

Intermountain West Joint Venture

Coordinated Bird Conservation Plan

Version 1.1



December 2005

Executive Summary

The Intermountain West Joint Venture (IWJV or Joint Venture) is comprised of multi-level partnerships between diverse public and private organizations who share common interest in the bird conservation in the Intermountain West. The Joint Venture encompasses much of the Intermountain area, from Canada to Mexico. This extensive geographic region encompasses portions of eleven western states and includes an enormous diversity of avian habitat.

The Joint Venture began in June of 1994 with a focus of conservation of wetland and associated habitats to serve as the implementation arm of the North American Waterfowl Management Plan (NAWMP). In 1999 the Management Board expanded the mission of the Joint Venture to include conservation actions for all bird habitats within the Joint Venture boundary.

The mission of the Intermountain West Joint Venture is to provide for partner assistance with long-term conservation of priority avian habitats. The guiding principles of Joint Venture operation are to apply a voluntary and non-regulatory approach to partnership building. IWJV is non-partisan and centered on building conservation partnerships rather than advocacy.

Well over 360 Joint Venture partners have come together to accomplish bird conservation in the first ten years of the Joint Venture's existence. To date, these partners have collaborated to conserve more than 430,000 acres of avian habitat. Non-federal partners have contributed more than \$75 million to match \$58 million from federal partners on bird conservation in the last decade.

This Plan coordinates the needs of all priority birds in the Joint Venture. Our planning focal points are key geographies where priority birds and priority habitats come together. Conservation projects will be generated within these areas. Partners used existing data to focus conservation efforts on priority habitats. Our challenge is to mix our best information and our best science with conservation opportunity to be most effective and most efficient with conservation expenditures. This Plan is a summary of the eleven State Coordinated Bird Habitat Conservation Plans and includes GIS mapping and analysis products.

We estimate approximately 500 avian species occur in the IWJV. A total of 87 species are considered continentally important in the Joint Venture, while 181 additional bird species have been identified by partners as regionally important. Both continentally and regionally important species were selected because they (1) are at risk or are in serious decline, (2) the most significant population of the species resides in Intermountain West biomes, or (3) have socio-economic importance. Continentally important species are those listed by plans of the major bird initiatives.

Nearly 495 million acres of habitat occurs within the IWJV. Of that total of 84.6 million acres were identified by state partners as Priority A habitats and 43.6 million acres as Priority B habitats, i.e., as the locations where bird conservation should happen in the next decade. These priority habitats occur in Bird Habitat Conservation Areas (BHCAs) which were designated as key geographies for conservation by state partners. IWJV

habitat objectives and strategies, which include protection, restoration, enhancement or maintenance of seven Priority A and seven Priority B habitats are presented.

The Plan describes administrative goals and objectives, including those for operation of the organization, communications for partnership development and maintenance, and adaptive planning, which includes established monitoring and evaluation principles for Joint Venture programmatic, project tracking, and applied science applications for the next decade.

The Plan also develops habitat goals and objectives for the fourteen Priority A and B habitat types identified in the planning process. These goals and objectives were based on a "roll-up" of the collective goals and objectives developed by each State Steering Committees (SSC). Narratives which describe priority habitats, associated continental priority bird species, threats and opportunities, long-term and short term goals, and identifies directional goals, measurable objectives, and strategies to improve habitat conditions are developed in the Plan.

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I. Introduction

Figure 1 – Political Boundaries of the Intermountain West Joint Venture



Background

The Intermountain West Joint Venture (IWJV or Joint Venture) began in June of 1994 to serve as the implementation arm of the North American Waterfowl Management Plan (NAWMP) in the Intermountain Region. The focus of the Joint Venture was conservation of wetland and associated habitats since the Joint Venture was linked to delivery of the North American Waterfowl Management Plan.

The Joint Venture is comprised of multi-level partnerships between diverse public and private organizations who share common interest in the conservation, maintenance, and management of key ecosystems in the Intermountain West. By multi-leveled

partnerships we mean partnerships may be formed from local to regional levels to carry out avian conservation.

The Joint Venture encompasses much of the Intermountain Region, from the Sierras and Cascades on the west to just east of the Rocky Mountains, and from the Mexican border on the south to the Canadian border on the north. This extensive geographic region encompasses portions of eleven western states and includes an enormous diversity of avian habitat.

The Joint Venture includes the entirety of three Bird Conservation Regions as designated by the North American Bird Conservation Initiative (NABCI). These include the Southern Rockies/Colorado Plateau, Great Basin, and the Northern Rockies. Portions of the Sonoran and Mojave Deserts, Sierra Madre Occidental, Chihuahuan Desert, Shortgrass Prairie, Pacific Rainforest and Sierra Nevada BCRs also occur within the Joint Venture boundary.

The 1995 Intermountain West Joint Venture Implementation Plan was constructed with the . . . “collective and collaborative thinking of wetland ecologists, biologists, natural resource managers, conservationists, user groups, private land owners, and local governments as to how the historic values and functions of the wetland ecosystem of the Intermountain area can be maintained, restored and enhanced.” The 1995 Plan nonetheless operated the same then as now, stating, “The Joint Venture is a collaborative effort at all levels. A myriad of participants are already involved and any stakeholder in wetlands issues is welcomed and encouraged to join in this milestone conservation effort.”

In June of 1999, the IWJV Management Board voted to expand the mission of the Joint Venture to include conservation actions for all bird habitats within the Joint Venture boundary. The intent of the Board was to provide for assistance with implementation of all major bird conservation initiatives, including the North American Waterfowl Management Plan (NAWMP), United States Shorebird Conservation Plan (USSCP), Partners in Flight (PIF), Waterbird Conservation for the Americas (WCA) and the Western States Sage Grouse Working Group which is aligned with the North American Grouse Plan (NAGP).

Nearly 495 million acres of habitat occur within the IWJV boundary. This includes perhaps the most diverse habitat within any joint venture in the contiguous forty-eight states due to the wide variation in physiography, elevation, and climate. The following highlight the basis for the habitat diversity of the Joint Venture:

- Well over 600 mountain ranges are found within the IWJV, including 314 named ranges in Nevada alone. Twenty-one of the thirty-three tallest mountains in North America occur in the Joint Venture.
- Of the seven largest deserts in North America, five occur entirely within the IWJV, and portions of the other two are also found here.
- The widest extremes of temperature ever recorded in the U.S. occur in the JV, with a range of some 200 degrees Fahrenheit between Death Valley, California and Yellowstone National Park, Wyoming.

- The change in elevation in the Joint Venture is dramatic, with a range of 14,775 feet which occurs in a distance of 90 miles in eastern California.

Of course, with such diversity comes a wide range of avian habitat niches, from alpine types to low and high elevation deserts, from world-class wetland habitat to montane wet meadows, from cedar-hemlock forests in the north to Joshua tree forests in the south, from mixed grass-mesquite types to short grass prairie, and from bristlecone pine forests to pinyon-juniper woodlands. Some 762 distinctive habitat mapping classifications (Appendix 1) were encountered from the GAP and SW ReGap mapping data sources (see the *Planning Approach* section) and these data served as the basis for IWJV habitat type development.

The IWJV Mission

The mission of the Intermountain West Joint Venture is to provide for partner assistance with long-term conservation of key avian habitats . . . to plan, fund, and develop habitat projects which benefit priority biological components of Intermountain ecosystems. The Joint Venture promotes the restoration and maintenance of migratory bird populations; fosters the protection, restoration, and enhancement of wetlands, riparian habitats, and the widely diverse uplands characteristic of the region; and champions broader understanding of all avian habitat issues, functions, and values.

Within the context of this mission, the following items further define the primary operational principles for the Joint Venture. They are based on previous direction from the Joint Venture Concept Plan, the first Joint Venture Implementation Plan, and the Joint Venture Management Board.

- Protect, restore, enhance and/or maintain key Intermountain bird populations and their habitats on a variety of land ownerships.
- Facilitate partnerships which are voluntary and non-regulatory for private and other landowners at various scales.
- Facilitate diverse “political” partnerships . . . political in the sense that the Joint Venture works across political boundaries to assist with the formation of non-traditional cooperative efforts. These efforts lead to leveraging of financial resources to maximize conservation work.
- Maintain a biological planning effort which is based on the best science available, employs an adaptive approach, and guides a practical approach to project development.
- Foster a monitoring and evaluation program that centers on program evaluation, project tracking, and applied science needs.
- Promote better understanding of the region’s avian habitat issues among local and national audiences, with emphasis on the critical functions and values of diverse avian species that are dependent upon our varied habitats.

Implementation through Conservation Partnerships

Habitat conservation is not an inexpensive proposition, nor is it a simple undertaking. In the Intermountain West, demands for habitat maintenance and improvement of the nearly 495 million acres of widely diverse avian habitat within the Joint Venture are imposing. The complexity of conservation solutions in the 21st century requires cooperation through partnerships. Those who are involved in all aspects of avian conservation, including applied science and monitoring, plus habitat protection, restoration, enhancement, and maintenance, clearly understand that project implementation can best occur through collaboration. Those are partners. Partners can be any entity, individual or organization. Partners include private landowners; local, regional, state, or federal governments; non-profit conservation organizations; business and corporations; and any of others who perceive themselves as stakeholders in a conservation effort and are willing to devote time and/or resources to a common effort.

The most obvious benefits of conservation partnerships include project implementation with shared of resources, whether technological or financial. Efficiency and effectiveness are enhanced through partnerships. Society can maximize their conservation dollar in the most effective manner in the highest priority habitats through partnerships. Secondly, but not secondarily, partnerships lead to the development of a broad base of political support for conservation actions. Partnerships necessarily facilitate greater opportunity for social buy-in.

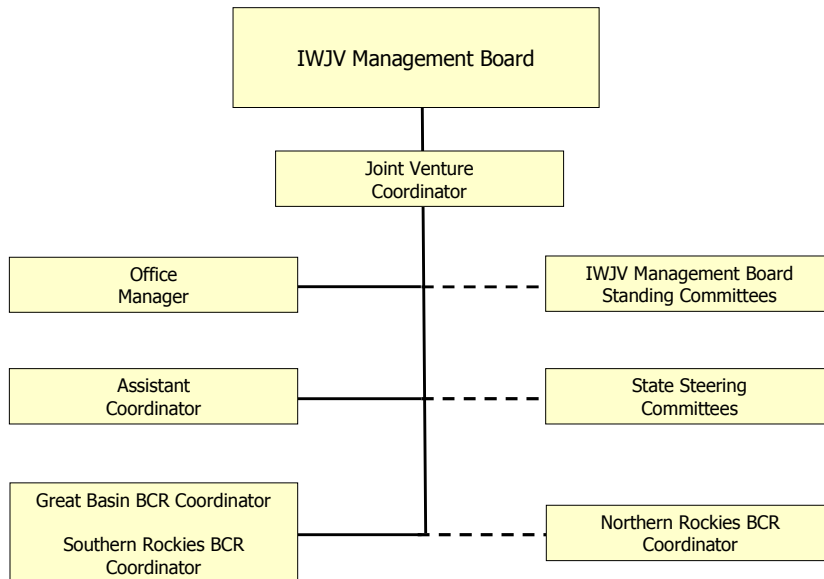
Now, in the 21st century, cooperation centered on conservation often involves those who might not have cooperated historically. For example, this modern approach of doing business may join extractive resource industry and environmental groups to accomplish conservation goals which have value for both partners. Long-term working relationships are enhanced which, in turn, shows the way for future successes. Continuous collaboration leads to further conservation implementation opportunities.

II. IWJV Administration

Organization and Operational Approach

The organization of the Intermountain West Joint Venture is displayed below. The various organizational components which are a direct line of authority from the Management Board are displayed by an unbroken line while those elements which are indirect lines or are advisory in nature are displayed by a broken line.

Figure 2 - Organization of the Joint Venture



The work of the Joint Venture centers on four basic areas which include coordination, communication, biological planning and associated activities, and project development and funding. The IWJV’s operational approach is focused on leading the partnership development process to the degree necessary for success. Joint Venture representatives facilitate and assist, oftentimes working in the background to achieve success.

The guiding principles of Joint Venture operation are to apply a voluntary and non-regulatory approach to partnership building. IWJV is nonpartisan, in that we recognize our purpose is to facilitate conservation partnerships rather than taking a political advocacy role.

The Joint Venture is an informally constituted public/private partnership dedicated to bird habitat conservation and is not a legal entity. Thus, IWJV, Inc, a 501 (c) (3) nonprofit organization, was formed to handle the financial affairs of the Joint Venture. The voluntary Board of Trustees is composed of the leadership of the Joint Venture Management Board.

The IWJV is governed by the Management Board (Figure 2). The Board has two primary purposes. First, they provide general oversight and guidance for the Joint Venture and provide broad policy direction to achieve of the goals of the North American Waterfowl Management Plan, the U.S. Shorebird Conservation Plan, Partners in Flight, the North American Waterbird Conservation Plan, and Western States Sagebrush Initiative. Their second primary role is to generate political and financial support for JV programs and projects.

The single employee of IWJV, Inc. is the Office Manager, who attends to the day-to-day administration of the organization. The Coordinator, Assistant Coordinator, and three Bird Conservation Region (BCR) Coordinators are contracted to serve as staff for Joint Venture activities. We anticipate any future positions required to carry out the IWJV mission would be staffed in a like manner. Administrative funding for Joint Venture activities comes from Congress through the U.S. Fish and Wildlife Service.

Communications

In the first decade of the existence of the Joint Venture, communication has been a modest undertaking. Greater emphasis has been placed on assisting partners with on-the-ground conservation actions. Communications in the Joint Venture currently used to explain the mission, purposes, programs, and actions of the JV include the following:

- The *Intermountain Quarterly*, a newsletter published to provide an update of important and timely information.
- Our web page www.iwJV.org. This includes basic information on mission, purpose, organization and contacts, programs, links, and legal requirements of IWJV, Inc.
- The BCR Coordinators will serve as “frontline” representatives of the JV to work closely with State Steering Committee partners within the respective BCR to coordinate adaptive planning activities and to coordinate on-the-ground project work.
- Joint Venture Management Board members meet with Congressional members and staffers on an annual basis to explain the Joint Venture approach and communicate successes of this approach.

Nevertheless, greater emphasis must be placed on an expansion of communications of the Joint Venture approach if we are to meet our conservation goals and objectives. Thus, specific communications goals and objectives are outlined in the *IWJV Goals and Objectives* section below.

Monitoring and Evaluation

The Technical Committee developed a recommended *IWJV Monitoring-Evaluation Plan* (Appendix 3) which was approved by the Board in March, 2004. Highlighted in the approved Plan were three basic components which are noted below.

Programmatic

This evaluation strategy essentially asks the question, "Are we accomplishing IWJV Plan goals and objectives?" This evaluation reviews the broad JV goals and objectives, such as acreage goals, "all bird" vision, expanding partnerships, administration, and project funding. It compares accomplishment and performance with established policy and planning efforts.

Project Tracking

This monitoring effort will examine individual project objectives, activities and accomplishments. Information included in this inquiry will include project location, habitat types and acreages, linkage to continental and regional bird plans, etc. Project tracking may also include project-specific data collection from partners or the applicant such as bird breeding success and brood survival. This information can be used for the programmatic evaluation as well. Project tracking is not intended to provide specific information relative to changes in bird populations.

Applied Science Needs

This area centers on identified monitoring needs or larger projects such as the Coordinated Bird Monitoring effort. The IWJV must partner with other programs to effectively monitor and evaluate such as population changes continentally or regionally, and detailed changes in habitat quality. The needs will be identified and supported from the IWJV annual budgets where appropriate. The recent final report from the USFWS on National Wildlife Refuges habitat goals and objectives is yet another example where cooperation will strengthen continental and regional monitoring programs.

See the *V. IWJV Goals and Objectives* section for a complete outline of the IWJV monitoring and evaluation program.

III. Joint Venture Partner Accomplishments (1994-2004)

Well over 360 partners have come together to accomplish bird conservation in a voluntary and non-regulatory fashion in the first ten years of the Joint Venture’s existence. Table 1 lists the wide array of partners who have joined forces to protect, restore and enhance wetland, riparian and upland bird habitats throughout the Joint Venture. Private landowners, non-government conservation organizations, state and federal agencies and local governments are the mainstays of our partnerships.

Table 1 – Partner Categories Working in the Intermountain West Joint Venture, 1994-2004

Corporate and Business	29	NGOs & Foundations	53
Local Government	41	Sportsmen Groups	17
Private Landowners	69	Civic Organizations	20
Private Individuals	23	Federal Agencies	50
Native American Tribes	10	Universities	2
State Agencies	48		

Joint Venture partners have collaborated to conserve more than 430,000 acres (Table 2) of avian habitat since our inception in 1994. We suspect the total acreage is significantly greater because we have only recently improved reporting procedures to upgrade our data base. We anticipate greater accuracy will be achieved in the future.

Nonetheless, partners have expended significant sums of money to achieve the 430,000 acres of habitat conservation accomplishment. Non-federal partners have contributed more than \$75 million to match with federal partners \$58 million for a total expenditure of more than \$133 million in the last decade. Federal funds include monies from grant programs as well as appropriated funds from a wide variety of federal agencies. Federal grant programs have been matched by non-federal funds at an average of 2.9 to 1 federal dollars throughout the ten-year period.

Most of the work reported early in the mid-1990s was accomplished on wetlands and associated upland habitat through the North American Wetlands Conservation Act (NAWCA). During this period, accomplishments in the first two years of the decade were minimal because our partnership efforts were just beginning. An increasing amount of upland work has been reported in recent years, due to both our expanded mission and improved reporting procedures. This is especially true in 2004, where a large increase in conservation acreage was reported.

Table 2 - Ten-Year Habitat Conservation Accomplishment Including both Non-federal and Federal Contributions (1994-2004)

Year	Conservation Accomplishment (acres)	Non Federal Project Funding (\$)	Total Federal Project Funding (\$)	Total Project Funding (\$)
1994-1995	12,309	2,120,231	55,000	2,175,231
1996	44,573	2,821,707	3,525,187	6,346,894
1997	15,936	5,869,334	1,874,374	7,743,708
1998	9,139	7,754,176	4,100,797	11,854,973
1999	25,395	3,977,279	3,952,686	7,929,965
2000	45,968	8,573,631	7,555,037	16,128,668
2001	57,142	16,267,762	9,335,856	25,633,618
2002	29,223	5,776,566	6,587,008	12,363,574
2003	20,898	11,566,779	4,970,945	16,537,724
2004	175,812	15,199,755	8,794,907	23,994,662
TOTAL	436,395	79,927,220	50,751,797	130,709,017

The significance of this partnership effort for the avian resource cannot be overstated. For example, in Intermountain West wetlands, conservation work has provided more secure nesting and migratory habitat for 23 species of waterfowl, 39 shorebird species, 18 other waterbird species, the bald eagle, peregrine falcon, and Northern harrier, as well as a variety of passerine birds. In recent years, habitat has been conserved for species which use the sagebrush steppe community including the greater sage grouse, sage thrasher, sage sparrow, Brewer’s sparrow and other sagebrush biome obligates.

This conservation effort has also benefited non-priority avian species such that habitat for common birds was maintained. Water quality, plus recreational, educational, and economic values were also improved or maintained by these partnership efforts. Certainly, the cooperative value of partnership based-conservation, that is the cooperative relationships between those who have not worked in collaboration in the past, cannot be overstated either.

IV. Biological Planning Process

The Purpose of the Plan

The purpose of this plan is to guide Joint Venture partners in their avian habitat conservation implementation efforts during the next decade. This Plan attempts to coordinate and plan for the needs of all priority birds (see definition in *Avian Species* section below) which are found in the Intermountain West Joint Venture. The focal point of this planning effort is key geographies where priority birds and priority habitats come together. Conservation projects are intended to be developed and implemented within these areas so partners might work more closely on their stated priorities.

As is explained in the section entitled *Planning Approach*, our basic planning information tends to be imprecise in some habitats. Therefore, we choose to speak of our planning as a *coordinated* effort (rather than an integrated effort) where partners seek to be aware of the needs of all priority species but not be placed in the position to trade-off avian habitat values at the planning level. Nevertheless, we do believe it is appropriate to integrate the needs of birds at the project level where more specific information is known about potential conflicts and conservation opportunities between species.

IWJV Planning Directives

US Fish & Wildlife Service Planning Requirements

The US Fish and Wildlife Service (Service) provides policy guidance for the establishment and organization of joint ventures who receive administrative funding through the Service. Service Manual 721 FW 6 declares "A joint venture is a self directed partnership of agencies, organizations, corporations, tribes, or individuals that has formally accepted the responsibility of implementing national or international bird conservation plans within a specific geographic area . . . and has received general acceptance in the bird conservation community for such responsibility."

This Manual direction (Appendix 2) provides the authority for this planning effort. Specifically, one of the items noted in this document is, "Biological planning and prioritization." (Item 6.4.A). Item 6.5.C states "An implementation plan, which the management board develops or adopts, guides joint venture conservation actions. The management board identifies the biological planning, conservation implementation and evaluation process that will guide the work of the joint venture."

Management Board Planning Policies

One key element of their role is the development of broad policy to provide direction for the Joint Venture partnership. Relative to planning, the following policy statements were adopted by the Board at their April 18, 2002 meeting:

1. Policy on IWJV Concept for Biological Planning

The business of the Joint Venture still centers on assistance with partnership efforts to accomplish on-the-ground conservation for important Intermountain avian habitats. To accomplish this objective our strategic planning must be organized to accommodate and recognize the needs of our state partnerships. Thus, biological

planning in the IWJV is rooted in our respective State Steering Committee's planning efforts. Their work will identify key species, which require specific key habitats, both of which converge at key geographical locations in every state. Any subsequent planning must be driven by the Committees' work on this basic concept.

2. *Policy on IWJV Biological Planning Components (which include):*

- JV level conservation program planning (broad scale)
- State Coordinated Planning Summaries (regional scale)
- Project level planning (project scale)
- Evaluation and monitoring of JV planning objectives and project objectives

3. *Policy on Joint Venture Direction*

- Conservation through the IWJV process will continue to be based on partnerships.
- The Joint Venture is committed to assisting partners to deliver all-bird habitat conservation, which means to facilitate habitat conservation and where possible, integrate the needs of priority bird species.
- The Joint Venture conservation implementation process is established to accommodate conservation on both an opportunistic and a systematic basis and these will be accomplished at the same time.
- Joint Venture conservation planning and implementation is an adaptive process.
- To facilitate the adaptive process, a primary focus of BCR Coordinators within the Joint Venture is to improve our biological foundation in a systematic manner.
- Prudence dictates we use our funding to maximize the return in each of our four basic areas of operation, which are coordination, communication, biological planning (including monitoring, evaluation and applied science support), and project seed money.

Planning Approach

Our broad planning objective was to identify geographic areas based on avian values and habitat needs which can be used to guide conservation implementation opportunities. With the variety and complexity of habitats included in the Joint Venture and with impacts to habitat an ongoing occurrence, we were clearly required to use existing data to keep abreast with immediate avian habitat conservation needs. With these data, we would develop a plan using the best scientific knowledge and opinion, and continue to apply an adaptive cycle of planning, implementation, evaluation, and upgraded planning, etc.

In the current iteration of IWJV planning, the habitat data base common to all Joint Venture state partnerships is GAP Analysis Mapping. The National Gap Analysis Program (GAP) coordinated by the U.S. Geological Survey has defined land cover classes using Thematic Mapper (TM) satellite images. Most of this work was accomplished in the early 1990s. While this allows us to have a common digital data base, we clearly understand the limitations of GAP data (which includes the relative age of the data and the lack of field validation which occurred prior to publishing the data). Although this data base should not be applied at the project planning level, it is useful for broad landscape level planning.

Between the publishing our draft Plan and this final draft of the IWJV Coordinated Implementation Plan, the Southwest ReGAP (SW ReGAP) project was completed. SW ReGAP is an update of GAP mapping for the five-state region which includes the states of Arizona, New Mexico, Colorado, Utah, and Nevada. A primary objective of the update is to use a coordinated mapping approach to create a detailed, seamless GIS map of land cover. Since this update improved the quality of land cover mapping we chose to apply this information for the final draft of our Plan. As GAP Analysis is improved in our other six Joint Venture states we will update our information as well. Of course, other geographic-specific and regionally-based GIS tools also can be applied to refine GAP data in key geographies.

As Joint Venture partners make use of existing resources, the challenge is to mix our most up-to-date information and our best science with conservation opportunity to achieve the most effective and most efficient use of conservation funding.

Each State Coordinated Bird Conservation Implementation Plan (see www.iwjk.org/state_plans) has listed the planning participants in their respective states. Collectively, the list includes representatives from state and federal agencies, tribes, non-government conservation organizations, Pacific Flyway and the major bird conservation initiatives, who are ornithologists, ecologists, biologists, and managers. In addition, we made use of regional plans for the major bird initiatives developed by our partners.

With these experts we were able to identify priority bird species, priority habitats, and the key geographies where these priorities converge. With this expertise we can identify and map locations where our conservation efforts should be implemented during the next decade. Through cooperative efforts conservation design can be developed at the local landscape level to address multiple species needs for key habitats.

The result of these efforts allows us to develop a plan which can be easily modified as better information is accumulated. In addition, such a plan allows us to use conservation partnership opportunities to center on the highest priority birds and sites to increase our effectiveness and efficiency.

Plan Components

The total components of the IWJV Coordinated Bird Conservation Plan include (1) the eleven State Coordinated Bird Habitat Conservation Plans (State Plans), (2) the GIS mapping and analysis products upon which State Plans have been developed, and (3) this, the IWJV Coordinated Bird Conservation Plan. The IWJV Plan is in effect a “roll-up” of the State Plans to summarize the work of the states and to identify the broad needs of bird conservation within the Joint Venture. The goal statements and measurable objectives found in the IWJV Plan are based on the State Plan objectives.

