

DRAFT

**Sierra Madre Pine-Oak and Cloud-Forests / Western
Mixed Coniferous Forests**



Conservation Business Plan

PIF V – August 2013

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Introduction

Coniferous and mixed deciduous-coniferous forests dominate the much of the western portions of North America, from the boreal forest fringe in n. Canada to the Sierra Madre in Mexico and into Guatemala and Honduras (Figure 1)[replace with higher resolution version]. A number of bird species of high continental concern are shared by the three countries, and in each country these species use habitats that support additional breeding, migrant or resident species that are conservation priorities at a regional scale. Most western forest habitats are threatened by consumptive land uses such as conversion to agricultural or residential uses, and in many cases disturbance regimes have been altered at the hand of man, or due to climate change. This plan attempts to address the most pervasive threats to these habitats and the birds they support by identifying tangible, specific conservation projects that will be undertaken by international partners. The final conservation plan will identify partners, geography, target species and habitats, budgets, timelines and measurable outputs.



Summary

Breeding Grounds Description. Juniper breaks in central Texas, Pine-Fir forests at lower to mid-elevations, and mid-to upper elevation Mixed Conifer and Spruce-Fir Forests from the Southern Rockies throughout the western U.S. and into British Columbia and Alberta.

Breeding Grounds Bird Conservation Regions:

- Northwestern Interior Forest (4)
- Northern Pacific Rainforest (5)
- Great Basin (9)
- Northern Rockies (10)
- Southern Rockies/Colorado Plateau (16)
- Sierra Madre Occidental (34).

Breeding Grounds Joint Ventures:

- Pacific Coast
- Canadian Intermountain
- Intermountain West
- Sonoran
- Oaks and Prairies Joint Ventures

Wintering Grounds Description: Higher elevation Pine-Oak and Cloud-Forests from Western Mexico through Guatemala and Honduras.

Initially Identified Priority Shared Species: Golden-cheeked Warbler, Flammulated Owl, Rufous Hummingbird, Calliope Hummingbird, Hermit Warbler, Grace's Warbler, Townsend's Warbler, Olive-sided Flycatcher, Hammond's Flycatcher, Red-faced Warbler (Table 1).

Bird Species	PIF V Priority Shared Species	3-Nation Shared SOS Birds	Pop'n Size	Pop'n Objective	Mexican Wintering Habitat
Golden-cheeked Warbler	Y	USA/Mexico	20,000	Rec. plan	Tropical Highland Forests
Flammulated Owl	Y	Y	20,000	Mtn/incr	Mexican Pine-Oak Forests
Rufous Hummingbird	Y	Y	11 mill.	100%	Mexican Pine-Oak Forests
Calliope Hummingbird	Y	Y	2 mill.	Mtn/incr	Mexican Pine-Oak Forests
Hermit Warbler	Y	USA/Mexico	2.5 mill.	Mtn/incr	Mexican Pine-Oak Forests
Grace's Warbler	Y	USA/Mexico	2 mill.	50%	Mexican Pine-Oak Forests
Townsend's Warbler	Y	Y	17 mill.		Mexican Pine-Oak Forests
Olive-sided Flycatcher	Y	Y			??
Hammond's Flycatcher	Y	Y	19 mill.		Mexican Pine-Oak Forests
Red-faced Warbler	Y	USA/Mexico	700,000	Mtn/incr	??

Additional Priority Migrant Species: The following addition conservation priority migrant species (Table 2) were considered for inclusion in the Conservation Planning process (see full spreadsheet for additional information)

Table 2.

