townsend's Solitaire	1			0.3	0.0	0.00
Swainson's Thrush	42		40	15.1	0.0	0.00
Hermit Thrush	13		10	3.5	1.4	0.39
American Robin	8		3	2.4	0.3	0.11
Varied Thrush	2			0.3	0.3	1.00
Gray Catbird	1			0.3	0.0	0.00
Orange-crowned Warbler	43	1	4	4.3	7.8	1.81
Nashville Warbler	4					
Yellow-rumped Warbler	28		6	5.1	2.7	0.53
Townsend's Warbler	87		21	15.7	8.9	0.57
MacGillivray's Warbler	52	1	29	10.3	6.8	0.66
Wilson's Warbler	27		18	6.5	1.9	0.29

Table 12. (cont.) Summary of results for all six Umatilla National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Western Tanager	11	1	2	3.8	0.0	0.00
Spotted Towhee	5			0.3	1.1	4.00
Chipping Sparrow	15		8	5.7	0.0	0.00
Fox Sparrow	4		1	0.8	0.3	0.33
Song Sparrow	5		5	1.6	0.3	0.17
Lincoln's Sparrow	19	1	21	4.6	2.7	0.59
Dark-eyed Junco	53	3	15	11.9	5.4	0.46
Black-headed Grosbeak	3			0.5	0.3	0.50
Lazuli Bunting	5			0.3	1.1	4.00
Cassin's Finch	1			0.3	0.0	0.00
Red Crossbill	1			0.3	0.0	0.00
Pine Siskin	39	1	4	10.6	0.0	0.00
ALL SPECIES POOLED	946	34	233	149.9	124.2	0.83
Total Number of Captures		1213				
Number of Species	43	12	29	41	31	
Total Number of Species		45			42	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this location in this year.

Table 13. Summary of the 2005 MAPS program on Willamette National Forest.

Station			Major Habitat Type	Latitude-longitude	Avg Elev. (m)	2005 operation		
Name	Code	No.				Total number of net-hours ¹	No. of periods	Inclusive dates
Mosquito Creek	MOCR	11263	Regenerating clear cut of douglas fir forest with dense understory, mature douglas fir forest	44°03'45"N,122°03'00"W	1381	384.7 (n/a)	8	6/02 - 8/04
Clearcut	CLCU	11160	Disturbed open mixed coniferous forest with dry mixed evergreen shrub component	43°57'29"N,122°12'46"W	1292	441.3 (415.7)	8	5/23 - 8/03
Fingerboard Prairie	FIPR	11158	Disturbed wet open meadow complex with alder/ willow thickets, fairly open mixed coniferous forest, dense deciduous/coniferous forest	44°11'57"N,121°57'22"W	1195	394.2 (372.8)	8	5/21 - 8/02
Ikenick	IKEN	11157	Very wet open meadow, mature mixed coniferous forest edge, disturbed mixed coniferous forest	44°22'15"N,122°00'59"W	1006	415.0 (365.0)	8	5/22 - 8/05
Brock Creek	BRCR	11162	Thinned mixed coniferous forest, dense mixed coniferous forest	43°52'55"N,122°12'00"W	792	446.0 (398.7)	8	5/19 - 7/31
Major Prairie	MAPR	11161	Dense buckthorn meadow, mixed coniferous forest	43°53'21"N,122°15'54"W	701	437.0 (431.7)	8	5/20 - 8/01
ALL STATIONS COMBINED						2518.2(1983.8)	8	5/19 - 8/05

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2003 are shown in parentheses. The Mosquito Creek station began operations in 2005 so there are no comparable hours to 2004.

Table 14. Capture summary for the six individual MAPS stations operated on Willamette National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Mosquito Creek			Clearcut			Fingerboard Prairie			Ikenick			Brock Creek			Major Prairie		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Calliope Hummingbird		2			2						1			1			1	
Rufous Hummingbird		21			20			11			20			9			17	
Unident. Selasphorus Hum.								1						2				
Red-breasted Sapsucker	5		1	1						5		3	2		2	3		2
Hairy Woodpecker											1							
Olive-sided Flycatcher											2							
Traill's Flycatcher				1						8		5	3					
Hammond's Flycatcher							3		2	1						2		2
Dusky Flycatcher				1		1				2								
Western Flycatcher	1			1			1			1			1			4		
Unident. Empidonax Flycat.		2			1									2				1
Cassin's Vireo													1					
Hutton's Vireo													2			3		2
Warbling Vireo	3			1									1					
Gray Jay	1	1					1											
Steller's Jay	1																	
Chestnut-backed Chickadee	10		1	8		5	10		2	1			3			5		3
Bushtit							1											
Red-breasted Nuthatch				2			1											
Brown Creeper													2			2		2
House Wren													1					
Winter Wren	1						6	1		1			1			1	1	
Golden-crowned Kinglet	2			6			5			3								
Swainson's Thrush	10		10	3		16	10		11	3		2	6		19	11		14
Hermit Thrush	4			1			2											
American Robin										1			3		4			

