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Western forests data synthesis: birds, climate, forests, and water

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ABSTRACT. Forest-dependent bird populations in the western United States are in steep decline, one of the steepest declines of any habitat group. Migratory Bird Habitat Joint Ventures seek to expand active forest restoration and management that will benefit bird populations, including western forest birds. Here, we apply the Avian Conservation Assessment Database (ACAD) to identify region-specific priority western forest bird species lists, and provide a technical synthesis of data sources, including ebird range maps, LANDFIRE National Vegetation Classification macrogroups, LANDFIRE Vegetation Condition Class Vegetation Departure, and priority areas for restoration, climate risk, and USFS watershed condition class. We mapped each data source across four western bird conservation regions (BCRs 5,9,10, and 16), overlaid with HUC8 level watersheds, to allow Migratory Bird Habitat Joint Ventures to identify conservation opportunities based on regional bird species richness, vegetation classification, and other priority conservation or restoration needs. This synthesis has already informed the work of Pacific Birds Habitat and Intermountain West Joint Ventures, and provides an example of how existing Partners in Flight tools such as ACAD can be queried and combined with other data sources to meet local and regional partnership needs.

La synthèse des données sur les forêts de l'Ouest : oiseaux, climat, forêts et eau

RÉSUMÉ. Les populations d'oiseaux dépendantes des forêts dans l'ouest des États-Unis connaissent un déclin marqué, l'un des plus marqués parmi tous les groupes d'habitats. Migratory Bird Habitat Joint Ventures vise à développer la restauration et la gestion actives des forêts, au bénéfice des populations d'oiseaux, notamment celles des forêts de l'Ouest. Dans le cadre de cette étude, nous utilisons la base de données ACAD (« Avian Conservation Assessment Database ») pour établir des listes d'espèces d'oiseaux forestiers prioritaires de l'Ouest, spécifiques à chaque région. Nous proposons une synthèse technique des sources de données, notamment les cartes d'aire de répartition d'eBird, les macrogroupes de la classification nationale de la végétation LANDFIRE, les écarts par rapport à la classe d'état de la végétation LANDFIRE, ainsi que les zones prioritaires en matière de restauration, de risques climatiques et de classe d'état des bassins versants de l'USFS. Nous avons cartographié chaque source de données dans quatre régions de conservation des oiseaux de l'Ouest (BCR 5, 9, 10 et 16), en les superposant aux bassins versants de niveau HUC8, afin de permettre à Migratory Bird Habitat Joint Ventures d'identifier les opportunités de conservation en fonction de la richesse régionale en espèces d'oiseaux, de la classification de la végétation et d'autres besoins prioritaires en matière de conservation ou de restauration. Cette synthèse a déjà servi de base aux travaux menés par les initiatives Pacific Birds Habitat et Intermountain West Joint Ventures. Elle illustre comment les outils existants de Partners in Flight, tels que l'ACAD, peuvent être consultés et combinés avec d'autres sources de données afin de répondre aux besoins des partenariats locaux et régionaux.

Key Words: *Avian Conservation Assessment Database; bird conservation regions; conservation planning; habitat restoration; Migratory Bird Habitat Joint Ventures; Partners in Flight*

INTRODUCTION

Over 50% of forest-dependent birds in the West are in decline, one of the broadest set of avian declines of any habitat (Rosenberg et al. 2019). Reasons for avian population declines are likely linked to loss and degradation of native forest habitat throughout the west, where landscape-scale forest structure has departed from its natural range of variability (Haugo et al. 2015), resulting in unnaturally severe fire, lack of successional diversity, and diminished freshwater supplies. Birds provide a range of ecological functions for healthy ecosystems (Sekercioglu 2006), and are useful monitoring indicators of forest health and condition (Hutto 1998, Canterbury et al. 2000). Threats associated with incompatible forest management, fire suppression and response, altered hydrology and watershed processes,

conversion and development, and other anthropogenic factors are impacting the Pacific Northwest rainforest, all western conifer, oak-dominated, and riparian forests, pinyon juniper, juniper-oak, aspen, and pine oak forests that this bird suite depends upon.

The Partners in Flight Western Working Group Forest Birds Committee was formed to implement conservation strategies outlined in the Western Forest Bird Conservation Investment Strategy (here after CIS; Alexander et al. 2025). The CIS outlines conservation strategies involving active forest restoration and management that will benefit bird populations by addressing the needs of key bird species. These conservation strategies focus on forest restoration opportunities that benefits birds, and are also relevant to people. For example, widespread habitat degradation

and uncharacteristic severe fire in the West are resulting in unprecedented impacts to both forests and people. Water from forested watersheds provides habitat for fish and wildlife species and supports our homes, farms and ranches, and industries. Forests that are more resilient to wildfire, with healthy watersheds, will not only benefit communities but also provide a nexus for forest bird recovery.

Partners in Flight's (PIF) leadership and focus on reversing the decline of songbirds helped increase the scope of U.S. Migratory Bird Joint Ventures, which initially only covered a portion of North America and focused primarily on waterfowl. Over the last 30 years joint ventures have since expanded their work to include habitat-focused conservation of landbirds, shorebirds, waterbirds, and game birds across all of North America, and implement PIF Landbird Conservation plans to restore habitats and reverse bird population declines. Recently, within the context of the CIS, the Intermountain West and Pacific Birds Joint Ventures are exploring unique conservation approaches that will be championed, marketed, and delivered through a lens of improving forest health to reduce the risk of wildfire to communities, improve watershed function and downstream water supplies, and address the needs of other key wildlife species and habitats (NABCI 2022). The joint ventures identified a need for a technical synthesis to help examine the scope of potential conservation impact and identify focal areas for such an initiative.

Despite the fact that PIF regularly identifies lists of priority bird species in continental North American Landbird Conservation Plans, few western forest bird species were included on the national Watch Lists for birds of conservation concern (Rosenberg et al. 2016). Yet, we know that many western forest birds are in decline (Rosenburg et al. 2019), demonstrating the need for a regional approach to identify priority species in order to facilitate coordinated conservation actions across multiple spatial scales, organizations, and land ownerships. Here, we use available PIF conservation planning tools and publicly available data sources to (1) identify a suite of priority species associated with western-forest habitats, and (2) assess regional and landscape scale vegetation, restoration priorities, climate risk, and watershed condition as a first step toward identifying shared priorities among conservation partnerships and developing strategies to meet species and habitat objectives at regional scales. Specifically, we queried the Avian Conservation Assessment Database (ACAD; Partners in Flight 2021) to develop priority western forest bird species lists for four Bird Conservation Regions (BCRs), and synthesized data from existing public data sources to create maps of Select Species Richness, National Vegetation Classification (NVC) macrogroup (i.e., forest type), vegetation departure, forest restoration priorities, climate risk, and watershed condition framework.

METHODS

We limited our data synthesis to the four Bird Conservation Regions (BCRs) (5, 9, 10, and 16) that dominate the contiguous U.S. portions of the Intermountain West and Pacific Birds Habitat Joint Ventures. BCRs are ecologically distinct regions in North America with similar bird communities, habitats, and resource management issues that can be used to inform conservation planning across similar habitats that span state, provincial, and national borders (NABCI 2000). We overlaid the

four BCRs with HUC8 watersheds (U.S. Geological Survey 2016) to facilitate land management decisions at a watershed scale (Appendix 1). HUC8 watersheds are the subbasin level in the National Watershed Boundary Dataset; 542 HUC8 level watersheds intersected the conservation planning area, providing opportunity to summarize species richness, vegetation, and threats within mid-sized ecological units for comparison.

To develop a list of priority western forest bird species for each of the four western BCRs, we used the ACAD regional and global data for landbirds (Partners in Flight 2021; Appendices 5–8). To narrow the list to western forest birds, we filtered the ACAD data to birds whose primary or secondary breeding habitat is listed as one of the following: “Forest Aerial: Temperate Western,” “Forests: Temperate Generalist,” “Forests: Temperate Western,” and “Forests: Generalist.” To identify priority species for conservation within each BCR, we included all species that were designated by ACAD as important at the regional scale based on two categories, the species was designated as (1) regionally important (i.e., had a 1 in the Regional Importance [RI] column) and/or (2) continental importance in the region (i.e., had some designation in the Continental Importance Regional [CIR] column). ACAD scores and priority species designations are based on a peer-reviewed process developed by Partners in Flight (Beissinger et al. 2000), where species are given categorical rankings and scores based on species distribution, trends, and known threats (Carter et al. 2000). ACAD scores and thresholds are used as the foundation for other agency lists, including the USFWS Birds of Conservation Concern, which also designates species priorities at both a continental scale and a BCR (regional) scale (U.S. Fish and Wildlife Service 2021). ACAD's regional dataset summarizes relevant metrics at the BCR scale; the scoring system at the regional scale includes assessments of each species' population size, threats, and trends within the BCR. ACAD's RI metric includes birds of Regional Concern, Regional Stewardship (a binary metric), and birds with Regional Density breeding scores of Near Extirpated or Extirpated. ACAD's CIR designation includes both Partners in Flight Watch List species and Common Birds in Steep Decline that occur regularly in the region and for which future conditions are not expected to improve. Species are assigned to Watch List or Common Birds in Steep Decline categories based on a scoring system that considers population size, breeding and non-breeding distributions, threats to breeding or non-breeding habitats, and population trend. Furthermore, the regional scoring system that assigns species a regional importance designation also considers regional density, percent of the population within the region, regional threats and regional population trends. For additional details on these metrics, see Panjabi et al. (2021). We then summarized each BCR priority list by Action Code from ACAD (Appendix 2). Action Codes were developed by PIF and are assigned for species of Regional Concern in ACAD to guide prioritization of action, and are hierarchical from highest to lowest need. There are four Action Codes (in order): Critical Recovery (CR), Immediate Management (IM), Management Attention (MA), and Planning and Responsibility (PR). CR has very high regional threats and actions are needed to prevent likely extirpation; IM has high regional threats and a declining population, and action is needed to reduce and mitigate threats and reverse or stabilize significant, long-term population declines; MA has moderate threats and population decline, and management or other on-the-ground

conservation actions are needed to reverse or stabilize significant, long-term population declines where threats are moderate, or to reduce high threats in species within unknown or stable population trends; PR birds are either Continentally Important but not of Regional Concern, or are Regional Stewardship species, and long-term planning actions are needed to ensure that sustainable populations are maintained in regions with high responsibility for these species (Partners in Flight 2021).

To summarize the presence of priority bird species within a BCR, we calculated Select Species Richness at the HUC8 level. We calculated Select Species Richness as the sum of priority birds for a given BCR averaged across a HUC8 watershed. To calculate Select Species Richness for each BCR, we downloaded range maps for all species from the eBird Status and Trends data products (Fink et al. 2021). We used the raw range maps provided in the spatial data package (approximately 3km resolution), which include up to four range distribution maps for each species (breeding, non-breeding, pre-breeding migration, and post-breeding migration; for non-migratory species, only one range map for the year is available). We overlaid the range maps for all BCR important species (using only the breeding season range map for migratory species) and used the “Count Overlapping Features” tool in ArcGIS Pro version 2.8 (ESRI Inc. 2021) to calculate a spatial metric of Select Species Richness across the geography of the BCR. Finally, we summarized the average Select Species Richness within HUC8 boundaries by calculating the mean value of the species richness metric within each HUC8 (Figs. 1-4A).

Next, we applied a vegetation classification system with four or five forest types within each BCR. Specifically, we determined National Vegetation Classification (NVC) macrogroups (i.e., forest type) for a BCR based on knowledge of forest types and verified spatially using the LANDFIRE NVC dataset (LANDFIRE 2016a). NVC is a hierarchy of vegetation classification, and an early break in the classification system is forest and woodlands (Federal Geographic Data Committee, Vegetation Subcommittee 2008). We assigned the four western BCRs into the Cool Temperate Forest and Woodland Formation. Within this formation, we assigned BCR 5 to the Vancouverian Forest and Woodland Division and BCRs 9, 10, and 16 to the Rocky Mountain Forest and Woodland Division and the Western NA Pinyon - Juniper Woodland and Scrub Division. We mapped each of the five macrogroups in BCR5 (Fig. 1B) except for Norway Maple - English Holly - Scotch Pine Vancouverian Ruderal Forest (code = M405), as it consists of non-native tree species that have escaped cultivation, and our data synthesis is focused on native western forest systems.

Within the Rocky Mountain Forest and Woodland Division, we mapped each of the four macrogroups that apply to BCRs 9, 10, and 16 (Figs. 2-4B). Geospatial data was not available in the LANDFIRE dataset for the two macrogroups (M896 and M897) in the Western NA Pinyon - Juniper Woodland and Scrub Division (code = D010), so these two macrogroups were mapped by their division, D010, instead. We mapped NVCs by BCR and overlaid this data with HUC8 boundaries (Figs. 1-4B). Finally, we summarized the acreage of each NVC described above by HUC8 watershed within each of the four BCRs (Appendices 9-12) and the total NVC acreage by BCR (Appendix 3).

Vegetation departure from historic conditions can be used to identify highly departed landscapes most in need of restoration. We examined vegetation departure using LANDFIRE (2016b) Vegetation Condition Class (VCC) overlaid with HUC8 watersheds (Figs. 1-4C). VCC categorizes Vegetation Departure (VDep) percentages from LANDFIRE (2016c) as low, moderate or high (VCC I-III) and into additional categories of very low, low, moderate to low, moderate to high, high, and very high (VCC I.A-VCCIII.B). VDep is a metric of difference in current vegetation composition and structure compared to historical composition and structure.

To incorporate restoration priorities informed by climate, we overlaid the Forest Restoration Priorities metric for western forests from Bateman et al. (2021) with HUC8 watersheds (Figs. 1-4D). These priority areas include those with high value as (1) potential carbon sinks, (2) potential bird habitat, and (3) areas where these two potential benefits intersect. This metric identifies high priority areas to implement restoration actions to simultaneously increase carbon sequestration and suitable bird habitat. Areas described as potential carbon sinks are disturbance-prone areas that would have increased carbon sequestration without human-caused or natural disturbance. Areas described as potential bird habitat are potentially important for bird species both today and under climate change, but “have been exposed to high amounts of human modification,” thus highlighting them as a priority for restoration (Bateman et al. 2021:32).

To further incorporate climate change into the data synthesis, we overlaid the avian Climate Risk index (Bateman et al. 2020a) from Bateman et al. (2020b) with HUC8 watersheds (Appendix 4). Bateman et al (2020b) calculated Climate Risk index using metrics of hazard, exposure, and vulnerability. Hazard was calculated using local bird species richness, exposure measured the sum of eight climate threats such as rising sea level and spring drought, and vulnerability was determined using species richness for species especially vulnerable to climate change because of range contraction in conjunction with projected future range gains (or lack thereof). Climate Risk data was generated by Bateman et al. (2020b) for two Representative Concentration Pathway (RCP) climate change scenario and year range combinations: RCP4.5 (2041–2070) and RCP8.5 (2071–2100). We included RCP4.5 (2041–2070) in our data synthesis because we considered the more moderate, near-term climate scenario to be more relevant to decision makers. Climate Risk is displayed as a low to high gradient for each BCR is not comparable across BCRs as displayed (Appendix 4).

To incorporate water resources into the data synthesis, we mapped Watershed Condition Classification (U.S. Forest Service 2024) at the HUC12 level (Figs. 1-4E). The Watershed Condition Classification framework classifies the conditions of watersheds with at least 5% USFS land as functioning properly, functioning at risk, or impaired function. The classification is designated based on 12 metrics rated poor, fair, or good including water quality, water quantity, aquatic habitat, aquatic biota, riparian/wetland vegetation, roads and trails, soils, fire regime or wildfire, forest cover, rangeland vegetation, terrestrial invasive species, and forest health (Potyondy and Geier 2011).

Fig. 1. Bird Conservation Region (BCR) 5 metrics. (A) Shows mean select bird species richness within HUC8 level watersheds. Select bird species richness at the HUC8 level watershed was calculated based on the overlap of 3km resolution eBird breeding season range maps of all BCR priority birds within the conservation planning area (Fink et al. 2021). Mean select species richness is the mean of this metric within each HUC8 level watershed boundary. (B) Shows National Vegetation Classification macrogroups (i.e., forest vegetation types) from LANDFIRE (2016a) overlaid with HUC8 watersheds (M886 = Southern Vancouverian Dry Foothill Forest and Woodland; M023 = Incense-cedar – Jeffrey Pine – Sierra White Fir Forest; M024 = Western Hemlock – Sitka Spruce – Redwood Rainforest; M025 = California Red Fir – Mountain Hemlock – Sierra Lodgepole Pine Forest). (C) Shows Vegetation Condition Class (VCC) from LANDFIRE (2016b), overlaid with HUC8 watersheds, representing restoration need within the conservation planning area. Vegetation Departure (VDep) from LANDFIRE (2016c) is a metric of difference in current vegetation composition and structure compared to historical composition and structure. VCC categorizes percent VDep as low, moderate or high (VCC I–III) and into additional categories of very low, low, moderate to low, moderate to high, high, and very high (VCC I.A–VCCIII.B). (D) Shows Priority Areas for Restoration from Bateman et al. (2021) summarized by HUC8 watershed. (E) Shows Watershed condition framework overlaid with HUC8 watersheds. The Watershed Condition Framework is a USFS system that classifies the conditions of HUC12 level watersheds with at least 5% USFS land as functioning properly, functioning at risk, or impaired function. The classification is designated based on 12 metrics rated poor, fair, or good including water quality, water quantity, aquatic habitat, aquatic biota, riparian/wetland vegetation, roads and trails, soils, fire regime or wildfire, forest cover, rangeland vegetation, terrestrial invasive species, and forest health (Potyondy and Geier 2011). (F) Shows land management grouped by nine major classes of management organizations based on data from the Protected Areas Database (U.S. Geological Survey Gap Analysis Project 2022) overlaid with HUC8 watersheds. BLM = Bureau of Land Management; DOD = Department of Defense; NPS = National Park Service; State = state agency management; Tribal = tribal management; USFS = U.S. Forest Service, USFWS = U.S. Fish and Wildlife Service, Other = Other protected areas managed by other non-government organizations, government agencies, or private entities; Private = not protected according to Protected Areas Database, assumed private management.

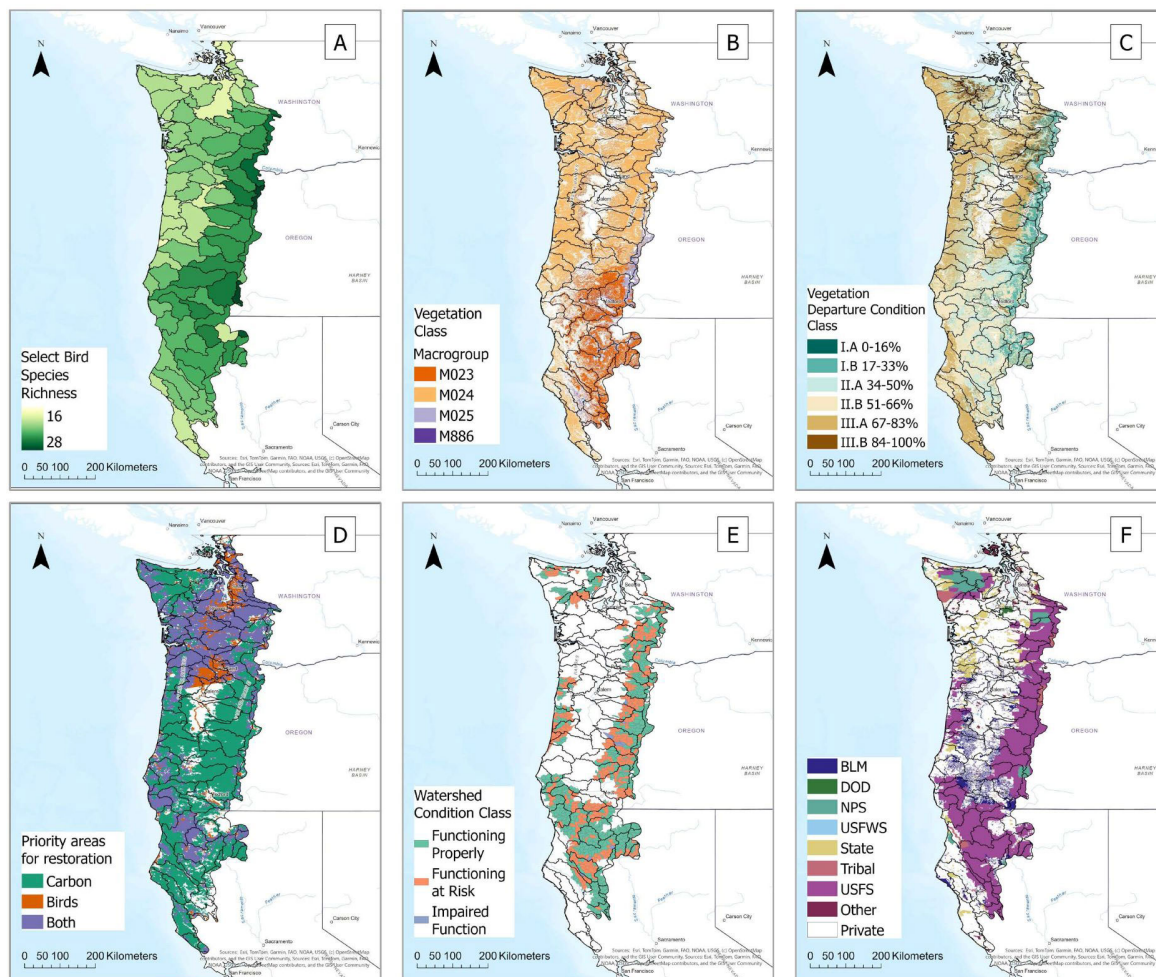


Fig. 2. Bird Conservation Region (BCR) 9 metrics. (A) Shows mean select bird species richness within HUC8 level watersheds. Select bird species richness at the HUC8 level watershed was calculated based on the overlap of 3km resolution eBird breeding season range maps of all BCR priority birds within the conservation planning area (Fink et al. 2021). Mean select species richness is the mean of this metric within each HUC8 level watershed boundary. (B) Shows National Vegetation Classification macrogroups (i.e., forest vegetation types) from LANDFIRE (2016a) overlaid with HUC8 watersheds (M022 = White Fir - Douglas-fir - Blue Spruce Forest; M501 = Ponderosa Pine - Douglas-fir - Limber Pine Central Rocky Mountain Dry Forest; M500 = Western Hemlock - Grand Fir - Western Larch Mesic Lower Montane Forest; M020 = Subalpine Fir - Engelmann Spruce - Whitebark Pine Rocky Mountain Forest; D010 = Western NA Pinyon - Juniper Woodland and Scrub Division). (C) Shows Vegetation Condition Class (VCC) from LANDFIRE (2016b), overlaid with HUC8 watersheds, representing restoration need within the conservation planning area. Vegetation Departure (VDep) from LANDFIRE (2016c) is a metric of difference in current vegetation composition and structure compared to historical composition and structure. VCC categorizes percent VDep as low, moderate or high (VCC I-III) and into additional categories of very low, low, moderate to low, moderate to high, high, and very high (VCC I.A-VCCIII.B). (D) Shows Priority Areas for Restoration from Bateman et al. (2021) summarized by HUC8 watershed. (E) Shows Watershed condition framework overlaid with HUC8 watersheds. The Watershed Condition Framework is a USFS system that classifies the conditions of HUC12 level watersheds with at least 5% USFS land as functioning properly, functioning at risk, or impaired function. The classification is designated based on 12 metrics rated poor, fair, or good including water quality, water quantity, aquatic habitat, aquatic biota, riparian/wetland vegetation, roads and trails, soils, fire regime or wildfire, forest cover, rangeland vegetation, terrestrial invasive species, and forest health (Potyondy and Geier 2011). (F) Shows land management grouped by nine major classes of management organizations based on data from the Protected Areas Database (U.S. Geological Survey Gap Analysis Project 2022) overlaid with HUC8 watersheds. BLM = Bureau of Land Management; DOD = Department of Defense; NPS = National Park Service; State = state agency management; Tribal = tribal management; USFS = U.S. Forest Service, USFWS = U.S. Fish and Wildlife Service, Other = Other protected areas managed by other non-government organizations, government agencies, or private entities; Private = not protected according to Protected Areas Database, assumed private management.

