Lower Mississippi Valley

JOINT VENTURE

Management Board Meeting

Eastern Phoebe © James Childress

October 21, 2020
Video Conference

The Lower Mississippi Valley Joint Venture is a self-directed, non-regulatory private, state, federal conservation partnership that exists for the purpose of sustaining bird populations and their habitats within the Lower Mississippi Valley region through implementing and communicating the goals and objectives of relevant national and international bird conservation plans.

The mission of the LMV Joint Venture is to

function as the forum in which the private, state, federal conservation community develops a shared vision of bird conservation for the Lower Mississippi Valley region; cooperates in its implementation; and collaborates in its refinement.

LMVJV Management Board Fall 2020 Agenda

October 21, 2020

Housekeeping & Administration			
10:00AM		Welcome/Roll Call	Raasch
	* p. 4	Spring Action Item Progress	McKnight
	p. 9	Spring Meeting Venue	
10:15AM	p.11	Operational Plan Progress Report & JV Office Staff Priorities	McKnight
	p.29	JV Office Budget	McKnight
10:30AM	p.31	Assoc. of JV Management Boards/3BB Loss "Think Big" Budget Discussion	Raasch
Communication			
11:00AM		Summary of Communications Activity	McKnight
	p.35	**Communication Plan Overview & Approval**	McKnight/G. Elliott
11:25AM		Pvt. Landowner Conservation Champs 2020 Private Lands Newsletter Concept Discussion	McKnight
Noon Break			
Habitat Delivery			
1:00PM	p.47	MAV Summary & Hi-lights	Brock
1:20PM	p.49	WGCPO Summary & Hi-lights	Bartush
Science			
1:40PM		Science Activity Roundup Waterbird Planning Investment UA-M Waterbird Study Status Emergent Wetland Assessment - MAV Open Pine Decision Tool Update	Mini
2:00PM		MAV Audio Bird Monitoring 2021	Mini/McKnight
	p.55	MAV Landbird Objectives - What's Next?	Mini/McKnight
	p.71	M&E Plan Review & Discussion	Mini
	p.81	Wetland Mgmt. Unit Tool Revision Rollout	Elliott
3:00PM		**Adjourn**	

* Page in Notebook

Decision Requested

Administration

LMVJV Management Board Contact List - October 2020					
Name	**Title**	**Organization**	**Email**	**Phone**	**Address**
Jeff Raasch[1] (Chair)	Statewide Wetlands/Joint Venture Program Coordinator	Texas Parks and Wildlife Department	jeff.raasch@tpwd.texas.gov	512.389.4578	Texas Parks and Wildlife 4200 Smith School Road, Austin, TX 78744
Ron Seiss[1] (Vice Chair)	Director, Lower Mississippi River Program	The Nature Conservancy	rseiss@tnc.org	601.713.3307	The Nature Conservancy 217 Rocky Branch Road, Covington, TN 38019
Merrie Morrison	Vice President for Operations	American Bird Conservancy	mmorr@abcbirds.org	540.253.5780	American Bird Conservancy 4249 Loudoun Ave., P.O.Box 249 The Plains, VA 20198
Garrick Dugger	Assistant Wildlife Division Chief	Arkansas Game and Fish Commission	Garrick.Dugger@agfc.ar.gov	501.223.6362	Arkansas Game & Fish Commission #2 Natural Resources Dr., Little Rock, AR 72205
Scott Manley	Director, Conservation Programs (MS, TN, AR, LA, AL)	Ducks Unlimited	smanley@ducks.org	601.956.1936	Ducks Unlimited 193 Business Park Dr., Suite E Ridgeland, MS 39157
Chris Garland	Wildlife Division Director	Kentucky Department of Fish & Wildlife Resources	chris.garland@ky.gov		Kentucky Department of Fish & Wildlife Resources #1 Sportsman's Lane Frankfort, KY 40601
Kenny Ribbeck[1]	Chief, Wildlife Division	Louisiana Department of Wildlife and Fisheries	kribbeck@wlf.louisiana.gov	225.765.2800	LA Dept Wildlife and Fisheries 2000 Quail Drive P.O. Box 98000, Baton Rouge, LA 70898
Russ Walsh	Executive Wildlife Director	Mississippi Department of Wildlife, Fisheries, & Parks	russw@mdwfp.state.ms.us	601.432.2202	Mississippi Dept of Wildlife, Fisheries, & Parks 1505 Eastover Drive, Jackson, MS 39211-6374
Joel Porath	Wildlife Management Chief-Ozark Unit	Missouri Department of Conservation	joel.porath@mdc.mo.gov	573.522.4115 ext 3188	Missouri Dept. of Conservation P.O. Box 180, Jefferson City, MO 65102
Vacant		National Wildl Turkey Federation			
Jeff Ford	Senior Biologist	Oklahoma Department of Wildlife Conservation	jeff.ford@odwc.ok.gov	918.527.9918	Oklahoma Dept. of Wildlife Conservation 49077 Fish Hatchery Rd. Hodgen, OK 74939
Jason Maxedon	Wildlife Program Manager, Region 1	Tennessee Wildlife Resources Agency	Jason.Maxedon@tn.gov	731.423.5730	200 Lowell Thomas Drive Jackson, TN 38301
Kristin Madden[1]	Deputy Chief, Migratory Birds	US Fish and Wildlife Service (Albuquerque)	kristin_madden@fws.gov	505.248.6878	U.S. Fish & Wildlife Service 500 Gold Avenue SW, Albuquerque, NM 87102
Mike Oetker	Deputy Regional Director	US Fish and Wildlife Service (Atlanta)	michael_oetker@fws.gov	404.679.4000	U.S. Fish & Wildlife Service 1875 Century Blvd., Atlanta, GA 30345
Tom Doyle	Deputy Director, National Wetlands Research Center	US Geological Survey	doylet@usgs.gov	337.266.8647	U.S. Geological Survey, Wetland & Aquatic Research Center 700 Cajundome Blvd., Lafayette, LA 70506
Eddie Taylor	Forest Supervisor, Kisatchie NF	USDA Forest Service, Region 8	etaylor@fs.fed.us	318.473.7160	U.S.D.A. Forest Service 2500 Shreveport Highway, Pineville, Louisiana 71360-2009
Mike Sullivan	State Conservationist, Arkansas	USDA Natural Resource Conservation Service	michael.sullivan@ar.usda.gov	501.301.3100	U.S.D.A. NRCS Room 3416, Federal Building 700 W. Capitol Ave, Little Rock, AR 72201-3215

[1]Executive Committee

LMVJV Management Board – 15 April 2020

Webinar

Action Items (★ File attached with 4-16-20 distribution email**)**

Status in Green

Administration

- **Future Board Meeting Locations**
  - 2020 Fall: Memphis, TN (S. Manley/J. Maxedon)
  - 2021 Spring (G. Dugger)

  Responsible: Primary, K. McKnight; All Applicable Board Members – Ongoing

Communication

- **Communication Plan Revision**
  - Gregg Elliott will lead the re-drafting effort, utilizing input gained thus far and in coordination with the *ad hoc* Communications Plan Revision Team
  - Communications Plan Revision Team: Gregg Elliott, KGregg Consulting; Scott Manley (with Emily Austin), DU; Merrie Morrison, ABC; Keith McKnight & LMVJV Office Staff, as appropriate.
  - The Team will work through phone & email correspondence to finalize a draft ready for Board consideration in late Summer 2020, and approval at the Fall Board Meeting.

  Responsible: K. McKnight, G. Elliott, Communications Plan Team, and ultimately full Board – Distributed to Board for Review

- **Private Landowner Conservation Champion Recognition** ★
  - 2020 PLCC Call for Nominations re-distributed to Board members by 17 April 2020; **Nominations (maximum two per Board member) due 29 May 2020**. Champions chosen by 1 August 2020.

  Responsible: K. McKnight & PLCC Selection Team - Complete

- **Communication with Agency Leadership & Decision-makers**
  - Maintaining meaningful connection and communication with regional (e.g., Albuquerque & Atlanta JV "Fly-ins") and national leadership is confirmed important.

  Responsible: K. McKnight, J. Raasch, with Board Member participation and support - Ongoing

Delivery

- **NAWCA Cycle 21-01 Project Ranks** ★
  - Project proposal ranks due to K. McKnight by **24 April 2020**, for synthesis and submittal to NAWCC Staff.

  Responsible: All Board Members & K. McKnight - Complete

Science

- **MAV Forest Breeding Bird Plan** ★
  - Document distributed to Board Members by 17 April 2020
  - Board Members circulate to staff for review, comments due to Dr. Mini by **29 May 2020**.
  - Redrafted Plan returned to Board Members by **30 June 2020**.
  - **Approval by Board sought by 31 July 2020**.

  Responsible: K. McKnight, A. Mini, Board Members & selected partner staff - Complete

- **Desired Forest Conditions for Wildlife (DFCW) Revision**
  - Explore the potential to more explicitly include West Gulf Coastal Plain & Ouachitas, East Gulf Coastal Plain, and other southeastern regions in the document. Include more WGCPO partners in the revision process.

  Responsible: A. Mini, B. Bartush, K. McKnight, FRCWG members - Underway

April 15, 2020 Management Board Call/Meeting Participants

Board Member	Organization
Derek Alkire	National Wild Turkey Federation
Tom Doyle	US Geological Survey
Garrick Dugger	Arkansas Game & Fish Commission
Jeff Ford	Oklahoma Department of Wildlife Conservation
Chris Garland	Kentucky Department of Fish & Wildlife Resources
Houston Havens[1]	Mississippi Department of Wildlife, Fisheries, & Parks
Kristin Madden	US Fish and Wildlife Service, Southwest
Scott Manely	Ducks Unlimited
Jason Maxedon	Tennessee Wildlife Resources Agency
Merrie Morrison	American Bird Conservancy
Jeff Raasch	Texas Parks and Wildlife Department
Kenny Ribbeck	Louisiana Department of Wildlife and Fisheries
Ron Seiss	The Nature Conservancy
Mike Sullivan	Natural Resources Conservation Service
Eddie Taylor	US Forest Service, Region 8
	US Fish and Wildlife Service, Southeast
	Missouri Department of Conservation
Guest	**Organization**
John Brunjes	Kentucky Department of Fish & Wildlife Resources
Ryan Diener	Pheasants Forever/Quail Forever
Gregg Elliott	KGregg Consulting
Jamie Feddersen	Tennessee Wildlife Resources Agency
David Graves	Arkansas Game & Fish Commission
Tim Landreneau	Natural Resources Conservation Service
Ethan Massey	Ducks Unlimited
Stacey Shankle	Trust for Public Land
Dant Twedt	US Geological Survey
Barry Wilson	Gulf Coast Joint Venture
Staff	
Bill Bartush	WGCPO Partnership Coordinator
Steve Brock	MAV Partnership Coordinator
Blaine Elliott	GIS Applications Biologist
Keith McKnight	Coordinator
Anne Mini	Science Coordinator

[1]for Russ Walsh

LMVJV Board Conference Call Agenda

Wednesday, 15 April 2020

1:00pm	**Housekeeping & Administration**
☐	Welcome
☐	Fall 2019 Meeting Action Item Progress
☐	Future Meeting Venues (Fall '20, Spring '21)
☐	LMVJV Office Budget Forecast
1:30pm	**Communication**
☐	Communication Plan Revision
☐	Private Landowner Conservation Champion Nominations 2020
☐	Hi-Lights of Atlanta JV Fly-in & AJVMB Meeting in DC
2:30pm	**Delivery**
☐	MAV - Brief Overview
☐	WGCPO - Brief Overview
☐	NAWCA Proposal Ranking - **ACTION NEEDED**
3:00pm	**Larger Partnership**
☐	USFWS Regional Migratory Bird/Science Applications Merger & Potential Capacity Sharing
3:30pm	**Science**
☐	MAV Landbird Bird Plan 2020
☐	NFWF MAV Bird Monitoring
☐	Waterbird Science Spending Projects Updates
☐	WMU Tool Update
☐	DFC Revision Update
☐	Wrap-up, Action Items, Final Thoughts
4:30pm	**Adjourn**

Call-in Information

Audio Dial: 877-614-9754
Passcode: 671 249 56#

Web see invitation from: e-meetings@mymeetings.com

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Name	**Title**	**Organization**	**Email**	**Phone**	**Address**
Jeff Raasch[1] (Chair)	Statewide Wetlands/Joint Venture Program Coordinator	Texas Parks and Wildlife Department	jeff.raasch@tpwd.texas.gov	512.389.4578	Texas Parks and Wildlife 4200 Smith School Road, Austin, TX 78744
Ron Seiss[1] (Vice Chair)	Director, Lower Mississippi River Program	The Nature Conservancy	rseiss@tnc.org	601.713.3307	The Nature Conservancy 217 Rocky Branch Road, Covington, TN 38019
Derek Alkire	Conservation Field Manager (AL,AR,LA,MS)	National Wildl Turkey Federation	dalkire@wtf.org	352.262.2373	136 Megs Lane Saltillo, MS 38866
Garrick Dugger	Assistant Wildlife Division Chief	Arkansas Game and Fish Commission	Garrick.Dugger@agfc.ar.gov	501.223.6362	Arkansas Game & Fish Commission #2 Natural Resources Dr., Little Rock, AR 72205
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Kristin Madden[1]	Deputy Chief, Migratory Birds	US Fish and Wildlife Service	kristin_madden@fws.gov	505.248.6878	U.S. Fish & Wildlife Service 500 Gold Avenue SW, Albuquerque, NM 87102
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Jason Maxedon	Wildlife Program Manager, Region 1	Tennessee Wildlife Resources Agency	Jason.Maxedon@tn.gov	731.423.5730	200 Lowell Thomas Drive Jackson, TN 38301
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Mike Sullivan	State Conservationist, Arkansas	Natural Resource Conservation Service	michael.sullivan@ar.usda.gov	501.301.3100	U.S.D.A. NRCS Room 3416, Federal Building 700 W. Capitol Ave, Little Rock, AR 72201-3215
Eddie Taylor	Forest Supervisor, Kisatchie NF	US Forest Service, Region 8	etaylor@fs.fed.us	318.473.7160	U.S.D.A. Forest Service 2500 Shreveport Highway, Pineville, Louisiana 71360-2009
Russ Walsh	Executive Wildlife Director	Mississippi Department of Wildlife, Fisheries, & Parks	russw@mdwfp.state.ms.us	601.432.2202	Mississippi Dept of Wildlife, Fisheries, & Parks 1505 Eastover Drive, Jackson, MS 39211-6374
Chris Garland	Wildlife Division Director	Kentucky Department of Fish & Wildlife Resources	chris.garland@ky.gov		Kentucky Department of Fish & Wildlife Resources #1 Sportsman's Lane Frankfort, KY 40601

[1]Executive Committee

Lower Mississippi Valley Joint Venture
Management Board Meeting Locations 2002-2021

Fa/Wi 2021	TBD
Sp/Su 2021	Tennessee (DU HQ, travel condition permitting)
Sp/Su 2020	Teleconference (in-person meeting not possible due to COVID-19 issues)
Fa/Wi 2020	Teleconference (in-person meeting not possible due to COVID-19 issues)
Sp/Su 2019	**Texas (Jefferson)**
Fa/Wi 2019	**Louisiana (Cypress Bend)**
Sp/Su 2018	**Louisiana (West Monroe)**
Fa/Wi 2018	**Mississippi (Natchez)**
Sp/Su 2017	**Missouri (Cape Girardeau)**
Fa/Wi 2017	**Tennessee (Dyersburg)**
Sp/Su 2016	**Arkansas (Wildlife Farms)**
Fa/Wi 2016	**Louisiana (Baton Rouge, after SEAFWA; October 19-20 *OR* 20-21)**
Sp/Su 2015	**Mississippi (Tara Wildlife)**
Fa/Wi 2015	**Tennessee (Millington)**
Sp/Su 2014	**Texas (Caddo Lake State Park)**
Fa/Wi 2014	Florida (SEAFWA)
Sp/Su 2013	**Louisiana (Lafayette)**
Fa/Wi 2013	Oklahoma (SEAFWA)
Sp/Su 2012	**Arkansas (Heber Springs)**
Fa/Wi 2011	Tennessee (SEAFWA)
Sp/Su 2011	**Arkansas (Eureka Springs)**
Fa/ Wi 2010	Mississippi (SEAFWA)
Sp/Su 2010	**Arkansas (5 Oaks Lodge)**
Fa/Wi 2009	Georgia (SEAFWA)
Sp/Su 2009	**Oklahoma (Broken Bow)**
Sp/Su 2008	**Mississippi (Vicksburg)**
Sp/Su 2007	**Texas (Tyler)**
Sp/Su 2006	**Mississippi (Vicksburg)**
Sp/Su 2005	**Arkansas (Winrock)**
Sp/Su 2004	**Louisiana (Buras)**
Fa/Wi 2003	Alabama (SEAFWA)
Sp/Su 2003	**Texas (Big Woods on the Trinity)**
Sp/Su 2002	**Mississippi (Tara Wildlife)**

2-Day Location	**"Box Score"**
Arkansas	5
Louisiana	5
Mississippi	5
Texas	4
Tennessee	2
Missouri	1
Oklahoma	1

Bold = Multi-day meeting
Gray = Planned

Lower Mississippi Valley Joint Venture

Progress Assessment of

2018 Operational Plan Goals & Priorities

Year 2

Lower Mississippi Valley
JOINT VENTURE
www.lmvjv.org

October 2020

LMVJV Operational Plan – Year 2 Progress

The Lower Mississippi Valley Joint Venture (LMVJV) was formed in 1987 as a regional partnership working towards achieving the goals and objectives of the North American Waterfowl Management Plan (NAWMP), and now assumes responsibility for planning, designing, coordinating, and implementing conservation in support of the U.S. Shorebird Conservation Plan, North American Waterbird Conservation Plan, and Partners in Flight Landbird Conservation Plans as well. The conservation landscape has changed (for better and worse) since the inception of the LMVJV and many challenges remain to be addressed. To facilitate a focused and efficient pursuit of shared partnership objectives, the LMVJV is guided by a 5-year Operational Plan.

The 2018 Operational Plan articulates the collective expectations of the Management Board with respect to how the LMVJV operates, interacts, and cooperates among all its parts (office staff, partners, other partnerships), and the essential expected outcomes. The primary purpose of the Plan is to ensure that the LMVJV Management Board, coordinator, office staff, and partner staff have proper context for making key (and perhaps tough) resource allocation decisions.

This document summarizes an assessment of progress after two years of work under the five-year plan.

LMVJV Operational Plan – Year 2 Progress

Organizational Performance

Priority A

Consistent, high-level engagement and involvement from Management Board members

Positives

Solid interest and participation in JV activities by all Management Board members continues. Management Board members actively facilitate increased involvement by their organization's staff in LMVJV technical teams, etc. Kentucky Dept. of Fish & Wildlife Resources Board seat filled by Chris Garland, Wildlife Division Director, Spring 2020.

Challenges

Turnover in Management Board members challenges us to share institutional knowledge, maintain a common context, and ensure continuity through time. National Wild Turkey Federation seat currently unfilled.

Priority B

Consistent, high-level engagement and involvement from partner staff in technical and delivery teams

Positives

Partner staff participation in all CDNs (40-60 active members each) continues to be very high.

Participation and input provided by science-related working groups is generally high (e.g., WGCPO BHW HSI development, MAV Forest Protection Model, MAV Forest Breeding Bird Plan revision, NETX Bird Monitoring).

Challenges

COVID-19 restrictions have dictated video and phone gatherings only, except for limited fieldwork.

Priority C

Effective communication of LMVJV activities

Positives

Regular email updates on timely issues sent to Board members and partner networks, with *News & Updates* e-newsletters distributed 3/year.

Brand new website launched in 2019.

Glossy summaries of four LMVJV Plans (MAV Waterfowl, Shorebird, WGCPO Open Pine, WGCPO Forest Wetland) completed in 2018 and posted on website.

Several partner accomplishments (e.g., acquisition, restoration) have been communicated to the partnership via *News & Updates*, owing to the provision of this information by partner organizations to JV staff.

Challenges

Will need to retain communication capacity to maintain momentum.

Organizational Performance (cont'd)

Priority D

Cultivating relationships with key DOI & USFWS decision-makers and relaying accomplishments

Positives

LMVJV Board Chair coordinated "fly-ins" among USFWS Southwest (2018) & Southeast (2020) Region JVs and USFWS Regional leadership. The efforts were successful and well received.

LMVJV Coordinator and Chair participated in DC fly-in meetings with USFWS Leadership (Director, Deputy Director, Program Leadership) in February 2020.

Challenges

Maintaining regular contact with key staff for building relationships is an ongoing challenge.

Priority E

Cultivating new sources of funding for partner activities

Positives

NFWF 2020 LMAV Fund approved $2.6MM to partners in 8 projects. JV Staff directly involved in successful proposals for DFCW Revision, MAV Bird Monitoring, and Tri-State WREP (AR, LA, MS).

USFWS Mig. Bird funds secured for MAV emergent wetland remote assessment($26K) supporting planning for secretive marshbirds and other taxa; a 2021 Shorebird/Waterbird Workshop ($10K); and an assessment of SE JV and SECAS Blueprint outputs ($80K) and recommendations for better harmonization.

Challenges

Accessing funds from sources outside of our traditional streams is an ongoing and worthwhile process that requires time, energy, and coordination.

Identifying and cultivating additional new donors to LMVJV partner efforts, while avoiding conflict with ongoing development efforts by partner organizations is a delicate process.

Priority F

Sufficient JV Office budget to support staff, travel, and activities

Positives

Migratory Bird Joint Venture (1234) funding levels remain relatively flat to increasing ($1.5MM increase in FY20), despite reductions in other programs.

LDWF, AGFC, MDC, TWRA, NRCS, ODWC, and TPWD are contributing funds to the LMVJV Support Office to augment 1234 funds.

TPWD and DU provide office space and support to JV staff in TX & MS.

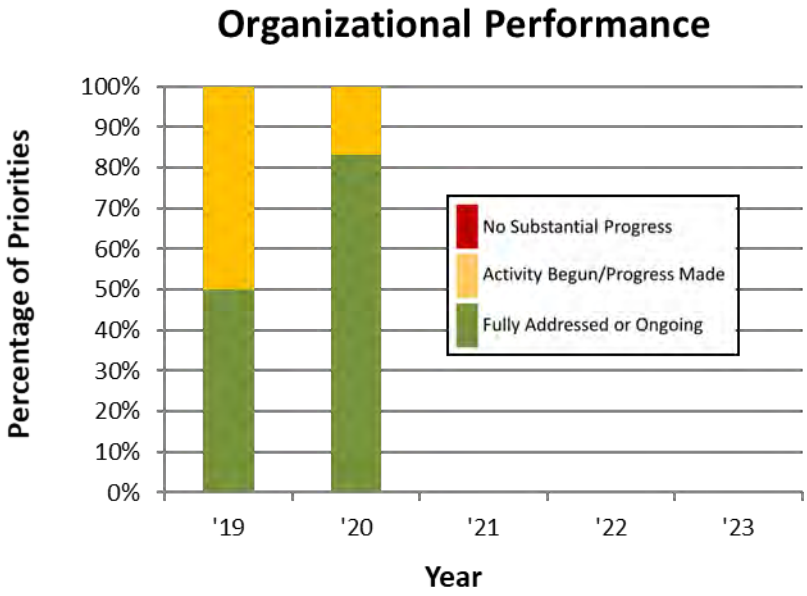
NFWF funds, through an award to ABC, provide approx. 50% of the WGCPO Partnership Coordinator's costs through early 2021.

Challenges

Securing additional outside (e.g., NFWF) funding requires ongoing investment.

LMVJV Operational Plan – Year 2 Progress

Organizational Performance (cont'd)



Year 2 ('20) Priorities Status

- Board member engagement
- Partner staff engagement
- Communication of JV activities
- Communication with DOI & USFWS
- Cultivate and increase funding sources
- Sufficient Office budget to support staff

Biological Planning

Goal 1: Landscape-oriented, biologically driven, partner vetted, up-to-date population objectives for priority species within all bird guilds in both BCRs by 2023

Highest Priority Waterbirds of the Mississippi Alluvial Valley & West Gulf Coastal Plain/Ouachitas Plan	<u>Positives</u> LMVJV staff are collecting data from partners on King Rail locations to help inform objectives. Univ. of Arkansas Monticello Marshbird research underway, with funding from LMVJV. Funds in place & plans progressing with DU to conduct emergent wetland assessment, fundamental to assessing marshbird habitat. <u>Challenges</u> This effort is challenged by a lack of population data to set defensible population objectives. Habitat and habitat use data collection ongoing.
Highest Priority MAV Landbird Plan Revision	<u>Positives</u> Drs. Twedt & Mini have finalized the update to the landbird biological model for the MAV. It is in publication process in USGS Open File Format. Board approved new Population & Habitat Objectives September 2020. <u>Challenges</u> Peer reviewed document synthesizing all four components of planning & design envisioned, not yet begun.
Highest Priority WGCPO Open Pine Plan Revision	Early discussions with partners through CDN activities have begun
High Waterfowl – New Population Objectives	<u>Positives</u> New population objectives have been completed by LMVJV Science Coordinator, although not distributed to the larger Waterfowl Working Group. With the GCJV, we have agreed upon an interpretation of the dual NAWMP objectives (80th percentile vs. Long-term average). <u>Challenges</u> Timing of updating waterfowl planning has not been ideal given other priorities (such as waterbirds) and the reality of the substantial effort that it will take to update our models.

Biological Planning (cont'd)

Medium

Multi-JV grassland bird conservation planning ("Murmuration")

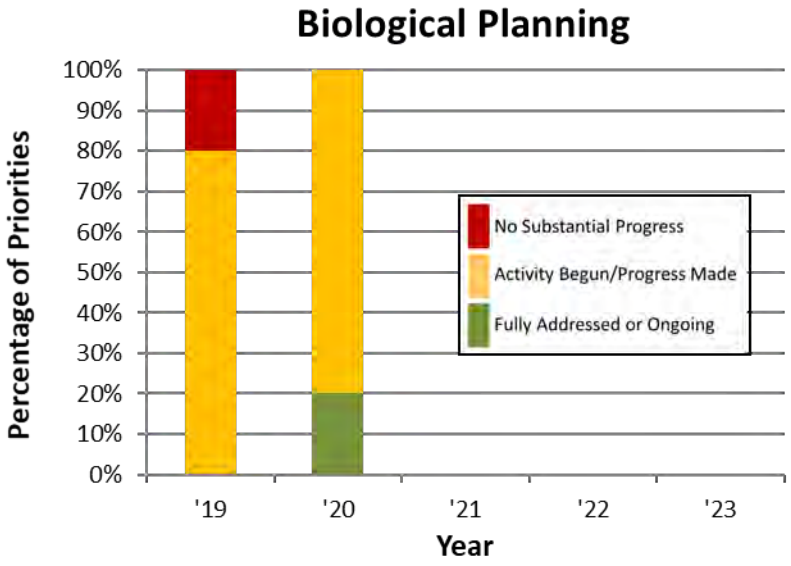
Positives

Science Coordinator participated in meeting in January 2019 to develop plan and discuss potential study sites.

Funding for components of the work is in place, poised to begin in early 2021

Challenges

Funding to conduct field work necessary to develop Full Annual Cycle models has not been fully obtained.



Year 2 ('20) Priorities Status

- Waterbird Planning
- MAV Landbird Plan Revision
- WGCPO Open Pine Plan Revision
- Waterfowl Objectives Updated
- Grassland Bird Murmuration

Conservation Design

Goal 2a: Up-to-date habitat objectives for priority species within each bird guild in both BCRs by 2023

Goal 2b: Effective decision support tools to link and integrate habitat objectives for priority species in each bird guild and other relevant resource concerns, useful for delivery action by 2023

Highest Priority Waterbirds of the Mississippi Alluvial Valley & West Gulf Coastal Plain/Ouachitas Plan	<u>Positives</u> Funds are in place to create our own data layers for palustrine emergent marsh. We will collect existing (limited) spatial data from partners to use as 'ground truth' locations. <u>Challenges</u> Next steps are completion of the assessment, then application of these data to as-yet undeveloped Marshbird models.
Highest Priority WGCPO Open Pine Plan Revision	Engagement of new membership/leaders within the AR-LA CDN, Delivery & Prioritization Team was profound in 2019-2020. Though no meetings have been convened specific to the delivery team, several conference calls have occurred discussing refinement of the priority map. Discussion within the CDN & continued dialogue with USFWS Science Applications staff are moving this effort forward. Integration of SWAP efforts in AR & LA with CDNs should prove fruitful.
Highest Priority CDN Delivery Priorities updated and distributed	Both the LA/MS MAV and NETX CDNs' delivery priorities were improved in the past year, with support from LMVJV Office and Partner (TPWD) staff. The delivery area of NETX expanded to include better integration with OPJV and TLIT delivery coverage. In addition, the AR-LA CDN has galvanized around a focused RCPP proposal, which (regardless of success) will aid future delivery through a shared partner vision of high priority landscapes and practices.
High Waterfowl – New Population Objectives translated to habitat objectives	<u>Positives</u> We have formed an LMVJV Waterfowl Working Group 'executive committee' to discuss new population objectives and improvements to the base biological model to set habitat objectives. <u>Challenges</u> Incorporating USFWS Southeast Region objectives into existing JV framework

Conservation Design (cont'd)

High

Human Objectives developed for waterfowl

Positives

Began discussion with Waterfowl WG leadership in summer 2019 regarding the need to dig deeper into HD science, and met in November 2019 to establish HD possibilities with HD scientists and key waterfowl biologists.

Challenges

Effort is hampered by a scarcity of expertise, and lack of direction from NAWMP.

High

Integration of priorities among guilds, ecosystem services, etc.

Positives

Soon to have solid planning/design products for all bird guilds in both BCRs.

Challenges

Developing and updating basic biological plan/design elements is staff-intensive, and occupies a higher priority than does integration.

Medium

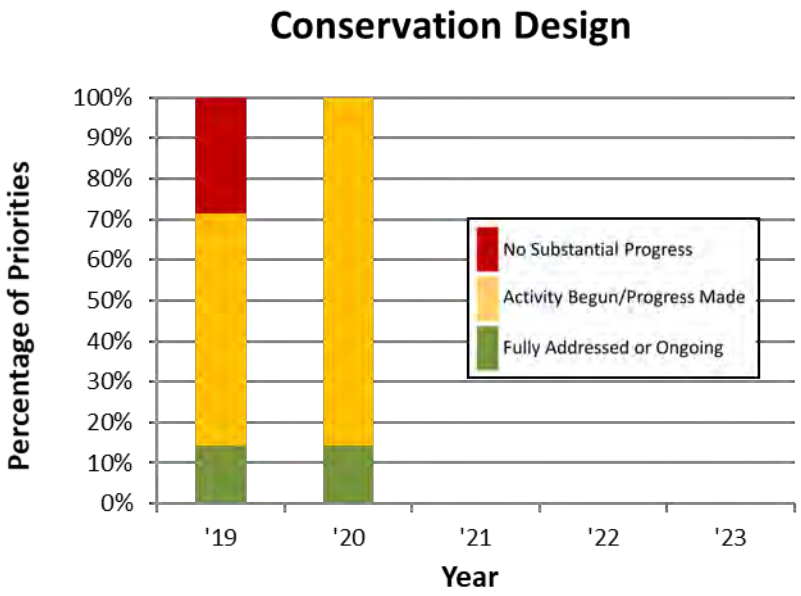
Multi-JV grassland bird conservation planning ("Murmuration")

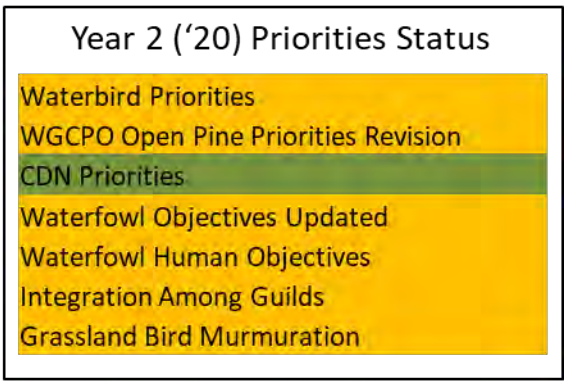
Positives

Meeting held in January 2020 to develop plan and discuss potential study sites.

Challenges

Funding to conduct field work necessary to develop Full Annual Cycle models has not been obtained.





Habitat Delivery

Goal 3a: The Partnership actively seeks and fosters existing and emerging opportunities for coordinated habitat delivery in support of LMVJV objectives

Goal 3b: Establish fully-functioning Conservation Delivery Networks throughout the JV, guided by LMVJV objectives by 2023

Goal 3c: Fully supported long-term functionality and productivity of existing Conservation Delivery Networks and Tri-state Conservation Partnership

Highest Priority

Continue support of existing CDNs & Cooperatives:

- CDNs
- Tri-state Cons. Partnership
- Longleaf Partnerships

Positives

Much LMVJV Office staff and partner staff time continues to be invested in support of existing cooperatives and networks.

