

Forest Bird Habitat Objectives & DFCWs: Two Sides of the Same Coin



Overview

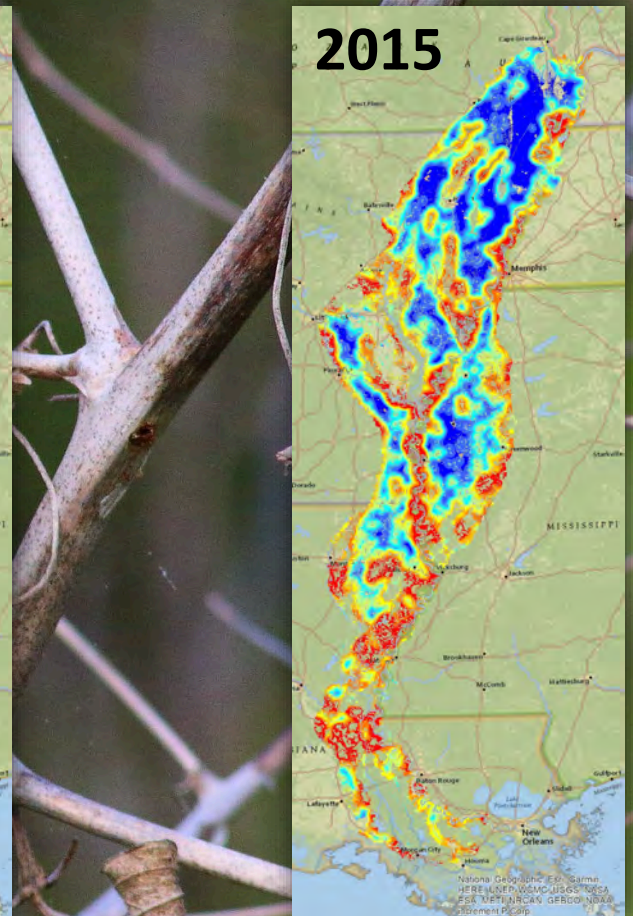
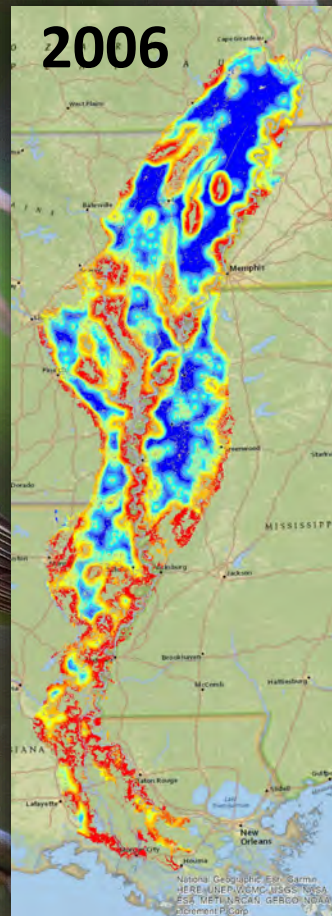
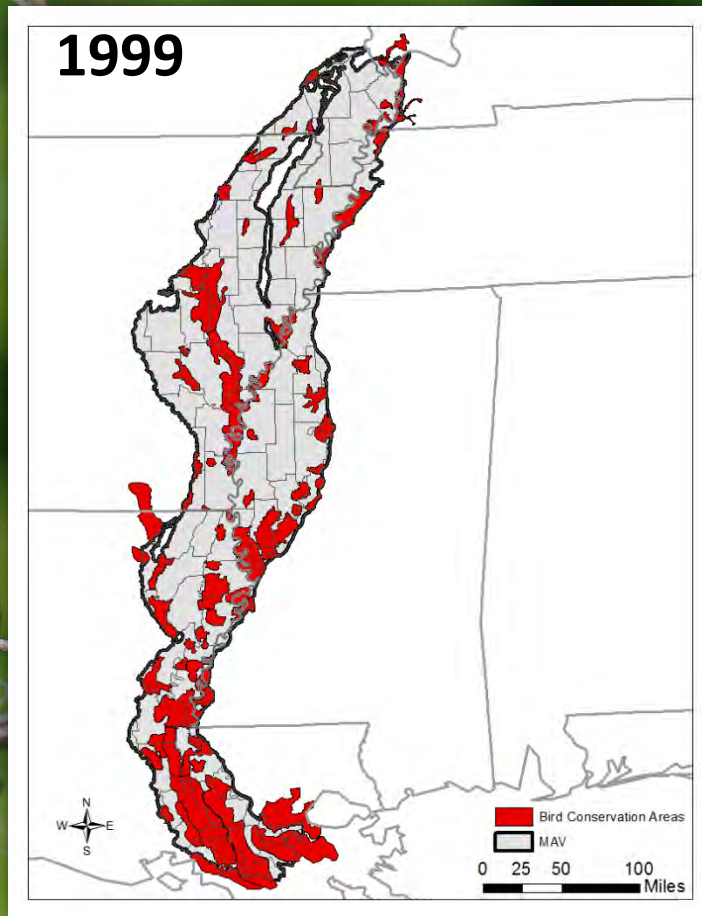
Brief Context, Background, History