Table 14. (cont.) Capture summary for the six individual MAPS stations operated on Willamette National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Mosquito Creek			Clearcut			Fingerboard Prairie			Ikenick			Brock Creek			Major Prairie		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Varied Thrush							1	1										
Cedar Waxwing													2					
Orange-crowned Warbler	9	1		11			10		1	12			1				2	
Nashville Warbler	2			1			4				1							
Yellow Warbler										1		4	1					
Yellow-rumped Warbler							2			1								
Townsend's Warbler																		1
Hermit Warbler	10		1	6			2			1		1			1	1		
MacGillivray's Warbler	22	2	15	9		12	12		11	3	1	2	9		9	4		10
Common Yellowthroat										25	2	38						
Wilson's Warbler	3		1	3			3		1	6								
Western Tanager	1			2									1			1		
Spotted Towhee															2	1	1	1
Chipping Sparrow														1				
Fox Sparrow				1														
Song Sparrow							1			7		7	6			12	1	23
Lincoln's Sparrow							1			4	3	10						
Dark-eyed Junco	8	1	4	3	2	7	6		1			1	12		1	8	1	7
Black-headed Grosbeak	6		2															
Lazuli Bunting													1					
Purple Finch										1			2					
ALL SPECIES POOLED	99	30	35	61	25	41	82	14	29	90	28	73	61	15	38	61	22	67
Total Number of Captures		164			127				125		191			114			150	
Number of Species	18	7	8	18	4	5	20	4	7	22	6	10	21	5	7	16	6	11
Total Number of Species		21			21				22		26			28			19	

Table 15. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Willamette National Forest in 2005.

Species	Mosquito Creek			Clearcut			Fingerboard Prairie			Ikenick			Brock Creek			Major Prairie		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
American Robin										1.4	0.0	0.00	5.4	1.3	0.25			
Varied Thrush							0.0	3.0	und. ¹									
Cedar Waxwing													2.7	0.0	0.00			
Orange-crowned Warbler	6.2	7.8	1.25													1.4	1.4	1.00
Nashville Warbler	1.6	1.6	1.00	1.4	0.0	0.00	3.0	3.0	1.00									
Yellow Warbler										2.9	0.0	0.00	1.3	0.0	0.00			
Yellow-rumped Warbler							3.0	0.0	0.00	1.4	0.0	0.00						
Townsend's Warbler																1.4	0.0	0.00
Hermit Warbler	14.0	1.6	0.11	6.8	1.4	0.20	1.5	1.5	1.00	2.9	0.0	0.00	1.3	0.0	0.00	1.4	0.0	0.00
MacGillivray's Warbler	28.1	6.2	0.22	16.3	4.1	0.25	10.7	10.7	1.00	1.4	2.9	2.00	13.5	1.3	0.10	11.0	0.0	0.00
Common Yellowthroat										36.1	20.2	0.56						
Wilson's Warbler	1.6	3.1	2.00	0.0	4.1	und.	1.5	3.0	2.00	2.9	5.8	2.00						
Western Tanager	0.0	1.6	und.	2.7	0.0	0.00							1.3	0.0	0.00	1.4	0.0	0.00
Spotted Towhee													1.3	0.0	0.00	1.4	0.0	0.00
Fox Sparrow				1.4	0.0	0.00												
Song Sparrow							0.0	1.5	und.	10.1	4.3	0.43	5.4	2.7	0.50	15.1	9.6	0.64
Lincoln's Sparrow							1.5	0.0	0.00	10.1	0.0	0.00						
Dark-eyed Junco	9.4	3.1	0.33	9.5	1.4	0.14	3.0	7.6	2.50	1.4	0.0	0.00	8.1	9.4	1.17	11.0	0.0	0.00
Black-headed Grosbeak	9.4	0.0	0.00															
Lazuli Bunting													1.3	0.0	0.00			
Purple Finch										1.4	0.0	0.00	2.7	0.0	0.00			

Table 15. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Willamette National Forest in 2005.

Species	Mosquito Creek			Clearcut			Fingerboard Prairie			Ikenick			Brock Creek			Major Prairie		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
ALL SPECIES POOLED	110.7	43.7	0.39	73.4	19.0	0.26	63.9	59.4	0.93	111.3	40.5	0.36	83.4	21.5	0.26	81.0	22.0	0.27
Number of Species	14	13		15	6		16	12		21	7		21	8		15	8	
Total Number of Species		18			17			18			22			22			16	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 16. Summary of results for all six Willamette National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Calliope Hummingbird		7				
Rufous Hummingbird		98				
Unidentified Selasphorus Hum.		3				
Red-breasted Sapsucker	16		8	2.1	2.1	1.00
Hairy Woodpecker	1			0.0	0.2	und. ¹
Olive-sided Flycatcher	2			0.5	0.0	0.00
Traill's Flycatcher	12		5	3.3	0.0	0.00
Hammond's Flycatcher	6		4	1.0	0.7	0.75
Dusky Flycatcher	3		1	0.7	0.2	0.33
Western Flycatcher	9			2.1	0.0	0.00
Unidentified Empidonax Flycat.		5	1			
Cassin's Vireo	1			0.2	0.0	0.00
Hutton's Vireo	5		2	0.7	0.5	0.67
Warbling Vireo	5			1.2	0.0	0.00
Gray Jay	2	1		0.5	0.0	0.00
Steller's Jay	1			0.0	0.2	und.
Chestnut-backed Chickadee	37		11	6.7	2.6	0.39
Bushtit	1			0.0	0.0	und.
Red-breasted Nuthatch	3			0.7	0.0	0.00
Brown Creeper	4		2	0.7	0.2	0.33
House Wren	1			0.0	0.2	und.
Winter Wren	10	2		1.2	1.2	1.00
Golden-crowned Kinglet	16			1.4	2.4	1.67
Swainson's Thrush	43		72	14.3	1.4	0.10
Hermit Thrush	7			1.0	0.7	0.75
American Robin	4		4	1.2	0.2	0.20
Varied Thrush	1	1		0.0	0.5	und.
Cedar Waxwing	2			0.5	0.0	0.00
Orange-crowned Warbler	45	1	1	1.2	1.4	1.20
Nashville Warbler	7	1		1.0	0.7	0.75
Yellow Warbler	2		4	0.7	0.0	0.00
Yellow-rumped Warbler	3			0.7	0.0	0.00
Townsend's Warbler	1			0.2	0.0	0.00
Hermit Warbler	20		3	4.5	0.7	0.16