Development of Planning Priorities

Priority Habitats

All habitats were ranked by the State Steering Committees in each state. The criteria used were (1) statewide importance to priority birds, (2) the relative degree of threat to the habitat, and (3) opportunities for conservation, including feasibility for habitat protection, restoration or enhancement. Habitats were ranked A, B, or C based on the following definitions:

- Priority A: High bird value, high threat, and high conservation opportunity.
- Priority B: One criterion may be high, but habitat is generally of moderate concern.
- Priority C: Relatively low value, low threat, and low conservation opportunity.

Priority A and B habitats are listed for each state in Table 3. Joint Venture Priority A and B habitats were derived from a roll-up of state priorities and the relative comprehensive occurrence of the type in the Joint Venture. In the instance of the Agricultural habitat type, the Joint Venture ranked this as an A priority type because in most cases Priority A types have been converted from native habitat to agriculture and significant opportunities occur with the agriculture industry to restore and protect the avian habitat values there.

Table 3 - Priority A and B Habitats for Each State and the Resultant Priority Designation for the Joint Venture

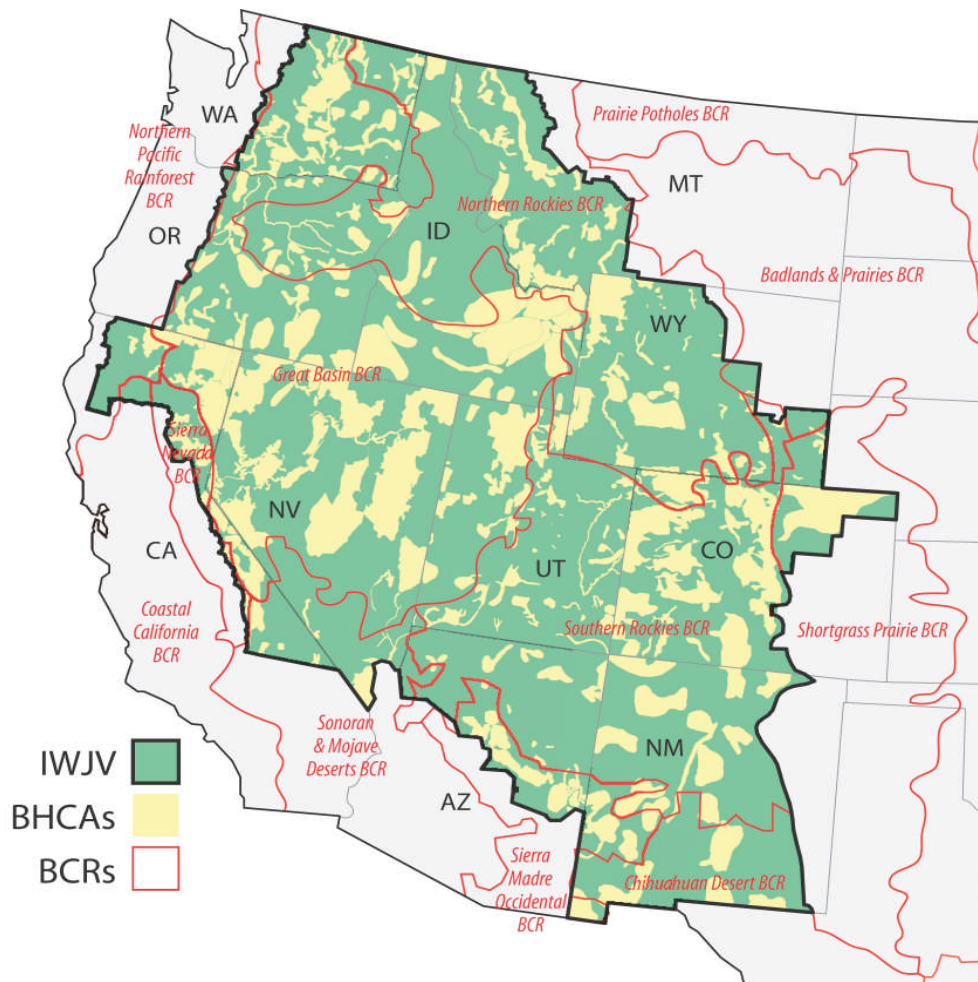
Habitat	AZ	CA	CO	ID	MT	NV	NM	OR	UT	WA	WY	IWJV
Aspen	A	A	A	A	A	A		A	A	A	A	A
Grassland	A	A	B	B	A		A	A	B	A	A	A
Dry Forest	B	B	A	A	A			A		A	A	A
Sagebrush Steppe	B	A	A	A	A	A		A	A	A	A	A
Riparian	A	A	A	A	A		A	A	A	A	A	A
Aquatic-Wetland	A	A	A	A	A	A	A	A	A	A	A	A
Agricultural		B	B	B	B	B	B	A	B	B	B	A
Mixed Conifer	B	B	B	B	B	B	B	B	B	B	A	B
Pinyon Juniper	B	B	A	B	B	B	B	A	B		B	B
Desert Scrub		B	B	A			B	B	B	B		B
Spruce Fir	B	B	B	B				B	B	B	B	B
Mountain Shrub		B	B	B		B	B	A	B	B	B	B
Pine Oak Woodland							A	A				B
Cedar Hemlock				B	B							B

BHCA Development and Application

One of the key components of the IWJV planning process is the development of Bird Habitat Conservation Areas (BHCAs). These areas are the “lynch pin” of our plans. These areas were identified by our experts in each state and selected by that group because of their inherent value for priority birds and priority habitats.

In affect, BHCAs are the best geographies where habitat conservation should take place in the next decade. Within the context of the adaptive planning disclaimer which follows, our conservation efforts are centered only within the boundaries of these specially recognized units. Of course, the adaptive planning approach makes it possible to modify and refine these designated areas as our conservation efforts move forward.

Figure 3 – Bird Conservation Regions (BCR) and Bird Habitat Conservation Areas (BHCA) of the IWJV



BHCAs are those geographies where bird habitat conservation projects may take place, where state partners believe the best opportunity exists for effective conservation activities. However, the BHCAs have no official status recognized by state and federal agencies that have management authority. In all of these units (private or public), BHCA designation simply notes where conservation activities should be focused. Such action would, of course, be predicated on concurrence, collaboration and cooperation with all landowners involved.

BHCAs, which number 383 across the Joint Venture, total more than 128 million acres or 28% of the Joint Venture. BHCAs average about 33,440 acres and range from the 2,552,944 acre Big Desert unit in Idaho to the 1,633 acre Black Lake/Alkali Lake unit in Wyoming.

Table 4 – Priority A and B Habitat acreage within BHCAs by State (acres)

Habitat Type	AZ	CA	CO	ID	MT	NV	NM	OR	UT	WA	WY	Total
Aspen Woodland	85,847	9,388	1,099,677	272,798	124,192	166,114	133,859	32,493	193,075	0	186,101	2,303,544
Grassland	242,708	309,847	3,110,671	1,361,157	1,543,395	683,251	3,766,388	813,708	453,345	2,034,546	285,204	14,604,220
Dry Forest	1,905,068	69,096	1,163,102	367,944	392,514	41,809	2,351,277	765,656	61,966	722,042	77,586	7,918,060
Sagebrush Steppe	476,919	2,521,258	3,328,638	7,137,225	1,022,760	12,717,626	469,340	3,860,153	2,467,887	1,217,184	4,052,267	39,271,257
Riparian	16,128	42,648	340,472	326,999	231,397	199,653	175,456	50,263	254,342	131,753	342,401	2,111,512
Aquatic-Wetland	14,578	554,561	342,601	372,744	170,710	1,124,324	205,100	540,992	1,948,904	200,863	558,983	6,034,360
Agricultural	8,974	828,014	3,219,867	3,206,712	597,070	263,296	184,839	396,365	960,860	2,134,386	513,512	12,313,895
Mixed Conifer	201,641	1,492,929	688,345	989,265	1,087,120	14,866	444,805	608,666	102,300	819,147	1,335,353	7,784,437
Pinyon Juniper	1,456,308	1,610,757	2,415,335	419,088	28,036	3,933,128	4,314,976	726,498	1,562,572	95,640	186,369	16,748,707
Desert Scrub	203,832	1,224,022	814,343	0	0	4,882,463	2,924,072	315,342	1,497,715	15,425	0	11,877,214
Spruce-Fir	61,762	98,658	950,891	458,921	201,112	0	41,955	13,929	37,700	97	313,547	2,178,572
Mountain Brush	95,306	160,544	1,353,257	751,861	278,378	264,580	252,332	92,075	311,106	272,690	28,647	3,860,776
Pine-Oak Woods	101,290	7,851	0	0	0	0	658,054	15,736	0	167,946	0	950,877
Cedar Hemlock	0	0	0	95,808	23,444	0	0	0	0	0	0	119,252
Total	4,870,361	8,929,573	18,827,199	15,760,522	5,700,128	24,291,110	15,922,453	8,231,876	9,851,772	7,811,719	7,879,970	128,076,681

BOLD indicates Priority A Habitats

The Adaptive Process

Two basic assumptions underlie the development of the IWJV adaptive process. First, planning is never complete . . . it is by its very nature, iterative. While the plan we have today is our best plan, we believe it will improve tomorrow. Secondly, change is our one constant. Environmental conditions change. Values for bird species and habitat change. Priorities change. Property values change. Technologies change.

With these assumptions, and as noted previously by our Management Board, Joint Venture "conservation planning and implementation is *an adaptive process*." We anticipate adaptive planning and implementation in the IWJV will involve three organizational components. First, the State Steering Committees will identify voids in planning information which requires improvement in the quality of information. For example, most partners are already aware GAP Analysis provides inadequate or incomplete information on the distribution and classification of riparian habitats. The SSC will detail the scope and magnitude of the problem within each state.

The SSC will then collaborate with the IWJV Technical Committee to develop efficient solutions to improve the planning information. The Technical Committee will also prioritize the most critical needs as they work to find solutions to gaps in planning data.

The respective BCR Coordinator will then be responsible to assist with building the necessary partnerships to fill these data gaps. Partnerships could be built in various ways and with a variety of partners. This would help the Joint Venture to better understand region-wide priorities for information development and how to get the most effort within administrative budget constraints.

Natural Resource Planning Base

Avian Species

The abundance and diversity of the avian resource of the Intermountain West Joint Venture is staggering. We estimate at least 500 species occur here and utilize habitats ranging from desert scrub to alpine, from grassland and sagebrush to forested types and from wetlands to aspen communities.

A list of continentally important species (Table 5) has been developed from those listed by plans of the major bird initiatives (see literature cited). These are listed because they (1) are at risk or are in serious decline, (2) the most significant population of the species resides in Intermountain West biomes, or (3) have socio-economic importance. All these species are included in the priority bird species list developed by the State Steering Committees as well.

Based on the criteria noted above a total of 88 species are considered continentally important in the Joint Venture. Of this total, 19 species are land birds identified as continentally important in the Southwest Avifaunal Biome according to the PIF North American Land Bird Conservation Plan. However, these species indicated by an asterisk (*) in Table 5, are not considered continentally important in the Intermountain West

Avifaunal Biome (which includes perhaps 90 percent of the Joint Venture area). Fourteen species are year-long residents while the remaining species are migratory.

A total of 276 priority bird species (Appendix 4) have been reported by partners in our 11-state, 495 million-acre area. Partners used the same criteria noted above for continentally important species to list regionally important species. With 88 species designated as continentally important, 188 species are considered regionally important within the Joint Venture.

Table 5 - IWJV Continentally Important Species

Species	Key Seasonal Use	Primary Habitat
Common Loon	M	Wetland
Eared Grebe	B,Y	Wetland
Western Grebe	B,M	Wetland
Clark's Grebe	B,M	Wetland
American White Pelican	B,M	Wetland
American Bittern	B,M	Wetland
Snowy Egret	B,M	Wetland, Riparian
White-faced Ibis	B,M	Wetland
Trumpeter Swan	B,M	Wetland
Mallard	B,M	Wetland
Northern Pintail	B,M	Wetland
Gadwall	B,M	Wetland
American Wigeon	B,M	Wetland
Cinnamon Teal	B,M	Wetland
Northern Shoveler	B,M	Wetland
Lesser Scaup	B,M	Wetland
Canvasback	B,M	Wetland
Redhead	B,M	Wetland
Ruddy Duck	B, M	Wetland
California Condor	Y	Various
Swainson's Hawk	B	Grassland, Agriculture
Gunnison's Sage-grouse	Y	Sagebrush-Steppe
Greater Sage-grouse	Y	Sagebrush-Steppe
Montezuma Quail *	Y	Grassland, Dry Forest
Scaled Quail *	Y	Grassland
Gambel's Quail *	Y	Desert Scrub
Yellow Rail	M	Wetland
Greater Sandhill Crane	B,M	Wetland, Grassland
Lesser Sandhill Crane	B,M	Wetland, Grassland
Snowy Plover	B	Wetland
Mountain Plover	B	Grassland
Black-necked Stilt	B	Wetland
American Avocet	B	Wetland
Spotted Sandpiper	B	Wetland
Whimbrel	M	Wetland

Species	Key Seasonal Use	Primary Habitat
Long-billed Curlew	B	Wetland, Grassland
Willet	B	Wetland
Western Sandpiper	M	Wetland
Least Sandpiper	M	Wetland
Long-billed Dowitcher	M	Wetland
Wilson's Phalarope	M	Wetland
Red-necked Phalarope	M	Wetland
Franklin's Gull	B,M	Wetland
Black Tern	B,M	Wetland
Band-tailed Pigeon *	B,M	Mixed Conifer, Pine-Oak
Flammulated Owl	B,M	Dry Forest, Pine-Oak
Elf Owl *	B,M,W	Pine-Oak Woodland
Mexican Spotted Owl	B,M,W	Dry Forest, Pine-Oak
White-throated Swift	B,M	Riparian, Various
Black Swift	B,M	Riparian, Various
Calliope Hummingbird	B,M	Riparian
Rufous Hummingbird	B,M	Riparian, Pine-Oak
Lewis's Woodpecker	B,M,W	Dry Forest, Riparian
White-headed Woodpecker	B,M,W	Dry Forest, Mixed Conifer
Williamson's Sapsucker	B,M,W	Spruce-fir
Red-naped Sapsucker	B,M,W	Aspen, Mixed Conifer
Olive-sided Flycatcher	B,M	Spruce-fir, Mixed Conifer
Willow Flycatcher	B,M	Riparian
Dusky Flycatcher	B,M	Dry Forest, Pine-Oak
Gray Flycatcher *	B,M	Pinyon-Juniper, Sagebrush
Bell's Vireo *	B	Riparian
Gray Vireo	B,M	Pinyon-Juniper, Pine-Oak
Pinyon Jay	Y	Pinyon-Juniper
Clark's Nutcracker	Y	Whitebark Pine
Verdin *	B,M,W	Mountain Brush
Cactus Wren *	B,M,W	Desert Scrub
Black-tailed Gnatcatcher *	Y	Desert Scrub
Mountain Bluebird	B,M,W	Aspen, Agricultural
Bendire's Thrasher	B,M,W	Grassland, Mtn. Brush
Curve-billed Thrasher *	Y	Desert Scrub
Crissal Thrasher *	Y	Desert Scrub
Sage Thrasher	B,M,W	Sagebrush-Steppe
Virginia's Warbler	B,M	Mtn Brush, Dry Forest
Lucy's Warbler *	B	Riparian
Grace's Warbler	B,M	Mixed Conifer
Red-faced Warbler *	B,M	Mixed Conifer, Riparian
Pyrrhuloxia *	Y	Mountain Brush
Canyon Towhee *	Y	Desert Scrub
Green-tailed Towhee	B,M	Sagebrush, Mtn. Brush
Black-throated Sparrow *	B,M	Desert Scrub
Sage Sparrow	B,M,W	Sagebrush-Steppe

Species	Key Seasonal Use	Primary Habitat
Brewer's Sparrow	B,M	Sagebrush-Steppe
McCown's Longspur	B,M	Grassland
Scott's Oriole *	B,M	Pine-Oak Woodland
Yellow-headed Blackbird *	B,M,W	Wetland
Black-capped Rosy Finch	Y	Alpine
Brown-capped Rosy Finch	Y	Alpine
Cassin's Finch	B,M,W	Dry Forest

*Only considered continentally important in PIF's Southwest Avifaunal Biome; B=breeding, M=migration, W=winter, Y=year-long

Avian Habitat

Avian habitats in the IWJV offer the most diverse habitat niches in North America. The wide array of habitat types provides nesting, migration, and wintering habitat for 500 bird species. See Table 6 for the total acreage of habitat types by state.

Nearly 495 million acres occur within the present bounds of the Joint Venture. The entire states of Nevada, Idaho, and Utah, which encompasses more than 180 million acres, are included. The smallest acreage of any IWJV state occurs in eastern Washington, still with more than 27 million acres.

Of the acreage which occurs within the bounds of the IWJV, 103 million acres or nearly 21 percent is classified as sagebrush steppe. This community is a critical habitat type in the JV because it is so extensive and perhaps as much as 80 percent of the North American sagebrush biome occurs within the IWJV boundary. It also hosts eight continentally important species (see Table 7), the highest number of any upland type in the JV. The sagebrush-steppe community has suffered significant degradation over the last half-century.

Aquatic and wetland habitats occupy more than 13.4 million acres and host an amazing 37 species of continental significance in the JV (42 percent of the species so classified). Clearly this is a critical habitat type in the JV. Also, an estimated 60 percent of wetlands have been drained or severely degraded in the JV.

Riparian habitats (5.3 million acres) are a critical type in the IWV in that they host 10 continentally important species, occupy only about one percent of the Joint Venture area, and are scattered across multiple ownerships and throughout diverse adjacent habitats.

Another 53.2 million acres is classified as grassland. Much of this is type occurs as bunchgrass types in the Great Basin, but an estimated 45 percent occurs in the shortgrass and desert grassland communities of New Mexico and northeastern Colorado. Seven continentally important species occur here and this too is a critical habitat for Joint Venture partners.

The dry forest type dominated by ponderosa pine communities is a critical habitat for JV partners because so much of its old-growth component has been removed. More than 26.1 million acres are distributed relatively evenly across the JV and the type hosts six continentally important species.

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Table 6 – Total Acreage of IWJV Habitat Types by State
(bold indicates Priority A habitat, italics indicates Priority B habitat in acres)

Habitat Type	AZ	CA	CO	ID	MT	NV	NM	OR	UT	WA	WY	Total
Aspen Woodland	102,135	30,928	3,308,183	864,322	385,631	338,838	410,449	38,065	1,866,935	4,808	681,108	8,031,402
Grassland	3,005,359	428,043	4,681,209	4,522,872	6,315,221	776,587	19,515,257	3,723,154	644,861	4,557,129	4,998,198	53,167,890
Dry Forest	3,500,040	1,622,370	2,578,081	2,249,948	1,772,985	51,063	5,147,433	5,231,614	500,583	3,038,504	450,435	26,143,056
Sagebrush Steppe	1,388,390	3,566,387	5,435,680	15,226,187	2,141,959	28,879,361	1,121,073	14,429,319	9,782,681	2,129,987	18,989,834	103,090,858
Riparian	59,454	65,967	1,039,426	894,738	825,543	333,578	466,423	146,963	477,436	148,813	1,078,781	5,337,122
Aquatic-Wetland	64,927	774,687	714,443	747,286	574,275	2,157,092	341,529	876,702	4,688,094	499,806	1,963,598	13,402,439
Agricultural	29,988	1,011,964	6,247,001	7,419,737	1,201,066	551,086	569,356	2,374,999	2,271,879	8,417,248	3,329,540	33,423,864
<i>Mixed Conifer</i>	355,626	7,259,970	1,670,006	6,895,717	5,990,863	102,387	1,104,125	3,928,120	775,060	4,681,541	5,042,842	37,806,257
<i>Pinyon Juniper</i>	9,332,680	2,676,723	5,218,697	630,534	169,946	9,003,105	13,340,082	2,864,466	10,572,916	559,573	1,368,383	55,737,105
<i>Desert Scrub</i>	5,802,145	5,724,316	2,067,736	624,523	0	17,033,870	5,220,932	815,346	8,442,910	21,861	2,559,649	48,313,288
<i>Spruce-Fir</i>	84,750	408,536	4,531,775	3,149,454	3,396,490	90,249	393,265	320,923	1,112,455	11,523	1,156,644	14,656,064
<i>Mountain Brush</i>	133,515	504,183	3,003,831	3,428,083	1,055,768	670,093	635,767	183,726	1,991,088	1,214,649	449,420	13,270,123
<i>Pine-Oak Woods</i>	166,738	649,352	0	0	0	0	922,192	38,781	0	316,649	0	2,093,712
<i>Cedar Hemlock</i>	0	0	0	1,094,018	357,609	0	0	0	0	0	0	1,451,627
Other Forest	497	2,174,410	1,804,135	5,446,502	4,563,270	201,111	101,568	2,123,522	686,321	364,852	372,249	17,838,437
Other Shrub	4,195,653	0	531,993	1,475	1,485	7,398,192	9,162,428	34,420	2,860,817	0	2,296,233	26,482,696
Other	2,420,747	1,011,075	3,704,120	2,104,312	1,609,120	3,227,206	2,640,480	5,781,676	7,638,305	1,214,576	2,701,886	34,053,503
Total	30,642,644	27,908,911	46,536,316	55,299,708	30,361,231	70,813,818	61,092,359	42,911,796	54,312,341	27,181,519	47,438,800	494,299,443

Table 7 - Relative Habitat Value for Continentally Important Species in the IWJV

Habitat Type	Continentally Important Species relying Prominently on Habitat Type
Aquatic-Wetland	37
Riparian	10
Sagebrush-Steppe	8
Grassland	7
Desert Scrub	7
Ponderosa Pine Forest	6
Pine-Oak	6
Mountain Brush	5
Mixed Conifer Forest	5
Pinyon Juniper	3
Aspen	2
Spruce Fir Forest	2
Agricultural	2
Alpine*	2
Various	1

* Not a priority habitat in IWJV

Land Ownership

Table 8 displays the total acreage of broad habitat types by state. More than any other Joint Venture, federal land ownership is of major significance in the IWJV. For example, the state of Nevada has more than 87 percent federal ownership, while Utah and Idaho have more than 65 percent each. This ownership occurs predominantly at high to mid-elevations while low elevation bottom-lands tend to be privately owned. One very significant implication of this ownership pattern is that much of the water in the Intermountain Region is also privately owned. Obviously water is a critical element of aquatic-wetland, riparian, and other habitat types as well. Thus, privately owned habitats are a vital focus of Joint Venture partnership activities for maintenance of avian populations.

Much of the Intermountain area is under federal ownership and more than half (54 percent) of the BHCA acreage occurs on federal lands (see Table 8). The remaining 46 percent reflects the predominance of non-federal ownership of lower elevation habitats including valley bottoms, river corridors, and shrub-steppe communities. These "bottom" types are the most productive of all Intermountain habitats, so again, private ownership of habitat is critical to avian population.

Who owns the habitat within the BHCAs? The Bureau of Land Management (BLM) controls one-third of the geography identified as those areas with the most important avian conservation opportunities in the next decade. The BLM owns the highest acreage of sagebrush, pinyon-juniper and desert scrub habitat designated in BHCAs. They also control the highest federal component of grassland types.

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Table 8 – Land Ownership Acreage within BHCAs (acres)

Habitat Type	USFS	BLM	USFWS	NPS	BOR	DOE/DOD	Misc. Fed	BIA	State	Private	Other	Total
Aspen Woodland	1,227,135	201,618	12,582	4,988	54	27	14,562	44,686	115,307	681,146	1,436	2,303,543
Grassland	1,136,773	2,745,892	182,749	58,644	35,375	181,311	36,415	684,731	1,520,418	8,001,827	20,085	14,604,220
Dry Forest	4,265,894	206,961	19,791	36,639	52	5,334	57,167	719,797	649,404	1,950,782	6,238	7,918,060
Sagebrush	3,301,619	23,045,154	866,144	216,780	88,491	520,511	67,006	816,708	1,888,609	8,314,933	145,301	39,271,255
Riparian	324,062	201,856	40,335	111,817	11,809	1,317	7,552	128,132	127,381	1,093,072	64,180	2,111,512
Aquatic-Wetland	378,362	824,961	293,415	224,440	28,845	103,940	622	97,404	256,656	1,562,882	2,262,831	6,034,360
Agricultural	74,271	196,894	51,893	2,188	30,084	16,249	1,314	277,306	298,205	11,345,132	20,360	12,313,896
Mixed Conifer	4,150,621	335,219	7,312	859,205	200	136	55,620	217,055	338,878	1,804,526	15,665	7,784,437
Pinyon Juniper	4,126,077	6,737,155	26,486	273,083	12,861	80,705	121,989	1,489,979	797,593	3,078,289	4,490	16,748,707
Desert Scrub	391,970	6,490,354	99,872	416,240	237,038	150,571	3,798	820,062	757,731	2,361,971	147,606	11,877,213
Spruce-Fir	1,586,987	72,519	1,907	231,005	30	2	18,830	35,151	72,583	158,004	1,554	2,178,572
Mountain Brush	1,018,630	801,206	25,851	46,322	2,335	2,655	42,284	80,122	286,106	1,552,213	3,051	3,860,776
Pine-Oak Woods	314,238	44,169	361	3,676	0	0	12,527	297,551	43,802	234,511	42	950,877
Cedar Hemlock	66,942	1,990	87	0	0	0	2	947	9,012	40,024	248	119,252
Total	22,352,035	41,905,016	1,628,785	2,482,638	447,174	1,062,758	439,688	5,709,631	7,161,685	42,179,312	2,693,078	128,076,681

Bold indicates Priority A habitats.