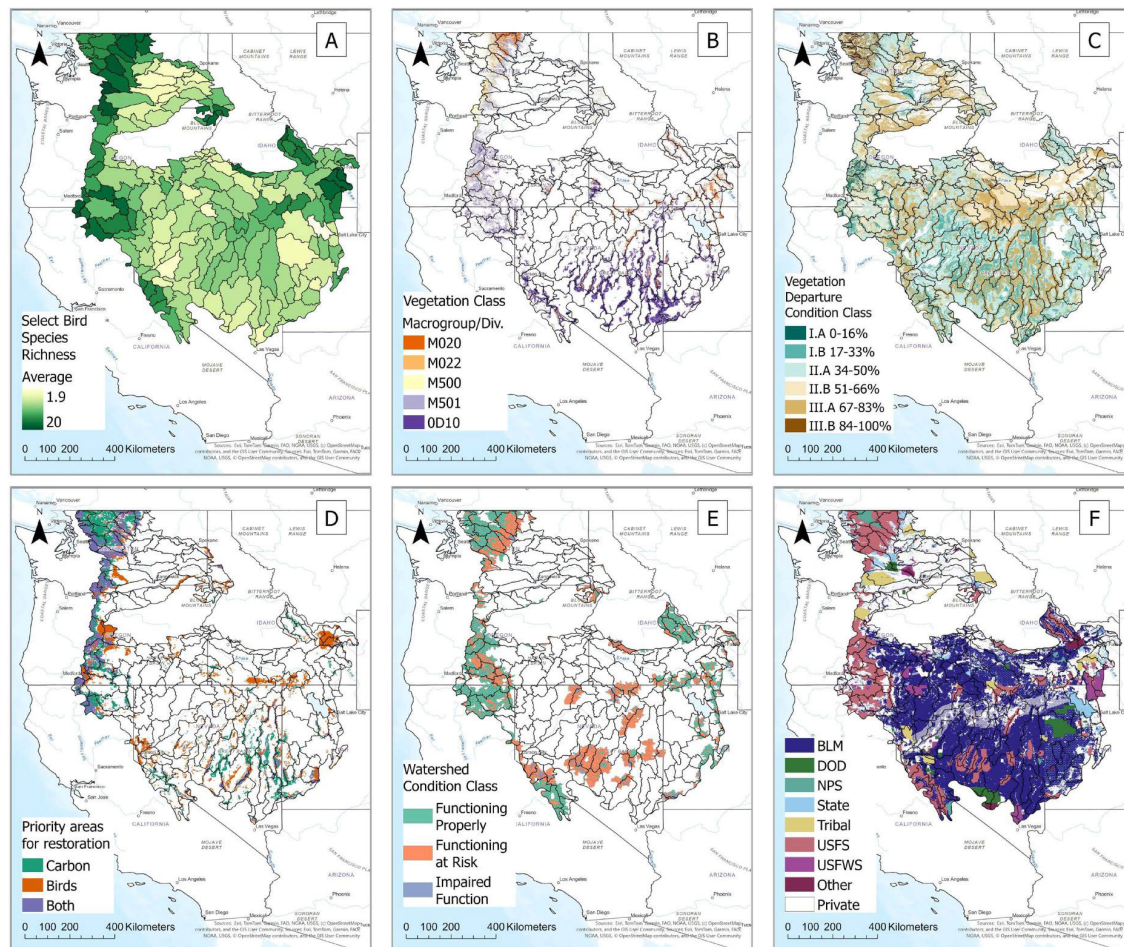


Fig. 3. Bird Conservation Region (BCR) 10 metrics. (A) Shows mean select bird species richness within HUC8 level watersheds. Select bird species richness at the HUC8 level watershed was calculated based on the overlap of 3km resolution eBird breeding season range maps of all BCR priority birds within the conservation planning area (Fink et al. 2021). Mean select species richness is the mean of this metric within each HUC8 level watershed boundary. (B) Shows National Vegetation Classification macrogroups (i.e., forest vegetation types) from LANDFIRE (2016a) overlaid with HUC8 watersheds (M022 = White Fir - Douglas-fir - Blue Spruce Forest; M501 = Ponderosa Pine - Douglas-fir - Limber Pine Central Rocky Mountain Dry Forest; M500 = Western Hemlock - Grand Fir - Western Larch Mesic Lower Montane Forest; M020 = Subalpine Fir - Engelmann Spruce - Whitebark Pine Rocky Mountain Forest; D010 = Western NA Pinyon – Juniper Woodland and Scrub Division). (C) Shows Vegetation Condition Class (VCC) from LANDFIRE (2016b), overlaid with HUC8 watersheds, representing restoration need within the conservation planning area. Vegetation Departure (VDep) from LANDFIRE (2016c) is a metric of difference in current vegetation composition and structure compared to historical composition and structure. VCC categorizes percent VDep as low, moderate or high (VCC I–III) and into additional categories of very low, low, moderate to low, moderate to high, high, and very high (VCC I.A–VCCIII.B). (D) Shows Priority Areas for Restoration from Bateman et al. (2021) summarized by HUC8 watershed. (E) Shows Watershed condition framework overlaid with HUC8 watersheds. The Watershed Condition Framework is a USFS system that classifies the conditions of HUC12 level watersheds with at least 5% USFS land as functioning properly, functioning at risk, or impaired function. The classification is designated based on 12 metrics rated poor, fair, or good including water quality, water quantity, aquatic habitat, aquatic biota, riparian/wetland vegetation, roads and trails, soils, fire regime or wildfire, forest cover, rangeland vegetation, terrestrial invasive species, and forest health (Potyondy and Geier 2011). (F) Shows land management grouped by nine major classes of management organizations based on data from the Protected Areas Database (U.S. Geological Survey Gap Analysis Project 2022) overlaid with HUC8 watersheds. BLM = Bureau of Land Management; DOD = Department of Defense; NPS = National Park Service; State = state agency management; Tribal = tribal management; USFS = U.S. Forest Service, USFWS = U.S. Fish and Wildlife Service, Other = Other protected areas managed by other non-government organizations, government agencies, or private entities; Private = not protected according to Protected Areas Database, assumed private management.

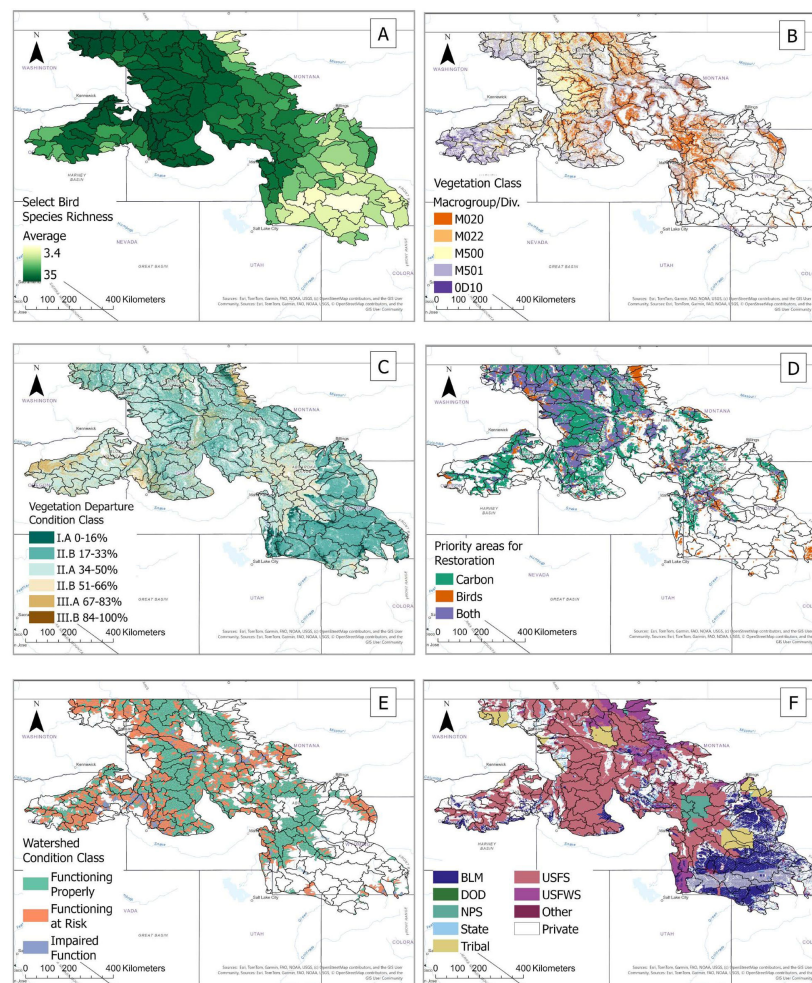
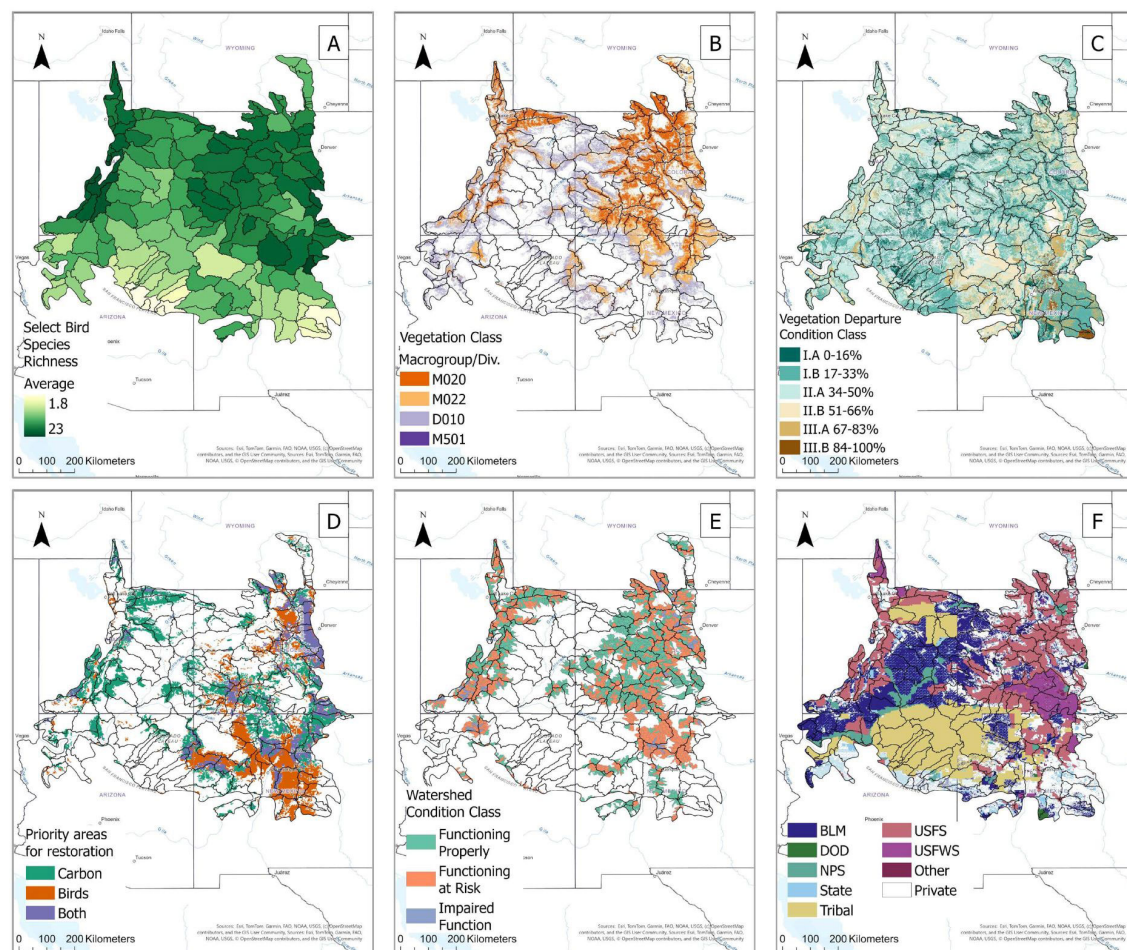


Fig. 4. Bird Conservation Region (BCR) 16 metrics. (A) Shows mean select bird species richness within HUC8 level watersheds. Select bird species richness at the HUC8 level watershed was calculated based on the overlap of 3km resolution eBird breeding season range maps of all BCR priority birds within the conservation planning area (Fink et al. 2021). Mean select species richness is the mean of this metric within each HUC8 level watershed boundary. (B) Shows National Vegetation Classification macrogroups (i.e., forest vegetation types) from LANDFIRE (2016a) overlaid with HUC8 watersheds (M022 = White Fir - Douglas-fir - Blue Spruce Forest; M501 = Ponderosa Pine - Douglas-fir - Limber Pine Central Rocky Mountain Dry Forest; M020 = Subalpine Fir - Engelmann Spruce - Whitebark Pine Rocky Mountain Forest; D010 = Western NA Pinyon - Juniper Woodland and Scrub Division). (C) Shows Vegetation Condition Class (VCC) from LANDFIRE (2016b), overlaid with HUC8 watersheds, representing restoration need within the conservation planning area. Vegetation Departure (VDep) from LANDFIRE (2016c) is a metric of difference in current vegetation composition and structure compared to historical composition and structure. VCC categorizes percent VDep as low, moderate or high (VCC I-III) and into additional categories of very low, low, moderate to low, moderate to high, high, and very high (VCC I.A-VCCIII.B). (D) Shows Priority Areas for Restoration from Bateman et al. (2021) summarized by HUC8 watershed. (E) Shows Watershed condition framework overlaid with HUC8 watersheds. The Watershed Condition Framework is a USFS system that classifies the conditions of HUC12 level watersheds with at least 5% USFS land as functioning properly, functioning at risk, or impaired function. The classification is designated based on 12 metrics rated poor, fair, or good including water quality, water quantity, aquatic habitat, aquatic biota, riparian/wetland vegetation, roads and trails, soils, fire regime or wildfire, forest cover, rangeland vegetation, terrestrial invasive species, and forest health (Potyondy and Geier 2011). (F) Shows land management grouped by nine major classes of management organizations based on data from the Protected Areas Database (U.S. Geological Survey Gap Analysis Project 2022) overlaid with HUC8 watersheds. BLM = Bureau of Land Management; DOD = Department of Defense; NPS = National Park Service; State = state agency management; Tribal = tribal management; USFS = U.S. Forest Service, USFWS = U.S. Fish and Wildlife Service, Other = Other protected areas managed by other non-government organizations, government agencies, or private entities; Private = not protected according to Protected Areas Database, assumed private management.



Finally, to incorporate land ownership into the data synthesis, we overlaid land management information from the Protected Areas Database Version 3.0 (U.S. Geological Survey Gap Analysis Project 2022). We used categories from the “Manager Name” field in the attribute table to map nine classes of land ownership across the study area (Figs. 1–4F). We first identified areas managed by (1) Bureau of Land Management, (2) Department of Defense, (3) National Park Service, (4) U.S. Forest Service, or (5) U.S. Fish and Wildlife Service, as well as by (6) any state managed lands, and (7) any tribal managed lands. All other lands within the PAD-US dataset were classified as (8) “Other,” and any land within the study area that was not within the PAD-US dataset were classified as (9) “Private.” We summarized the acres within each of these classes within each of the HUC8 Watershed within all four western BCRs using the “Tabulate Area” tool in ArcGIS Pro version 2.8 (ESRI Inc. 2021; Appendices 13–16).

RESULTS

We synthesized data across four western BCRs (BCR 5, 9, 10, and 16) and overlaid the 542 HUC8 level watersheds that intersect these BCR boundaries (Appendix 1). Using our process for filtering the ACAD regional and global databases, we identified 66 unique priority bird species across the four western BCRs; with between 31 and 41 priority species identified per BCR (Appendices 5–8). The majority of species in each BCR priority list had actions codes “MA” (Management Attention) or “PR” (Planning and Responsibility), though each BCR list also had 2–4 species with more urgent action codes “CR” (Critical Recovery) or “IM” (Immediate Management) (Appendix 2, 5–8).

DISCUSSION

The six metrics can be applied to decision making at the scale of each BCR. Select Species Richness identifies areas where priority species co-occur. Vegetation forest types can be examined to identify restoration opportunities across the geography of each BCR that are likely to benefit the same suites of species, increasing the likelihood of conservation actions having population-level impacts for priority bird species. Areas where high Select Species Richness overlaps with departure are potential restoration opportunities, as these forests need restoration actions to increase resilience and maintain or increase populations of priority bird species. Then, Forest Restoration Priority areas further highlight restoration opportunities that will benefit birds while increasing carbon sequestration; climate risk can be used as an additional lens for restoration planning. Finally, the watershed condition framework provides another layer for identifying restoration needs and aligning restoration actions with tangible benefits for people through improved watershed health and function. In combination, we suggest that these metrics can serve as the coarse groundwork for exploring restoration opportunities across the broad forested landscape of the Intermountain West and Pacific Birds Habitat Joint Ventures to inform the potential of launching something joint venture specific.

Our work contributes to the PIF Science vision for a future focused on better aligning bird conservation objectives among agencies, conservation organizations, ornithological societies, and global goals for biodiversity, restoration, and area protection in order to eliminate gaps, reduce redundancy, leverage capacities, and maximize impact. This synthesis is intended as a first step to

catalyze conversations, strengthen and expand partnerships, and leverage resources to increase the pace, scale, and quality of active western forest management that aligns multiple benefits for birds and people. The vision for the future of PIF Science includes three additional concepts that are at the forefront of applying the synthesis: (1) increase and empower Indigenous voices, priorities, and leadership, (2) continue to integrate social and biological science to understand and incorporate human dimensions and behaviors, and (3) recognize the knowledge and interests of a wide variety of partners as new projects are envisioned. Following these three guiding principles, the synthesis has already informed the work of Pacific Birds Habitat and Intermountain West Joint Ventures.

In response to emerging information highlighting declining forest birds, including results presented in this synthesis, along with increasingly large and severe wildfires and growing opportunities for active cross-boundary forest management, western forests have been identified as a new priority for the Intermountain West Joint Venture. In response, the joint venture has launched a new body of work focused on improving forest habitat for birds and other wildlife while reducing wildfire risk and supporting communities in forest ecosystems (IWJV 2025). Known for their diversity, forests within the IWJV boundary vary from lower-elevation, dry pinyon-juniper woodlands to high-elevation whitebark pine forests, with many unique forest types in between. Initial efforts are focused on dry frequent-fire forests and persistent pinyon-juniper woodland, but at the same time, the joint venture is exploring opportunities to work in a variety of forest types in the Intermountain West. The joint venture is leveraging their well-established approach to build partnerships, grow capacity, bridge science and implementation, and engage in innovative communications efforts. Specifically, their work in western forests supports partners in integrating current knowledge, science, and data on bird and wildlife effects of forest management into their work; grows capacity to implement forest management with co-benefits to birds and other wildlife; and communicates the outcomes and needs of this work to relevant audiences. Our analysis helped the IWJV explore the nexus of forest bird habitat conservation with other societal values and drivers of conservation funding and implementation while developing strategies for engaging in the management of forests. Additionally, the IWJV has used the list of priority species to inform the development of other decision-support tools and resources, such as a tool that assesses the benefits of forest thinning for both reducing wildfire risk and enhancing habitat for forest birds in Montana.

Based on recent science, identified needs, and opportunities, Pacific Birds Habitat Joint Venture is expanding their well-established oak and prairie program under a broader umbrella that addresses the conservation challenges facing diverse conifer and mixed-forest ecosystems from California to Alaska. The results of this synthesis provide a landscape view of priority birds and forest health at a meaningful scale for strategic planning. The goal of Pacific Birds’ broadened forest effort is to improve forest health through active management, reduce catastrophic wildfire risk to benefit birds and people, and support rural communities while strengthening economies. This expanded initiative leverages two decades of experience, science and knowledge, and partnerships developed through Pacific Birds’ oak and prairie

program to catalyze cross-boundary action. By working with diverse public, private, and tribal partners Pacific Birds aims to accelerate the pace and scale of conservation by building local workforce capacity, co-developing and implementing multi-scale strategies, and mobilizing on-the-ground restoration and stewardship.

Although there are a number of PIF conservation planning tools available at the international scale, we have found that the integration of ground-up local information integrated with a top-down application of international science is most successful in achieving conservation outcomes (e.g., Stephens et al. 2011). In addition to this synthesis catalyzing joint venture work, the priority species lists that were generated for each BCR within the two joint ventures provides an important example of how ACAD can be queried to meet local and regional needs. For example, the Prairie, Oaks, and People Investment Strategy calls for a 300 million dollar investment in oak and prairie protection and restoration over the next five years (Evans-Peters et al. 2024, NABCI 2025). As one thread of that strategy, Pacific Birds Habitat Joint Venture, in partnership with Klamath Bird Observatory, has merged three relevant species lists that are all equally important to reversing the declines of oak and prairie associated birds within the geographic scope of the strategy. Using a ground-up approach, we include imperiled species documented in the *Population and Habitat Objectives for Landbirds in Prairie, Oak, and Riparian Habitats of Western Oregon and Washington*, a bi-state PIF conservation plan (Rockwell et al. 2022). This list includes local data about steep declines by ecoregion, as well as extirpations along the edges of species ranges, two metrics not available in regional and national databases. Then, we layer on the priority birds from this synthesis drawn directly from ACAD and aligned with national and international prioritization schemas. Last, we highlight two tipping point species, the only two oak and prairie associated species from the most recently published priority bird list from the Road to Recovery initiative that highlights 112 bird species in the U.S. and Canada. Now, consistent with the principles above, we are applying the investment strategy and launching a new body of research to identify limiting factors for the 11 most imperiled oak and prairie associated birds in the Pacific Northwest. Our goal is to have a measurable positive impact on oak and prairie habitats, birds and other associated plants and animals, and people.