Table 16. (cont.) Summary of results for all six Willamette National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
MacGillivray's Warbler	59	3	59	13.3	4.1	0.30
Common Yellowthroat	25	2	38	6.0	3.3	0.56
Wilson's Warbler	15		2	1.0	2.6	2.75
Western Tanager	5			1.0	0.2	0.25
Spotted Towhee	1	1	3	0.5	0.0	0.00
Chipping Sparrow		1				
Fox Sparrow	1			0.2	0.0	0.00
Song Sparrow	26	1	30	5.2	3.1	0.59
Lincoln's Sparrow	5	3	10	1.9	0.0	0.00
Dark-eyed Junco	37	4	21	7.1	3.6	0.50
Black-headed Grosbeak	6		2	1.4	0.0	0.00
Lazuli Bunting	1			0.2	0.0	0.00
Purple Finch	3			0.7	0.0	0.00
ALL SPECIES POOLED	454	134	283	87.0	33.4	0.38
Total Number of Captures		871				
Number of Species	42	14	20	37	24	
Total Number of Species		45			41	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this location in this year.

Table 17. Summary of the 2005 MAPS program on Siuslaw National Forest.

Station		2005 operation							
Name	Code	No.	Major Habitat Type	Latitude-longitude	Avg Elev. (m)	Total number of net-hours ¹	No. of periods	Inclusive dates	
Cougar Creek	COUC	11167	Mature semi-dense Douglas fir forest, young disturbed Douglas fir forest, post- clearcut vine maple grove	44°16'20"N,123°51'46"W	259	480.0 (392.5)	8	5/26 - 8/06	
Crab Creek	CRCR	11168	Young dense disturbed Douglas fir forest	44°15'11"N,123°51'39"W	219	384.0 (351.7)	8	5/21 - 7/30	
Homestead	HOME	11165	Mature Douglas fir forest, mature red alder stands, grassy meadow	44°30'23"N,123°37'48"W	207	352.8 (297.8)	8	5/23 - 7/31	
Beaver Ridge	BERI	11166	Young dense disturbed Douglas fir forest	44°18'45"N,123°50'19"W	158	439.0 (347.8)	8	5/25 - 8/07	
Cape Creek	CCRE	11241	Thinned douglas fir stand on coastal hill	44°08'18"N,124°01'25W	122	414.7 (264.7)	8	5/22 - 8/01	
Salvation Meadow	SAME	11903	Wet meadow, riparian corridor, second-growth Douglas fir-dominated mixed coniferous forest	44°15'33"N,123°44'32"W	122	411.0 (384.0)	8	5/24 - 8/08	
ALL STATIONS COMBINED						2481.5(2038.5)	8	5/21 - 8/08	

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2004 are shown in parentheses.

Table 18. Capture summary for the six individual MAPS stations operated on Siuslaw National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Cougar Creek			Crab Creek			Homestead			Beaver Ridge			Cape Creek			Salvation Meadow		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Sharp-shinned Hawk													1					
Western Screech-Owl								1										
Northern Saw-whet Owl		2																
Allen's Hummingbird					1													1
Unident. Selasphorus Hum.		3			12			1						9				2
Downy Woodpecker																		1
Hairy Woodpecker										1								2
Hammond's Flycatcher				2														
Western Flycatcher	2		1				6		1	5						10		8
Unident. Empidonax Flycat.								1										
Hutton's Vireo	2						2											
Warbling Vireo				2		1												2
Gray Jay										2			1		1			
Steller's Jay	1									1			1					
Chestnut-backed Chickadee	9		1															
Brown Creeper	1												1					
Winter Wren	16	1	6	3		1	9	1	8	9	1	8	4		5	6	2	9
Swainson's Thrush	32		85	8		6	30		33	21	1	37	3			22		73
Unidentified Thrush								1										
American Robin										1		1						1
Varied Thrush	1		1				1											
Wrentit	2		1									1				1		
Black-throated Gray Warbler							1											
Hermit Warbler	3																	1
Wilson's Warbler	29	1	19	6		1	13	1	18	13		8	2			19		7

Table 18. (cont.) Capture summary for the six individual MAPS stations operated on Siuslaw National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Cougar Creek			Crab Creek			Homestead			Beaver Ridge			Cape Creek			Salvation Meadow		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Spotted Towhee				1														
Song Sparrow				10	1		1			2		2				8		9
Dark-eyed Junco				16	1	8							17	1	13			
Unidentified Sparrow					1													
Black-headed Grosbeak				1	1											3		2
Purple Finch				2														
Unidentified Bird		1								1								
ALL SPECIES POOLED	98	8	114	51	17	17	63	6	60	55	3	57	30	10	19	75	6	108
Total Number of Captures		220			85			129			115			59			189	
Number of Species	11	5	7	10	6	5	8	6	4	9	3	6	8	2	3	11	4	6
Total Number of Species		14			13			12			11			9			14	

Table 19. Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Siuslaw National Forest in 2005.