Current State of MAV Forest Bird Planning

How All This Connects with DFCWs



LMVJV, MAV, & Forest Breeding Birds



LMVJV, MAV, & Forest Breeding Birds

Table 3. Priority bird species listed by total PIF concern score, and segregated by entry criteria. Other measures include are of importance and population trends scores, percent of BBS populations, and local migratory status. [Refer to Appendix 2 for scientific names]

Priority and species	Total PIF score	Concern scores		Percent BBS	Migratory status
		A1	PT		
Ia. Highest overall priority					
Swainson's Warbler	29	5	3	20.8	B
Swallow-tailed Kite	28	4	3	25.1	E
Cerulean Warbler	28	3	4	-	E
Ib. High overall priority					
Prothonotary Warbler	24	5	2	34.8	B
Painted Bunting	24	3	5	4.4	B
Red-headed Woodpecker	23	5	5	3.0	D
Bell's Vireo	23	2	3	1.0	B
Northern Parula	23	5	5	6.9	B
Worm-eating Warbler	23	2	3	-	B
Kentucky Warbler	22	3	3	4.7	B
Orchard Oriole	22	5	5	7.4	B
Yellow-billed Cuckoo	22	5	5	6.0	B
Wood Thrush	22	3	3	1.3	B
White-eyed Vireo	22	4	5	8.4	B
II. Physiographic area priority species					



LMVJV, MAV, & Forest Breeding Birds



High Responsibility for Forest Breeding Birds

- MAV - 1% of US Land Area
- 11 Forest bird species with $\geq 5\%$ global population within the MAV
- 33% of all Prothonotary Warblers
- 11% of all Swainson's Warblers



LMVJV, MAV, & Forest Breeding Birds

Variety of Practical Tools to Get it Done



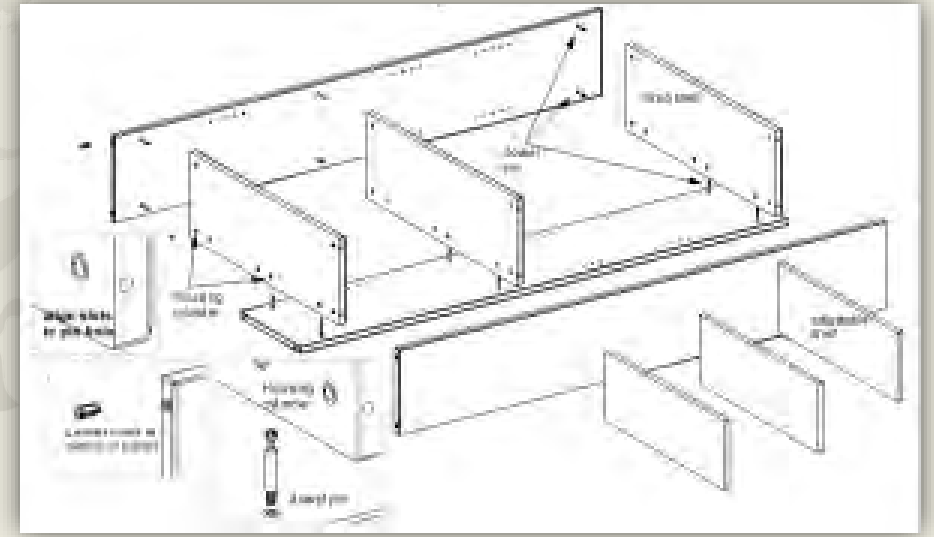
RECORD AND RETURN TO:
WETLANDS AMERICA TRUST, INC.
ONE WATERFOWL WAY
MEMPHIS, TENNESSEE 38120

DEED OF CONSERVATION EASEMENT AND TRANSFER

THIS DEED OF CONSERVATION EASEMENT
conservation purposes by
Liability Company, with an address of P.O. Box
PROPERTIES, LLC, a Kentucky Limited Liabil
Arlington, Kentucky 42021, (who with their succes
the "Grantor"), and delivered to WETLANDS
organized under the laws of the District of Columbia



LMVJV, MAV, & Forest Breeding Birds



What Do We Need to Know?