The North American Bird Conservation Initiative (NABCI) *Field Guide to Developing Partnerships* (NABCI 2021) points to several successful examples of partnerships that boost bird habitat conservation efforts while simultaneously achieving shared goals, such as water conservation, beneficial grazing for livestock, or reduction in wildfire risk. Partnerships engaged in multiple conservation outcomes for forest and human health can use our synthesis as a model to improve the focus and efficiency of these partnerships. Clearly identified ecological goals, along with research and monitoring, can benefit the effectiveness of collaborative forest restoration partnerships (Flitcroft et al. 2017), though the complexity of ecological systems at landscape scales can make evaluating their effectiveness challenging. Still, western collaborative partnerships remain committed to incorporating science into their processes (Colavito 2017). Although many data sources exist at landscape scales to aid these processes, there is a need to better integrate existing data sources in current conservation research and decision making (Binley et al. 2024).

Our case study here, where we simply summarized many already available tools and datasets to help identify conservation priority overlap, and created a product that was applied to ongoing work in two U.S. Migratory Bird Habitat Joint Ventures, demonstrates one way to improve science delivery to these partnerships in the West.

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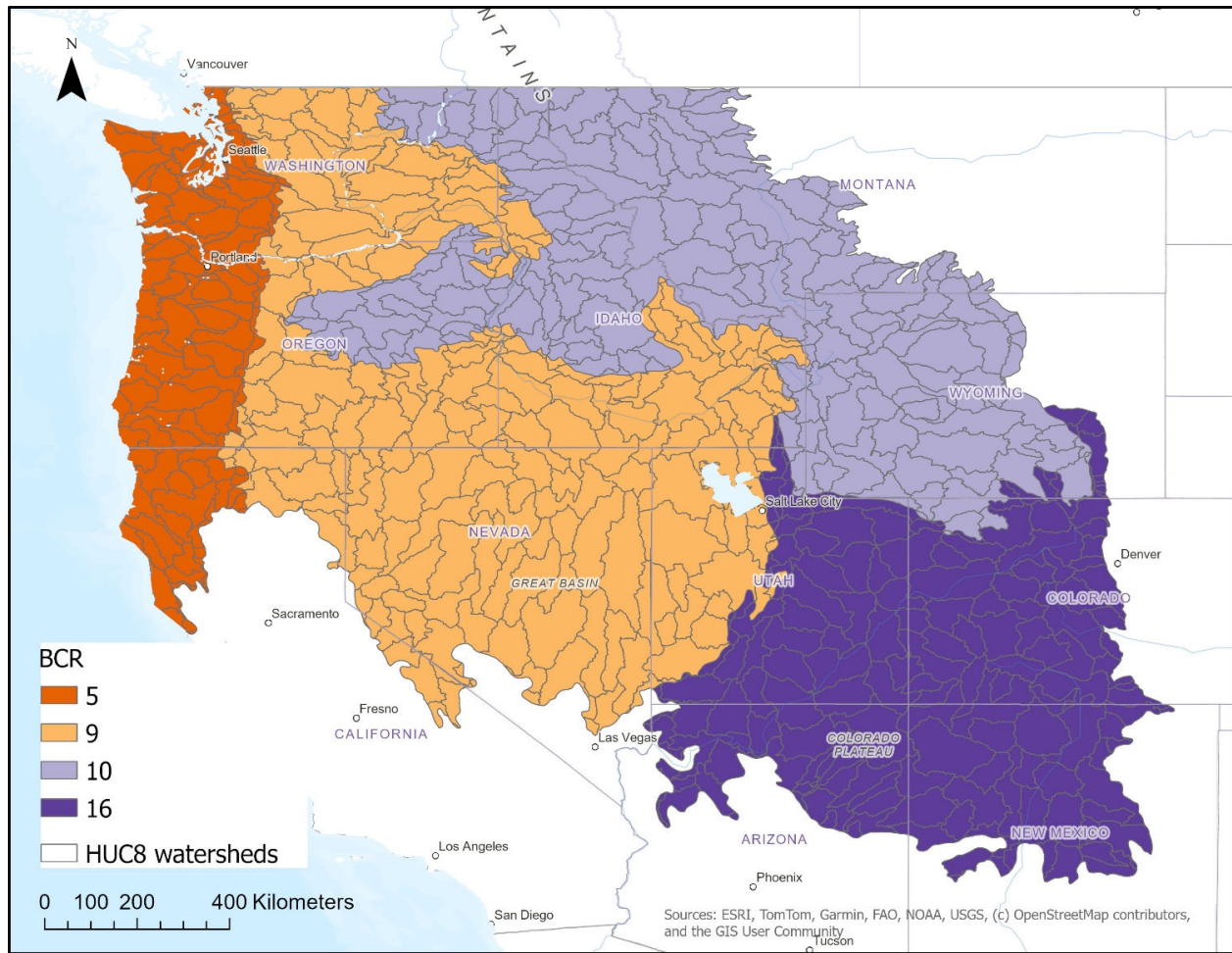
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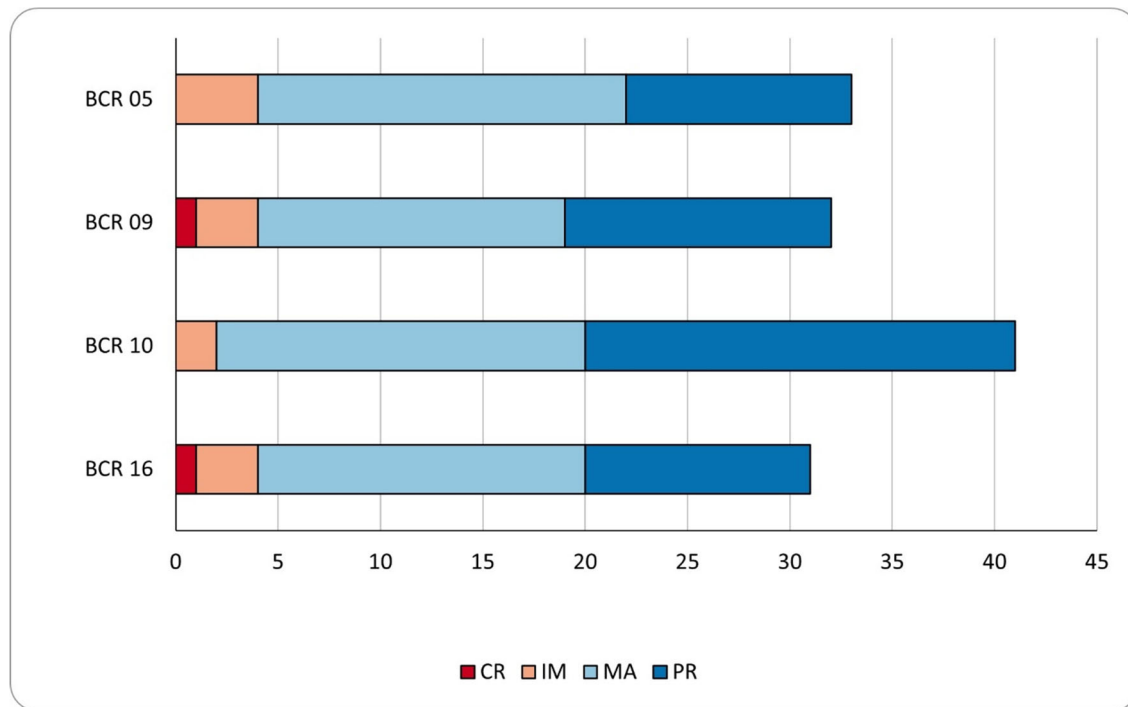
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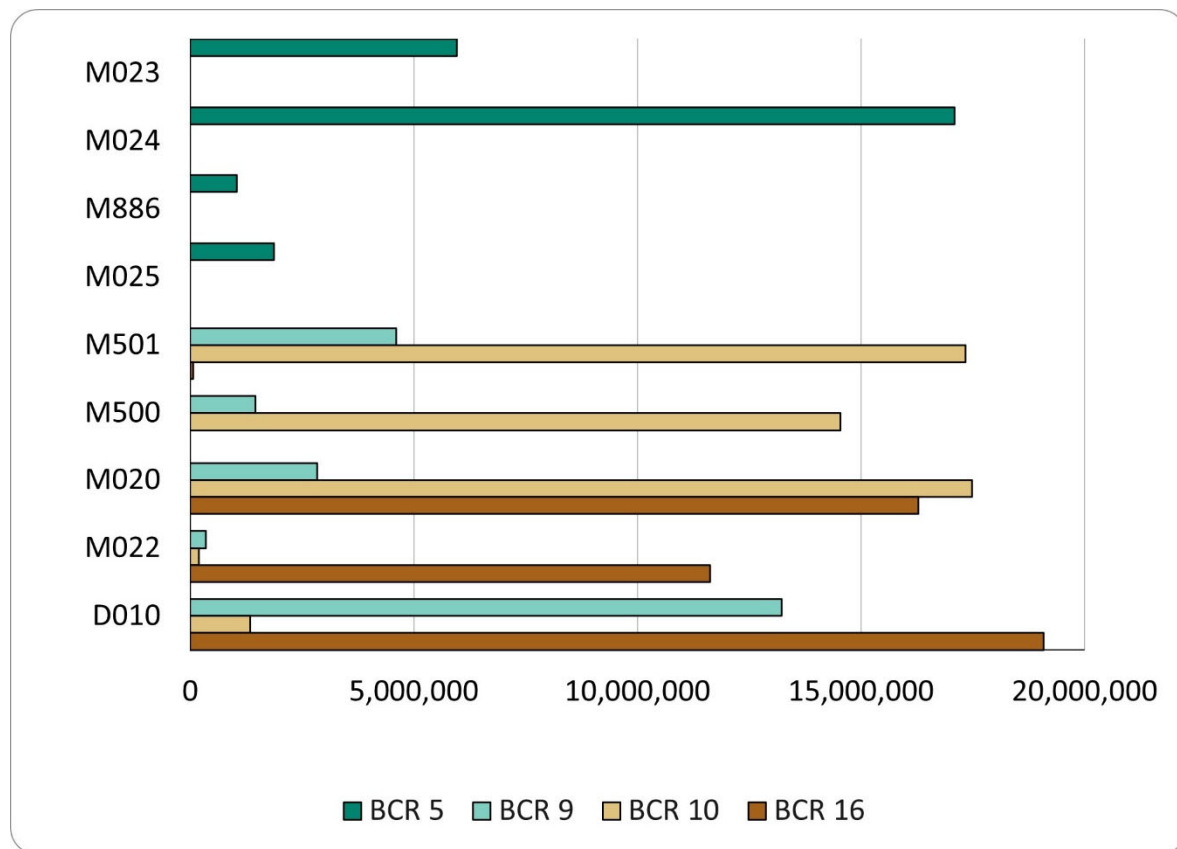




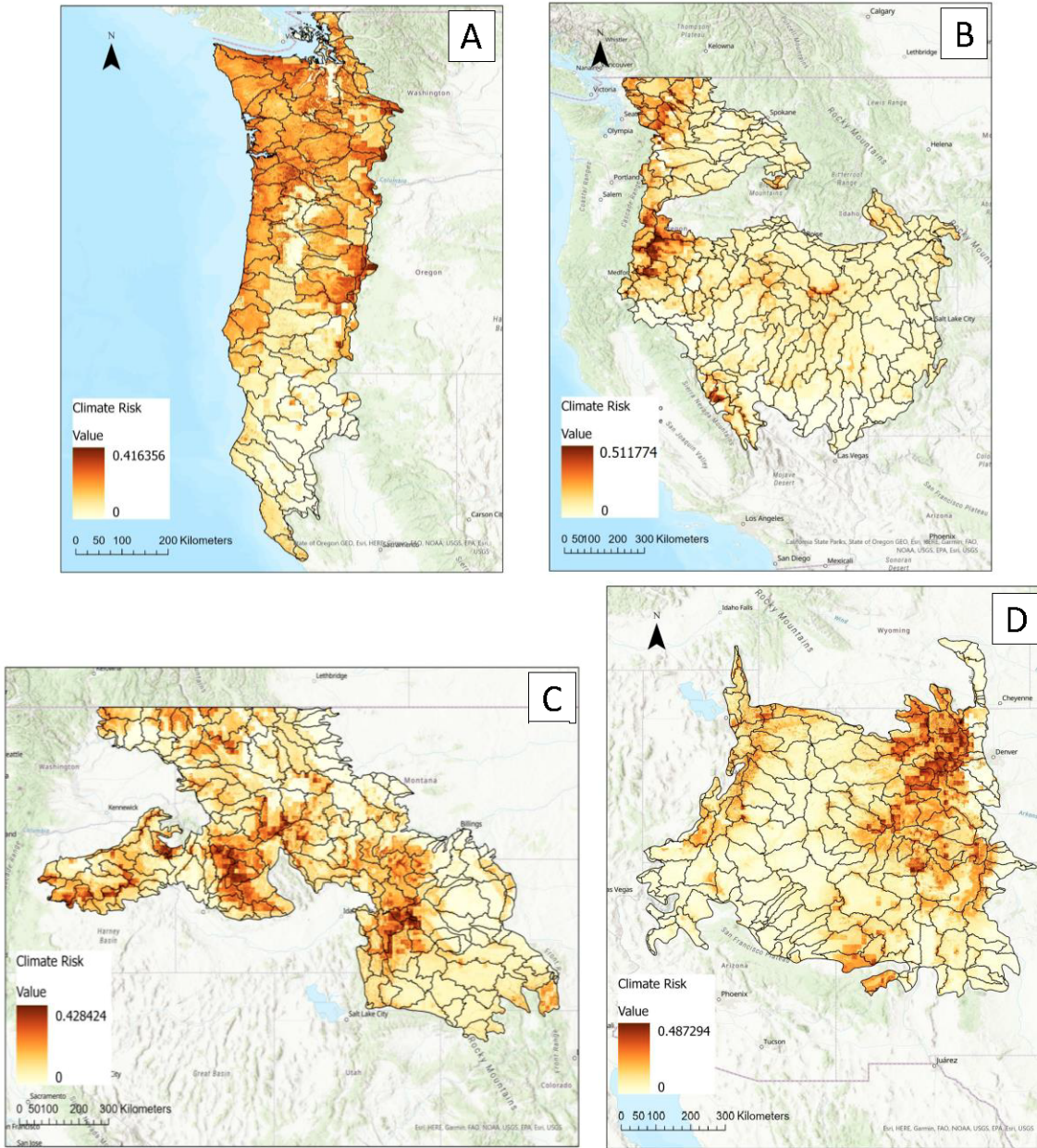
Appendix 1. 542 HUC8 level watersheds intersect the boundary of BCR 5, 9, 10, and 16 (U.S. Geological Survey 2016).



Appendix 2. Number of priority bird species by BCR, displayed by action code from highest threat to lower threat: Critical Recovery (CR), Immediate Management (IM), Management Attention (MA), and Planning and Responsibility (PR) (PIF 2021).



Appendix 3. Amount (acres) of nine forest vegetation types, identified as a division or macrogroup (see methods for details) in the National Vegetation Classification system, in BCR 5, 9, 10, and 16. D010 = Western NA Pinyon – Juniper Woodland and Scrub Division; M022 = White Fir -Douglas-fir - Blue Spruce Forest; M501 = Ponderosa Pine - Douglas-fir - Limber Pine Central Rocky Mountain Dry Forest; M020 = Subalpine Fir - Engelmann Spruce - Whitebark Pine Rocky Mountain Forest; M886 = Southern Vancouverian Dry Foothill Forest and Woodland; M023 = Incense-cedar – Jeffrey Pine – Sierra White Fir Forest; M024 = Western Hemlock – Sitka Spruce – Redwood Rainforest; M025 = California Red Fir – Mountain Hemlock – Sierra Lodgepole Pine Forest.



Appendix 4. Climate Risk from Bateman et al. (2020b) summarized by HUC8 watershed for RCP4.5 (2041-2070 30-year climate normal). (A) shows Climate Risk for BCR 5, (B) shows BCR 9, (C) shows BCR 10, and (D) shows BCR 16.

Appendix 5. BCR 5 global and regional annual trends (%/year) and action code for birds of Regional Importance (which includes birds of Regional Concern, Regional Stewardship, and birds with Regional Density breeding scores of Near Extirpated or Extirpated), Continental Importance category (“Watch List - Red” = Continental Watch List Red: highly vulnerable; “Watch List-Yel-R” = Continental Watch List Yellow-R: range restricted; “Watch List-Yel-D” = Continental Watch List Yellow-D: steep decline; “CBSD” = Common Birds in Steep Decline), and percent of population within BCR 5 as derived from the Avian Conservation Assessment Database (PIF 2021). Bird species for which no global or regional annual trends were available are labelled as “NA.”

Common name	Continental Importance	% Population in BCR	Regional Importance	Action code	Global trend (%/yr)	Regional trend (%/yr)
Band-tailed Pigeon	CBSD	14	Yes	IM	-1.63	-2.11
Black Swift	Watch List - Yel-D	13	Yes	IM	-5.67	-7.42
Rufous Hummingbird	Watch List - Yel-D	69	Yes	IM	-2.07	-2.49
White-breasted Nuthatch		1	Yes	IM	1.87	-2.28
Sooty Grouse		48	Yes	MA	-1.10	-1.85
Vaux's Swift		29	Yes	MA	-1.12	-0.77
Spotted Owl	Watch List - Yel-D	12	Yes	MA	NA	NA
Lewis's Woodpecker	Watch List - Yel-D	1	Yes	MA	-1.96	-2.88
Williamson's Sapsucker		1	Yes	MA	0.28	NA
Olive-sided Flycatcher	Watch List - Yel-D	9	Yes	MA	-2.97	-3.42
Western Wood-Pewee	CBSD	7	Yes	MA	-1.66	-1.78
Willow Flycatcher		24	Yes	MA	-1.25	-2.93
Cassin's Vireo		14	Yes	MA	1.09	-0.65
Chestnut-backed Chickadee		81	Yes	MA	-1.37	-1.70
Pacific Wren		72	Yes	MA	-0.55	-1.06
Golden-crowned Kinglet		23	Yes	MA	-0.52	-2.49
Varied Thrush	CBSD	33	Yes	MA	-2.15	-1.58
Evening Grosbeak	Watch List - Yel-D	17	Yes	MA	-5.00	-2.57
Purple Finch		19	Yes	MA	-1.27	-1.09
Pine Siskin	CBSD	11	Yes	MA	-3.38	-4.64
Bullock's Oriole		3	Yes	MA	-0.63	-1.61
Black-throated Gray Warbler		47	Yes	MA	-1.26	-1.39
Mountain Quail	Watch List - Yel-R	23		PR	-0.59	0.04
Flammulated Owl	Watch List - Yel-R	2		PR	NA	NA
Red-breasted Sapsucker		75	Yes	PR	1.28	1.15
Pacific-slope Flycatcher		76	Yes	PR	0.22	-0.56
Steller's Jay		39	Yes	PR	-0.24	0.18
Mountain Chickadee	CBSD	2		PR	-1.48	-1.49
Oak Titmouse	Watch List - Yel-R	3		PR	-1.42	-0.09
Cassin's Finch	Watch List - Yel-D	1		PR	-2.00	-1.50
Townsend's Warbler		49	Yes	PR	-0.77	0.12
Hermit Warbler		74	Yes	PR	-0.28	-0.06
Wilson's Warbler	CBSD	13		PR	-1.59	-1.73

Appendix 6. BCR 9 global and regional annual trends (%/year) and action code for birds of Regional Importance (which includes birds of Regional Concern, Regional Stewardship, and birds with Regional Density breeding scores of Near Extirpated or Extirpated), Continental Importance category (“Watch List - Red” = Continental Watch List Red: highly vulnerable; “Watch List-Yel-R” = Continental Watch List Yellow-R: range restricted; “Watch List-Yel-D” = Continental Watch List Yellow-D: steep decline; “CBSD” = Common Birds in Steep Decline), and percent of population within BCR 9 as derived from the Avian Conservation Assessment Database (PIF 2021). Bird species for which no global or regional annual trends were available are labelled as “NA.”

Common name	Continental Importance	% Population in BCR	Regional Importance	Action code	Global trend (%/yr)	Regional trend (%/yr)
Cassia Crossbill	Watch List - Red	100	Yes	CR	NA	NA
Black Swift	Watch List - Yel-D	14	Yes	IM	-5.67	-9.59
Pinyon Jay	Watch List - Yel-D	38	Yes	IM	-3.37	-4.13
Townsend's Warbler		6	Yes	IM	-0.77	-1.94
Spotted Owl	Watch List - Yel-D	5	Yes	MA	NA	NA
Long-eared Owl		5	Yes	MA	-2.42	NA
Lewis's Woodpecker	Watch List - Yel-D	36	Yes	MA	-1.96	-1.17
Red-naped Sapsucker		15	Yes	MA	1.15	-0.76
White-headed Woodpecker		21	Yes	MA	0.93	2.64
Olive-sided Flycatcher	Watch List - Yel-D	6	Yes	MA	-2.97	-1.32
Willow Flycatcher		10	Yes	MA	-1.25	-1.46
Mountain Chickadee	CBSD	24	Yes	MA	-1.48	-0.75
Oak Titmouse	Watch List - Yel-R	1	Yes	MA	-1.42	5.73
Veery		2	Yes	MA	-1.12	-1.68
Varied Thrush	CBSD	1	Yes	MA	-2.15	-2.75
Pine Siskin	CBSD	7	Yes	MA	-3.38	-3.17
Virginia's Warbler	Watch List - Yel-D	1	Yes	MA	-2.16	NA
MacGillivray's Warbler		10	Yes	MA	-0.94	-0.61
Black-throated Gray Warbler		11	Yes	MA	-1.26	-1.49
Mountain Quail	Watch List - Yel-R	7		PR	-0.59	1.48
Sooty Grouse		36	Yes	PR	-1.10	-1.17
Band-tailed Pigeon	CBSD	1		PR	-1.63	-4.28
Broad-tailed Hummingbird	Watch List - Yel-D	7		PR	-1.65	1.51
Rufous Hummingbird	Watch List - Yel-D	8		PR	-2.07	-1.73
Calliope Hummingbird	Watch List - Yel-R	31	Yes	PR	-0.38	0.02
Flammulated Owl	Watch List - Yel-R	23		PR	NA	NA
Western Wood-Pewee	CBSD	14		PR	-1.66	1.23
Gray Flycatcher		69	Yes	PR	2.15	2.28
Evening Grosbeak	Watch List - Yel-D	29	Yes	PR	-5.00	-0.63
Cassin's Finch	Watch List - Yel-D	37	Yes	PR	-2.00	0.13
Wilson's Warbler	CBSD	1		PR	-1.59	-1.49
Lazuli Bunting		29	Yes	PR	0.40	0.98

Appendix 7. BCR 10 global and regional annual trends (%/year) and action code for birds of Regional Importance (which includes birds of Regional Concern, Regional Stewardship, and birds with Regional Density breeding scores of Near Extirpated or Extirpated), Continental Importance category (“Watch List - Red” = Continental Watch List Red: highly vulnerable; “Watch List-Yel-R” = Continental Watch List Yellow-R: range restricted; “Watch List-Yel-D” = Continental Watch List Yellow-D: steep decline; “CBSD” = Common Birds in Steep Decline), and percent of population within BCR 10 as derived from the Avian Conservation Assessment Database (PIF 2021). Bird species for which no global or regional annual trends were available are labelled as “NA.”