Bird Species	3-Nation Shared SOS Birds	Why include as priority species?	Mexican Wintering Habitat
Willow Flycatcher	Y	Priority for 3 western Cdn BCR's; experienced large declines	Tropical Deciduous Forests
Alder Flycatcher	Y	Priority Boreal species (BCR 4)	Tropical Evergreen Forests
Dusky Flycatcher	Y	Of conservation concern in BCR 9	Mexican Pine-Oak Forests
Pacific Slope Flycatcher	Y	Continental and BCR 5 stewardship species;	Tropical Deciduous Forests
Western Wood-Pewee	Y	Of conservation concern in BCR 5	Tropical Highland Forests
MacGillvray's Warbler	Y	Of regional concern (BCR 9) and a regional stewardship species	Tropical Deciduous Forests
Blackpoll Warbler	Mainly Canada/USA	subalpine species; regional stewardship species	Tropical Evergreen Forests
Black-throated Grey Warbler	Mainly USA/Mexico but Canada also	Continental and BCR 5 stewardship species;	Tropical Deciduous Forests
Yellow-breasted Chat	Mainly USA/Mexico but Canada also	Federally Threatened in Canada	Tropical Deciduous Forests
Cassin's Vireo	Y	Priority for two western Cdn BCR's	Mexican Pine-Oak Forests
Western Tanager	Y	Regional stewardship species for BCR 10	Mexican Pine-Oak Forests
Swainson's Thrush	Y	Of regional concern and regional stewardship species for BCR 10	Tropical Evergreen Forest
Vaux's Swift	Mainly USA/Mexico but Canada also	Of conservation concern in BCR 9	Tropical Highland Forests
Williamson's Sapsucker	Mainly USA/Mexico but Canada also	Threatened in Canada; Priority species in two Cdn BCR's; uses medium to higher elevation forests.	Mexican Pine-Oak Forests
Bullock's Oriole	Mainly USA/Mexico but Canada also	Of regional concern in BCR 5	Tropical Deciduous Forests
Lazuli Bunting	Mainly USA/Mexico but Canada also	Regional stewardship species for BCR 9	Tropical Deciduous Forests
Band-tailed Pigeon	Mainly USA/Mexico but Canada also	Of continental, national and regional concern	Mexican Pine-Oak Forests
Wilson's Warbler	Y	Common bird in steep decline; priority boreal species	Generalist
American Kestrel	Mainly Canada/USA, but also Mexico	Of regional concern and regional stewardship species	???
Violet-green Swallow	Mainly USA/Mexico but Canada also	Of regional concern and regional stewardship species	Mexican Pine-Oak Forests

Tropical Resident Species. The following tropical resident bird species were included in the PIF Tri-national plan for Tropical Highland Forests and Mexican Pine-Oak Forests (note: add CR/EN designation; include spreadsheet showing threats, and this list did not include species primarily associated with Tropical Coniferous and Tropical Deciduous Forests).

Tropical Resident Species at Greatest Risk of Extinction: Horned Guan, Bearded Wood-Partridge, Thick-billed Parrot, Maroon-fronted Parrot, Bearded Screech-Owl, Unspotted Saw-whet Owl, Tamaulipas Pygmy-Owl, Imperial Woodpecker, Tufted Jay, Dwarf Jay, White-throated Jay, Pink-headed Warbler, Azure-rumped Tanager.

Tropical Resident Species of High Tri-national Concern, Primarily Mexican

Distribution: Long-tailed Wood-Partridge, Eared Quetzal, Gray-crowned Woodpecker, Sinaloa Martin, Hooded Grosbeak

Tropical Resident Species of High Tri-national Concern, Primarily MesoAmerican

Distribution: Buffy-crowned Wood-partridge, Solitary Eagle, Fulvous Owl, Resplendant Quetzal, Blue-throated Motmot, Azure-hooded Jay, Black-throated Jay, Slate-colored Solitaire, Black-headed Nightingale-thrush, Black Thrush.

Tropical Resident Species of High Tri-national Concern, Primarily South

American Distribution: Strong-billed Woodcreeper, Black-banded Woodcreeper, Slaty Finch

Still needed in this section

More specific conservation targets: Species, habitat types, ecosystem functions.

Brief description of the current situation and conservation need (i.e. an over view of why is this geography is in need of conservation attention for the targets identified).

Brief citation of major prior conservation plans or other key documents this CBP is built upon (citation listed in appendix).

Note on CR/EN endemic species: These should/can be listed as conservation targets.

Threats that the migratory and endemic species have in common.