Who

Priority Species

What

Protection

Reforestation

Management

} Spatial Priorities

Where

How Much

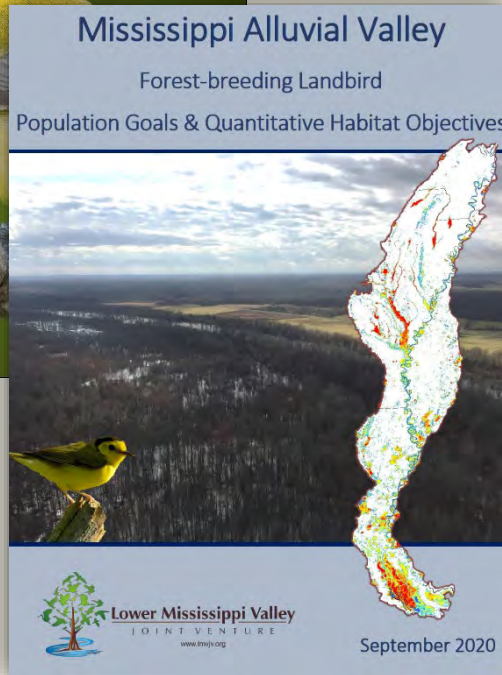
Population Obj. → Habitat Obj.



Who & How Much?

Key Aspects

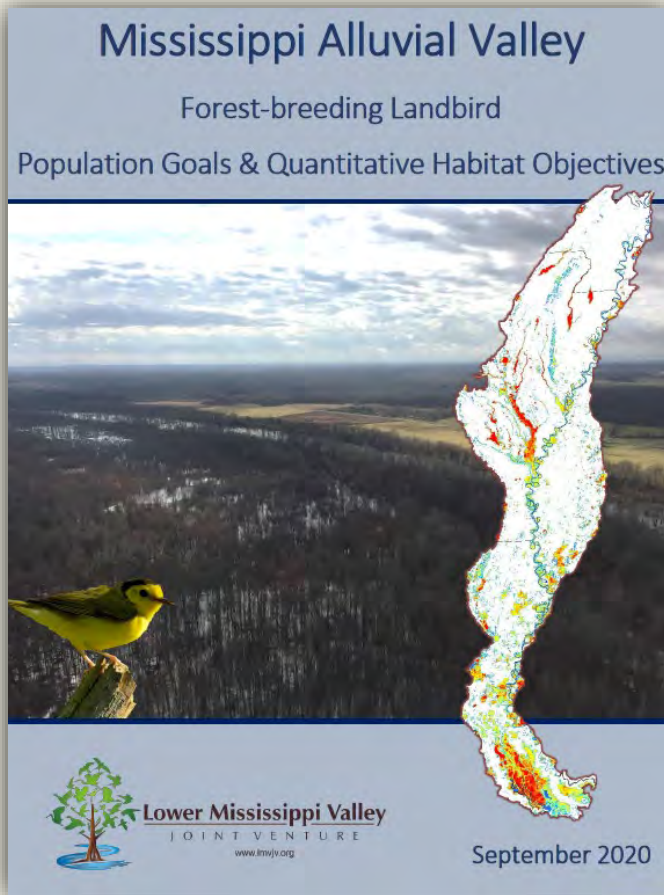
- Estimates current populations of forest birds (54 species) based on contemporary Breeding Bird Survey data
- Accounts for large-scale geographic distribution (skewing) across the MAV
- Uses population estimates and historical trends (1966-2015) to establish regional population goals
- Uses variance associated with BBS trends to establish Minimum Viable Populations (minimum forest area to sustain)
- This combined with probability of occupancy & forest habitat data used to identify sustainable forest habitat



Who & How Much?