Conservation Delivery Networks. The AR MAV, LA-MS MAV, and NE TX CDNs continue to function well and benefit from active support of the LMVJV staff. CDN membership participation remains high, with 40-60 attendees typical at regular CDN meetings, and excellent participation in workshops and field days. As intended, these CDNs have developed and updated their priorities to address coordination and information needs unique to their geographies. For example, the AR and LA/MS MAV CDNs maintain active Working Ag Lands Working Groups, addressing opportunities for CDN partners to more effectively implement conservation actions in the MAV working agriculture landscape. Both of these CDN's hosted Turn-row Credibility Workshops in 2019, aimed at improving delivery staff's knowledge and effectiveness in working with farmers. The MAV CDN's have more recently turned their focus toward Desired Forest Conditions for Wildlife and in the midst of the pandemic, are hosting webinars led by technical experts from within the JV partnership. Thus far, these CDN-hosted training opportunities have been well attended and received.

In contrast, the NE TX CDN has developed a successful private lands program (NETX Habitat Incentive Program [HIP]), improving nearly 15,000 acres of private lands in four years.

The AR-LA WGCP CDN has benefited from energy injected by the new WGCPO Partnership Coordinator, CDN leadership from LDWF and AGFC, and a NFWF grant awarded to Quail Forever. Although somewhat behind the other three CDNs, the AR-LA CDN's Steering Committee has met several times in 2019, and is poised to take full advantage of the CDN's power to facilitate and focus conservation in that region.

Longleaf Partnerships. JV Office staff continue to provide technical guidance, communication and logistical support to the TX Longleaf Implementation Team (TLIT). Transitional support for the TLIT Coordinator, to ensure smooth involvement with TLIT Steering Committee is working well. JV Office staff continue to work with the Western Louisiana Ecosystem Partnership (WLEP), however WLEP has not met in 2020 due to a variety of issues(COVID, TNC reorg etc); closer connections to LLA, America's Longleaf

and LA - TX partners will ensure better communication and shared resources.

Tri-state Conservation Partnership (TCP). The TCP continues to experience strong support and engagement from NRCS and other JV partners. In addition, the TCP also maintains its important and productive working relationship with the MAV CDN's, as much of the work of the TCP is directly fostered through and supported by the MAV CDN's and their working groups (additional details below).

Challenges

Effective communication and coordination of these multiple partnerships requires special attention as the activities and opportunities increase in number and frequency, and as partner staff composition and participation changes over time.

High

Develop and foster unique partnership opportunities at sub-regional scale

- Tri-state Conservation Partnership

The **Tri-state Conservation Partnership** (TCP) was initiated in 2013 and was fully formalized through the JV in 2015 with a Declaration of Partnership (signatories: NRCS AR, LA, MS & LVMJV). This unique partnership continues to be successful and strong, serving as an effective mechanism for fostering engagement among LMVJV partners in support of shared delivery priorities within the MAV of AR, LA & MS. Many of the Farm Bill centered delivery priorities identified by TCP planning are shared and promoted through the CDN's and are often effectively accomplished through CDN based working groups. In tandem with CDNs, the TCP has become an important catalyst for supporting and addressing JV delivery interests. JV Staff continue to work directly with Board member Seiss (TNC's Lower MS River Prog. Coordinator) in leading the stewardship of the TCP. Specific recent examples of the productive collaboration resulting from the TCP/CDN relationship include:

- JV Staff, working directly with Seiss, coordinated extensively with lead partners (NRCS, DU, TNC, Cons. Districts and Walton Family Foundation) in 2018 and 2019 in the development of a watershed based RCPP proposal targeting portions of the AR and LA MAV. The ~$3M project proposal was submitted to NRCS in Dec 2019. Though the April 2020 RCPP award announcement did not include funding for the project, it none-the-less represents a significant example of JV-partner based collaboration and planning, the results of which will carry forward into other such collaborative conservation delivery efforts.

- A TCP/CDN based, Wetland Reserve Easement (WRE) Outreach Working Group continues it's work on the development of multiple videos that will focus on wetland and forest management on WRE's, as well as new enrollment. The project was funded through a MS NRCS grant and will target WRE and potential WRE landowners in the MAV of AR, LA and MS. Since Feb 2020, the working group has conducted three field trips (winter/spring/late summer) to conduct interviews and gather relevant seasonal video content. The first videos in the series are targeted for completion and release by the end of 2020 or early 2021.

- In Jun 2020, JV Staff working with Seiss, completed it's collaborative effort with DU and NRCS to develop a web-based WRE forest plantation age estimation tool designed to assist forest market leads in identifying WRE tracts that may be ready for first treatment. The availability of the new Tool, delivered through the JV website, was shared with all members of the MAV CDNs, International Paper Co. (Vicksburg) and MS Forestry Association lead staff working with the

TCP. A related workshop is planned for WRE landowners and forest market producers/suppliers, but has been delayed due to the pandemic. The workshop, now tentatively targeted for 2021, will be designed to inform landowner participants about the process for evaluating and initiating treatment of WRE forest stands and to foster connections between landowners and forest industry.

Challenges

With ever increasing needs and demands across multiple JV priorities, the continued growth and success of the TCP does serve to intensify overall demands on JV staff capacity. No other TCP-like partnerships are in development.

Medium

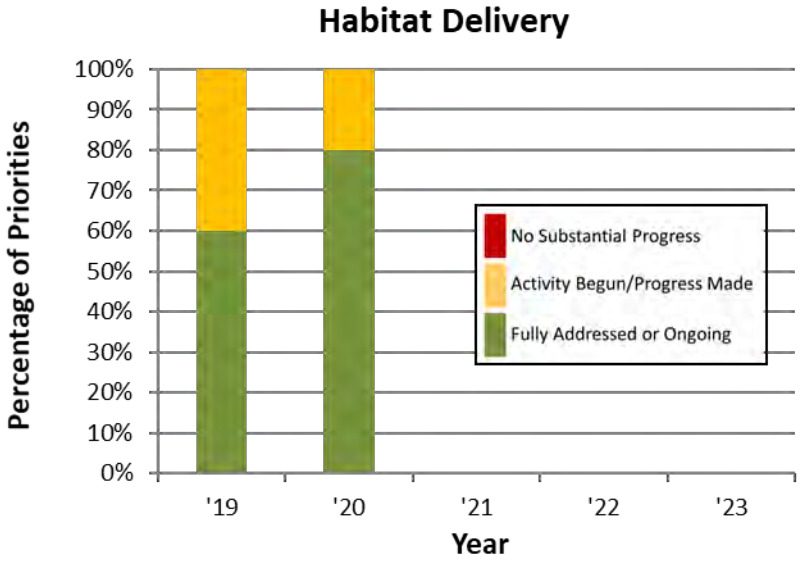
Be responsive to partners' desire to develop additional CDNs

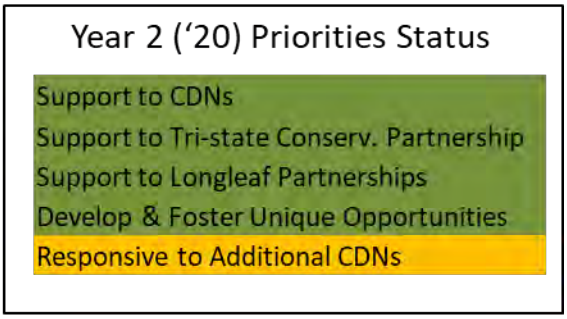
Positives

Some level of interest has been previously expressed for establishing CDNs in both the Atchafalaya Basin and the MAV of MO/KY/TN. To date, no concrete interest has been demonstrated by key JV partners to initiate CDN establishment in these areas.

Challenges

In order for new CDN's to be formulated and successfully established, strong support and commitment from a lead JV partner organization within a given area is required. Oklahoma dialogue has been initiated with NWTF, USFS and State personnel, however with limitations on travel and meetings, this engagement has not progressed beyond the formative stages



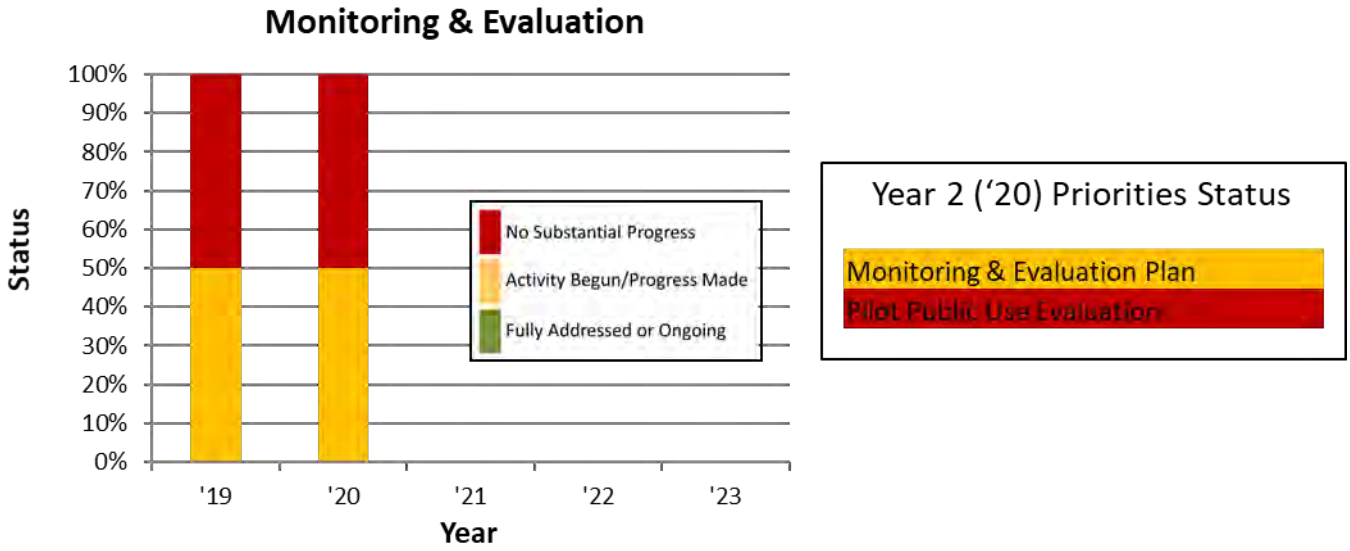


Monitoring & Evaluation

Goal 4a: Develop iterative habitat and population monitoring & evaluation priorities by 2020

Goal 4b: Capitalize on opportunities for effects monitoring that support LMVJV priority habitat conservation actions

Highest Priority Monitoring & Evaluation Plan	Monitoring and Evaluation Plan has been drafted and was made available to Management Board for review and comment prior to Fall 2020 Meeting.
N High Pilot public use evaluation	No progress.



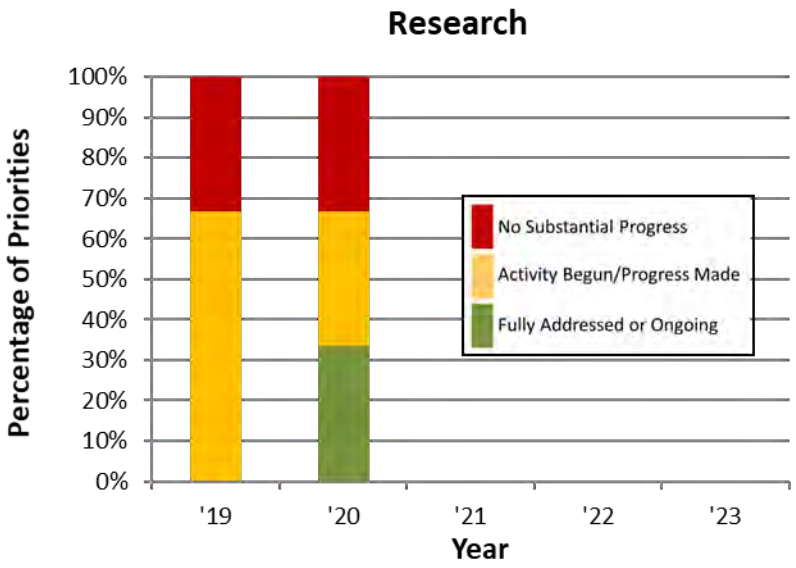
Research

Goal 5a: Update and prioritize assumption-driven research needs by 2020

Goal 5b: Active engagement by key research professionals in assumption testing and other applicable research for each bird guild and human science in both BCRs

Priority A Actively seek opportunities to increase research funds available through and to LMVJV partners	JV staff and Science Team are working to identify priorities for research funding in the near term, and develop an approach to setting realistic priorities into the future. LMVJV funds provided to Univ. Arkansas Monticello (Dr. Doug Osborne) marsh bird research project in 2020. More funds available for this effort, pending development of habitat database and approval by Science Team.
Priority B Maintain and continue to build the depth and breadth of research scientist participation in LMVJV-relevant research topics	Outreach to universities and other organizations by LMVJV Staff continues. As JV science priorities are maintained and addressed, and working groups are formed, further outreach will continue. Currently working with the following: • Dr. Dan Saenz of USFS Southern Research Station (Nacogdoches, TX) on songbird response to NE Texas HIP program prescribed fire and songbird response to MAV forestry practices through a NFWF grant • Dr. Rebecca Kidd (Stephen F. Austin State Univ.) on forest breeding bird response to WRE(P) reforestation in the MAV • Dave Holdermann (TPWD) on waterborne bird surveys for bottomland hardwood priority bird species • Dr. Hans Williams (Stephen F. Austin State Univ.) on evaluation of bottomland hardwood assessments associated with water development activities in the WGCPO • Dr. Kristine Evans (Mississippi State Univ.) on assessment of SE JV and SECAS Blueprint outputs • Dr. Don White (University of Arkansas Monticello) regarding habitat suitability indices for Prothonotary Warblers on White and Cache Rivers
Priority C Improve understanding of private landowner participation in conservation programs	No progress; however, discussion regarding human dimensions aspects for waterfowl should begin to shed light on this aspect.

LMVJV Operational Plan – Year 2 Progress



Year 2 ('20) Priorities Status

Increase Research Funds

Build Research Scientist Participation

Understand Priv. Landowner Participation

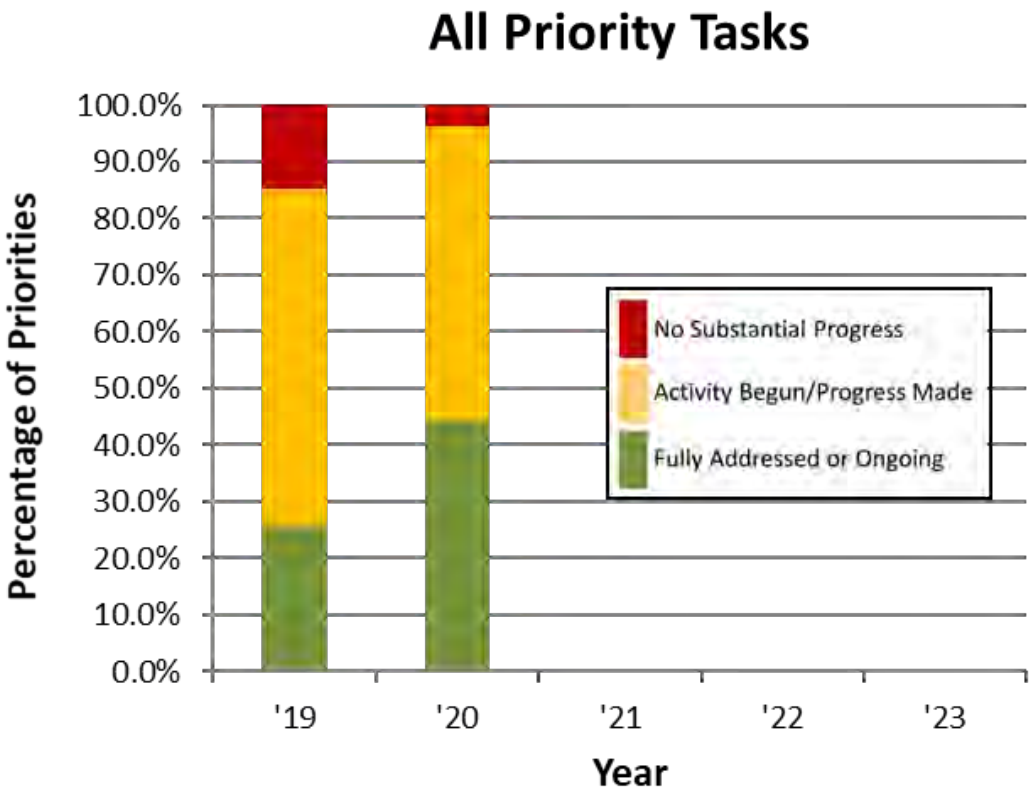
Communication, Education, and Outreach

Goal 6a: Address priority actions detailed in the 2014 LMVJV Communications Plan

Goal 6b: Revise/update 2014 Communications Plan as appropriate by 2023

Priority A Effectively address Communications Plan priority actions	Complete assessment of Communications Plan priorities not currently available
Priority B Update Communications Plan by 2023	Updated Communications Plan available for review and discussion by Management Board prior to Fall 2020 Meeting.

Overall Progress



LMVJV FY2020 Budget

Income/Expense Summary	
Income	
FY20 Mig Bird Joint Venture (1234)	$842,561
MS Mig Bird Field Office (Admin Support)	$12,868
1231 Project Specific[1]	$36,000
1420 Project Specific[1]	$80,000
Partner Contribution & Agreement Funds	
To ABC Agreement	$30,000
To U of AR Waterbird Study	$8,121
To Office Expense	$3,365
Expenses	
Salary & Benefits (USFWS)[2]	$540,714
Travel	$9,072
Operational	$17,085
Regional Office Support	$28,254
Office Space[3]	$18,927
Replacement Vehicle	$36,890
ABC Agreement - Science Coord.	$103,000
ABC Agreement - WGCPO PC	$114,900
DU Partnership Support Agreement	$43,677
U of Arkansas Montecello Waterbird Study	$8,121
CESU to Mississippi State	$80,000
Communications Contract	$10,000
Expense Total	**$1,010,640**
Balance	**$2,275**

[1] $10K for Shorebird/Waterbird Wkshp (to ABC); $26K for MAV Emergent Wetland Assess. (to DU); $80K for JV/SECAS Comparison & Integration Project (to MSU)

[2] includes the following 4 USFWS staff:
Coordinator (McKnight)
Partnership Coordinator (Brock)
GIS Applications Biologist (Elliott)
Office Administrator (McHan)

[3] approximately $8,500 of FY19 carryover funds applied to FY20 Office Expense

Partner Contributed Funds Summary		
Carryover from FY19		**$16,464**
FY20 Contributions		
LDWF		$17,500
AGFC		$20,000
TPWD		$50,000
NRCS ($36,000 in process)		
TWRA ($11,250)*		
MDC ($8,000)*		
DU (in kind support)	$28,800	
FY20 Subtotal		$92,500
Total Avaliable		**$108,964**
Withdrawal: Agreement/Project		-$41,486
Withdrawal: Office Staff/Expense		-$3,365
Balance		**$64,114**

*TWRA ($11,250) & MDC ($8,000) go directly to ABC; accounted as reduction in total Science Coordinator expense

Agreement / Activity	From PC	From 1234	From 1231	From 1420	Carryover	Balance
DU - Partnership & Science Support*		$17,677	$26,000			
ABC - Partnership Coordination	$30,000	$84,900			$8,000	**$65,900**
ABC - Waterbird Workshop			$10,000			
ABC - Science Coordinator		$93,000			$116,000	**$109,000**
USGS - Waterbird Study						
USGS - Waterbird Study U of A	$8,121					
MSU - JV/SECAS Comparison				$80,000		
JV Office Expenses	$3,365					

*Funds to DU to be applied to Water Management Tool Revision, Forest Assessement, and Emergent Wetland Assessement

LMVJV FY2021 Budget

Income/Expense Summary	
Income	
FY21 Mig Bird Joint Venture (1234)[1]	$800,433
MS Mig Bird Field Office (Admin Support)	$12,868
Partner Contribution & Agreement Funds	
To Agreements	
ABC	$100,000
To Office Expense	$1,625
Income Total	**$914,926**
Expenses	
Salary & Benefits (USFWS)[2]	$548,825
Travel	$11,000
Operational	$17,598
Regional Office Support	$28,254
Office Space[3]	$18,927
ABC Agreement - Science Coord.	$100,000
ABC Agreement - WGCPO PC	$50,000
Communications Contract	$10,000
Science Project Support	$130,000
Expense Total	**$914,604**
Balance	**$323**

[1] Assumes FY20 funding level ($842,561) reduced by 5% (CR holdback)

[2] includes the following 4 USFWS staff, increased 1.5% over FY20:
Coordinator (McKnight)
Partnership Coordinator (Brock)
GIS Applications Biologist (Elliott)
Office Administrator (McHan)

Partner Contributed Funds Summary		
Carryover from FY2020		**$64,114**
FY21 Contributions		
LDWF		$17,500
AGFC		
TPWD		$25,000
NRCS		$36,000
ODWC		$5,000
TWRA ($11,250)*		
MDC ($8,000)*		
DU (in kind support)	$28,800	
FY21 Subtotal		$83,500
Total Avaliable		**$147,614**
Withdrawal: Agreement/Project		-$101,625
Withdrawal: Office Staff/Expense		-$1,625
Balance		**$44,363**

*TWRA ($11,250) & MDC ($8,000) go directly to ABC; accounted as reduction in total Science Coordinator expense

Agreement / Activity	From PC	From 1234	From 1231	From 1420	Carryover	Balance
DU - Partnership & Science Support		*Funds obligated in FY20, project conducted FY21*				
ABC - Partnership Coordination	$50,000				$65,900	**$58,900**
ABC - Science Coordination	$50,000	$50,000			$116,000	**$116,000**
USGS - Waterbird Study U of A		*Funds spent in FY20, project completed FY21*				
MSU - JV/SECAS Comparison		*Funds obligated in FY20, project conducted FY21-22*				
Science Project Support		$130,000				
JV Office Expenses	$1,625					

McCreary/AJVMB Message to JV Coordinators, 9/21/2020

[JVs, stimulus, and 3BB decline thoughts and discussion]

I and some others have been thinking about how the JV community might be able to leverage the power of the JVs to take advantage of potential increases in federal investment in conservation as well as take a leading role within the USFWS' 3BB decline response.

Some of our friends in DC believe that the recent passing of the Great American Outdoors Act – which included full, mandatory funding for the Land & Water Conservation Fund at $900 million annually – is a harbinger that we are in an unprecedented time relative to conservation funding! Recall, LWCF has received full authorized funding only twice in 55 years. LWCF appropriations averaged $340 million/year, the new law nearly triples available LWCF funding! What's more, JV funding increases are specifically included in the following bills and proposals:

- FY 2021 House Appropriations Bill: passed with $1.6 million increase for JVs (to $16.2 million)
- 21st Century Conservation Corps for our Health and our Jobs Act – introduced by Sen. Wyden: $150 million for JVs
- Restoration and Resilient Jobs Dear Colleague Letter – a set of legislative ideas developed by Rep. Dingell that includes $2 billion for NABCI and JVs

Clearly, there are some legislative ideas in the works that could strengthen, actually transform, the JV enterprise! In terms of support from Administration, I have reason to believe JVs are very much on the radar, perhaps in ways that we haven't been in over a decade. I'm hearing talk that the USFWS Migratory Bird Program is making moves about how to address the 3 Billion Bird (3BB) decline. The JVs are well positioned to lead that effort, and I argue the time is now to assert ourselves as such.

As you may recall, the AJVMB has pitched the ability of JVs to expand our programs to address the decline. While we've consistently relayed that our $19.9M ask just barely takes us up to baseline funding, that level of funding wouldn't enable us to expand our programs to truly make a difference to those birds and bird habitats in decline. I believe that our story is being listened to finally, and I think that we have an opportunity to put ourselves at the front of this movement. But, of course, some work would need to be done.

The work would be to update our 2016 needs assessment, which was done to determine what essentially is the base level funding needed. For an update, we would need to expand that assessment to determine what we could do with, say, potentially double the funding we currently have: $30M. Let's not be shy here on what we really need.

Some questions immediately come to my mind: What would it take for a JV to dramatically expand our capabilities to accommodate the 3BB decline? Is this something that we as a community, or an individual JV, would even want to take on? Will it distract us from our existing priorities? Can it grow our existing priorities? More money isn't always good, especially when it comes with requirements that may be challenging to meet. However, if we don't clearly articulate our needs, it is unlikely that we'll receive increased funding to address those needs. I think it would be worthwhile for each JV to first assess what it would take to be fully effective expanding on our current conservation delivery, science, policy, and communications priorities by developing a cost basis for that level of functionality. Subsequently, we could then add to this a number that represents JV program expansion of our role addressing the 3BB decline, framed within NABCI's 5 Game Changing Paradigms (attached).

In closing, I strongly believe that the time is right now for JVs to lead an ambitious movement to conserve habitat at scales that will make a difference and alter the trajectory of migratory bird populations. If not us, who else can do this as it can be only be done by catalyzing bold partnerships and collaboration among all of the above? That is the history and the niche of JVs. The time may be now to think bigger that we have in our 30-year history.

Let's start this conversation and see where it goes!

Communication

Lower Mississippi Valley Joint Venture Communications Plan

for a

A landscape supporting healthy native bird populations across the LMVJV

D R A F T

Lower Mississippi Valley
JOINT VENTURE
www.lmvjv.org

October 2020

The members of the Lower Mississippi Valley Joint Venture Management Board agree with the priorities, messages, and tasks contained within this Communications Plan, and are committed to its long-term implementation.

Jeff Raasch, Chairman
Texas Parks and Wildlife Department
Ron Seiss, Vice Chair
The Nature Conservancy
Russ Walsh
Mississippi Department of Wildlife, Fisheries, and Parks
Jason Maxedon
Tennessee Wildlife Resources Agency
Garrick Dugger
Arkansas Game and Fish Commission
Tom Doyle
U.S.G.S. - National Wetlands Research Center
Kristin Madden
U.S. Fish and Wildlife Service, Migratory Birds
Jeff Ford
Oklahoma Department of Wildlife Conservation
Scott Manley
Ducks Unlimited
Michael Oetker
U.S. Fish and Wildlife Service, Region 4
Merrie Morrison
American Bird Conservancy
Joel Porath
Missouri Department of Conservation
Chris Garland
Kentucky Department of Fish and Wildlife Resources
Kenny Ribbeck
Louisiana Department of Wildlife and Fisheries
Mike Sullivan
U.S.D.A. Natural Resources Conservation Service
Eddie Taylor
U.S. Forest Service, Region 8
Vacant
National Wild Turkey Federation

This report may be cited:
Lower Mississippi Valley Joint Venture Management Board. 2020. Lower Mississippi Valley Joint Venture Communications Plan. Jackson, Mississippi. 9 pp.

Lower Mississippi Valley Joint Venture
Communications Plan

PURPOSE

Communication is central to the success of Lower Mississippi Valley Joint Venture (LMVJV) activities, taking on innumerable forms and delivered over a wide range of media. As a result, identifying communication needs most critical to achieving LMVJV goals, specifying important audiences, and crafting key messages is essential for optimizing our effectiveness and efficiency. The LMVJV has developed this Communications Plan to provide guidance and focus to communications activities undertaken in support of its goals and objectives. This document directly addresses the 2018 Operational Plan's Communication Goal of *updating the Communication, Education, and Outreach Plan by 2023*.

LMVJV MISSION

The Lower Mississippi Valley Joint Venture functions as the forum in which the private, state, and federal conservation community develops a shared vision of bird conservation for the Lower Mississippi Valley region; cooperates in its implementation; and collaborates in its refinement.

COMMUNICATION OBJECTIVES, TASKS, AND KEY MESSAGES

This document is focused on identifying the LMVJV's highest priority communications objectives, tasks, and key messages, organized around the Five-Year Operational Plan elements of

- Organizational Performance
- Biological Planning
- Conservation Design
- Delivery
- Monitoring & Evaluation Research

We anticipate that an effective communications plan will be instrumental in allowing LMVJV Support Office staff and partners to reach identified audiences, accomplish priority tasks, and share key messages necessary to move our Operational Plan Goals to completion.

Organizational Performance

Priorities:
Communicate relevant news of LMVJV activities, accomplishments, partner accomplishments, activities, and needs among Management Board members and their organizations' staffs, JV Support Office staff, key supporters, and others.

Priority Communication Needs:

- Regular, concise information exchange among LMVJV staff and Management Board members

- Relevant and timely LMVJV information, news, and documents easily accessible to anyone interested (including but not limited to partners and potential funders/supporters)
- Communication raw material available to staff and partners for use in engaging people within their organizations as well as existing and potential supporters
- Encouraging partners to include joint venture talking points, benefits, and messages in their interactions (field tours, office visits, etc.) with Administration and Congressional staff, as appropriate

It is important to understand that "Joint Venture activities" not only are the actions of JV Support Office staff, JV Working Groups/Networks, and/or Management Board members, but also include actions and decisions of partners that are informed by the partnership's planning, design, monitoring, and research activities, which ultimately support the accomplishment of their biological objectives.

Primary Audiences:
Management Board members, partner staff, key DOI/USFWS administration staff, and Congress

Key Messages:
- Coordination and cooperation among LMVJV partners enables more efficient and effective on-the- ground conservation through intelligent application of the adaptive management concept
- LMVJV partners are working hard to bring about positive landscape change through collaborative science and delivery
- The LMVJV is guided by state-of-the-art science

Tasks:
1. Maintain baseline connection with Management Board members through regular emails, phone contact, and e-news updates regarding time-sensitive announcements, opportunities, and relevant events/accomplishments
2. Maintain connection with Management Board members through Spring & Fall Board meetings
3. Maintain and update a website with news items, project examples and information, and JV-developed documents, all of which are easily accessed and downloadable
4. Provide fact sheets and success stories with current relevant information for use by partners
5. Solicit feedback from partners (primarily through the Management Board) regarding the most useful forms of communication raw material
6. Based on #5 feedback, maintain a cache of communication raw material (e.g., State Fact Sheets & Subject Briefs) for quick-turnaround custom uses and objectives, if warranted
7. Identify potential new partners for who could benefit from targeted communication

8. Encourage Management Board to bring new partner outreach needs to JV Office staff to develop and deploy

Milestones:

- Quarterly News & Updates
- Web content updated at least monthly
- Project completions, acquisitions, dedications, etc. communicated by partners to JV staff within two weeks of completion

Metrics:

- Newsletters: calculate average annual open and click rate; identify top stories; calculate growth in newsletter subscriptions
- Website analytics: visits and new visitors; traffic in response to e-news campaigns; document downloads
- Number of new case studies, accomplishment reports, etc. developed to communicate JV successes to partners and others

Biological Planning & Conservation Design

Operational Plan Goal:
Complete landscape-oriented, biologically-driven, partner vetted, up-to-date population objectives and habitat objectives for priority species within all bird guilds in both BCRs by 2023. Share decision support tools to link and integrate habitat objectives for priority species in each bird guild with other relevant resource concerns by 2023.

Priority Communication Need:
Engage science and delivery partners in the planning and design processes by conveying the relevance of JV objective-setting to their priorities, interests and day jobs, and vice versa. Share conservation planning and design tools/recommendations with local and regional conservation organizations with similar interests, for example local land trusts.

Primary Audiences:
Research scientists, biologists, and delivery practitioners working to restore and manage important bird habitats of the LMVJV bird conservation regions. Conservation organizations working to conserve habitats or species for which the JV has developed plans and decision support tools.

Key Messages:

- Biological planning is a critical aspect of LMVJV responsibilities, providing the foundation for effective conservation design, delivery, and monitoring, yet dependent upon research
- Conservation Design is the primary nexus between conservation science & habitat delivery

- Conservation Design is an important aspect of LMVJV responsibilities, informing delivery, and dependent upon research and monitoring for evaluation of assumptions
- Timely development and refinement of objectives is crucial for optimal conservation delivery, and effective dissemination of this information is essential for validation and assumption testing

Tasks:

1. Refine existing "New Board Member" packet to be generally useful to all new partners
2. Identify new, more diverse audiences to broaden engagement and awareness of the JV's planning and design processes
3. Provide effective, multi-functional, and user-friendly mechanisms for information exchange among CDN, Science Team, *ad hoc* Working Group members, and other interested partners (e.g., ftp site, virtual discussion forum, Google Docs, etc.)
4. Publish planning and design products, as appropriate, in the primary literature outlets (peer-reviewed scientific journals, books, etc.)
5. Publish completed planning and design products quickly, and on easily-accessible media (e.g., .pdf and Word files via the LMVJV web site, GIS files via the LMVJV ftp site, and web enabled maps and databases via various servers such as USGS, GCPOLCC Conservation Planning Atlas, and Data Basin)
6. Actively distribute completed planning and design products to local and regional conservation organizations, including information on how to use the tools and where to get more information. Target product outreach appropriate to organizations (such as MAV Forest Protection Model for land trusts).

Milestones:

- Publish at least one planning/design product-related piece in primary literature every two years
- Completed planning, design, research, or monitoring documents uploaded to the web site within 2 weeks of completion, accompanied by mass (e.g., email) notification to partners
- LMVJV Office science staff and/or technical working group leaders attend Conservation Delivery Network (CDN) meetings (full membership and/or working group) to provide science updates and solicit feedback from CDN members.
- Targeted outreach to identified new audiences

Metrics:

- New organizations and/or individuals actively participating in/contributing to LMVJV science process and/or actively using products
- Number of LMVJV planning/design related articles published in primary literature over time

Habitat Delivery

Overall Goal:
The Partnership actively seeks and fosters existing and emerging opportunities for coordinated habitat delivery in support of LMVJV objectives, and establishes fully-functioning Conservation Delivery Networks throughout the JV, guided by LMVJV objectives, by 2023. Fully supported long-term functionality and productivity of existing Conservation Delivery Networks (CDNs) and Tri-state Conservation Partnership (TCP).