Species	Cougar Creek			Crab Creek			Homestead			Beaver Ridge			Cape Creek			Salvation Meadow		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Sharp-shinned Hawk													1.4	0.0	0.00			
Downy Woodpecker																1.5	0.0	0.00
Hairy Woodpecker										1.4	0.0	0.00				2.9	0.0	0.00
Hammond's Flycatcher				1.6	1.6	1.00												
Western Flycatcher	3.8	0.0	0.00				8.5	1.7	0.20	4.1	1.4	0.33				11.7	4.4	0.38
Hutton's Vireo	2.5	0.0	0.00				3.4	0.0	0.00									
Warbling Vireo				3.1	0.0	0.00										2.9	0.0	0.00
Gray Jay										0.0	2.7	und. ¹	0.0	1.4	und. ¹			
Steller's Jay	1.3	0.0	0.00							1.4	0.0	0.00	1.4	0.0	0.00			
Chestnut-backed Chickadee	8.8	2.5	0.29															
Brown Creeper	1.3	0.0	0.00										1.4	0.0	0.00			
Winter Wren	6.3	15.0	2.40	4.7	1.6	0.33	13.6	5.1	0.38	8.2	8.2	1.00	7.2	0.0	0.00	8.8	4.4	0.50
Swainson's Thrush	73.8	2.5	0.03	18.8	0.0	0.00	68.0	1.7	0.03	47.8	5.5	0.11	4.3	0.0	0.00	70.1	2.9	0.04
American Robin										2.7	0.0	0.00				1.5	0.0	0.00
Varied Thrush	1.3	0.0	0.00				0.0	1.7	und. ¹									
Wrentit	2.5	1.3	0.50							1.4	0.0	0.00				0.0	1.5	und. ¹
Black-throated Gray Warbler							1.7	0.0	0.00									
Hermit Warbler	1.3	2.5	2.00															
Wilson's Warbler	41.3	5.0	0.12	7.8	1.6	0.20	27.2	5.1	0.19	19.1	2.7	0.14	1.4	1.4	1.00	17.5	13.1	0.75
Spotted Towhee				1.6	0.0	0.00												
Song Sparrow				0.0	15.6	und. ¹	1.7	0.0	0.00	2.7	0.0	0.00				8.8	4.4	0.50

Table 19 (cont.). Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated on Siuslaw National Forest in 2005.

Species	Cougar Creek			Crab Creek			Homestead			Beaver Ridge			Cape Creek			Salvation Meadow		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Dark-eyed Junco				20.3	9.4	0.46							23.2	4.3	0.19			
Black-headed Grosbeak				1.6	0.0	0.00										7.3	0.0	0.00
Purple Finch				3.1	0.0	0.00												
ALL SPECIES POOLED	143.8	28.8	0.20	62.5	29.7	0.48	124.1	15.3	0.12	88.8	20.5	0.23	40.5	7.2	0.18	132.8	30.7	0.23
Number of Species	11	6		9	5		7	5		9	5		7	3		10	6	
Total Number of Species		11			10			8			10			8			11	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 20. Summary of results for all six Siuslaw National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un- banded	Recap- tured	Adults	Young	
	Sharp-shinned Hawk	1			0.2	
Western Screech-Owl		1				
Northern Saw-whet Owl		2				
Allen's Hummingbird		2				
Unident.. Selasphorus Hum.		27				
Downy Woodpecker	1			0.2	0.0	0.00
Hairy Woodpecker	3			0.7	0.0	0.00
Hammond's Flycatcher	2			0.2	0.2	1.00
Western Flycatcher	23		10	4.6	1.2	0.26
Unidentified Empidonax Flycat.		1				
Hutton's Vireo	4			1.0	0.0	0.00
Warbling Vireo	4		1	1.0	0.0	0.00
Gray Jay	3		1	0.0	0.7	und. ¹
Steller's Jay	3			0.7	0.0	0.00
Chestnut-backed Chickadee	9		1	1.7	0.5	0.29
Brown Creeper	2			0.5	0.0	0.00
Winter Wren	47	5	37	8.0	6.0	0.76
Swainson's Thrush	116	1	234	47.6	2.2	0.05
Unidentified Thrush		1				
American Robin	2		1	0.7	0.0	0.00
Varied Thrush	2		1	0.2	0.2	1.00
Wrentit	3		2	0.7	0.5	0.67
Black-throated Gray Warbler	1			0.2	0.0	0.00
Hermit Warbler	3	1		0.2	0.5	2.00
Wilson's Warbler	82	2	53	19.6	4.8	0.25
Spotted Towhee	1			0.2	0.0	0.00
Song Sparrow	21	1	11	2.2	3.1	1.44
Dark-eyed Junco	33	2	21	7.0	2.2	0.31
Unidentified Sparrow		1				
Black-headed Grosbeak	4	1	2	1.5	0.0	0.00
Purple Finch	2			0.5	0.0	0.00
Unidentified Bird		2				
ALL SPECIES POOLED	372	50	375	99.6	22.2	0.22
Total Number of Captures		797				
Number of Species	24	10	13	23	12	
Total Number of Species		27			24	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this location in this year.