Key Aspects (cont'd)

- Estimates habitat capability (relative to regional population goal) under existing management conditions (characterized using FIA data [2,574 plots in the MAV, 2006-13])
- Estimates habitat capability (relative to regional population goal) under theoretical “best” management (empirical data from 26 studies)
- Estimates additional forest (if any) needed to meet each species’ regional population goal under current and “best” forest management conditions



Who & How Much?

Mississippi Alluvial Valley
Forest-breeding Landbird
Population Goals & Quantitative Habitat Objectives

Lower Mississippi Valley
JOINT VENTURE
www.lmvalley.org

September 2020

Table 4. Species with habitat sufficient to support population goals given optimal management of forest habitat within the Mississippi Alluvial Valley Bird Conservation Region

Common Name	% Population	ACAD RCS-b	Population Goal	Population Supported by Optimally Managed Forest	Trend
Yellow-breasted Chat ^{1,3}	3.32	15	1,276,300	1,432,649	-
Brown Thrasher ^{1,2}	1.47	14	529,250	865,775	-
Wood Thrush	0.89	14	69,990	215,289	-
Cerulean Warbler	0.33	14	10,100	24,963	-
Eastern Towhee ¹	1.67	12	353,030	837,257	-/+
Indigo Bunting ¹	4.53	11	3,122,820	3,282,164	-/+

¹ Positive association with edge; ² Positive association with urban; ³ Negative association with forest.



Table 5. Species that need additional forest habitat to support their current population goals

Common Name	% Population	ACAD RCS-b	Population Goal	Additional Habitat Need	Trend
Prothonotary Warbler	32.09	17	3,999,000	958,299	-
Northern Parula	2.85	16	3,160,600	566,835	-
Carolina Chickadee ^{1,2}	4.35	13	3,707,440	509,444	-/+
Red-shouldered Hawk	3.10	12	145,560	687,676	-/+
Yellow-throated Warbler	1.12	12	33,330	701,649	+
Pine Warbler	0.69	11	830	103,242	-/+
Hairy Woodpecker	0.26	10	123,170	267,915	-
Wild Turkey	0.17	10	2,530	498,311	-/+
Warbling Vireo	0.12	10	58,630	702,783	-/+
American Goldfinch	0.18	8	126,990	138,928	-/+

¹ Positive association with edge; ² Positive association with urban; ³ Negative association with forest.



Who & How Much?

Priority Forest Breeding Bird Species of the Mississippi Alluvial Valley

Common Name	% Population ^a	ACAD RCS-b ^b	Population Goal	Additional Habitat Needed (ha)	Trend ^c
Insufficient Habitat ^d					
Prothonotary Warbler	32.09	17	3,999,000	958,299	-
Northern Parula	2.85	16	3,160,600	566,835	-
Red-shouldered Hawk	3.1	12	145,560	103,242	-/+



1.73 MM ac Reforestation Still Needed

Forest Configuration & Structure Critical

Kentucky Warbler	1.54	13	87,400	none	-/+
Ruby-throated				none	-/+
Hooded Warbler				none	-/+
Pileated Woodpecker				none	-/+
Swallow-tailed Kite	0.53	13	1,790	none	+

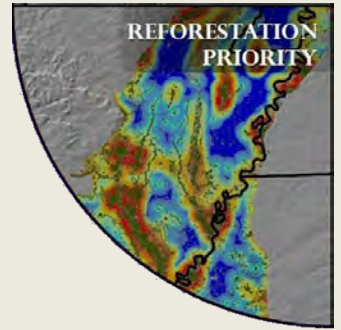
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What/Where - Reforestation?