Priority Communication Needs:

- Support and further develop existing CDNs and the TCP, as well as foster development of new CDNs and similar partner networks through regular, concise information exchange among CDN leadership and CDN members (e.g., Steering Committee, bi-annual membership, working group and sub-committee meetings) and other partners
- Relevant and timely LMVJV information, news, and documents easily accessible to delivery professionals

Primary Audiences:
On-the-ground delivery biologists, program biologists, agronomists, foresters, soil scientists, technicians, etc. and their supervisors

Key Messages:

- The JV partnership is an inclusive and forward thinking group of conservation professionals working together to advance habitat conservation in the LMVJV region
- The activities, experiences, and perspectives of on-the-ground delivery professionals are valued and vital to the LMVJV's conservation mission
- Conservation Delivery Networks provide value-added opportunities for coordination, communication, collaboration, and perhaps most importantly, camaraderie and relationship-building, among conservation delivery professionals
- In addition to leveraging current resources, Conservation Delivery Networks have the capacity to attract new and non-traditional funding for habitat conservation

Tasks:

1. Refine existing "New Board Member" packet to be generally useful to new and more diverse partners.
2. Improve connections between Board Members and Conservation Delivery Networks.
3. Periodically update Board Members on the opportunity to form new CDN's in relevant portions of JV region
4. Provide relevant information and success stories regarding the science-driven priorities and effective partnership activities of the LMVJV to potential funders and prospective delivery partners (e.g. Land Trusts)

5. Provide effective, multi-functional, and user-friendly mechanisms for information exchange among CDN members (e.g., ftp site, virtual discussion forum, etc.)
6. Publish and disseminate completed products quickly on easily-accessible media

Milestones:

- Completed CDN products uploaded to the web site within 2 weeks of completion, accompanied by mass (e.g., email) notification to partners
- LMVJV Office staff maintain positive and active relationship with USFWS staff who administer NAWCA, and attend, when feasible and appropriate, NAWCA Council Staff meetings where U.S. grant proposals will be considered

Monitoring & Evaluation

Overall Goal:

Develop iterative habitat and population monitoring and evaluation priorities by 2021, and capitalize on opportunities for effects monitoring that support LMVJV priority habitat conservation actions.

Priority Communication Needs:

- Engage science and delivery partners in contributing to updates and maintenance of the Monitoring and Evaluation Plan
- Engage science and delivery partners in appropriate monitoring activities by communicating LMVJV monitoring priorities, and identifying connections between agency/organizational monitoring needs and those of the LMVJV partnership
- Engage key partner staff in effective exchange of habitat accomplishment and assessment data in support of addressing monitoring and evaluation objectives

Primary Audiences:

Field biologists, area managers, other partner staff responsible for monitoring

Key Messages:

- Adaptive management demands focused and effective monitoring of conservation outcomes
- Effective monitoring, that informs improvements to biological planning and design, results in better, more effective conservation outcomes
- Effective monitoring requires a network of coordinated and dedicated biologists to conduct appropriate monitoring activities at appropriate temporal and spatial scales
- Our ability to understand and communicate partnership accomplishments positively impacts agency, legislative, and donor support for our continued work

Tasks:

1. Catalogue and summarize LMVJV monitoring and evaluation activities to date, and highlight positive results of having such information
2. Provide compelling justification to partner biologists, monitoring specialists, etc. for maintaining, revising, and carrying out Monitoring & Evaluation Priorities

Milestones:

- Monitoring & Evaluation "success stories" uploaded to the web site and updated bi-annually
- Share results of a planned Louisiana Department of Wildlife & Fisheries pilot project to synthesize, analyze, and interpret numerical response of humans to management actions on appropriate state Wildlife Management Areas
- Report annually to the Management Board on progress towards meeting the partnership's Monitoring & Evaluation objectives and identify barriers to achieving priority tasks

Metrics:

- Number of projects, annually, with monitoring & evaluation components directly addressing LMVJV objectives and/or Science Priorities

Biological Planning & Conservation Design

Overall Goal:

Update and prioritize assumption-driven research needs by 2022, and continue to grow active engagement by key research professionals in assumption testing and other applicable research for each bird guild and human science in both BCRs.

Priority Communication Needs:

- Actively seek opportunities to increase research funds available through and to LMVJV partners
- Maintain and continue to build the depth and breadth of research scientist participation in LMVJV-relevant research topics
- Improve understanding of private landowner participation in conservation programs to facilitate better/more efficient delivery of LMVJV habitat priorities

Primary Audiences:

Research scientists and other LMVJV partners with interest or potential interest in the LMVJV region, and potential funders.

Key Messages:

- Habitats of the MAV & WGCPO are extremely important to continental populations of numerous high priority birds, as well as many other priority wildlife species

- Sound science is integral to helping partners deliver conservation most efficiently and effectively
- Science conducted in the LMVJV is an excellent investment in conservation because of the coordination and cooperation among scientists, planners, and delivery staff

Tasks:

1. Promote and disseminate updated ***Science Priorities*** document (in development) and ***Monitoring & Evaluation Priorities*** (in development) to research scientists and partners
2. Gain a better understanding of how JV partners (especially states) allocate and spend research dollars and work to align research projects (via issuing RFPs and other means)
3. Identify and develop opportunities for increased interaction and information exchange such as symposia, workshops, etc.
4. Assist research scientists with articulating the need for and benefits of addressing key LMVJV science needs to funding entities

Milestones:

- Host and/or actively participate in development and delivery of workshops and symposia focused on the status and needs of science related to LMVJV priorities
- LMVJV Support Office staff and technical working group leaders attend >2 professional technical meetings annually to network with partners
- LMVJV Science Priorities addressed in research proposals. For science priorities accomplished without a formal research proposal, a project description and measurable outcomes will be provided by LMVJV Support Office Staff
- Report annually to the Management Board on progress towards meeting the partnership's Research objectives and identify barriers to achieving priority tasks

Metrics:

- Number of new scientists who attend or participate in LMVJV workshops and projects
- Number of unique individuals who open the ***Science Priorities*** document when disseminated/number of web hits
- Number of projects initiated that address LMVJV Science Priorities

Habitat Delivery

USDA United States Department of Agriculture

NRCS Natural Resources Conservation Service

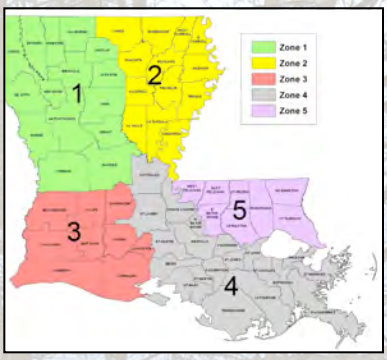
WETLAND RESERVE EASEMENTS (WRE) ACCEPTING APPLICATIONS In LOUISIANA

With the Wetland Reserve Easement (WRE) program, you can:

- Receive up to $3,950/acre for enrolling in WRE (payment rates vary by zone and land use, and are in review for 2021 rate adjustments).
- Reduce risk of farming flood-prone land.
- Develop highly productive wildlife habitat.
- Retain ownership of your property, as well as access control, hunting and fishing rights, and the ability to sell the property.
- Incur little or no out of pocket cost for habitat restoration such as tree planting and wetland development.
- Enjoy improved opportunities to observe wildlife as well as increase hunting opportunities for waterfowl, deer, and other wildlife.
- Create potential income from leased hunting.
- Make great memories with family and friends.
- Leave a lasting legacy for your children and grandchildren.
- Contribute to wildlife and ecosystem health regionally.

Understanding Wetland Reserve Easements See URL below!

Louisiana Area	Agricultural Land	Other Land
Zone 1	$2,590	$1,700
Zone 2	$2,605	$1,475
Zone 3	$2,200	$1,480
Zone 4	$3,320	$1,965
Zone 5	$3,950	$3,420
2020 maximum rates listed above. *In review for 2021 rate adjustments		



"If you are interested in creating wildlife habitat this is a way to do it. It's a way to create a conservation habitat without having to bear all the expense yourself; you have a lot of professional resources to get it done. It's a great alternative to marginal agricultural land or something that's already too wet to farm."

-- Bob Bush, WRE owner in the Miss. Alluvial Valley

WRE Eligible Land Types

Ranking and enrollment priority is given to applications that include:

- Farmed Wetlands or Prior Converted Cropland, Pasture, or Hayland

Other eligible lands may include:

- Former or Degraded Wetlands
- Riparian (stream-side) areas
- Some CRP lands

WRE Easement Options

- Permanent: 100% of payment rate and 100% of restoration costs provided
- 30-year: 75% of payment rate, 75% of restoration costs provided with 25% match provided by Landowner

How to Apply for WRE

- Applications for WRE may be submitted at your local NRCS Service Center at any time.
- Landowners are encouraged to apply by September 25, 2020 for funding consideration in 2021.
- Applications submitted after September 25, 2020 will be accepted and considered in the next funding period.

FIND IT HERE: Local Service Centers- https://www.nrcs.usda.gov/wps/portal/nrcs/main/la/contact/local/ Understanding WRE- https://www.lmvjv.org/s/Understanding-WRE-LA.pdf

Photos: top Mallard closeup by Fyn Kynd Photography Flickr CC 2.0; background Bogue Chitto Cypress by Loco Steve Flickr CC 2.0; Hunter & dog from Bob Bush

2020 Registration NOW OPEN for NRCS Agricultural Conservation Easement Program (ACEP) Workshops

WHEN ARE THE WORKSHOPS?

The workshops will be conducted virtually via Zoom on

- **Tuesday, October 6 from 10 am – 12 noon**
- **Thursday, October 8 from 2 pm to 4 pm**

WHAT WILL I LEARN?

*** Details of ALE and WRE * The application process * Required documentation * What a restored easement will look like * Ranking of offers * How to make the best WRE offer.**

You should strongly encourage anyone interested in ACEP to attend one of these meetings, *they will be glad they did!*

HOW DO I REGISTER?

Any interested landowners in Mississippi are welcome to attend. Anyone planning to attend must *register online* at https://lowerdelta.org/workshops/

ACEP CONSISTS OF TWO COMPONENTS

Agricultural Land Easements (ALE) assist conservation organizations to protect productive working lands by preventing non-agricultural uses and maximize protection of land devoted to food production (such as land shown at right).

Wetland Reserve Easements (WRE) restore, protect, and enhance enrolled wetlands and improve wildlife habitat. Eligible WRE lands include farmed or prior-converted wetlands that can be successfully and cost-effectively restored (such as land shown at left).

USDA United States Department of Agriculture
Natural Resources Conservation Service

TRI-STATE CONSERVATION PARTNERSHIP

Mississippi's LOWER DELTA PARTNERSHIP

Highlights of WGCPO - LMVJV CDNs May to September 2020

In the West Gulf Coastal Plain & Ouachita (WGCPO), or BCR 25 of the Lower Mississippi Valley Joint Venture (LMVJV), partners are enhancing open pine and bottomland hardwood habitat, with a focus on restoring shortleaf and longleaf pine ecosystems through four Conservation Delivery Networks (CDNs). The NETX, AR-LA, Texas Longleaf (TLIT), and Louisiana Longleaf (WLEP) networks support forest habitat conservation efforts to benefit priority "open-pine" species.

Brown-headed Nuthatch
Prairie Warbler,
Bachman's Sparrow

Henslow's Sparrow, Red-cockaded Woodpecker,
Northern Bobwhite

Chuck-Will's-Widow,
American Kestrel,
Eastern wild turkey

In 2020, NETX and TLIT increased their emphasis on enhancement of bottomland hardwood/forested wetland habitat that supports priority species like:

Acadian Flycatcher, Kentucky Warbler,
Louisiana Waterthrush

Prothonotary Warbler,
Red-Shouldered Hawk

It is vitally important to monitor the priority birds using habitat enhanced through our conservation efforts. The LMVJV project, "Facilitating Native Pine Conservation in East Texas," continued, pioneering the use of song meters to expand on traditional point count data. Extended in 2020, thirty-four (34) units were deployed from March through July 2020 to assess breeding bird response to open pine habitat conservation actions, especially as enhanced through prescribed burning.

Highlights of WGCPO - LMVJV CDNs May to September 2020

The Northeast Texas Conservation Delivery Network (NETX CDN) conducted a **successful virtual CDN meeting on September 15, 2020, with approximately 60 participants** attending through ZOOM or by phone. Completing its 5th year of habitat restoration, the NETX CDN is providing coordination of efforts for other agencies and organizations to promote conservation of open pine habitat within priority geographies.

	Funding Source	Fiscal Year*					
		17	18	19	20	21	22
Standard HIP	TPWD Stamp Funds	$136,000.00	$60,000.00	$60,000.00	$85,000.00	$85,000.00	???
	NFWF	-	-	$120,000.00			
Neches River HIP	TPWD PR Funds	-	-	$73,750.00	$73,750.00	$73,750.00	???

*Fiscal Year =September 1 - August 31

The 2020 Request for Proposals (RFP) was open May 15 – June 30. The NETX CDN Steering Committee met virtually to develop the 2020 RFP timeline/ process, and then again to evaluate/rank proposals. Since 2018, proposal requests have exceeded available funds. Of the **28 RFP proposals submitted, only 19 proposals were funded**, but will impact more than **5,704 acres of open pine and bottomland hardwood habitat.** Projects were financed by just over **$208,000** in funding from NFWF and Texas Parks & Wildlife Department.

	Proposed	Approved
Total (Both HIP)		
Acres	6568.5	5703.5
Cost Share	$294,437.66	$225,195.58
Average Cost per Acre	$44.83	$39.48
# of proposals	28	19
Standard		
Acres	4163.5	3895.5
Cost Share Proposed	$196,471.66	$153,067.58
Average Cost per Acre	$47.19	$39.29
Neches River		
Acres	2405	1808
Cost Share Proposed	$97,966.00	$72,128.00
Average Cost per Acre	$40.73	$39.89

Highlights of WGCPO - LMVJV CDNs May to September 2020

The **Texas Longleaf Implementation Team (TLIT)** convened a virtual July 30 meeting to conduct business (see attached notes) and evaluate the 2020 "open season" progress (no RFP). To date, TLIT has successfully obligated funds that will impact 5,553 acres of habitat: planted 927 ac longleaf; enhanced 5,026 acres of longleaf, and 570 acres of bottomland hardwood forest. Beginning with $334,708 of available NFWF funds in 2020, TLIT has spent $254,269 to date, with $80,439 remaining for available projects through this calendar year.

The **TLIT website** is being improved, with readily available access to summary material. Included will be an "On-Line Dashboard of Accomplishment," enabling annual and total accomplishments to be seen in detail for ease of developing reports and for comparisons, such as between-among years, or practices.

- Creation of ***Longleaf Accomplishment Dashboard*** on website

The TLIT conservation philosophy is about more than just "pine." To emphasize a broader approach, with elements of a landscape-scale philosophy and intricate longleaf ecosystem, TLIT has added items to the website for both information and education purposes. Both the fire-maintained longleaf plant community, as well as the avian wildlife diversity, are illustrated in the following links:

- Development of ***Groundcover Resource Page*** on website
- Development of ***Birds of the Longleaf Forest Page*** on website

Regular communications have also been greatly improved with a regular newsletter that has been rolled into the website blog page for easy retrieval.

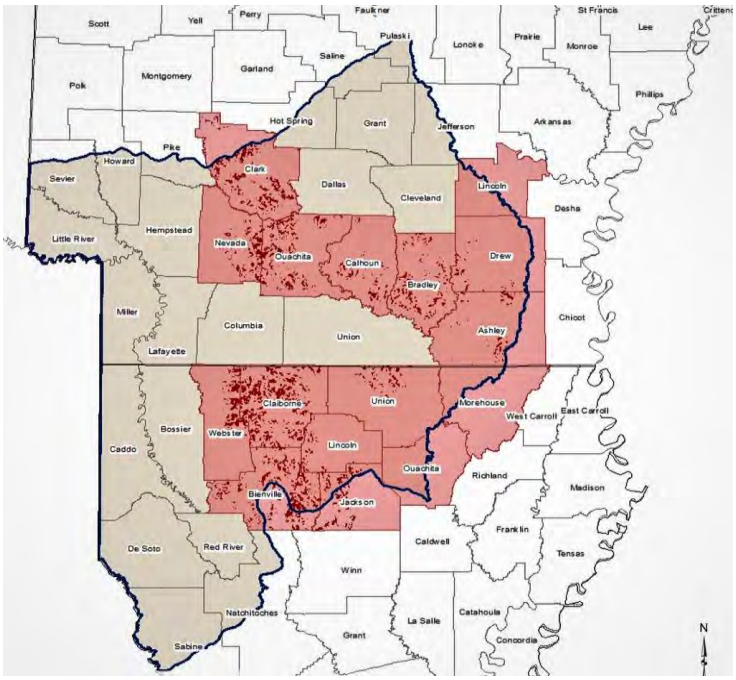
- Launched bi-weekly e-newsletter ***Texas Longleaf News***

Highlights of WGCPO - LMVJV CDNs May to September 2020

The **Arkansas – Louisiana (AR-LA) CDN** Steering Committee met virtually on 5/11 and 7/14 to establish the foundation for a conservation delivery grant proposal. The designated "grant-focused" working groups have met continuously from July to September, defining details and contributions in pursuit of a USDA - NRCS Regional Conservation Partnership Program (RCPP) proposal. The partners have refined the proposal area to 16 counties and parishes within the CDN, focusing on forest stand improvement practices such as fire, thinning, and brush control.

Eight (8) Counties in Arkansas
Clark, Nevada, Ouachita, Calhoun, Bradley, Lincoln, Drew, and Ashley

Eight (8) Parishes in Louisiana
Union, Claiborne, Webster, Bienville, Lincoln, Jackson, Ouachita, and Morehouse



During the RCPP development process, an innovative breakthrough is the involvement of new partners from forest industry and electric utility and energy sectors. These new partners have provided over $2 million worth of contribution to the conservation proposal. Over five years, approximately $5 million has been committed through the 17 partners. The "Open Pine" habitat conservation efforts will be connected through utility corridor rights-of-way, utilizing an Integrated Vegetation Management (IVM) system. The IVM plan is targeted to improve diversity, and support a pollinator-friendly regime that minimizes impacts to pollinators.

https://www.fws.gov/savethemonarch/pdfs/Monarch%20CCAA-CCA%20Public%20Comment%20Documents/Monarch-Nationwide_CCAA-CCA_Draft.pdf

This RCPP proposal will be submitted by November 4, 2020.

Science

Mississippi Alluvial Valley

Forest-breeding Landbird

Population Goals & Quantitative Habitat Objectives

Lower Mississippi Valley
JOINT VENTURE
www.lmvjv.org

September 2020

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

Mississippi Alluvial Valley Landbird Team, Lower Mississippi Valley Joint Venture:

Dean Demarest, U.S. Fish and Wildlife Service
Blaine Elliott, Lower Mississippi Valley Joint Venture and U.S. Fish and Wildlife Service
Robert Ford, Partners in Flight and U.S. Fish and Wildlife Service
David Hanni, Tennessee Wildlife Resources Agency
Keith McKnight, Lower Mississippi Valley Joint Venture and U.S. Fish and Wildlife Service
Anne Mini, Lower Mississippi Valley Joint Venture and American Bird Conservancy
Daniel Twedt, Patuxent Wildlife Research Center, U.S. Geological Survey
Randy Wilson, U.S. Fish and Wildlife Service

Introduction

The Mississippi Alluvial Valley (MAV) is a 9 million ha (22-million-acre) floodplain that supports a diverse and ecologically rich bottomland hardwood forest ecosystem – one of the most productive in North America. It extends from roughly Cape Girardeau, Missouri, to the Gulf of Mexico and features a mosaic of ridges, swales, meander belts, and backswamps. Small changes in elevation (<1 foot) in the MAV are associated with large shifts in hydrology, which in turn, strongly affect plant and animal community composition and structure. The resultant diversity contributes to a fertile and productive floodplain. General forest types in the MAV include: Oak-gum-cypress (41%), elm-ash-cottonwood (29%), oak-hickory (17%), and the remainder is other forest types (Oswalt 2013). Within the oak-gum-cypress and elm-ash-cottonwood categories, sugarberry-hackberry-elm-green ash and sweetgum-Nuttall oak-willow oak forest types account for close to one-half of MAV bottomland forest acreage, while baldcypress-tupelo forests are about 16 percent (Oswalt 2013). Although we emphasize bottomland hardwood habitat and associated bird species, this planning effort includes analyses based upon all forest types within the MAV. Hence, the term 'forest' refers to all forest types in the MAV.

Since European colonization, the most significant threat to forest-interior landbirds that breed in the Mississippi Alluvial Valley Bird Conservation Region (BCR 26) has been the loss of bottomland hardwood forest habitat. By the early 1990's, less than 25% of the MAV remained forested, and most of the remaining bottomland hardwood forest occurred on the river side of the mainline Mississippi River levees or within the public land estate. In spite of these losses, the MAV continues to support significant migratory bird habitats and populations and is home to many federal-listed fish, plant, invertebrate, and mammal species. The Partners in Flight North American Landbird Conservation Plan (Rosenberg et al. 2016) highlighted the importance of the MAV as continentally important for six Watch List species and five Common Birds in Steep Decline that are reliant on forest habitats.

The Lower Mississippi Valley Joint Venture (LMVJV) vision is a landscape supporting healthy native bird populations and other wildlife. As such, the LMVJV partnership is committed to actions that help reverse bird population declines and maintain and improve the quantity and quality of bottomland hardwood forested habitat within the MAV. Herein, we specifically address "how much" forest habitat (bottomland hardwood forest and other forest types) is necessary to support target populations of forest breeding landbirds in MAV. It is integral to other recent planning efforts pertinent to forest breeding landbirds in the MAV that examine "where" bottomland hardwood forest reforestation (LMVJV 2015) and forest protection activities should be prioritized (Elliott et al. 2020), and "what conditions" should be sought in managing bottomland hardwood forest habitats for priority birds and wildlife (LMVJV Forest Resource Conservation Working Group 2007).

Previous Planning Context for Forest Breeding Landbirds – 1999 Plan

Establishing transparent, biologically-based, landscape-scale population and habitat objectives has been central to the work of the LMVJV partnership for over two decades. The Partners in Flight Bird Conservation Plan for the MAV: Version 1.0 (Twedt et al. 1999; hereafter, 1999 Plan) established forest-interior breeding landbird goals for the MAV based on an approach that expressed quantitative relationships between forest patch size and capacity of these patches to sustain "local source populations" of priority forest-interior breeding landbirds (Mueller et al. 2000). Specifically, the forest-interior breeding landbird goals were based on the amount of contiguous "core forest" habitat presumed necessary for supporting local source populations of high priority, forest-interior breeding species. Forest patches capable of supporting ≥500 breeding pairs of these focal species were assumed to also support at least that many pairs of other, less vulnerable forest breeding bird species which have less restrictive habitat requirements and typically occur at higher densities.

The 1999 Plan recognized that local source populations of different focal species would require contiguous patches of core forest habitat of differing extent. Thus, it was determined that local source populations of Swainson's and Prothonotary Warblers would require forest patches >4,000 ha, whereas Cerulean Warbler (>8,000 ha) and Swallow-tailed Kite (>40,000 ha) each required respectively larger forest patches. The 1999 Plan then identified existing forest patches and grouped them into 87 discrete Bird Conservation Areas according to their size, juxtaposition, and potential to "build" contiguous core forest in each of the desired size configurations: >4,000 ha (n = 52), >8,000 ha (n = 36) and >40,000 ha (n = 13). Forest habitat restoration objectives for each Bird Conservation Area were subsequently established by examining the area of non-forested habitat that would require restoration in order to achieve target core forest patch sizes. Based on distribution and condition of extant forest, as well as perceived conservation opportunity for non-forested tracts, the 1999 Plan identified priority areas for restoring and expanding core forest in each Bird Conservation Area. Achievement of patch size targets within all Bird Conservation Areas would require >1.5 million ha of forest restoration.

The breeding landbird goals for the MAV specified within the 1999 Plan were not species specific, nor were they derived in a way that was predicated on population size or trend (e.g., losses over time). Rather, forest-interior breeding landbird goals were largely a product of the opportunities inherent in and near extant forest and potential for restoration in relation to core forest patch sizes believed capable of supporting viable local breeding populations of a few focal species. Since publication of the 1999 Plan, extensive bottomland hardwood forest reforestation has increased the availability of forest habitat within the MAV (King et al. 2006; Mitchell et al. 2016). In addition, monitoring efforts continue to collect important bird population data. Current efforts identifying bird population goals and forest habitat objectives take into account these refinements over time.

Present Planning Context for Forest Breeding Landbirds

The effort herein relates to and builds upon three existing LMVJV conservation planning products with relevance to forest breeding landbirds:

1. Desired Forest Conditions for Wildlife in the MAV (LMVJV Forest Resource Conservation Working Group 2007), available at - **www.lmvjv.org/desired-forest-conditions**,
2. MAV Forest Breeding Bird Decision Support Model (LMVJV 2015), available at - **www.lmvjv.org/mav-bbdsm**, and
3. Forest Protection Priorities for the MAV (Elliott et al. 2020), available at - **www.lmvjv.org/s/MAV-Forest-Protection**

These three products respectively describe: landscape and stand-level bottomland hardwood forest habitat conditions desirable for supporting priority forest-interior breeding birds (Tables 1 & 2), bottomland hardwood reforestation priorities bearing optimal potential for creating and expanding core

"interior" forest (Fig. 1), and forest protection priorities to promote enduring benefits of extant forest habitats that may not be sufficiently secure at present (Fig. 1). These products collectively speak to the need to secure existing forest habitats, augment availability of core forest habitat, and promote habitat conditions favorable for a range of forest breeding bird priorities. All are rooted in explicitly established linkages that describe demonstrated or assumed relationships between forest breeding birds and the amount, condition and configuration of forest habitats.

Population goals and habitat objectives build upon and relate to these three existing planning products by establishing quantitative population goals for forest breeding landbirds rooted in population change, examining the capacity of extant forest habitat to fulfill these objectives, and estimating how much more habitat is necessary for those species whose goals are not presently supported.

Table 1. Desired landscape characteristics for bottomland hardwood forests within the Mississippi Alluvial Valley (LMVJV 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 *Management of Bottomland Hardwood Forests, Table 2*).
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).

Table 2. 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
Small Cavities (<10 inch diameter)	> 4 visible holes/acre or > 4 "snag" stems ≥ 4 inch dbh or ≥ 2 stems > 20 inch dbh	< 2 visible holes/acre or < 2 snags ≥ 4 inch dbh or < 1 stem ≥ 20 inch dbh
Den Trees/Large Cavities[5] (>10 inch diameter)	1 visible hole/10 acres or ≥ 2 stems ≥ 26 inch dbh (≥ 8 ft^2 BA ≥ 26 inch dbh)	0 visible holes/10 acres or < 1 stem ≥ 26 inch dbh (< 4 ft^2 BA ≥ 26 inch dbh)
Standing Dead and/or Stressed Trees[5]	> 6 stems/acre ≥ 10 inch dbh or ≥ 2 stems ≥ 20 inch dbh (> 4 ft^2 BA ≥ 10 inch dbh)	< 4 stems ≥ 10 inch dbh/acre or < 1 stem ≥ 20 inch dbh (< 2 ft^2 BA ≥ 10 inch dbh)

[1] Promotion of species and structural diversity within stands is the underlying principle of management. Management should promote vines, cane, and Spanish moss within site limitations.

[2] "Older age class" stems are those approaching biological maturity, (i.e., senescence). We do not advocate aging individual trees but use of species-site-size relationships as a practical surrogate to discern age.

[3] Dominants (a.k.a. emergents) should have stronger consideration on more diverse sites, such as ridges and first bottoms.

[4] Advanced regeneration of shade-intolerant trees in sufficient numbers (circa 400/acre) to ensure their succession to forest canopy. Areas lacking canopy (i.e., group cuts) should be restricted to < 20% of stand area.

[5] Utilizing BA parameters allows the forest manager to maintain this variable in size classes that are most suitable for the stand instead of using specific size classes noted.

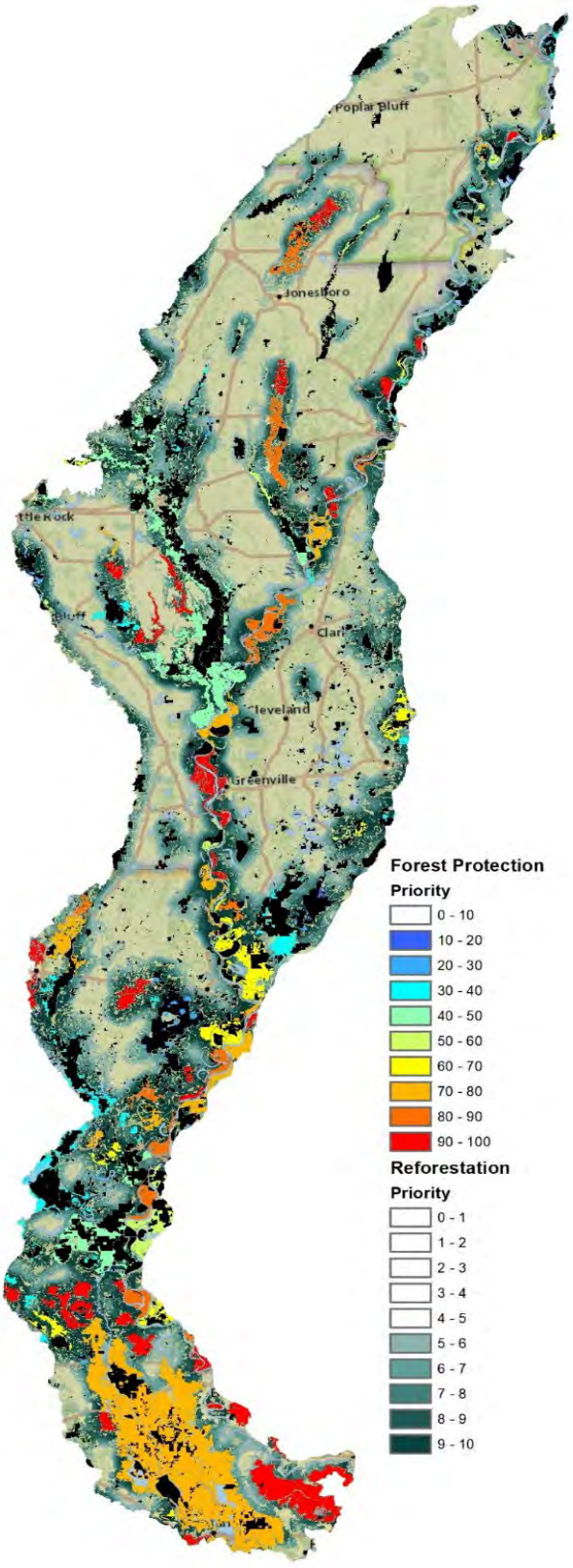


Figure 1. Higher priority reforestation areas identified within Forest Breeding Bird Decision Support Model (LMVJV 2015) and protection priorities specified by the Forest Conservation-Protection Model (Elliott et al. 2020) for the Mississippi Alluvial Valley.

Establishing Forest Breeding Landbird Population Goals and Habitat Objectives

We established population goals for each forest breeding bird species in the MAV (Tables 3-5) using their current estimated population and the long-term population trend for each species. We then evaluated the capacity of extant forest habitat in the MAV to support these species-specific population goals using empirically derived estimates of minimum sustainable populations and estimated occupancy of each species within the MAV (Twedt and Mini 2020). Population size (number of pairs), minimum sustainable population, probability of occupancy, and long-term trend (Sauer et al. 2017) for each species were estimated using data from the North American Breeding Bird Survey (BBS; Pardieck et al. 2016). This evaluation elucidated which species' population goals could be achieved with existing forest habitat and which species required additional forest habitat to achieve their population goals.

Our objectives were: (1) to establish population goals for forest-breeding bird species based on quantitative, regional avian surveys; (2) to estimate the minimum sustainable population of each species that has a low likelihood (≤1%) of extirpation over a 100-year interval; (3) to estimate probability of occupancy of these species relative to measurable landscape covariates such as, forest cover, flood frequency, and geographic location; (4) to determine the minimum area of forest habitat required to support a minimum sustainable population for each species based on published density estimates in forest habitat for each species; and (5) to estimate the population of each breeding species within those forest patches deemed capable of supporting sustainable populations of the species.

If the estimated regional population of a species, summed for all 'sustainable populations', was less than the MAV population goal for that species, we hypothesize that additional management actions are required to attain the stated population goal. Management actions include: (1) alteration of the type of silvicultural management (Twedt 2012), (2) increasing the area of bottomland hardwood forest habitat via forest restoration (Twedt et al. 2006), or (3) for species not entirely dependent on forest habitat, recommending landscape changes likely to increase the area of occupied habitat.

Trend-based bird population goals are presented herein, with the intent of supporting populations assumed present in the late 1960s. As such, we back-projected 2015 population estimates to 1966 population estimates and determined how much habitat would be needed to support these populations. Based on published 1966-2015 avian population trend estimates for the MAV (Sauer et al. 2017), we categorized species as having:

(1) a positive (upward) population trend, including all values within the credible interval (CI) for the trend estimate;
(2) a positive (upward) population trend, but which included a negative (downward) value as the lower limit of the CI for the trend estimate; or
(3) a negative (downward) trend estimate.