Common name	Continental Importance	% Population in BCR	Regional Importance	Action code	Global trend (%/yr)	Regional trend (%/yr)
Lewis's Woodpecker	Watch List - Yel-D	30	Yes	IM	-1.96	-3.16
Pinyon Jay	Watch List - Yel-D	3	Yes	IM	-3.37	-3.85
Black Swift	Watch List - Yel-D	17	Yes	MA	-5.67	-0.11
Vaux's Swift		8	Yes	MA	-1.12	-3.46
Rufous Hummingbird	Watch List - Yel-D	23	Yes	MA	-2.07	-0.82
Northern Goshawk		5	Yes	MA	0.57	-0.88
Williamson's Sapsucker		32	Yes	MA	0.28	-1.27
White-headed Woodpecker		13	Yes	MA	0.93	1.68
Olive-sided Flycatcher	Watch List - Yel-D	15	Yes	MA	-2.97	-2.84
Western Wood-Pewee	CBSD	25	Yes	MA	-1.66	-0.60
Willow Flycatcher		34	Yes	MA	-1.25	-0.82
Plumbeous Vireo		0	Yes	MA	-0.84	-14.38
Golden-crowned Kinglet		21	Yes	MA	-0.52	-2.50
Veery		6	Yes	MA	-1.12	-2.51
Varied Thrush	CBSD	9	Yes	MA	-2.15	-2.48
Evening Grosbeak	Watch List - Yel-D	14	Yes	MA	-5.00	-5.14
Cassin's Finch	Watch List - Yel-D	38	Yes	MA	-2.00	-4.08
Red Crossbill		10	Yes	MA	0.08	-2.36
Chipping Sparrow		10	Yes	MA	-0.60	-1.30
Townsend's Warbler		32	Yes	MA	-0.77	-0.67
Mountain Quail	Watch List - Yel-R	1		PR	-0.59	-2.29
Dusky Grouse		49	Yes	PR	1.49	0.93
Broad-tailed Hummingbird	Watch List - Yel-D	2		PR	-1.65	-0.16
Calliope Hummingbird	Watch List - Yel-R	59	Yes	PR	-0.38	-0.22
Flammulated Owl	Watch List - Yel-R	20		PR	NA	NA
Red-naped Sapsucker		65	Yes	PR	1.15	1.57
Least Flycatcher	CBSD	5		PR	-1.78	-0.83
Hammond's Flycatcher		57	Yes	PR	0.59	0.42
Dusky Flycatcher		58	Yes	PR	-0.68	-0.70
Cassin's Vireo		51	Yes	PR	1.09	1.61
Warbling Vireo		30	Yes	PR	0.93	1.85
Clark's Nutcracker		38	Yes	PR	0.03	-0.18

Common name	Continental Importance	% Population in BCR	Regional Importance	Action code	Global trend (%/yr)	Regional trend (%/yr)
Mountain Chickadee	CBSD	31	Yes	PR	-1.48	-1.27
Red-breasted Nuthatch		26	Yes	PR	1.32	0.09
Townsend's Solitaire		30	Yes	PR	0.35	0.57
Pine Siskin	CBSD	27	Yes	PR	-3.38	-3.58
Virginia's Warbler	Watch List - Yel-D	1		PR	-2.16	NA
MacGillivray's Warbler		61	Yes	PR	-0.94	-0.19
Wilson's Warbler	CBSD	3		PR	-1.59	-2.76
Western Tanager		31	Yes	PR	1.07	1.49
Lazuli Bunting		32	Yes	PR	0.40	0.54

Appendix 8. BCR 16 global and regional annual trends (%/year) and action code for birds of Regional Importance (which includes birds of Regional Concern, Regional Stewardship, and birds with Regional Density breeding scores of Near Extirpated or Extirpated), Continental Importance category (“Watch List - Red” = Continental Watch List Red: highly vulnerable; “Watch List-Yel-R” = Continental Watch List Yellow-R: range restricted; “Watch List-Yel-D” = Continental Watch List Yellow-D: steep decline; “CBSD” = Common Birds in Steep Decline), and percent of population within BCR 16 as derived from the Avian Conservation Assessment Database (PIF 2021). Bird species for which no global or regional annual trends were available are labelled as “NA.”

Common name	Continental Importance	% Population in BCR	Regional Importance	Action code	Global trend (%/yr)	Regional trend (%/yr)
California Condor	Watch List - Yel-R	87	Yes	CR	NA	NA
Lewis's Woodpecker	Watch List - Yel-D	18	Yes	IM	-1.96	-2.24
Willow Flycatcher		1	Yes	IM	-1.25	-2.56
Pinyon Jay	Watch List - Yel-D	50	Yes	IM	-3.37	-3.28
Band-tailed Pigeon	CBSD	0	Yes	MA	-1.63	-5.43
Black Swift	Watch List - Yel-D	5	Yes	MA	-5.67	NA
Broad-tailed Hummingbird	Watch List - Yel-D	67	Yes	MA	-1.65	-1.68
Western Screech-Owl		9	Yes	MA	-0.97	NA
Spotted Owl	Watch List - Yel-D	8	Yes	MA	NA	NA
Williamson's Sapsucker		31	Yes	MA	0.28	0.82
Red-naped Sapsucker		14	Yes	MA	1.15	1.92
Olive-sided Flycatcher	Watch List - Yel-D	2	Yes	MA	-2.97	-2.23
Clark's Nutcracker		35	Yes	MA	0.03	-0.04
Violet-green Swallow		25	Yes	MA	-0.73	-0.57
Mountain Chickadee	CBSD	16	Yes	MA	-1.48	-1.67
Evening Grosbeak	Watch List - Yel-D	5	Yes	MA	-5.00	1.94
Cassin's Finch	Watch List - Yel-D	14	Yes	MA	-2.00	-1.34
Virginia's Warbler	Watch List - Yel-D	71	Yes	MA	-2.16	-1.27
Black-throated Gray Warbler		16	Yes	MA	-1.26	-0.91
Lazuli Bunting		11	Yes	MA	0.40	-1.00
Calliope Hummingbird	Watch List - Yel-R	1		PR	-0.38	NA
Flammulated Owl	Watch List - Yel-R	30	Yes	PR	NA	NA
Western Wood-Pewee	CBSD	15		PR	-1.66	-0.41
Gray Vireo		69	Yes	PR	3.97	1.54
Plumbeous Vireo		50	Yes	PR	-0.84	2.00
Woodhouse's Scrub-Jay		31	Yes	PR	-0.69	-0.94
Juniper Titmouse		74	Yes	PR	0.66	0.50
Pygmy Nuthatch		32	Yes	PR	-0.43	0.21
Western Bluebird		26	Yes	PR	0.81	0.85
Pine Siskin	CBSD	10		PR	-3.38	-1.41
Wilson's Warbler	CBSD	1		PR	-1.59	-2.53

Appendix 9. Amount (acres) of nine forest vegetation types, identified as macrogroups in the National Vegetation Classification system, in BCR 5 and by watershed (HUC8).

Watershed		Macrogroup (acres)			
Name	#	M023	M024	M886	M025
Lower Columbia-Sandy	17080001	0	405,424	9,065	3,548
Applegate	17100309	300,379	10	27,315	23,174
Necanicum	17100201	0	47,937	0	6
Crescent-Hoko	17110021	0	200,226	323	1,003
Lower Willamette	17090012	0	67,890	2,211	0
Lower Klamath	18010209	248,690	47,944	4,084	32,342
Nooksack	17110004	0	30,414	7,185	6
Willapa Bay	17100106	0	411,058	16	1
Skokomish	17110017	0	114,826	2,651	7,744
Lower Chehalis	17100104	0	355,646	6,184	1,120
Lower Columbia-Clatskanie	17080003	0	365,133	9,245	373
Chetco	17100312	28,467	24,722	944	5,621
Upper Yakima	17030001	24	35,249	0	5,862
Butte	18010205	42,144	0	1	23,092
Stillaguamish	17110008	0	35,175	7,364	0
Russian	18010110	12,687	36,222	9,751	3
Cow Creek	18020151	6,942	49	3,514	3
North Umpqua	17100301	130,750	309,781	10,706	165,242
Paynes Creek-Sacramento River	18020155	2	0	0	2
Mattole	18010107	3,072	76,356	3,583	0
Upper Klamath Lake	18010203	49,286	116	0	112,090
Middle Willamette	17090007	0	64,814	9,143	0
Snoqualmie	17110010	0	93,573	7,439	2
Trinity	18010211	643,358	267	25,246	119,638
Queets-Quinault	17100102	0	554,103	13	27,669
Siuslaw	17100206	0	405,194	6,261	0
Clackamas	17090011	8	434,142	4,476	13,978
Middle Columbia-Hood	17070105	7,607	398,786	4,279	16,627
Nehalem	17100202	0	418,547	2,401	6
Clear Creek-Sacramento River	18020154	73,347	2	4,921	587
Middle Fork Willamette	17090001	57,248	479,921	7,389	116,354
Cottonwood Creek	18020152	106,317	4	2,628	10,558
Shasta	18010207	74,291	0	9,886	26,688
Upper Rogue	17100307	542,850	11,726	58,713	176,296
Smith	18010101	90,147	25,376	571	22,181
Skykomish	17110009	0	54,308	4,038	0
Upper Eel	18010103	175,445	157	26,163	2,003
Middle Fork Eel	18010104	219,300	5	27,297	13,666

Watershed		Macrogroup (acres)			
Name	#	M023	M024	M886	M025
Klickitat	17070106	11	21,825	0	11,389
Upper Klamath	18010206	233,086	2	26,793	30,362
Lower Cowlitz	17080005	0	570,175	31,735	5,509
Lower Pit	18020003	76,613	1,611	8,092	74
Upper Stony	18020115	67,342	1	447	4,054
Lower Skagit	17110007	0	25,190	3,968	0
Upper Chehalis	17100103	3,879	477,207	20,605	228
Upper Cache	18020116	16,300	2	1,222	45
Dungeness-Elwha	17110020	0	321,400	17,944	49,029
Sacramento Headwaters	18020005	227,008	8	5,596	27,329
Puyallup	17110014	7,403	363,774	7,333	17,692
Umpqua	17100303	28,875	574,986	17,230	1,535
Nisqually	17110015	3,527	260,120	21,696	1,535
Wilson-Trusk-Nestuccu	17100203	0	464,721	2,094	16
Hood Canal	17110018	0	339,087	17,163	24,864
Williamson	18010201	6,368	37	0	67,217
Grays Harbor	17100105	0	222,692	1	423
Duwamish	17110013	1	161,785	4,131	2,324
Yamhill	17090008	0	202,564	29,396	0
Coquille	17100305	13,891	389,619	11,212	34
Siletz-Yaquina	17100204	0	363,422	1,205	4
Coast Fork Willamette	17090002	14,864	226,982	8,452	14,755
Lake Washington	17110012	30	100,577	3,254	465
South Fork Trinity	18010212	305,919	143	11,172	8,744
Molalla-Pudding	17090009	8	232,900	8,521	10,457
Scott	18010208	229,815	0	18,259	54,543
Sumas River	17110001	0	612	316	0
Lewis	17080002	0	498,570	11,137	4,954
South Umpqua	17100302	495,982	78,562	36,794	17,177
South Santiam	17090006	22	436,451	13,380	18,591
Salmon	18010210	265,710	6	8,380	59,022
Lower Deschutes	17070306	46	82,850	10	17,744
Illinois	17100311	196,960	2,083	7,936	17,767
Mad-Redwood	18010102	96,447	184,712	12,962	1,743
Lower Rogue	17100310	160,175	26,088	12,048	1,081
Lower Eel	18010105	143,336	85,174	71,566	2,057
Gualala-Salmon	18010109	712	85,738	1,097	0
Thomes Creek-Sacramento River	18020156	73,284	1	650	10,392
Tualatin	17090010	0	153,366	30,443	0
Coos	17100304	0	331,617	3,954	0
Sixes	17100306	0	122,445	807	0
McCloud	18020004	197,695	31	3,306	28,422

Watershed		Macrogroup (acres)			
Name	#	M023	M024	M886	M025
Strait of Georgia	17110002	0	49,271	12,968	13
Mckenzie	17090004	93	558,378	9,738	77,154
Big-Navarro-Garcia	18010108	2,426	436,475	2,023	2
North Santiam	17090005	38	338,755	3,478	29,386
Upper Deschutes	17070301	6,587	41,403	3	168,231
Puget Sound	17110019	0	280,984	61,379	0
Middle Rogue	17100308	254,051	8	55,594	5,413
San Juan Islands	17110003	0	39,140	21,248	0
Upper Cowlitz	17080004	58	506,015	1,930	32,642
Snohomish	17110011	0	28,258	5,529	0
South Fork Eel	18010106	12,848	137,701	12,139	526
Upper Willamette	17090003	3	391,359	56,246	2,418
Alsea	17100205	0	366,461	838	0
Hoh-Quillayute	17100101	0	585,644	3	18,437
Siltcoos	17100207	0	55,307	7	0
Little Deschutes	17070302	2,236	1,509	0	51,476
Lower Columbia	17080006	0	208,258	2	19
Naches	17030002	33	109,352	0	50,342
Deschutes	17110016	2,077	44,690	4,743	66
BCR totals		5,958,120	17,093,207	1,045,182	1,875,186

Appendix 10. Amount (acres) of nine forest vegetation types, identified as macrogroups in the National Vegetation Classification system, in BCR 9 and by watershed (HUC8).

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Truckee	16050102	0	0	171	0	42,337
Big Lost	17040218	23,827	14	8,585	0	6,006
Upper Amargosa	18090202	0	0	3	2	30,739
Idaho Falls	17040201	664	1	1,568	0	193
Upper Pit	18020002	9,071	8	4,201	0	292,831
Medicine Lodge	17040215	1,817	0	82	0	439
Middle Fork Feather	18020123	0	0	16	0	334
Wallowa	17060105	4,775	1,432	98	0	51
Upper Klamath	18010206	8,743	3	286	0	13,582
Escalante Desert	16030006	0	0	2,110	674	629,647
North Fork Humboldt	16040102	17	0	7,290	0	566
Cactus-Sarcobatus Flats	16060013	0	0	40	18	86,235
Provo	16020203	0	0	58	8	215
Hells Canyon	17060101	15,128	16,603	361	0	743
Lower Quinn	16040202	2	0	4,109	0	23,181
Duwamish	17110013	0	0	0	0	0
Nooksack	17110004	99	6,347	981	0	0
Lower Skagit	17110007	179	1,825	676	0	0
Spanish Fork	16020202	0	0	2,031	828	4,083
Lower Malheur	17050117	791	80	253	0	7,719
Upper Virgin	15010008	0	0	694	22	32,491
Little Wood	17040221	3,608	17	558	0	327
Pine Valley	16020302	0	0	590	3,948	159,980
Gabbs Valley	16060002	0	0	2,188	2,154	128,145
Upper Crab	17020013	9,654	0	0	0	0
Teton	17040204	16,464	669	31,513	0	2
West Walker	16050302	0	0	9,128	0	134,118
East Branch North Fork Feather	18020122	0	0	0	0	0
Donner und Blitzen	17120003	109	0	27,754	0	58,731
Fish Lake-Soda Spring Valleys	16060010	0	0	15,961	0	239,385
Great Salt Lake	16020310	0	0	0	0	0
Upper Salmon	17060201	6,152	0	851	0	1,912
Lower Snake	17060110	2,830	0	0	0	0
Upper Columbia-Entiat	17020010	131,792	29,558	49,855	0	142
Las Vegas Wash	15010015	0	0	2,716	13,531	24,462

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Lower Virgin	15010010	0	0	1,723	86	123,911
Williamson	18010201	348,377	16	39,322	0	10,193
Pine	16040104	0	0	1,406	1,127	82,670
Granite Springs Valley	16050104	0	0	20	0	5,095
Upper Quinn	16040201	32	0	13,311	0	15,584
Big Wood	17040219	2,804	1	1,126	0	453
Lower Crab	17020015	6,370	0	0	0	0
Beaver-Camas	17040214	5,202	1	4,395	0	110
Portneuf	17040208	11,560	0	173,583	26,460	40,154
Wenatchee	17020011	182,861	130,100	83,589	0	14
Butte	18010205	1,205	0	60	0	56,313
South Fork Humboldt	16040103	0	0	35,849	2,477	58,696
Middle Columbia-Hood	17070105	46,247	189,369	2,543	0	171
Jordan	16020204	29	0	19,531	3,760	10,210
Warner Lakes	17120007	1,734	1	8,913	0	85,315
Hot Creek-Railroad Valleys	16060012	0	0	16,373	10,022	673,349
Boise-Mores	17050112	35,849	5,843	223	0	0
Lower Sevier	16030005	0	0	5,327	3,926	237,651
Naches	17030002	84,591	177,624	42,153	0	905
Honey-Eagle Lakes	18080003	432	0	831	0	68,125
Jordan	17050108	2,253	0	27,241	0	126,325
Upper Humboldt	16040101	6	0	63,090	957	27,090
Southern Great Salt Lake Desert	16020306	0	0	16,585	17,482	201,016
Tule Valley	16020303	0	0	258	1,029	40,952
Middle Columbia-Lake Wallula	17070101	31,234	492	0	0	180
Long-Ruby Valleys	16060007	0	0	27,126	15,357	570,560
Upper Deschutes	17070301	392,427	36,188	10,898	0	116,222
Lower Bear-Malad	16010204	1,606	0	51,229	8,168	26,486
Spring-Steptoe Valleys	16060008	0	0	54,469	60,586	881,696
American Falls	17040206	1,285	0	25,232	8,363	20,696
Okanogan	17020006	122,684	6,005	15,417	0	0
Dry Lake Valley	16060009	0	0	3,456	6,478	409,313
Meadow Valley Wash	15010013	0	0	1,655	1,479	686,372
Lower Weber	16020102	519	0	23,086	6,031	5,079
Little Humboldt	16040109	18	0	11,888	0	3,370
Clearwater	17060306	122,279	74,981	920	0	4
Walker	16050303	0	0	15	0	12,480
Lower Spokane	17010307	78,724	4	2	0	0
Raft	17040210	94	0	51,214	7,742	84,483
Muddy	15010012	0	0	277	2,684	48,425
Lost	18010204	42,087	0	644	0	233,602

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Stillaguamish	17110008	18	5,907	81	0	0
Lower Owyhee	17050110	20	0	328	0	5,558
Brownlee Reservoir	17050201	12	0	24	0	53
Upper Skagit	17110005	714	47,688	70,757	0	0
Lake Abert	17120006	9,607	3	3,597	0	48,931
Lower Yakima	17030003	127,333	68,745	10,979	0	588
Dixie Valley	16060001	0	0	1,254	1,028	258,294
Trout	17070307	1,609	0	7	0	6,456
Guano	17120008	50	0	1,628	0	19,277
Bully	17050118	779	60	63	0	4,543
Lower Henrys	17040203	5,781	47	11,054	0	17
Lower Snake-Asotin	17060103	22,110	9,847	402	0	600
White	15010011	0	0	5,858	10,609	358,796
Reese	16040107	0	0	13,792	3,455	226,515
Pilot-Thousand Springs, Nevada, Utah	16020307	1	0	1,044	146	160,109
Silver	17120004	12	0	47	0	16,287
Little Lost	17040217	59,049	69	35,188	0	8,013
Diamond-Monitor Valleys	16060005	0	0	19,885	12,879	494,118
Pyramid-Winnemucca Lakes	16050103	0	0	332	0	47,840
Lake Chelan	17020009	110,088	24,591	105,499	0	0
Northern Great Salt Lake Desert	16020308	2	0	6,357	2,556	145,709
Beaver-South Fork	17070303	0	0	9	0	28,627
Willow	17040205	20,792	188	47,000	1,850	873
Upper Crooked	17070304	101	0	0	0	2,204
Little Deschutes	17070302	277,427	582	35,683	0	1,827
South Fork Owyhee	17050105	178	0	26,231	0	2,720
Lower Boise	17050114	4,946	864	623	0	2,283
Middle Snake-Payette	17050115	2	0	9	0	637
Lower Humboldt	16040108	0	0	1,613	0	27,273
C.J. Strike Reservoir	17050101	4,288	2	6,476	0	874
Upper Carson	16050201	0	0	384	0	73,647
Weiser	17050124	158	0	81	0	12
Rock	16040106	1	0	1,617	0	347
Sanpoil	17020004	1	0	0	0	0
Blackfoot	17040207	34,625	766	77,006	6,624	9,074
Lower Salmon	17060209	60,298	50,465	950	0	3,094
Goose	17040211	52	0	33,391	1,930	74,582
Sevier Lake	16030009	0	0	411	2,021	116,928
Sand Spring-Tikaboo Valleys	16060014	0	0	1,136	2,389	298,656
Surprise Valley	18080001	293	1	4,881	0	66,826

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Burnt	17050202	7	0	2	0	0
Goose Lake	18020001	7,084	11	2,247	0	85,393
San Pitch	16030004	0	0	84	74	29,390
Upper Yakima	17030001	174,750	170,942	27,164	0	1,327
Palouse	17060108	36,439	1,764	35	0	0
Banks Lake	17020014	1,547	0	0	0	0
Lower Snake-Tucannon	17060107	11,761	28	0	0	0
Lake Walcott	17040209	830	0	31,997	10,374	17,580
Camas	17040220	1,759	15	2,988	0	0
Shasta	18010207	33	0	10	0	4,324
Methow	17020008	328,299	13,373	332,268	0	0
Salt	17040105	5	9	56	0	0
Curlew Valley	16020309	86	0	15,319	2,772	70,734
Upper Tuolumne	18040009	0	0	0	0	0
Lower Pit	18020003	887	23	793	0	53,593
Utah Lake	16020201	8	0	17,989	6,858	87,566
Eureka-Saline Valleys	18090201	0	0	8,947	284	89,883
South Fork Boise	17050113	12,917	603	2,224	0	0
Lower Beaver	16030008	0	0	21	10	14,882
Upper Henrys	17040202	7,991	37	6,937	0	2
Middle Sevier	16030003	0	0	1,007	374	64,606
Crowley Lake	18090102	0	0	13,469	0	117,119
Lower North Fork Clearwater	17060308	0	0	0	0	0
Harney-Malheur Lakes	17120001	0	0	468	0	13,999
Upper Rogue	17100307	34	0	2	0	11
Upper Owyhee	17050104	141	0	27,840	0	71,387
Middle Owyhee	17050107	187	0	5,689	0	83,272
Silvies	17120002	0	0	27	0	2,131
Sauk	17110006	170	25,618	11,795	0	0
Middle Bear	16010202	2,442	0	78,596	7,484	12,561
Bruneau	17050102	161	0	80,985	0	22,358
Lake Washington	17110012	0	84	6	0	0
Sprague	18010202	215,514	5	12,394	0	76,684
Walker Lake	16050304	0	0	1,111	0	96,200
Upper Malheur	17050116	2,189	57	571	0	65,266
Thousand-Virgin	16040205	2	0	3,736	0	1,680
Imnaha	17060102	28,071	50,357	1,942	0	1,638
Mono Lake	18090101	0	0	1,585	0	109,594
Upper Columbia-Priest Rapids	17020016	6,231	0	0	0	0
Klickitat	17070106	213,893	163,725	11,587	0	518
McCloud	18020004	3	0	112	0	693