Another one-third of BHCA habitat is under private ownership, in spite of the large amount of federal ownership in the IWJV. Private landowners are the largest single owner of grassland, aquatic-wetland, and mountain brush habitats. They also are the second highest single ownership of the dry forest type and the sagebrush types.

Clearly habitat protection on predominantly non-federal ownership habitats calls for the application of conservation easements. Application of Farm Bill or other incentive programs is also a goal on predominantly non-federal ownership locations. Conversely, our management goals where habitats are predominantly federal ownership should center on restoration or other direct conservation efforts to increase habitat productivity.

The US Forest Service controls and manages 17 percent of IWJV BHCA acreage. They own the highest single ownership of aspen, dry forest, mixed conifer, spruce fir, pine-oak woodlands and cedar hemlock types.

Nonetheless, all ownerships are important where conservation opportunities to improve avian habitat exist. The actual conservation practice which is ultimately applied must be dictated by local knowledge and conditions, partnership opportunity and avian habitat priority.

V. IWJV Goals and Objectives

Joint Venture Administrative Goals and Objectives

Organization and Operation

1. Long-term Vision

At the Management Board level, continue to involve a wide diversity of visionary stakeholders who are focused on avian conservation plus political and financial support of Joint Venture programs. IWJV staff efforts will center on facilitation of partnerships that will conserve priority avian species in priority habitats and geographies.

2. Objectives

- a) Conduct semi-annual Management Board meetings to respond to policy level Joint Venture needs and to maintain a fresh perspective about avian habitat conservation.
- b) Continue to communicate with Congress on an annual basis to provide information of IWJV programs, accomplishments, and needs.
- c) IWJV Coordinator provides an Annual Report to the Management Board of the status of every aspect of Joint Venture activity.
- d) Maintain and improve the Bird Information and Resource Data (BIRD) report to track program and project accomplishments and make these data on a timely basis for partners.

Communications

1. Long-term Vision:

Continue existing communication devices including the *Intermountain Quarterly*, the IWJV web page, the annual one-page brochure, and project information sheets. Develop relationships with feature editors and outdoor writers to promote Joint Venture understanding at a broader level and foster cooperation between local and national partners. Emphasize cooperative conservation with private land owners.

2. Objectives:

- a) Work with State Steering committees to develop new, diverse contacts in each state annually to build the potential partnership base.
- b) Conduct at least two congressional tours annually to acquaint Members and/or staffers with significant partner-based projects.
- c) Conduct at least two media tours annually to generate greater interest with potential project partners.
- d) Prepare news releases related to project and partner accomplishment for every state on an annual basis.

Adaptive Planning and Performance Evaluation

1. Long-term Vision:

The goal for adaptive planning is to apply established monitoring and evaluation principles for Joint Venture programmatic, project tracking and applied science to

evaluate, learn, and improve upon our planning information in the next decade. Performance evaluation will be based on population and habitat linkages yet to be developed.

2. Objectives:

- a) Use the State Steering Committees, the Technical Committee, and the Bird Conservation Area Coordinators to develop and maintain the Joint Venture adaptive planning approach.
- b) The IWJV Management Board will conduct a programmatic evaluation. Initiate in 2005, and repeat every three years.
- c) The IWJV will conduct project tracking-monitoring of IWJV Cost-Share projects using the format approved by the Management Board. The final report will include suggested improvements to the Management Board in the spring of 2006. This should include measurement protocols and cycle times.
- d) The IWJV will ensure that the project tracking-monitoring process be made available to the IWJV Cost-Share project applicants. The IWJV will provide a description of how projects will be monitored and share those criteria with State Steering Committees asking for input and buy-in.
- e) The JV Coordinator will provide oversight to a validation process developed by the Technical Committee that confirms that the project is in fact completed as reported and functioning as described.
- f) The IWJV will promote continuation of the State Steering Committees and/or state all bird planning committees to further all bird implementation and help identify priority bird monitoring needs and pursue funding sources and partners for implementation of that monitoring. JV State Steering Committees should play an active role in development and delivery of state level Coordinated Bird Monitoring (CBM) programs.
- g) IWJV will continue to support the CBM concept and its effort to assess bird population trends range-wide and at project levels.
- h) IWJV will continue to contract to develop GIS layers which map the various bird initiative continental species habitat priorities at the BCR level within the IWJV.
- i) The Technical Committee will undertake the development of quantitative linkages between priority species population levels and JV state habitat objectives. Initial focus will be on the FWS Migratory Bird Program Focal Species List.

IWJV Habitat Goals and Objectives:

In August 2004, IWJV State Steering Committee (SSC) chairs from all states met with IWJV staff in Salt Lake City to develop draft goals and measurable habitat objectives for the Priority A and B habitats listed in each state plan. These directional goals and measurable habitat objectives were presented to each SSC for their approval and modification as necessary. The collective goals and objectives also provide the basis for overall IWJV habitat goals and objectives. From this acreage each SSC designated key geographies where they determined the best opportunities exist to build partnerships designed to meet coordinated bird habitat conservation goals for priority species and habitats.

The fourteen Priority A and B habitat types were rated on (1) relative partner concern, (2) relative significance of continentally important avian species, and (3) the relative human and biological threats. From this analysis the percentage of designated BHCA area which should have conservation practices applied during the planning period was determined. This process established measurable objectives for Joint Venture priority habitats to be applied within designated BHCAs.

The central theme which underlies the habitat objectives in all types is to make habitat *available* to accommodate the nesting, migration and wintering needs of priority bird species in the Joint Venture. With the advance of the IWJV adaptive process, these needs will be better defined and linked to desired population levels for priority birds.

IWJV measurable objectives were established which were focused and realistic, but which were also challenging in order to meet the needs of Joint Venture avian resources. The measurable objectives are noted in the priority habitat narratives which follow. The following narratives describe priority habitats, associated continental priority bird species, threats and opportunities, long-term and short term goals. They also identify directional goals, measurable objectives, and strategies to improve habitat conditions.

Strategies listed are broad recommendations which have the potential for application on Joint Venture habitats. Nevertheless, local project partnerships should strongly consider local best management practices. Listed strategies should be considered as broad guidance.

Priority A Habitats

A-1. GRASSLAND

More than 53 million acres of grassland occurs within the IWJV boundaries. New Mexico accounts for some 26 percent of the grassland types in the IWJV. Predominant types include bunchgrasses, short and mixed grass prairie, and grassland shrub types in the southwest. The annual precipitation in Intermountain grasslands ranges from ten to twenty inches annually. In the north precipitation falls during the winter and then again as summer thunder storms. In the south precipitation occurs during a mid-summer monsoon season and to a lesser degree as summer rainfall.

Fire is the probable factor that tips the balance from forest to grasslands. Fires, set by lightning and by humans, regularly swept the grassland prairies in earlier times. Thanks to their underground stems and buds, perennial grasses and herbs are not harmed by fires that destroy most shrubs and trees. Grasslands in undisturbed prairie are perennial; their extensive root systems help prevent soil erosion. The return of the season's above-ground growth to the topsoil returns minerals and provides humus to the soil. Grassland acreage within BHCAs includes more than 14.6 million acres.

Continental Priority Bird Species: Swainson's Hawk, Montezuma Quail, Scaled Quail, Mountain Plover, Bendire's Thrasher, McCown's Longspur.

Threats and Opportunities: Grassland habitats have declined dramatically from historic levels, primarily as a result of conversion to croplands. Remaining grasslands at lower elevations have been heavily impacted by invasive exotic

species such as cheatgrass (*Bromus tectorum*). Other threats include improper livestock grazing management and urbanization.

Long-term Vision for Habitat Condition: No net loss of grassland to type conversion or vegetative succession. Large blocks of grassland in a diverse mosaic of habitats across the planning area. Minimize encroachment by woody vegetation.

Short-term Directional Goals: Maintain large tracts of native grassland wherever they occur. Restore grassland complexes to expand the size of habitat blocks wherever feasible, particularly on highly erodible soils. Strive to develop the grassland community to conserve a healthy mix of perennial grasses and native species. Control invasion by noxious weeds. Reestablish fire regime, and manage grazing to maintain appropriate species composition and vertical and horizontal structure for nesting and cover for priority species.

Measurable Objectives: Protect/restore/enhance or maintain 8.1 million acres of the IWJV grassland acreage.

Strategies:

- Reestablish fire regimes to restore appropriate grassland succession.
- Apply mechanical treatments to create habitat diversity.
- Establish grazing systems with non-continuous use annually.

A-2. SAGEBRUSH STEPPE

Sagebrush steppe is the largest single community in the IWJV, where it occupies approximately 103 million acres of habitat. Nevada, with nearly 29 million acres accounts for 28 percent of the total sagebrush acreage in the Joint Venture. Also, Wyoming, Oregon, and Idaho each have more than 14 million acres of this community. About 39.2 million acres have been identified as important habitat within the BHCAs. The Joint Venture encompasses perhaps 80% of all sagebrush community distribution in the U.S. Approximately 45% of the sagebrush region is public land managed by the U.S. Bureau of Land Management and the U.S. Forest Service.

Sagebrush habitats are typified by long cool winters and hot dry summers. Annual precipitation ranges from 6 to 16 inches annually and occurs mostly in the late fall, winter, and early spring. Sagebrush communities are quite complex. An exhaustive compendium of the sagebrush biome is developed in the Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats (Connelly, J.W., S. T. Knick, M. A. Schroeder and S. J. Stiver, 2004).

Sagebrush dominated landscapes in the Intermountain West have undergone radical changes in recent years. Decadent shrub communities dominate much of the Great Basin today as a result of improper livestock grazing and intensive fire suppression. Reduced fire frequency has also resulted in woodland encroachment, especially at mesic locations. Many species of birds, particularly those associated with a herbaceous understory have suffered long-term declines.

Concurrently, the spread of invasive annual grasses throughout much of the region has often increased the frequency and intensity of disturbance from the historical regime. Increases in fire frequency and size of burns have caused large-scale conversion of

shrubland to expanses dominated by exotic annual grasses. Consequently, the quality, quantity, and the configuration of bird habitat within the sagebrush landscape is much different now than in the past.

Continental Priority Bird Species: Gunnison's Sage-grouse, Greater Sage-grouse, Gray Flycatcher, Sage Thrasher, Green-tailed Towhee, Sage Sparrow, Brewer's Sparrow.

Threats and Opportunities: Alteration of natural fire regimes due to fire suppression and low fuel loads caused by historic improper livestock grazing practices has reduced the quality of sagebrush habitat. In addition, invasion by exotic annual grasses and encroachment by conifers (pinyon-juniper) have contributed to the decrease in quantity and quality of sagebrush habitats in the West. In concept, fire management in sagebrush types is attractive because it is a natural disturbance within the ecosystem. However, cheatgrass and other invasive exotic species are a problem in the reintroduction of fire regimes, especially in dry locations. Exotics can alter fire regimes and community succession, and will sometimes preclude the re-establishment of complex sagebrush communities.

Habitat conversion to farming, reseeding of exotic perennial grasslands, and urbanization has also impacted the quantity of sagebrush steppe. More recently, the development of energy production sites threatens to further fragment sagebrush stands.

Long-term Vision for Habitat Condition: Manage for a diverse herbaceous understory, with a high representation of forb species. In addition, provide for diverse age-classes of sagebrush to maintain the long-term stability of this community. Maintain a variety of both horizontal and vertical structure in managed sagebrush stands. Reduce the predominance of invasive or encroaching species in localized areas.

Short-term Directional Goals: Restore the acreage of effective habitat for all Sage Grouse subspecies within its historic range. Over time, maintain at least 50% of existing sagebrush in stands 30 year-old age class or older. Restore sagebrush communities within the historic range of Greater Sage-grouse. Minimize the continued fragmentation of the largest existing blocks of sagebrush habitat.

Measurable Objectives: Protect/restore/enhance 21 million acres of sagebrush steppe in the Joint Venture. Maintain sagebrush communities with diverse habitat structure, especially mature stands of sagebrush, throughout the known range of priority species in the BHCAs.

Strategies:

- Prescribed fire in which low-to-moderate intensity burns may be applied which create mosaic stands with multiple seral aspects and where domination by exotic species is not an issue.
- Suppress wildfire on deteriorated sites susceptible to domination by exotic species.

- Employ prescribed fire or mechanical treatment to halt woodland encroachment in sagebrush communities where domination by exotics is determined not to be an issue.
- Manage grazing according to non-continuous, rotational principles
- Explore treatments which replace exotic annual grass species with perennial grasses and forbs.

A-3. DRY FOREST

This type is dominated by Ponderosa pine and Douglas fir communities. Ponderosa pine and Douglas fir types commonly occur throughout the Joint Venture except in the Great Basin, the deserts of the southwest, and in higher elevation forested communities. Formerly open “park-like” stands dominated by large trees are now crowded with smaller, less fire-resistant trees, including shade-tolerant true firs, with significant impacts on bird habitat values.

This forest community totals 26.1 million acres within the IWJV and of that total 7.9 million acres occur within Joint Venture designated BHCAs. Oregon and New Mexico total the highest dry forest habitat of the JV states with about 20 percent (each) of the total acreage in the Joint Venture. The U.S. Forest Service, along with a few private landowners, will be a major partner in conservation of this habitat throughout the Joint Venture.

Continental Priority Bird Species: Montezuma Quail, Flammulated Owl, Mexican Spotted Owl, Lewis’s Woodpecker, White-headed Woodpecker, Dusky Flycatcher, Virginia’s Warbler, Cassin’s finch.

Threats and Opportunities: The most significant threat to mature dry forest habitats is the development of dense understory regeneration in areas where fire has been suppressed. This has made these stands much more susceptible to hotter, stand-replacing fires. High rates of harvest of mature trees as well as conversion of stands to agricultural and residential uses have also contributed to the loss of suitable habitat for priority bird species in this type.

Long-term Vision for Habitat Condition: Extend age-class rotations to provide for the long-term maintenance of 25% of dry forest habitats as old growth (old growth stands should meet or exceed values for old growth elements, namely a minimum of 215 year-old trees with a density of at least 17 trees/acre, each with a 21 inch dbh; also 6 snags/acre with a minimum 9 inch dbh should be present).

Short-term Directional Goals: Restore the role of fire to reduce understory encroachment. Retain all trees with old growth elements. Manage for single and double-storied stands with open conditions (up to 50 percent canopy cover) in dry forests of all age classes. Restore historic structural characteristics with no elimination of large trees or snags.

Measurable Objectives: Manage 7.1 million acres of dry forest habitat in the Joint Venture to center on extended timber management rotations which will restore old growth characteristics and provide for long-term maintenance of these stands.

Strategies:

- Extend timber management rotations to provide for old growth needs.
- Use fire, thinning and other management strategies to enhance old growth habitat values in degraded stands where feasible and appropriate.

A-4. ASPEN

Aspen is a relatively short-lived precursor to coniferous forest types. It is better defined as a transition zone between the arid grasslands and sagebrush steppe types and the wetter, colder, mixed conifer and dry forest types. Over long periods of time aspen is maintained by fire or other disturbance. The characteristic uniform height of trees in aspen groves (clones) reflects the common age of the individuals that likely developed from suckers after a disturbance. This habitat type is likely the most immediately threatened of all IWJV types through plant succession.

While 8 million acres occur within the Joint Venture, aspen is a habitat type which is poorly defined in the GAP Analysis (although the SW ReGAP improved our data base significantly in the Four-Corner states and Nevada). Significant acreages may be included in Dry Forest and Mixed Conifer types which have succeeded Aspen types. Our mapping shows more than 65 percent of this type occurs in Colorado and Utah. A total of 2.3 million acres are included in the Joint Venture BHCA inventory.

Continental Priority Bird Species: Red-naped Sapsucker, Mountain Bluebird.

Threats and Opportunities: Individual aspen clones are highly threatened by a lack of regeneration, generally from fire suppression. Often, lack of regeneration may be caused by fire suppression combined with intense browsing by livestock and/or big game. In many places encroachment by conifers has also severely reduced acreage of this successional type.

Long-term Vision for Habitat Condition: Regenerate entire clones in aspen/grass, aspen/forb and aspen/shrub complexes. Provide for minimum blocks of 40 acres within conifer complexes. Maintain 20% of stands in overmature condition, while working to achieve equal distribution of age classes.

Short-term Directional Goals: Increase the acreage of aspen wherever it currently occurs. Use fire and logging in both aspen and coniferous types where aspen is present, to regenerate decadent stands.

Measurable Objectives: Restore 1.5 million acres of the aspen type in the Joint Venture.

Strategies:

- Treat entire clones of aspen (as opposed to partial clones) where management is required.
- Use prescribed fire or mechanical treatment to regenerate aspen clones, either in decadent aspen types or where aspen is a major component of coniferous forests.
- Protect aspen sprouts in the short-term from intensive ungulate browsing.

A-5. RIPARIAN

Riparian habitats are those plant communities which generally support woody vegetation found along rivers, creeks, streams and other water bodies. This habitat can range from a dense thicket of shrubs to a closed canopy of large mature trees covered by vines. Riparian habitat occurs from the highest to lowest elevations, thus it provides riverbank protection, erosion control and improved water quality. Riparian systems are one of our most important and most impacted habitats.

The total acreage of riparian habitat, which is poorly represented by GAP Analysis, but improved by SW ReGAP, was estimated at 5.3 million acres. Within the BHCAs, about 2.1 million acres is mapped.

Continental Priority Bird Species: White-throated Swift, Black Swift, Calliope Hummingbird, Rufous Hummingbird, Lewis's Woodpecker, Willow Flycatcher, Bell's Vireo, Lucy's Warbler.

Threats and Opportunities: Riparian habitat conservation opportunity often involves areas where woodland, shrubland and herbaceous/wetland components are present in various combinations. Losses of riparian habitats of all types have been estimated at approximately 75 percent and are particularly pronounced at lower elevations where these habitats have been more heavily impacted by agricultural and urban development. The extent of mature stands of cottonwoods has decreased over time as natural flows have been altered along rivers throughout the Joint Venture, which has reduced regeneration and replacement. In some areas, cottonwoods have been harvested for pulp or cleared for pasture and residential development. Remaining riparian habitats have been invaded by non-native plants in many areas and degradation related to livestock grazing is common.

Long-term Vision for Habitat Condition: Protect and enhance existing stands, with a goal of no net loss of riparian forest, woodland, or shrub type. Maintain and, where possible, expand existing large blocks of riparian woodland. Re-establish riparian woodlands on appropriate floodplain sites.

Short-term Directional Goals: Maintain or restore the dynamic nature of floodplains to accommodate all successional stages of riparian types. Manage existing complexes to protect mature trees and snags, and to recruit replacements for both. Manage grazing intensity to allow a diverse habitat structure to develop, including a shrub understory. Stream banks should support dense growth of shrubs, forbs and grasses.

Measurable Objectives: Protect, restore and/or enhance 1 million acres of riparian habitat in the Joint Venture.

Strategies:

- Employ non-continuous grazing programs to increase structural diversity for birds.
- Employ extended timber management rotations to insure all age-class representation in riparian corridors.

- Replicate flood regimes in habitats that have been altered through man's activities.

A-6. AQUATIC-WETLANDS

In the IWJV we reference aquatic habitats to include ponds, lakes, springs, and various types of wetlands. Some of these habitats are shallow and others deep, some are cold-water and others warm-water, some are freshwater and others saline, and all have varying degrees of water level stability.

Wetlands generally are shallow, low-lying areas (near the water table) with fluctuating water levels. The soils are wet at some point in time most years and they support an abundance of aquatic plants. Wetlands are valuable habitats that support a rich biodiversity of waterfowl, shorebirds, waterbirds, songbirds, and other wildlife. They act as natural sponges, absorbing rain water and preventing floods. They can vary in size from a small wet meadow to thousands of acres.

More than 13.4 million acres of aquatic and wetland habitat occur in the Joint Venture. More than 6.0 million acres have been included in the BHCA inventory. The greatest amount of aquatic-wetland habitat in the Joint Venture occurs in our driest states: Utah with 35 percent, and Nevada with 16 percent of the total acreage.

Wetlands continue to be a primary conservation emphasis for IWJV partners. All the primary wetland complexes considered to be of conservation priority were included in the BHCAs. But, because the National Wetlands Inventory is not completed for each state, we had to rely on the Montana Gap layers for acreage calculations. While open water habitats are well represented (and probably overstate wetland acreages), other wetland types are not. Therefore the acreage represented by these merged types is thought to be somewhat accurate. Project proponents will rely on local data to better define wetland acreage during the development of conservation projects.

Continental Priority Bird Species: Common Loon, Eared Grebe, Western Grebe, Clark's Grebe, Snowy Egret, American White Pelican, American Bittern, Trumpeter Swan, Mallard, Northern Pintail, Gadwall, American Wigeon, Cinnamon Teal, Northern Shoveler, Lesser Scaup, Canvasback, Redhead, Ruddy Duck, Yellow Rail, Greater Sandhill Crane, Lesser Sandhill Crane, Snowy Plover, Mountain Plover, Black-necked Stilt, American Avocet, Spotted Sandpiper, Whimbrel, Long-billed Curlew, Willet, Long-billed Dowitcher, Western Sandpiper, Least Sandpiper, Wilson's Phalarope, Red-necked Phalarope, Franklin's Gull, Black Tern, Yellow-headed Blackbird.

Threats and Opportunities: Drainage, conversion through tilling and filling has resulted in a continual loss of small wetland acres across the Joint Venture. These threats are compounded periodically by drought conditions. Lakeshores throughout the Joint Venture are severely threatened by development. Invasive aquatic and semi-aquatic plants (e.g. Purple loosestrife) are a growing concern in many marsh areas. Water level management is a primary concern on reservoirs and managed wetland systems. Adequate quantity and timing of water delivery is a key issue.

Long-term Vision for Habitat Condition: Increase high quality wetland habitat in the long-term. Maintain, restore and enhance wetland basins to increase the

capacity to provide resilience to drought cycles and provide a diversity of wetland types. Emphasize projects that include associated priority upland habitat types (grassland, shrub steppe, and riparian).

Short-term Directional Goals: Wetlands should be managed to preserve or mimic natural water level fluctuations, and to encourage diverse natural plant communities, including submerged, emergent and riparian vegetation. Wetland complexes should be protected and managed with adjoining uplands to provide nesting cover for waterfowl, shorebirds and waterbirds. Where known nesting colonies of priority birds exist, wetlands should be managed to provide both security and appropriate feeding habitats for the species in question.

Measurable Objectives: Protect, restore and/or enhance 1.9 million acres of wetlands in the Joint Venture.

Strategies:

- Protect wetlands through acquisition or easement from willing partners.
- Restore and enhance wetlands to mimic natural wetland systems.
- Secure adequate water supplies.
- Aggressively control invasive species to maintain productivity of marsh habitats.

A-7. AGRICULTURAL

Potatoes, hay and grains, dairy and poultry, livestock, fruits, and nuts, are major crops produced by Intermountain West farmers. We estimate more than 115,000 farmers make their living here. Some 33.4 million acres are held by private landowners and farmed each year. Of those acres, about 12.3 million acres are included in the BHCAs.

Monotypic agricultural crops are generally of little value to birds. However, irrigated pasture and rangelands do have significant values for avian species. Many agricultural environments can often serve as a buffer for important grassland, sagebrush steppe, wetland, and riparian habitats, where profuse development is threatening the ecological integrity of landscapes. The protection and restoration of agricultural lands may be our best approach to meeting the needs of wetland and grassland birds.

Continental Priority Bird Species: Swainson's Hawk, Greater Sandhill Crane, Lesser Sandhill Crane, Long-billed Curlew.

Threats and Opportunities: Many agricultural practices such as conversion of native grassland to cropland, pesticide and herbicide applications, harvest during the nesting season, and the maintenance of extensive monocultures can have negative impacts on bird habitat. But agricultural lands often offer opportunities for habitat restoration; innovative farming practices, planting of cover and food crops, and important feeding and staging areas for a variety of avian species. These values are also threatened in much of the West by population growth and explosive residential and industrial development.

Long-term Vision for Habitat Condition: Work with the agricultural community to develop best management practices to restore bird nesting and foraging values. In any case, work with the agricultural community to maintain agriculture on the landscape to preserve future opportunities. Use appropriate grazing regimes in pasturelands that provide residual cover for ground-nesting birds.

Short-term Goals: Improve avian habitat conditions wherever possible through implementation of appropriate Farm Bill programs applied on the maximum possible acreage, and discourage the continued conversion of agricultural land to residential and industrial uses. Through Farm Bill Programs and other incentives, encourage the conversion of agricultural habitat to native grassland, wetland and shrub steppe habitat where possible.

Measurable Objectives: Protect, restore, and/or enhance 4.3 million acres of agricultural lands in the Joint Venture to improve their value to priority bird species.

Strategies:

- Use Farm Bill programs and other incentives to protect, restore and enhance bird habitat with emphasis on native grassland, shrub land, riparian and wetland habitats.
- Work with federal program managers to improve incentive programs to better fit the needs of farmers in the improvement of bird habitat under their ownership.

Priority B Habitats

B-1. PINE-OAK WOODLANDS

Oak habitats which include both oak woodlands and mixed oak and conifer woodlands occur in all Joint Venture states except Nevada and Wyoming. Mean annual precipitation for this vegetation type is 22 inches per year and elevational range of the type is from 5000 to 7000 feet.