Species and Habitats Matrix. Characterizing habitats and habitat relationships in a uniform way across such a huge landscape offers many challenges. The leadership team compiled information from PIF Plans, and from the Implementation Plans of the Intermountain, Canadian Intermountain and Pacific Coast Joint Ventures to provide an initial framework to guide further business plan development (Table 3). The species matrix at present (pre-PIF V, Table 4) includes wintering and breeding associations only. Migration, particularly through riparian habitats, is a topic needing further exploration.

Table 3. Habitat crosswalk/rollup for Sierra Madre Pine-Oak, Cloud Forests and Western Coniferous Forest Conservation Plan Development.[fill in associations, agree on categories]

Habitat Class	Associations	Region	Extent	Objectives?	Source
Cedar/Hemlock		Intermountain	Y	Y	IWJV 2005
Coniferous Forest					
Deciduous Forest	Aspen	Intermountain	Y	Y	IWJV 2005
Dry Forest	Ponderosa Pine/Douglas-fir	Intermountain	Y	Y	IWJV 2005
Gary Oak					
Juniper-Pine Woodland	Pinyon-Juniper Woodland	Intermountain	Y	Y	IWJV 2005
	Juniper Woodland/Savanna	Intermountain	Y		IWJV 2005
	Limber Pine/Juniper	Intermountain	Y		
Mexican Pine-Oak					

Mixed and Coniferous					
Mixed Woods					
Mesic Mixed Conifer	Western Larch/Douglas-fir	Intermountain	Y	Y	IWJV 2005
	Lodgepole Pine Forest	Intermountain			
Moist Pacific NW Forest		Pacific			
Pine-Oak Woodland		Intermountain	Y		IWJV 2005
Riparian					
Shrub/Early Successional					
Spruce-Fir	Engleman Spruce/Subalpine Fir	Intermountain	Y	Y	IWJV 2005
Tropical Deciduous Forest					
Tropical Evergreen Forest					
Tropical Highland Forest					
Woodland	Ashe Juniper/Oak	Edwards Plateau			OPJV
	Oak Savanna/Woodland	Pacific			

Table 4.

Avifaunal Region	Habitat	Species	Season
Canada: BCR 4	Shrub/early successional	Alder Flycatcher	Breeding
Mexico	Tropical Evergreen Forests	Alder Flycatcher	Wintering
Mexico	Tropical highland forests	Azure-hooded Jay	Breeding?
Mexico	Tropical highland forests	Azure-rumped Tanager	Breeding?
Mexico	Mexican Pine-Oak Forests	Band-tailed Pigeon	Wintering
Mexico	Tropical highland forests	Bearded Screech-owl	Breeding?
Mexico	Tropical highland forests	Bearded Wood-Partridge	Breeding?
Mexico	Tropical deciduous forest	Belted Flycatcher	Breeding?
Mexico	Tropical highland forests	Black Thrush	Breeding?
Canada: BCR 4	Shrub/early successional	Blackpoll Warbler	Breeding
Mexico	Tropical Evergreen Forests	Blackpoll Warbler	Wintering
Canada: BCR 5	Mixed woods	Black-throated Gray Warbler	Breeding
Canada: BCR 5	Riparian	Black-throated Gray Warbler	Breeding
Mexico	Tropical Deciduous Forests	Black-throated Gray Warbler	Wintering
Mexico	Tropical highland forests	Black-throated Jay	Breeding?
Mexico	Tropical highland forests	Blue-throated Motmot	Breeding?
Mexico	Tropical highland forests	Buffy-crowned Wood-Partridge	Breeding?
Canada: BCR 5	Riparian	Bullock's Oriole	Breeding
Canada: BCR 5	Mixed woods	Bullock's Oriole	Breeding
Mexico	Tropical Deciduous Forests	Bullock's Oriole	Wintering
Canada: BCRs 9 & 10	Coniferous forest	Calliope Hummingbird	Breeding
Canada: BCRs 9	Mixed woods	Calliope Hummingbird	Breeding
Canada: BCR 10	Riparian	Calliope Hummingbird	Breeding
Mexico	Mexican Pine-Oak Forests	Calliope Hummingbird	Wintering
Canada: BCR 10	Coniferous forest	Cassin's Vireo	Breeding
Canada: BCRs 5 & 10	Mixed woods	Cassin's Vireo	Breeding
Canada: BCR 5	Gary Oak	Cassin's Vireo	Breeding
Mexico	Mexican Pine-Oak Forests	Cassin's Vireo	Wintering
Mexico	Tropical deciduous forest	Cinnamon-tailed Sparrow	Breeding?
Mexico	Tropical deciduous forest	Cozumel Thrasher	Breeding?
Intermountain West	Dry forest	Dusky Flycatcher	Breeding
Intermountain West	Pine-oak Woodland	Dusky Flycatcher	Breeding
Canada: BCRs 9 & 10	Coniferous forest	Dusky Flycatcher	Breeding