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Lemhi	17060204	54,834	92	56,674	0	1,851
Lower John Day	17070204	15,471	103	3	0	4,732
Cow Creek	18020151	0	0	0	0	0
Northern Big Smoky Valley	16060004	0	0	26,009	6,203	204,218
Alvord Lake	17120009	45	0	6,462	0	22,564
Middle Carson	16050202	0	0	100	0	83,131
Strait of Georgia	17110002	4	344	0	0	0
Madeline Plains	18080002	287	0	2,423	0	90,165
Upper Klamath Lake	18010203	16,476	327	289	0	9,131
East Little Owyhee	17050106	0	0	2	0	98
Lower Grande Ronde	17060106	65,613	27,218	1,173	0	1,708
Salmon Falls	17040213	78	0	41,705	277	27,418
Willow	17050119	1	0	2	0	140
Umatilla	17070103	8,724	113	2	0	16
Lower Crooked	17070305	81,938	24	5,752	0	139,846
Skykomish	17110009	10	9,115	469	0	0
Crooked-Rattlesnake	17050109	0	0	3	0	33
Upper Snake-Rock	17040212	208	0	28,312	1,003	17,237
Snoqualmie	17110010	0	6,509	314	0	0
Chief Joseph	17020005	33,342	65	76	0	0
Owens Lake	18090103	0	0	1,814	0	17,862
Little Bear-Logan	16010203	3,083	0	35,220	12,042	4,281
Southern Big Smoky Valley	16060003	0	0	1,532	537	189,424
Skull Valley	16020305	0	0	1,746	913	46,487
Franklin D. Roosevelt Lake	17020001	38,272	2	0	0	0
Middle Humboldt	16040105	2	0	2,565	410	46,150
Willow	17070104	3,963	79	2	0	130
Little Smoky-Newark Valleys	16060006	0	0	2,602	2,584	186,209
Massacre Lake	16040204	89	0	2,454	0	59,700
Smoke Creek Desert	16040203	30	0	996	0	46,875
Birch	17040216	25,382	26	10,918	0	2,925
Similkameen	17020007	66,957	8,234	183,884	0	0
Rush-Tooele Valleys	16020304	0	0	33,586	13,629	107,547
Bear Lake	16010201	1,490	4	3,573	1,067	1,187
Sumas River	17110001	233	7,586	8,565	0	0
Beaver Bottoms-Upper Beaver	16030007	0	0	7,338	2,840	196,046
East Walker	16050301	0	0	9,918	0	214,511
Middle Snake-Succor	17050103	1,524	0	9,972	0	32,219
Ralston-Stone Cabin Valleys	16060011	0	0	812	1,105	273,519
Summer Lake	17120005	263,589	5	29,216	0	121,229
Rock	17060109	21,263	455	4	0	0

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Death Valley-Lower Amargosa	18090203	0	0	1	82	7,370
Snohomish	17110011	1	219	2	0	0
Hangman	17010306	52,234	3,084	54	0	0
Middle Salmon-Panther	17060203	25,497	68	15,916	0	989
Coeur d'Alene Lake	17010303	60	0	0	0	0
Walla Walla	17070102	29,460	361	2	0	1
Pahsimeroi	17060202	46,459	48	31,559	0	6,004
Carson Desert	16050203	0	0	4	0	20,684
Moses Coulee	17020012	2,239	0	0	0	0
Hamlin-Snake Valleys	16020301	0	0	33,070	29,927	431,625
Lower Deschutes	17070306	175,979	76,572	523	0	24,787
Palisades	17040104	1,931	7	2,721	0	0
Payette	17050122	6,751	1,804	288	0	440
South Fork Clearwater	17060305	10,585	2,480	35	0	0
BCR totals		4,606,127	1,458,603	2,838,041	351,730	13,228,940

Appendix 11. Amount (acres) of nine forest vegetation types, identified as macrogroups in the National Vegetation Classification system, in BCR 10 and by watershed (HUC8).

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Big Lost	17040218	50,138	145	55,763	0	1,248
Upper Green-Flaming Gorge Reservoir	14040106	91,192	0	14,863	7,637	53,167
Blackfoot	17010203	456,618	157,720	363,075	0	1,135
Upper Tongue	10090101	41,278	296	174,675	0	853
Dry	10080011	1,532	0	636	221	3
Crazy Woman	10090205	34,696	48	50,919	9	1,971
Stillwater	17010210	119,162	148,877	108,523	0	0
Upper Spokane	17010305	78,600	102,874	1,556	0	0
Idaho Falls	17040201	2,974	7	3,235	0	10
Red Rock	10020001	98,401	548	147,380	0	4,476
Muddy	14050004	6,329	0	5,020	3,895	130
Medicine Lodge	17040215	27,078	45	12,845	0	1,737
Greys-Hobock	17040103	154,418	9,253	355,985	0	505
Big Hole	10020004	237,950	1,425	641,643	0	4,678
Wallowa	17060105	83,065	148,922	100,682	0	818
Hells Canyon	17060101	22,873	46,441	24,192	0	2,369
Bitterroot	17010205	497,935	173,449	361,259	0	511
Upper Yellowstone-Pompeys Pillar	10070007	2,060	0	0	0	0
Madison	10020007	140,812	2,909	607,022	0	1,015
Pend Oreille	17010216	94,517	436,624	56,548	0	0
New Fork	14040102	24,755	177	133,926	4	917
Nowood	10080008	91,049	114	101,515	36,378	3,301
Little Wood	17040221	32,341	22	4,492	0	0
North Fork Shoshone	10080012	68,307	1,055	127,488	261	3,130
Blacks Fork	14040107	24,007	463	70,056	1,013	926
South Fork Powder	10090203	3,080	0	1,603	280	1
Little Salmon	17060210	48,061	133,043	72,634	0	428
Lower Bighorn	10080015	19,251	19	2,336	0	10
Colville	17020003	231,769	237,622	5,979	0	0
Teton	17040204	62,708	3,948	130,789	0	36
Upper Yellowstone	10070002	274,526	7,724	339,174	0	3,099
South Fork Salmon	17060208	75,411	68,352	304,719	0	0
Upper Salmon	17060201	199,894	858	262,004	0	2,103
Greybull	10080009	33,661	23	47,844	1,078	2,889
Big Horn Lake	10080010	134,984	982	82,739	1,537	6,135

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Yaak	17010103	48,375	243,511	82,348	0	0
Belt	10030105	105,091	4,400	82,549	0	392
Flint-Rock	17010202	322,896	41,003	352,008	0	2,489
Swan	17010211	67,681	153,281	130,685	0	0
Little Bighorn	10080016	52,290	503	61,714	0	294
Lower Laramie	10180011	655	0	340	1,623	4
Big Wood	17040219	93,455	117	46,904	0	0
Beaver-Camas	17040214	47,624	649	41,985	0	38
Priest	17010215	39,512	409,390	53,386	0	0
North Fork John Day	17070202	321,901	374,996	86,696	0	64,868
Gros Ventre	17040102	6,108	440	190,633	0	97
Upper Missouri-Dearborn	10030102	144,515	19,197	28,180	0	540
Kettle	17020002	246,631	188,002	16,663	0	0
Gallatin	10020008	162,930	10,772	353,383	0	546
Stillwater	10070005	80,849	2,536	109,389	0	1,569
Lower Flathead	17010212	261,157	166,714	101,197	0	136
Boise-Mores	17050112	120,731	39,722	11,528	0	0
Lower Yampa	14050002	28,625	0	1,678	889	27,739
Cut Bank	10030202	5,814	1,002	17,473	0	0
Middle Fork Flathead	17010207	35,853	141,138	292,907	0	0
Clear	10090206	26,569	324	113,903	0	1,378
Middle Kootenai	17010101	307,412	630,785	256,950	0	0
Badwater	10080006	28,500	0	4,570	1,691	12
Upper Deschutes	17070301	0	0	0	0	156
Okanogan	17020006	108,399	43,252	3,193	0	0
Teton	10030205	35,822	13,642	39,213	0	0
Upper North Platte	10180002	9,558	0	74,832	20,926	353
Jefferson	10020005	150,164	384	91,660	0	1,526
Little Spokane	17010308	148,471	102,070	3,352	0	0
Middle Fork Clearwater	17060304	22,610	81,430	1,426	0	0
Upper Milk	10050002	7	0	0	0	0
Yellowstone Headwaters	10070001	73,262	1,975	709,340	0	965
St. Joe	17010304	122,928	670,656	169,103	0	0
Upper Musselshell	10040201	125,161	835	82,555	0	284
Clearwater	17060306	68,876	344,031	4,257	0	0
Middle Fork John Day	17070203	135,078	164,016	25,580	0	17,859
Little Wind	10080002	18,809	45	54,676	676	1,496
Lower Spokane	17010307	157,012	23,631	1,244	0	0
Marias	10030203	1,866	0	0	0	0
South Fork Shoshone	10080013	36,785	151	67,090	288	2,232
Upper Green-Slate	14040103	1,046	0	636	36	5

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Central Bear	16010102	49,584	2,558	82,219	226	264
Middle Fork Payette	17050121	59,894	72,296	36,563	0	0
Brownlee Reservoir	17050201	81,360	134,391	33,695	0	4,775
Middle North Platte-Casper	10180007	4,363	0	24,047	29,023	131
Pend Oreille Lake	17010214	103,653	377,002	33,452	0	0
Trout	17070307	48,848	10,691	379	0	73,223
Bully	17050118	4,093	213	440	0	13,225
Lower Henrys	17040203	35,846	1,095	158,102	0	17
Powder	17050203	142,985	184,348	71,566	0	5,270
Lower Snake-Asotin	17060103	14,738	41,202	4,401	0	53
Beaverhead	10020002	68,387	114	84,636	0	2,646
Silver	17120004	98,535	7,647	1,741	0	32,163
Ruby	10020003	96,823	279	72,858	0	2,320
Upper Grande Ronde	17060104	240,584	382,686	59,181	0	570
Little Snake	14050003	51,366	0	47,592	17,697	16,588
Sweetwater	10180006	53,019	74	73,132	3,609	378
Beaver-South Fork	17070303	65,542	13,971	1,792	0	80,798
Willow	17040205	12,554	214	13,049	0	6
Upper Crooked	17070304	156,353	56,523	9,081	0	188,392
South Fork Flathead	17010209	73,964	203,283	462,682	0	3
Lochsa	17060303	28,590	303,365	277,154	0	0
Milk Headwaters	10050001	11,153	245	11,420	0	0
Middle Clark Fork	17010204	332,829	435,328	247,354	0	139
Lower Boise	17050114	0	0	0	0	0
Boulder	10020006	145,106	329	128,447	0	1,076
Lower Middle Fork Salmon	17060206	205,210	11,033	194,158	0	0
North Fork Payette	17050123	61,846	127,622	158,834	0	0
Weiser	17050124	93,638	161,340	63,791	0	872
Judith	10040103	134,585	1,593	97,226	0	516
Sanpoil	17020004	307,511	95,495	9,522	0	0
Blackfoot	17040207	25,086	2,812	37,038	0	41
Lower Salmon	17060209	63,616	147,036	59,265	0	1,411
Burnt	17050202	108,440	84,773	19,354	0	26,666
Upper Middle Fork Salmon	17060205	124,794	13,894	217,526	0	0
Palouse	17060108	40,382	91,250	557	0	0
Upper White	14050005	0	0	0	10	4,252
Lower Snake-Tucannon	17060107	20,676	42,833	6,696	0	130
Camas	17040220	16,282	21	2,020	0	0
Arrow	10040102	10,979	368	6,215	0	65
Upper Green	14040101	29,322	781	295,560	30	633
Salt	17040105	107,728	9,340	165,552	0	211

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Muddy	14040108	31,059	0	7,394	539	121
Lower Wind	10080005	12,465	0	7,736	2,187	29
South Fork Boise	17050113	167,655	5,146	36,706	0	0
Upper Henrys	17040202	104,249	3,081	349,938	0	52
Pryor	10070008	39,439	131	11,338	0	225
Lower North Fork Clearwater	17060308	50,101	480,483	69,051	0	0
Harney-Malheur Lakes	17120001	40,098	9,103	1,873	0	17,037
Silvies	17120002	252,130	95,600	11,394	0	47,010
Upper Wind	10080001	47,431	192	301,488	519	4,532
Vermilion	14040109	27,267	0	8,445	1,904	35,080
Upper Selway	17060301	65,833	163,860	167,482	0	0
Lower Selway	17060302	43,046	284,595	180,053	0	0
Upper Yellowstone-Lake Basin	10070004	24,990	0	5	0	0
Upper Malheur	17050116	151,452	139,493	45,839	0	54,796
Imnaha	17060102	23,398	109,796	61,300	0	389
Popo Agie	10080003	30,624	116	106,465	2,024	840
Lower Kootenai	17010104	79,717	240,387	101,815	0	0
Lemhi	17060204	43,870	121	41,322	0	1,198
Lower John Day	17070204	197,796	34,185	2,634	0	212,692
Pathfinder-Seminole Reservoirs	10180003	32,574	0	21,243	5,466	58
Moyie	17010105	22,646	68,795	27,926	0	0
Upper Clark Fork	17010201	273,585	2,867	250,306	0	1,939
Clarks Fork Yellowstone	10070006	110,934	3,180	239,097	925	2,862
Elk	17010106	310	288	23,248	0	0
Fisher	17010102	214,388	204,418	33,109	0	0
Belly	09040002	2,466	5,865	47,911	0	0
Lower Grande Ronde	17060106	169,557	276,819	14,823	0	517
Lower White	14050007	0	0	0	0	55
Lower Clark Fork	17010213	362,196	636,854	212,777	0	0
Willow	17050119	12,742	7,717	3,414	0	5,737
Upper John Day	17070201	363,614	231,595	37,212	0	172,678
Umatilla	17070103	117,157	178,691	3,420	0	400
Lower Crooked	17070305	142,657	35,003	2,275	0	72,851
North and Middle Forks Boise	17050111	104,155	27,815	32,310	0	0
Two Medicine	10030201	35,066	16,854	113,998	0	0
Muskrat	10080004	987	0	250	374	2
South Fork Payette	17050120	79,627	57,266	91,748	0	0
Upper Missouri	10030101	543,578	6,517	182,612	0	3,284

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
South Fork Coeur d'Alene	17010302	21,714	110,384	29,268	0	0
Upper Coeur d'Alene	17010301	39,876	461,133	29,524	0	0
Chief Joseph	17020005	63,315	1,301	1,197	0	0
Bitter	14040105	45,207	0	1,761	555	769
North Fork Flathead	17010206	31,464	128,934	303,856	0	0
Flathead Lake	17010208	141,643	178,624	61,316	0	0
Cache La Poudre	10190007	0	0	4	13	0
Great Divide Closed Basin	14040200	3,399	0	1,967	271	9
Franklin D. Roosevelt Lake	17020001	483,929	289,458	23,587	0	0
Upper Laramie	10180010	4,475	0	29,929	5,512	147
Willow	17070104	13,778	19,802	590	0	259
Upper North Fork Clearwater	17060307	26,927	441,118	260,857	0	0
St. Marys	09040001	6,176	7,855	104,755	0	0
Sun	10030104	63,971	51,176	168,640	0	0
Birch	17040216	6,829	11	10,170	0	479
Shields	10070003	84,830	2,456	66,665	0	60
Bear Lake	16010201	33,390	2,604	79,457	13,604	2,453
Smith	10030103	315,584	4,550	171,521	0	756
Middle Salmon-Chamberlain	17060207	186,094	149,857	325,281	0	0
Rock	17060109	833	952	7	0	0
Middle Fork Powder	10090201	50,387	69	41,228	22,633	1,585
Upper Weber	16020101	3,317	0	2,589	403	1,705
Hangman	17010306	25,560	18,092	394	0	0
Upper Bear	16010101	81,563	4	18,407	3,407	2,098
Middle Salmon-Panther	17060203	308,732	7,590	199,126	0	372
Shoshone	10080014	34,531	65	12,316	940	851
Coeur d'Alene Lake	17010303	85,770	192,789	5,954	0	0
Walla Walla	17070102	55,777	138,082	2,787	0	93
Little Medicine Bow	10180005	3,785	0	6,271	1,137	60
Big Sandy	14040104	3,328	37	37,273	18	142
Lower Deschutes	17070306	11,834	1,201	68	0	12,078
Upper Bighorn	10080007	72,698	18	53,814	5,494	1,429
Upper Yampa	14050001	5,053	0	4,352	1,099	3,285
Palisades	17040104	171,268	10,854	122,424	0	823
Medicine Bow	10180004	11,667	0	37,900	1,830	196
Payette	17050122	79,426	49,081	13,373	0	0
Snake Headwaters	17040101	20,800	2,839	497,557	0	173
South Fork Clearwater	17060305	60,458	372,520	98,858	0	0
BCR totals		17,346,971	14,546,917	17,481,638	199,891	1,343,615

Appendix 12. Amount (acres) of nine forest vegetation types, identified as macrogroups in the National Vegetation Classification system, in BCR 16 and by watershed (HUC8).

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Conejos	13010005	0	0	186,374	57,754	8,972
Havasu Canyon	15010004	0	0	0	41,067	169,084
Upper Green-Flaming Gorge Reservoir	14040106	9,480	0	219,088	84,607	159,372
Animas	14080104	0	0	264,551	117,564	129,096
North Platte Headwaters	10180001	148	0	340,886	2,781	452
Rio Grande-Albuquerque	13020203	70	0	2,497	91,569	94,566
Chinle	14080204	0	0	5,369	238,616	277,423
Price	14060007	0	0	105,466	68,712	192,578
Leroux Wash	15020009	0	0	0	44,656	116,424
Uncompahgre	14020006	0	0	130,490	54,549	148,085
Blue	14010002	0	0	232,016	3,973	1,224
Upper Lake Powell	14070001	0	0	4,596	45,290	298,711
Rio Chama	13020102	0	0	242,567	747,562	315,197
Grand Canyon	15010002	0	0	9,175	155,682	444,248
Escalante Desert	16030006	0	0	42,256	69,371	141,880
Upper Little Colorado	15020002	0	0	0	260	49,414
Provo	16020203	5,336	0	182,851	29,043	26,708
Rio Salado	13020209	0	0	147	7,050	46,237
Upper Dolores	14030002	2	0	264,113	230,517	347,689
Arroyo Del Macho	13060005	0	0	0	1	5,517
Cimarron Headwaters	11040001	3	0	28	10,669	4,762
Spanish Fork	16020202	0	0	126,386	50,088	104,402
Upper Virgin	15010008	0	0	39,527	122,786	493,139
Chaco	14080106	0	0	1,535	82,599	99,088
Blacks Fork	14040107	461	0	151,913	6,294	119
Apishapa	11020007	0	0	9,486	67,302	12,936
Tularosa Valley	13050003	38	0	0	4,974	77,732
Gallo Arroyo	13060006	10	0	0	2,046	77,053
Western Estancia	13050001	79	0	247	61,354	150,326
North Fork Gunnison	14020004	0	0	263,937	29,307	62,411
Big Thompson	10190006	19	0	184,779	60,110	1,410
Upper South Platte	10190002	0	0	406,231	216,045	10,858
Upper Verde	15060202	0	0	0	275	1,789
Upper Canadian	11080003	4	0	6,628	79,700	7,733
Colorado Headwaters-Plateau	14010005	0	0	412,612	125,380	591,801
St. Vrain	10190005	113	0	192,924	70,315	2,663

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Tomichi	14020003	0	0	304,285	70,465	1,997
Lower Colorado-Marble Canyon	15010001	0	0	23,420	103,789	83,687
Lower Virgin	15010010	0	0	72	6,809	64,832
Red Lake	15010007	0	0	0	1,261	92,066
Escalante	14070005	0	0	85,232	70,165	272,570
Jornada Del Muerto	13020210	170	0	0	3,318	79,554
Dirty Devil	14070004	0	0	286	1,470	27,279
Plains of San Agustin	13020208	0	0	15	26,465	74,127
Lower Laramie	10180011	561	0	24,775	86,080	1,589
Lower Green	14060008	0	0	845	8,425	87,041
Big Chino-Williamson Valley	15060201	0	0	0	39,619	221,868
Jadito Wash	15020014	0	0	0	229	31,227
Saguache	13010004	0	0	200,353	126,049	69,078
Jemez	13020202	0	0	22,087	233,569	68,207
San Miguel	14030003	0	0	192,994	141,622	229,911
Polacca Wash	15020013	0	0	0	2,102	96,636
Jordan	16020204	46	0	55,478	24,950	5,727
Arkansas Headwaters	11020001	2	0	470,915	382,939	283,986
Fort Pearce Wash	15010009	0	0	0	10,909	170,701
Elephant Butte Reservoir	13020211	0	0	305	4,465	3,648
Lower Yampa	14050002	63	0	36,269	12,952	150,390
Grand Wash	15010006	0	0	0	3,689	148,847
Lower Sevier	16030005	0	0	36,563	58,677	95,958
Fremont	14070003	0	0	150,088	54,334	169,850
Horse	10180012	0	0	3,508	3,422	95
Mancos	14080107	0	0	26,382	24,137	152,607
Piedra	14080102	0	0	134,277	185,799	22,769
Lone Tree-Owl	10190008	0	0	168	621	1
Eagle	14010003	0	0	335,995	10,632	59,387
Lower Bear-Malad	16010204	373	0	4,305	571	267
Paria	14070007	0	0	1,514	19,937	243,066
Lower San Juan	14080205	0	0	254	2,682	164,556
Upper North Platte	10180002	3,104	0	458,975	9,694	88
Rio Grande Headwaters	13010001	0	0	414,126	76,611	15,957
Upper Puerco	15020006	0	0	105	233,265	381,429
Lower Weber	16020102	4,073	0	187,649	33,090	10,925
Upper Rio Grande	13020101	0	0	324,582	436,422	351,008
Conchas	11080005	0	0	0	2	86
San Rafael	14060009	0	0	116,060	43,350	81,900
East Fork Sevier	16030002	0	0	125,809	139,767	191,856