Forest Breeding Bird Reforestation Priority Model



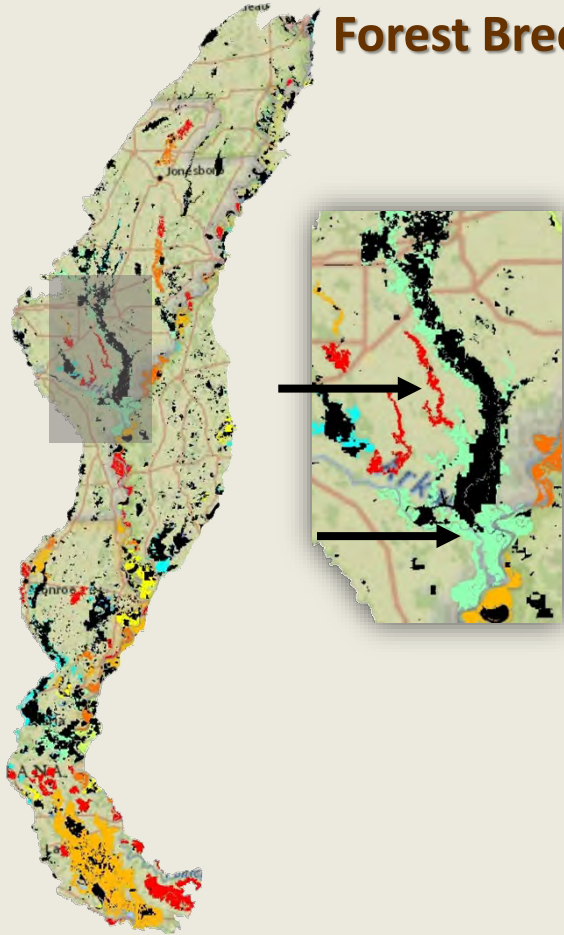
- Strategy based on building optimal Forest Core
- Revised with latest forest data in 2015
- Historically instrumental in facilitating the most efficient deployment of restoration resources

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What/Where - Protection?

Forest Breeding Bird Protection Priority Model



Strategy based on urgency of protecting less-protected, optimal Forest Core

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What/Where - Management?



What/Where - Management?

RESTORATION, MANAGEMENT AND MONITORING OF FOREST RESOURCES IN THE MISSISSIPPI ALLUVIAL VALLEY: RECOMMENDATIONS FOR ENHANCING WILDLIFE HABITAT



LOWER MISSISSIPPI ALLUVIAL VALLEY JOINT VENTURE
FOREST RESOURCE CONSERVATION WORKING GROUP

Table 3. Desired landscape characteristics for bottomland hardwood forests within the Mississippi Alluvial Valley (LMJV Forest Resources Conservation Working Group 2007).

Habitat Type	Percent of Area	Description
Forest Cover	70-100%	Large (>10,000 acre) contiguous forested areas are desired. At any point in time, a minimum 35% and optimum 50% of the forest should meet the desired stand structure conditions (See <i>Management of Bottomland Hardwood Forests, Table 2</i>).
Actively Managed Forest	70-95%	Forests that are managed via prescribed silvicultural treatments to meet desired stand conditions.
- Regenerating Forest	≤ 10%	Forest regeneration on areas > 7 acres (e.g., clearcuts where >80% of overstory has been removed) or forest restoration on agricultural lands (i.e., reforestation). However, achieving increased forest cover via reforestation overrides the 10% limitation.
- Shrub/Scrub	≤ 5%	Thamnic woody vegetation (hydric or mesic) within bottomland forests, including forests in early seral (successional) stages.
Passively Managed Forest	5-30%	Forest areas that are not subjected to silvicultural manipulation (e.g., no-cut, wilderness, set-aside, and natural areas).

DESIRED FOREST
CONDITIONS



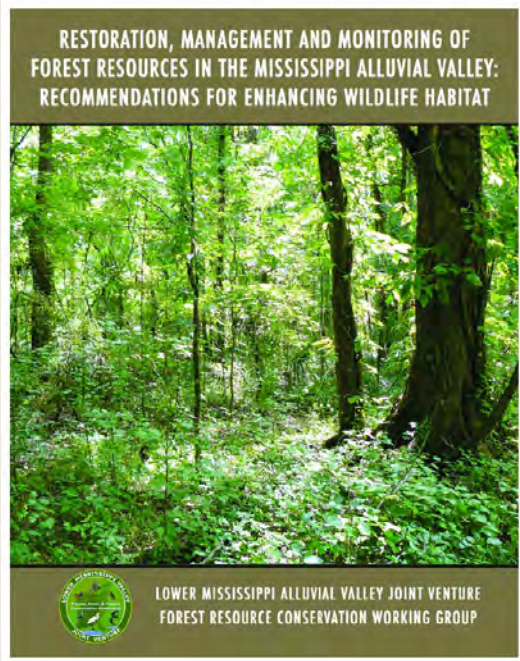
Lower Mississippi Valley
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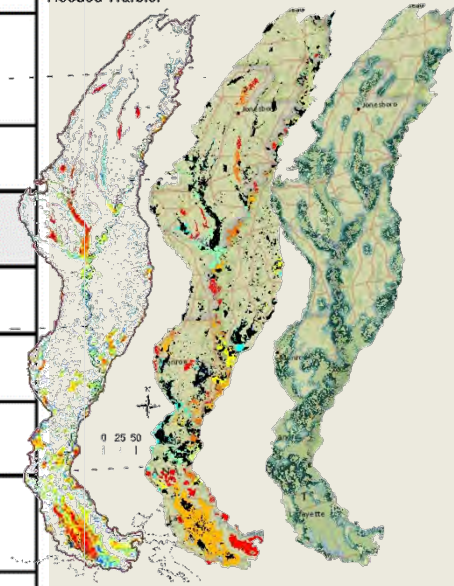
What/Where - Management?