Canada: BCRs 9 & 10	Shrub/early successional	Dusky Flycatcher	Breeding
Mexico	Mexican Pine-Oak Forests	Dusky Flycatcher	Wintering
Mexico	Tropical highland forests	Dwarf Jay	Breeding?
Mexico	Mexican Pine-oak forest	Eared Quetzal	Breeding?
Mexico	Tropical deciduous forest	Flammulated Flycatcher	Breeding?
Canada: BCRs 9 & 10	Coniferous forest	Flammulated Owl	Breeding
Mexico	Mexican Pine-Oak Forests	Flammulated Owl	Wintering
Southwest Avifaunal Biome	Mixed and coniferous forest	Flammulated Owl	Breeding
Pacific Avifaunal Biome	Woodland	Flammulated Owl	Breeding
Intermountain West Avifaunal Biome	Coniferous forest	Flammulated Owl	Breeding
Intermountain West	Dry forest	Flammulated Owl	Breeding
Intermountain West	Pine-oak Woodland	Flammulated Owl	Breeding
Mexico	Tropical highland forests	Fulvous Owl	Breeding?
Southwest Avifaunal Biome	Woodland	Golden-cheeked Warbler	Breeding
Mexico	Tropical highland forests	Golden-cheeked Warbler	Wintering
Mexico	Tropical Highland Forests	Golden-cheeked Warbler	Wintering
Southwest Avifaunal Biome	Mixed and coniferous forest	Grace's Warbler	Breeding
Intermountain West Avifaunal Biome	Coniferous forest	Grace's Warbler	Breeding
Intermountain West	Pine-oak Woodland	Grace's Warbler	Breeding
Intermountain West	Mixed-conifer	Grace's Warbler	Breeding
Mexico	Mexican Pine-Oak Forests	Grace's Warbler	Wintering
Canada: BCR 9	Coniferous forest	Gray Flycatcher	Breeding
Mexico	Mexican Pine-Oak Forests	Hammond's Flycatcher	Wintering
Southwest Avifaunal Biome	Mixed and coniferous forest	Hermit Warbler	Breeding
Pacific Avifaunal Biome	Coniferous forest	Hermit Warbler	Breeding
Mexico	Mexican Pine-Oak Forests	Hermit Warbler	Wintering
Mexico	Tropical highland forests	Horned Guan	Breeding?
Mexico	Mexican Pine-oak forest	Imperial Woodpecker	Breeding?
Canada: BCRs 9 & 10	Shrub/early successional	Lazuli Bunting	Breeding
Canada: BCRs 9 & 10	Riparian	Lazuli Bunting	Breeding
Mexico	Tropical Deciduous Forests	Lazuli Bunting	Wintering
Canada: BCRs 5 & 9	Shrub/early successional	MacGillvray's Warbler	Breeding
Canada: BCRs 5 & 9	Riparian	MacGillvray's Warbler	Breeding
Mexico	Tropical Deciduous Forests	MacGillvray's Warbler	Wintering
Mexico	Mexican Pine-oak forest	Maroon-fronted Parrot	Breeding?
Mexico	Tropical deciduous forest	Mexican Sheartail	Breeding?
Mexico	Tropical deciduous forest	Mexican Woodnymph	Breeding?
Intermountain West	Cedar/Hemlock forest	Olive-sided Flycatcher	Breeding
Intermountain West	Mixed-conifer	Olive-sided Flycatcher	Breeding
Mexico	Tropical highland forests	Olive-sided Flycatcher	Wintering
Intermountain West	Spruce fir	Olive-sided Flycatcher	Breeding
Canada: BCRs 9 & 10	Coniferous forest	Olive-sided Flycatcher	Breeding
Canada: BCRs 5, 9 & 10	Mixed woods	Olive-sided Flycatcher	Breeding
Canada: BCR 4	Shrub/early successional	Olive-sided Flycatcher	Breeding
Mexico	Tropical Highland Forests	Olive-sided Flycatcher	Wintering
Canada: BCR 5	Shrub/early successional	Orange-crowned Warbler	Breeding
Canada: BCR 5	Riparian	Orange-crowned Warbler	Breeding
Mexico	Tropical Deciduous Forests	Pacific Slope Flycatcher	Wintering
Canada: BCR 5	Riparian	Pacific-slope Flycatcher	Breeding
Mexico	Tropical highland forests	Pink-headed Warbler	Breeding?
Mexico	Tropical deciduous forest	Red-crowned Parrot	Breeding?
Southwest Avifaunal Biome	Mixed and coniferous forest	Red-faced Warbler	Breeding
Mexico	Tropical highland forests	Resplendent Quetzal	Breeding?
Mexico	Tropical deciduous forest	Rose-bellied Bunting	Breeding?
Pacific Avifaunal Biome	Coniferous forest	Rufous Hummingbird	Breeding
Intermountain West Avifaunal Biome	Woodland	Rufous Hummingbird	Breeding
Mexico	Mexican Pine-oak forest	Rufous Hummingbird	Wintering
Intermountain West	Riparian	Rufous Hummingbird	Breeding
Intermountain West	Pine-oak Woodland	Rufous Hummingbird	Breeding