The total Pine-Oak Woodland habitat in the Joint Venture is about 2.1 million acres, with 1 million acres mapped in the BHCAs.

Continental Priority Bird Species: Montezuma quail, Band-tailed Pigeon, Flammulated Owl, Elf Owl, Mexican Spotted Owl, Rufous Hummingbird, Dusky Flycatcher, Gray Vireo, Scott's Oriole, Grace's Warbler.

Threats and Opportunities: Altered fire regimes are a significant threat in this type. Fires can be expected to encourage oak and juniper growth and enhance germination of such shrubs as manzanita and deerbrush. Concurrent long-term, season-long grazing practices have generated less desirable shrub and grass species. The other major threat (in Oregon) is by rural residential development.

Long-term Vision for Habitat Condition: Maintain the natural functions of the Pine Oak Woodland. Improve inherent productivity of this habitat for birds.

Short-term Directional Goals: Enter into partnerships which will favor reestablishment of natural fire regimes.

Measurable Objectives: Protect, restore and/or enhance 665,700 acres of these woodlands in the Joint Venture.

Strategies:

- Reintroduce prescribed fire to favor oak and associated shrub species.
- Encourage non-continuous grazing practices to reduce the potential for invasive species.

- Protect this type through Conservation easements where opportunities arise.

B-2. CEDAR/HEMLOCK FOREST

This type includes 1,451,627 acres of habitat in Idaho and Montana. Only three BHCAs are included, one in Idaho and two in Montana, and these have a combined acreage of 119,252 acres. These are valuable communities for the priority birds listed below.

Continental Priority Bird Species: Red-naped Sapsucker, Olive-sided Flycatcher.

Threats and Opportunities: The current amount of old-growth cedar-hemlock is much reduced compared to historic levels, primarily due to logging. Fragmentation of stands continues to be a threat, particularly in valley bottom habitats. Many of the bird species that are near obligates for this habitat require large snags and downed material, which will not be recruited into mature stands without protection and guided management.

Long-term Vision for Habitat Condition: Manage stands for old-growth recruitment. The vision is for mature to old growth stands with a relatively closed canopy, small patches of dense undergrowth (particularly paper birch), large diameter (minimum 65 cm), tall (minimum of 25m) snags, large trees, and much downed woody material.

Short-term Goals: Retain all existing old-growth stands and double the acreage of this habitat by targeting stands in other cover types that were historically in cedar-hemlock, especially in areas adjacent to existing old-growth stands.

Measurable Objectives: Management should occur on 76,000 acres of the IWJV acreage, with a goal of 35% of the habitat in old growth condition.

Strategies:

- Work with the USFS to develop management plans in appropriate BHCAs to manage for sustainable old growth values for birds.

B-3. MIXED CONIFER

Mixed-conifer forests generally occur at elevations from about 7000 feet to 10,000 feet where annual precipitation is from 25 to 35 inches annually. The mixed-conifer forest is comparatively lush and diverse. Depending on location, Douglas-fir, white fir, limber pine (in the north), blue spruce, and less commonly southwestern white pine form mixed stands in this community, with ponderosa pine joining the mix on warmer slopes. Aspen, along with Gambel oak, is prominent in these forests following disturbances.

Under natural conditions the relatively open nature of the mixed-conifer forest coupled with the rich, moist soil found at these elevations allows for the development of a diverse understory of forbs, grasses, and shrubs. Understory conditions vary widely, from dry, open-canopy forests with grassy undergrowth on open slopes and ridges to moist, closed-canopied stands dominated by numerous herbaceous plants in the canyons and ravines.

Until the late 1800s when grazing and fire suppression policies vastly reduced widespread fires, fire regimes included frequent surface fires to infrequent, patchy

crown fires with return intervals of about 10 years. In the absence of fire these forests have undergone major changes in structure and species composition throughout the American west.

About 37.8 million acres of mixed conifer is found in the IWJV. More than 6 million acres of this type occurs in each of California, Idaho and Montana. Of the total area, about 7.9 million acres have been mapped in the BHCAs. A predominance of this acreage occurs on Forest Service lands.

Continental Priority Bird Species: Band-tailed Pigeon, White-headed Woodpecker, Red-naped Sapsucker, Olive-sided Flycatcher, Grace's Warbler, Red-faced Warbler.

Threats and Opportunities: Logging and stand-replacing fires have been the primary causes of the reduction in old-growth acreage in this type, which is the seral stage preferred by our priority bird species. Fragmentation is an issue as well, although U.S. Forest Service guidelines do call for distributing old-growth stands throughout all 4th-order watersheds where feasible. Insects and disease, while potentially considered as threats if they reach epidemic proportions, actually create the structural components preferred by priority bird species (e.g. spatial and structural heterogeneity, snags).

Long-term Vision for Habitat Condition: Manage for no net loss of old-growth stands (a minimum of 170 years old), and maintain mature and over mature stands for recruitment as old growth, toward a goal of 20% of this habitat managed for old-growth conditions.

Short-term Goals: Most of the IWJV's managed forest landscape is characterized by a diversity of seral stages of this habitat. The primary need is to protect and expand the number of stands with old-growth characteristics [specifically, a minimum of 16 inches dbh trees, broken-topped live trees and snags (at least 8/ac, with at least 20% at a minimum of 20 inches dbh), downed woody material (about 40 logs/ac), and spatial heterogeneity including small openings with dense regeneration]. Old-growth stands should be at least 50 to 100 acres in size, embedded in larger blocks of 350 to 1000 acres of mature or partially-cut forest.

Measurable Objectives: Restore, protect, and/or enhance 2.4 million acres of mixed forest type in the Joint Venture.

Strategies:

- Work to develop a management plan with federal and private landowners to establish extended forest management rotations that will permit the old-growth characteristics noted above to become established.

B-4. PINYON-JUNIPER AND LIMBER PINE

Pinyon-Juniper habitat typically is open woodland of low, round-crowned, bushy trees that are needle-leaved, evergreen, and with a height of 20 to 40 feet. Crowns of individual trees rarely touch and canopy cover generally is less than 50 percent. These open groves of overstory trees often have a dense to open layer of shrubs reaching heights of 5 feet. Low herbaceous plants may also be present in this habitat. Stand structure varies depending on site quality and elevation.

After disturbance, Pinyon Juniper habitats slowly proceed through the successional sequence. Pinyon-Juniper is a climax vegetation type. As such, most stands become multiple-aged through time. Pinyon-Juniper habitats are expanding into savannah, grassland, and shrub steppe areas in the intermountain west. Tree densities in Pinyon-Juniper habitats have increased in the past 100 years at the expense of the formerly more abundant shrub and herbaceous understory. These changes in successional patterns result from complex interactions between unrestricted livestock grazing (until about 1935), a warmer and wetter climatic period (1880-1940), and suppression of natural fire.

In the IWJV, some 55.7 million acres of Pinyon-Juniper can be found. Arizona, Nevada, New Mexico and Utah both contain more than 9 million acres each. The BHCA mapping acreage is 16.7 million acres.

Continental Priority Bird Species: Gray Vireo, Pinyon Jay, Clark's nutcracker.

Threats and Opportunities: Fire suppression has led to an abundance of old-growth in this type at the expense of understory vegetation. Improper grazing practices and invasion of exotics can also have impacts on the quality of this habitat. Oil and gas exploration has caused some fragmentation of this habitat, and is a continuing threat.

Long-term Vision for Habitat Condition: Healthy stands of limber pine and juniper should include mature and decadent trees, snags, and regeneration. Crowns should be vigorous and seed/fruit-bearing. Understory should be a variety native grasses and forbs.

Short-term Goals: Maintain the current distribution of pinyon juniper and limber pine woodlands. Move toward a better age-class distribution to develop healthier stands in the long-term

Measurable Objectives: Restore an array of age-classes in 5.3 million acres of mixed forest type in the Joint Venture.

Strategies:

- Employ prescribed fire and mechanical treatment to alter age class distribution in this type.
- In limber pine types, non-continuous grazing systems should be used to improve the grass-forb component.

B-5. MOUNTAIN BRUSH

Mountain brush is a diverse IWJV type and is found on almost all east-, west-, and south-facing exposures at elevations of 4000 to 7500 feet, and on north-facing exposures at lower elevations. Species of oak, and true mountain mahogany, curl-leaf mahogany, bitterbrush, serviceberry, chokecherry and maple are the dominant plants. In the southwest, Chihuahuan desert scrub communities are dominant.

Soils are generally dry, shallow on the rocky slopes or deeper on flat areas and in basins. Slopes are moderate to steep. The climate in these types is subject to relatively cold, snowy winters. Summers are characterized by warm temperatures and

scattered but intense thunderstorms. Annual precipitation is between 15-21 inches, and is generally spread throughout the year. Some mountain brush species are fire tolerant such as the oaks and true mountain mahogany, which sprout after fire.

Within the IWJV, some 13.3 million acres of mountain brush can be found. Of that total, 3.9 million acres occur within the BHCAs.

Continental Priority Bird Species: Verdin, Bendire's Thrasher, Virginia's Warbler, Pyrrhuloxia.

Threats and Opportunities: Fire suppression generally reduces habitat quality for wildlife species, in that dominance of old, uneven-age classes lead to catastrophic fire events.

Long-term Vision for Habitat Condition: This type should include a diversity of age-classes to maintain long-term stability of the type.

Short-term Goals: Reduce predominance of decadent stands to achieve a better balance in age-class distribution.

Measurable Objectives: Restore 1.3 million acres of this habitat type in the Joint Venture.

Strategies:

- Depending on the nature of mountain brush species, use prescriptive fire and mechanical treatments to reduce decadent stands.

B-6. SPRUCE FIR

Ranging from elevations of 7,500 feet to about 11,500 feet the spruce-fir type approaches alpine conditions in the IWJV. Annual precipitation can be relatively high for this semi-arid region, from 30 to 35 inches a year. Much of this falls as snow during the cooler months, but a significant portion falls as heavy rains during the summer thunderstorm season. Where lingering snow packs keep the forest floor moist for much of the year, sub-alpine conifer forests dominated by spruce and sub-alpine fir may occur commonly as small, isolated mountaintop stands. Spruce-fir forests grade into whitebark pine types at higher elevations, and into mixed-conifer forests at lower elevations. Significant stands of aspen occur in sub-alpine forests, particularly after fires.

Some spruce-fir stands experience mixed fire regimes, with patchy crown fires occurring about every several hundred years, and more frequent surface fires occurring every 15 to 30 years. Overall, sub-alpine forests have probably been less altered by modern fire suppression than have the lower elevation forests. Livestock grazing has also had less impact, due to the natural lack of herbage in these forests.

Approximately 14.7 million acres of this type occur within the Joint Venture, with 76 percent located in Colorado, Idaho, and Montana. Most of this type is managed by the US Forest Service. Some 2.2 million acres occur within BHCAs.

Continental Priority Bird Species: Williamson's Sapsucker, Olive-sided Flycatcher.

Threats and Opportunities: Windthrow in this community is exacerbated where partial cutting of spruce-fir forest exposes remaining old trees to new wind stresses. Logging operations also contribute to outbreaks of spruce beetles, since these insects prefer downed trees. In areas where spruce-fir stands have been clear-cut, regeneration has been a problem. Sites are generally of low productivity in Spruce fir.

Long-term Vision for Habitat Condition: Maintain the integrity of the community with an emphasis on sustainable forestry and old-growth within the capability of this habitat.

Short-term Goals: Timber harvest should mimic natural systems.

Measurable Objectives: Manage 292,000 acres of this type for extended rotations in the Joint Venture.

Strategies:

- Work with U.S. Forest Service to develop management prescriptions which allow for diverse age classes with old-growth well represented.

B-7. DESERT SCRUB

This is a major type in the Joint Venture with more than 48 million acres of habitat and nearly 11.9 million acres which occur in the BHCAs, however the partners appear to have limited interest in pursuing conservation objectives.

Continental Priority Bird Species: Gambel's Quail, Cactus Wren, Black-tailed Gnatcatcher, Curve-billed Thrasher, Crissal Thrasher, Canyon Towhee, Black-throated Sparrow.

Threats and Opportunities: Livestock grazing where continuous and long season use has a real potential to alter the integrity of this community. Development of water catchments for priority bird species is a significant opportunity here.

Long-term Vision for Habitat Condition: Maintain the integrity of the community with an emphasis on restoring the grass-forb component of this community.

Short-term Goals: Employ non-continuous grazing systems which allow for rest periods on an annual basis. Establish new water sources in this community

Measurable Objectives: Manage 160,000 acres of this type which establish appropriate livestock grazing regimes.

Strategies:

- Work with management agencies to develop management prescriptions which allow for non-continuous livestock grazing.
- Engage in partnerships to develop new water sources.

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Appendix 1 – Gap and SW ReGap Habitat Classifications by Arizona Used to Develop IWJV Habitat Types

ID	Code	Description	AZ		IWJV	
26	S028	Rocky Mtn Subalpine Dry-Mesic Spruce-Fir Forest & Woodland	1001	Spruce-Fir	4270	Spruce-Fir
28	S030	Rocky Mountain Subalpine Mesic-Fir Forest and Woodland	1001	Spruce-Fir	4270	Spruce-Fir
30	S032	Rocky Mtn Montane Dry-Mesic Mixed Conifer Forest & Woodland	1002	Mixed Conifer	4255	Mid-Elevation Mixed Conifer
32	S034	Rocky Mtn Montane Mesic Mixed Conifer Forest & Woodland	1002	Mixed Conifer	4255	Mid-Elevation Mixed Conifer
22	S023	Rocky Mountain Aspen Forest and Woodland	1003	Aspen	4350	Aspen
34	S036	Rocky Mountain Ponderosa Pine Woodland	1004	Pine	4200	Dry Ponderosa/Fir Forest
35	S038	Southern Rocky Mountain Pinyon-Juniper Woodland	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
36	S039	Colorado Plateau Pinyon-Juniper Woodland	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
37	S040	Great Basin Pinyon-Juniper Woodland	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
46	S052	Colorado Plateau Pinyon-Juniper Shrubland	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
64	S075	Inter-Mountain Basins Juniper Savanna	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
92	S112	Madrean Pinyon-Juniper Woodland	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
95	S115	Madrean Juniper Savanna	1005	Pinyon-Juniper	4222	Juniper/Pine Woodlands
33	S035	Madrean Pine-Oak Forest and Woodland	1006	Pine-Oak	4210	Pine-Oak Woodlands
41	S046	Rocky Mtn Gambel Oak-Mixed Montane Shrubland	1006	Pine-Oak	3250	Mountain Shrubland
45	S051	Madrean Encinal	1006	Pine-Oak	4210	Pine-Oak Woodlands
91	S111	Madrean Upper Montane Conifer-Oak Forest and Woodland	1006	Pine-Oak	4210	Pine-Oak Woodland
54	S060	Mojave Mid-Elevation Mixed Desert Scrub	1007	Mohave Desert-Scrub	3300	Other Shrub
57	S063	Sonoran Paloverde-Mixed Cacti Desert Scrub	1008	Sonoran Desert-Scrub	3300	Other Shrub
60	S069	Sonoran-Mojave Creosotebush-White Bursage Desert Scrub	1008	Sonoran Desert-Scrub	3300	Other Shrub
61	S070	Sonoran-Mojave Mixed Salt Desert Scrub	1008	Sonoran Desert-Scrub	3310	Greasewood/Saltbush
105	S129	Sonoran Mid-Elevation Desert Scrub	1008	Sonoran Desert-Scrub	3300	Other Shrub
52	S058	Apacherian-Chihuahuan Mesquite Upland Scrub	1009	Chihuahuan Desert-Scrub	3300	Other Shrub
55	S061	Chihuahuan Succulent Desert Scrub	1009	Chihuahuan Desert-Scrub	3300	Other Shrub
56	S062	Chihuahuan Creosotebush, Mixed Desert and Thorn Scrub	1009	Chihuahuan Desert-Scrub	3300	Other Shrub
59	S068	Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub	1009	Chihuahuan Desert-Scrub	3300	Other Shrub
65	S077	Apacherian-Chihuahuan Piedmont Semi-Desert Grassland/Steppe	1009	Chihuahuan Desert-Scrub	3000	Grassland
96	S116	Chihuahuan Mixed Salt Desert Scrub	1009	Chihuahuan Desert-Scrub	3310	Greasewood/Saltbush
13	S014	Inter-Mountain Basins Wash	1010	Cold Desert-Scrub	3310	Greasewood/Saltbush
40	S045	Inter-Mountain Basins Mat Saltbush Shrubland	1010	Cold Desert-Scrub	3310	Greasewood/Saltbush
48	S054	Inter-Mountain Basins Big Sagebrush Shrubland	1010	Cold Desert-Scrub	3400	Sagebrush Steppe
50	S056	Colorado Plateau Mixed Low Sagebrush Shrubland	1010	Cold Desert-Scrub	3400	Sagebrush Steppe
53	S059	Colorado Plateau Blackbrush-Mormon-tea Shrubland	1010	Cold Desert-Scrub	3300	Other Shrub
58	S065	Inter-Mountain Basins Mixed Salt Desert Scrub	1010	Cold Desert-Scrub	3310	Greasewood/Saltbush
62	S071	Inter-Mountain Basins Montane Sagebrush Steppe	1010	Cold Desert-Scrub	3400	Sagebrush Steppe
67	S079	Inter-Mountain Basins Semi-Desert Shrub Steppe	1010	Cold Desert-Scrub	3310	Greasewood/Saltbush
82	S096	Inter-Mountain Basins Greasewood Flat	1010	Cold Desert-Scrub	3310	Greasewood/Saltbush
108	S136	Southern Colorado Plateau Sand Shrubland	1010	Cold Desert-Scrub	3300	Other Shrub
47	S053	Great Basin Semi-Desert Chaparral	1011	Chaparral	3250	Mountain Shrubland

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ID	Code	Description	AZ	IWJV		
51	S057	Mogollon Chaparral	1011	Chaparral	3250	Mountain Shrubland
93	S113	Chihuahuan Sandy Plains Semi-Desert Grassland	1012	Desert Grassland	3000	Grassland
71	S085	Southern Rocky Mountain Montane-Sub-alpine Grassland	1013	High Elevation Grasslands	3000	Grassland
76	S090	Inter-Mountain Basins Semi-Desert Grassland	1013	High Elevation Grasslands	3000	Grassland
79	S093	Rocky Mtn Lower Montane Riparian Woodland and Shrubland	1014	Riparian Forest-Low Elevation	6100	Riparian Woodland
80	S094	NA Warm Desert Lower Montane Riparian Woodland/Shrubland	1014	Riparian Forest-Low Elevation	6100	Riparian Woodland
83	S097	N American Warm Desert Riparian Woodland and Shrubland	1014	Riparian Forest-Low Elevation	6100	Riparian Woodland
84	S098	N American Warm Desert Riparian Mesquite Bosque	1014	Riparian Forest-Low Elevation	6100	Riparian Woodland
118	D04	Invasive Southwest Riparian Woodland and Shrubland	1014	Riparian Forest-Low Elevation	6100	Riparian Woodland
77	S091	Rocky Mountain Sub-alpine-Montane Riparian Shrubland	1015	Riparian Forest-High Elevation	6300	Riparian Shrubland
85	S100	N American Arid West Emergent Marsh	1016	Freshwater Marsh	5100	Wet Meadow/Marsh
86	S102	Rocky Mountain Alpine-Montane Wet Meadow	1016	Freshwater March	5100	Wet Meadow/Marsh
110	N11	Open Water	1017	Open Water	5000	Water
70	S083	Rocky Mountain Sub-alpine Mesic Meadow	1018	Alpine	7000	Other/Unvegetated
111	N21	Developed, Open Space - Low Intensity	1020	Urban/Agriculture	7000	Other/Unvegetated
112	N22	Developed, Medium - High Intensity	1020	Urban/Agriculture	7000	Other/Unvegetated
14	S015	Inter-Mountain Basins Playa	1021	Other Wetland	5200	Other Wetland
21	S022	N American Warm Desert Playa	1021	Other Wetland	5200	Other Wetland
24	S025	Rocky Mtn Subalpine-Montane Limber-Bristlecone Pine Woodland	1022	Other Forest	4000	Other Forest
114	N80	Agriculture	1023	Agriculture	2000	Agriculture
1	S001	North American Alpine Ice Field	7000	Other/Unvegetated	7000	Other/Unvegetated
2	S002	Rocky Mountain Alpine Bedrock and Scree	7000	Other/Unvegetated	7000	Other/Unvegetated
5	S006	Rocky Mountain Cliff and Canyon	7000	Other/Unvegetated	7000	Other/Unvegetated
9	S010	Colorado Plateau Mixed Bedrock Canyon & Tableland	7000	Other/Unvegetated	7000	Other/Unvegetated
10	S011	Inter-Mountain Basins Shale Badland	7000	Other/Unvegetated	7000	Other/Unvegetated
11	S012	Inter-Mountain Basins Active and Stabilized Dune	7000	Other/Unvegetated	7000	Other/Unvegetated
12	S013	Inter-Mountain Basins Volcanic Rock and Cinder Land	7000	Other/Unvegetated	7000	Other/Unvegetated
15	S016	N American Warm Desert Bedrock Cliff and Outcrop	7000	Other/Unvegetated	7000	Other/Unvegetated
16	S017	N American Warm Desert Badland	7000	Other/Unvegetated	7000	Other/Unvegetated
17	S018	N American Warm Desert Active and Stabilized Dune	7000	Other/Unvegetated	7000	
18	S019	N American Warm Desert Volcanic Rockland	7000	Other/Unvegetated	7000	Other/Unvegetated
19	S020	N American Warm Desert Wash	7000	Other/Unvegetated	3300	Other Shrub
20	S021	N American Warm Desert Pavement	7000	Other/Unvegetated	7000	Other/Unvegetated
113	N31	Barren Lands, Non-specific	7000	Other/Unvegetated	7000	Other/Unvegetated
116	D02	Recently Burned	7000	Other/Unvegetated	7000	Other/Unvegetated
117	D03	Recently Mined or Quarried	7000	Other/Unvegetated	7000	Other/Unvegetated
119	D06	Invasive Perennial Grassland	7000	Other/Unvegetated	7000	Other/Unvegetated
121	D08	Invasive Annual Grassland	7000	Other/Unvegetated	7000	Other/Unvegetated
122	D09	Invasive Annual and Biennial Forbland	7000	Other/Unvegetated	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by California
Used to Develop IWJV Habitat Types**

HR1/2/3	WHR Habitat Type	CA Code	CA Plan Type	IWJV	IWJV Type
ADS	Alpine-Dwarf Shrub	1019	Alpine	7000	Other/Unvegetated
AGS	Annual Grassland	1004	Grasslands	3000	Grassland
ASC	Alkali Desert Scrub	1011	Desert Scrub	3300	Other Shrubland
ASP	Aspen	1006	Aspen	4350	Aspen
BAR	Barren	7000	Other/Unvegetated	7000	Other/Unvegetated
BBR	Bitterbrush	1005	Sagebrush/Bitterbrush	3400	Sagebrush Steppe
BOP	Blue Oak-Foothill Pine	1020	Valley and Foothill Oak	4210	Pine-Oak Woodlands
BOW	Blue Oak Woodland	1020	Oak	4210	Pine-Oak Woodlands
COW	Coastal Oak Woodland	1020	Oak	4210	PineOak Woodlands
CPC	Closed-Cone Pine-Cypress	4000	Other Forest	4000	Other Forest
CRC	Chamise-Redshank Chaparral	1007	Montane Shrubland	3250	Mountain Shrubland
CRP	Cropland	1015	Agricultural Cropland	2000	Agricultural
DFR	Douglas-Fir	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
DGR	Dryland Grain Crops	1015	Agricultural Cropland	2000	Agricultural
DRI	Desert Riparian	1003	Riparian/Riverine	6100	Riparian Woodland
DSC	Desert Scrub	1011	Desert Scrub	3300	Other Shrubland
EPN	Eastside Pine	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
FEW	Freshwater Emergent Wetland	1002	Palustrine Emergent Wetlands	5100	Wet Meadow/Marsh
IGR	Irrigated Grain Crops	1015	Agricultural Cropland	2000	Agricultural
IRF	Irrigated Row and Field Crops	1015	Agricultural Cropland	2000	Agricultural
IRH	Irrigated Hayfield	1015	Agricultural Cropland	2000	Agricultural
JPN	Jeffrey Pine	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
JST	Joshua Tree	1012	Joshua Tree	3300	Other Shrubland
JUN	Juniper	1017	Juniper	4222	Juniper/Pine Woodlands
KMC	Klamath Mixed Conifer	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
LAC	Lacustrine	1009	Lacustrine Wetlands	5200	Other Wetlands
LPN	Lodgepole Pine	1008	High Elevation Coniferous Forest	4000	Other Forest
LSG	Low Sage	1005	Sagebrush/Bitterbrush	3400	Sagebrush Steppe
MCH	Mixed Chaparral	1007	Montane Shrubland	3250	Mountain Shrubland
MCP	Montane Chaparral	1007	Montane Shrubland	3250	Mountain Shrubland
MHC	Montane Hardwood-Conifer	4000	Other Forest	4000	Other Forest
MHW	Montane Hardwood	4000	Other Forest	4000	Other Forest