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Colorado Headwaters	14010001	0	0	1,002,036	32,824	117,302
San Luis	13010003	0	0	126,469	53,029	47,673
Middle North Platte-Casper	10180007	996	0	84,361	64,920	627
Rio Puerco	13020204	0	0	9,608	73,511	112,208
Dinnebito Wash	15020017	0	0	0	271	65,799
Carrizo Wash	15020003	0	0	0	6,699	167,383
Alamosa-Trinchera	13010002	0	0	269,242	153,555	108,197
Duchesne	14060003	2	0	401,598	83,792	256,209
Cimarron	11080002	1	0	55,984	281,283	28,244
Silver	15020005	0	0	0	3	6,398
Upper Arkansas	11020002	17	0	185,516	239,514	90,918
Lower Puerco	15020007	0	0	0	5,004	54,865
Little Snake	14050003	189	0	276,708	11,547	16,859
Rio Grande-Santa Fe	13020201	25	0	5,867	117,401	286,350
Upper Gila	15040001	0	0	0	2,808	518
Purgatoire	11020010	25	0	46,528	326,193	87,568
Pecos Headwaters	13060001	306	0	76,045	293,401	508,852
Glendo Reservoir	10180008	175	0	40,962	109,882	1,483
Lower Little Colorado	15020016	0	0	15	21,457	52,855
Huerfano	11020006	0	0	93,187	160,238	86,434
Strawberry	14060004	0	0	153,767	65,154	159,733
San Pitch	16030004	0	0	92,704	37,274	77,785
Middle San Juan	14080105	0	0	19,500	49,402	195,616
McElmo	14080202	0	0	356	4,112	146,016
Canyon Diablo	15020015	0	0	0	8	810
Upper White	14050005	0	0	292,042	24,285	139,165
Montezuma	14080203	0	0	6,515	18,960	220,264
Lower Lake Powell	14070006	0	0	199	3,987	158,581
Lower Dolores	14030004	0	0	60,767	78,905	234,380
Muddy	14040108	250	0	21,389	892	22
Utah Lake	16020201	8	0	45,845	25,733	21,046
Lower Beaver	16030008	0	0	3,339	1,825	21,201
Middle Sevier	16030003	0	0	136,096	87,978	316,888
Pintada Arroyo	13060002	8	0	0	1,012	142,478
East-Taylor	14020001	0	0	311,944	7,996	67
South Platte Headwaters	10190001	0	0	250,958	135,246	717
Kanab	15010003	0	0	8,064	172,192	408,034
Middle Bear	16010202	3,330	0	78,001	30,803	4,123
Vermilion	14040109	26	0	0	295	898
Middle South Platte-Cherry Creek	10190003	0	0	0	28	1
Blanco Canyon	14080103	0	0	8	68,002	325,126

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Clear	10190004	1	0	168,696	33,028	657
Zuni	15020004	0	0	32	151,803	509,545
Canadian Headwaters	11080001	2	0	26,855	336,681	51,441
Upper Colorado-Kane Springs	14030005	0	0	32,822	52,603	296,784
Cottonwood Wash	15020011	0	0	0	59,540	161,512
Eastern Estancia	13050002	1	0	0	1,189	16,293
Upper Lodgepole	10190015	0	0	6,209	6,174	33
Roaring Fork	14010004	0	0	476,568	28,177	60,076
Lower Green-Desolation Canyon	14060005	0	0	49,018	120,605	344,799
Westwater Canyon	14030001	0	0	12,397	28,486	282,292
Willow	14060006	0	0	22,829	51,400	220,500
Fountain	11020003	0	0	81,552	44,513	1,241
North Plains	13020206	0	0	29	120,152	213,053
Piceance-Yellow	14050006	0	0	25,955	19,121	275,222
Lower White	14050007	0	0	19,290	66,383	519,867
Upper Gunnison	14020002	2	0	618,870	155,094	70,072
Big Sandy	15030201	0	0	0	4,714	236,865
Upper Pecos	13060003	11	0	0	70	20,333
Upper Sevier	16030001	0	0	78,477	151,221	239,926
Little Bear-Logan	16010203	9,987	0	173,427	43,245	9,663
Chevelon Canyon	15020010	0	0	0	19	35,245
Mora	11080004	0	0	42,567	247,260	2,986
Crow	10190009	0	0	11,610	10,999	111
Corn-Oraibi	15020012	0	0	0	3,484	79,953
Cache La Poudre	10190007	17	0	296,015	102,932	855
Arroyo Chico	13020205	0	0	1,500	34,509	65,638
Upper Laramie	10180010	2,072	0	271,141	5,956	82
Upper San Juan	14080101	0	0	298,299	566,070	367,939
Lower Green-Diamond	14060010	90	0	135,760	27,839	166,249
Bill Williams	15030204	0	0	0	19	4,201
Lake Mead	15010005	0	0	0	4,451	182,784
Muddy	14070002	0	0	41,579	30,343	78,148
Bear Lake	16010201	934	0	85,316	21,240	1,221
Rio San Jose	13020207	0	0	7,476	234,312	239,084
Beaver Bottoms-Upper Beaver	16030007	0	0	41,554	36,320	31,550
Middle Little Colorado	15020008	0	0	0	139	26,391
Upper Weber	16020101	20,291	0	226,382	27,608	37,716
Upper Bear	16010101	1,853	0	162,320	13,184	531
Little Medicine Bow	10180005	14	0	23,380	8,229	253

Watershed		Macrogroup (acres)				Division (acres)
Name	#	M501	M500	M020	M022	D010
Lower San Juan-Four Corners	14080201	0	0	4,987	44,666	228,486
Upper Yampa	14050001	176	0	694,243	21,887	17,638
Medicine Bow	10180004	418	0	69,092	233	19
Moenkopi Wash	15020018	0	0	0	4,180	160,536
Sacramento Wash	15030103	0	0	0	2,279	21,103
Lower Gunnison	14020005	0	0	152,126	73,482	265,154
BCR totals		65,384	0	16,280,357	11,621,481	19,091,609

Appendix 13. Amount (acres) managed by each of 9 groups (Bureau of Land Management (BLM), Department of Defense (DOD), National Park Service (NPS), State agencies (State); Tribal management (Tribal), US Forest Service (USFS), US Fish and Wildlife Service (FWS), Other protected areas managed by other non-government organizations, government agencies, or private entities (Other), or not protected and assumed private management (Private) based on data in the Protected Areas Database (2021), in BCR 5 and by watershed (HUC8).

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Applegate	17100309	169,157	0	0	863	0	216,625	0	0	111,435
Chetco	17100312	12,946	0	0	863	0	269,271	863	2,589	118,144
Mad-Redwood	18010102	18,124	0	84,579	25,028	0	142,403	9,494	7,767	467,275
Upper Eel	18010103	12,946	0	0	23,302	863	200,227	0	2,589	180,797
Middle Fork Eel	18010104	40,563	0	0	7,767	9,494	314,150	0	1,726	138,297
Lower Eel	18010105	44,879	0	0	14,672	12,946	169,157	0	31,070	711,304
South Fork Eel	18010106	46,605	0	0	63,866	0	0	0	42,289	304,269
Mattole	18010107	81,990	0	0	4,315	0	0	0	13,809	224,495
Butte	18010205	0	0	0	0	0	69,044	0	0	7,842
Shasta	18010207	11,220	0	0	11,220	0	117,375	0	8,630	268,207
Scott	18010208	9,494	0	0	0	863	234,749	0	6,041	264,210
Lower Klamath	18010209	1,726	0	6,904	3,452	70,770	733,591	0	0	166,439
Salmon	18010210	0	0	0	0	0	479,855	0	0	0
Trinity	18010211	52,646	0	0	1,726	71,633	1,065,001	0	1,726	119,545
South Fork Trinity	18010212	0	0	0	0	0	563,570	0	0	27,308
McCloud	18020004	0	0	0	863	0	253,736	0	12,083	38,759
Sacramento Headwaters	18020005	12,083	0	0	6,041	0	282,217	0	2,589	64,248
Upper Stony	18020115	0	0	0	0	0	96,661	0	0	0
Cow Creek	18020151	1,726	0	0	0	0	2,589	0	0	22,914
Cottonwood Creek	18020152	22,439	0	0	863	0	130,320	0	0	69,914
Clear Creek-Sacramento River	18020154	29,344	0	24,165	0	0	34,522	0	0	23,494
Thomes Creek-Sacramento River	18020156	0	0	0	863	0	103,566	0	0	227
Smith	18010101	0	0	49,194	52,646	1,726	389,235	0	863	60,855
Upper Klamath	18010206	107,018	0	0	6,904	0	337,452	0	2,589	89,128
Wilson-Trusk-Nestuccu	17100203	81,127	0	0	228,708	0	137,225	6,904	2,589	188,182
Siletz-Yaquina	17100204	54,372	0	0	25,891	7,767	78,537	3,452	1,726	312,964
Upper Willamette	17090003	85,442	863	0	22,439	0	25,891	6,041	48,331	1,018,018

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Mckenzie	17090004	69,044	0	0	0	0	567,886	0	863	220,091
Middle Willamette	17090007	35,385	0	0	0	0	0	3,452	10,357	405,614
Yamhill	17090008	68,181	0	0	0	12,946	6,904	863	5,178	406,118
Siuslaw	17100206	147,581	0	0	18,987	0	165,705	0	1,726	166,137
Umpqua	17100303	287,395	0	0	25,891	0	86,305	0	863	576,428
Coquille	17100305	158,801	0	0	0	6,904	81,127	0	863	426,451
Coos	17100304	39,700	0	0	68,181	863	16,398	4,315	6,904	335,004
Alsea	17100205	100,977	0	0	1,726	0	281,354	3,452	5,178	72,777
Siltcoos	17100207	863	0	0	863	0	54,372	0	0	33,021
South Umpqua	17100302	290,847	0	0	12,083	22,439	354,713	0	0	481,882
North Umpqua	17100301	90,620	0	18,987	0	863	582,558	0	0	187,175
Middle Fork Willamette	17090001	20,713	0	0	0	0	724,960	0	15,535	112,562
Coast Fork Willamette	17090002	65,592	0	0	0	0	88,031	0	6,904	263,179
North Santiam	17090005	38,837	0	0	33,659	2,589	316,739	0	3,452	107,400
South Santiam	17090006	75,948	0	0	863	0	182,103	0	4,315	400,264
Molalla-Pudding	17090009	52,646	0	0	12,946	0	2,589	0	11,220	476,428
Clackamas	17090011	45,742	0	0	863	17,261	428,072	0	9,494	142,290
Lower Columbia-Sandy	17080001	35,385	0	0	48,331	0	339,178	863	12,083	150,777
Nehalem	17100202	44,879	0	0	221,803	0	0	0	1,726	289,583
Tualatin	17090010	32,796	0	0	25,891	0	0	7,767	30,207	366,799
Lower Willamette	17090012	11,220	0	0	10,357	0	0	0	28,481	209,784
Willapa Bay	17100106	0	0	0	77,674	863	0	17,261	17,261	502,215
Lower Skagit	17110007	0	0	0	6,904	0	7,767	0	8,630	96,127
Lake Washington	17110012	0	0	0	13,809	0	58,687	0	105,292	258,657
Skykomish	17110009	0	0	0	32,796	0	2,589	0	3,452	65,743
Snohomish	17110011	0	0	0	6,041	6,041	0	0	9,494	137,087
Nisqually	17110015	0	57,824	37,974	63,003	5,178	55,235	5,178	12,946	266,685
Puget Sound	17110019	0	42,289	15,535	63,003	42,289	863	3,452	40,563	1,117,743
Sumas River	17110001	0	0	0	0	863	0	0	0	24,605
Hoh-Quillayute	17100101	0	0	263,230	133,772	22,439	128,594	2,589	5,178	215,787
Queets-Quinault	17100102	0	0	246,832	111,333	206,269	89,757	863	18,987	84,327
Lower Chehalis	17100104	0	0	863	13,809	0	79,400	0	10,357	416,548
Grays Harbor	17100105	0	0	0	17,261	0	53,509	863	35,385	213,941
Nooksack	17110004	3,452	0	0	9,494	12,946	0	0	7,767	146,373
Stillaguamish	17110008	0	0	0	5,178	863	0	0	863	100,336
Duamish	17110013	0	0	0	57,824	863	102,703	0	84,579	143,201

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Puyallup	17110014	0	0	131,183	12,083	9,494	176,062	0	18,124	295,251
Snoqualmie	17110010	0	0	0	31,933	0	3,452	0	56,098	86,901
Upper Yakima	17030001	0	0	0	4,315	0	43,152	0	863	8,780
Upper Chehalis	17100103	0	0	0	164,842	4,315	10,357	3,452	4,315	646,793
Deschutes	17110016	0	6,041	0	0	0	12,083	0	4,315	87,851
Skokomish	17110017	0	0	31,933	1,726	4,315	82,853	0	0	37,183
Hood Canal	17110018	0	6,041	85,442	83,716	5,178	146,718	0	5,178	283,350
Strait of Georgia	17110002	8,630	0	0	18,987	4,315	863	0	12,083	153,386
San Juan Islands	17110003	112,196	0	1,726	8,630	0	0	863	132,046	0
Dungeness-Elwha	17110020	0	0	264,956	50,920	0	94,072	1,726	3,452	126,069
Crescent-Hoko	17110021	0	0	30,207	57,824	11,220	25,891	0	1,726	123,823
Naches	17030002	0	0	0	0	0	214,036	0	0	10
Big-Navarro-Garcia	18010108	6,904	0	0	70,770	0	0	0	64,729	647,589
Gualala-Salmon	18010109	0	0	0	12,083	0	0	0	76,811	169,555
Russian	18010110	3,452	0	0	8,630	0	0	0	26,754	188,815
Illinois	17100311	64,729	0	4,315	3,452	0	469,498	0	2,589	92,747
Sixes	17100306	15,535	0	0	863	0	83,716	0	5,178	192,673
Middle Rogue	17100308	176,925	0	0	2,589	0	25,028	0	13,809	356,422
Lower Rogue	17100310	214,899	0	0	3,452	0	202,816	0	0	163,998
Upper Rogue	17100307	186,418	0	68,181	863	0	463,457	0	6,904	304,151
Upper Klamath Lake	18010203	863	0	25,028	0	0	152,760	0	0	5,828
Lower Pit	18020003	0	0	0	0	0	132,046	0	0	21,716
Upper Cache	18020116	1,726	0	0	0	0	29,344	0	1,726	3,604
Lewis	17080002	0	0	0	84,579	0	379,741	1,726	11,220	208,452
Klickitat	17070106	0	0	0	863	72,496	0	0	0	104
Little Deschutes	17070302	0	0	0	0	0	68,181	0	0	0
Upper Deschutes	17070301	0	0	0	0	26,754	320,191	0	0	108
Lower Deschutes	17070306	21,576	0	0	0	91,483	88,894	0	0	272
Lower Cowlitz	17080005	0	0	0	76,811	0	143,266	0	28,481	680,195
Upper Cowlitz	17080004	0	0	69,907	863	1,726	537,679	0	1,726	49,221
Middle Columbia-Hood	17070105	863	0	0	22,439	0	481,581	863	18,124	35,613
Necanicum	17100201	0	1,726	863	4,315	0	0	1,726	8,630	73,741
Lower Columbia-Clatskanie	17080003	863	0	0	84,579	0	12,946	17,261	12,946	615,480
Lower Columbia	17080006	0	0	3,452	43,152	0	0	6,904	10,357	285,220

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Williamson	18010201	0	0	64,729	0	0	50,920	0	0	0

	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
BCR5 Total	3,428,030	114,784	1,530,185	2,451,916	769,837	15,756,670	112,193	1,233,293	20,562,310
%	7.5%	0.2%	3.3%	5.3%	1.7%	34.3%	0.2%	2.7%	44.7%

Appendix 14. Amount (acres) managed by each of 9 groups (Bureau of Land Management (BLM), Department of Defense (DOD), National Park Service (NPS), State agencies (State); Tribal management (Tribal), US Forest Service (USFS), US Fish and Wildlife Service (FWS), Other protected areas managed by other non-government organizations, government agencies, or private entities (Other), or not protected and assumed private management (Private) based on data in the Protected Areas Database (2021), in BCR 9 and by watershed (HUC8).

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Walker Lake	16050304	232,305	152,450	0	0	10,889	83,484	0	0	52,122
Fish Lake-Soda Spring Valleys	16060010	1,368,419	0	0	3,630	0	308,529	0	0	57,528
Mono Lake	18090101	232,305	0	0	39,927	0	395,644	0	29,038	14,969
Crowley Lake	18090102	275,862	0	0	0	0	562,613	0	185,118	22,737
Owens Lake	18090103	90,744	0	0	0	0	123,412	0	39,927	2,353
Eureka-Saline Valleys	18090201	214,156	0	214,156	14,519	0	163,339	0	0	5,301
Meadow Valley Wash	15010013	1,520,869	0	0	3,630	0	0	0	0	53,176
Lower Virgin	15010010	272,232	0	0	7,260	0	29,038	0	0	4,652
Muddy	15010012	424,682	0	0	0	3,630	0	243,194	0	34,594
Upper Virgin	15010008	0	0	0	0	0	58,076	0	0	2,417
Las Vegas Wash	15010015	0	3,630	0	0	0	0	130,671	0	0
Escalante Desert	16030006	925,588	0	0	116,152	0	170,599	0	0	607,760
Dry Lake Valley	16060009	1,372,049	0	0	0	0	0	0	0	26,747
Pine Valley	16020302	344,827	0	0	65,336	0	54,446	0	54,446	5,808
Sand Spring-Tikaboo Valleys	16060014	1,030,851	333,938	0	0	0	123,412	188,747	159,709	125,420
Beaver Bottoms-Upper Beaver	16030007	649,727	0	0	65,336	0	10,889	0	0	219,445
Carson Desert	16050203	526,315	83,484	0	0	7,260	0	108,893	119,782	531,503
Pyramid-Winnemucca Lakes	16050103	294,010	0	0	0	406,533	0	0	0	162,352
Granite Springs Valley	16050104	747,730	0	0	3,630	0	0	0	0	320,697
Dixie Valley	16060001	2,272,229	58,076	0	0	0	0	0	0	269,909
Lower Quinn	16040202	2,014,516	0	0	0	14,519	0	0	0	80,508
Middle Carson	16050202	319,419	0	0	7,260	7,260	0	0	3,630	199,642
Massacre Lake	16040204	729,581	0	0	0	0	0	7,260	7,260	102,210
Thousand-Virgin	16040205	392,014	0	0	0	0	0	352,087	0	13,112
Smoke Creek Desert	16040203	1,415,606	0	0	0	72,595	0	14,519	3,630	61,253
Upper Quinn	16040201	1,676,949	0	0	0	36,298	141,561	0	0	378,681

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Lower Humboldt	16040108	813,066	0	0	10,889	0	0	0	39,927	790,920
Truckee	16050102	83,484	0	0	10,889	3,630	79,855	0	7,260	239,305
Summer Lake	17120005	1,524,499	0	0	32,668	0	624,318	14,519	0	432,220
Beaver-South Fork	17070303	294,010	0	0	47,187	0	0	0	0	64,664
Little Deschutes	17070302	32,668	0	0	18,149	0	508,166	0	0	42,165
Warner Lakes	17120007	784,028	0	0	58,076	0	130,671	58,076	0	201,499
Lower Grande Ronde	17060106	39,927	0	0	7,260	0	68,965	0	3,630	246,969
Umatilla	17070103	0	10,889	0	0	98,003	0	10,889	0	1,056,296
Willow	17070104	14,519	0	0	0	0	0	0	0	503,893
Lower John Day	17070204	119,782	0	0	0	3,630	0	0	7,260	916,273
Upper Deschutes	17070301	90,744	0	0	0	36,298	722,322	0	18,149	185,831
Upper Crooked	17070304	3,630	0	0	0	0	0	0	0	3,700
Lower Crooked	17070305	359,346	21,779	0	14,519	0	192,377	0	3,630	302,964
Lower Deschutes	17070306	94,374	0	0	50,817	460,979	105,263	0	0	537,147
Trout	17070307	10,889	0	0	0	0	18,149	0	0	81,098
Upper Rogue	17100307	0	0	0	0	0	7,260	0	0	0
Harney-Malheur Lakes	17120001	348,457	0	0	3,630	7,260	0	105,263	0	330,490
Silvies	17120002	10,889	0	0	3,630	0	0	0	3,630	147,268
Donner und Blitzen	17120003	366,606	0	0	0	0	0	61,706	0	69,094
Silver	17120004	627,948	0	0	50,817	0	0	21,779	0	142,262
Lake Abert	17120006	312,159	0	0	18,149	0	221,415	0	0	119,846
Alvord Lake	17120009	1,143,374	0	0	36,298	0	0	0	0	209,065
Middle Owyhee	17050107	820,325	0	0	83,484	0	0	0	0	54,186
Middle Snake-Payette	17050115	14,519	0	0	0	0	0	0	0	165,302
Lower Malheur	17050117	439,201	0	0	21,779	3,630	0	0	0	145,246
Bully	17050118	127,042	0	0	0	0	0	0	0	58,107
Willow	17050119	58,076	0	0	0	0	0	0	0	98,074
Crooked-Rattlesnake	17050109	794,917	0	0	0	0	0	0	0	65,805
Lower Owyhee	17050110	965,516	0	0	127,042	0	0	0	3,630	146,748
Upper Malheur	17050116	566,242	0	0	108,893	0	0	0	0	177,355
Guano	17120008	1,147,004	0	0	29,038	0	0	428,312	0	318,678
Middle Columbia-Hood	17070105	3,630	0	0	61,706	3,630	275,862	0	18,149	511,105
Upper Pit	18020002	254,083	0	0	25,408	7,260	940,108	3,630	10,889	457,657

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Madeline Plains	18080002	264,972	0	0	3,630	0	10,889	0	0	258,836
Upper Klamath Lake	18010203	7,260	0	0	18,149	0	36,298	29,038	7,260	191,618
Lower Pit	18020003	123,412	0	0	14,519	0	671,505	0	18,149	311,007
Middle Fork Feather	18020123	7,260	0	0	0	0	10,889	0	0	37,958
Honey-Eagle Lakes	18080003	686,024	29,038	0	54,446	3,630	43,557	0	21,779	426,567
Surprise Valley	18080001	243,194	0	0	7,260	3,630	116,152	0	0	199,731
Goose Lake	18020001	3,630	0	0	0	0	370,235	0	3,630	301,716
Williamson	18010201	0	0	3,630	14,519	3,630	508,166	47,187	14,519	229,319
Sprague	18010202	7,260	0	0	7,260	0	758,620	0	43,557	248,312
Butte	18010205	21,779	0	0	10,889	0	134,301	0	0	134,184
Shasta	18010207	7,260	0	0	0	0	25,408	0	0	65,799
McCloud	18020004	0	0	0	0	0	94,374	0	0	48,370
Lost	18010204	181,488	0	54,446	3,630	0	990,924	127,042	43,557	587,465
Upper Klamath	18010206	65,336	0	0	0	0	68,965	0	0	260,198
Southern Great Salt Lake Desert	16020306	1,724,135	1,350,270	0	156,080	112,523	10,889	21,779	0	140,854
Northern Great Salt Lake Desert	16020308	1,470,052	392,014	0	264,972	0	14,519	0	21,779	758,605
North Fork Humboldt	16040102	399,273	0	0	0	0	54,446	0	0	191,867
Upper Humboldt	16040101	736,841	0	0	0	0	159,709	0	0	850,893
Long-Ruby Valleys	16060007	2,065,333	0	0	3,630	3,630	225,045	39,927	0	300,690
South Fork Humboldt	16040103	435,571	0	0	0	14,519	166,969	0	0	203,311
Rush-Tooele Valleys	16020304	239,564	54,446	0	90,744	0	108,893	0	0	287,728
Skull Valley	16020305	348,457	3,630	0	39,927	21,779	29,038	0	0	73,451
Curlew Valley	16020309	384,754	0	3,630	101,633	0	123,412	25,408	3,630	848,373
Pine	16040104	533,575	0	0	0	0	0	0	0	111,601
Pilot-Thousand Springs, Nevada, Utah	16020307	566,242	0	0	10,889	0	0	0	0	376,385
Goose	17040211	283,121	0	0	21,779	0	170,599	0	0	218,224
Little Bear-Logan	16010203	0	0	0	7,260	0	83,484	192,377	0	0
Spanish Fork	16020202	3,630	0	0	0	0	3,630	0	7,260	82,129
San Pitch	16030004	21,779	0	0	7,260	0	3,630	0	0	160,445
Medicine Lodge	17040215	177,858	0	0	10,889	0	10,889	0	166,969	148,980
Birch	17040216	152,450	0	0	7,260	0	98,003	0	58,076	7,939
Little Lost	17040217	264,972	0	0	10,889	0	279,491	0	10,889	54,257