Canada: BCR 4	Shrub/early successional	Rufous Hummingbird	Breeding
Canada: BCRs 5, 9 & 10	Riparian	Rufous Hummingbird	Breeding
Mexico	Mexican Pine-Oak Forests	Rufous Hummingbird	Wintering
Mexico	Mexican Pine-oak forest	Sinaloa Martin	Breeding?
Mexico	Tropical deciduous forest	Socorro Dove	Breeding?
Mexico	Tropical deciduous forest	Socorro Mockingbird	Breeding?
Mexico	Mexican Pine-oak forest	Solitary Eagle	Breeding?
Canada: BCR 10	Coniferous forest	Swainson's Thrush	Breeding
Mexico	Tropical Evergreen Forest	Swainson's Thrush	Wintering
Mexico	Tropical highland forests	Tamaulipas Pygmy-owl	Breeding?
Mexico	Mexican Pine-oak forest	Thick-billed Parrot	Breeding?
Canada: BCRs 9 & 10	Coniferous forest	Townsend's Warbler	Breeding
Canada: BCRs 5, 9 & 10	Mixed woods	Townsend's Warbler	Breeding
Mexico	Mexican Pine-Oak Forests	Townsend's Warbler	Wintering
Mexico	Mexican Pine-oak forest	Tufted Jay	Breeding?
Mexico	Tropical highland forests	Unspotted Saw-whet Owl	Breeding?
Canada: BCR 9	Coniferous forest	Vaux's Swift	Breeding
Canada: BCRs 5 & 9	Riparian	Vaux's Swift	Breeding
Mexico	Tropical Highland Forests	Vaux's Swift	Wintering
Mexico	Mexican Pine-Oak Forests	Violet-green Swallow	Wintering
Canada: BCR 9	Coniferous forest	Western Tanager	Breeding
Mexico	Mexican Pine-Oak Forests	Western Tanager	Wintering
Canada: BCR 5	Mixed woods	Western Wood-Pewee	Breeding
Canada: BCR 5	Gary Oak	Western Wood-Pewee	Breeding
Mexico	Tropical Highland Forests	Western Wood-Pewee	Wintering
Mexico	Tropical highland forests	White-throated Jay	Breeding?
Canada: BCRs 9 & 10	Coniferous forest	Williamson's Sapsucker	Breeding
Canada: BCRs 9	Mixed woods	Williamson's Sapsucker	Breeding
Mexico	Mexican Pine-Oak Forests	Williamson's Sapsucker	Wintering
Canada: BCRs 5, 9 & 10	Shrub/early successional	Willow Flycatcher	Breeding
Canada: BCRs 5, 9 & 10	Riparian	Willow Flycatcher	Breeding
Mexico	Tropical Deciduous Forests	Willow Flycatcher	Wintering
Canada: BCR 4	Shrub/early successional	Wilson's Warbler	Breeding
Canada: BCRs 9 & 10	Riparian	Yellow-breasted Chat	Breeding
Mexico	Tropical Deciduous Forests	Yellow-breasted Chat	Wintering
Mexico	Tropical deciduous forest	Yellow-headed Parrot	Breeding?