Table 21. Summary of the 2005 MAPS program on Fremont National Forest.

Station			Major Habitat Type	Latitude-longitude	Avg Elev. (m)	2005 operation		
Name	Code	No.				Total number of net-hours ¹	No. of periods	Inclusive dates
Sycan River	SYRI	11169	Wet willow/bogbirch riparian meadow, mixed coniferous forest	42°40'23"N,120°48'59"W	2003	303.3 (296.7)	7	6/04 - 7/31
Deadhorse	DEAD	11170	Dense willow-dominated meadow, mixed coniferous forest	42°35'27"N,120°48'51"W	1944	336.3 (319.0)	7	6/03 - 7/30
Augur Creek	AUCR	11172	Semi-wet riparian meadow with aspen groves, sage brushland and mixed coniferous forest	42°31'12"N,120°42'38"W	1847	356.0 (290.2)	7	6/10 - 8/03
Deer Creek	DCRK	11266	Well drained mixed coniferous forest, willow riparian meadow, dry ponderous pine woodland	42°27'51"N,120°44'50"W	1724	333.3 (n/a)	7	6/09 - 8/02
Swamp Creek	SWCR	11174	Riparian meadow, mahogany shrubland, mixed pine forest	42°25'05"N,120°34'00"W	1658	329.7 (294.5)	7	6/08 - 8/01
Island	ISLA	11173	Open riparian meadow with willow thickets, mixed coniferous forest and dry brushland	42°30'19"N,120°39'40"W	1628	301.0 (233.3)	7	6/06 - 8/04
ALL STATIONS COMBINED						1959.7(1433.7)	7	6/03 - 8/04

¹ Total net-hours in 2005. Net-hours in 2005 that could be compared in a constant-effort manner to 2004 are shown in parentheses. The Deer Creek MAPS station began operations in 2005 therefore does not have comparable hours to the 2004 season.

Table 22. (cont.) Capture summary for the six individual MAPS stations operated Fremont National Forest in 2005.
 N = Newly Banded, U = Unbanded, R = Recaptures of banded birds.

Species	Sycan River			Deadhorse			Augur Creek			Deer Creek			Swamp Creek			Island		
	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R	N	U	R
Unidentified Bird		1																
ALL SPECIES POOLED	118	24	57	199	36	70	117	19	24	124	11	35	37	9	24	51	8	36
Total Number of Captures		199			305			160			170			70			95	
Number of Species	24	12	12	26	14	16	30	8	13	26	7	5	14	5	7	15	5	7
Total Number of Species		31			32			36			29			17			18	

Table 23. Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated Fremont National Forest in 2005.

Species	Sycan River			Deadhorse			Augur Creek			Deer Creek			Swamp Creek			Island		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
Williamson's Sapsucker							3.4	0.0	0.00	1.8	0.0	0.00				2.0	0.0	0.00
Red-naped X Red-breasted	2.0	0.0	0.00	16.1	0.0	0.00	1.7	1.7	1.00	5.4	0.0	0.00	3.6	0.0	0.00	2.0	0.0	0.00
Red-breasted Sapsucker				5.4	1.8	0.33							3.6	0.0	0.00			
Downy Woodpecker							1.7	0.0	0.00									
Hairy Woodpecker				5.4	0.0	0.00	1.7	0.0	0.00				3.6	0.0	0.00			
Northern Flicker				1.8	0.0	0.00	1.7	0.0	0.00				0.0	1.8	und. ¹	2.0	0.0	0.00
Western Wood-Pewee				8.9	0.0	0.00	6.7	0.0	0.00							2.0	0.0	0.00
Hammond's Flycatcher	4.0	0.0	0.00				3.4	0.0	0.00	1.8	0.0	0.00				4.0	0.0	0.00
Gray Flycatcher				1.8	0.0	0.00												
Dusky Flycatcher	25.7	0.0	0.00	25.0	1.8	0.07	6.7	0.0	0.00	3.6	0.0	0.00	1.8	0.0	0.00			
Western Flycatcher	5.9	0.0	0.00	3.6	0.0	0.00	6.7	0.0	0.00	5.4	0.0	0.00	5.5	1.8	0.33			
Cassin's Vireo							1.7	0.0	0.00									
Warbling Vireo	11.9	0.0	0.00	33.9	0.0	0.00	25.3	0.0	0.00	36.0	0.0	0.00	3.6	0.0	0.00	4.0	0.0	0.00
Steller's Jay										1.8	0.0	0.00						
Mountain Chickadee	5.9	0.0	0.00	8.9	1.8	0.20	13.5	1.7	0.13	5.4	3.6	0.67	3.6	0.0	0.00	4.0	2.0	0.50
Red-breasted Nuthatch	2.0	0.0	0.00	5.4	0.0	0.00	3.4	0.0	0.00	0.0	1.8	und. ¹	1.8	1.8	1.00	2.0	0.0	0.00
Brown Creeper	2.0	2.0	1.00				5.1	0.0	0.00	3.6	0.0	0.00	1.8	0.0	0.00	10.0	0.0	0.00
Golden-crowned Kinglet							1.7	5.1	3.00	0.0	1.8	und.						
Ruby-crowned Kinglet	2.0	0.0	0.00															
Mountain Bluebird							1.7	0.0	0.00									
Townsend's Solitaire	4.0	2.0	0.50															
Hermit Thrush	2.0	0.0	0.00	1.8	0.0	0.00	8.4	1.7	0.20							0.0	2.0	und. ¹
American Robin	15.8	0.0	0.00	8.9	0.0	0.00	5.1	0.0	0.00	18.0	1.8	0.10	12.7	0.0	0.00	21.9	2.0	0.09
Yellow-rumped Warbler	9.9	7.9	0.80	10.7	16.1	1.50	6.7	5.1	0.75	12.6	9.0	0.71	9.1	0.0	0.00	23.9	6.0	0.25

Table 23. (cont.) Numbers of adult and young individual birds captured per 600 net-hours and reproductive index (young/adult) at the six individual MAPS stations operated Fremont National Forest in 2005.