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HR1/2/3	WHR Habitat Type	CA Code	CA Plan Type	IWJV	IWJV Type
MRI	Montane Riparian	1003	Riparian/Riverine	6100	Riparian Woodland
OVN	Orchard and Vineyard	1015	Agricultural Cropland	2000	Agricultural
PAS	Pasture	1016	Agricultural Pasture	2000	Agricultural
PGS	Perennial Grassland	1004	Grasslands	3000	Grassland
PJN	Pinyon-Juniper	1010	Pinyon-Juniper	4222	Juniper/Pine Woodlands
PPN	Ponderosa Pine	1014	Ponderosa Pine	4200	Dry Ponderosa/Fir Forest
RFR	Red Fir	1008	High Elevation Coniferous Forest	4000	Other Forest
RIC	Rice	1015	Agricultural Cropland	2000	Agricultural
RIV	Riverine	1003	Riparian/Riverine	6100	Riparian Woodland
SCN	Sub-alpine Conifer	1008	High Elevation Coniferous Forest	4000	Other Forest
SGB	Sagebrush	1005	Sagebrush/Bitterbrush	3400	Sagebrush Steppe
SMC	Sierran Mixed Conifer	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
URB	Urban	7000	Other/Unvegetated	7000	Other/Unvegetated
VOW	Valley Oak Woodland	1020	Oak	4210	Pine-Oak Woodlands
VRI	Valley-Foothill Riparian	1003	Riparian/Riverine	6100	Riparian Woodland
WFR	White Fir	1013	Mid-Elevation Coniferous Forest	4255	Mid-Elevation Mixed Conifer
WTM	Wet Meadow	1001	Wet Meadow	5100	Wet Meadow/Marsh

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Colorado
Used to Develop IWJV Habitat Types**

ID	Code	Description			IWJV	
48	S054	Inter-Mountain Basins Big Sagebrush Shrubland	1001	Sagebrush Shrubland	3400	Sagebrush Steppe
50	S056	Colorado Mixed Low Sagebrush Shrubland	1001	Sagebrush Shrubland	3400	Sagebrush Steppe
62	S071	Inter-Mountain Basins Montane Sagebrush Steppe	1001	Sagebrush Shrubland	3400	Sagebrush Steppe
104	S128	Wyoming Basins Low Sagebrush Shrubland	1001	Sagebrush Shrubland	3400	Sagebrush Steppe
34	S036	Rocky Mountain Ponderosa Pine Woodland	1002	Ponderosa Pine	4200	Dry Ponderosa/Fir Forest
35	S038	Southern Rocky Mountain Pinyon-Juniper Woodland	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
36	S039	Colorado Plateau Pinyon-Juniper Woodland	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
46	S052	Colorado Plateau Pinyon-Juniper Shrubland	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
63	S074	Southern Rocky Mountain Juniper Woodland and Savanna	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
64	S075	Inter-Mountain Basins Juniper Savanna	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
92	S112	Madrean Pinyon-Juniper Woodland	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
103	S125	Rocky Mountain Foothill Limber Pine-Juniper Woodland	1003	Pinyon-Juniper	4222	Juniper/Pine Woodland
124	D11	Recently Chained Pinyon-Juniper Areas	1003	Pinyon-Juniper	7000	Other/Unvegetated
22	S023	Rocky Mountain Aspen Forest and Woodland	1004	Aspen	4350	Aspen
38	S042	Inter-Mountain West Aspen-Mixed Conifer Forest & Woodland Complex	1004	Aspen	4350	Aspen
81	S095	Western Great Plains Riparian Woodland and Shrubland	1005	Low Elevation Riparian	6100	Riparian Woodland
118	D04	Invasive Southwest Riparian Woodland and Shrubland	1005	Low Elevation Riparian	6100	Riparian Woodland
77	S091	Rocky Mountain Subalpine-Montane Riparian Shrubland	1006	High Elevation Riparian	6300	Riparian Shrubland
78	S092	Rocky Mountain Subalpine-Montane Riparian Woodland	1006	High Elevation Riparian	6100	Riparian Woodland
79	S093	Rocky Mountain Lower Montane Riparian Woodland and Shrubland	1006	High Elevation Riparian	6100	Riparian Woodland
14	S015	Inter-Mountain Basins Playa	1007	Wetlands	5200	Other Wetlands
85	S100	N American Arid West Emergent Marsh	1007	Wetlands	5100	Wet Meadow/Marsh
86	S102	Rocky Mountain Alpine-Montane Wet Meadow	1007	Wetlands	5100	Wet Meadow/Marsh
99	S120	Western Great Plains Floodplain Herbaceous Wetland	1007	Wetlands	6200	Riparian Herbaceous
70	S083	Rocky Mountain Subalpine Mesic Meadow	1008	<i>Grassland</i>	7000	Other/Unvegetated
71	S085	Southern Rocky Mountain Montane-sub-alpine Grassland	1008	<i>Grassland</i>	3000	Grassland
72	S086	Western Great Plains Foothill and Piedmont Grassland	1008	<i>Grassland</i>	3000	Grassland
73	S087	Central Mixed-grass Prairie	1008	<i>Grassland</i>	3000	Grassland
74	S088	Western Great Plains Shortgrass Prairie	1008	<i>Grassland</i>	3000	Grassland
75	S089	Western Great Plains Sandhill Prairie	1008	<i>Grassland</i>	3000	Grassland
76	S090	Inter-Mountain Basins Semi-Desert Grassland	1008	<i>Grassland</i>	3000	Grassland
106	S132	Western Great Plains Tallgrass Prairie	1008	<i>Grassland</i>	3000	Grassland
119	D06	Invasive Perennial Grassland	1008	<i>Grassland</i>	7000	Other/Unvegetated
121	D08	Invasive Annual Grassland	1008	<i>Grassland</i>	7000	Other/Unvegetated
114	N80	Agriculture	1009	<i>Agricultural</i>	2000	Agricultural
42	S047	Rocky Mountain Lower Montane-Foothill Shrubland	1010	<i>Mountain Shrubland</i>	3250	Mountain Shrubland
44	S050	Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland	1010	<i>Mountain Shrubland</i>	3250	Mountain Shrubland
53	S059	Colorado Plateau Blackbrush-Mormon-tea Shrubland	1011	<i>Semidesert Shrubland</i>	3300	Other Shrub
58	S065	Inter-Mountain Basins Mixed Salt Desert Scrub	1011	<i>Semidesert Shrubland</i>	3310	Greasewood/Saltbush
67	S079	Inter-Mountain Basins Semi-Desert Shrub Steppe	1011	<i>Semidesert Shrubland</i>	3310	Greasewood/Saltbush

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ID	Code	Description			IWJV	
30	S032	Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest & Woodland	1012	<i>Mixed Conifer</i>	4255	Mid-Elevation Mixed Conifer
32	S034	Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland	1012	<i>Mixed Conifer</i>	4255	Mid-Elevation Mixed Conifer
26	S028	Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	1013	<i>Spruce-Fir</i>	4270	Spruce-Fir
28	S030	Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland	1013	<i>Spruce-Fir</i>	4270	Spruce-Fir
110	N11	Open Water	1013	<i>Spruce-Fir</i>	5000	Open Water
110	N11	Open Water	1014	<i>Open Water - Lakes</i>	5000	Open Water
5	S006	Rocky Mountain Cliff and Canyon	1016	Cliff/Rock	7000	Other/Unvegetated
7	S008	Western Great Plains Cliff and Outcrop	1016	Cliff/Rock	7000	Other/Unvegetated
8	S009	Inter-Mountain Basins Cliff and Canyon	1016	Cliff/Rock	7000	Other/Unvegetated
9	S010	Colorado Plateau Mixed Bedrock Canyon and Tableland	1016	Cliff/Rock	7000	Other/Unvegetated
15	S016	N American Warm Desert Bedrock Cliff and Outcrop	1016	Cliff/Rock	7000	Other/Unvegetated
2	S002	Rocky Mountain Alpine Bedrock and Scree	1017	Alpine Tundra	7000	Other/Unvegetated
4	S004	Rocky Mountain Alpine Fell-Field	1017	Alpine Tundra	7000	Other/Unvegetated
69	S081	Rocky Mountain Dry Tundra	1017	Alpine Tundra	7000	Other/Unvegetated
13	S014	Inter-Mountain Basins Wash	3300	Other Shrubland	3310	Greasewood/Saltbush
40	S045	Inter-Mountain Basins Mat Saltbush Shrubland	3300	Other Shrubland	3310	Greasewood/Saltbush
43	S048	Western Great Plains Sandhill Shrubland	3300	Other Shrubland	3300	Other Shrubland
82	S096	Inter-Mountain Basins Greasewood Flat	3300	Other Shrubland	3310	Greasewood/Saltbush
108	S136	Southern Colorado Plateau Sand Shrubland	3300	Other Shrubland	3300	Other Shrubland
24	S025	Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forest
29	S031	Rocky Mountain Lodgepole Pine Forest	4000	Other Forest	4000	Other Forest
33	S035	Madrean Pine-Oak Forest and Woodland	4210	Oak	4210	Pine-Oak Woodlands
41	S046	Rocky Mountain Gambel Oak-Mixed Montane Shrubland	4210	Oak	3250	Mountain Shrubland
1	S001	N American Alpine Ice Field	7000	Other/Unvegetated	7000	Other/Unvegetated
10	S011	Inter-Mountain Basins Shale Badland	7000	Other/Unvegetated	7000	Other/Unvegetated
11	S012	Inter-Mountain Basins Active and Stabilized Dune	7000	Other/Unvegetated	7000	Other/Unvegetated
111	N21	Developed, Open Space - Low Intensity	7000	Other/Unvegetated	7000	Other/Unvegetated
112	N22	Developed, Medium - High Intensity	7000	Other/Unvegetated	7000	Other/Unvegetated
113	N31	Barren Lands, Non-specific	7000	Other/Unvegetated	7000	Other/Unvegetated
115	D01	Disturbed, Non-specific	7000	Other/Unvegetated	7000	Other/Unvegetated
116	D02	Recently Burned	7000	Other/Unvegetated	7000	Other/Unvegetated
117	D03	Recently Mined or Quarried	7000	Other/Unvegetated	7000	Other/Unvegetated
120	D07	Invasive Perennial Forbland	7000	Other/Unvegetated	7000	Other/Unvegetated
122	D09	Invasive Annual and Biennial Forbland	7000	Other/Unvegetated	7000	Other/Unvegetated
123	D10	Recently Logged Areas	7000	Other/Unvegetated	7000	Other/Unvegetated
125	D14	Disturbed, Oil Well	7000	Other/Unvegetated	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Idaho
Used to Develop IWJV Habitat Types**

Cover Type	Code	PIF Name	PIF	IWJV
Urban	1000		7000	7000
High Intensity Urban	1001		7000	7000
Low Intensity Urban	1002		7000	7000
Disturbed, High	1101		7000	7000
Disturbed, Low	1102		7000	7000
Agricultural Land	2000		2000	2000
Foothills Grasslands	3101	Grassland	1011	3000
Disturbed Grassland	3102	Grassland	1011	3000
Herbaceous Clearcut	3103		7000	7000
Montane Parklands / Subalpine Meadow	3104	Grassland	1011	3000
Wet Meadow	3105	Marshes, Lakes, Ponds	1012	5100
Herbaceous Burn	3106		7000	7000
Shrub/Steppe	3107	Sagebrush/Salt Desert Shrub	1010	3400
Dry Meadow	3108	Grassland	1011	3000
Perennial Grassland	3109	Grassland	1011	3000
Perennial Grass Slope	3110	Grassland	1011	3000
Mesic Upland Shrubs	3201	Mountain Brush	1009	3250
Warm Mesic Shrubs	3202	Mountain Brush	1009	3250
Curleaf Mountain Mahogany	3301	Mountain Brush	1009	3250
Bitterbrush	3304	Mountain Brush	1009	3250
Mountain Big Sagebrush	3305	Sagebrush/Salt Desert Shrub	1010	3400
Wyoming Big Sagebrush	3306	Sagebrush/Salt Desert Shrub	1010	3400
Basin & Wyoming Big Sagebrush	3307	Sagebrush/Salt Desert Shrub	1010	3400
Black Sagebrush Steppe	3308	Sagebrush/Salt Desert Shrub	1010	3400
Silver Sage	3309		3300	3300
Salt-Desert Scrub	3310	Sagebrush/Salt Desert Shrub	1010	3310
Rabbitbrush	3312	Sagebrush/Salt Desert Shrub	1010	3310
Low Sagebrush	3315	Sagebrush/Salt Desert Shrub	1010	3400
Mountain Low Sagebrush	3316	Sagebrush/Salt Desert Shrub	1010	3400
Aspen	4101	Aspen	1008	4350
Cottonwood	4102	Riparian	1013	6100
Maple	4103		4000	4000

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Cover Type	Code	PIF Name	PIF	IWJV
Englemann Spruce	4201	High Elevation Mixed Conifer	1002	4270
Lodgepole Pine	4203	Lodgepole Pine	1003	4000
Ponderosa Pine	4206	Ponderosa Pine	1006	4200
Grand Fir	4207	High Elevation Mixed Conifer	1002	4000
Subalpine Fir	4208	High Elevation Mixed Conifer	1002	4270
Western Red Cedar	4210	Cedar and Hemlock	1004	4000
Western Hemlock	4211	Cedar and Hemlock	1004	4000
Douglas-Fir	4212	Low Elevation Mixed Conifer	1005	4255
Western Larch	4215	Low Elevation Mixed Conifer	1005	4255
Douglas-Fir/Limber Pine	4216		4222	4222
Subalpine Pine	4217	Lodgepole Pine	1003	4000
Subalpine Fir/Whitebark Pine	4218	High Elevation Mixed Conifer	1002	4000
Mixed Whitebark Pine Forest	4219	High Elevation Mixed Conifer	1002	4000
Mixed Subalpine Forest	4220	High Elevation Mixed Conifer	1002	4270
Mixed Mesic Forest	4221	Low Elevation Mixed Conifer	1005	4255
Mixed Xeric Forest	4222	Ponderosa Pine	1006	4200
Douglas-Fir/Lodgepole Pine	4223	Low Elevation Mixed Conifer	1005	4000
Douglas Fir/Grand Fir	4225	Low Elevation Mixed Conifer	1005	4255
Western Red Cedar/Grand Fir Forest	4226	Cedar and Hemlock	1004	4000
Western Red Cedar/Western Hemlock	4227	Cedar and Hemlock	1004	4000
Western Larch/Lodgepole Pine	4228	Low Elevation Mixed Conifer	1005	4255
Western Larch/Douglas Fir	4229	Low Elevation Mixed Conifer	1005	4255
Utah Juniper	4230	Juniper/Pinyon/Mountain Mahogany	1007	4222
Western Juniper	4231	Juniper/Pinyon/Mountain Mahogany	1007	4222
Pinyon Pine/Juniper	4232	Juniper/Pinyon/Mountain Mahogany	1007	4222
Mixed Needleleaf/Broadleaf Forest	4301	Low Elevation Mixed Conifer	1005	4000
Burnt, Standing Timber	4401		4000	4000
Water	5000		5000	5000
Needleleaf Dominated Riparian	6101	Riparian	1013	6100
Broadleaf Dominated Riparian	6102	Riparian	1013	6100
Needleleaf/Broadleaf Dominated Riparian	6103	Riparian	1013	6100
Mixed Riparian (Forest and Non-forest)	6104	Riparian	1013	6100
Forb Dominated Riparian	3201	Riparian	1013	6200
Shrub Dominated Riparian	6202	Riparian	1013	6300

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Cover Type	Code	PIF Name	PIF	IWJV
Mixed Non-Forest Riparian	6203	Riparian	1013	6300
Deep Marsh	6301	Marshes, Lakes, Ponds	1012	5100
Shallow Marsh	6302	Marshes, Lakes, Ponds	1012	5100
Aquatic Bed	6303	Marshes, Lakes, Ponds	1012	5200
Mud Flat	6304	Marshes, Lakes, Ponds	1012	5200
Sand Dune	7201		7000	7000
Vegetated Sand Dune	7202		7000	7000
Exposed Rock	7300	Cliffs, Outcrops, Talus	1014	7000
Lava	7301		7000	7000
Vegetated Lava	7302		7000	7000
Mixed Barren Land	7800		7000	7000
Shoreline and Stream Gravel Bars	7900		5100	5100
Alpine Meadow	8100		1001	7000
Perennial Ice or Snow	9100		7000	7000
Cloud	9800		7000	7000
Cloud Shadow	9900		7000	7000

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Montana
Used to Develop IWJV Habitat Types**

	Name	Code	PIF Type	IWJV	
2010	Agricultural Lands - Dry	2000	Agricultural	Agricultural	2000
2020	Agricultural Lands - Irrigated	2000	Agricultural		
3130	Very Low Cover Grasslands	3100	Prairie Grassland	Grassland	3000
3150	Low/Moderate Cover Grasslands	3100	Prairie Grassland		
3170	Moderate/High Cover Grasslands	3100	Prairie Grassland		
3180	Montane Parklands & Subalpine Meadow	3180	Intermountain Grassland	Grassland	3000
3200	Mixed Mesic Shrubs	3250	Montane Shrubland	Mountain Shrubland	3250
3300	Mixed Xeric Shrubs	3250	Montane Shrubland		
3510	Mesic Shrub-Grassland Association	3250	Montane Shrubland		
3309	Silver Sage	3311	Other Shrub	Greasewood/Salt Bush	3311
3310	Salt-Desert Shrub/Dry Salt Flats	3311	Other Shrub		
3350	Sagebrush	3400	Sagebrush Steppe	Sagebrush Steppe	3400
3520	Xeric Shrub-Grassland Association	3400	Sagebrush Steppe		
4000	Low Density Xeric Forest	4200	Dry Forest	Dry Ponderosa/Fir Forest	4200
4206	Ponderosa Pine	4200	Dry Forest		
4290	Mixed Xeric Forest	4200	Dry Forest		
4205	Limber Pine	4222	Juniper/Limber Pine	Juniper/Pine Woodlands	4222
4214	Rocky Mountain Juniper	4222	Juniper/Limner Pine		
4216	Utah Juniper	4222	Juniper/Limber Pine		
4203	Lodgepole Pine	4233	Dry Fir-Lodgepole	Other	7000
4223	Douglas-Fir/Lodgepole Pine	4233	Dry Fir-Lodgepole		
4207	Grand Fir	4255	Mixed Mesic Forest	Mid-Elevation Mixed Conifer	4255
4212	Douglas-Fir	4255	Mixed Mesic Forest		
4215	Western Larch	4255	Mixed Mesic Forest		
4280	Mixed Mesic Forest	4255	Mixed Mesic Forest		
4260	Mixed Whitebark Pine Forest	4260	Whitebark Pine	Other	7000
4270	Mixed Subalpine Forest	4270	Wet Subalpine Fir	Spruce-Fir Forest	4270
4210	Western Red Cedar	4299	Cedar-Hemlock Forest	Other	7000
4211	Western Hemlock	4299	Cedar-Hemlock Forest		
4140	Mixed Broadleaf Forest	4350	Aspen	Aspen Woodland	4350
4300	Mixed Broadleaf & Conifer Forest	4350	Aspen		

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	Name	Code	PIF Type	IWJV	
4400	Standing Burnt Forest	4400	Burned Forest	Other	7000
5000	Water	5000	Water	Water	5000
6110	Conifer Riparian	6110	Riparian Coniferous Forest	Riparian Forest	6100
6120	Broadleaf Riparian	6125	Riparian Deciduous Forest		
6130	Mixed Broadleaf & Conifer Riparian	6125	Riparian Deciduous Forest		
6400	Mixed Riparian	6125	Riparian Deciduous Forest		
6200	Graminoid & Forb Riparian	6200	Riparian Herbaceous	Riparian Herbaceous	6200
6300	Shrub Riparian	6300	Riparian Shrubland	Riparian Shrubland	6300
1100	Urban or Developed Lands	7000	Other/Unvegetated	Other	7000
3110	Altered Herbaceous	7000	Other/Unvegetated		
7300	Rock	7000	Other/Unvegetated		
7500	Mines, Quarries, Gravel Pits	7000	Other/Unvegetated		
7600	Badlands	7000	Other/Unvegetated		
7604	Missouri Breaks	7000	Other/Unvegetated		
7800	Mixed Barren Sites	7000	Other/Unvegetated		
9100	Snowfields or Rice	7000	Other/Unvegetated		
9800	Clouds	7000	Other/Unvegetated		
9900	Cloud Shadows	7000	Other/Unvegetated		
8100	Alpine Meadows	8100	Alpine Meadows	Other	7000

**Appendix 1 – Gap and SW ReGap Habitat Classifications by New Mexico
Used to Develop IWJV Habitat Types**

ID	Code	Description	NM		IWJV	
65	S077	Apacherian-Chihuahuan Piedmont Semi-Desert Grassland/Steppe	1001	Chihuahuan Desert Grassland	3000	Grassland
68	S080	Chihuahuan Gypsophilous Grassland and Steppe	1001	Chihuahuan Desert Grassland	3000	Grassland
90	S109	Chihuahuan-Sonoran Desert Bottomland and Swale Grassland	1001	Chihuahuan Desert Grassland	3000	Grassland
93	S113	Chihuahuan Sandy Plains Semi-Desert Grassland	1001	Chihuahuan Desert Grassland	3000	Grassland
72	S086	Western Great Plains Foothill and Piedmont Grassland	1002	Plains and Mesa Grassland	3000	Grassland
74	S088	Western Great Plains Shortgrass Prairie	1002	Plains and Mesa Grassland	3000	Grassland
76	S090	Inter-Mountain Basins Semi-Desert Grassland	1002	Plains and Mesa Grassland	3000	Grassland
109	S138	Western Great Plains Mesquite Woodland and Shrubland	1002	Plains and Mesa Grassland	3000	Grassland
70	S083	Rocky Mountain Subalpine Mesic Meadow	1003	Wet Meadow and Montane Grassland	7000	Other/Unvegetated
71	S085	Southern Rocky Mountain-Subalpine Grassland	1003	Wet Meadow and Montane Grassland	3000	Grassland
86	S102	Rocky Mountain Alpine-Montane Meadow	1003	Wet Meadow and Montane Grassland	5100	Wet Meadow/Marsh
69	S081	Rocky Mountain Dry Tundra	1004	Alpine Tundra	7000	Other/Unvegetated
19	S020	N American Warm Desert Wash	1005	Chihuahuan Desert Shrub	3300	Other Shrub
52	S058	Apacherian-Chihuahuan Mesquite Upland Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
55	S061	Chihuahuan Succulent Desert Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
56	S062	Chihuahuan Creosotebush, Mixed Desert and Thorn Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
57	S063	Sonoran Paloverde-Mixed Cacti Desert Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
59	S068	Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
60	S069	Sonoran-Mojave Creosotebush-White Bursage Desert Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
96	S116	Chihuahuan Mixed Salt Desert Scrub	1005	Chihuahuan Desert Shrub	3310	Greasewood/Saltbush
105	S129	Sonoran Mid-Elevation Desert Scrub	1005	Chihuahuan Desert Shrub	3300	Other Shrub
43	S048	Western Great Plains Sandhill Shrubland	1006	Plains-Mesa Sand Shrub	3300	Other Shrub
108	S136	Southern Colorado Plateau Sand Shrubland	1006	Plains-Mesa Sand Shrub	3300	Other Shrubland
41	S046	Rocky Mountain Gambel Oak Mixed Montane Shrubland	1007	Montane Shrub	3250	Mountain Shrubland
42	S047	Rocky Mountain Lower Montane-Foothill Shrubland	1007	Montane Shrub	3250	Mountain Shrubland
51	S057	Mogollon Chaparral	1007	Montane Shrub	3250	Mountain Shrubland
97	S117	Coahuilan Chaparral	1007	Montane Shrub	3300	Other Shrubland
13	S014	Inter-Mountain Basins Wash	1008	Great Basin Desert Shrub	3310	Greasewood/Saltbush
48	S054	Inter-Mountain Basins Big Sagebrush Shrubland	1008	Great Basin Desert Shrub	3400	Sagebrush Steppe
50	S056	Colorado Plateau Mixed Low Sagebrush Shrubland	1008	Great Basin Desert Shrub	3400	Sagebrush Steppe
53	S059	Colorado Plateau Blackbrush-Mormon-tea Shrubland	1008	Great Basin Desert Shrub	3300	Other Shrubland
58	S065	Inter-Mountain Basins Mixed Salt Desert Scrub	1008	Great Basin Desert Shrub	3310	Greasewood/Saltbush
62	S071	Inter-Mountain Basins Montane Sagebrush Steppe	1008	Great Basin Desert Shrub	3400	Sagebrush Steppe
67	S079	Inter-Mountain Basins Semi-Desert Shrub Steppe	1008	Great Basin Desert Shrub	3310	Greasewood/Saltbush
82	S096	Inter-Mountain Basins Greasewood Flat	1008	Great Basin Desert Shrub	3310	Greasewood/Saltbush
35	S038	Southern Rocky Mountain Pinyon-Juniper Woodland	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland
36	S039	Colorado Plateau Pinyon-Juniper Woodland	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland
63	S074	Southern Rocky Mountain Juniper Woodland and Savanna	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland
64	S075	Inter-Mountain Basins Juniper Savanna	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland
92	S112	Madrean Pinyon-Juniper Woodland	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland

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ID	Code	Description	NM		IWJV	
95	S115	Madrean Juniper Savanna	1009	Pinyon-Juniper Woodland	4222	Juniper/Pine Woodland
124	D11	Recently Chained Pinyon-Juniper Areas	1009	Pinyon-Juniper Woodland	7000	Other/Unvegetated
33	S035	Madrean Pine-Oak Forest And Woodland	1010	Madrean Pine-Oak Woodland	4210	Pine-Oak Woodlands
45	S051	Madrean Encinal	1010	Madrean Pine-Oak Woodland	4210	Pine-Oak Woodlands
91	S111	Madrean Upper Montane Conifer-Oak Forest and Woodland	1010	Madrean Pine-Oak Woodland	4210	Pine-Oak Woodlands
34	S036	Rocky Mountain Ponderosa Pine Woodland	1011	Ponderosa Pine Forest	4200	Dry Ponderosa/Fir Forest
30	S032	Rocky Mtn Montane Dry-Mesic Mixed Conifer Forest & Woodland	1012	Mixed Conifer Forest	4255	Mid-Elevation Mixed Conifer
32	S034	Rocky Mountain Montane Mesic Mixed Conifer Forest & Woodland	1012	Mixed Conifer Forest	4255	Mid-Elevation Mixed Conifer
26	S028	Rocky Mtn Subalpine Dry-Mesic Spruce-Fir Forest & Woodland	1013	Spruce-Fir (Subalpine) Forest	4270	Spruce-Fir
28	S030	Rocky Mountain Subalpine Mesic Spruce-Fir Forest & Woodland	1013	Spruce-Fir (Subalpine) Forest	4270	Spruce-Fir
80	S094	NA Warm Desert Lower Montane Riparian Woodland & Shrubland	1014	Southwest Riparian	6100	Riparian Woodland
83	S097	N American Warm Desert Riparian Woodland and Shrubland	1014	Southwest Riparian	6100	Riparian Woodland
84	S098	N American Warm Desert Riparian Mesquite Bosque	1014	Southwest Riparian	6100	Riparian Woodland
118	D04	Invasive Southwest Riparian Woodland and Shrubland	1015	Mid-Elevation Riparian	6100	Riparian Woodland
77	S091	Rocky Mountain Subalpine-Montane Riparian Shrubland	1016	Montane Riparian	6300	Riparian Shrubland
78	S092	Rocky Mountain Subalpine-Montane Riparian Woodland	1016	Montane Riparian	6100	Riparian Woodland
79	S093	Rocky Mtn Lower Montane Riparian Woodland and Shrubland	1016	Montane Riparian	6100	Riparian Woodland
81	S095	Western Great Plains Riparian Woodland and Shrubland	1016	Montane Riparian	6100	Riparian Woodland
14	S015	Inter-Mountain Basins Playa	1017	Emergent Wetlands and Lakes	5200	Other Wetlands
21	S022	N American Warm Desert Playa	1017	Emergent Wetlands and Lakes	5200	Other Wetlands
85	S100	N American Arid West Emergent Marsh	1017	Emergent Wetlands and Lakes	5100	Wet Meadow/Marsh
89	S108	Western Great Plains Saline Depression Wetland	1017	Emergent Wetlands and Lakes	5200	Other Wetlands
5	S006	Rocky Mountain Cliff and Canyon	1018	Cave/Rock/Cliff	7000	Other/Unvegetated
7	S008	Western Great Plains Cliff and Outcrop	1018	Cave/Rock/Cliff	7000	Other/Unvegetated
9	S010	Colorado Plateau Mixed Bedrock Canyon and Tableland	1018	Cave/Rock/Cliff	7000	Other/Unvegetated
15	S016	N American Warm Desert Bedrock Cliff and Outcrop	1018	Cave/Rock/Cliff	7000	Other/Unvegetated
114	N80	Agriculture	1019	Agricultural Lands	2000	Agricultural
111	N21	Developed, Open Space - Low Intensity	1020	Urban	7000	Other/Unvegetated
112	N22	Developed, Medium - High Intensity	1020	Urban	7000	Other/Unvegetated
23	S024	Rocky Mountain Bigtooth Maple Ravine Woodland	4000	Other Forest	4000	Other Forest
24	S025	Rocky Mtn Subalpine-Montane Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forest
29	S031	Rocky Mountain Lodgepole Pine Forest	4000	Other Forest	4000	Other Forest
22	S023	Rocky Mountain Aspen Forest and Woodland	4350	Aspen	4350	Aspen
38	S042	Inter-Mtn West Aspen-Mixed Conifer Forest & Woodland Complex	4350	Aspen	4350	Aspen
110	N11	Open Water	5000	Water	5000	Water
1	S001	N American Alpine Ice Field	7000	Other/Unvegetated	7000	Other/Unvegetated
2	S002	Rocky Mountain Alpine Bedrock and Scree	7000	Other/Unvegetated	7000	Other/Unvegetated
4	S004	Rocky Mountain Alpine Fell-Field	7000	Other/Unvegetated	7000	Other/Unvegetated
10	S011	Inter-Mountain Basins Shale Badland	7000	Other/Unvegetated	7000	Other/Unvegetated
11	S012	Inter-Mountain Basins Active and Stabilized Dune	7000	Other/Unvegetated	7000	Other/Unvegetated
12	S013	Inter-Mountain Basins Volcanic Rock and Cinder Land	7000	Other/Unvegetated	7000	Other/Unvegetated
17	S018	N American Warm Desert Active and Stabilized Dune	7000	Other/Unvegetated	7000	Other/Unvegetated
18	S019	N American Warm Desert Volcanic Rockland	7000	Other/Unvegetated	7000	Other/Unvegetated
20	S021	N American Desert Pavement	7000	Other/Unvegetated	7000	Other/Unvegetated

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ID	Code	Description	NM		IWJV	
113	N31	Barren Lands, Non-specific	7000	Other/Unvegetated	7000	Other/Unvegetated
116	D02	Recently Burned	7000	Other/Unvegetated	7000	Other/Unvegetated
117	D03	Recently Mined or Quarried	7000	Other/Unvegetated	7000	Other/Unvegetated
119	D06	Invasive Perennial Grassland	7000	Other/Unvegetated	7000	Other/Unvegetated
122	D09	Invasive Annual and Biennial Forbland	7000	Other/Unvegetated	7000	Other/Unvegetated
123	D10	Recently Logged Areas	7000	Other/Unvegetated	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Nevada
Used to Develop IWJV Habitat Typescv**

Code	Description					
114	N80	Agriculture	1001	Agricultural Lands	2000	Agriculture
22	S023	Rocky Mountain Aspen Forest and Woodland	1002	Aspen	4350	Aspen
38	S042	Inter-Mtn West Aspen-Mixed Conifer Forest/Woodland Complex	1002	Aspen	4350	Aspen
2	S002	Rocky Mountain Alpine Bedrock and Scree	1003	Barren	7000	Other/Unvegetated
3	S003	Mediterranean California Alpine Bedrock and Scree	1003	Barren	7000	Other/Unvegetated
9	S010	Colorado Plateau Mixed Bedrock Canyon and Tableland	1003	Barren	7000	Other/Unvegetated
11	S012	Inter-Mountain Basins Active and Stabilized Dune	1003	Barren	7000	Other/Unvegetated
15	S016	N American Warm Desert Bedrock Cliff and Outcrop	1003	Barren	7000	Other/Unvegetated
16	S017	N American Warm Desert Badland	1003	Barren	7000	Other/Unvegetated
17	S018	N American Warm Desert Active and Stabilized Dune	1003	Barren	7000	Other/Unvegetated
18	S019	N American Warm Desert Volcanic Rockland	1003	Barren	7000	Other/Unvegetated
20	S021	N American Warm Desert Pavement	1003	Barren	7000	Other/Unvegetated
113	N31	Barren Lands, Non-specific	1003	Barren	7000	Other/Unvegetated
34	S036	Rocky Mountain Ponderosa Pine Woodland	1004	Dry Ponderosa/Fir Forest	4200	Dry Ponderosa/Fir Forest
102	S123	Mediterranean California Ponderosa-Jeffrey Pine Forest/Woodland	1004	Dry Ponderosa/Fir Forest	4200	Dry Ponderosa/Fir Forest
27	S029	Northern Pacific Mesic Subalpine Woodland	1005	Sierra Nevada Coniferous Forest	4000	Other Forest
31	S033	Mediterranean California Dry-Mesic Mixed Conifer Forest/Woodland	1005	Sierra Nevada Coniferous Forest	4255	Mid-Elevation Mixed Conifer
101	S122	Sierra Nevada Subalpine Lodgepole Forest and Woodland	1005	Sierra Nevada Coniferous Forest	4000	Other Forest
19	S020	N American Warm Desert Wash	1006	Lowland Riparian	3300	Other Shrub
80	S094	NA Warm Desert Lower Montane Riparian Woodland/Shrubland	1006	Lowland Riparian	6100	Riparian Woodland
83	S097	North American Warm Desert Riparian Woodland/Shrubland	1006	Lowland Riparian	6100	Riparian Woodland
118	D04	Invasive Southwest Riparian Woodland and Shrubland	1006	Lowland Riparian	6100	Riparian Woodland
84	S098	N American Warm Desert Riparian Mesquite Bosque	1007	Mesquite/Catclaw	6100	Riparian Woodland
53	S059	Colorado Plateau Blackbrush-Mormon-tea Shrubland	1008	Mojave Shrub	3300	Other Shrub
54	S060	Mojave Mid-Elevation Mixed Desert Shrub	1008	Mojave Desert	3300	Other Shrub
60	S069	Sonoran-Mojave Cresotebush-White Bursage Desert Shrub	1008	Mojave Desert	3300	Other Shrub
70	S083	Rocky Mountain Subalpine Mesic Meadow	1009	Montane Parkland	7000	Other/Unvegetated
71	S085	Southern Rocky Mountain Montane-Subalpine Grassland	1009	Montane Parkland	3000	Grassland
23	S024	Rocky Mountain Bigtooth Maple Ravine Woodland	1010	Montane Riparian	4000	Other Forest
77	S091	Rocky Mountain Subalpine-Montane Riparian Shrubland	1010	Montane Riparian	6300	Riparian Shrubland
78	S092	Rocky Mountain Subalpine-Montane Riparian Woodland	1010	Montane Riparian	6100	Riparian Woodland
98	S118	Great Basin Foothill/Lower Montane Riparian Woodland/Shrubland	1010	Montane Riparian	6100	Riparian Woodland
41	S046	Rocky Mountain Gambel Oak-Mixed Montane Shrubland	1011	Montane Shrubland Mahogany	3250	Mountain Shrubland
44	S050	Inter-Mountain Basins Mountain Mahogany Woodland/Shrubland	1011	Montane Shrubland Mahogany	3250	Mountain Shrubland
47	S053	Great Basin Semi-Desert Chaparral	1011	Montane Shrubland Mahogany	3250	Mountain Shrubland
51	S057	Mogollon Chaparral	1011	Montane Shrubland Mahogany	3250	Mountain Shrubland
94	S114	Sonoran-Mojave-Baja Semi-Desert Chaparral	1011	Montane Shrubland Mahogany	3250	Mountain Shrubland
37	S040	Great Basin Pinyon-Juniper Woodland	1012	Pinyon-Juniper	4222	Juniper/Pine Woodlands
64	S075	Intermountain Basins Juniper Savanna	1012	Juniper-Juniper	4222	Juniper/Pine Woodlands
48	S054	Inter-Mountain Basins Big Sagebrush Shrubland	1013	Sagebrush	3400	Sagebrush Steppe

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Code	Description					
49	S055	Great Basin Xeric Mixed Sagebrush Shrubland	1013	Sagebrush	3400	Sagebrush Steppe
62	S071	Inter-Mountain Basins Montane Sagebrush Steppe	1013	Sagebrush	3400	Sagebrush Steppe
66	S078	Inter-Mountain Basins Big Sagebrush Steppe	1013	Sagebrush	3400	Sagebrush Steppe
76	S090	Inter-Mountain Basins Semi-Desert Grassland	1014	Grassland	3000	Grassland
107	S134	North Pacific Montane Grassland	1014	Grassland	3000	Grassland
119	D06	Invasive Perennial Grassland	1014	Grassland	7000	Other/Unvegetated
121	D08	Invasive Annual Grassland	1014	Grassland	7000	Other/Unvegetated
13	S014	Inter-Mountain Basins Wash	1015	Salt Desert Scrub	3310	Greasewood/Saltbush
58	S065	Inter-Mountain Basins Mixed Salt Desert Scrub	1015	Salt Desert Scrub	3310	Greasewood/Saltbush
61	S070	Sonora-Mojave Mixed Salt Desert Scrub	1015		3310	
67	S079	Inter-Mountain Basins Semi-Desert Shrub Steppe	1015		3310	
82	S096	Inter-Mountain Basins Greasewood Flat	1015		3310	Greasewood/Saltbush
14	S015	Inter-Mountain Basins Playa	1016	Wetland	5200	Other Wetland
21	S022	N American Warm Desert	1016	Wetland	5200	Other Wetland
85	S100	N American Arid West Emergent Marsh	1016	Wetland	5100	Wet Meadow/Marsh
86	S102	Rocky Mountain Alpine-Montane Wet Meadow	1016	Wetland	5100	Wet Meadow/Marsh
87	S103	Temperate Pacific Montane Wet Meadow	1016	Wetland	5100	Wet Meadow/Marsh
88	S105	Mediterranean California Subalpine-Montane Fen	1016	Wetland	5200	Other Wetland
100	S121	Mediterranean California Red Fir Forest and Woodland	1016	Wetland	4000	Other Forest
110	N11	Open Water	1016	Wetland	5000	Water
24	S025	Rocky Mtn Subalpine-Montane Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forest
25	S026	Inter-Mtn Basins Subalpine Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forests
26	S028	Rocky Mtn Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	4000	Other Forest	4270	Spruce-Fir
28	S030	Rocky Mountain Subalpine Mesic Spruce-Fir Forest/Woodland	4000	Other Forest	4270	Spruce-Fir
30	S032	Rocky Mountain Montane Dry-Mesic Conifer Forest/Woodland	4000	Other Forest	4255	Mid-Elevation Mixed Conifer
32	S034	Rocky Mtn Montane Mesic Mixed Conifer Forest/Woodland	4000	Other Forest	4255	Mid-Elevation Mixed Conifer
1	S001	North American Alpine Ice Field	7000	Other/Unvegetated	7000	Other/Unvegetated
6	S007	Sierra Nevada Cliff and Canyon	7000	Other/Unvegetated	7000	Other/Unvegetated
8	S009	Inter-Mountain Basins Cliff and Canyon	7000	Other/Unvegetated	7000	Other/Unvegetated
69	S081	Rocky Mountain Dry Tundra	7000	Other/Unvegetated	7000	Other/Unvegetated
111	N21	Developed, Open Space - Low Intensity	7000	Other/Unvegetated	7000	Other/Unvegetated
112	N22	Developed, Medium - High Intensity	7000	Other/Unvegetated	7000	Other/Unvegetated
116	D02	Recently Burned	7000	Other/Unvegetated	7000	Other/Unvegetated
117	D03	Recently Mined or Quarried	7000	Other/Unvegetated	7000	Other/Unvegetated
122	D09	Invasive Annual and Biennial Forbland	7000	Other/Unvegetated	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Oregon
Used to Develop IWJV Habitat Types**

Code	Class Name	PIF Code	PIF Type	IWJV
32	Sitka Spruce-W. Hemlock Maritime Forest	4000	Other Forest	4000
33	Mountain Hemlock Montane Forest	4000	Other Forest	4000
34	True Fir-Hemlock Montane Forest	4000	Other Forest	4000
37	Shasta Red Fir-Mountain Hemlock Forest	4000	Other Forest	4000
39	Whitebark-Lodgepole Montane Forest	4000	Other Forest	4000
40	Ponderosa Pine Dominant Mixed Conifer Forest	1005	Ponderosa Pine	4200
41	Northeast Oreg Mixed Conifer Forest	1015	<i>Mixed Conifer</i>	4255
42	Jeffrey Pine Forest and Woodland	4000	Other Forest	4000
43	Serpentine Conifer Woodland	4000	Other Forest	4000
44	Lodgepole Pine Forest and Woodland	1017	<i>Lodgepole Pine</i>	4000
45	Subalpine Fir-Lodgepole Pine Montane Conifer	1016	<i>Subalpine Fir</i>	4000
46	Coastal Lodgepole Forest	1017	<i>Lodgepole Pine</i>	4000
49	Douglas Fir-W Hemlock-W Red Cedar Forest	4000	Other Forest	4000
50	Douglas Fir-Port Oxford Cedar Forest	4000	Other Forest	4000
51	Douglas Fir-Mixed Deciduous Forest	1015	<i>Mixed Conifer</i>	4255
52	Douglas Fir-White Fir/Tanoak-Madrone Mixed Forest	1015	<i>Mixed Conifer</i>	4255
53	Douglas Fir/White Oak Forest	1006	Oak-Pine Woodland	4210
54	Ponderosa Pine Forest and Woodland	1005	Ponderosa Pine	4200
56	Douglas Fir Dominant-Mixed Conifer Forest	1015	<i>Mixed Conifer</i>	4255
57	Ponderosa Pine/White Oak Forest and Woodland	1006	Oak-Pine Woodland	4210
58	Ponderosa Pine-W Juniper Woodland	1007	Juniper	4222
59	Ponderosa-Lodgepole Pine on Pumice	4000	Other Forest	4000
61	Western Juniper Woodland	1007	Juniper	4222
63	Red Alder Forest	4000	Other Forest	4000
64	Red Alder-Big Leaf Maple Forest	4000	Other Forest	4000
66	Aspen Groves	1008	Aspen	4350
67	Mixed Conifer/Mixed Deciduous Forest	1015	<i>Mixed Conifer</i>	4255
72	Siskiyou Mountains Mixed Deciduous Forest	1015	<i>Mixed Conifer</i>	4255
75	Oregon White Oak Forest	1006	Oak-Pine Woodland	4210
77	South Coast Mixed Deciduous Forest	4000	Other Forest	4000
85	Siskiyou Mountains Serpentine	3300	Other Shrubland	3300
87	Hawthorn-Willow Shrubland	3300	Other Shrubland	3300

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Code	Class Name	PIF Code	PIF Type	IWJV
89	Manzanita Dominant Shrubland	3300	Other Shrubland	3300
90	Mountain Mahogany Shrubland	1004	Montane Shrub/Mountain Mahogany	3250
91	Sagebrush Steppe	1003	Sagebrush Steppe	3400
93	Low-Dwarf Sagebrush	1003	Sagebrush Steppe	3400
95	Salt Desert Scrub Shrubland	1014	<i>Mixed Salt Desert Scrub</i>	3310
96	Big Sagebrush Shrubland	1003	Sagebrush Shrubland	3400
97	Bitterbrush-Big Sagebrush Shrubland	1003	Sagebrush Shrubland	3400
103	Northeast Oreg Canyon Grassland	1001	Grassland Steppe	3000
105	Subalpine Grassland	1013	<i>Subalpine Dry Grass</i>	3000
106	Forest-Grassland Mosaic	1001	Grassland Steppe	3000
110	Subalpine Parkland	1013	<i>Subalpine Dry Grass</i>	3000
112	Modified Grassland	1001	Grassland Steppe	3000
113	Coastal Strand	7000	Other/Unvegetated	7000
114	Wet Meadow	1011	Wet Meadow/Marsh	5100
121	Grass-shrub-sapling or Regenerating young forest	7000	Other/Unvegetated	7000
122	Alkali Playa	1012	Alkali Wetlands	5200
124	Urban	7000	Other/Unvegetated	7000
125	Agriculture	1002	Agriculture	2000
126	Exposed Tidal Flat	7000	Other/Unvegetated	7000
127	Lave Flow	7000	Other/Unvegetated	7000
128	Coastal Dunes	7000	Other/Unvegetated	7000
129	Alpine Fell-Snowfields	7000	Other/Unvegetated	7000
130	Open Water	5000	Water	5000
135	Palustrine Forest	1009	Riparian Woodland	6100
136	Palustrine Shrubland	1010	Riparian Shrubland	6300
138	Palustrine Emergent	1011	Wet Meadow/Marsh	5100
200	NWI Palustrine Forest	1200	NWI Palustrine Forest	6100
201	NWI Palustrine Shrubland	1011	Wet Meadow/Marsh	5100
202	NWI Estuarine Emergent	1202	NWI Estuarine Emergent	5100
203	NWI Palustrine Emergent	1203	NWI Palustrine Emergent	5100

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Utah
Used to Develop IWJV Habitat Types**

ID	Code	Description	UT		IWJV	
114	N80	Agriculture	1007	Agriculture	2000	Agriculture
71	S085	Southern Rocky Mountain Montane-Subalpine Grassland	1017	Grassland	3000	Grassland
76	S090	Inter-Mountain Basins Semi-Desert Grassland	1017	Grassland	3000	Grassland
94	S114	Sonora-Mojave-Baja-Desert Chaparral	1009	Low Desert Scrub	3250	Mountain Shrubland
42	S047	Rocky Mountain Lower Montane-Foothill Shrubland	1010	Mountain Shrub	3250	Mountain Shrubland
44	S050	Inter-Mountain Basins Mountain Mahogany Woodland/Shrubland	1010	Mountain Shrub	3250	Mountain Shrubland
47	S053	Great Basin Semi-Desert Chaparral	1010	Mountain Shrub	3250	Mountain Shrubland
51	S057	Mogollon Chaparral	1010	Mountain Shrub	3250	Mountain Shrubland
41	S046	Rocky Mountain Gambel Oak-Mixed Montane Shrubland	1016	Northern and Desert Oak	3250	Mountain Shrubland
19	S020	North American Warm Desert Wash	1009	Low Desert Scrub	3300	Other Shrub
53	S059	Colorado Plateau Blackbrush-Mormon-tea Shrubland	1009	Low Desert Scrub	3300	Other Shrub
54	S060	Mojave Mid-Elevation Mixed Desert Scrub	1009	Low Desert Scrub	3300	Other Shrub
60	S069	Sonora-Mojave Creosotebush-White Bursage Desert Scrub	1009	Low Desert Scrub	3300	Other Shrub
108	S136	Southern Colorado Plateau Sand Shrubland	3300	Other Shrubland	3300	Other Shrub
40	S045	Inter-Mountain Basins Mat Saltbush Shrubland	1008	High Desert Scrub	3310	Greasewood/Saltbush
58	S065	Inter-Mountain Basins Mixed Salt Desert Scrub	1008	High Desert Scrub	3310	Greasewood/Saltbush
67	S079	Inter-Mountain Basins Semi-Desert Shrub Steppe	1008	High Desert Scrub	3310	Greasewood/Saltbush
82	S096	Inter-Mountain Basins Greasewood Flat	1008	High Desert Scrub	3310	Greasewood/Saltbush
61	S070	Sonora-Mojave Mixed Salt Desert Scrub	1009	Low Desert Scrub	3310	Greasewood/Saltbush
13	S014	Inter-Mountain Basins Wash	3300	Other Shrubland	3310	Greasewood/Saltbush
48	S054	Inter-Mountain Basins Big Sagebrush Shrubland	1001	Sagebrush Steppe	3400	Sagebrush Steppe
49	S055	Great Basin Xeric Mixed Sagebrush Shrubland	1001	Sagebrush Steppe	3400	Sagebrush Steppe
50	S056	Colorado Plateau Mixed Low Sagebrush Shrubland	1001	Sagebrush Steppe	3400	Sagebrush Steppe
62	S071	Inter-Mountain Basins Montane Sagebrush Steppe	1001	Sagebrush Steppe	3400	Sagebrush Steppe
66	S078	Inter-Mountain Basins Big Sagebrush Steppe	1001	Sagebrush Steppe	3400	Sagebrush Steppe
104	S128	Wyoming Basins Low Sagebrush Shrubland	1001	Sagebrush Steppe	3400	Sagebrush Steppe
23	S024	Rocky Mountain Bigtooth Maple Ravine Woodland	1003	Mountain Riparian	4000	Other Forest
29	S031	Rocky Mountain Lodgepole Pine Forest	1020	Ponderosa Pine	4000	Other Forest
24	S025	Rocky Mtn Subalpine-Montane Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forest
25	S026	Inter-Mountain Basins Subalpine Limber-Bristlecone Pine Woodland	4000	Other Forest	4000	Other Forest
34	S036	Rocky Mountain Ponderosa Pine Woodland	1019	Ponderosa Pine	4200	Dry Ponderosa/Fir Forest
36	S039	Colorado Plateau Pinyon-Juniper Woodland	1011	Pinyon Juniper	4222	Juniper/Pine Woodlands
37	S040	Great Basin Pinyon-Juniper Woodland	1011	Pinyon Juniper	4222	Juniper/Pine Woodlands
46	S052	Colorado Plateau Pinyon-Juniper Shrubland	1011	Pinyon Juniper	4222	Juniper/Pine Woodlands
64	S075	Inter-Mountain Basins Juniper Savanna	1011	Pinyon Juniper	4222	Juniper/Pine Woodlands
30	S032	Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest/Woodland	1012	Mixed Conifer	4255	Mid-Elevation Mixed Conifer
32	S034	Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland	1012	Mixed Conifer	4255	Mid-Elevation Mixed Conifer
26	S028	Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest/Woodland	1013	Subalpine Conifer (Fir)	4270	Spruce-Fir
28	S030	Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland	1013	Subalpine Conifer (Fir)	4270	Spruce-Fir
22	S023	Rocky Mountain Aspen Forest and Woodland	1014	Aspen	4350	Aspen