For those species with a positive (upward) population trend (inclusive of CI), we assumed our current population estimate sufficed as the population goal for the MAV. For species with an apparent positive trend (albeit with a CI that suggested a possible decrease), we established a population goal that was the current population estimate back-projected by the lower CI value for 50 years. For species with a negative population trend from 1966 to 2015, we established a population goal that was the current population estimate back-projected by the negative trend estimate for 50 years. We exempted non-native species (i.e., Cattle Egret, Eurasian Collared-Dove, European Starling, House Sparrow, and Rock Pigeon), adopting a population goal for these species of no more than their current estimated population.

Based on the results of Twedt and Mini (2020), we grouped birds into 3 categories:

1) Species with habitat sufficient to support their population goals,

2) Species with sustainable forest habitat sufficient to support population goals if optimally managed, and
3) Species with additional habitat needed to support their population goals.

Species with habitat sufficient to support their population goals.

For 30 species, sustainable habitat models indicated their population goals could be achieved within the current area of extant forest (Table 3). Twelve of these species had positive population trends. Sixteen

Table 3. Species with habitat sufficient to support population goals – either within sustainable habitat or within all habitat – within the Mississippi Alluvial Valley Bird Conservation Region

Common Name	% Population[a]	ACAD RCS-b[b]	Population Goal	Population Supported within Sustainable Habitat	Trend[c]
Swainson's Warbler	11.2	17	85,860	118,170	-/+
Red-headed Woodpecker[1,2,3]	4.1	16	347,030	460,170 [d]	-/+
Acadian Flycatcher[1]	2.67	16	597,420	4,751,318	+
Yellow-billed Cuckoo[1,3]	5.35	15	1,344,810	1,401,533	-
White-eyed Vireo[3]	2.98	15	2,586,730	4,607,796	-
Mississippi Kite[2]	13.6	13	434,040	658,926[d]	+
Ruby-throated Hummingbird	1.92	13	1,309,130	6,995,026	-/+
Kentucky Warbler[1]	1.54	13	87,400	194,259	-/+
Yellow-throated Vireo[1,3]	1.10	13	132,590	182,078	-/+
Swallow-tailed Kite	0.53	13	1,790	2,235 [d]	+
Barred Owl[1,3]	8.2	12	40,110	235,846 [d]	+
Carolina Wren[1]	5.29	12	2,711,610	4,937,279	+
Red-bellied Woodpecker[2,3]	4.64	12	914,650	2,004,691	+
Boat-tailed Grackle[2]	4.30	12	14,900	18,472 [e]	-/+
Tufted Titmouse	3.00	12	973,910	1,535,361	+
Downy Woodpecker[1,2,3]	2.69	12	1,471,890	1,872,009	-/+
Summer Tanager[1,2,3]	2.59	12	761,750	1,170,215	+
Hooded Warbler	1.70	12	476,370	727,601	-/+
Pileated Woodpecker[1]	1.66	12	161,820	216,763	-/+
Eastern Wood-Pewee[1]	2.63	11	243,990	268,622	+
Northern Cardinal[1,3]	4.34	10	4,426,020	6,998,153	-/+
Great Crested Flycatcher	2.15	10	594,630	992,494	+
White-breasted Nuthatch	0.21	10	56,110	232,145	-/+
Black-and-White Warbler	0.006	10	33,190	131,917 [e]	-/+
Blue-gray Gnatcatcher[1]	2.06	9	2,467,450	9,594,162	-/+
American Crow	1.03	9	280,150	363,444	+
Eastern Phoebe[3]	0.4	9	35,110	45,480 [d]	-/+
American Redstart	0.02	9	113,840	291,295	-/+
Red-eyed Vireo	0.09	8	495,640	938,754	-/+
American Robin[2]	0.23	7	721,950	807,124 [d]	+

[a] Percent of global population found in MAV Bird Conservation Region; [b] Avian Conservation Assessment Database Regional Concern Score for Breeding (see http://pif.birdconservancy.org/ACAD/;Panjabi et al., 2020); [c] + = positive trend; -/+ = confidence interval overlaps 0; - = negative trend; [d] estimates are based on total habitat, not sustainable forest habitat; [e] no estimate within sustainable habitat; [1] Positive association with edge; [2] Positive association with urban; [3] Negative association with forest.

species had credible intervals that overlapped zero, indicating an uncertainty in their population trend. Two species (White-eyed Vireo, Yellow-billed Cuckoo) appear to have sufficient habitat to support their population goals but significant negative population trends associated with these species suggest continuing conservation attention is warranted. Notably, some species, based on their occupancy models, are not forest-dependent but rather are associated with forest edges, urban areas, or not strongly associated with forest.

Species with forest habitat sufficient to support their population goals if optimally managed.

To account for management of existing forest, we examined the U.S. Forest Service's Forest Inventory and Analysis (FIA) database to estimate the proportion of forest stands likely to have been subjected to management (i.e., timber harvest). These data indicated 14% of stands had evidence of silvicultural treatment within the past five years: 26% of these treated stands had been clear-cut with the remaining stands subjected to partial harvest or thinning. Density estimates for each species that were associated with these silvicultural treatments, proportional to the application of those treatments within the MAV, were used to assess current populations. We then estimated each species' theoretical population based on the number of territories that could be located within the entirety of occupied habitat in the MAV, at each management specific density.

For six species, our sustainable habitat models indicated that population goals could be met if existing forest was managed for their 'optimal' density (Table 4). Two of these species had uncertain population trends whereas four species had negative population trends. Further, several species assumed to have sufficient habitat at present (i.e., in Table 3) depend upon relatively specific ranges of forest structural attributes. For example, Swainson's Warbler is often associated with well-developed cane brake habitat, many other species have associations with under- and mid-story conditions requiring canopy gaps, and Kentucky and Swainson's Warblers exhibit a dependence upon higher elevation, less-frequently flooded forests. These examples highlight the importance of promoting conservation-management actions focused on the LMVJV's Desired Forest Conditions for Wildlife.

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.

Species with additional habitat needed to support their population goals.

For 19 species, our habitat models indicated that the current amount of habitat, even if managed for optimal density of the species, is insufficient to sustain their population goals. For nine of these species (Blue Jay, Common Yellowthroat, Chimney Swift, Field Sparrow, Fish Crow, Orchard Oriole, Painted Bunting, Baltimore Oriole, Common Grackle), we determined that their population goals could not likely be achieved solely within forest habitat, and therefore their population goals would need to be met in other ways. For 10 species (Table 5), we estimated that an additional 700,000 ha of sustainable forested habitat would be sufficient to meet their population goals (Twedt and Mini 2020).

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.

Discussion

The current 'State of the Birds' (NABCI 2019) reported forest birds have suffered a 22% decrease since 1970, and Rosenberg et al. (2019) estimate a decline of nearly 650 million breeding Eastern Forest and Forest Generalist birds since 1970. Several of the species treated here are on the Partners in Flight Continental Plan Watch List or are Common Birds in Steep Decline. Additionally, population trends for some of these species are more steeply declining within the MAV than in Eastern North America (i.e., Eastern BBS region). For example, the 4 species with negative population trends that need additional habitat to support their population goals, have much steeper declines in the MAV than in eastern North America (Table 6).

Table 6. Species needing additional habitat to support their current population goals, which also are in steeper decline in the MAV than in the Eastern U.S.

Species	MAV-wide BBS trend 1966-2015	Eastern BBS trend 1966-2015
Prothonotary Warbler	-1.40 (-2.47, -0.30)	-0.74 (-1.19, -0.29)
Northern Parula	-3.38 (-4.78, -1.86)	1.33 (0.97, 1.66)
Field Sparrow	-3.85 (-8.25, -1.98)	-2.79 (-2.97, -2.63)
Hairy Woodpecker	-2.11 (-3.81, -0.39)	0.93 (0.31, 1.39)

One important concept confirmed through our modeling is that the quality/condition of the forest has a significant impact on potential occupancy and population estimate. The LMVJV Forest Resources Conservation Working Group (2007) recommended silvicultural management to positively influence bottomland hardwood forest structure (Table 2) and to promote "Desired Forest Conditions for Wildlife." These habitat parameters explicitly link wildlife needs to structural bottomland hardwood forest attributes, addressing important aspects of bottomland hardwood forest conservation for provision of wildlife habitat in the MAV. Pursuit of these stand scale and landscape scale (Table 1) desired conditions by partners will continue to be a priority of the LMVJV, especially with the understanding that meeting forest breeding bird objectives is dependent upon attaining desired conditions within bottomland hardwood forest habitats of the MAV.

This planning effort confirms the high value of sufficient forest core habitat to the conservation of our priority bird populations. Increasing and maintaining forest core in the MAV requires both the strategic

placement of reforestation activities and retention of existing forest within and contributing to forest core (Fig. 1). The LMVJV's MAV Forest Protection Model (Elliott et al. 2020) and MAV Forest Breeding Bird Decision Support Model (https://www.lmvjv.org/mav-breeding-bird-decision-support-model) provide partners with spatial guidance for placement of protection and reforestation, respectively.

As we are unsure of what is causing more steeply declining populations within the MAV, further investigation of these species' population trends is warranted. We recognize the need to consider the full annual cycle of landbirds that breed in the MAV. Most of these birds make long migrations across the Gulf of Mexico and spend the winter in Central and South America. For example, Prothonotary Warblers breed across much of the Eastern United States but have a limited winter range (Fig. 2). It is possible, for this and other species, that the limiting factors may not entirely be on the breeding grounds. We are supportive of efforts to better elucidate limiting factors throughout the life cycles of forest nesting birds that breed in the LMVJV region, and will incorporate this information into our objectives as it comes available. Meanwhile, it is the responsibility the LMVJV partnership to work towards ensuring that sufficient breeding habitat is provided within our geography.

The LMVJV partnership has leveraged and marshaled resources over the past three decades towards an impressive record of substantial, strategic restoration of bottomland hardwood forest habitat in the MAV (https://www.lmvjv.org/brochures-summaries). We are confident that through continued collaboration and cooperation we can ultimately attain our partnership goal of sustaining populations of forest breeding landbirds.

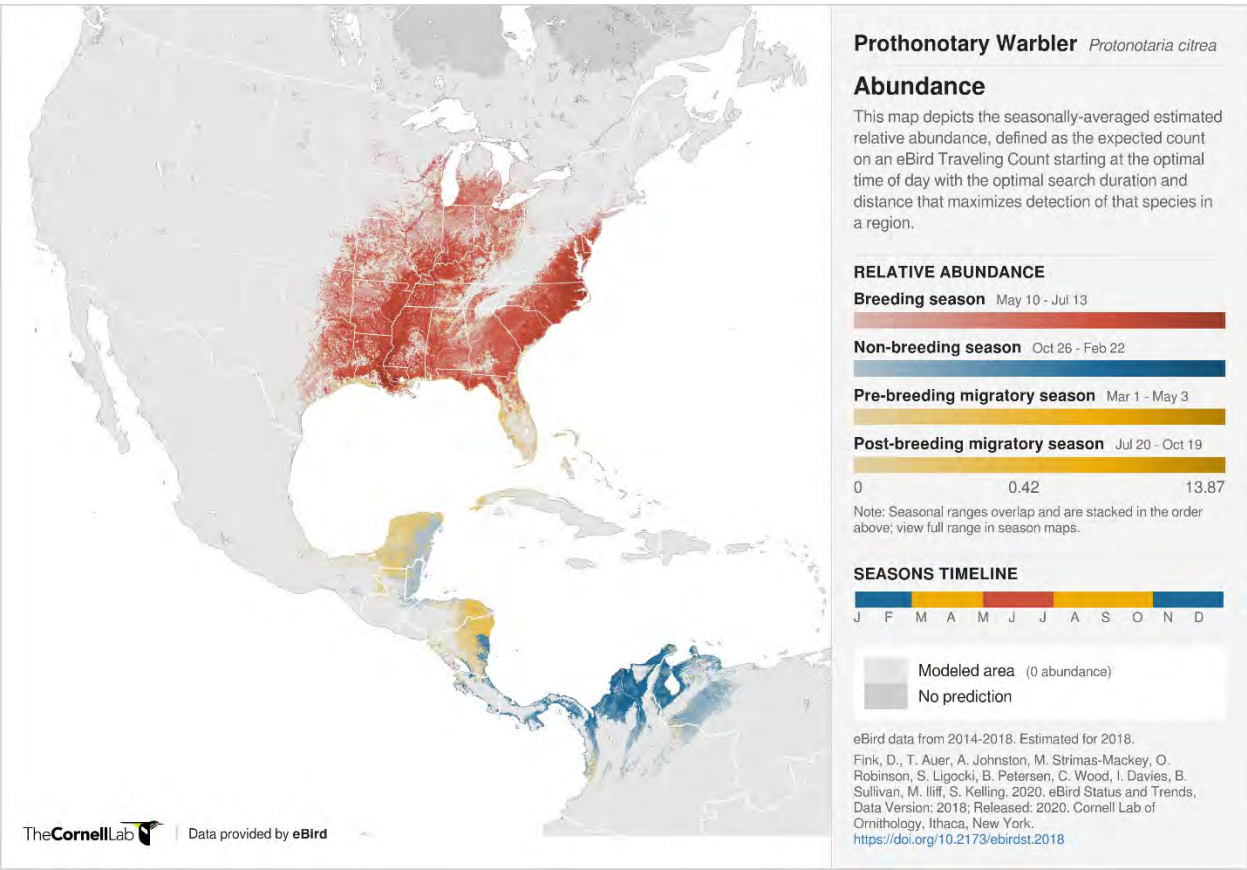


Figure 2. Seasonal distribution of Prothonotary Warbler.

Research Needs

Given the uncertainties in what may be driving population trends and occupancy of habitat, research projects that address certain fundamental needs are crucial. As such, research and information needs remain an LMVJV priority (Table 7).

Table 7. Research and information needs for birds in the Mississippi Alluvial Valley.

Category	Question	End-point to measure management performance	Uncertainty Description	Uncertainty Category	Effect Size
Site/area management and habitat quality	How do silvicultural practices affect habitat quality for forest landbirds? What are appropriate silvicultural techniques?	Survival, population size, productivity (breeding), pre-migratory body condition	Silvicultural practices can have positive and negative effects on habitat quality of adjacent forest	High	High
Site/area characteristics and population demographics	What are the important forest stand characteristics (block shape/size, age, species composition, vertical structure, proximity to other forest blocks, etc.) for maintaining and/or increasing populations of forest landbirds?	Survival, population size, productivity (breeding), pre-migratory body condition	It is currently unclear how interactions among stand- and site-level vegetation characteristics, forest block size, shape and connectivity, and arthropod and fruit densities affect avian demography. The degree to which silvicultural practices and other management can replicate natural processes in creating habitat for bird species of concern is not clear, or varies by species	High	High
Climatic processes	Will climate-induced changes in vegetation structure and composition affect resources available to forest breeding landbirds?	Invertebrate species richness and abundance, fruiting plant species richness and abundance, body condition at autumn departure, productivity, habitat use	There is uncertainty about how climate-induced changes in the vegetation composition and structure of habitats influence food availability and nesting substrates for forest breeding landbirds	High	High

Recommended Conservation Actions

- ACHIEVE **OPTIMAL FOREST SPATIAL CONFIGURATION AND STRUCTURE** AS GUIDED BY DESIRED FOREST CONDITIONS FOR WILDLIFE WITHIN ALL FOREST HABITAT
- FACILITATE **LONG-TERM INTEGRITY OF FOREST HABITAT** THROUGH APPROPRIATE MEANS OF PROTECTION, PRIORITIZED AS GUIDED BY THE MAV FOREST CONSERVATION-PROTECTION MODEL
- SEEK TO ESTABLISH A MINIMUM OF **700,000 HECTARES OF ADDITIONAL SUSTAINABLE FOREST** HABITAT, PRIORITIZED AS GUIDED BY THE MAV FOREST BREEDING BIRD DECISION SUPPORT MODEL
- **ADDRESS KEY UNCERTAINTIES** IN MODELS DRIVING OUR UNDERSTANDING OF POPULATION TRENDS AND OCCUPANCY OF HABITATS THROUGH SCIENCE

Citations

Elliott, A.B., A.E. Mini, S.K. McKnight, and D.J. Twedt. 2020. Conservation-protection of forests for wildlife in the Mississippi Alluvial Valley. Forests 11:75-89.

King, S.L., D.J. Twedt, and R.R. Wilson. 2006. The Role of the Wetlands Reserve Program in Conservation Efforts in the Mississippi Alluvial Valley. Wildlife Society Bulletin 34:914–920.

LMVJV. 2015. MAV Forest Breeding Bird Decision Support Model – Update 2015. Available at https://www.lmvjv.org/s/LMVJV_FBBDSM_2015_Summary.pdf

LMVJV Forest Resource Conservation Working Group. 2007. Restoration, Management, and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat. R.R. Wilson, K. Ribbeck, S. King, and D.J. Twedt, editors. Available at https://static1.squarespace.com/static/5bb3865d2727be6f94acf2fc/t/5bedef53562fa78090470d0f/1542319976884/DFC_Report_to_LMVJV_2007.pdf

Mitchell, M., R.R. Wilson, D.J. Twedt, A.E. Mini, and J.D. James. 2016. Object-based forest classification to facilitate landscape-scale conservation in the Mississippi Alluvial Valley. Remote Sensing Applications: Society and Environment 4:55–60.

Mueller, A.J., D.J. Twedt, and C.R. Loesch. 2000. Development of management objectives for breeding birds in the Mississippi Alluvial Valley *in* R. Bonney, D.N. Pashley, R. Cooper and L. Niles, editors. Strategies for Bird Conservation: The Partners in Flight Planning Process. Proceedings of the 3rd Partners in Flight workshop, October 1–5, 1995: Cape May, NJ. Proceedings RMRS-P-16, Ogden, UT; United States Department of Agriculture, Forest Service, Rocky Mountain Research Station, p. 12–17.

NABCI. 2019. The State of the Birds Report 2019, United States of America. North American Bird Conservation Initiative, accessed 19 September 2020, at https://www.stateofthebirds.org/2019/wp-content/uploads/2019/09/2019-State-of-the-Birds.pdf.

Oswalt, Sonja N. 2013. Forest Resources of the Lower Mississippi Alluvial Valley. Gen. Tech. Rep. SRS-177. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 29 p.

Panjabi, A.O., W.E. Easton, P.J. Blancher, A.E. Shaw, B.A. Andres, C.J. Beardmore, A.F. Camfield, D.W. Demarest, R. Dettmers, R.H. Keller, K.V. Rosenberg, T. Will, and M.A. Gahbauer. 2020. Avian Conservation Assessment Database Handbook, Version 2020. Partners in Flight Technical Series No. 8.1.

Pardieck, K.L., D.J. Ziolkowski Jr., M.A.R. Hudson, and K. Campbell. 2016. North American Breeding Bird Survey dataset 1966 - 2015, version 2015.1. U.S. Geological Survey, Patuxent Wildlife Research Center, accessed 30 October 2018, at https://www.pwrc.usgs.gov/BBS/RawData/.

Rosenberg, K.V., A.M. Dokter, P.J. Blancher, J.R. Sauer, A.C. Smith, P.A. Smith, J.C. Stanton, A. Panjabi, L. Helft, M.Parr, P.P. Marra. 2019. Decline of the North American Avifauna. Science. Published online September 19, 2019. doi: 10.1126/science.aaw1313.

Rosenberg, K.V., J.A. Kennedy, R. Dettmers, R.P. Ford, D. Reynolds, J.D. Alexander, C.J. Beardmore, P.J. Blancher, R.E. Bogart, G.S. Butcher, A.F. Camfield, A. Couturier, D.W. Demarest, W.E. Easton, J.J. Giocomo, R.H. Keller, A.E. Mini, A.O. Panjabi, D.N. Pashley, T.D. Rich, J.M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp.

Sauer, J.R., D.K. Niven, J.E. Hines, D.J. Ziolkowski Jr., K.L. Pardieck, J.E. Fallon, and W.A. Link. 2017. The North American Breeding Bird Survey, results and analysis 1966 - 2015. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD accessed 30 October 2018, at https://www.mbr-pwrc.usgs.gov/bbs/bbs.html

Twedt, D.J. 2012. Wildlife forestry, Chapter 10 *in* C.A. Okia, editor. Global Perspectives on Sustainable Forest Management, INTECH, Rijeka, Croatia, ISBN: 978-953-51-0569-5, p. 161–190, accessed 18 August 2019, at http://www.intechopen.com/books/global-perspectives-on-sustainable-forest-management/wildlife-forestry.

Twedt, D.J., and A. Mini. 2020. Forest area to support landbird population goals for the Mississippi Alluvial Valley. United States Geological Survey Open File Report (in press), Patuxent Wildlife Research Center, Ecosystems, Wildlife Programs. 105 pp.

Twedt, D.J., D. Pashley, C. Hunter, A. Mueller, C. Brown, and R. Ford. 1999. Partners in Flight Bird Conservation Plan for the Mississippi Alluvial Valley. [available at https://static1.squarespace.com/static/5bb3865d2727be6f94acf2fc/t/5bedd052aa4a991d649bf506/1542312026011/MAV_PIF_PLAN.pdf]

Twedt, D.J., W.B. Uihlein III, and A.B. Elliott. 2006. A Spatially Explicit Decision Support Model for Restoration of Forest Bird Habitat. Conservation Biology 20:100–110.

Suggested Citation:

Lower Mississippi Valley Joint Venture. 2020. Mississippi Alluvial Valley Forest-breeding Landbird Population Goals and Quantitative Habitat Objectives. Jackson, MS. 14 pp.

Lower Mississippi Valley Joint Venture
Monitoring and Evaluation Plan

Introduction

The Lower Mississippi Valley Joint Venture Partnership promotes targeted, outcome-based monitoring that either: 1) evaluates our progress in meeting stated population and habitat objectives for the major bird plans, or 2) tests assumptions made in our biological models regarding population or habitat objectives. The four major bird plans include the North American Waterfowl Management Plan, the Partners in Flight Landbird Plan, the North American Waterbird Conservation Plan, and the U.S. Shorebird Conservation Plan. Some of our monitoring needs have systems already established to track metrics, and others need to be developed. Furthermore, we have certain technical expectations that represent the desired characteristics of Joint Ventures with regards to monitoring (Table 1). Under each bird plan section below, we describe how we are achieving content in each area (summarized in Figure 1), provide recommendations for continuing or improving our activities, and briefly describe habitat inventory and monitoring programs and population monitoring programs where appropriate.

Table 1. Technical Expectations for Monitoring excerpted from Desired Characteristics for Habitat Joint Venture Partnerships (Joint Venture "Matrix").

Element	Sub Element/ Product	TECHNICAL EXPECTATIONS	
		Minimal Content- **Expected characteristics and level of performance for newly established and/or minimally-funded Joint Ventures.**	**Comprehensive Content-** **Joint Ventures should move toward this content as a Joint Venture matures and funding levels increase.**
MONITORING	**Coordination/ Partnerships**	Joint Venture informs and influences partner organizations implementing monitoring programs.	Joint Venture provides a structure and process that generates, attracts, leverages, and implements outcome-based monitoring activities in support of Joint Venture established biological targets.
	Conservation Tracking System	General description of anticipated need for tracking partnership activities (gross partnership accomplishments). A vision for creating that capability among partners. The joint venture office solicits information on accomplishments from joint venture partners, organizes and submits the information to appropriate managers of national databases and Management Board.	Conservation tracking and spatial database system in place. Explicit description of how information will be used to inform decisions (e.g., increasing performance for Program X). Explanation of linkage between tracking system and biological models so that biological accomplishments can be assessed and reported.
	Habitat Inventory & Monitoring Programs	General description of anticipated process that will be employed to inventory and monitor landscape conditions and net habitat change over time and net progress toward habitat objectives (gains and losses).	Documentation of habitat monitoring objectives and habitat parameters that will be inventoried and monitored over time. Expected process (e.g., remote sensing) and time interval for data collection. Explicit description of how information will be used to inform decisions (e.g., refining habitat or population objectives). Assessment of the net change in Joint Venture landscape conditions conducted at <5 year intervals.
	Population Monitoring Program	Description of anticipated process for prioritizing and coordinating monitoring of bird population responses over time.	Documentation of demographic parameters monitored specific to each objective. Expected process (e.g., aerial surveys, nest survival) and time interval for data collection, storage, and management. Explicit description of how new information collected from monitoring programs will be used to inform future planning decisions (i.e., identify the feedback loop).

Figure 1. LMVJV's "Operational Compass" depicting self-assessment of achievement of Joint Venture Matrix elements for Monitoring.

LMVJV Operational Compass: Habitat Conservation To Sustain Bird Populations Through Science, Technology and Partnerships									
SHC Framework	**Element/Product**	**NAWMP**	**PIF**	**USSCP**	**NAWP**	**NAWMP**	**PIF**	**USSCP**	**NAWP**
	Biological Planning Unit	Mississippi Alluvial Valley				West Gulf Coastal Plains/Ouachitas			
Outcome-based Monitoring	Conservation Tracking System								
	Habitat Inventory and Monitoring Program								
	Population Monitoring Program								

	Reliable information exists; good mechanisms in place
	Some reliable information exists, but needs to be updated; mechanisms in development
	Information exists, but not much or not adopted by JV; needs significant attention; AND/OR lacking in some guilds within the bird group
	Information absent or of little value; little/no attention paid to this by the JV

North American Waterfowl Management Plan

Coordination/Partnerships

The Lower Mississippi Valley Joint Venture has a chartered Waterfowl Working Group that provides a structure to implement monitoring when needed. Coordination of monitoring activities is provided through the LMVJV Science Coordinator. The Working Group is chartered to ensure that "population and habitat monitoring programs are supporting the progressive refinement of waterfowl conservation goals and objectives." Thus the Working Group should ensure that Joint Venture planning is coordinated with NAWMP goals and objectives with regards to monitoring and evaluation activities.

Recommendation: Periodically evaluate membership and subcommittees of Waterfowl Working Group with regards to monitoring needs

Conservation Tracking System

The LMVJV currently has no formal conservation tracking system in place. Partners are periodically asked to provide the JV Coordinator with accomplishments (acres, dollars), based on sideboards of geography (MAV and WGCPO), time span (one year), and connection to LMVJV objectives and priorities to meet USFWS reporting requests. The Management Board has determined that the "cost" in time and

resources (JV Office and Partner staff) required to develop and maintain such a database outweighs the benefits of such information to the partnership's mission.

Recommendation: Status quo

Habitat Inventory and Monitoring Program

Monitoring and Evaluation Need:

The role of the Lower Mississippi Valley Joint Venture in this regard is to assess JV partner contributions to NAWMP population goals during the non-breeding season. We function on the premise that waterfowl populations are food (energy) limited during the non-breeding season. Therefore, our Joint Venture has implemented monitoring and evaluation through the web-based Water Management Unit (WMU) Tool on public lands, and remote sensing on private lands that focuses on calculating energy provided on the landscape for waterfowl. Upkeep of the WMU Tool is provided through the LMVJV GIS Applications Biologist & partner staff. The WMU database was completed in 2011, and improved in 2020. Improvements include the ability to track multiple habitat types within an impoundment, the ability to qualify moist-soil productivity, and an additional shorebird habitat module.

Type of Data Collected:

We collect geospatial data from public land managers that includes detailed waterfowl habitat information for impounded wetlands. We then convert these data to Duck Energy Days (DEDs) through a bioenergetics model. Additionally, we use remote sensing of water on the landscape coupled with land cover data (National Agricultural Statistics Service CropScape and National Land Cover Database) to assess potential waterfowl habitat on private land.

Purpose and Use of Data:

The data are used to calculate surplus/deficit energy needs within each state to assess overall Joint Venture contributions to NAWMP goals. Data are accessed and used by the LMVJV staff, and data can be made available to partners through request to the LMVJV GIS Applications Biologist. We additionally provide a 'view only' option for partners wanting to utilize the data.

Methodology for Data Collection:

Public land

In 2020, we updated our Water Management Unit application: https://gisweb.ducks.org/wmu/

The WMU application now provides for the ability to track each habitat that occurs within a water management unit. Hence, there now exist three separate and unique polygon layers to utilize in providing data: a water management unit polygon, a waterfowl unit polygon, and a shorebird unit polygon. Once users delineate a water management unit polygon (or if a water management unit polygon persists in the database from previous data entry), a polygon template for defining the waterfowl habitat or shorebird habitat within that water management unit polygon is automatically created. Users apply the polygon edit tools to more precisely define the distinct areas specific to each habitat within the water management unit.

Detailed instructions for using the WMU application can be found here:
https://gisweb.ducks.org/wmu/docs/WMUHelp.pdf

Private land and natural flooding

Private lands enrolled in the Wetland Reserve Easement program are geospatially delineated based on information from the Protected Areas Database. Additionally, naturally flooded areas (i.e., not actively managed) are identified based on where water falls on the landscape. We overlay the private lands and natural flood geospatial data layers with National Land Cover Database (NLCD) or National Agriculture Statistic Service (NASS) geospatial data layers to determine the habitat type. We additionally use a flood frequency model (Allen 2016) to determine where water is on the landscape. The combination of layers – protected area, land cover, and flood frequency are combined to determine available habitat type. Private lands are given a conservative value of 20% red oak if forested wetland, or a harvested crop value if cropland.

Frequency of Data Collection:

Data calls for input into WMU tool as needed for public land, and remote sensing landscape analysis on private land as needed. The Waterfowl Working Group intends to collect public lands data on a yearly basis beginning in 2020.

Recommendation: Continue public lands data collection in Water Management Unit database and remote sensing assessment of private lands for a bionergetics model update.

Recommendation: Update, as needed, Water Management Unit Database to reflect current needs of Waterfowl Working Group to track waterfowl habitat on public land

Population Monitoring Program

Population objectives are stepped down to our geography, using harvest data, from continental breeding population objectives (see Fleming et al. 2017). The LMVJV supports coordinated mid-winter aerial survey efforts conducted primarily by our State partners. This is identified as a priority in our LMVJV Science Priorities (LMVJV 2015) because data can be linked to landscape level factors that may influence waterfowl distribution on the landscape.

Currently, we have no demographic monitoring in place. However, partners are interested in assessing the current winter body condition of waterfowl and comparing to body condition indices from the 1980s. Such temporal comparisons should be useful to assess if waterfowl wintering in the LMVJV geography return to the breeding grounds in good body condition.

An additional component of understanding non-breeding waterfowl population distribution and dynamics relative to habitat features is the impacts of sanctuary on body condition, survival, and habitat selection. This was a recommendation based on a joint meeting of the Gulf Coast Joint Venture and LMVJV Waterfowl Working Groups. One potential means of elucidating the relationship is through an agent-based model. Such a model could simulate the landscape of the MAV and duck response to disturbances, habitat types, etc. for evaluating different management scenarios.

Recommendation: Support use of mid-winter aerial survey data in research projects and to evaluate waterfowl response to the landscape

Recommendation: Support periodic evaluation of winter waterfowl body condition

Recommendation: Support efforts to model the impacts of sanctuary on waterfowl distribution and demographics

U.S. Shorebird Plan

Coordination/Partnerships

The Lower Mississippi Valley Joint Venture maintains an *ad hoc* LMVJV Shorebird Working Group that could provide the structure to implement monitoring when needed. This group completed a LMVJV Shorebird Plan in 2018. Coordination for monitoring activities is provided through the LMVJV Science Coordinator. At a larger scale, a mid-continent shorebird business plan has been suggested and involvement in this process could benefit the LMVJV.

Recommendation: Continue working with representatives of the U.S. Shorebird Plan and provide appropriate support to a mid-continent shorebird plan

Conservation Tracking System

The LMVJV currently has no formal conservation tracking system in place. Partners are periodically asked to provide the JV Coordinator with accomplishments (acres, dollars), based on sideboards of geography (MAV and WGCPO), time span (one year), and connection to LMVJV objectives and priorities to meet USFWS reporting requests. The Management Board has determined that the "cost" in time and resources (JV Office and Partner staff) required to develop and maintain such a database outweighs the benefits of such information to the partnership's mission.

Recommendation: Status quo

Habitat Inventory and Monitoring Program

Monitoring and Evaluation Need:

The role of the Lower Mississippi Valley Joint Venture in this regard is to assess JV partner contributions to shorebird population goals during the non-breeding season, specifically migration. We function on the premise that shorebird populations are energy limited during migration and that fall is the most limiting time period. Therefore, our Joint Venture supports monitoring and evaluation that focuses on calculating how much habitat is provided on the landscape for shorebirds. We are currently beta testing a habitat tracking module for public lands within the Water Management Tool specifically for shorebirds. Upkeep of the Conservation Tracking System will be provided through the LMVJV GIS Applications Biologist.

Type of Data Collected:

We will collect geospatial data from partners focused on shallow water/mudflat habitat on public land. Data will be collected in a similar manner to the waterfowl

Purpose and Use of Data:

The data will be used to calculate surplus and deficit shorebird habitat needs for public land in each state.

Methodology for Data Collection:

Within the WMU application, the shorebird module enables partners to delineate mudflat habitat. Managed shorebird habitat is defined as follows:

Shorebird unit polygons should be delineated within a water management unit polygon to depict the total area of drawdown (the mudflat) that will gradually be exposed for shorebird management during the late summer shorebird migration timeframe. This is not to include the mudflat exposed by evaporation, but is meant to show the area of annual active management for shorebirds.