Table 4. Desired stand characteristics for bottomland hardwood forests within the Mississippi Alluvial Valley (LMVJV Forest Resources Conservation Working Group 2007)

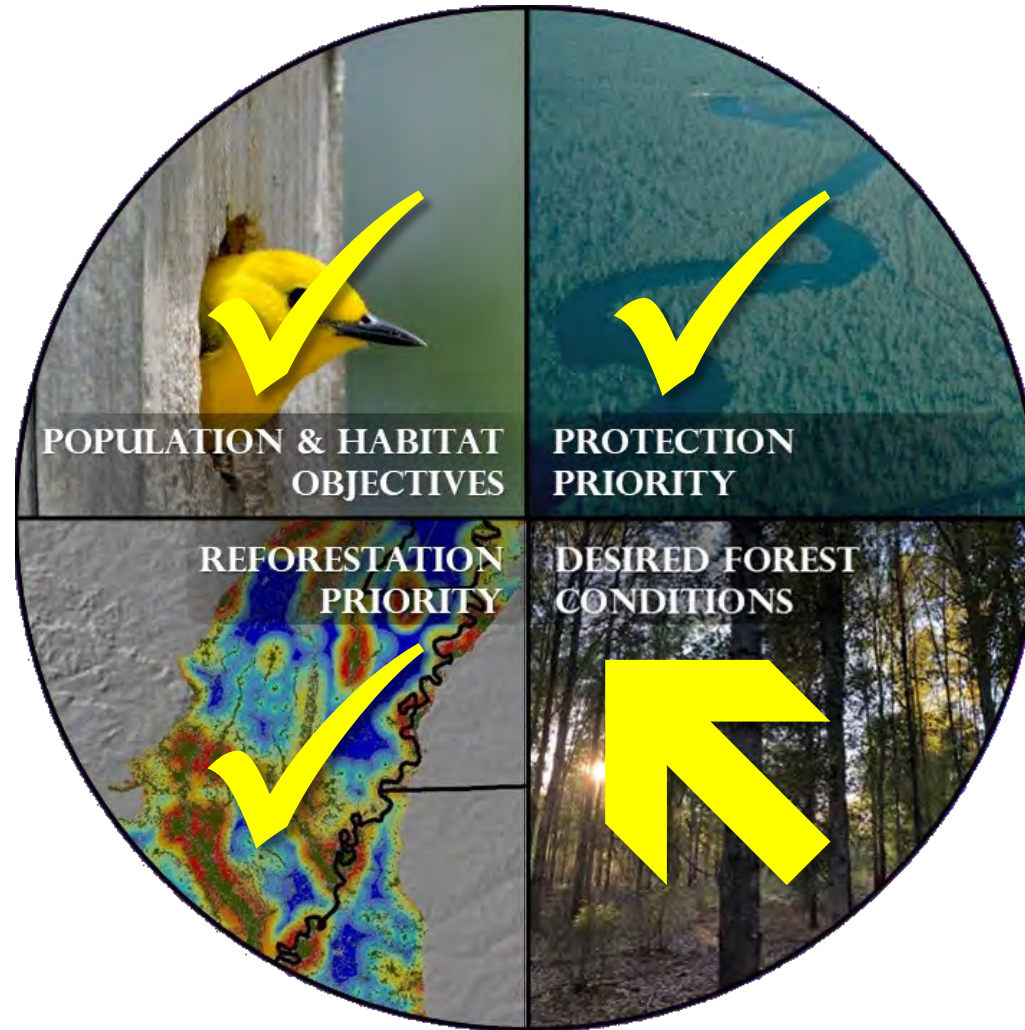
Forest Variables ¹	Desired Stand Structure	Conditions That May Warrant Management
Primary Management Factors		
Overstory Canopy Cover	60-70%	> 80%
Midstory Cover	25-40%	< 20% or > 50%
Basal Area	60-70 ft ² /acre with ≥ 25% in older age classes ²	> 90 ft ² /acre or ≥ 60% in older age classes
Tree Stocking	60-70%	< 50% or > 90%
Secondary Management Factors		
Dominant Trees ³	> 2/acre	< 1/acre
Understory Cover	25-40%	< 20%
Regeneration ⁴	30-40% of area	< 20% of area
Coarse Woody Debris (>10 inch diameter)	≥ 200 ft ³ /acre	< 100 ft ³ /acre