Species	Sycan River			Deadhorse			Augur Creek			Deer Creek			Swamp Creek			Island		
	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index	Ad.	Yg.	Repr. index
MacGillivray's Warbler	19.8	9.9	0.50	14.3	5.4	0.38	8.4	3.4	0.40	21.6	0.0	0.00	10.9	0.0	0.00	2.0	0.0	0.00
Wilson's Warbler	0.0	4.0	und. ¹	7.1	3.6	0.50	3.4	1.7	0.50	1.8	0.0	0.00						
Western Tanager	2.0	0.0	0.00	8.9	0.0	0.00	0.0	0.0	0.00	9.0	0.0	0.00						
Chipping Sparrow										1.8	0.0	0.00						
Brewer's Sparrow	0.0	2.0	und.	1.8	0.0	0.00												
Fox Sparrow							0.0	1.7	und. ¹									
Song Sparrow										5.4	0.0	0.00						
Lincoln's Sparrow	19.8	7.9	0.40	21.4	8.9	0.42	0.0	1.7	und.	10.8	0.0	0.00						
White-crowned Sparrow	21.8	15.8	0.73	3.6	5.4	1.50	3.4	1.7	0.50									
Dark-eyed Junco	9.9	2.0	0.20	19.6	26.8	1.36	18.5	11.8	0.64	21.6	18.0	0.83	18.2	0.0	0.00	37.9	4.0	0.11
Black-headed Grosbeak	2.0	0.0	0.00															
Lazuli Bunting				1.8	0.0	0.00				1.8	0.0	0.00						
Brown-headed Cowbird	2.0	0.0	0.00															
Cassin's Finch	0.0	2.0	und.	3.6	1.8	0.50	3.4	0.0	0.00	3.6	0.0	0.00						
Pine Siskin										3.6	0.0	0.00						
Evening Grosbeak							3.4	0.0	0.00	3.6	0.0	0.00						
ALL SPECIES POOLED	170.1	55.4	0.33	219.4	73.1	0.33	146.6	37.1	0.25	180.0	36.0	0.20	80.1	5.5	0.07	117.6	15.9	0.14
Number of Species	20	10		23	10		25	11		22	6		13	3		13	5	
Total Number of Species		23			23			27			24			14			14	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this station in this year.

Table 24. Summary of results for all six Fremont National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Sharp-shinned Hawk		2				
Northern Pygmy-Owl		1				
Calliope Hummingbird		9				
Rufous Hummingbird		26				
Belted Kingfisher		3				
Williamson's Sapsucker	4			1.2	0.0	0.00
Red-naped X Red-breasted Saps.	14		7	5.2	0.3	0.06
Red-breasted Sapsucker	3		6	1.5	0.3	0.20
Unidentified Sapsucker		12				
Downy Woodpecker	1			0.3	0.0	0.00
Hairy Woodpecker	5		1	1.8	0.0	0.00
Northern Flicker	4		2	0.9	0.3	0.33
Western Wood-Pewee	8		4	3.1	0.0	0.00
Hammond's Flycatcher	5		4	2.1	0.0	0.00
Hammond's/Dusky Flycatcher		1				
Gray Flycatcher	1			0.3	0.0	0.00
Dusky Flycatcher	31	2	14	10.4	0.3	0.03
Western Flycatcher	15		2	4.6	0.3	0.07
Unidentified Empidonax Flycat.		6				
Cassin's Vireo	1			0.3	0.0	0.00
Warbling Vireo	61	2	29	19.6	0.0	0.00
Steller's Jay	1			0.3	0.0	0.00
Mountain Chickadee	26	4	4	7.0	1.5	0.22
Red-breasted Nuthatch	9	1	2	2.4	0.6	0.25
Brown Creeper	11		4	3.7	0.3	0.08
House Wren	6	1	1			
Golden-crowned Kinglet	5			0.3	1.2	4.00
Ruby-crowned Kinglet	1			0.3	0.0	0.00
Mountain Bluebird			1	0.3	0.0	0.00
Townsend's Solitaire	3			0.6	0.3	0.50
Hermit Thrush	8		6	2.1	0.6	0.29
American Robin	38	11	12	13.5	0.6	0.05
Orange-crowned Warbler	80		14			
Nashville Warbler	9		1			

Table 24. (cont.) Summary of results for all six Fremont National Forest MAPS stations combined in 2005.