See https://gisweb.ducks.org/wmu/docs/WMUHelp.pdf for instructions on using the Water Management Unit application.

Frequency of Data Collection:

Data will be collected as the LMVJV Shorebird Plan is updated, approximately every 5 years.

Recommendation: Continue to maintain the shorebird module to track shorebird habitat for tracking quantity and availability of shorebird habitat

Recommendation: Continue to explore ways to assess available shorebird habitat on private land through remote sensing

Population Monitoring Program

There is no systematic shorebird population monitoring program in place in the LMVJV. Current LMVJV Shorebird Plan objectives are derived from estimates provided by the USSCP (B. Andres, unpubl.). eBird data have been utilized to develop migration curves for our bioenergetics model and split objectives between Bird Conservation Regions.

Recommendation: Scope the cost in terms of time and effort to perform a population 'blitz' count to potentially validate population estimates and document use of public lands

Recommendation: Continue to encourage data input to eBird to help with migration chronology and splitting of population objectives between Bird Conservation Regions

Partners in Flight Landbird Plan

Coordination/Partnerships

Each Bird Conservation Region [Mississippi Alluvial Valley (MAV) and West Gulf Coastal Plain/Ouachitas (WGCPO)] has *ad hoc* working groups that can facilitate monitoring and evaluation activities.

The *ad hoc* MAV Landbird Working Group, and a formally chartered Forest Resources Conservation Working Group, both provide potential structure to implement monitoring when needed. In fact, members of these groups have helped conduct monitoring of forest songbird response to Desired Forest Conditions for Wildlife.

The WGCPO partners assembled two *ad hoc* landbird working groups that developed the Open Pine and Forested Wetland Plans for the region. Additionally, the Northeast Texas (NETX) Conservation Delivery Network has organized a core working group (*ad hoc* monitoring group) and larger review team for developing a Northeast Texas bird monitoring protocol. The NETX CDN Steering Committee will evaluate the progress and recommendations of the ad hoc group. Formal committee development was postponed until year 2 results and will be established in Fall 2020.

Recommendation: Maintain and re-energize ad hoc technical teams/working groups as needed to develop and implement priority monitoring efforts

Recommendation: Support formation of NETX CDN monitoring group; consider similar monitoring groups in other CDNs

Conservation Tracking System

The LMVJV currently has no formal conservation tracking system in place. Partners are periodically asked to provide the JV Coordinator with accomplishments (acres, dollars), based on sideboards of geography (MAV and WGCPO), time span (one year), and connection to LMVJV objectives and priorities

to meet USFWS reporting requests. The Management Board has determined that the "cost" in time and resources (JV Office and Partner staff) required to develop and maintain such a database outweighs the benefits of such information to the partnership's mission.

Recommendation: Status quo

Habitat Inventory and Monitoring Program

Monitoring and Evaluation Need:

One role of the Lower Mississippi Valley Joint Venture is to assess Joint Venture partner contributions to landbird population goals during the breeding season. We function on the premise that breeding bird populations respond both to the quantity and quality of forested habitat on the landscape. Therefore, our Joint Venture supports monitoring and evaluation that focuses on calculating the amount and structure of forested habitat that is provided on the landscape for breeding landbirds.

Forest Quantity

In the MAV, we developed our own classification of bottomland hardwood forest (Mitchel et al. 2016). This assessment provides us the ability to assess forest outside the 5-year timeframe of NLCD. However, an updated version of NLCD was released since our 2012 classification. So we have been using 2016 NLCD until we update our classification.

In the WGCPO we use NLCD to track net landscape change of forested habitat (both bottomland hardwood and pine) on the landscape. Additionally, we need a reliable mechanism to track fire activity. One of our Science Priority recommendations is to monitor the location, acres, and frequency of prescribed fire activities and other metrics relevant to desired open pine conditions. An effort in Florida ("Mapping Fire in Florida") potentially could be expanded to benefit the WGCPO for tracking fire. Tall Timbers Research, Inc. initiated development of this robust spatial database for more precise mapping and tracking of fire occurrence in Florida, using satellite-based products. Currently the database is expanding into the Southeast.

Forest Structure

We are also interested in tracking forest structure. The Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative had constructed a Forest Characterization database to track Desired Forest Conditions for bottomland hardwood forest. However, this database was not completed, nor was there a strong partner desire to use it. There still may be utility for such a database if it can be pushed to completion with additional funding.

For open pine forest, we would greatly benefit from better means to assess forest structure and composition through remote sensing. Currently, Forest Inventory and Analysis (FIA) data offers the only means to collect forest structure data at large scales. However, these data are of limited utility at the finer scales useful to our delivery efforts.

Type of Data Collected:

Forest Quantity

MAV (Bottomland Hardwood)

We use object-based image analysis with Random Forest classification to quickly and accurately classify forest cover. See Mitchell et al. (2016) for complete details. We collect information on 'core-forest', patch size, and extent of forest on the landscape.

WGCPO (Bottomland Hardwood)

We use NLCD to track net landscape change of woody wetland habitat across the landscape.

WGCPO (Open Pine)

We currently do not track net landscape change of open pine habitat on the landscape because available remotely sensed structural data (especially canopy cover) is insufficient. Much of the pine timber classified through NLCD is industrial pine plantation. We need a system to catalogue the number of acres burned through partner and CDN programs, such as the NE Texas Habitat Incentive Program.

Forest Structure

We currently do not have a regular, systematic assessment of forest structure. However, forest structure assessments have been conducted through various projects. In the Mississippi Alluvial Valley, forest structure has been collected through Twedt and Wilson (2017), and federal and state partners collect these data as part of their forest inventory. In the West Gulf Coastal Plain, Dr. Dan Saenz with the Southern Research Station is conducting stand structure information on longleaf pine stands and other shortleaf/loblolly pine stands where songmeters are being placed.

Purpose and Use of Data:

Forest Quantity

Bottomland Hardwood

MAV Forest Assessment and NLCD woody wetlands data are used to calculate changes in landscape composition and acreage of bottomland hardwood forest. Calculations of amount of forest-core habitat will be used to assess partner contributions to increasing forest-core for breeding landbirds in the MAV.

Open Pine

A decision support tool was developed by LMVJV partners for open pine habitat to provide information on strategically sighting open pine management prescriptions (e.g., enhancement, prescribed fire) and protection activities in locations where they have the greatest chance of supporting viable populations of priority bird species. Thus, developing protocols and procedures for reporting the locations of prescribed activities on the landscape would help partners better implement effective management actions. Once desired conditions are achieved in these habitats, monitoring should ensure desired results are being achieved and maintained over time. An online database would facilitate the analysis of such data.

Methodology for Data Collection:

We used object-based image analysis with Random Forest classification to quickly and accurately classify forest cover in the MAV. We used Landsat band, band ratio, and band index statistics to identify and define similar objects as our training sets instead of selecting individual training points. This provided a single rule-set that was used to classify each of the 11 Landsat 5 Thematic Mapper scenes that encompassed the Mississippi Alluvial Valley. Additionally, we burn Wetland Reserve Easement Program (WREP) data into the forest classification. See Mitchell et al. (2016) for complete details.

Frequency of Data Collection:

Bottomland Hardwood

Our MAV Forest Assessment can be collected as needed; there currently is no prescribed frequency of assessment. NLCD data is made available, approximately every 5 years, so forest in the WGCPO can be assessed roughly at that frequency.

Open Pine

When means to collect prescribed fire data are made available, data should be collected every year and assessed every 5 years.

Recommendation: Revisit validation of FIA data with empirical data; contact USFS regarding updated FIA data for Bottomland Hardwood and Open Pine structure

Recommendation: Investigate means for Open Pine fire tracking within WGCPO CDNs

Recommendation: Continue assessment of forested wetland acreage and core-forest habitat through MAV Forest Assessment as needed, or NLCD analysis every 5 years as appropriate

Recommendation: Continue assessment of acres of prescribed fire in Open Pine habitat, as appropriate

Recommendation: Continue to explore effective ways of obtaining remotely sensed pine canopy cover

Population Monitoring Program

One role of the Joint Venture is to assess partner contributions to reversing population declines for breeding species of continental and regional importance. Currently, the only large-scale monitoring program available to track breeding bird trends is the Breeding Bird Survey. In the Texas portion of the West Gulf Coastal Plain, partners are conducting specialized waterborne surveys for breeding birds of forested wetlands. Additionally, bird response to NE TX Habitat Incentive Program prescribed fire is being recorded via song meters.

Recommendation: Assess regional Breeding Bird Survey trends at 5-year intervals for priority bird species

Recommendation: Continue support of waterborne surveys in Texas for bottomland hardwood species and consider the applicability to other geographies

Recommendation: Continue support of monitoring bird response to prescribed fire through the NE TX HIP

North American Waterbird Plan

Coordination/Partnerships

Currently, the Lower Mississippi Valley Joint Venture does not have an *ad hoc* LMVJV Waterbird Working Group that could provide the structure to implement monitoring when needed, although one is being formed regarding King Rail (secretive marshbirds) planning. There is no National Waterbird Coordinator, so tapping into larger-scale national efforts is difficult. However, regional efforts show promise. The Midwest Secretive Marshbird Working Group provides useful support for its partners and may be a useful model to replicate in our region. Secretive marshbirds are among the most poorly monitored groups of birds in North America.

Recommendation: Continue formation of LMVJV Waterbird Working Group

Recommendation: Discuss need for "Southeast" Secretive Marshbird Working Group with partners and neighboring Joint Ventures

Conservation Tracking System

The LMVJV currently has no formal conservation tracking system in place. Partners are periodically asked to provide the JV Coordinator with accomplishments (acres, dollars), based on sideboards of geography (MAV and WGCPO), time span (one year), and connection to LMVJV objectives and priorities to meet USFWS reporting requests. The Management Board has determined that the "cost" in time and resources (JV Office and Partner staff) required to develop and maintain such a database outweighs the benefits of such information to the partnership's mission.

Recommendation: Status quo

Habitat Inventory and Monitoring Program

We currently do not have a habitat inventory and monitoring program for waterbird habitat. Ideally, we will implement a database that can track provision of secretive marshbird habitat on public land (similar to waterfowl and shorebird habitat). We are currently discussing developing our own classification of permanent emergent marsh in the MAV, as it seems that NLCD and NWI do a poor job of depicting this habitat in our geography.

Recommendation: Scope development of a secretive marshbird module to track King Rail habitat

Recommendation: Continue to develop and iteratively update classification of permanent emergent marsh habitat to assess secretive marshbird habitat

Population Monitoring Program

We currently do not have a population monitoring program for either secretive marshbirds or colonial nesting waterbirds. One identified LMVJV Science Need is to assess the need for a coordinated inventory of wading bird colonies.

Recommendation: The feasibility of surveying and monitoring wading birds in the MAV and WGCPO will be discussed with regional waterbird experts. If a coordinated inventory appears reasonable and feasible and other datasets are inaccurate, the LMVJV will form a working group dedicated to this task.

The LMVJV Wetlands Management Unit (WMU) Tool 2.0

The Water Management Unit Tool 2.0 has been created by the Lower Mississippi Valley Joint Venture to help management entities record and keep track of their management units. It also allows LMVJV partners to calculate available habitat energy potential for waterfowl and shorebirds.

Based upon input from the majority of JV partners and waterfowl managers, the WMU Tool now will track each habitat that occurs within a water management unit. Therefore, an important difference from the previous WMU Tool is that there now exist 3 separate and unique polygon layers to work with to provide your data: a water management unit polygon, a waterfowl unit polygon, and a shorebird unit polygon. Once you draw a water management unit polygon (or if a water management unit polygon persists in the database from previous data entry), a polygon template for defining the waterfowl habitat or shorebird habitat within that water management unit polygon is automatically created. You will need to use the polygon edit tools to more precisely define the distinct areas specific to each habitat within the water management unit polygon.

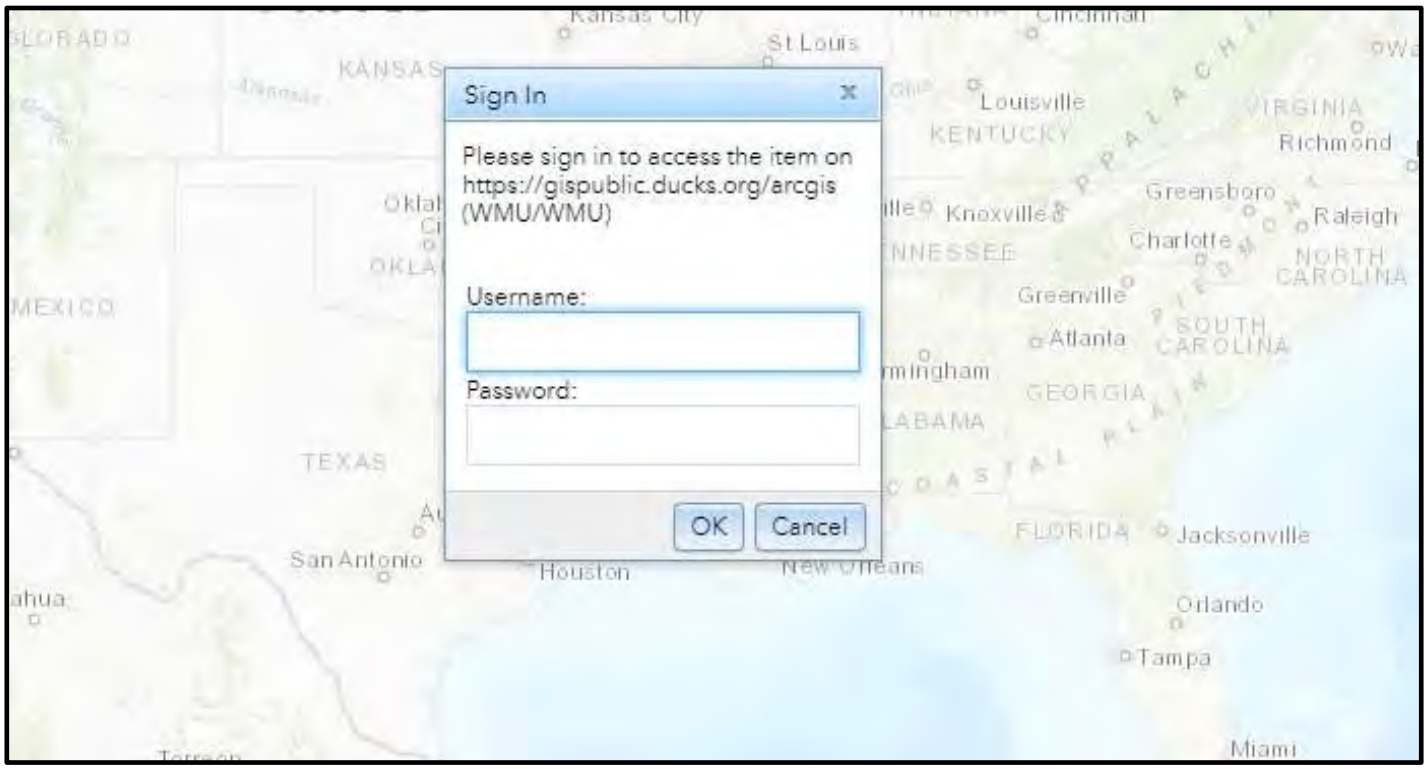
Before beginning the data entry or data editing process, it is EXTREMELY important to understand these definitions that are integral to the data collection.

- Water Management Unit (WMU) – a water management unit is any impoundment unit that holds water for waterfowl or shorebirds during appropriate seasons specifically due to the ***active, deliberate action*** to manipulate a water control structure of some kind to form a pool of water. ***In the Tool, the WMU Layer is represented with a purple outline.***
- Full-pool – the defined maximum extent of water that pools up from a water control structure prior to levees being breached or structures being topped. Further, as this is meant to define available waterfowl foraging habitat, do not include deep water (>18", 45cm) in the full pool water management unit boundary. Keep this definition in mind when delineating or revising a **water management unit** polygon.
- Waterfowl habitat polygons – should be delineated based upon each unique and distinct habitat within a fullpool water management unit polygon. (Previously, the WMU Tool contained one waterfowl polygon per impoundment, with the impoundment being defined by the majority habitat of that impoundment; this is no longer the case). Describe each water management unit with as many habitat-specific waterfowl polygons as appropriate; however, a waterfowl habitat polygon ***cannot*** extend outside of the full-pool water management unit boundary, as we are not including dry feeding as waterfowl habitat in this database. ***In the Tool, Waterfowl Habitat Layer is represented by a light blue polygon.***
- Shorebird unit polygons – should be delineated within a water management unit polygon to depict the total area of drawdown (the mudflat) that will gradually be exposed for shorebird management during the late summer, shorebird migration timeframe. This is not to include the mudflat normally exposed strictly by evaporation, but is to depict the area of annual ***active management*** for shorebirds. ***In the Tool, the Shorebird Habitat Layer is represented by a light orange polygon.***
- Management – the name of the management area / refuge (e.g., Yazoo NWR, Red River WMA, Duck Creek CA.) assigned to manage the waterfowl / shorebird habitat.
- Management unit – what you refer to the WMU as (e.g., Tolliver Bottom #3).
- Habitat type – the cover type vegetation or general condition of the waterfowl polygon can include the following… hardwoods, corn, fallow, forested swamp, millet, milo, moist-soil, mudflat, open-aquatic, reforested hardwoods, rice, shrub swamp, soybean, or other. Hardwoods refers to typical, largely mature bottomland forest tree species. Forested swamps refers to cypress-tupelo swamp and the like. Open-aquatic habitats refer to deep-water areas in pools that dabblers cannot use for foraging. Reforested hardwoods are young plantations of BLH species that have not attained maturity (i.e. producing mast); a minimal amount of red oak percentage will automatically be applied to reforested hardwoods, so you do not need to supply an estimate. Shrub swamp represents buttonbush habitat. "Other" habitats are currently not being tracked by this database,

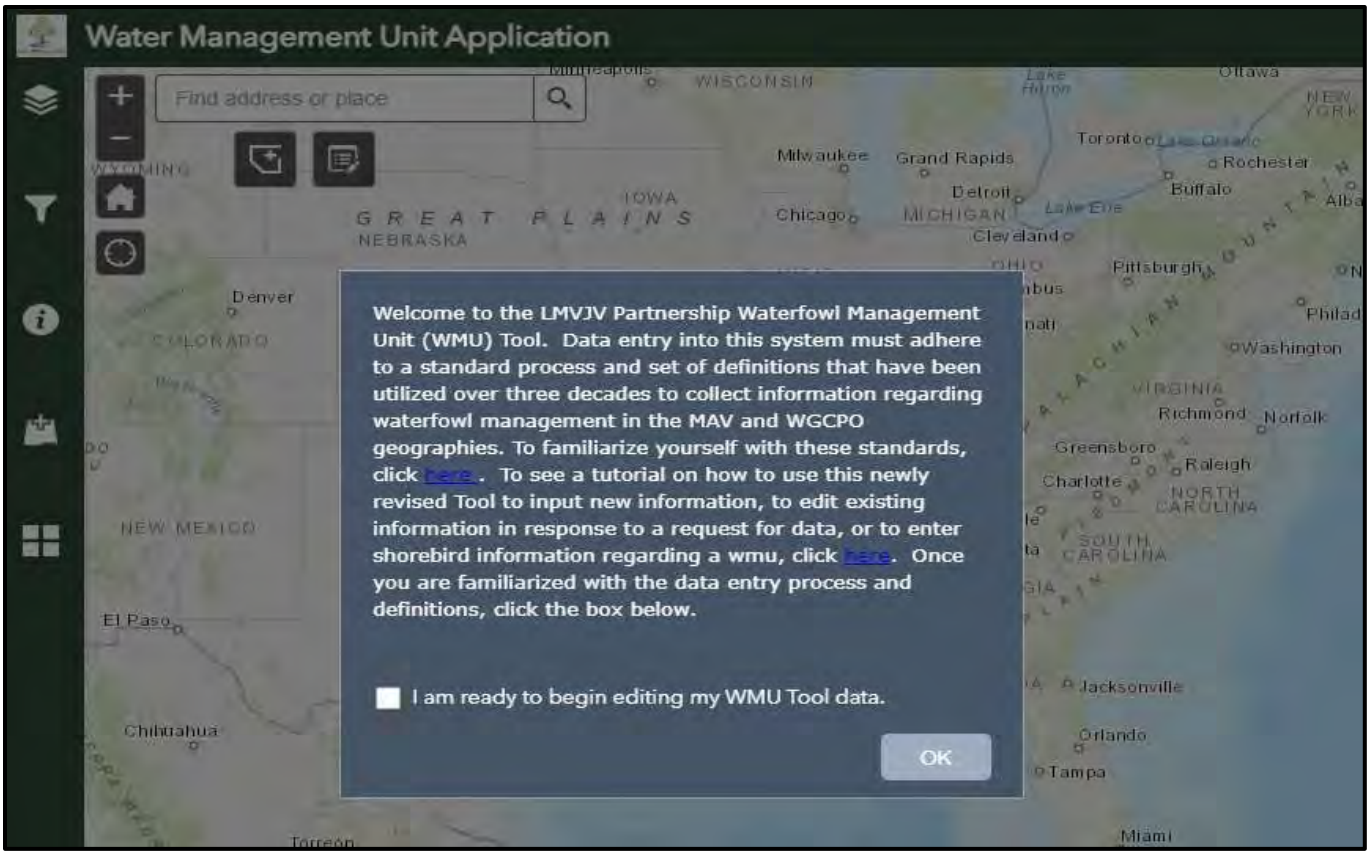
and, therefore, will be lumped into a single category. Contact Blaine Elliott with the LMVJV Office in Jackson, MS if this is an issue. [HabitatType] in the database Attribute Table.

- Harvest Percentage – refers to the percent of the crop cover type that will be harvested for that specific waterfowl habitat polygon. A harvest percentage should only be applied to agricultural cover type waterfowl habitat polygons. [HarvPCT] in the database Attribute Table.
- Oak Percentage – refers to the estimated percent of red-oak group tree species in the hardwood canopy of the unit. An oak percentage is only applicable for hardwoods cover type waterfowl habitat polygons. Only mature forest habitats should receive a Red Oak % estimation. [OakPCT] in the database Attribute Table.
- Moist-soil productivity – a relative measure of seed productivity of moist-soil habitats. Currently, the Tool tracks High, Medium and Low seed productivity, but this attribute will evolve over time. Only Moist-Soil habitat polygons should receive a moist-soil productivity estimation. [MoistSoilProductivity] in the database Attribute Table.
- Functional – is the wmu expected to be fully functional (will hold water) during the waterfowl season? If the answer is 'No', there is no need to delete the wmu from the Tool database. By setting the functional value to 'No', the wmu data is preserved in the database, but it will not be counted as a contributing waterfowl habitat for that season. Once it becomes functional once more, the wmu can be *turned on* again and it's DED contribution will be accounted for once again. A yes/no response is required. [Functional] in the database Attribute Table.

Sign-in screen when you first open the Tool. This is not ArcGIS Online credentials. These are created specifically for the application and provides specific users private access to data entry and editing to their assigned wmus. Your username ensures privacy for the records that you provide to the Tool database. No one can see or edit your data but you can review and alter your data until the data collection period is completed. If you forget your password, there is a password recovery system on the Tool front page. Please contact mmitchell@ducks.org if you need assistance with it.



Once you have read and become familiar with the WMU Tool definitions and the data-entry process, please accept the terms of use/compliance to enter or edit data in the application by clicking in the "I am ready…" box. ***Don't try to add data or edit data until you are fully familiar with the definitions and the process steps.*** The WMU Tool works similarly to what you've likely used before with ArcGIS, but it is NOT exactly the same and you will not be able to easily and successfully complete the process until you have fully familiarized yourself with the steps and the definitions. Just a friendly warning…



Become familiar with the **User Interface**.

1 – Layer list/Table of Contents.

2 – Data Review Filter for Reviewed/non-Reviewed habitats.

3 – Information about the application's user interface.

4 – Upload Data widget allows upload of local data as an input into Add WMU Tool (see instructions below…).

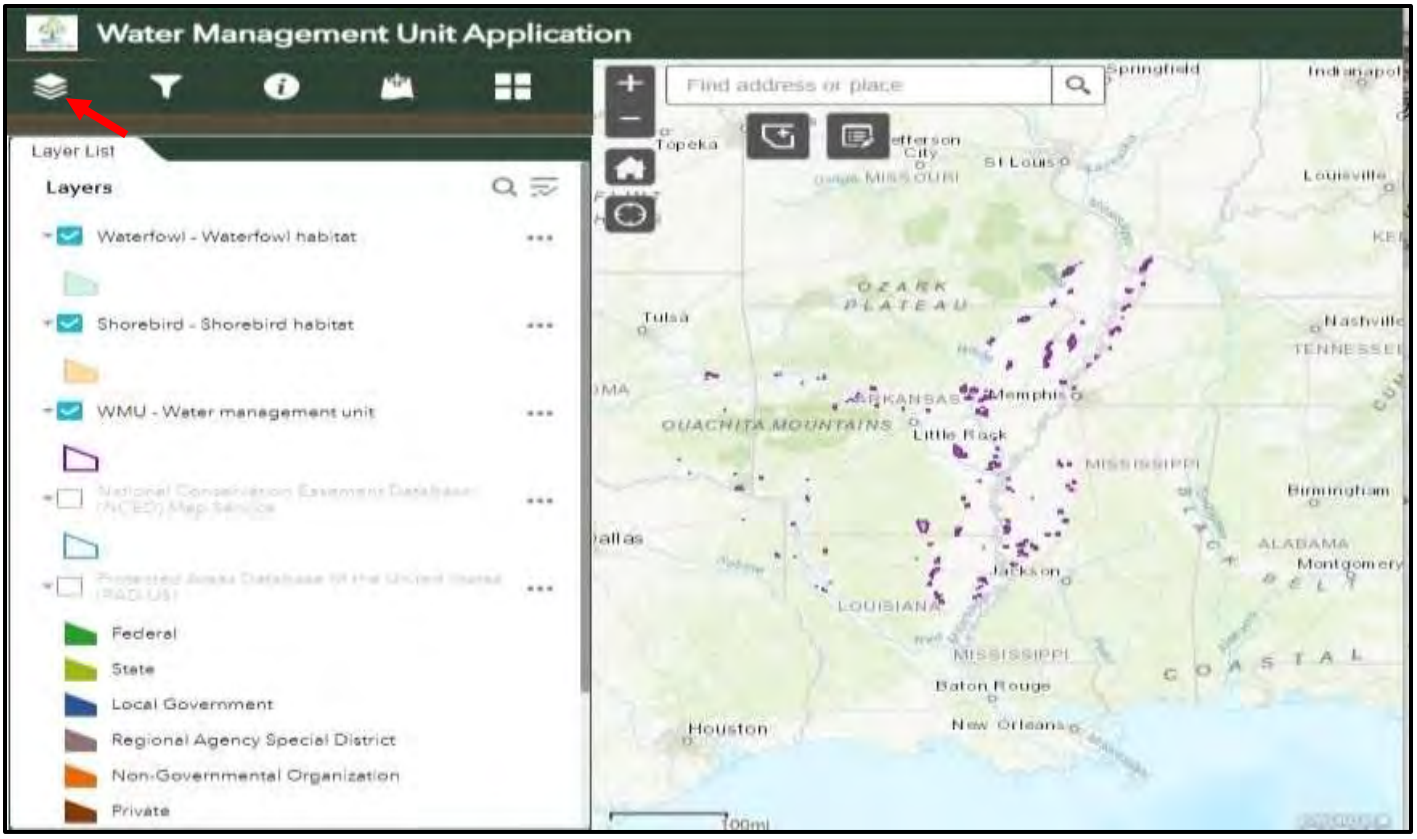
5 – Basemap Gallery of background images that can be add to the viewer.

6 – Add WMU button is used to add a new WMU polygon. It also creates Waterfowl and Shorebird template features with the same geometry.

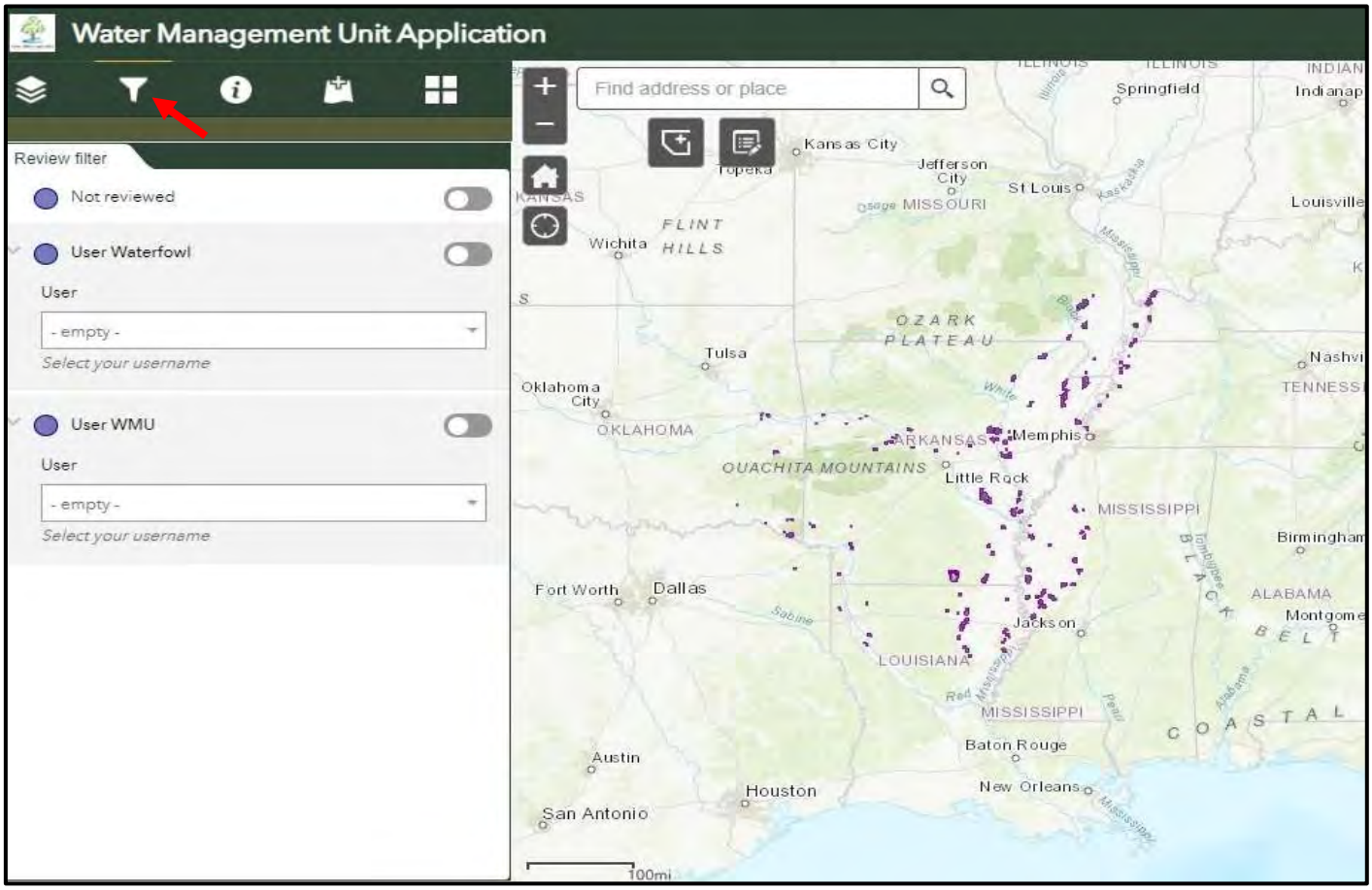
7 – Edit button for adding, delete, or cutting up polygons. Also, to be used for editing attribute data.

8 – Find address window / zoom in – zoom out tool. You can also use your mouse scroller to zoom in and out. There is also an address window that allows you to locate 'some' named locations.