Hooded Warbler



MAV Forest Breeding Bird Conservation



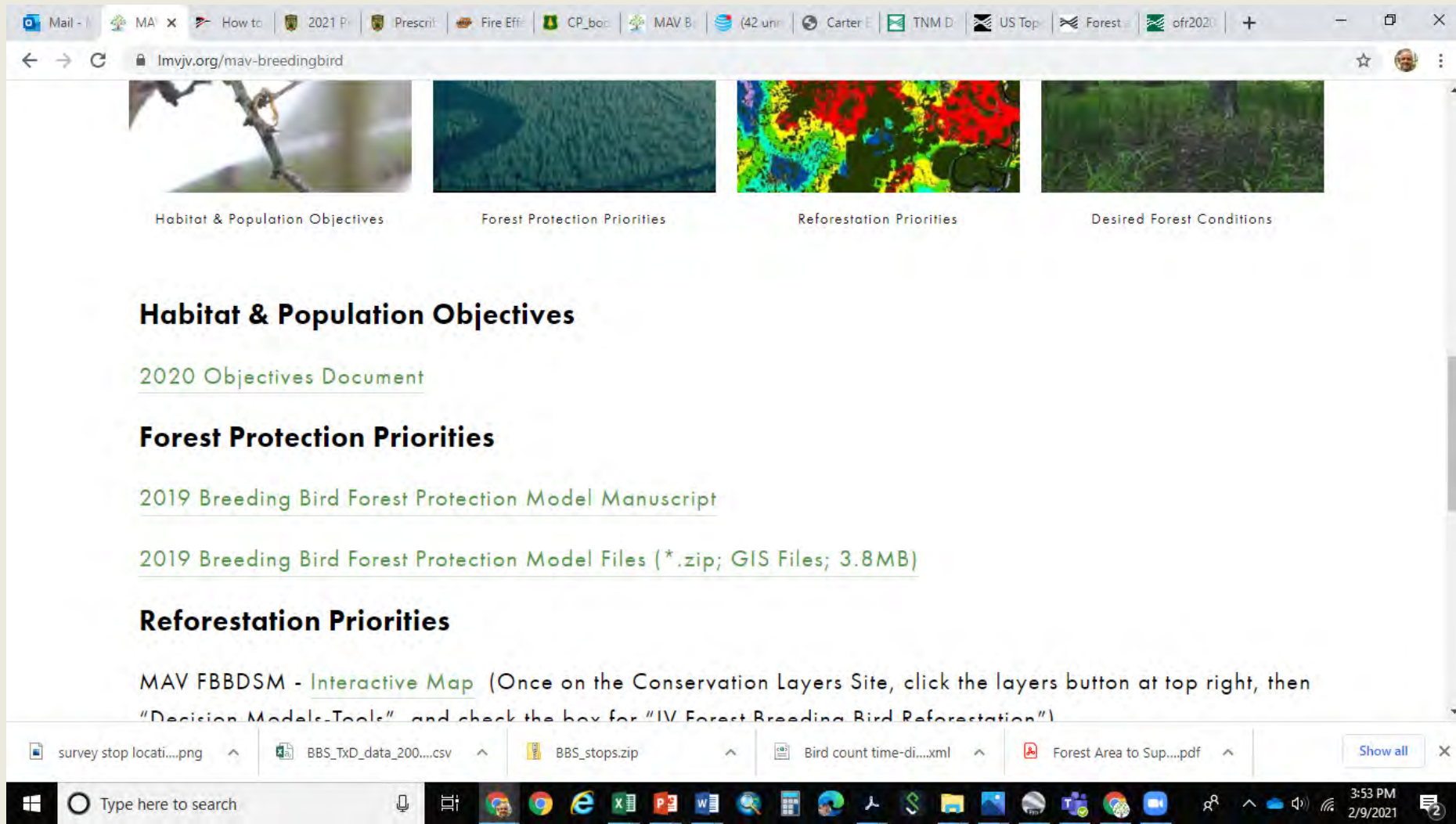
All Adds Up To

Recommended Conservation Actions

- ACHIEVE **OPTIMAL FOREST SPATIAL CONFIGURATION AND STRUCTURE** AS GUIDED BY DESIRED FOREST CONDITIONS FOR WILDLIFE WITHIN ALL FOREST HABITAT