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ID	Code	Description	UT	IWJV
38	S042	Inter-Mountain West Aspen-Mixed Conifer Forest/Woodland Complex	1014	Aspen
110	N11	Open Water	1015	Water
86	S102	Rocky Mountain Alpine-Montane Wet Meadow	1004	Wet Meadow
85	S100	North American Arid West Emergent Marsh	1006	Wetland
14	S015	Inter-Mountain Basins Playa	1005	Playa
21	S022	North American Warm Desert Playa	1005	Playa
79	S093	Rocky Mountain Lower Montane Riparian Woodland Shrubland	1002	Lowland Riparian
83	S097	N American Warm Desert Riparian Woodland and Shrubland	1002	Lowland Riparian
84	S098	N American Warm Desert Riparian Mesquite Bosque	1002	Lowland Riparian
118	D04	Invasive Southwest Riparian Woodland and Shrubland	1002	Lowland Riparian
78	S092	Rocky Mountain Subalpine-Montane Riparian Woodland	1003	Mountain Riparian
80	S094	NA Warm Desert Lower Montane Riparian Woodland/Shrubland	1003	Mountain Riparian
98	S118	Great Basin Foothill & Lower Montane Riparian Woodland/Shrubland	1003	Mountain Riparian
77	S091	Rocky Mountain Subalpine-Montane Riparian Shrubland	1003	Mountain Riparian
124	D11	Recently Chained Pinyon-Juniper Areas	1011	Pinyon Juniper
70	S083	Rocky Mountain Subalpine Mesic Meadow	1017	Grassland
119	D06	Invasive Perennial Grassland	1017	Grassland
121	D08	Invasive Annual Grassland	1017	Grassland
4	S004	Rocky Mountain Alpine Fell-Field	1018	Alpine
39	S043	Rocky Mountain Alpine Dwarf-Shrubland	1018	Alpine
69	S081	Rocky Mountain Dry Tundra	1018	Alpine
1	S001	North American Alpine Ice Field	7000	Other/Unvegetated
2	S002	Rocky Mountain Alpine Bedrock and Scree	7000	Other/Unvegetated
5	S006	Rocky Mountain Cliff and Canyon	7000	Other/Unvegetated
8	S009	Inter-Mountain Basins Cliff and Canyon	7000	Other/Unvegetated
9	S010	Colorado Plateau Mixed Bedrock Canyon and Tableland	7000	Other/Unvegetated
10	S011	Inter-Mountain Basins Shale Badland	7000	Other/Unvegetated
11	S012	Inter-Mountain Basins Active and Stabilized Dune	7000	Other/Unvegetated
12	S013	Inter-Mountain Basins Volcanic Rock and Cinder Land	7000	Other/Unvegetated
15	S016	N American Warm Desert Bedrock Cliff and Outcrop	7000	Other/Unvegetated
18	S019	N American Warm Desert Volcanic Rockland	7000	Other/Unvegetated
111	N21	Developed, Open Space - Low Intensity	7000	Other/Unvegetated
112	N22	Developed, Medium - High Intensity	7000	Other/Unvegetated
113	N31	Barren Lands, Non-specific	7000	Other/Unvegetated
115	D01	Disturbed, Non-specific	7000	Other/Unvegetated
116	D02	Recently Burned	7000	Other/Unvegetated
117	D03	Recently Mined or Quarried	7000	Other/Unvegetated
122	D09	Invasive Annual and Biennial Forbland	7000	Other/Unvegetated
123	D10	Recently Logged Areas	7000	Other/Unvegetated
125	D14	Disturbed, Oil Well	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Washington
Used to Develop IWJV Habitat Types**

ID	Value	Name	PIF		Value	IWJV	IWJV Cover Type
0	1000	Urban/Developed	7000	Other/Unvegetated	1000	7000	Other/Unvegetated
1	2000	Agricultural	1007	Agricultural, Pasture, Mixed Environs	2000	2000	Agricultural
2	3110	Xeric Grasslands	1001	Grasslands (including Basin Wild Rye)	3110	3000	Grassland
3	3120	Subalpine Meadow	1015	Subalpine Parklands	3120	7000	Other/Unvegetated
5	3200	Upland Shrublands	1009	Canyon Shrublands	3200	3250	Mountain Shrublands
6	3301	Big Sagebrush	1002	Shrub-Steppe	3301	3400	Sagebrush Steppe
7	3302	Other Sagebrush	1002	Shrub-Steppe	3302	3400	Sagebrush Steppe
8	3303	Salt-desert Shrub	1008	Desert Playa and Salt Scrub	3303	3310	Greasewood/Saltbush
9	3304	Bitterbrush	1009	Canyon Shrublands	3304	3250	Mountain Shrublands
	3305	Mountain Mahogany	1017	Western Juniper/Mountain Mahogany Woodlands	3305	3250	Mountain Shrublands
12	4110	Xeric Deciduous Forest	1003	Ponderosa Pine Forest/Woodlands (Eastside Oak)	4110	4210	Pine-Oak Woodlands
13	4120	Mesic Deciduous Forest	1004	Upland Aspen Forest	4120	4350	Aspen
16	4219	Mixed Coastal Forest	4000	Other Forest	4219	4000	Other Forest
17	4221	Ponderosa Pine	1003	Ponderosa Pine Forest/Woodlands (Eastside Oak)	4221	4200	Dry Ponderosa/Fir Forest
19	4223	Xeric Douglas-Fir	1003	Ponderosa Pine Forest/Woodlands (Eastside Oak)	4223	4200	Dry Ponderosa/Fir Forest
	4225	Western Juniper	1017	Western Juniper/Mountain Mahogany Woodlands	4225	4222	Juniper/Pine Woodlands
23	4229	Mixed Xeric Coniferous Forest	1017	Western Juniper/Mountain Mahogany Woodlands	4229	4222	Juniper/Pine Woodlands
	4231	Lodgepole Pine	1014	Lodgepole Pine Forest and Woodlands	4231	4000	Other Forest
	4232	Grand Fir	1013	Montane Mixed Conifer Forest	4232	4255	Mid-Elevation Mixed Conifer
26	4233	Mesic Douglas-Fir	1013	Montane Mixed Conifer Forest	4233	4255	Mid-Elevation Mixed Conifer
	4235	Western Red Cedar	4000	Other Forest	4235	4000	Other Forest
	4236	Western Hemlock	4000	Other Forest	4236	4000	Other Forest
	4237	Western Larch	1013	Montane Mixed Conifer Forest	4237	4255	Mid-Elevation Mixed Conifer
31	4239	Mixed Mesic Coniferous Forest	1013	Montane Mixed Conifer Forest	4239	4255	Mid-Elevation Mixed Conifer
32	4241	Subalpine Fir	4000	Other Forest	4241	4270	Spruce-Fir
	4242	Whitebark Pine	4000	Other Forest	4242	4000	Other Forest
35	4249	Mixed Subalpine Coniferous Forest	1014	Lodgepole Pine Forest and Woodlands	4249	4000	Other Forest
36	4310	Xeric Mixed Forest	1003	Ponderosa Pine Forest/Woodlands (Eastside Oak)	4310	4210	Pine-Oak Woodlands
37	4320	Mesic Mixed Forest	1013	Montane Mixed Conifer Forest	4320	4255	Mid-Elevation Mixed Conifer
38	5000	Water	1012	Open Water 0 Lakes, Rivers, Streams	5000	5000	Water
39	6110	Coniferous Forested Riparian	1011	Montane Coniferous Wetlands	6110	6100	Riparian Woodland
40	6120	Deciduous Forested Riparian	1005	Riparian – Wetlands	6120	6100	Riparian Woodland
41	6130	Mixed Riparian	1005	Riparian – Wetlands	6130	6100	Riparian Woodland
42	5210	Shrub Dominated Riparian	1005	Riparian – Wetlands	6210	6300	Riparian Shrubland
43	6220	Graminoid / Forb Riparian	1005	Riparian – Wetlands	6220	6200	Riparian Herbaceous
44	6300	Estuarine Emergents	1006	Herbaceous Wetlands	6300	5200	Other Wetlands
45	7100	Exposed Rock	7000	Other/Unvegetated	7100	7000	Other/Unvegetated
46	7200	Sand	7000	Other/Unvegetated	7200	7000	Other/Unvegetated
47	7300	Lava	7000	Other/Unvegetated	7300	7000	Other/Unvegetated
48	7400	Tidal Flats	7000	Other/Unvegetated	7400	7000	Other/Unvegetated

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ID	Value	Name	PIF		Value	IWJV	IWJV Cover Type
49	8100	Alpine Meadow	1016	Alpine Grasslands and Shrublands	8100	7000	Other/Unvegetated
50	9000	Ice/Snow	7000	Other/Unvegetated	9000	7000	Other/Unvegetated
51	9800	Cloud	7000	Other/Unvegetated	9800	7000	Other/Unvegetated

**Appendix 1 – Gap and SW ReGap Habitat Classifications by Wyoming
Used to Develop IWJV Habitat Types**

Value	Name	PIF	PIF Type	IWJV
0		7000	Other/Unvegetated	7000
11001	Urban	1015	Urban	7000
20005	Sandhills Upland Prairie	1004	Shortgrass Prairie	3000
20006	Lowland Tallgrass Prairie	1004	Shortgrass Prairie	3000
20010	Western Mixedgrass Prairie	1004	Shortgrass Prairie	3000
20011	Barren/Sand/Outcrop	7000	Other/Unvegetated	7000
20012	Agricultural Fields	1012	Agricultural Lands	2000
20014	Fallow Agricultural Fields	1012	Agricultural Lands	2000
20016	Emergent Wetland	1003	Wetlands	5100
21001	Dry Land Crops Type	1012	Agricultural Lands	2000
21002	Irrigated Crop Type	1012	Agricultural Lands	2000
30000		7000	Other/Unvegetated	7000
30005	High Cover Grassland	1004	Shortgrass Prairie	3000
30006	Low Cover Grassland	1004	Shortgrass Prairie	3000
30014	Barren Land	7000	Other Unvegetated	7000
30015	Creeping Juniper Dwarf-shrub	3300	Other Shrubland	3300
31001	Mixed Grass Prairie	1004	Shortgrass Prairie	3000
31002	Short Grass Prairie	1004	Shortgrass Prairie	3000
31003	Great Basin Foothills Grassland	1004	Shortgrass Prairie	3000
31020	Mid Grass Prairie Type	1004	Shortgrass Prairie	3000
31030	Short Grass Prairie Type	1004	Shortgrass Prairie	3000
32001	Mesic Upland Shrub Type	1011	Mountain-Foothills Shrub	3250
32002	Xeric Upland Shrub Type	1011	Mountain-Foothills Shrub	3250
32005	Bitterbrush Shrub Steppe	1011	Mountain-Foothills Shrub	3250
32006	Mountain Big Sagebrush Type	1006	Shrub-steppe	3400
32007	Wyoming Big Sagebrush Type	1006	Shrub-steppe	3400
32008	Black Sagebrush Steppe	1006	Shrub-steppe	3400
32009	Big Sagebrush Type	1006	Shrub-steppe	3400
32010	Desert Shrub Type	1006	Shrub-steppe	3300

Value	Name	PIF	PIF Type	IWJV
32011	Saltbush Fans and Flats Type	1006	Shrub-steppe	3310
32012	Greasewood Fans and Flats Type	1006	Shrub-steppe	3310
32013	Vegetated Dunes	1016	Specialized Habitats	7000
41001	Aspen Type	1010	Aspen	4350
41002	Bur Oak Woodland	1011	Mountain-Foothills Shrub	7000
42000	Burned Conifer	1016	Specialized Habitats	7000
42001	Spruce - Fir Type	1008	High Elevation Conifer	4270
42003	Douglas Fir Type	1005	Mid Elevation Conifer	4255
42004	Lodgepole Pine Type	1005	Mid Elevation Conifer	4000
42007	Lodgepole Pine Clearcut Type	1016	Specialized Habitats	4000
42008	Whitebark Pine	1008	High Elevation Conifer	4000
42009	Limber Pine Type	1005	Mid Elevation Conifer	4000
42010	Ponderosa Pine Type	1009	Low Elevation Conifer	4200
42015	Juniper Woodland Type	1017	Juniper Woodland	4222
52001	Open Water Type	1013	Aquatic	5000
61001	Forest Dominated Wetland/Riparian Type	1001	Montane Riparian	6100
62001	Shrub Dominated Wetland/Riparian Type	1002	Plains/Basin Riparian	6300
62002	Grass-dominated Wetland	1003	Wetlands	5100
62003	Grass-dominated Riparian	1002	Plains/Basin Riparian	6200
71001	Unvegetated Playa	1016	Specialized Habitats	7000
73001	Active Sand Dunes	1016	Specialized Habitats	7000
74001	Exposed Rock Type	1016	Specialized Habitats	7000
74002	Alpine Bare Rock and Soil	1016	Specialized Habitats	7000
75001	Mining Operations Type	1016	Specialized Habitats	7000
82001	Meadow Tundra	1014	Alpine Tundra/Grassland	7000
82002	Subalpine Meadow Type	1007	Meadows	5100
91001	Permanent Snow	1016	Specialized Habitats	7000

Appendix 2 – U.S. Fish and Wildlife Service Manual 721 FW 6

6.1 What is the purpose of this chapter? This chapter establishes policy and provides guidance for the establishment and organization of joint ventures receiving administrative funding through the Service.

6.2 What are the authorities for this program?

A. The [Migratory Bird Treaty Act \(16 U.S.C. 703-712\)](#) authorizes appropriations to carry out the provisions and to accomplish the purposes of the migratory bird conventions with Canada, Mexico, Japan, and the Soviet Union.

B. The [North American Wetlands Conservation Act \(16 U.S.C. 4401-4412\)](#) finds that the protection of migratory birds and their habitats require the coordinated action of governments, private organizations, landowners, and other citizens. It also encourages partnership among public agencies and other interests.

C. The [Fish and Wildlife Conservation Act \(16 U.S.C. 2901-2911\)](#) authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for non-game fish and wildlife.

6.3 What is a migratory bird joint venture? A joint venture is a self-directed partnership of agencies, organizations, corporations, tribes, or individuals that has formally accepted the responsibility of implementing national or international bird conservation plans within a specific geographic area or for a specific taxonomic group, and has received general acceptance in the bird conservation community for such responsibility.

6.4 What does a migratory bird joint venture do? Working both together and independently, joint venture partners conduct activities in support of bird conservation goals that the joint venture partnership developed. These activities include:

- A.** Biological planning and prioritization.
- B.** Project development and implementation.
- C.** Monitoring, evaluation, and applied research activities.
- D.** Communications and outreach.
- E.** Fund raising for projects and other activities.

6.5 What are the responsibilities of joint ventures?

A. A joint venture should accept the responsibility for delivery of national or international bird conservation plans. Joint ventures should work to develop the capacity to become the delivery agents for all migratory bird habitat conservation priorities in their geographic areas.

B. A joint venture management board should direct joint venture activities. The board should be comprised of a broad spectrum of representatives from public and private organizations, tribes, institutions, and interests vested in conservation of fish and wildlife habitat within the geographic area of the joint venture.

C. An implementation plan, which the management board develops or adopts, guides joint venture conservation actions. The management board identifies the biological planning, conservation implementation, and evaluation process that will guide the work of the joint venture.

D. Joint ventures should be able to implement conservation actions identified in the implementation plan, including the design, funding, and tracking of conservation projects.

E. Joint ventures should develop an evaluation strategy to guide monitoring and assessment activities. By evaluating activities, joint ventures can analyze the effectiveness of conservation actions, test the biological assumptions that underlay their strategies, and guide future conservation planning.

6.6 What is the role of joint venture management boards? Joint venture management boards are comprised of representatives of the participating agencies and organizations. The management boards are responsible for maintaining commitment and support to achieve the goals and objectives of the joint venture. The management boards determine priorities for all aspects of joint venture activities.

6.7 What role does the Service play on joint venture management boards? Regional Directors and the California/Nevada Operations Office (CNO) Manager, or their designees, are members of joint venture management boards and are responsible for our commitment to meet joint venture objectives.

6.8 What is the role of Joint Venture Coordinators? Joint Venture Coordinators (JVC's):

A. Are responsible for disseminating information and guidance and coordinating and facilitating actions and projects within a joint venture.

B. Should coordinate implementation of Plan activities with the Division of Bird Habitat Conservation and other Service personnel in their Regions/CNO and across Regions/CNO where appropriate.

C. Assist joint venture management boards by:

(1) Coordinating meetings;

(2) Serving as intermediaries for communication among board members and agencies; and

(3) Coordinating activities required for conservation planning, development, and implementation of joint venture projects, tracking accomplishments, and evaluating the process and results.

D. Solicit information on accomplishments from joint venture partners, and organize and submit the information to the appropriate managers of national databases.

E. Generate external support for and participation in joint ventures. JVC's operate with considerable latitude across traditional boundaries due to the unique nature of joint venture activities. JVC's are not necessarily Service employees. They may be members of any partner organization.

6.9 How are joint ventures established, and how does the Service determine whether or not to become involved? At any time, Federal, State, tribal, or private parties may suggest establishing new joint ventures.

A. The initiating agency or organization coordinates with potential partners to produce a scoping document or concept plan. They circulate this document for review and comment to interested agencies, organizations, and individuals.

B. Based on the review of the scoping document, the initiating agency or organization makes a decision whether or not to proceed with the formation of a joint venture and management board and develop an implementation plan.

C. If they decide to proceed, the initiating agency or organization submits the draft implementation plan to our Division of Bird Habitat Conservation. The Division of Bird Habitat Conservation coordinates review of the plan within the Service, with appropriate Flyway Council(s), with the national or international councils that oversee the various bird conservation initiatives, and other interested parties.

D. Based on this review of the implementation plan, the Division of Bird Habitat Conservation will determine whether or not to make a recommendation to the Director for the Service to support the proposed joint venture.

6.10 How does the Service support joint ventures? For those joint ventures that the Service recognizes, we will seek support for a full-time JVC and associated costs for basic program infrastructure. We do not fund all facets of joint venture work, but we encourage other Federal and State agencies, conservation organizations, and private interests to contribute. We will direct new funding to the joint venture activities that need it most. Following are the priorities:

A. Providing a JVC in each recognized joint venture.

B. Establishing base capability for biological planning, implementation, and evaluation.

C. Supporting joint ventures that address the full spectrum of bird conservation as defined by the international and national bird plans.

D. Assisting new joint ventures with initial planning and organization

Appendix 3 - Technical Committee Recommendations for the IWJV Monitoring-Evaluation Plan

March 2004

Executive Summary: In 2002 the IWJV Management Board developed a concept for biological planning that included "Tracking of Accomplishments" and "Evaluation and Monitoring." The position stated that the "Technical Committee will propose an evaluation and monitoring process to the Management Board to be implemented when the IWJV plan is completed. Also, they will develop an evaluation and monitoring approach for project assessment." The Technical Committee is comprised of individuals named in Appendix 1. This document is meant to provide Management Board members guidance for policy development and future allocation of funds to implement the IWJV monitoring and evaluation program.

The approach outlined below will serve to establish consistent project tracking for IWJV projects as well programmatic evaluation of the IWJV implementation plan. Information gathered under this effort could be blended with other monitoring efforts for more detailed analysis. These recommendations pertain to all bird habitat projects within the IWJV. Projects which occur within the IWJV have various reporting requirements as mandated by their respective funding sources.

With the acceptance of the recommendations (or their modifications), the Management Board will provide direction to the IWJV Coordinator which determines the scope of IWJV monitoring and evaluation activities.

Scope, Need and Authority: The need and authority which supports these recommendations is reflected in (1) the IWJV Mission Statement, and (2) the Management Board direction noted above. The recommendations are also responsive to the "all bird" vision of the North American Bird Conservation Initiative (NABCI). Specific requirements for monitoring and evaluation can be found in numerous documents including the North American Wetlands Conservation Act's report to Congress and the U.S. Fish and Wildlife Services Directors Order No. 146 on Joint Venture Administration.

Definitions:

- Monitoring: "To keep track of, regulate, or control the operation of a process."
- Evaluate: "To determine the significance or worth of, through careful appraisal and study."

Technical Committee Assumptions:

1. Monitoring over time leads to effective evaluation.
2. Monitoring and evaluation may effect partners and project delivery.
3. Monitoring and evaluation requires a long-term commitment.
4. Monitoring and evaluation has costs.

5. Monitoring and evaluation should be simple and able to be completed by the JV and project proponents with minimal effort.

IWJV Monitoring and Evaluation Plan Recommendations, 2004

IWJV monitoring and evaluation should focus on three elements, (1) Programmatic, (2) Project Tracking, and (3) Applied Science Needs. See Appendix 2 for more details of programmatic and project tracking elements:

1. Programmatic: This evaluation considers the broad JV goals and objectives, such as, acreage goals, all bird vision, expanding partners, administration, project funding. Are we doing what our plan says!!

Technical Committee Recommendation: Upon completion of state implementation plans and subsequent roll-up to the IWJV Implementation Plan, the IWJV Management Board will initiate steps to conduct a programmatic evaluation. Begin in 2005, and repeat every three years.

2. Project Tracking: This monitoring effort will examine specific project objectives, activities and accomplishments. Project location, habitat types and acreages, linkage to bird plans continentally and regionally. Project tracking may include project specific data collection from partners or the applicant such as bird breeding success and brood survival. This information can be used for the programmatic evaluation as well.

Project tracking **IS NOT** intended to provide specific information relative to changes in bird populations.

Technical Committee Recommendation: The IWJV will conduct project tracking-monitoring of past NAWCA and IWJV Cost-Share projects using the format presented below and develop a final report which includes suggested improvements to the Management Board in the spring of 2005. This should include some measurement protocols and cycle times.

Technical Committee Recommendation: IWJV will ensure the project tracking-monitoring process is made available to the IWJV Cost-Share project applicants. The IWJV will provide a description of how projects will be monitored and share those criteria with State Steering Committees asking for input and buy-in.

Technical Committee Recommendation: The JV Coordinator will provide oversight to a validation process developed by the Technical Committee that confirms the project is in fact completed as reported and functioning as described.

Technical Committee Recommendation: IWJV will explore the potential to update website for project applicant reporting requirements.

3. Applied Science Needs: This area centers on identified monitoring needs or larger projects such as the Coordinated Bird Monitoring effort. The IWJV must partner with other programs to effectively monitor and evaluate such as population changes continentally or regionally, and detailed changes in habitat quality. The needs will be identified and supported from the IWJV annual budgets where appropriate. The recent final report from the USFWS on National Wildlife Refuges habitat goals objectives is yet

another example where partnering will strengthen continental and regional monitoring programs.

Technical Committee Recommendation: The IWJV will promote continuation of the State Steering Committees and/or state all bird planning committees to further all bird implementation and help identify priority bird monitoring needs and pursue funding sources and partners for implementation of that monitoring. JV State Steering Committees should play an active role in development and delivery of state level CBM programs.

Technical Committee Recommendation: IWJV strongly supports the concept of CBM and its effort to assess bird population trends range-wide.

Technical Committee Recommendation: IWJV will contract to develop GIS layers which map the various bird initiative continental species habitat priorities at the BCR level within the IWJV.

Appendix 3.1 - Technical Committee Members

Committee Chair: Tice Supplee, IWJV Board Liaison

Members:

- Carol Beardmore (Sonoran JV)
- Joe LaTourrette (IWJV State All Bird Plan Coordinator)
- Red Hunt (NAWMP)
- Gary Ivey (IW Waterbird Plan)
- Tom Aldrich (Pacific Flyway)
- Don Paul (Great Basin BCR Coordinator)
- Dan Casey (Northern Rockies BCR Coordinator)
- Lew Oring (IW Shorebird Plan)
- Christopher Rustay (Shortgrass Prairie BCR)
- Jon Bart (USGS Bird Monitoring)

Appendix 3.2 - Details of IWJV Monitoring and Evaluation Plan Elements:

1. Programmatic Evaluation: Identify IWJV Implementation Plan Goals and Objectives

Acreage: type, location

Partners: new, numbers

Funding: targets achieved

Expansion: geography, positions

Science: adaptive management, biological assessment

2. Project Tracking: This form was adapted from the Colorado Division of Wildlife Wetland Program Evaluation developed by Mr. Alex Chappell. This form when constructed will be a web based interactive document based on user response.

A. General Information (example)

Project Name and IWJV #	Sipe Wetland protection and restoration project IWJV #22309
BCR	Southern Rockies
STATE	Arizona
Watershed(s); GPS Coordinates or UTM Coordinates	Mount Baldy 26.8N; 29.8 E
Bird Habitat Conservation Area	White Mountains BHCA
Assessor Date project completed Date of evaluation Project contact	James Q. Cole, 07/2001; 04/2004 Dave Cagle
Project Objectives: original project objectives: (provide a brief statement of what was to be accomplished)	Acquire 3,500 acres of wetlands and 2,000 acres of associated uplands. Restore 900 acres of seasonal wetlands through improved water delivery system.
Have the objectives been met? List habitat types and acreages	Yes? No? if no, why?
Is there a management plan for the site?	Yes/ No if yes, where is it?
Has there been any public use generated by the project?	Yes/ no if yes what kind, user days, revenue. etc.?
Do photo points exists; before and after?	Yes, No if yes, where are they housed?
Has the project resulted in surrounding landowners changing management?	Yes, No. If yes, how? What acreage is involved?
Structural Integrity, project future needs.	Fee title acquisition protected in perpetuity and included as a SWMA, Moist soil/ water delivery structures need repair year 2015.