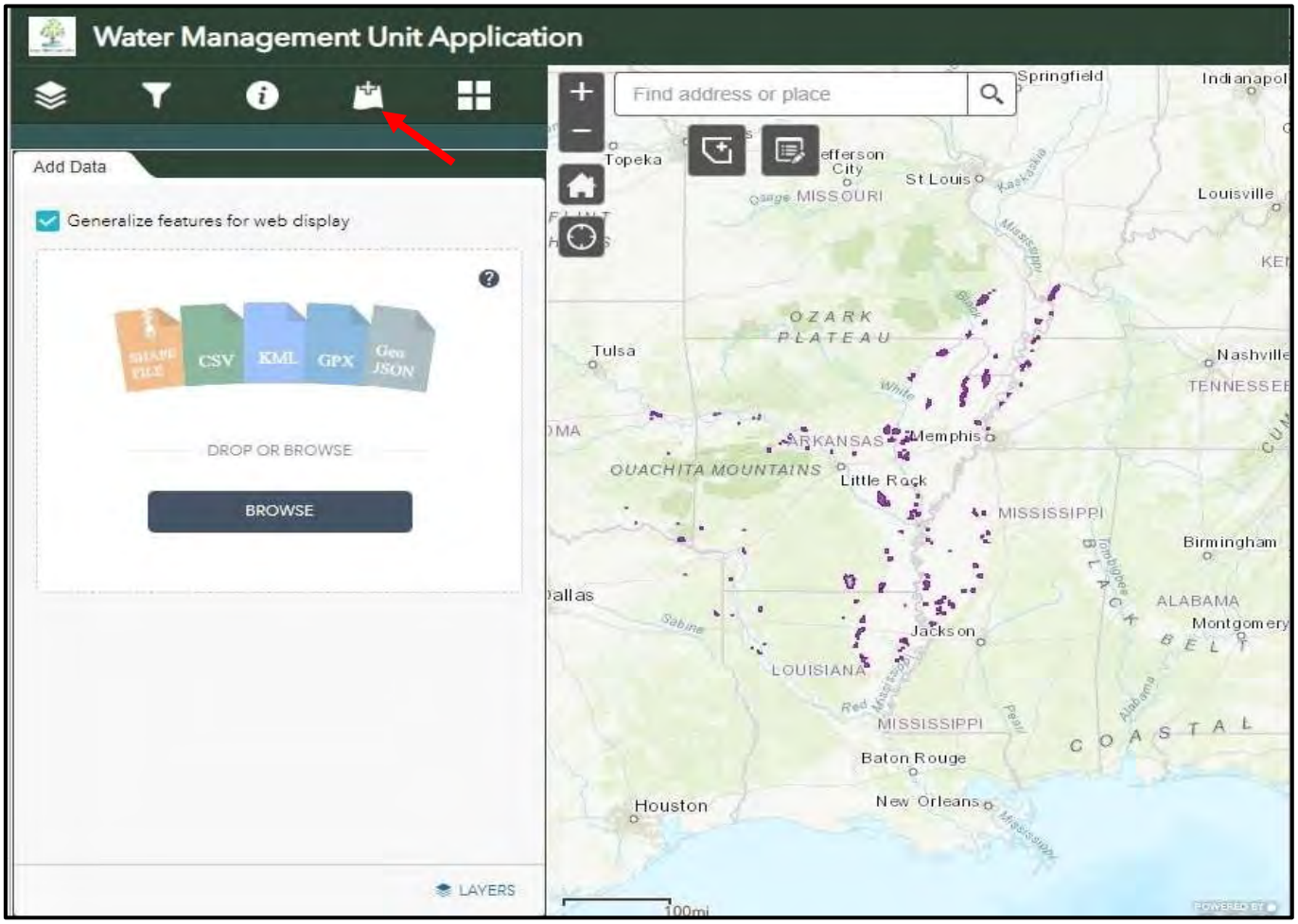
Layer List – contains all the vector data that you can use to enter your data.



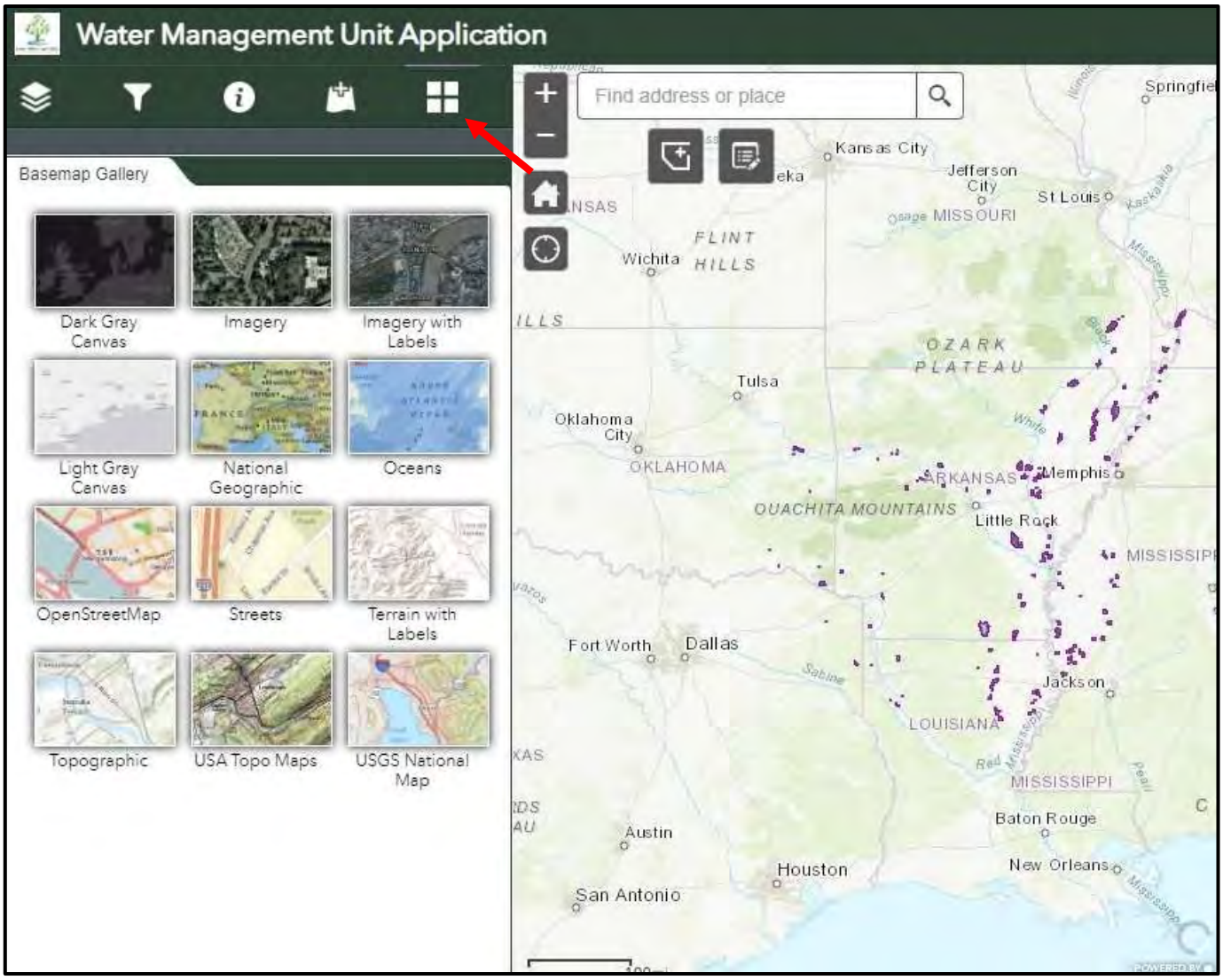
Data Review Filter – allows a user to show only polygons that need review as well as filtering waterfowl and wmu polygons by user. Each habitat in a wmu should be reviewed during each data collection period, even if nothing has changed from the previous year's management prescription.



Upload (Add) Data – zipped shapefiles, KMLs, GPX points, etc. can be uploaded to the database to use instead of newly creating water management unit or waterfowl habitat polygons, BUT ONLY IF those data are defined by the same definitions that are required by this application. Please refer to the user instructions and definitions before adding any data created outside of this Tool.

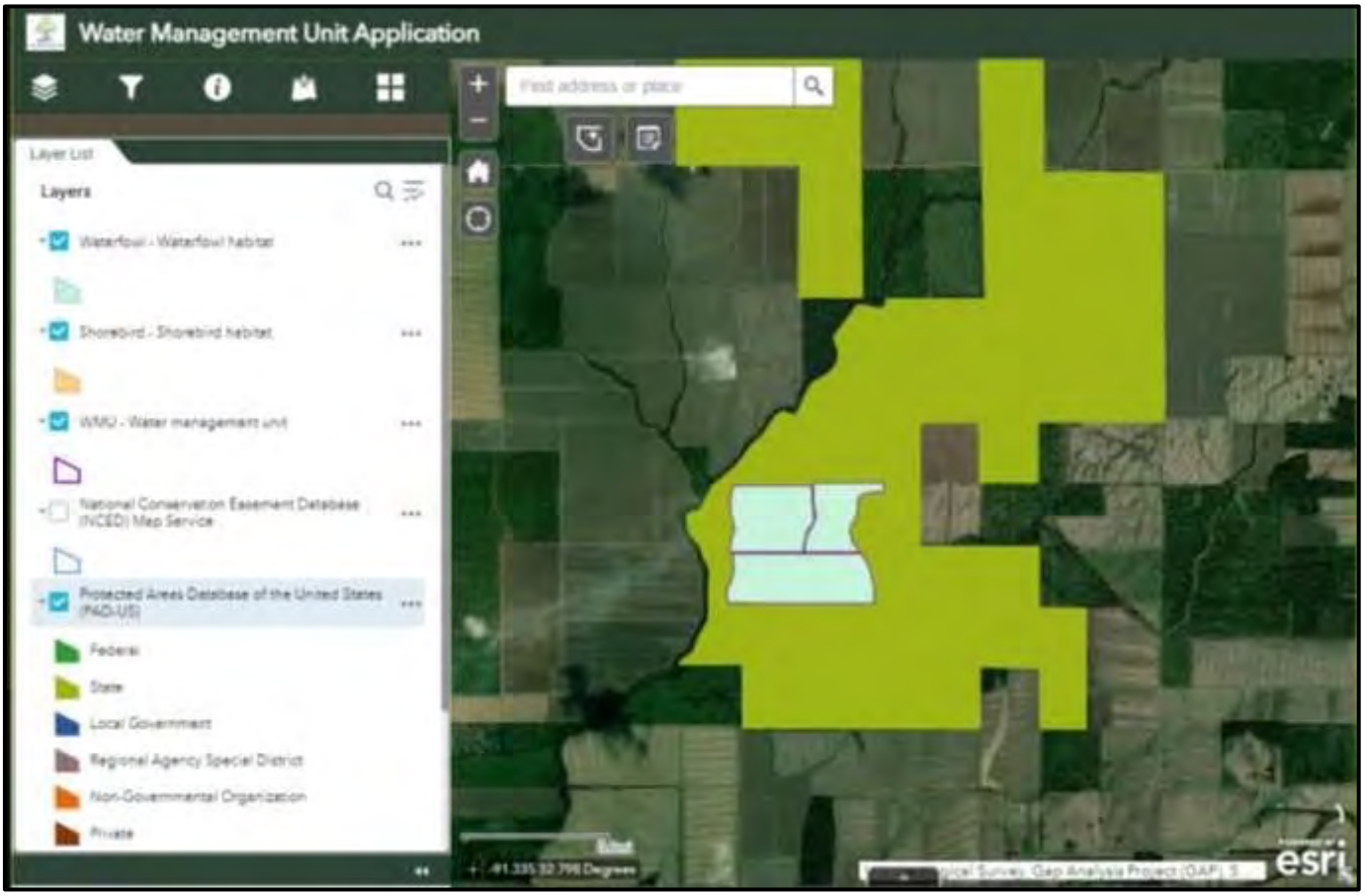


Basemap gallery – background imagery can be very useful for seeing the soil waterline for many habitats and imagery is also useful as a location reference.

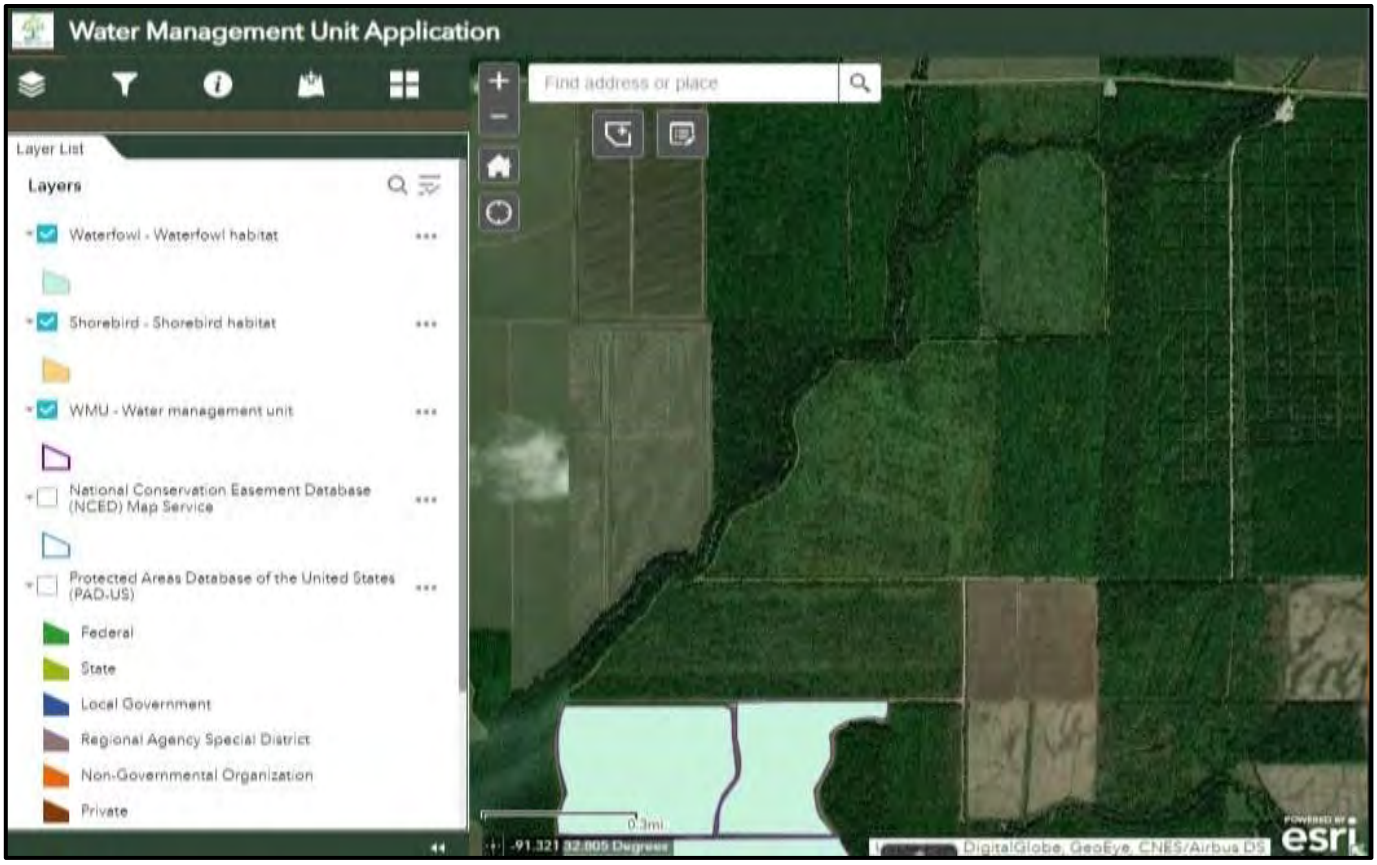


To begin the data reporting process:

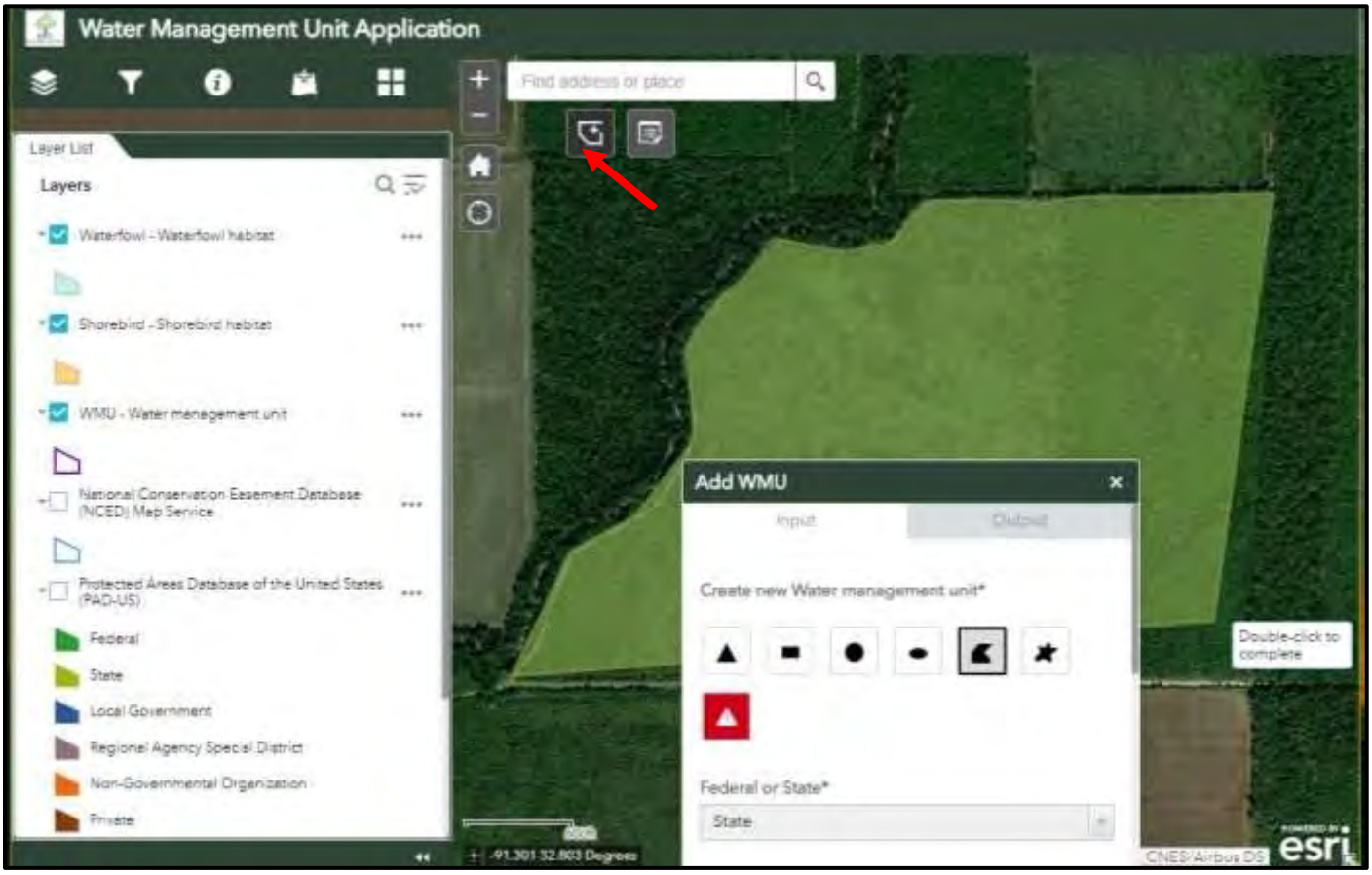
Click on the NWR and/or WMA data, the 3 WMU Tool data layers, and a basemap that you might find useful and Zoom to the proper managed area in order to prepare for adding / editing waterfowl or shorebird habitat data using the Find Address window, the zoom tools, or your mouse's scroller.



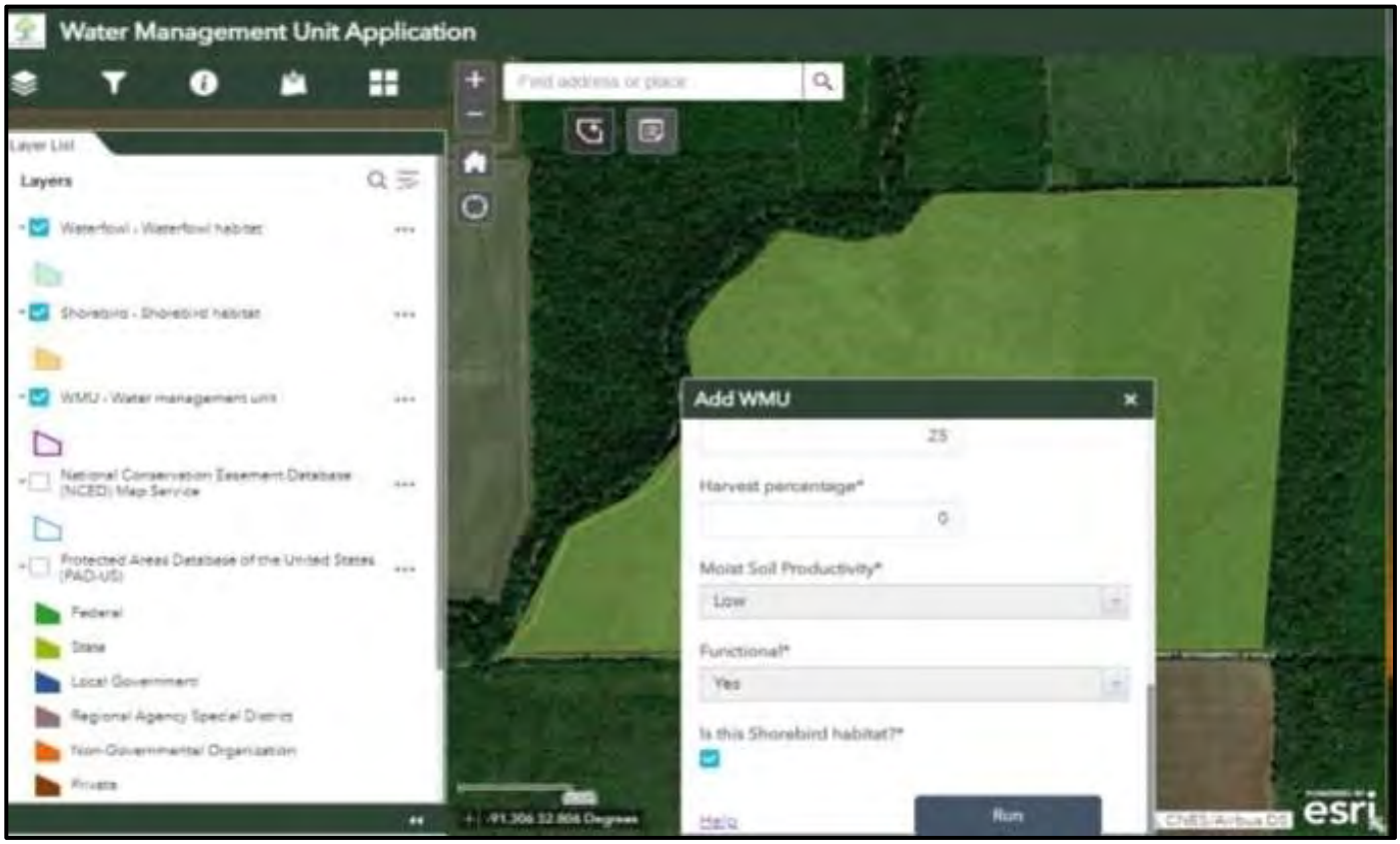
To create a new WMU polygon: Zoom in tightly in order to create as accurate representation of the water management unit as possible.



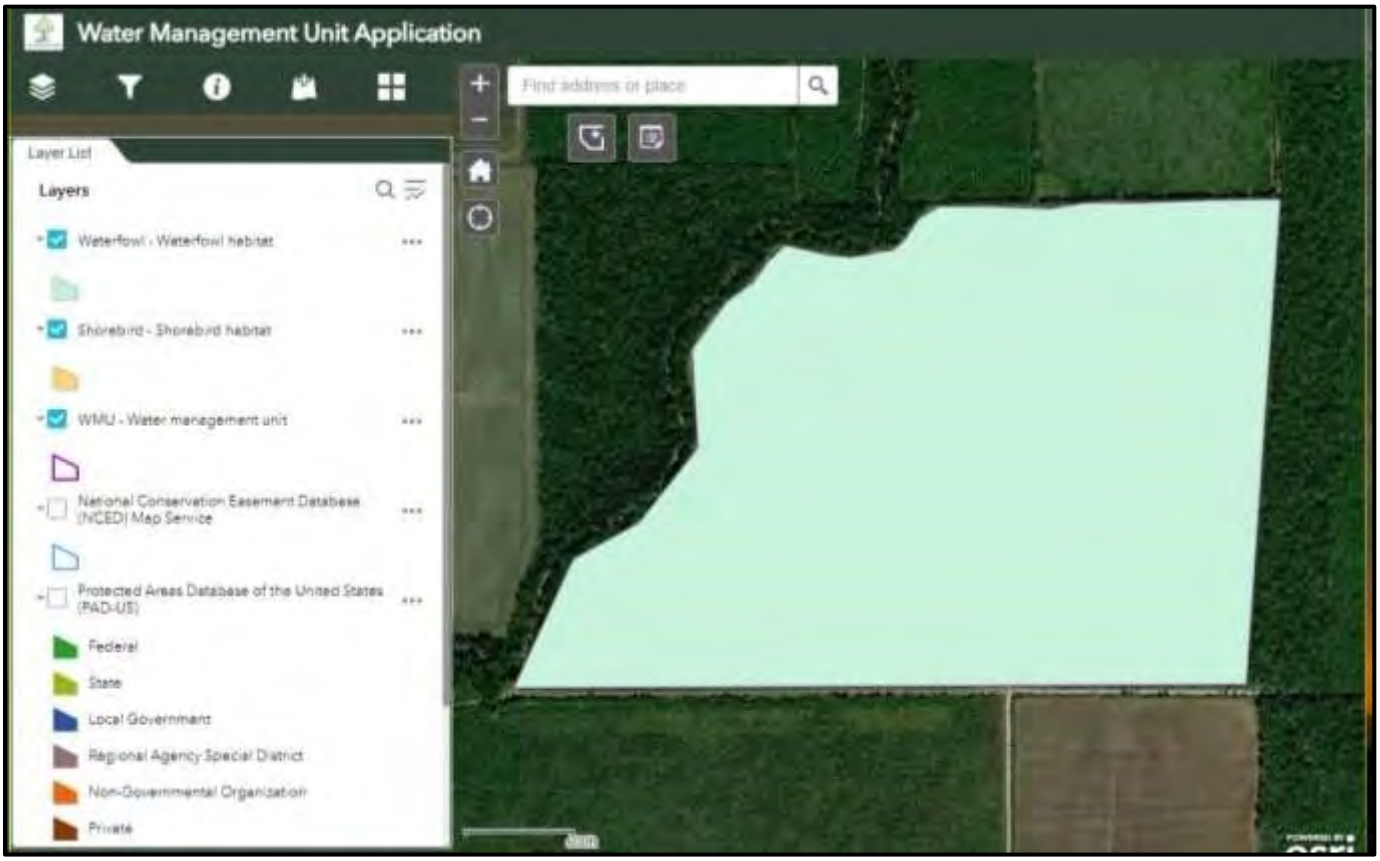
Click the ADD WMU button. Select the polygon tool from the shape tools available and use the mouse to click in points to represent an accurate full-pool boundary (see definitions page) and double-click to complete the polygon. If you want to delete your work before completing the polygon, simply re-click the polygon tool and start again. If you want to delete a completed polygon before continuing, click the red Delete button.



Once you have completed your wmu polygon, scroll down the Add WMU window and complete the attributes for the principal habitat that covers the greater portion of that wmu (this can be altered later) and whether the unit is expected to function this season. Also, include whether this unit is actively managed for shorebird habitat during summer-fall shorebird migration. TIP: Once you fully expand your Add WMU window or your Edit window, it will stay that way from then on.



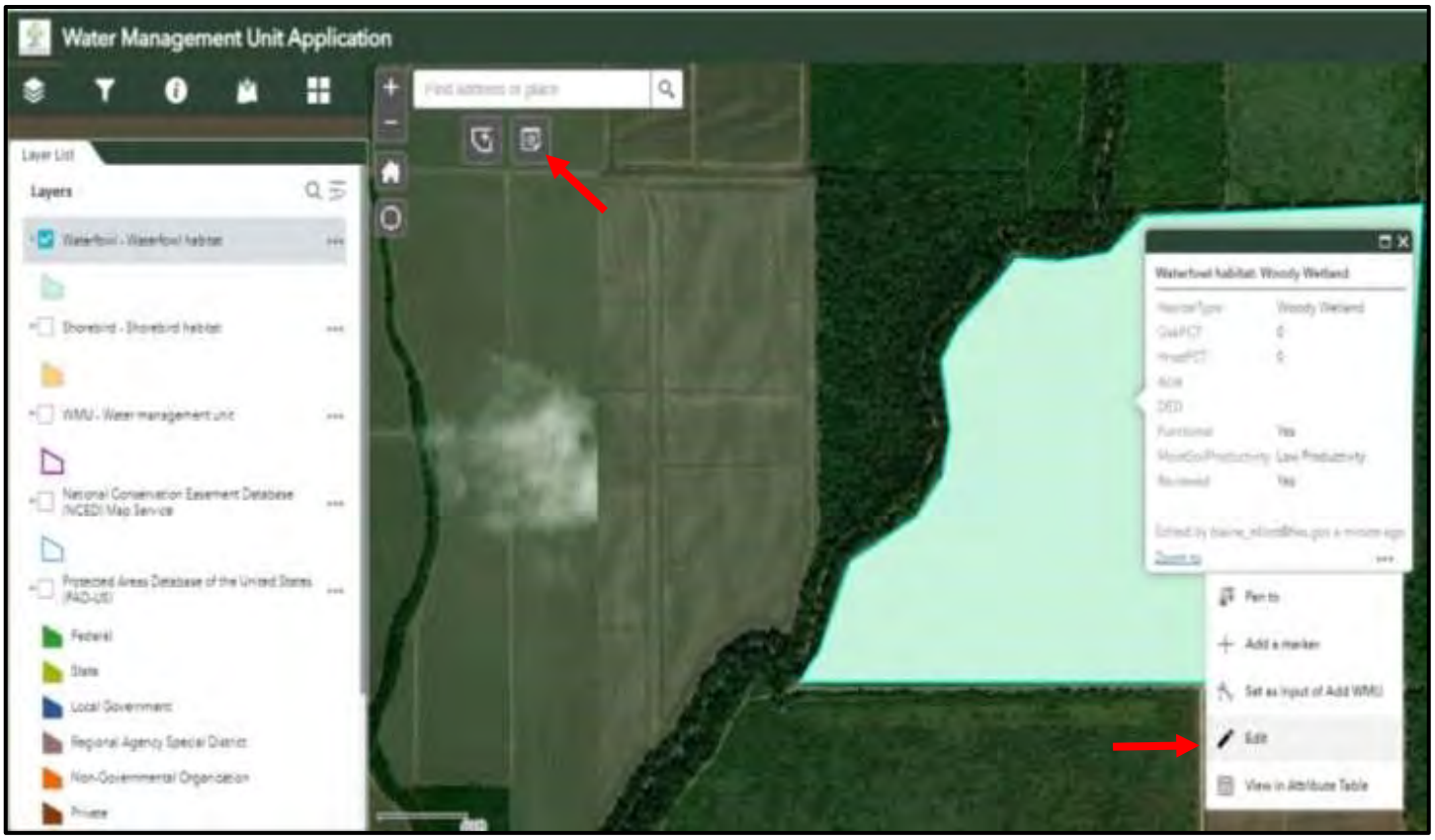
When you click Run, you will create up to 3 separate polygons in the 3 WMU Tool layers (waterfowl, shorebird and WMU) that will be used for data reporting. This will take a few moments and the Add WMU tool window will switch to the OUTPUT tab as it is processing. Once the upload process is completed, change the tab back to INPUT and click the red Delete button to remove the polygon from the screen (this simply removes the input layer from your view screen, so that you can see the new data that you added to the Tool database). Finally, zoom up and down slightly with your mouse scroller (or click them off and on again) to return all 3 layers that you've now created and successfully added.



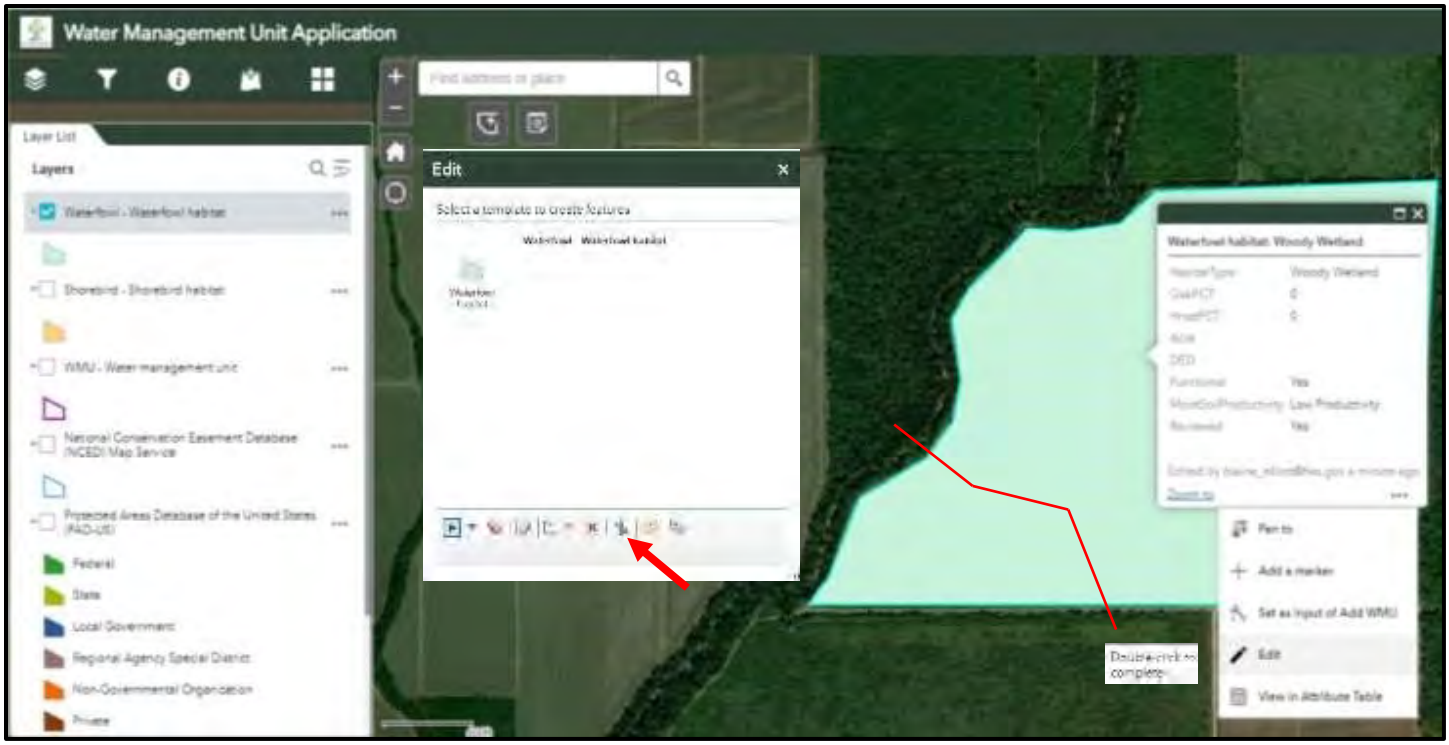
Check to be sure all 3 are created by clicking on and off of each layer in the Layer List **To edit newly created waterfowl habitat template into waterfowl habitat polygon data:**

NOTE: When you edit data, you are editing every data layer that is clicked on and visible in the Layer List. **Therefore, be sure to turn off the WMU layer and Shorebird layer when editing Waterfowl data, and vice versa.**

With only Waterfowl layer checked on and visible, select the waterfowl polygon (the boundary will change to blue) you wish to edit and then click Edit Data (using either the EDIT DATA button or the ellipses (…) drop-down option; both options are displayed in the image).