Accessing the Information



Mail - MA x How to 2021 P Prescri Fire Eff CP_boc MAV B (42 unr Carter E TNM D US Top Forest ofr2020 +

lmvjv.org/mav-breedingbird

Habitat & Population Objectives Forest Protection Priorities Reforestation Priorities Desired Forest Conditions

Habitat & Population Objectives

[2020 Objectives Document](#)

Forest Protection Priorities

[2019 Breeding Bird Forest Protection Model Manuscript](#)

[2019 Breeding Bird Forest Protection Model Files \(*.zip; GIS Files; 3.8MB\)](#)

Reforestation Priorities

MAV FBBDSM - [Interactive Map](#) (Once on the Conservation Layers Site, click the layers button at top right, then "Decision Models/Tools" and check the box for "IV Forest Breeding Bird Reforestation")

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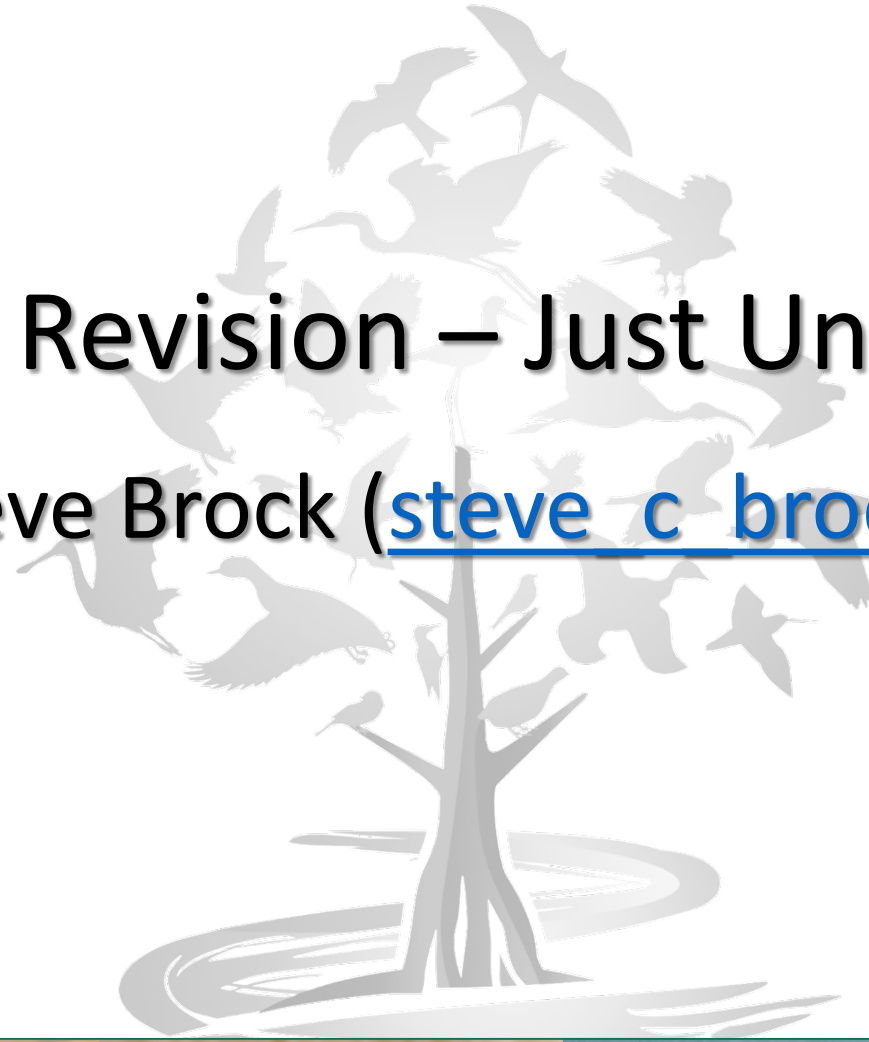
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Next Step

DFCW Revision – Just Underway

Contact Steve Brock (steve_c_brock@fws.gov)





Thank you!