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Big Lost	17040218	341,197	0	58,076	7,260	0	112,523	0	323,049	150,001
Big Wood	17040219	279,491	0	0	14,519	0	0	0	18,149	134,810
Camas	17040220	79,855	0	0	10,889	0	14,519	0	0	235,718
Little Wood	17040221	359,346	0	36,298	29,038	0	0	0	39,927	199,555
Boise-Mores	17050112	7,260	0	0	32,668	0	105,263	0	0	3,013
South Fork Boise	17050113	0	0	0	7,260	0	243,194	0	7,260	2,356
Upper Salmon	17060201	127,042	0	0	7,260	0	43,557	0	0	23,581
Pahsimeroi	17060202	221,415	0	0	21,779	0	246,824	0	3,630	40,357
Middle Salmon-Panther	17060203	83,484	0	0	0	0	76,225	0	0	20,031
Lemhi	17060204	214,156	0	0	32,668	0	206,896	0	3,630	130,019
South Fork Clearwater	17060305	0	0	0	0	72,595	0	0	0	87,325
Palisades	17040104	0	0	0	0	0	7,260	0	0	3,910
Upper Henrys	17040202	7,260	0	0	7,260	0	10,889	0	0	28,032
Willow	17040205	7,260	0	0	83,484	0	0	0	0	240,835
Teton	17040204	25,408	0	0	18,149	0	29,038	0	21,779	349,629
Lower Henrys	17040203	134,301	0	0	166,969	0	10,889	0	7,260	227,793
Lower Skagit	17110007	0	0	0	36,298	0	43,557	0	0	93,111
Upper Skagit	17110005	0	0	493,647	25,408	0	490,017	0	3,630	48,163
Lake Washington	17110012	0	0	0	0	0	18,149	0	18,149	5
Skykomish	17110009	0	0	0	58,076	0	359,346	0	10,889	21,337
Snohomish	17110011	0	0	0	25,408	0	7,260	0	0	4,072
Hangman	17010306	0	0	0	3,630	105,263	0	10,889	0	232,636
Upper Crab	17020013	65,336	0	0	47,187	0	0	0	3,630	1,061,752
Rock	17060109	14,519	0	0	18,149	0	3,630	25,408	0	542,303
Sumas River	17110001	0	0	50,817	7,260	0	58,076	0	0	20,578
Nooksack	17110004	0	0	7,260	105,263	0	163,339	0	14,519	129,203
Sauk	17110006	0	0	0	18,149	0	435,571	0	0	20,214
Stillaguamish	17110008	0	7,260	0	72,595	0	166,969	0	0	82,657
Chief Joseph	17020005	10,889	0	0	79,855	206,896	21,779	0	3,630	389,705
Methow	17020008	7,260	0	0	72,595	0	1,001,813	0	14,519	81,808
Lake Chelan	17020009	0	0	134,301	0	0	413,792	0	7,260	48,806
Upper Columbia-Entiat	17020010	32,668	47,187	0	214,156	0	308,529	3,630	21,779	372,366
Wenatchee	17020011	0	0	0	21,779	0	798,547	0	3,630	56,277
Moses Coulee	17020012	50,817	0	0	65,336	0	0	0	21,779	465,514
Banks Lake	17020014	3,630	0	0	47,187	0	0	10,889	18,149	323,135
Lower Crab	17020015	10,889	0	0	76,225	0	0	36,298	39,927	1,421,320
Snoqualmie	17110010	0	0	0	29,038	0	181,488	0	58,076	13,329

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Upper Yakima	17030001	10,889	148,820	0	352,087	0	468,239	0	14,519	373,647
Okanogan	17020006	18,149	0	0	137,931	145,190	61,706	0	3,630	335,384
Similkameen	17020007	32,668	0	0	141,561	0	206,896	7,260	0	42,362
Strait of Georgia	17110002	0	0	0	3,630	0	0	0	0	8,781
Naches	17030002	0	0	0	105,263	0	323,049	0	3,630	77,826
Lower Spokane	17010307	3,630	3,630	10,889	21,779	10,889	0	0	0	254,333
Franklin D. Roosevelt Lake	17020001	7,260	0	10,889	18,149	18,149	0	0	3,630	174,341
Gabbs Valley	16060002	1,132,485	21,779	0	0	76,225	83,484	0	3,630	16,373
West Walker	16050302	141,561	18,149	0	10,889	21,779	333,938	0	3,630	64,129
Southern Big Smoky Valley	16060003	784,028	0	0	0	0	279,491	0	0	18,007
Northern Big Smoky Valley	16060004	747,730	0	0	0	0	417,422	0	0	46,443
Diamond-Monitor Valleys	16060005	1,444,644	0	0	0	0	482,758	0	0	85,134
Reese	16040107	1,056,260	0	0	0	10,889	261,343	0	3,630	196,620
Walker	16050303	217,786	0	0	10,889	250,453	0	0	0	80,537
Ralston-Stone Cabin Valleys	16060011	954,627	283,121	0	0	0	319,419	0	0	18,189
Cactus-Sarcobatus Flats	16060013	29,038	457,350	0	0	3,630	0	0	68,965	797
Upper Carson	16050201	94,374	0	0	0	65,336	68,965	0	0	56,012
East Walker	16050301	275,862	0	0	7,260	0	410,163	0	18,149	39,384
Death Valley-Lower Amargosa	18090203	14,519	0	0	0	0	0	0	0	5
White	15010011	1,589,834	0	0	10,889	0	137,931	36,298	0	58,062
Hamlin-Snake Valleys	16020301	1,626,132	0	72,595	105,263	3,630	145,190	0	3,630	74,688
Tule Valley	16020303	588,021	0	0	36,298	0	0	0	0	640
Sevier Lake	16030009	794,917	0	0	83,484	0	0	0	0	15,801
Lower Sevier	16030005	1,303,083	0	0	261,343	0	127,042	0	0	662,258
Lower Beaver	16030008	355,716	0	0	68,965	0	0	0	0	64,460
Spring-Steptoe Valleys	16060008	2,827,582	0	7,260	7,260	18,149	388,384	0	0	215,419
Little Smoky-Newark Valleys	16060006	878,402	0	0	0	0	21,779	0	0	24,671
Hot Creek-Railroad Valleys	16060012	2,500,904	43,557	0	0	7,260	522,685	0	0	57,266
Middle Sevier	16030003	148,820	0	0	36,298	0	14,519	0	0	156,330
Upper Amargosa	18090202	0	43,557	0	0	0	0	0	130,671	0
Rock	16040106	359,346	0	0	0	0	0	0	0	206,549

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Little Humboldt	16040109	733,211	0	0	0	0	145,190	0	0	249,842
Middle Humboldt	16040105	1,252,267	0	0	7,260	0	0	0	29,038	820,738
Imnaha	17060102	0	0	0	3,630	0	188,747	0	32,668	80,036
Brownlee Reservoir	17050201	47,187	0	0	0	0	0	0	0	82,118
Klickitat	17070106	3,630	0	0	72,595	413,792	14,519	7,260	0	327,783
Lower Snake-Asotin	17060103	29,038	0	0	83,484	0	61,706	0	7,260	212,572
Middle Columbia-Lake Wallula	17070101	21,779	58,076	0	98,003	18,149	0	47,187	83,484	1,379,191
Walla Walla	17070102	0	0	0	7,260	0	0	3,630	0	860,671
Lower Snake	17060110	32,668	0	0	14,519	0	0	0	14,519	403,098
Upper Columbia-Priest Rapids	17020016	25,408	76,225	0	36,298	0	0	108,893	163,339	940,143
Lower Yakima	17030003	50,817	50,817	0	112,523	896,550	3,630	90,744	54,446	651,751
Lower Boise	17050114	174,228	32,668	0	47,187	0	21,779	14,519	10,889	613,790
Payette	17050122	58,076	0	0	3,630	0	10,889	0	0	226,985
Weiser	17050124	10,889	0	0	0	0	0	0	0	92,865
Lower Salmon	17060209	36,298	0	3,630	65,336	0	7,260	0	0	225,301
Clearwater	17060306	18,149	0	0	14,519	577,132	3,630	0	0	333,182
Middle Snake-Succor	17050103	1,067,149	72,595	0	83,484	0	0	0	0	369,482
Jordan	17050108	490,017	0	0	72,595	0	0	0	0	253,592
Hells Canyon	17060101	3,630	0	0	7,260	0	39,927	0	0	69,866
Upper Owyhee	17050104	845,734	0	0	50,817	214,156	170,599	0	3,630	102,409
South Fork Owyhee	17050105	740,471	0	0	0	58,076	94,374	0	0	306,129
East Little Owyhee	17050106	588,021	0	0	3,630	0	7,260	0	0	7,499
Great Salt Lake	16020310	3,630	0	0	1,088,928	0	0	3,630	0	13,830
Middle Bear	16010202	47,187	0	0	50,817	0	90,744	678,765	3,630	8
Utah Lake	16020201	105,263	18,149	0	148,820	0	21,779	0	0	399,925
Jordan	16020204	0	7,260	0	18,149	0	21,779	0	25,408	324,532
Lower Bear-Malad	16010204	72,595	0	0	58,076	0	127,042	776,768	0	86
Lower Weber	16020102	0	3,630	0	50,817	0	58,076	0	3,630	202,313
Portneuf	17040208	112,523	0	0	32,668	275,862	174,228	0	3,630	474,284
Raft	17040210	319,419	0	10,889	29,038	0	181,488	0	0	409,731
American Falls	17040206	395,644	0	0	119,782	163,339	10,889	0	21,779	681,189
Lake Walcott	17040209	1,288,564	0	642,467	76,225	0	47,187	18,149	7,260	720,271
Upper Snake-Rock	17040212	595,280	0	3,630	58,076	0	123,412	0	7,260	848,647
C.J. Strike Reservoir	17050101	903,810	116,152	0	127,042	0	7,260	3,630	0	281,969

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Salmon Falls	17040213	990,924	0	0	36,298	0	116,152	0	0	269,316
Bruneau	17050102	1,513,609	25,408	0	108,893	21,779	333,938	0	0	168,656
Idaho Falls	17040201	112,523	0	0	65,336	0	0	0	0	227,093
Blackfoot	17040207	39,927	0	0	123,412	119,782	43,557	0	21,779	383,991
Beaver-Camas	17040214	170,599	0	0	105,263	0	14,519	10,889	7,260	296,459
Bear Lake	16010201	7,260	0	0	0	0	0	61,706	0	120
Palouse	17060108	29,038	3,630	0	50,817	0	3,630	29,038	3,630	1,208,105
Lower Snake-Tucannon	17060107	0	0	0	32,668	0	0	0	14,519	786,729

	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
BCR9 Total	77,992,633	4,032,664	1,818,510	8,061,712	5,121,595	24,301,234	4,217,783	2,580,770	47,328,941
%	44.5%	2.3%	1.0%	4.6%	2.9%	13.9%	2.4%	1.5%	27.0%

Appendix 15. Amount (acres) managed by each of 9 groups (Bureau of Land Management (BLM), Department of Defense (DOD), National Park Service (NPS), State agencies (State); Tribal management (Tribal), US Forest Service (USFS), US Fish and Wildlife Service (FWS), Other protected areas managed by other non-government organizations, government agencies, or private entities (Other), or not protected and assumed private management (Private) based on data in the Protected Areas Database (2021), in BCR 10 and by watershed (HUC8).

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Beaver-South Fork	17070303	146,893	0	0	10,131	0	116,501	0	0	295,198
Burnt	17050202	136,762	0	0	0	0	207,676	0	0	338,514
Powder	17050203	96,240	0	0	10,131	0	369,764	0	5,065	577,321
Upper Grande Ronde	17060104	5,065	0	0	10,131	10,131	481,200	0	5,065	531,781
Wallowa	17060105	0	0	0	0	0	298,851	0	10,131	150,788
Lower Grande Ronde	17060106	5,065	0	0	10,131	0	445,743	0	0	117,445
Umatilla	17070103	0	0	0	0	81,044	177,284	0	5,065	166,569
Willow	17070104	0	0	0	0	0	20,261	0	0	28,509
Upper John Day	17070201	146,893	0	5,065	50,653	0	567,310	0	0	623,411
North Fork John Day	17070202	70,914	0	0	15,196	0	764,855	0	5,065	336,205
Middle Fork John Day	17070203	0	0	0	0	0	288,720	0	0	200,553
Lower John Day	17070204	162,088	0	0	5,065	0	96,240	0	0	721,956
Upper Crooked	17070304	187,415	0	0	0	0	273,524	0	20,261	260,165
Lower Crooked	17070305	25,326	0	0	0	0	217,806	0	0	89,431
Lower Deschutes	17070306	0	0	0	0	0	45,587	0	0	25,971
Trout	17070307	5,065	0	0	0	0	30,392	0	0	295,086
Harney-Malheur Lakes	17120001	50,653	0	0	0	0	55,718	0	0	41,216
Silvies	17120002	101,305	0	0	0	0	410,286	0	0	153,123
Silver	17120004	40,522	0	0	0	0	151,958	0	0	17,779
Bully	17050118	106,371	0	0	0	0	0	0	0	69,182
Willow	17050119	55,718	0	0	5,065	0	0	0	0	272,270
Upper Malheur	17050116	157,023	0	0	0	0	384,960	0	0	107,727
Upper Green-Slate	14040103	653,419	0	0	5,065	0	0	25,326	121,566	214,061
Muddy	14040108	268,459	0	0	25,326	0	0	0	0	321,598
Upper Green-Flaming Gorge Reservoir	14040106	633,158	0	0	81,044	0	116,501	20,261	15,196	91,159

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Lower Yampa	14050002	207,676	0	0	45,587	0	0	0	20,261	368,493
Bitter	14040105	810,442	0	0	50,653	0	0	0	5,065	619,949
Vermilion	14040109	541,983	0	0	20,261	0	0	0	0	49,032
Blacks Fork	14040107	729,398	0	0	45,587	0	101,305	0	5,065	651,218
Upper Bear	16010101	369,764	0	10,131	70,914	0	10,131	967,465	0	740
Upper Weber	16020101	0	0	0	0	0	10,131	5,065	0	63,086
Beaverhead	10020002	217,806	0	0	141,827	0	146,893	0	0	440,412
Big Hole	10020004	172,219	0	5,065	116,501	0	1,068,771	0	40,522	388,604
Medicine Lodge	17040215	40,522	0	0	5,065	0	141,827	0	5,065	12,913
Birch	17040216	15,196	0	0	5,065	0	50,653	0	0	2,332
Big Lost	17040218	162,088	0	0	5,065	0	420,417	0	5,065	38,325
Big Wood	17040219	60,783	0	0	5,065	0	344,438	0	0	53,407
Camas	17040220	40,522	0	0	5,065	0	60,783	0	0	25,551
Little Wood	17040221	40,522	0	0	5,065	0	70,914	0	25,326	21,665
North and Middle Forks Boise	17050111	0	0	0	0	0	486,265	0	0	0
Boise-Mores	17050112	5,065	0	0	40,522	0	238,067	0	0	1,587
South Fork Boise	17050113	5,065	0	0	15,196	0	562,244	0	0	3,753
South Fork Payette	17050120	0	0	0	5,065	0	526,787	0	5,065	7,112
Middle Fork Payette	17050121	5,065	0	0	10,131	0	192,480	0	0	14,854
North Fork Payette	17050123	0	0	0	75,979	0	278,590	0	15,196	245,548
Upper Salmon	17060201	425,482	0	0	20,261	0	1,063,705	0	0	8,322
Middle Salmon-Panther	17060203	40,522	0	0	5,065	0	926,943	0	0	15,689
Lemhi	17060204	121,566	0	0	10,131	0	96,240	0	0	11,742
Upper Middle Fork Salmon	17060205	0	0	0	5,065	0	957,335	0	0	0
Lower Middle Fork Salmon	17060206	0	0	0	10,131	0	876,291	0	0	0
Middle Salmon-Chamberlain	17060207	10,131	0	0	0	0	1,094,097	0	0	336
South Fork Salmon	17060208	0	0	0	5,065	0	861,095	0	0	0
Little Salmon	17060210	20,261	0	0	5,065	0	227,937	0	0	103,256
Upper Selway	17060301	0	0	0	0	0	623,027	0	0	0
South Fork Clearwater	17060305	25,326	0	0	5,065	10,131	526,787	0	0	40,134
Pryor	10070008	0	0	0	0	354,568	0	222,872	0	123

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Upper Bighorn	10080007	1,347,360	0	0	131,697	238,067	30,392	0	60,783	503,037
Greybull	10080009	177,284	0	0	106,371	0	258,328	0	30,392	203,990
Dry	10080011	222,872	0	0	15,196	0	0	0	111,436	52,820
Upper Wind	10080001	116,501	0	0	81,044	790,181	617,962	0	25,326	61,724
Muskrat	10080004	364,699	0	0	45,587	5,065	0	0	0	48,453
Upper Yellowstone-Lake Basin	10070004	0	0	0	15,196	5,065	0	116,501	0	62,854
Stillwater	10070005	0	0	0	10,131	0	379,895	440,678	40,522	32,638
Yellowstone Headwaters	10070001	0	0	1,195,402	0	0	455,874	0	0	108
Clarks Fork Yellowstone	10070006	283,655	0	0	45,587	5,065	724,333	30,392	45,587	532,514
Shoshone	10080014	354,568	0	0	45,587	30,392	45,587	0	96,240	404,610
Gallatin	10020008	0	0	70,914	60,783	0	572,375	0	141,827	389,036
Upper Yellowstone	10070002	20,261	0	15,196	45,587	0	820,573	0	55,718	598,381
Madison	10020007	65,848	0	445,743	50,653	0	693,941	0	192,480	236,641
South Fork Shoshone	10080013	10,131	0	0	0	0	308,981	0	0	54,639
North Fork Shoshone	10080012	30,392	0	20,261	0	0	476,135	0	25,326	41,128
Gros Ventre	17040102	0	0	5,065	0	0	390,025	5,065	0	2,349
Palisades	17040104	70,914	0	0	5,065	0	471,070	0	15,196	32,796
Upper Henrys	17040202	45,587	0	40,522	45,587	0	531,853	0	10,131	25,145
Willow	17040205	0	0	0	5,065	0	30,392	20,261	0	23,373
Teton	17040204	20,261	0	0	10,131	0	253,263	0	5,065	19,230
Lower Henrys	17040203	10,131	0	146,893	5,065	0	96,240	0	10,131	11,855
Snake Headwaters	17040101	0	0	572,375	0	0	541,983	0	5,065	5,912
Hangman	17010306	0	0	0	0	35,457	15,196	0	0	40,631
Little Spokane	17010308	0	0	0	35,457	0	20,261	0	0	409,679
Colville	17020003	5,065	0	0	101,305	0	212,741	60,783	5,065	378,104
Sanpoil	17020004	0	0	0	10,131	349,503	202,611	0	0	87,220
Chief Joseph	17020005	0	0	0	0	146,893	0	0	0	0
Kettle	17020002	10,131	0	0	40,522	0	374,830	0	0	215,395
Okanogan	17020006	0	0	0	5,065	121,566	65,848	0	0	101,289
Pend Oreille	17010216	0	0	0	40,522	5,065	531,853	0	0	127,370
Lower Spokane	17010307	0	0	0	35,457	131,697	0	0	0	120,585
Franklin D. Roosevelt Lake	17020001	20,261	0	40,522	40,522	420,417	217,806	0	0	351,966
Two Medicine	10030201	0	0	45,587	10,131	374,830	187,415	744,594	10,131	0
Cut Bank	10030202	0	0	25,326	5,065	526,787	0	582,505	0	0

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Upper Missouri- Dearborn	10030102	45,587	0	0	40,522	0	91,175	663,550	25,326	0
Marias	10030203	0	0	0	30,392	0	0	146,893	10,131	0
Smith	10030103	5,065	0	0	81,044	0	435,613	222,872	91,175	428,232
Belt	10030105	0	0	0	5,065	0	192,480	222,872	0	33,359
Teton	10030205	20,261	0	0	45,587	0	86,109	577,440	91,175	0
Arrow	10040102	0	0	0	5,065	0	20,261	0	0	13,323
Judith	10040103	10,131	0	0	25,326	0	253,263	5,065	0	111,689
Milk Headwaters	10050001	0	0	0	0	263,394	0	263,394	0	0
Sun	10030104	10,131	0	0	65,848	0	440,678	911,748	20,261	0
Upper Coeur d'Alene	17010301	5,065	0	0	0	0	557,179	0	0	3,654
South Fork Coeur d'Alene	17010302	35,457	0	0	5,065	0	70,914	0	0	64,340
Upper North Fork Clearwater	17060307	0	0	0	15,196	0	800,312	0	0	30,909
Lower North Fork Clearwater	17060308	15,196	0	0	207,676	15,196	258,328	0	10,131	264,483
Moyie	17010105	0	0	0	0	0	131,697	0	0	2,087
Fisher	17010102	0	0	0	65,848	0	364,699	101,305	10,131	51,648
Blackfoot	17010203	121,566	0	0	212,741	0	815,508	1,382,817	65,848	634
Middle Clark Fork	17010204	0	0	0	91,175	0	1,109,293	0	30,392	128,027
Middle Fork Flathead	17010207	0	0	354,568	0	0	359,634	714,202	0	0
Flathead Lake	17010208	0	0	0	40,522	177,284	217,806	774,985	25,326	0
South Fork Flathead	17010209	0	0	0	0	0	1,089,032	1,043,444	40,522	0
Stillwater	17010210	0	0	0	101,305	0	278,590	460,939	5,065	174
Swan	17010211	0	0	0	65,848	0	415,352	354,568	20,261	3
Lower Flathead	17010212	0	0	0	25,326	1,129,554	25,326	673,680	20,261	5,785
Yaak	17010103	0	0	0	0	0	400,156	0	5,065	0
Lower Clark Fork	17010213	0	0	0	136,762	0	1,149,815	65,848	5,065	220,804
Middle Kootenai	17010101	0	0	0	50,653	0	1,261,251	5,065	20,261	122,402
North Fork Flathead	17010206	0	0	288,720	15,196	0	314,046	607,832	0	1
Elk	17010106	0	0	0	0	0	20,261	0	0	0
Upper Laramie	10180010	106,371	0	0	91,175	0	40,522	5,065	45,587	756,779
Lower Laramie	10180011	25,326	0	0	15,196	0	0	0	5,065	121,332
Pathfinder-Seminoe Reservoirs	10180003	329,242	0	0	65,848	0	0	5,065	40,522	238,379