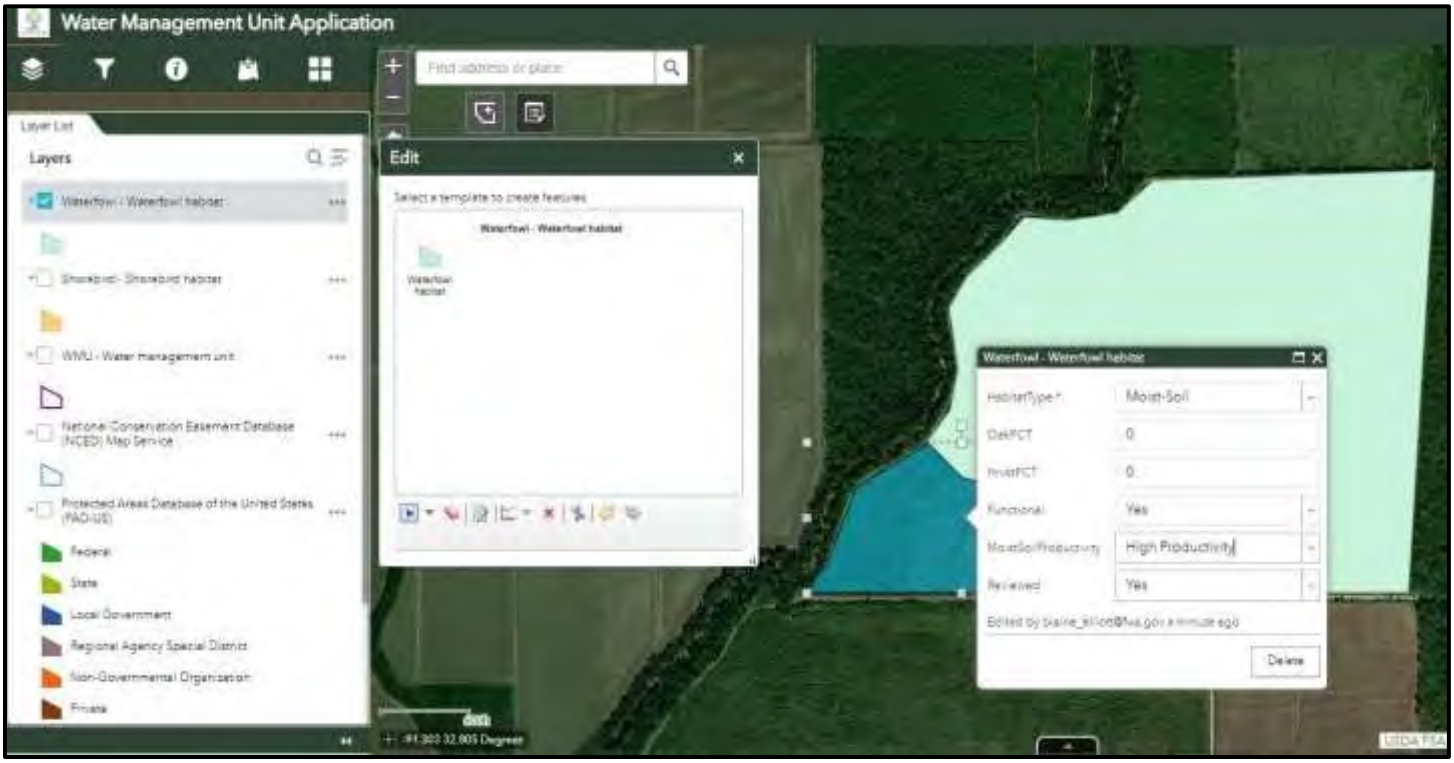


Choose the Cut Tool (scissors) to make a cut that subsets the Waterfowl polygon into habitats. To do this, start with the first click outside the polygon, then click inside the polygon to trace the habitat edge, double-clicking outside the polygon to complete it. NOTE: if you need to restart the edit, select the Cut Tool again BEFORE double-clicking. (Once you double-click, the edit is done).



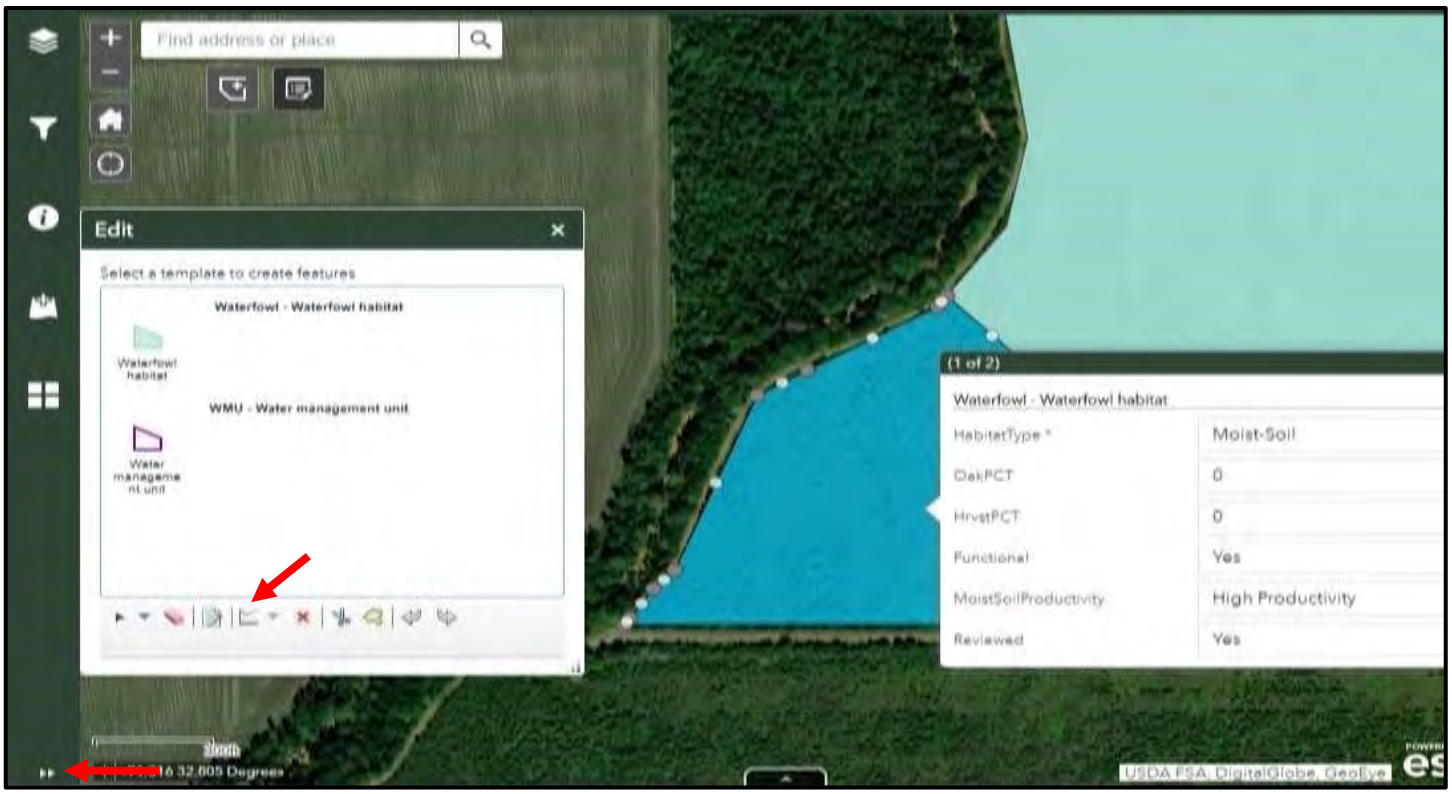
Tip: If the Edit window is in the way of the area in which you need to edit the polygon or for which you need to see underlying habitat, you can close the window and still continue to edit the polygon on the Tool screen.

Edit this new polygon's management info by clicking on the new polygon and completing the information in the pop-up window. **DO NOT try to estimate any Acres or DED values**; these will be calculated by the database on its own. Agricultural habitats should receive no Red Oak %. Hardwoods should not be given a Harvest %. Only Moist-Soil managed polygons should receive a moist-soil productivity estimation.



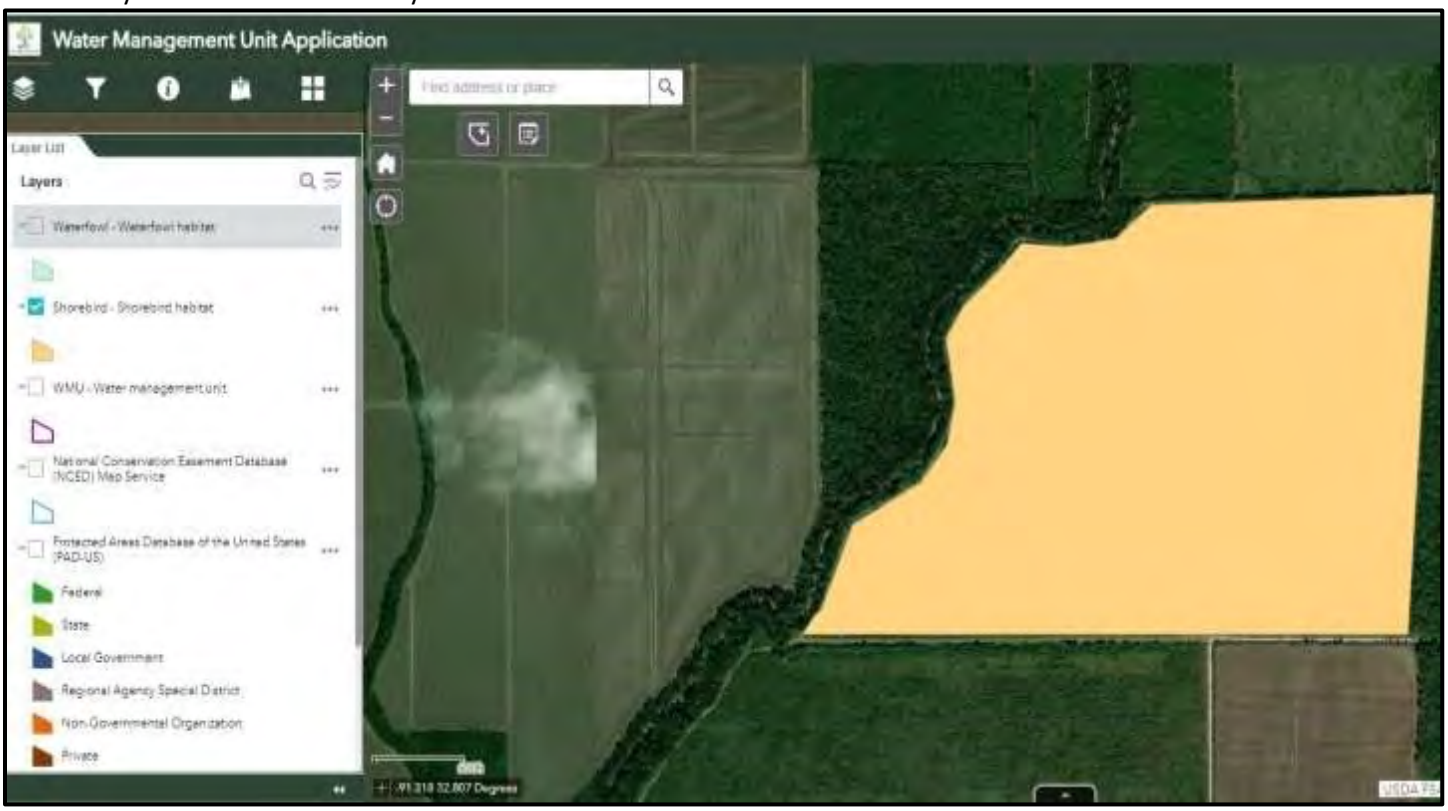
Continue this process until all of the impoundments habitats have a representative polygon with current year management information included in the WMU Tool.

You can also edit the vertices (click points) of a polygon individually, to provide a more detailed polygon refinement. Select the polygon of choice and then close the habitat attribute window. Your selected polygon should turn blue. Click the polygon again until the polygon vertices appear (again, you can close the habitat window if it is in the way and still continue to edit the vertices). You can drag and drop each vertex to where you would like to relocate it. Again, zoom in closely for greater accuracy for changing the shape of the object. Once you have relocated all vertices to their revised location, click to close the Edit Tool window and all your changes will be saved. NOTE: I have closed the Layer List window by clicking on the Show / hide side toolbar option in the lower right of the user interface window.

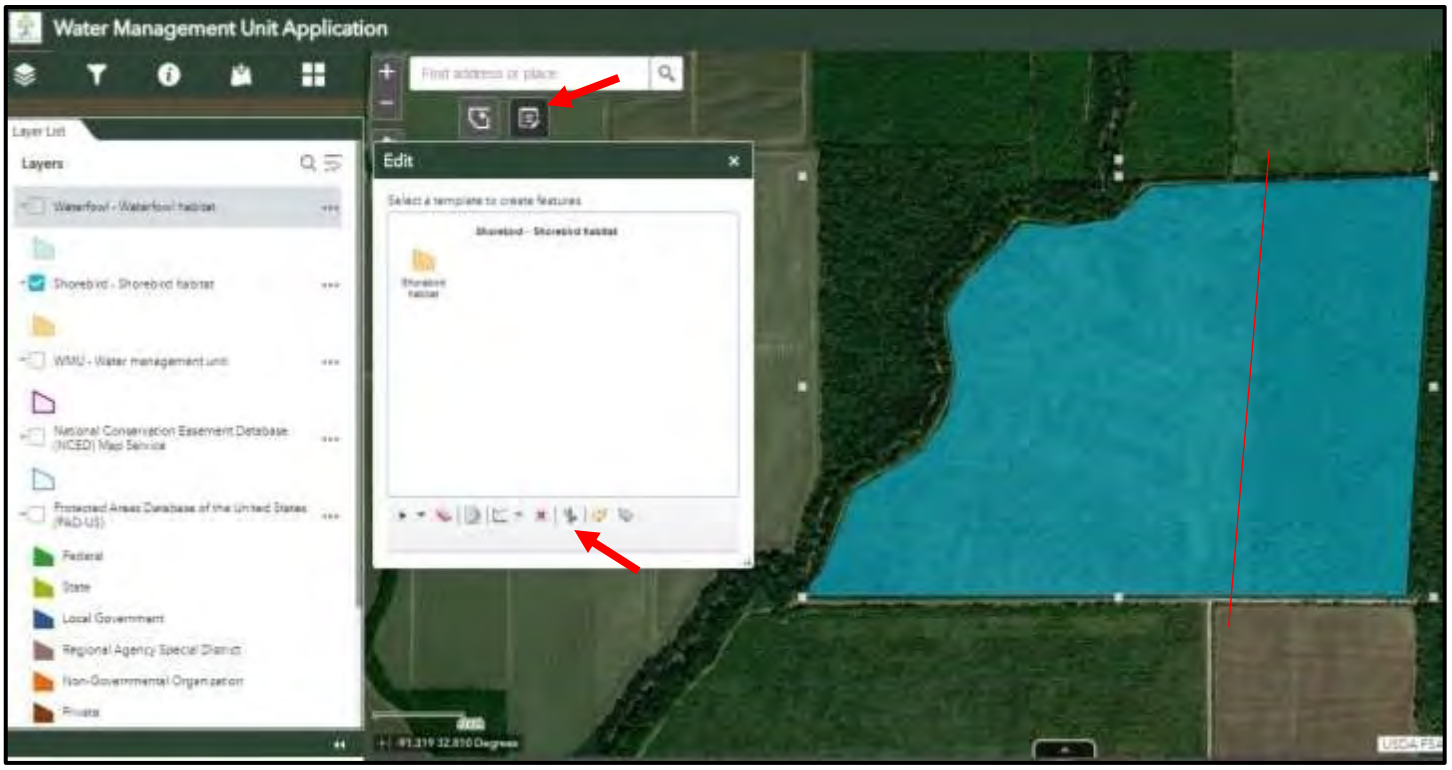


To edit Shorebird habitat info:

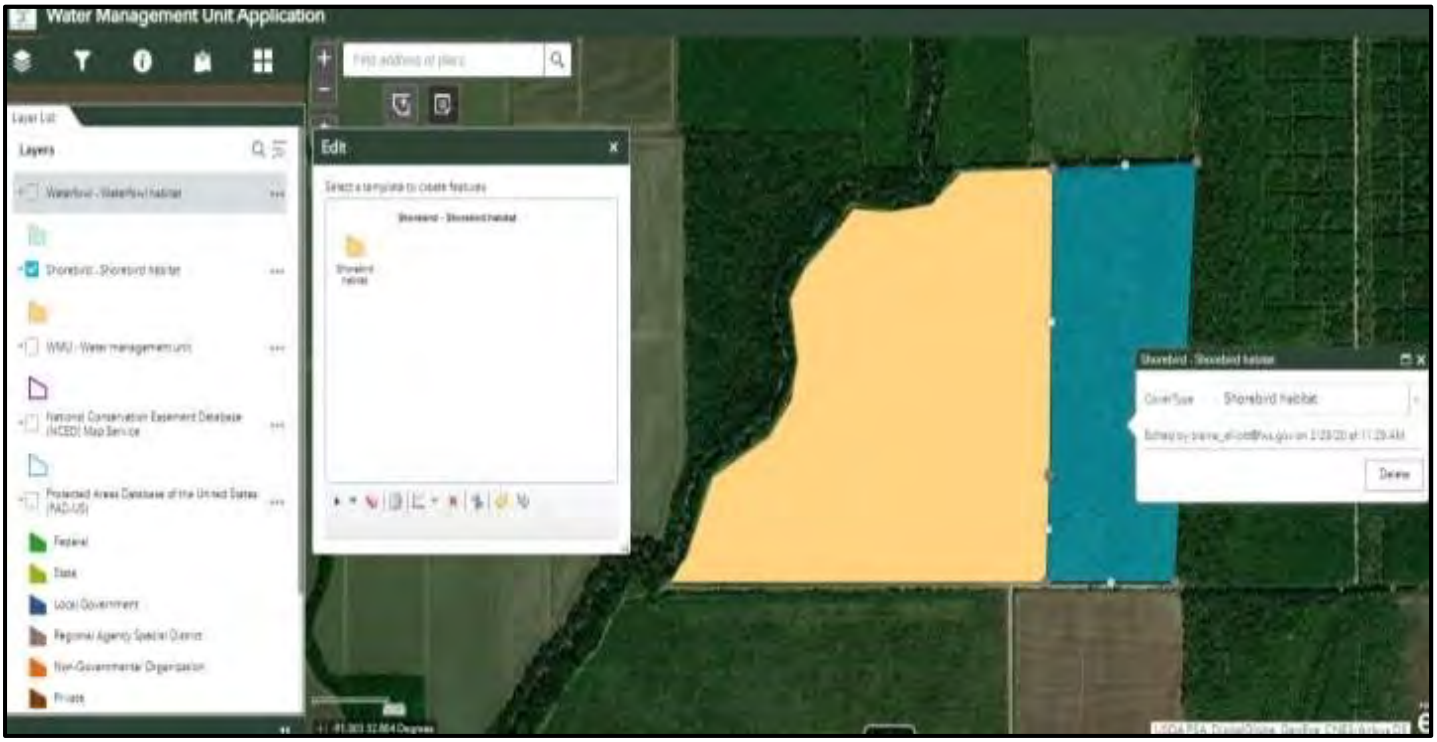
Once all waterfowl habitats are defined, you should then define your Shorebird management zone for that impoundment (assuming you created a template for one when you created your WMU polygon; see above). Click off the WMU polygon and the Waterfowl Habitat polygon layers in the Layer List and click on the Shorebird polygon layer. This will allow you to view and edit only the Shorebird data.



As previously, click on the shorebird habitat polygon and then select the Edit widget. Use the Cut Tool to cut subset the WMU polygon into shorebird and non-shorebird habitat by delineating the active management drawdown zone (see definitions, if needed).



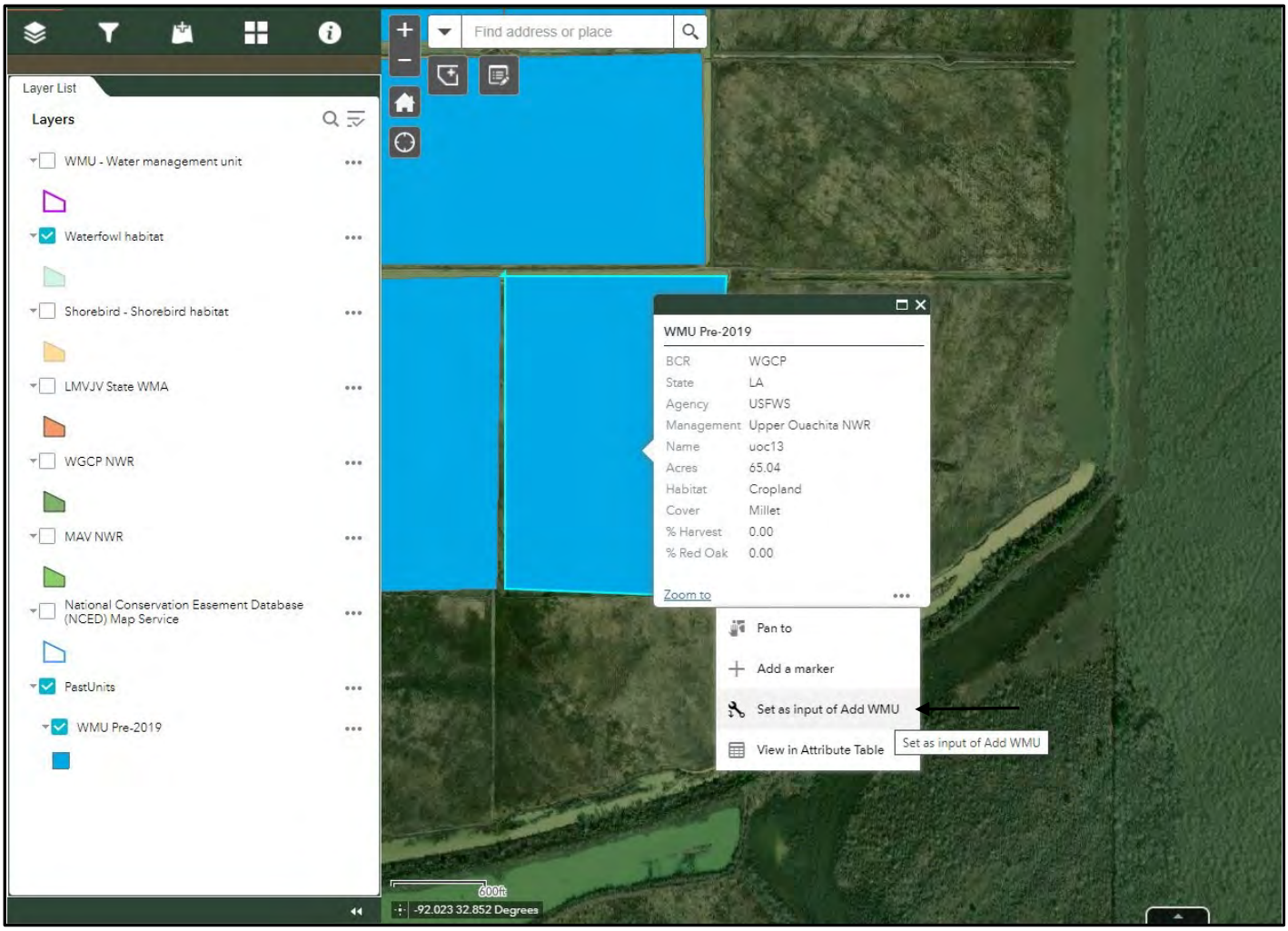
Be certain to click on all sections of the WMU polygon to make sure each is correctly defined as either shorebird or nonshorebird habitat.



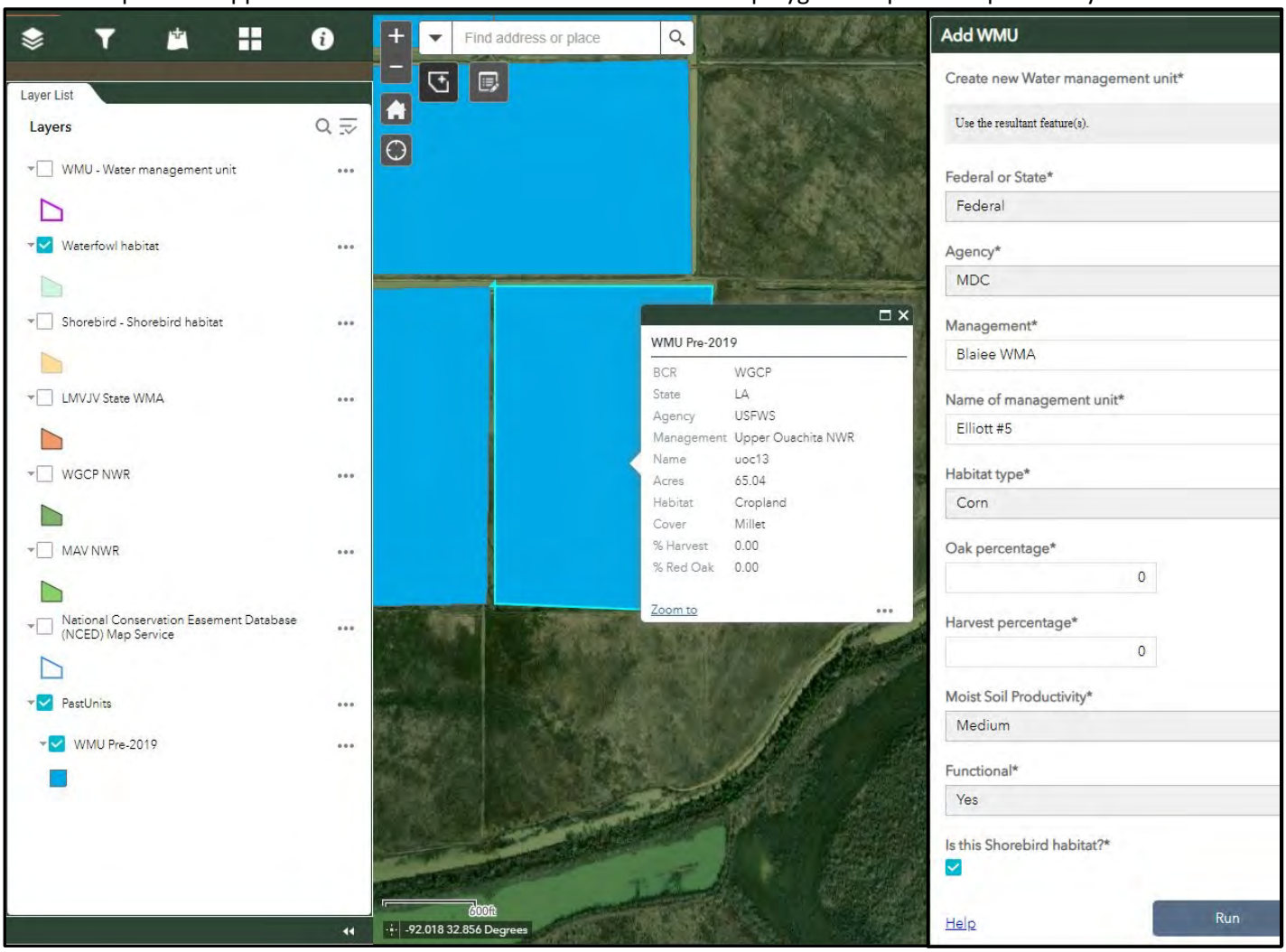
To copy a WMU polygon from previously archived data and add it to the WMU Tool as new data:

We realize that delineating waterfowl habitat polygons on every WMU that you manage can be a daunting challenge. There is a way to use WMU full-pool polygons previously entered in earlier data collections and add them to the new data process that will enable you to quickly create your new waterfowl and shorebird habitat templates. With all 3 WMU Tool layers (WMU, waterfowl and shorebird) clicked on and viewable, also click on the Past Units archived WMU data in the Layer List. Zoom to the polygon you would like to copy and add as new data. Review it to be sure it accurately represents the full-pool boundary (if it does not, go back and create this WMU as instructed above).

Click on the WMU polygon and click the ellipsis (…) in the lower right corner of the pop-up window. Select Set as Input of Add WMU.



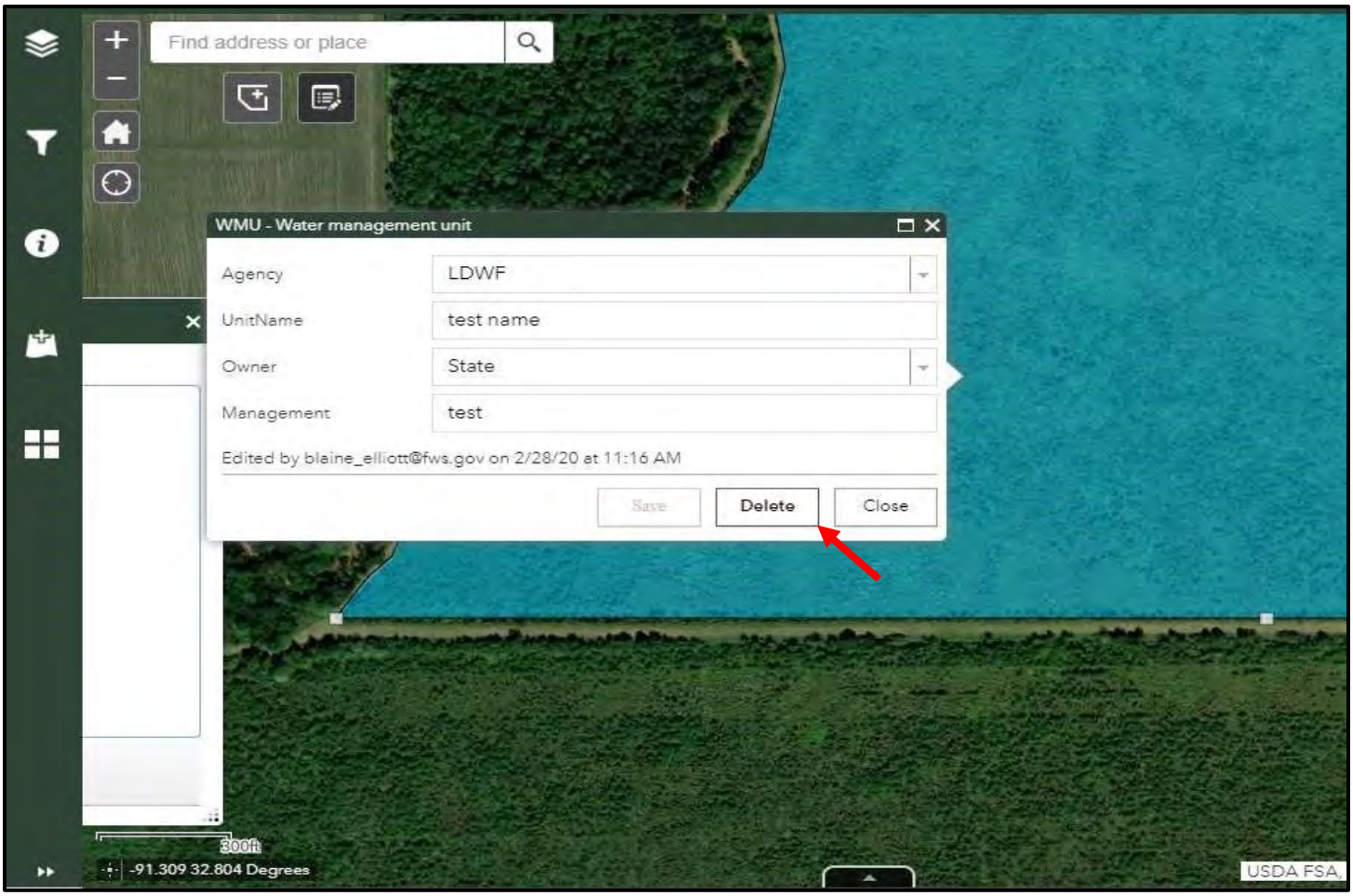
Fill in the WMU attribute info as you did for a new wmu polygon (see instructions above). Run the input process to Add the wmu. Once the add process is complete, switch from output to input and click off and on the 3 layers so that they the new inputs will appear. Edit the waterfowl and shorebird habitat polygon templates as previously instructed.