Goal Identification for Conservation Targets:

. *Begin with population goals established by prior PIF and working group plans.* Draft to be filled out prior to PIF V meeting.)

List of specific threats: These categories from the Tri-national plan (add specificity)

- Urbanization (habitat conversion)
- Agriculture (habitat conversion)
- Livestock (Impacts to horizontal and vertical (age) structure; habitat conversion)
- Energy/Transportation (habitat conversion and fragmentation)
- Logging/Wood Harvest (Inappropriate age distribution, loss of old growth, early succession, key structural components)
- Ecosystems Modifications (Disruption of natural disturbance regimes)
- Contaminants
- Exotic/Invasive species
- Climate Change (Disruption of disturbance regimes; distributional shifts, successional patterns)

Prescribed Actions by theme: The Breakout Group Leaders will need to organize their Project Matrix, to allow fruitful discussion during the PIF V meeting.

- **Species-specific projects:** how can we meet the overall population goal? The overall habitat goal? The desired habitat conditions and BMPs to get there? Key focal areas identified? Management actions prescribed for what areas? Conservation and protections identified for what areas? Ongoing guard presence needed for what areas?
- **Habitat projects:** Is it being diminished or degraded in a way that makes it unable to support target species? Is it affecting overall carrying capacity, or a key vital rate, or both?
- **Direct land protection projects:** What lands are identified for protection? Public decree? Where is critical Increased onsite protection or management needed?
- **Working landscape projects:** how do we influence local communities? Promote bird-friendly uses of the land? In what specific areas? What industries are impacting habitat and focal species where engagement could lead to more sustainable practices?
- **Policy/regulatory projects:** To what extent are existing or potential future laws, regulations, policies, or judicial decisions detrimental?
- **Socio – Economic/Community engagement projects:** To what extent are social factors and considerations detrimental? To what extent are current or anticipated economic factors and conditions detrimental? How do we influence and engage local communities to meet their needs and the needs of the conservation targets? How can environmental education and environmental awareness projects be used to reach our goals?
- **Knowledge, Monitoring and Evaluating projects:** To what extent is our scientific understanding of the threats and/or necessary conservation actions insufficient? Have

the monitoring and evaluation needs for the program been adequately identified and planned for?

NOTE: For each conservation target, ensure that the Full Annual Life Cycle is considered

The Project Matrix

For each project, begin to fill in a row of the Project Matrix. **(This Matrix is open for review, comment and improvement)** Under each list key activities for each relevant theme in a tabular form:

Key Threat (use as the organizing principle)	Stage W, B, T	Objectives	Key Theme and Strategy	Cons. targets	Project	Activity
Which of the main threats is being addressed here?	List if: Wintering Breeding and/or Transit work	What is the overall objective?	What type of work (theme from above) and what is the strategy is being used?	What are the conservation targets	What is the project name?	What are the activities?

Matrix
continued...

Results of the Activity	Long-term Outcome	Timeframe	Anticipated Costs	Total Costs	Evaluation	Comments
What is the measurable result/deliverables ?	What are the measureable long-term impacts/outcomes expected?	What time period? How long will it take/	Cost/year	Total project costs	How will the project be evaluated?	General comments, next steps, list of potential actors, risks