Species	Birds captured			Birds/600 nethours		Reprod. Index
	Newly banded	Un-banded	Recap-tured	Adults	Young	
Yellow-rumped Warbler	61	1	7	11.9	7.3	0.62
MacGillivray's Warbler	46	4	50	12.9	3.1	0.24
Wilson's Warbler	12		5	2.1	1.5	0.71
Unidentified Warbler		7				
Western Tanager	12	1		3.4	0.0	0.00
Chipping Sparrow	1			0.3	0.0	0.00
Brewer's Sparrow	2			0.3	0.3	1.00
Fox Sparrow	1			0.0	0.3	und. ¹
Song Sparrow	3			0.9	0.0	0.00
Lincoln's Sparrow	34	1	15	8.6	3.1	0.36
White-crowned Sparrow	22	2	12	4.6	3.7	0.80
Dark-eyed Junco	84	9	43	20.8	10.7	0.51
Black-headed Grosbeak	1			0.3	0.0	0.00
Lazuli Bunting	2			0.6	0.0	0.00
Brown-headed Cowbird	1			0.3	0.0	0.00
Cassin's Finch	8			1.8	0.6	0.33
Pine Siskin	2			0.6	0.0	0.00
Evening Grosbeak	4			1.2	0.0	0.00
Unidentified Bird		1				
ALL SPECIES POOLED	646	107	246	152.8	37.4	0.24
Total Number of Captures		999				
Number of Species	42	18	24	39	21	
Total Number of Species		49			40	

¹ Reproductive index (young/adult) is undefined because no adults of this species were captured at this location in this year.

Appendix I. Numerical listing (in AOU checklist order) of all the species sequence numbers, species alpha codes, and species names for all species banded or encountered during the 14 years, 1992-2005, of the MAPS Program on the 44 stations ever operated in Forest Service Region 6.

NUMB	SPEC	SPECIES NAME
00820	AWPE	American White Pelican
01010	GBHE	Great Blue Heron
01300	TUVU	Turkey Vulture
01460	CANG	Canada Goose
01570	WODU	Wood Duck
01610	AMWI	American Wigeon
01630	MALL	Mallard
01680	BWTE	Blue-winged Teal
01690	CITE	Cinnamon Teal
01750	AGWT	American Green-winged Teal
01760	CANV	Canvasback
01870	HADU	Harlequin Duck
01950	BAGO	Barrow's Goldeneye
01970	HOME	Hooded Merganser
01980	COME	Common Merganser
02015	UNDU	Unidentified Duck
02020	OSPR	Osprey
02130	BAEA	Bald Eagle
02170	NOHA	Northern Harrier
02200	SSHA	Sharp-shinned Hawk
02210	COHA	Cooper's Hawk
02240	NOGO	Northern Goshawk
02245	UNAH	Unidentified Accipiter Hawk
02380	RSHA	Red-shouldered Hawk
02420	SWHA	Swainson's Hawk
02460	RTHA	Red-tailed Hawk
02470	FEHA	Ferruginous Hawk
02510	GOEA	Golden Eagle
02545	UNHA	Unidentified Hawk
02630	AMKE	American Kestrel
02710	PRFA	Prairie Falcon
02830	CHUK	Chukar
02920	RNEP	Ring-necked Pheasant
02940	RUGR	Ruffed Grouse
02960	SPGR	Spruce Grouse
03000	BLUG	Blue Grouse
03100	MOUQ	Mountain Quail
03130	CAQU	California Quail
03370	VIRA	Virginia Rail
03600	SACR	Sandhill Crane

Appendix I. continued.

NUMB	SPEC	SPECIES NAME
03780	KILL	Killdeer
04020	SPSA	Spotted Sandpiper
04360	DUNL	Dunlin
04460	WISN	Wilson's Snipe
04690	RBGU	Ring-billed Gull
05220	MAMU	Marbled Murrelet
05370	ROPI	Rock Pigeon
05440	BTPI	Band-tailed Pigeon
05570	MODO	Mourning Dove
06670	WESO	Western Screech-Owl
06800	GHOW	Great Horned Owl
06830	NOPO	Northern Pygmy-Owl
06940	SPOW	Spotted Owl
06950	BADO	Barred Owl
06970	GGOW	Great Gray Owl
06980	LEOW	Long-eared Owl
07040	NSWO	Northern Saw-whet Owl
07055	UNOW	Unidentified Owl
07080	CONI	Common Nighthawk
07110	COPO	Common Poorwill
07330	BLSW	Black Swift
07410	VASW	Vaux's Swift
08640	BCHU	Black-chinned Hummingbird
08670	ANHU	Anna's Hummingbird
08690	CAHU	Calliope Hummingbird
08720	BTAH	Broad-tailed Hummingbird
08730	RUHU	Rufous Hummingbird
08740	ALHU	Allen's Hummingbird
08774	USHU	Unidentified Selasphorus Hummingbird
08775	UNHU	Unidentified Hummingbird
09110	BEKI	Belted Kingfisher
09390	LEWO	Lewis's Woodpecker
09570	WISA	Williamson's Sapsucker
09590	RNSA	Red-naped Sapsucker
09595	RRSH	Red-naped X Red-breasted Saps. Hybrid
09600	RBSA	Red-breasted Sapsucker
09605	UNSA	Unidentified Sapsucker
09640	NUWO	Nuttall's Woodpecker
09650	DOWO	Downy Woodpecker
09660	HAWO	Hairy Woodpecker
09690	WHWO	White-headed Woodpecker
09700	ATTW	American Three-toed Woodpecker

Appendix I. continued.