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Medicine Bow	10180004	157,023	0	0	96,240	0	20,261	0	25,326	526,512
Little Medicine Bow	10180005	131,697	0	0	65,848	0	0	0	10,131	301,702
Upper North Platte	10180002	435,613	0	0	81,044	0	65,848	0	20,261	692,545
Middle Fork Powder	10090201	182,350	0	0	65,848	0	10,131	0	0	173,341
Crazy Woman	10090205	25,326	0	0	10,131	0	60,783	0	0	64,321
South Fork Powder	10090203	86,109	0	0	40,522	0	0	0	20,261	124,181
Clear	10090206	0	0	0	20,261	0	187,415	0	15,196	21,951
Imnaha	17060102	0	0	0	0	0	243,133	0	0	7,101
Brownlee Reservoir	17050201	141,827	0	0	81,044	0	344,438	0	0	183,180
Lower Snake-Asotin	17060103	0	0	0	0	0	65,848	0	0	12,316
Walla Walla	17070102	0	0	0	5,065	0	101,305	0	0	148,588
Lower Snake-Tucannon	17060107	0	0	0	10,131	0	81,044	0	0	9,546
Payette	17050122	121,566	0	0	60,783	0	121,566	0	0	217,633
Weiser	17050124	146,893	0	0	75,979	0	369,764	0	0	425,252
Hells Canyon	17060101	0	0	0	0	0	227,937	0	0	15
Little Wind	10080002	233,002	0	0	20,261	460,939	30,392	0	0	32,733
Popo Agie	10080003	227,937	0	0	30,392	40,522	192,480	0	10,131	35,577
Sweetwater	10180006	1,408,143	0	0	131,697	0	60,783	5,065	5,065	214,859
New Fork	14040102	248,198	0	0	45,587	0	364,699	0	10,131	154,521
Big Sandy	14040104	876,291	0	0	65,848	0	75,979	0	65,848	63,239
Little Snake	14050003	992,792	0	0	151,958	0	40,522	0	15,196	341,325
Great Divide Closed Basin	14040200	1,641,146	0	0	131,697	0	0	0	0	654,561
Muddy	14050004	466,004	0	0	55,718	0	0	0	0	166,180
Upper Yampa	14050001	15,196	0	0	65,848	0	0	0	15,196	275,853
Upper White	14050005	10,131	0	0	10,131	0	0	0	0	8,197
Upper Green	14040101	795,246	0	0	75,979	0	541,983	0	86,109	364,743
Bear Lake	16010201	25,326	0	0	65,848	0	121,566	607,832	5,065	2
Central Bear	16010102	162,088	0	0	45,587	0	131,697	501,461	0	0
Greys-Hoback	17040103	0	0	25,326	10,131	0	926,943	20,261	0	49,787
Salt	17040105	5,065	0	0	20,261	0	405,221	0	0	156,346
Boulder	10020006	30,392	0	0	15,196	0	273,524	0	5,065	149,294
Red Rock	10020001	476,135	0	0	217,806	0	420,417	212,741	65,848	272,050
Ruby	10020003	101,305	0	0	70,914	0	212,741	0	15,196	217,559
Jefferson	10020005	75,979	0	0	60,783	0	258,328	0	5,065	438,159

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Beaver-Camas	17040214	15,196	0	0	25,326	0	151,958	0	0	57,990
Lower Salmon	17060209	40,522	0	0	15,196	0	314,046	0	0	58,247
Lower Selway	17060302	0	0	0	0	0	663,550	0	0	0
Lochsa	17060303	0	0	0	0	0	734,463	0	0	0
Middle Fork Clearwater	17060304	0	0	0	15,196	10,131	81,044	0	0	38,682
Clearwater	17060306	20,261	0	0	106,371	81,044	146,893	0	5,065	252,920
Upper Clark Fork	17010201	10,131	0	0	131,697	0	425,482	633,158	101,305	258,667
Flint-Rock	17010202	25,326	0	0	35,457	0	729,398	0	65,848	308,394
Bitterroot	17010205	0	0	0	45,587	0	1,403,078	5,065	40,522	368,113
Shields	10070003	0	0	0	5,065	0	126,632	0	50,653	357,683
Nowood	10080008	673,680	0	0	126,632	0	222,872	0	30,392	342,611
Upper Tongue	10090101	0	0	0	15,196	0	293,785	0	0	14,526
Lower Wind	10080005	192,480	0	0	86,109	724,333	0	0	192,480	127,742
Badwater	10080006	253,263	0	0	75,979	0	0	0	25,326	165,235
Big Horn Lake	10080010	516,657	0	111,436	40,522	227,937	227,937	0	5,065	120,447
Lower Bighorn	10080015	0	0	10,131	0	283,655	0	35,457	0	13
Little Bighorn	10080016	0	0	0	5,065	136,762	126,632	0	10,131	10,673
Upper Musselshell	10040201	0	0	0	30,392	0	253,263	0	15,196	193,703
Upper Yellowstone -Pompeys Pillar	10070007	0	0	0	0	0	0	20,261	0	0
Upper Missouri	10030101	167,154	25,326	0	151,958	0	658,484	785,116	172,219	731,925
Idaho Falls	17040201	10,131	0	0	10,131	0	0	0	0	4,218
Blackfoot	17040207	0	0	0	0	0	81,044	0	0	10,272
Palouse	17060108	0	0	0	10,131	0	101,305	0	0	79,083
Upper Spokane	17010305	0	0	0	0	0	60,783	0	10,131	305,316
Coeur d'Alene Lake	17010303	10,131	0	0	25,326	65,848	106,371	0	0	201,331
St. Joe	17010304	10,131	0	0	75,979	116,501	688,876	0	65,848	235,260
Pend Oreille Lake	17010214	5,065	0	0	70,914	0	293,785	0	91,175	394,005
Priest	17010215	0	0	0	192,480	0	395,091	0	0	25,656
Lower Kootenai	17010104	5,065	0	0	40,522	5,065	395,091	5,065	20,261	142,919
Middle North Platte-Casper	10180007	395,091	0	0	101,305	0	5,065	0	20,261	459,987

	BLM	DOD	NPS	State	Tribal	USFS	USFWS	Other	Private
BCR1 0 Total	22,596,141	25,326	3,434,248	6,858,363	7,380,089	52,856,029	15,281,899	3,105,003	28,777,504
%	16.1%	0.02%	2.4%	4.9%	5.3%	37.7%	10.9%	2.2%	20.5%

Appendix 16. Amount (acres) managed by each of 9 groups (Bureau of Land Management (BLM), Department of Defense (DOD), National Park Service (NPS), State agencies (State); Tribal management (Tribal), US Forest Service (USFS), US Fish and Wildlife Service (FWS), Other protected areas managed by other non-government organizations, government agencies, or private entities (Other), or not protected and assumed private management (Private) based on data in the Protected Areas Database (2021), in BCR 16 and by watershed (HUC8).

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Bill Williams	15030204	16,777	0	0	0	0	0	0	0	812
North Plains	13020206	251,656	0	104,018	46,976	36,910	53,687	0	0	269,591
Upper Gila	15040001	43,620	0	0	3,355	0	0	0	0	4,443
Carrizo Wash	15020003	285,210	0	0	218,102	3,355	3,355	0	0	381,324
Silver	15020005	6,711	0	0	50,331	0	0	0	0	127,454
Chevelon Canyon	15020010	0	0	0	26,843	0	10,066	0	0	131,079
Upper Little Colorado	15020002	43,620	0	26,843	127,506	13,422	0	0	0	415,718
Grand Wash	15010006	456,337	0	10,066	6,711	0	0	0	0	161
Grand Canyon	15010002	342,252	0	573,776	20,132	412,716	40,265	0	0	5,554
Fort Pearce Wash	15010009	828,788	0	0	93,952	3,355	0	0	0	103,067
Lower Virgin	15010010	211,391	0	0	13,422	3,355	0	0	0	3,833
Lake Mead	15010005	147,638	0	147,638	0	194,614	0	0	0	2,304
Kanab	15010003	765,035	0	23,488	87,241	117,440	382,517	0	0	123,787
Upper Virgin	15010008	486,535	0	140,927	73,819	20,132	238,235	0	10,066	363,304
Escalante Desert	16030006	87,241	0	6,711	30,199	0	107,373	0	3,355	78,532
Upper Sevier	16030001	174,482	0	3,355	40,265	0	459,692	0	3,355	101,676
Beaver Bottoms-Upper Beaver	16030007	0	0	0	3,355	0	137,572	0	0	175
Animas	14080104	140,927	0	3,355	16,777	127,506	466,403	0	3,355	143,574
Chinle	14080204	0	0	83,885	0	2,634,002	0	0	0	1
Lower San Juan-Four Corners	14080201	402,650	0	0	50,331	681,150	124,150	0	0	43,894
Uncompahgre	14020006	157,705	0	0	10,066	0	177,837	0	16,777	368,740
San Miguel	14030003	288,566	0	0	33,554	0	409,361	0	13,422	266,254
Upper Dolores	14030002	489,891	0	0	70,464	0	614,041	0	43,620	194,004
Montezuma	14080203	258,367	0	0	23,488	60,397	30,199	0	0	351,893
Fremont	14070003	510,023	0	174,482	150,994	0	392,584	0	0	61,895
Escalante	14070005	684,505	0	251,656	16,777	0	325,475	0	3,355	23,563
McElmo	14080202	154,349	0	16,777	3,355	90,596	0	0	13,422	199,710
Dirty Devil	14070004	446,270	0	40,265	46,976	0	0	0	0	3,886
Middle San Juan	14080105	90,596	0	0	30,199	963,005	30,199	0	0	118,867
Mancos	14080107	33,554	0	43,620	3,355	338,897	46,976	0	6,711	50,983

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Lower San Juan	14080205	369,096	0	104,018	30,199	1,050,245	3,355	0	0	3,070
Lower Lake Powell	14070006	617,397	0	278,500	40,265	926,095	0	0	0	15,034
Upper Lake Powell	14070001	1,040,179	0	593,909	107,373	0	120,795	0	0	4,455
Corn-Oraibi	15020012	0	0	0	0	469,758	0	0	0	0
Polacca Wash	15020013	0	0	0	0	738,192	0	0	0	0
Jadito Wash	15020014	0	0	0	0	597,264	0	0	0	0
Dinnebito Wash	15020017	0	0	0	0	516,734	0	0	0	0
Moenkopi Wash	15020018	0	0	0	0	1,707,907	0	0	0	0
Lower Little Colorado	15020016	0	0	63,753	67,108	744,902	80,530	0	0	90,292
Canadian Headwaters	11080001	0	0	0	26,843	0	0	6,711	395,939	215,162
Cimarron Headwaters	11040001	0	0	0	20,132	0	0	0	0	40,069
Cimarron	11080002	0	0	0	50,331	0	63,753	3,355	53,687	345,977
Upper Canadian	11080003	0	0	0	36,910	0	0	0	0	130,660
Huerfano	11020006	43,620	0	0	20,132	0	157,705	0	0	295,247
Apishapa	11020007	3,355	0	0	6,711	0	10,066	0	0	104,089
Purgatoire	11020010	3,355	0	0	60,397	0	16,777	0	60,397	498,154
Mora	11080004	0	0	0	16,777	0	97,307	379,162	0	2,427
Upper Rio Grande	13020101	432,849	0	0	67,108	255,012	808,655	322,120	46,976	288,865
Rio Grande-Santa Fe	13020201	63,753	0	40,265	33,554	211,391	238,235	0	43,620	569,668
Jemez	13020202	50,331	0	87,241	0	211,391	278,500	0	0	38,327
Rio Grande-Albuquerque	13020203	80,530	53,687	6,711	67,108	201,325	204,680	97,307	53,687	843,085
Rio Puerco	13020204	265,078	0	0	80,530	332,186	97,307	20,132	16,777	544,135
Jornada Del Muerto	13020210	57,042	90,596	0	164,415	0	0	0	0	97,250
Western Estancia	13050001	13,422	0	0	231,524	0	134,217	0	3,355	1,210,720
Eastern Estancia	13050002	0	0	0	40,265	0	20,132	0	0	280,471
Pintada Arroyo	13060002	6,711	0	0	114,084	0	0	0	0	521,222
Upper Pecos	13060003	110,729	0	0	127,506	0	0	0	0	1,080,598
Arroyo Del Macho	13060005	228,168	0	0	90,596	0	0	0	0	367,474
Gallo Arroyo	13060006	134,217	0	0	104,018	0	13,422	0	0	317,850
San Luis	13010003	177,837	0	150,994	36,910	0	194,614	1,016,691	70,464	0
Saguache	13010004	187,903	0	0	57,042	0	409,361	855,631	60,397	0
Conejos	13010005	60,397	0	0	20,132	0	342,252	499,957	3,355	0
Tularosa Valley	13050003	177,837	127,506	0	107,373	0	33,554	0	0	417,625
Alamosa-Trinchera	13010002	238,235	0	0	70,464	0	244,945	1,640,799	33,554	0

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Pecos Headwaters	13060001	16,777	0	10,066	117,440	0	406,005	6,711	10,066	1,185,532
Rio Chama	13020102	134,217	0	0	67,108	238,235	1,060,312	0	3,355	500,414
Tomichi	14020003	167,771	0	0	6,711	0	456,337	0	23,488	47,995
Piedra	14080102	0	0	0	13,422	77,175	355,674	0	3,355	20,266
Muddy	14040108	10,066	0	0	3,355	0	6,711	0	0	28,130
Upper Green-Flaming Gorge Reservoir	14040106	117,440	0	43,620	46,976	0	395,939	0	0	112,477
Piceance-Yellow	14050006	432,849	0	0	16,777	0	0	0	0	153,152
Lower Yampa	14050002	144,283	0	100,662	10,066	0	20,132	0	20,132	95,215
Duchesne	14060003	26,843	0	0	20,132	1,657,576	741,547	0	0	18,995
Strawberry	14060004	0	0	0	137,572	751,613	318,765	0	10,066	81
Lower Green-Desolation Canyon	14060005	738,192	0	0	83,885	590,553	10,066	0	3,355	118,949
Lower Green-Diamond	14060010	436,204	0	67,108	97,307	100,662	221,457	23,488	0	157,402
Willow	14060006	184,548	0	0	124,150	489,891	0	0	0	7,200
Price	14060007	526,800	0	0	174,482	0	114,084	0	3,355	391,445
Blacks Fork	14040107	13,422	0	0	3,355	0	191,259	0	0	15,181
Lower White	14050007	1,379,076	0	3,355	124,150	775,101	0	0	6,711	150,222
Upper Bear	16010101	10,066	0	0	10,066	0	187,903	322,120	3,355	257
Little Bear-Logan	16010203	0	0	0	23,488	0	365,740	372,451	0	0
Provo	16020203	0	0	0	43,620	0	224,813	0	0	150,964
Spanish Fork	16020202	0	0	0	50,331	0	389,228	0	0	95,089
San Pitch	16030004	16,777	0	0	23,488	0	174,482	0	0	134,473
Upper Weber	16020101	3,355	0	0	43,620	0	194,614	3,355	16,777	436,971
Clear	10190004	3,355	0	0	10,066	0	154,349	0	20,132	96,965
Big Thompson	10190006	0	0	104,018	0	0	208,036	0	36,910	58,635
Cache La Poudre	10190007	0	0	36,910	46,976	0	469,758	0	87,241	163,209
Upper Laramie	10180010	26,843	0	0	13,422	0	281,855	0	3,355	92,570
Lower Laramie	10180011	90,596	0	0	80,530	0	127,506	0	0	378,771
Upper South Platte	10190002	0	0	0	10,066	0	634,174	0	83,885	196,908
Horse	10180012	0	0	0	3,355	0	3,355	0	33,554	36,480
Upper Lodgepole	10190015	0	0	0	3,355	0	16,777	0	6,711	7,948
St. Vrain	10190005	3,355	0	23,488	0	0	241,590	0	70,464	43,483
North Platte Headwaters	10180001	174,482	0	0	114,084	0	315,409	23,488	26,843	311,512
Medicine Bow	10180004	0	0	0	10,066	0	77,175	0	0	6,200

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Little Medicine Bow	10180005	16,777	0	0	6,711	0	20,132	0	0	25,785
Upper North Platte	10180002	26,843	0	0	10,066	0	493,246	0	26,843	33,539
Crow	10190009	6,711	0	0	6,711	0	30,199	0	0	21,280
Eagle	14010003	110,729	0	0	6,711	0	429,493	0	6,711	78,746
Blue	14010002	10,066	0	0	0	0	395,939	0	16,777	30,257
Roaring Fork	14010004	57,042	0	0	10,066	0	697,927	0	50,331	148,516
Colorado Headwaters	14010001	365,740	0	93,952	63,753	0	939,517	0	43,620	389,254
Red Lake	15010007	97,307	0	0	60,397	67,108	0	0	0	63,450
Sacramento Wash	15030103	43,620	0	0	0	0	0	0	0	2,429
Big Sandy	15030201	161,060	0	0	248,301	0	0	0	0	298,356
Big Chino-Williamson Valley	15060201	0	0	0	204,680	63,753	40,265	0	0	435,398
Upper Verde	15060202	0	0	0	10,066	0	6,711	0	0	27,902
Plains of San Agustin	13020208	130,861	0	0	251,656	0	43,620	0	6,711	292,611
Rio Salado	13020209	107,373	0	0	67,108	120,795	43,620	46,976	0	139,992
Rio San Jose	13020207	161,060	0	0	80,530	718,059	261,722	0	10,066	435,912
Elephant Butte Reservoir	13020211	33,554	0	0	40,265	0	40,265	0	3,355	74,153
Zuni	15020004	83,885	0	6,711	187,903	751,613	157,705	0	0	554,061
Upper Puerco	15020006	70,464	13,422	0	33,554	885,830	53,687	0	0	167,776
Lower Puerco	15020007	10,066	0	171,126	83,885	348,963	0	0	0	143,256
Leroux Wash	15020009	3,355	0	13,422	46,976	392,584	0	0	0	74,061
Cottonwood Wash	15020011	6,711	0	0	30,199	1,006,625	0	0	0	37,418
Middle Little Colorado	15020008	26,843	0	0	268,433	466,403	0	0	16,777	425,647
Canyon Diablo	15020015	0	0	0	30,199	57,042	0	0	0	31,394
Paria	14070007	754,969	0	33,554	33,554	0	53,687	0	0	36,262
Havasut Canyon	15010004	0	0	43,620	301,987	197,970	30,199	0	0	495,345
Lower Colorado-Marble Canyon	15010001	167,771	0	271,789	10,066	265,078	234,879	0	0	2,139
Lower Sevier	16030005	13,422	0	0	10,066	0	224,813	0	0	32,770
Lower Beaver	16030008	0	0	0	3,355	0	30,199	0	0	6,970
East Fork Sevier	16030002	150,994	0	3,355	70,464	3,355	513,379	0	0	71,169
Middle Sevier	16030003	130,861	0	0	30,199	3,355	603,975	0	0	84,232
Arroyo Chico	13020205	278,500	0	0	33,554	100,662	90,596	0	0	356,070
Rio Grande Headwaters	13010001	6,711	0	0	3,355	0	832,143	865,697	6,711	0
Chaco	14080106	322,120	0	26,843	100,662	2,164,244	0	0	0	363,649

Watershed		Land Management (acres)								
Name	#	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
Blanco Canyon	14080103	463,047	0	0	57,042	429,493	46,976	0	0	130,848
Upper Gunnison	14020002	523,445	0	70,464	23,488	0	590,553	0	57,042	318,024
North Fork Gunnison	14020004	40,265	0	0	6,711	0	389,228	0	43,620	134,389
San Rafael	14060009	942,872	0	0	147,638	0	379,162	0	0	104,052
Lower Dolores	14030004	359,030	0	0	36,910	0	117,440	0	3,355	63,445
Lower Gunnison	14020005	463,047	0	0	13,422	0	352,319	13,422	3,355	233,037
Westwater Canyon	14030001	741,547	0	0	97,307	0	0	0	6,711	91,621
Lower Green	14060008	795,234	3,355	238,235	164,415	0	0	0	3,355	45,010
Muddy	14070002	657,662	0	20,132	73,819	0	194,614	0	0	40,121
Upper Colorado-Kane Springs	14030005	805,300	0	224,813	137,572	0	157,705	0	20,132	133,509
Upper San Juan	14080101	406,005	0	0	77,175	687,860	744,902	0	30,199	318,217
South Platte Headwaters	10190001	46,976	0	3,355	70,464	0	520,090	0	43,620	357,563
Arkansas Headwaters	11020001	406,005	0	0	87,241	0	895,896	0	26,843	566,268
Fountain	11020003	3,355	6,711	0	3,355	0	134,217	0	3,355	25,130
Upper Arkansas	11020002	150,994	50,331	0	23,488	0	187,903	0	23,488	337,677
East-Taylor	14020001	0	0	0	6,711	0	476,469	0	10,066	23,502
Little Snake	14050003	43,620	0	0	6,711	0	281,855	0	0	92,349
Upper Yampa	14050001	57,042	0	0	57,042	0	644,240	0	36,910	563,879
Upper White	14050005	208,036	0	0	26,843	0	345,608	0	16,777	244,992
Colorado Headwaters-Plateau	14010005	1,083,800	0	20,132	20,132	3,355	459,692	26,843	20,132	825,049
Bear Lake	16010201	3,355	0	0	3,355	0	110,729	140,927	0	0
Middle Bear	16010202	3,355	0	0	0	0	134,217	144,283	0	0
Utah Lake	16020201	3,355	0	0	3,355	0	114,084	0	0	31,569
Jordan	16020204	0	0	0	0	0	114,084	0	0	16,604
Lower Bear-Malad	16010204	0	0	0	0	0	10,066	10,066	0	0
Lower Weber	16020102	0	0	0	16,777	0	291,921	0	10,066	200,765
Middle North Platte-Casper	10180007	10,066	0	0	87,241	0	107,373	0	6,711	214,686
Glendo Reservoir	10180008	3,355	0	0	46,976	0	174,482	0	0	158,742

	BLM	DOD	NPS	State	Tribal	USFS	FWS	Other	Private
BCR16 Total	28,400,246	345,608	4,606,987	8,368,409	27,078,212	30,228,948	6,841,694	1,986,407	28,125,942
%	20.9%	0.3%	3.4%	6.2%	19.9%	22.2%	5.0%	1.5%	20.7%