B. Continental Bird Plan Priorities (*example*)

Species – Plan Linkage	NAWMP	U.S. Shorebird	PIF	Waterbird
Northern Pintail	X		X	
G. Scaup	X			
Sandhill Crane			X	X
Bandtail Pigeon			X	
Marbled Godwit		X		
SW Willow Flycatcher			X	
Mountain Plover		X		
Marsh Wren			X	

C. Regional (State or JV Plans) Species or Habitat Objectives

Species/Habitat	Objectives	Measures	Results
Northern Pintail	Increase winter use by 1000 bird days	Bi-monthly winter ground counts	02-03 winter use, average winter use increased by 2000 bird days
Cinnamon Teal	Increase nesting pairs 10%	Conduct June nesting islands surveys	02-03 nest density increased 15% over previous year
Ruddy Duck	Increase nesting density 10%	Conduct June emergent vegetation surveys	02-03 nest density declined 5%
Sage Grouse	Increase current population by 100%	Seasonal lek counts	10 % increase at leks
Palustrine emergent marsh	Increase habitat type by 500,000 acres	Acreage completed	500 acres maintained in perpetuity. 1% of objective achieved
Grassland	Increase habitat quality on 100,000 acres	Acreage of habitat quality improved	500 acres protected. .5% of objective achieved
Sagebrush	Increase wet meadow complexes by 50,000 acres	Acreage of wet meadow habitat restored	250 acres restored. .5% of objective achieved

Appendix 4 – Continental and Regional Priority Bird Species

Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
1	Common Loon		X		X	X			X	X	X	X
2	Horned Grebe				X	X			X	X		
3	Eared Grebe		X	X	X	X	X	X	X	X		X
4	Red-necked Grebe				X				X			
5	Western Grebe	X	X	X	X	X	X	X	X	X	X	X
6	Clark's Grebe	X	X	X	X	X	X	X	X	X	X	X
7	American White Pelican	X	X	X	X	X	X	X	X	X	X	X
8	Double-crested Cormorant		X					X				
9	Neotropic Cormorant							X				
10	American Bittern	X	X	X		X		X			X	X
11	Least Bittern	X	X				X	X	X	X	X	
12	Great Blue Heron		X			X					X	X
13	Great Egret	X	X					X				
14	Snowy Egret	X	X	X	X	X	X	X	X	X	X	X
15	Cattle Egret				X					X		
16	Green Heron							X				
17	Black-crowned Night-Heron	X	X	X	X	X	X	X	X	X	X	X
18	White-faced Ibis	X	X	X	X	X	X	X	X	X	X	X
19	Tundra Swan		X		X	X	X			X	X	
20	Trumpeter Swan		X		X	X	X			X	X	X
21	Greater White-fronted Goose		X			X	X		X			
22	Ross's Goose					X	X	X				
23	Lesser Snow Goose				X	X	X	X		X		
24	Canada Goose	X			X	X	X	X		X	X	
25	Wood Duck	X	X		X	X	X		X	X	X	
26	Mallard	X	X	X	X	X	X	X	X	X	X	
27	Northern Pintail	X	X	X	X	X	X	X	X	X	X	X
28	Gadwall	X			X	X	X			X		X

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Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
29	American Wigeon	X	X	X	X	X	X	X	X	X	X	
30	Northern Shoveler	X			X	X	X			X		
31	Blue-winged Teal	X		X	X	X		X		X		
32	Cinnamon Teal	X		X	X	X	X	X		X	X	
33	Green-winged Teal	X			X	X	X	X		X		
34	Lesser Scaup	X	X	X	X	X	X	X	X	X	X	X
35	Ring-necked Duck	X	X		X	X	X		X	X		
36	Greater Scaup	X	X			X						
37	Canvasback	X	X	X	X	X	X	X	X	X	X	X
38	Redhead	X	X	X	X	X	X	X	X	X	X	X
39	Harlequin Duck		X		X	X			X	X	X	X
40	Common Goldeneye			X	X	X		X		X		
41	Barrow's Goldeneye			X	X	X		X	X	X	X	X
42	Bufflehead	X	X	X	X	X		X	X	X	X	X
43	Common Merganser	X				X						
44	Ruddy Duck	X			X	X				X	X	
45	Hooded Merganser					X					X	
46	California Condor	X	X					X		X	X	
47	Northern Harrier	X	X	X		X	X	X	X	X	X	X
48	White-tailed Kite		X									
49	Cooper's Hawk		X				X			X	X	
50	Sharp-shinned Hawk		X			X						
51	Northern Goshawk	X	X	X	X	X	X	X	X	X	X	X
52	Zone-tailed Hawk	X										
53	Common Black-Hawk	X						X				
54	Swainson's Hawk	X	X	X	X	X	X	X	X	X	X	X
55	Ferruginous Hawk	X	X		X	X	X	X	X	X	X	X
56	Osprey	X	X		X					X		
57	Golden Eagle	X	X	X	X	X			X	X	X	X
58	Bald Eagle	X	X	X	X	X	X	X	X	X	X	X
59	Gyr Falcon					X						
60	Prairie Falcon	X	X	X	X	X	X	X	X	X	X	X

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		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
		Species List										
61	Merlin		X								X	X
62	Peregrine Falcon	X	X	X	X	X	X	X	X	X	X	X
63	Ring-necked Pheasant											
64	Chukar											
65	Ruffed Grouse		X		X	X						
66	Sharp-tailed Grouse			X	X	X	X		X	X	X	X
67	Greater Sage-grouse		X	X	X	X	X	X	X	X	X	X
68	Gunnison Sage-Grouse			X						X		
69	Spruce Grouse				X	X			X			
70	Blue Grouse	X		X	X	X		X	X		X	X
71	White-tailed Ptarmigan			X	X	X		X			X	X
72	Mearn's Quail	X										
73	Mountain Quail				X				X		X	
74	Scaled Quail	X		X				X				
75	Gambel's Quail									X	X	
76	Sora											
77	Virginia Rail					X						X
78	Yellow Rail		X		X	X			X		X	
79	Greater Sandhill Crane	X	X	X	X	X	X	X	X	X	X	X
80	Lesser Sandhill Crane		X						X			
81	Black-bellied Plover	X	X		X	X	X		X	X	X	X
82	American Golden Plover				X	X			X		X	X
83	Semipalmated Plover		X		X	X					X	
84	Snowy Plover	X	X	X	X	X	X	X	X	X	X	X
85	Killdeer	X	X		X	X	X	X		X	X	X
86	Mountain Plover	X		X	X	X	X	X		X	X	X
87	Black-necked Stilt	X	X	X	X	X	X	X	X	X	X	X
88	American Avocet	X	X	X	X	X	X	X	X	X	X	X
89	Greater Yellowlegs	X	X	X	X	X	X			X	X	X
90	Lesser Yellowlegs		X		X	X					X	
91	Solitary Sandpiper	X	X	X	X	X	X	X	X	X	X	X
92	Spotted Sandpiper	X	X	X	X	X		X		X	X	X

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		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
		Species List										
93	Upland Sandpiper				X	X	X		X	X	X	X
94	Buff-breasted Sandpiper					X						X
95	Whimbrel		X		X	X			X		X	X
96	Long-billed Curlew	X	X		X	X	X	X	X	X	X	X
97	Hudsonian Godwit					X						X
98	Marbled Godwit	X	X		X	X	X	X	X	X	X	X
99	Willet	X	X	X	X	X	X	X	X	X	X	X
100	Sanderling				X	X			X		X	X
101	Red Knot					X						X
102	Dunlin		X		X	X					X	
103	Baird's Sandpiper		X		X	X					X	
104	Semipalmated Sandpiper	X	X		X	X	X			X	X	X
105	Western Sandpiper	X	X	X	X	X	X		X	X	X	X
106	Least Sandpiper	X	X		X	X	X		X	X	X	X
107	Pectoral Sandpiper		X		X	X					X	
108	Stilt Sandpiper				X	X		X			X	
109	Long-billed Dowitcher	X	X		X	X	X		X	X	X	X
110	Short-billed Dowitcher					X						
111	Wilson's Snipe	X	X	X	X	X	X	X		X	X	X
112	Wilson's Phalarope	X	X	X	X	X	X	X	X	X	X	X
113	Red-necked Phalarope	X	X		X	X	X		X	X	X	X
114	Franklin's Gull	X	X		X	X	X	X	X	X	X	X
115	California Gull	X	X		X	X	X	X		X	X	X
116	Black Tern	X	X	X	X	X	X	X	X	X	X	X
117	Caspian Tern	X	X		X	X	X			X	X	X
118	Common Tern	X				X	X			X	X	X
119	Forster's Tern		X	X	X	X		X	X	X	X	X
120	Band-tailed Pigeon	X	X	X				X		X	X	X
121	Black-billed Cuckoo					X						X
122	Western Yellow-billed Cuckoo		X	X			X	X		X	X	
123	Yellow-billed Cuckoo	X	X		X	X	X		X	X	X	X
124	Barn Owl											

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Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
125	Long-eared Owl	X	X	X						X	X	
126	Short-eared Owl	X	X	X	X	X	X	X	X	X	X	
127	Flammulated Owl	X	X	X	X	X	X	X	X	X	X	
128	Eastern Screech-Owl					X						X
129	Elf Owl							X				
130	Great Gray Owl		X		X	X			X	X	X	X
131	Northern Spotted Owl		X				X		X		X	
132	Mexican Spotted Owl	X		X				X		X	X	
133	Northern Pygmy Owl				X	X		X	X	X		X
134	Burrowing Owl	X	X	X	X	X	X	X	X	X	X	X
135	Boreal Owl				X	X			X	X		X
136	Northern Saw-whet Owl									X	X	
137	Common Poorwill			X		X						X
138	Whip-poor-will	X						X				
139	Belted Kingfisher	X	X					X				
140	White-throated Swift	X		X							X	X
141	Black Swift	X	X	X	X	X		X	X	X	X	
142	Vaux's Swift		X		X	X			X		X	
143	Magnificent Hummingbird							X				
144	Black-chinned Hummingbird		X	X					X		X	X
145	Costa's Hummingbird		X					X		X	X	
146	Calliope Hummingbird	X	X		X	X	X		X	X	X	X
147	Broad-tailed Hummingbird			X		X			X	X	X	X
148	Rufous Hummingbird	X	X	X	X	X					X	X
149	Red-headed Woodpecker					X		X				X
150	Lewis's Woodpecker	X	X	X	X	X	X	X	X	X	X	X
151	White-headed Woodpecker		X		X		X		X		X	
152	Three-toed Woodpecker	X		X	X	X	X	X	X	X		X
153	Black-backed Woodpecker		X		X	X			X	X	X	X
154	Pileated Woodpecker		X			X			X		X	
155	Williamson's Sapsucker	X	X	X	X	X		X	X	X	X	X
156	Red-breasted Sapsucker		X		X							

Intermountain West Joint Venture Coordinated Bird Conservation Plan

Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
157	Red-naped Sapsucker	X	X	X		X	X	X	X	X	X	X
158	Olive-sided Flycatcher	X	X	X	X	X	X	X	X	X	X	X
159	Western Wood-Pewee		X	X								
160	Willow Flycatcher	X	X		X	X	X		X	X	X	X
161	Southwestern Willow Flycatcher	X	X	X			X	X		X	X	
162	Least Flycatcher					X						
163	Dusky Flycatcher			X	X	X					X	X
164	Hammond's Flycatcher	X		X	X	X		X	X		X	X
165	Gray Flycatcher	X	X	X			X	X	X	X	X	X
166	Pacific Slope Flycatcher		X									
167	Cordilleran Flycatcher	X		X	X	X				X		X
168	Say's Phoebe			X				X				X
169	Vermillion Flycatcher	X	X							X	X	
170	Ash-Throated Flycatcher						X		X		X	X
171	Cassin's Kingbird			X		X						X
172	Loggerhead Shrike	X	X	X	X	X	X	X	X	X	X	X
173	Bell's Vireo	X	X				X	X		X	X	
174	Gray Vireo	X	X	X	X		X	X		X		
175	Plumbeous Vireo					X						X
176	Cassin's Vireo				X	X					X	
177	Warbling Vireo		X			X		X				
178	Red-eyed Vireo					X		X			X	
179	Western Scrub-Jay							X				X
180	Pinyon Jay	X	X	X	X		X	X		X		X
181	Clark's Nutcracker			X	X	X			X		X	X
182	Black-billed Magpie	X		X								
183	Horned Lark		X	X							X	
184	Violet-green Swallow			X				X				
185	Northern Rough-winged Swallow					X			X			X
186	Bank Swallow		X				X	X	X			
187	Purple Martin	X	X	X	X			X	X	X		X
188	Bridled Titmouse	X						X				

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Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
189	Juniper Titmouse	X	X	X			X	X		X	X	X
190	Oak Titmouse		X									
191	Mountain Chickadee				X	X						
192	Chestnut-backed Chickadee					X						
193	Verdin	X	X				X	X		X		
194	Red-breasted Nuthatch		X		X	X						
195	Pygmy Nuthatch			X	X	X		X	X	X	X	X
196	Brown Creeper		X			X			X		X	X
197	Marsh Wren		X			X		X	X		X	X
198	Bewick's Wren											X
199	Winter Wren					X						
200	Rock Wren			X								X
201	Cactus Wren	X					X	X		X		
202	American Dipper	X	X	X	X	X		X	X	X	X	X
203	Golden-crowned Kinglet	X	X	X		X						X
204	Blue-gray Gnatcatcher		X			X						
205	Mountain Bluebird			X	X	X		X				
206	Western Bluebird			X			X			X	X	X
207	Townsend's Solitaire				X	X						X
208	Varied Thrush					X			X		X	
209	Veery	X				X		X	X		X	X
210	Hermit Thrush								X		X	
211	Gray Catbird	X				X					X	
212	Bendire's Thrasher	X	X					X		X	X	
213	Curve-billed Thrasher							X				
214	Crissal Thrasher	X	X					X		X	X	
215	Le Conte's Thrasher		X				X			X	X	
216	Sage Thrasher	X	X	X	X	X	X	X	X	X	X	X
217	Sprague's Pipit	X				X		X				X
218	Phainopepla	X	X				X			X	X	
219	Bohemian Waxwing			X		X						
220	Nashville Warbler		X			X			X		X	

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Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
221	Virginia's Warbler	X	X	X	X		X	X	X	X	X	X
222	Lucy's Warbler	X	X				X	X		X		
223	Yellow Warbler	X	X						X	X	X	
224	Townsend's Warbler				X	X			X		X	X
225	Hermit Warbler		X									
226	Black-throated Gray Warbler	X	X	X			X	X		X	X	X
227	Grace's Warbler	X		X			X	X		X	X	
228	American Redstart	X				X						
229	Ovenbird					X						X
230	MacGillivray's Warbler	X	X	X	X	X	X	X	X	X	X	X
231	Common Yellowthroat		X							X	X	
232	Wilson's Warbler		X	X			X	X				X
233	Red-faced Warbler	X						X				
234	Painted Redstart							X				
235	Yellow-breasted Chat	X	X				X		X	X	X	
236	Olive Warbler	X						X				
237	Western Tanager		X		X	X						
238	Hepatic Tanager	X										
239	Summer Tanager	X	X							X	X	
240	Lazuli Bunting		X	X	X	X		X	X		X	X
241	Dickcissel					X		X				X
242	Pyrrhuloxia						X					
243	Blue Grosbeak	X	X				X			X	X	
244	Abert's Towhee	X						X		X		
245	Canyon Wren	X					X					
246	Green-tailed Towhee		X	X	X	X					X	
247	Black-throated Sparrow		X		X			X	X	X	X	X
248	Sage Sparrow	X	X	X	X	X	X	X	X	X	X	X
249	Chipping Sparrow		X			X			X		X	
250	Clay-colored Sparrow					X						
251	Brewer's Sparrow	X	X	X	X	X	X	X	X	X	X	X
252	Black-chinned Sparrow	X	X					X				

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Species List		Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
253	Lark Bunting			X	X	X				X		X
254	Vesper Sparrow						X	X	X		X	X
255	Lark Sparrow		X			X			X			X
256	Baird's Sparrow					X		X				X
257	Grasshopper Sparrow	X	X		X	X		X	X	X	X	X
258	Fox Sparrow		X							X	X	
259	Song Sparrow		X			X						
260	McCown's Longspur				X	X		X				X
261	Chestnut-collard Longspur	X				X		X				X
262	Bullock's Oriole		X					X	X		X	X
263	Scott's Oriole	X	X	X			X			X	X	X
264	Bobolink	X			X	X	X	X	X	X	X	X
265	Tri-colored Blackbird		X		X		X		X	X		
266	Yellow-headed Blackbird		X			X						
267	Gray-crowned Rosy Finch								X		X	
268	Black-capped Rosy-Finch											X
269	Brown-capped Rosy Finch			X				X				X
270	Black Rosy-Finch			X	X	X	X		X	X	X	X
271	Red Crossbill				X	X						
272	White-winged Crossbill				X					X		X
273	Lesser Goldfinch				X					X		
274	Lawrence's Goldfinch		X							X	X	
275	Cassin's Finch			X	X	X						
276	Pine Grosbeak	X		X				X	X			

Appendix 5 – Acreage Status and Objectives of Priority A and B Habitats

IWJV Habitat Type: **GRASSLAND**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	3,005,359	242,708	242,700	8%
California	428,043	309,847	30,521	7%
Colorado	4,681,209	3,110,671	400,000	9%
Idaho	4,522,872	1,361,157	838,383	19%
Montana	6,315,221	1,543,395	448,626	7%
Nevada	776,587	683,251	0	0%
New Mexico	19,515,257	3,766,388	3,457,000	18%
Oregon	3,723,154	813,708	365,000	10%
Utah	644,861	453,345	81,987	13%
Washington	4,557,129	2,034,546	2,000,000	44%
Wyoming	4,998,198	285,204	285,000	12%
TOTAL	53,167,890	14,604,220	8,149,217	15%

IWJV Habitat Type: **SAGEBRUSH-STEPPE**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	1,388,390	476,919	327,000	24%
California	3,566,387	2,521,258	237,961	7%
Colorado	5,435,680	3,328,638	2,700,000	50%
Idaho	15,226,187	7,137,225	6,628,845	44%
Montana	2,141,959	1,022,760	905,319	42%
Nevada	28,879,361	12,717,626	240,000	1%
New Mexico	1,121,073	469,340	469,000	42%
Oregon	14,429,319	3,860,153	2,930,000	20%
Utah	9,782,681	2,467,887	1,580,870	16%
Washington	2,129,987	1,217,184	1,200,000	56%
Wyoming	18,989,834	4,052,267	3,800,000	20%
TOTAL	103,090,858	39,271,256	21,018,995	20%

IWJV Habitat Type: **DRY PONDEROSA PINE FOREST**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	3,500,040	1,905,068	1,900,000	54%
California	1,622,370	69,096	3,060	0%
Colorado	2,578,081	1,163,102	1,100,000	43%
Idaho	2,249,948	367,944	346,984	15%
Montana	1,772,985	392,514	245,243	14%
Nevada	51,063	41,809	3,000	6%
New Mexico	5,147,433	2,351,277	2,300,000	45%
Oregon	5,231,614	765,656	370,000	7%
Utah	500,583	61,966	0	0%
Washington	3,038,504	722,042	720,000	29%
Wyoming	450,435	77,586	78,000	17%
TOTAL	26,143,056	7,918,060	7,066,287	27%

IWJV Habitat Type: **ASPEN**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	102,135	85,847	10,000	10%
California	30,928	9,388	1,404	5%
Colorado	3,308,183	1,099,677	670,000	20%
Idaho	864,322	272,798	270,000	31%
Montana	385,631	124,192	250,000	65%
Nevada	338,838	166,114	40,000	12%
New Mexico	410,449	133,859	0	0%
Oregon	38,065	32,493	25,000	66%
Utah	1,866,935	193,075	85,604	5%
Washington	4,808	0	0	73%
Wyoming	681,108	186,191	176,000	26%
TOTAL	8,031,402	2,303,543	1,531,508	19%

IWJV Habitat Type: **RIPARIAN**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	59,462	16,128	16,000	27%
California	65,967	42,648	6,397	10%
Colorado	1,039,426	340,472	73,391	6%
Idaho	894,738	326,999	246,438	26%
Montana	625,543	231,397	141,941	36%
Nevada	333,576	199,653	8,182	2%
New Mexico	466,423	175,456	89,000	19%
Oregon	146,963	50,263	47,000	32%
Utah	477,436	254,342	55,808	12%
Washington	148,813	131,753	45,000	24%
Wyoming	1,078,781	342,401	317,000	29%
TOTAL	5,337,128	2,111,512	1,046,157	20%

IWJV Habitat Type: **WATER-WETLANDS**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	64,927	14,578	14,500	22%
California	774,687	554,561	74,713	10%
Colorado	714,443	342,701	130,000	22%
Idaho	747,286	372,744	227,066	34%
Montana	574,275	170,710	106,830	13%
Nevada	2,157,092	1,006,868	25,000	1%
New Mexico	341,529	205,100	120,000	35%
Oregon	876,702	540,992	455,000	52%
Utah	4,688,094	1,948,904	602,350	13%
Washington	499,806	200,863	80,000	17%
Wyoming	1,963,598	558,983	27,000	1%
TOTAL	13,402,439	6,034,360	1,862,459	14%

IWJV Habitat Type: **AGRICULTURAL**
 IWJV Priority: **A**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	29,988	8,974	9,000	30%
California	1,011,964	828,014	124,755	12%
Colorado	6,247,001	3,219,867	880,000	14%
Idaho	7,419,737	3,206,712	1,784,798	24%
Montana	1,201,066	597,070	597,000	50%
Nevada	551,086	263,296	13,000	2%
New Mexico	569,356	184,839	61,415	11%
Oregon	2,374,999	396,365	215,000	9%
Utah	2,271,879	960,860	24,965	1%
Washington	8,417,248	2,134,386	200,000	2%
Wyoming	3,329,540	513,512	430,000	13%
TOTAL	33,423,864	12,313,895	4,339,933	13%

IWJV Habitat Type: **PINE OAK WOODLANDS**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	166,738	101,290	0	0%
California	649,352	7,851	0	0%
Colorado	0	0	0	0%
Idaho	0	0	0	0%
Montana	0	0	0	0%
Nevada	0	0	0	0%
New Mexico	922,192	658,054	650,000	70%
Oregon	38,781	15,736	15,700	40%
Utah	0	0	0	0%
Washington	316,649	167,946	0	0%
Wyoming	0	0	0	0%
TOTAL	2,093,712	950,876	665,700	32%

IWJV Habitat Type: **CEDAR HEMLOCK**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	0	0	0	0%
California	0	0	0	0%
Colorado	0	0	0	0%
Idaho	1,094,018	95,808	54,279	5%
Montana	357,609	23,444	21,885	6%
Nevada	0	0	0	0%
New Mexico	0	0	0	0%
Oregon	0	0	0	0%
Utah	0	0	0	0%
Washington	0	0	0	0%
Wyoming	0	0	0	0%
TOTAL	1,451,627	119,252	76,164	5%

IWJV Habitat Type: **MIXED CONIFER**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	355,626	201,641	60,000	17%
California	7,259,970	1,492,929	68,668	1%
Colorado	1,670,006	688,345	32,000	2%
Idaho	6,895,717	989,265	529,463	8%
Montana	5,990,863	1,087,120	1,087,000	18%
Nevada	102,387	14,866	0	0%
New Mexico	1,104,125	444,805	444,000	40%
Oregon	3,928,120	608,666	0	0%
Utah	775,060	102,300	3,968	1%
Washington	4,681,541	819,147	40,000	1%
Wyoming	5,042,842	1,335,353	132,000	14%
TOTAL	37,806,257	7,784,437	2,397,099	6%

IWJV Habitat Type: **MOUNTAIN BRUSH**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	133,515	95,306	0	0%
California	504,183	160,544	4,562	1%
Colorado	3,003,831	1,353,257	280,000	9%
Idaho	3,428,083	751,861	482,979	14%
Montana	1,055,768	278,378	0	0%
Nevada	670,093	264,580	90,000	13%
New Mexico	635,767	252,332	250,000	58%
Oregon	183,726	92,075	4,000	2%
Utah	1,991,088	311,106	288	0%
Washington	1,214,649	272,690	125,000	10%
Wyoming	449,420	28,647	29,000	6%
TOTAL	13,270,124	3,860,776	1,265,829	10%

IWJV Habitat Type: **PINYON JUNIPER**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	9,332,680	1,456,308	1,450,000	16%
California	2,676,723	1,610,757	16,560	1%
Colorado	5,218,697	2,415,335	2,400,000	46%
Idaho	630,534	419,088	315,267	50%
Montana	169,946	28,063	28,000	16%
Nevada	9,003,105	3,933,128	75,000	1%
New Mexico	13,340,082	4,314,976	808,888	6%
Oregon	2,864,466	726,498	53,000	2%
Utah	10,572,916	1,562,572	8,192	0%
Washington	559,573	95,640	0	0%
Wyoming	1,368,383	186,369	105,000	8%
TOTAL	55,737,105	16,748,707	5,259,907	9%

IWJV Habitat Type: **DESERT SCRUB**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	5,802,145	203,832	0	0%
California	5,724,316	1,224,393	56,087	5%
Colorado	2,067,736	814,343	0	0%
Idaho	624,523	0	0	0%
Montana	0	0	0	0%
Nevada	17,033,870	4,88,463	0	0%
New Mexico	5,220,932	2,924,072	0	0%
Oregon	815,346	315,342	55,000	7%
Utah	8,442,910	1,497,715	33,434	0%
Washington	21,861	15,425	15,000	69%
Wyoming	2,559,649	0	0	0%
TOTAL	48,313,288	11,877,214	159,521	0.3%

IWJV Habitat Type: **SPRUCE-FIR**
 IWJV Priority: **B**

State	Total Habitat Acreage	Total State BHCA Acreage	Total State Objective Acreage	Objective Percentage of Total
Arizona	84,750	61,762	0	0%
California	408,563	98,658	0	0%
Colorado	4,531,775	950,891	0	0%
Idaho	3,149,454	458,921	278,191	9%
Montana	3,396,490	201,112	0	0%
Nevada	90,249	0	0	0%
New Mexico	393,265	41,955	0	0%
Oregon	320,923	13,929	13,900	4%
Utah	1,112,455	37,700	0	0%
Washington	11,523	0	0	0%
Wyoming	1,156,644	313,547	0	0%
TOTAL	14,656,064	2,178,572	292,091	2%