NUMB	SPEC	SPECIES NAME
09710	BBWO	Black-backed Woodpecker
09800	RSFL	Red-shafted Flicker
09860	PIWO	Pileated Woodpecker
09915	UNWO	Unidentified Woodpecker
11340	OSFL	Olive-sided Flycatcher
11380	WEWP	Western Wood-Pewee
11475	TRFL	Traill's Flycatcher
11475	WIFL	Willow Flycatcher
11500	LEFL	Least Flycatcher
11510	HAFL	Hammond's Flycatcher
11515	HDFL	Hammond's/Dusky Flycatcher
11520	GRFL	Gray Flycatcher
11530	DUFL	Dusky Flycatcher
11555	COFL	Cordilleran Flycatcher
11555	PSFL	Pacific-slope Flycatcher
11555	WEFL	Western Flycatcher
11595	UEFL	Unidentified Empidonax Flycatcher
11740	ATFL	Ash-throated Flycatcher
12020	WEKI	Western Kingbird
12085	UNFL	Unidentified Flycatcher
12710	CAVI	Cassin's Vireo
12740	HUVI	Hutton's Vireo
12760	WAVI	Warbling Vireo
12790	REVI	Red-eyed Vireo
12910	GRAJ	Gray Jay
12920	STJA	Steller's Jay
13110	WESJ	Western Scrub-Jay
13150	CLNU	Clark's Nutcracker
13190	AMCR	American Crow
13300	CORA	Common Raven
13410	TRES	Tree Swallow
13440	VGSW	Violet-green Swallow
13490	NRWS	Northern Rough-winged Swallow
13510	BANS	Bank Swallow
13520	CLSW	Cliff Swallow
13540	BARS	Barn Swallow
13555	UNSW	Unidentified Swallow
13570	BCCH	Black-capped Chickadee
13580	MOCH	Mountain Chickadee
13600	CBCH	Chestnut-backed Chickadee
13680	BUSH	Bushtit
13690	RBNU	Red-breasted Nuthatch

Appendix I. continued.

NUMB	SPEC	SPECIES NAME
13700	WBNU	White-breasted Nuthatch
13710	PYNU	Pygmy Nuthatch
13730	BRCR	Brown Creeper
13840	ROWR	Rock Wren
14040	BEWR	Bewick's Wren
14070	HOWR	House Wren
14110	WIWR	Winter Wren
14130	MAWR	Marsh Wren
14210	AMDI	American Dipper
14240	GCKI	Golden-crowned Kinglet
14250	RCKI	Ruby-crowned Kinglet
14570	WEBL	Western Bluebird
14580	MOBL	Mountain Bluebird
14590	TOSO	Townsend's Solitaire
14780	VEER	Veery
14810	SWTH	Swainson's Thrush
14820	HETH	Hermit Thrush
14835	UNTH	Unidentified Thrush
15000	AMRO	American Robin
15060	VATH	Varied Thrush
15110	WREN	Wrentit
15130	GRCA	Gray Catbird
15370	EUST	European Starling
15550	CEDW	Cedar Waxwing
15660	OCWA	Orange-crowned Warbler
15670	NAWA	Nashville Warbler
15750	YWAR	Yellow Warbler
15800	AUWA	Audubon's Warbler
15810	BTYW	Black-throated Gray Warbler
15840	TOWA	Townsend's Warbler
15845	THWH	Townsend's x Hermit Warbler Hybrid
15850	HEWA	Hermit Warbler
16030	BAWW	Black-and-white Warbler
16040	AMRE	American Redstart
16080	OVEN	Ovenbird
16110	KEWA	Kentucky Warbler
16140	MGWA	MacGillivray's Warbler
16150	COYE	Common Yellowthroat
16290	WIWA	Wilson's Warbler
16460	YBCH	Yellow-breasted Chat
16495	UNWA	Unidentified Warbler
16840	WETA	Western Tanager

Appendix I. continued.

NUMB	SPEC	SPECIES NAME
17790	GTTO	Green-tailed Towhee
17810	SPTO	Spotted Towhee
18020	CHSP	Chipping Sparrow
18040	BRSP	Brewer's Sparrow
18080	VESP	Vesper Sparrow
18130	SAVS	Savannah Sparrow
18220	FOSP	Fox Sparrow
18230	SOSP	Song Sparrow
18240	LISP	Lincoln's Sparrow
18290	MWCS	Mountain White-crowned Sparrow
18290	PSWS	Puget Sound White-crowned Sparrow
18290	WCSP	White-crowned Sparrow
18320	ORJU	Oregon Junco
18335	UNSP	Unidentified Sparrow
18610	BHGR	Black-headed Grosbeak
18660	LAZB	Lazuli Bunting
18730	RWBL	Red-winged Blackbird
18810	WEME	Western Meadowlark
18820	YHBL	Yellow-headed Blackbird
18860	BRBL	Brewer's Blackbird
18960	BHCO	Brown-headed Cowbird
19105	BUOR	Bullock's Oriole
19300	GCRF	Gray-crowned Rosy-Finch
19330	PIGR	Pine Grosbeak
19350	PUFI	Purple Finch
19360	CAFI	Cassin's Finch
19370	HOFI	House Finch
19375	UCFI	Unidentified Carpodacus Finch
19380	RECR	Red Crossbill
19430	PISI	Pine Siskin
19490	LEGO	Lesser Goldfinch
19510	AMGO	American Goldfinch
19580	EVGR	Evening Grosbeak
19920	HOSP	House Sparrow
20085	UNBI	Unidentified Bird