To change the shape of a persisting WMU impoundment polygon (change the full pool definition) and habitats:

Sometime management conditions change; a levee could irreparably breach or new water control structures provide substantially greater control of water such that the previous full pool definition is “permanently” altered. Said another way, the habitat polygons should always lie within the Water Management Unit polygon and when this polygon changes, the change affects the habitats within as well. To make such a change in the WMU Tool, this will require deletion of the persisting polygons in the WMU Tool, since changing the full pool definition will also change the waterfowl habitat and potentially the shorebird habitat polygons.

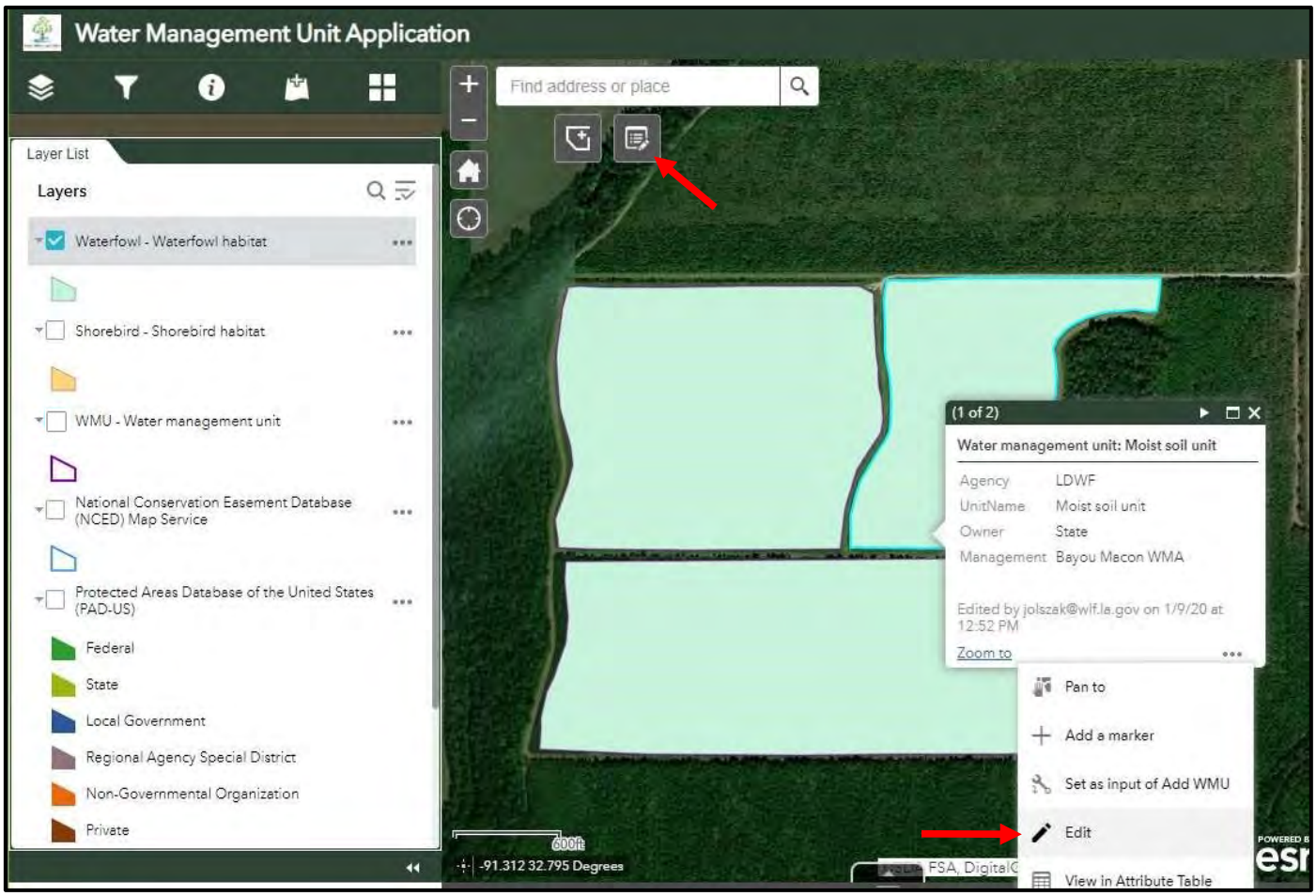
Select the polygon that needs to be deleted and then click the Edit tool widget. Then click within the polygon again; the polygon will turn blue and the attribute table will pop up. Click the Delete button and the selected polygon will disappear.



Continue to delete polygons from all layers that need to be removed and then follow the instructions for creating a new WMU polygon above.

To edit a persisting waterfowl habitat polygon management attribute info (no shape changes):

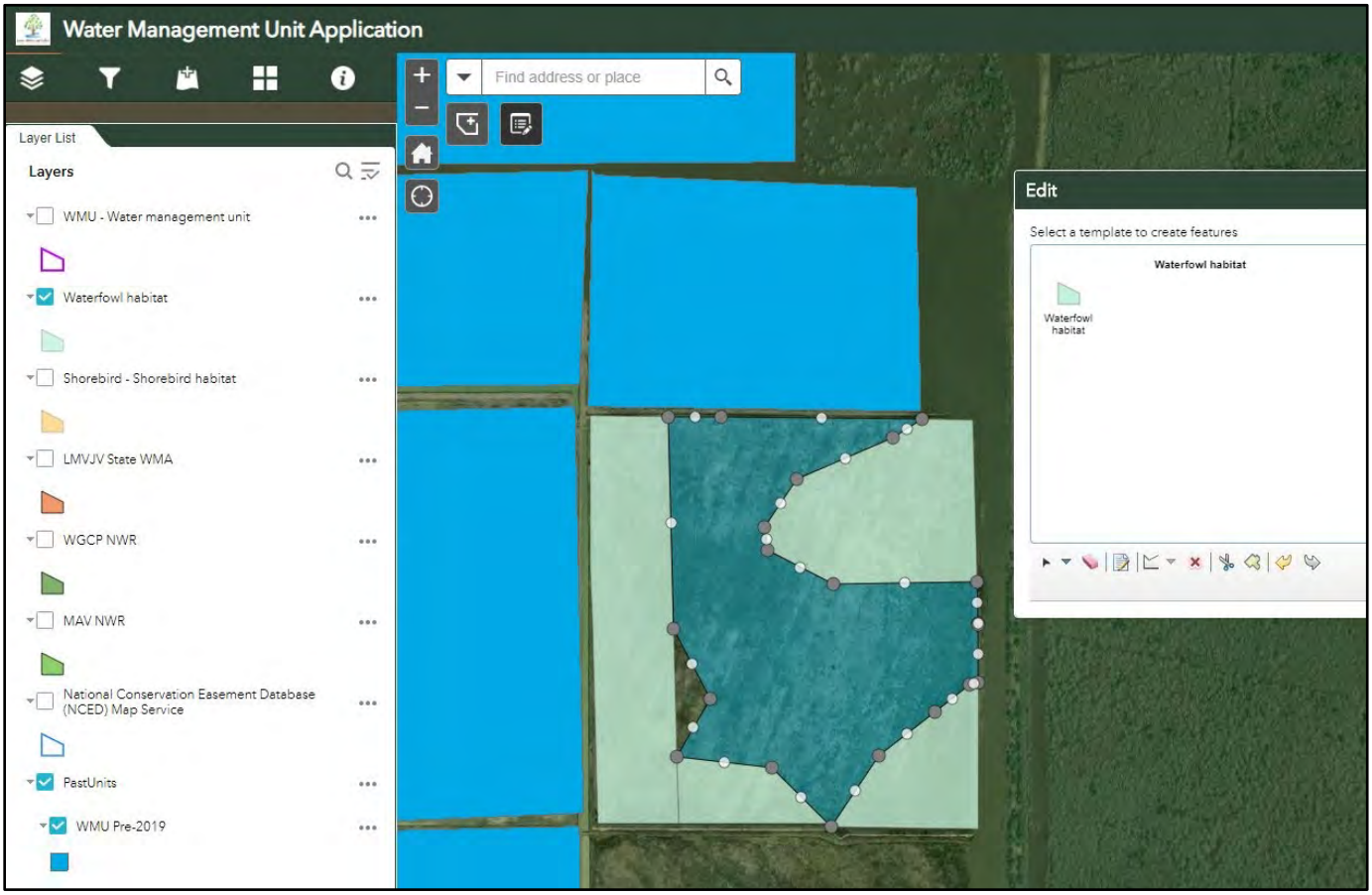
If all you need to do is to update the management info (attribute values) in the WMU Tool for a waterfowl habitat polygon – meaning the habitat polygons are correctly shaped, but there was either a change in the management prescription from last year's data or the prescription remained the same as the previous season, but you need to certify that this habitat record has been reviewed and is correct as-is – you can simply update the management attribute info,



as needed. Be certain that only the Waterfowl habitat layer is clicked on in the Layer List. Click on the polygon you want to edit and then select the Edit Tool. The attribute table will appear with previous management information. Edit as needed to update. Be sure to check the Reviewed box so that we know that the data information is approved for the current season. The changes will automatically update the Tool data tables.

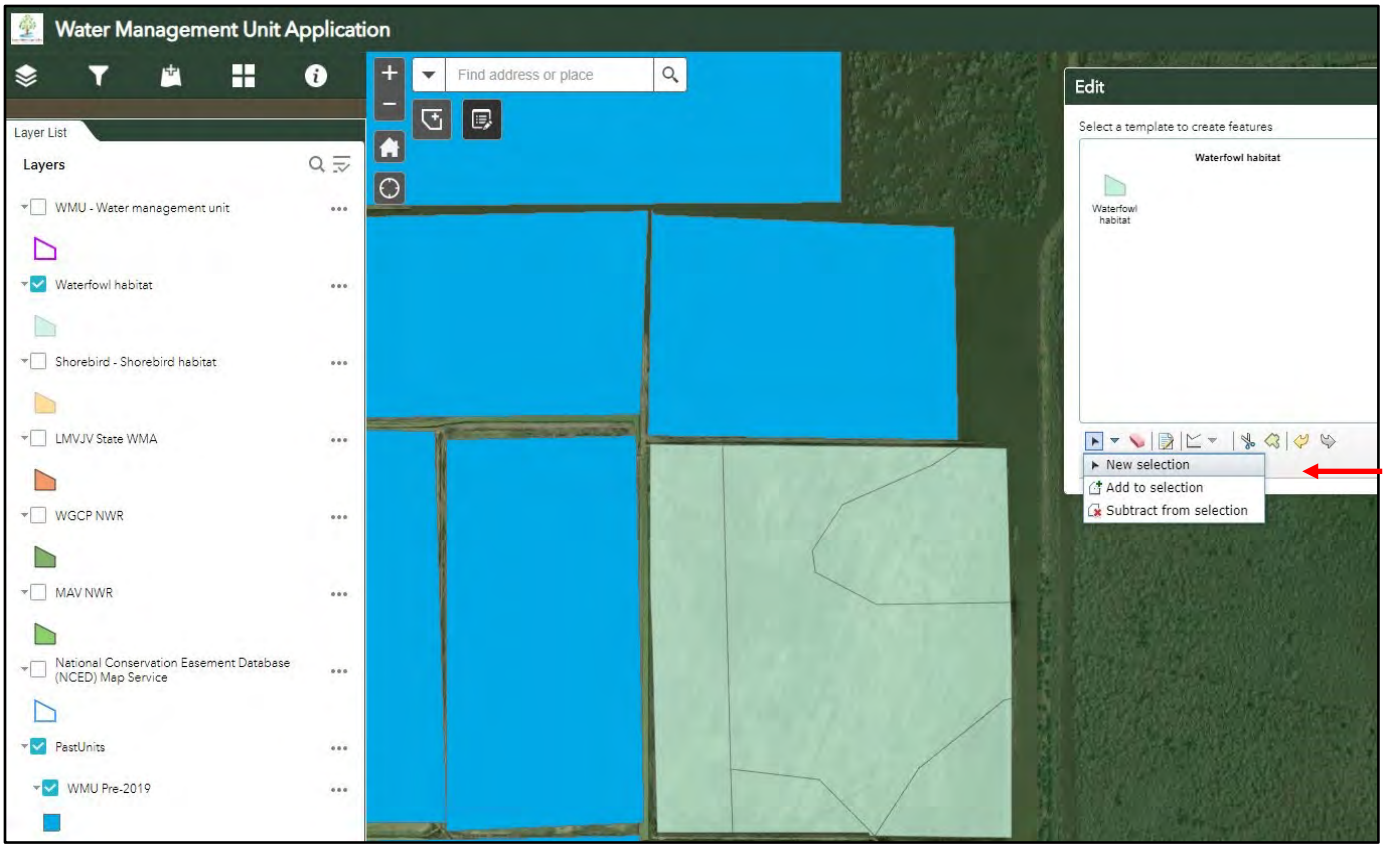
To edit a set of persisting Waterfowl Habitat polygons within an unchanged WMU polygon:

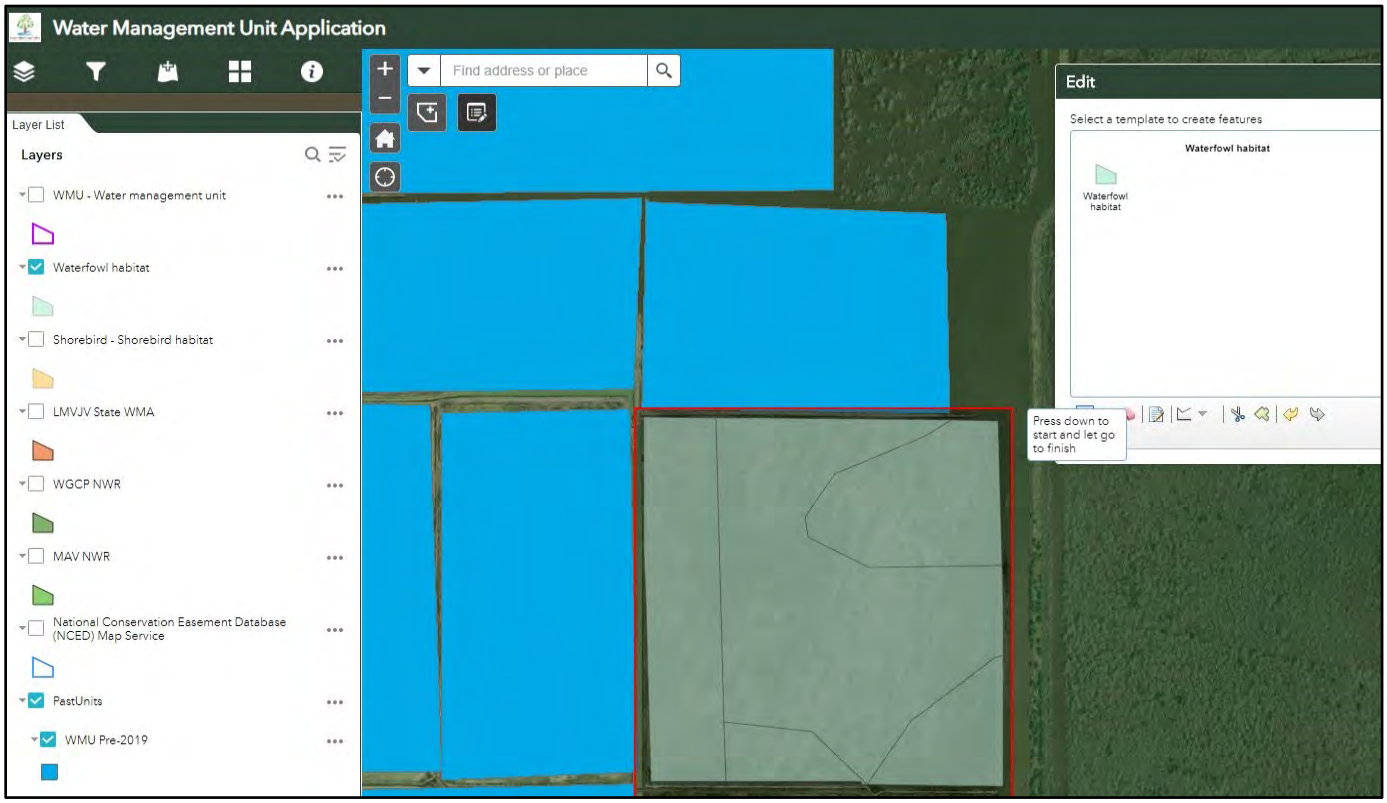
Once the original Waterfowl Habitat single polygon has been subset into specific habitats, there are a couple of different ways to edit them to define habitat changes from season to season. Each polygon can be edited individually by moving the vertices of each habitat to redefine each polygon. To edit in this manner, zoom in to your wmu, click Edit Tool (under the address search bar), then click on the habitat polygon you wish to edit until you see the individual vertices. These can be moved using your mouse and clicking/holding/dragging the point where you want it to go. Additional points are made when you drag a light gray point to a new location and you can delete dark gray points by holding your mouse pointer over the point, then right-click, delete.



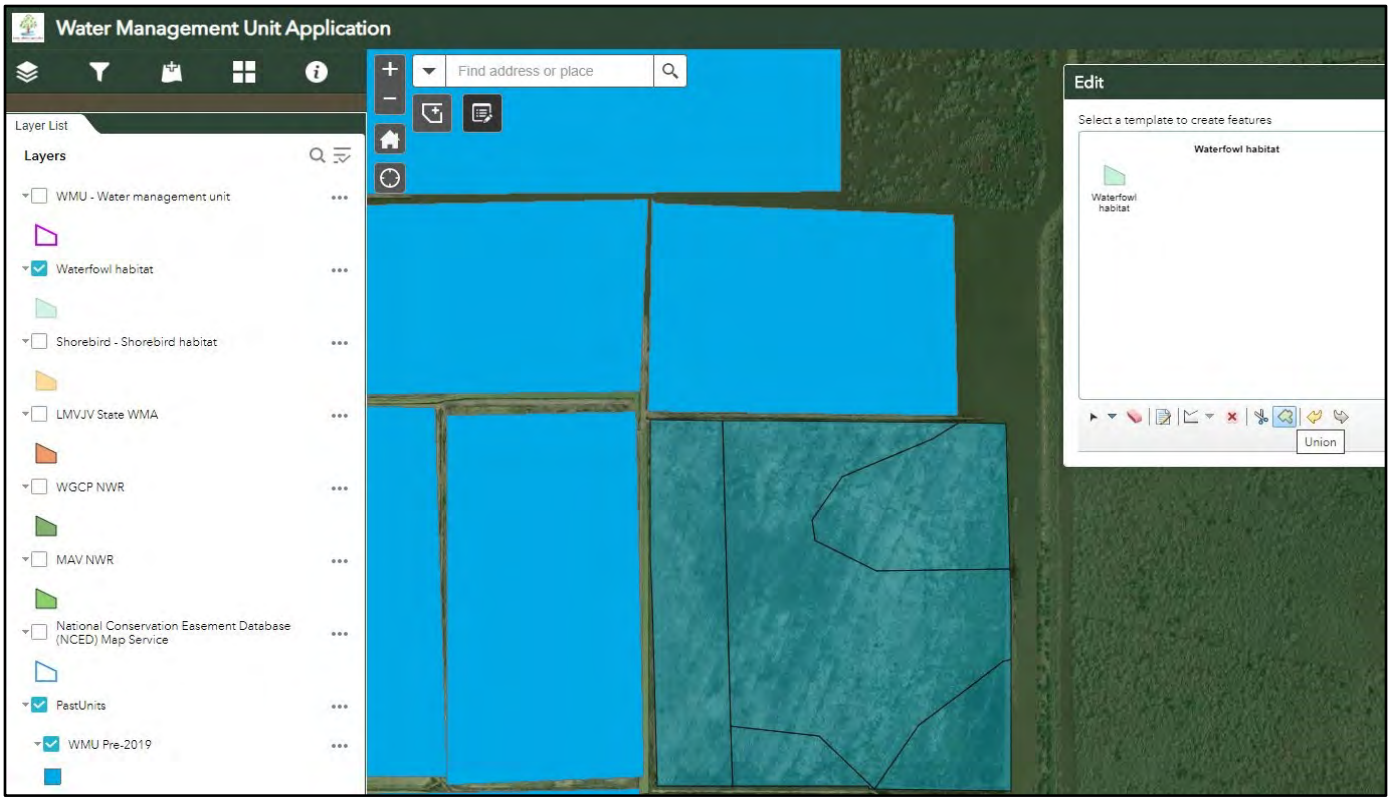
However, this could be a bit tricky if numerous polygons or vertices need to edited, since there should be no undefined habitats (aka, holes) in the habitat polygons – there should be a contiguous light green polygon or set of polygons filling up the entire purple-lined WMU full-pool polygon area. Even deep water or fallow ground should be accounted for to ensure there are no gaps left. Therefore, the ideal method to properly edit multiple habitat polygons in this circumstance is to start with a full-pool definition and newly redefine your habitats, starting with new templates.

To attain new templates, click on the Edit Tool and where you see the arrow or pointer, choose the select option, New selection. Then, using your mouse, click/hold/drag to create a red select box that contains all of the polygons to be edited in a specific wmu.





Finally, select the Union option to unite all the polygons to once again represent the full-pool for this wmu and Edit as needed.



Note that the original WMU boundary and Shorebird boundary are unaffected, if you've made sure to only edit the waterfowl polygons by clicking off the others in the Table of Contents display.

To completely delete a polygon you have created:

Click the Edit tool and click the polygon you wish to delete. An edit box will open with a delete option on the bottom. Be sure to have all the layers in the Layer List viewable so that you are able to delete each polygon you need to delete.

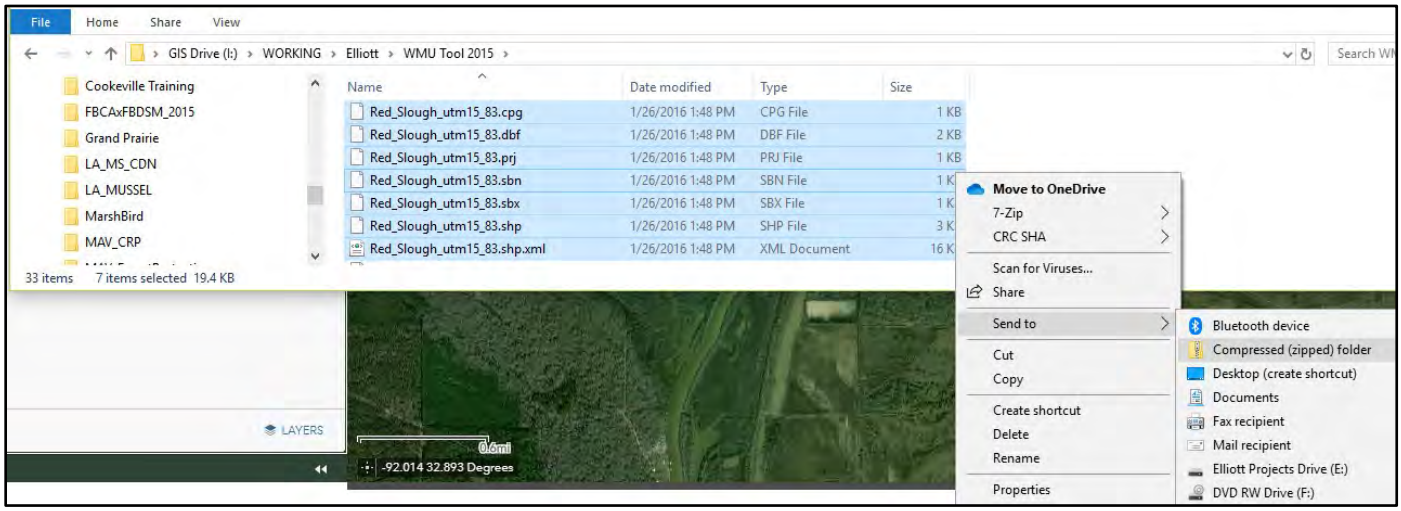
Filter units that need review:

Each data pull requires that all waterfowl polygons be reviewed. If nothing has changed with the unit you can simply edit each unit and select Reviewed = 'Yes'. After every data pull all records will have their reviewed status set to 'No'. It is useful to know which features haven't been reviewed and there is an easy way to display this. Select the Filter tool (funnel icon) on the left hand tool bar and enable the Waterfowl review filter by hitting the toggle button. Enabling this filter will hide all features that have been reviewed and zoom in to the features that need review. You can also expand the attribute table at the bottom and turn off Filter by map extent. The attribute table will then show all features that haven't been reviewed. Double click a row to zoom to that feature and edit as necessary.

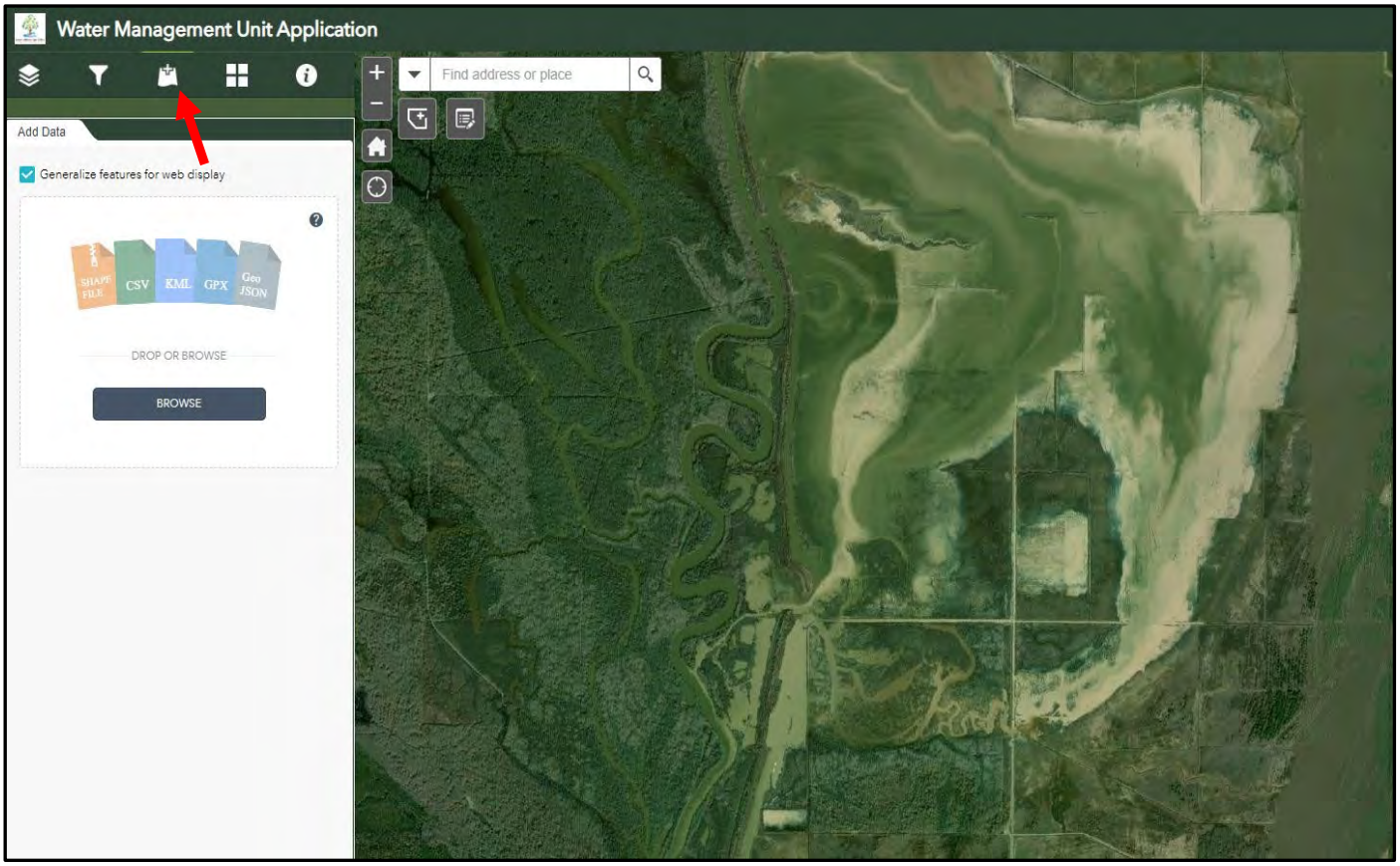
Upload data into the WMU Tool for editing:

If you have already created WMU locally (via GPS or GIS) and want to put these in the application, this can be done with the Add Data tool (this option is particularly useful for complicated polygons).

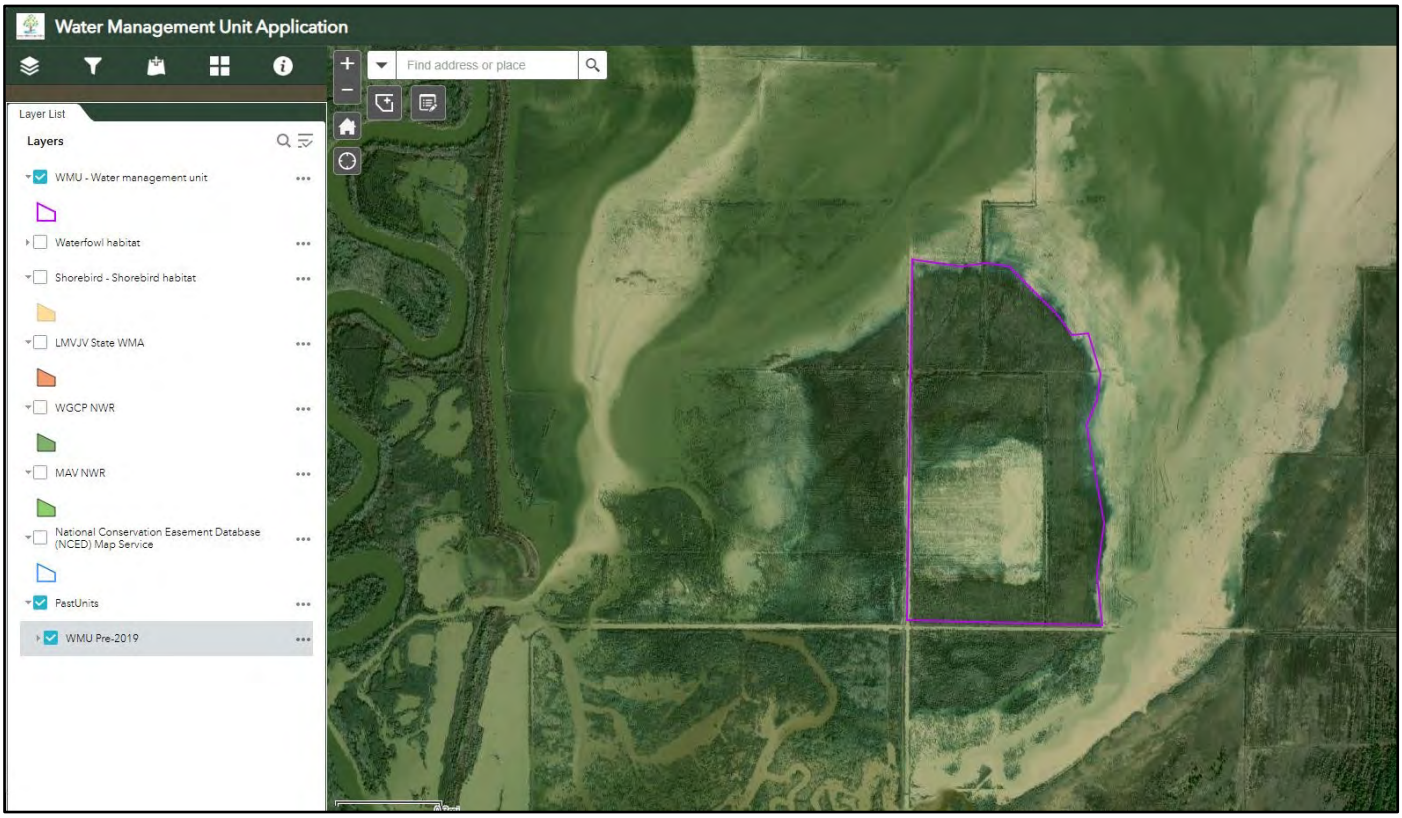
Go to the location of the files in Windows Explorer and select all the files associated with that WMU. Right-click and select Send to Zipped Folder.



Add that zipped folder with the Add Data tool in the WMU Tool. That button is located on the left hand toolbar.



Zoom into the location to find the wmu or wmus that you've added to view the uploaded data.



Now that the shape is in the application you click can click on the shape and then select 'Set as Input of Add WMU'. From this point, you can complete the 'Add WMU Tool' process as per usual. After you run the tool, make sure to clear the tool feature as well as trashing the uploaded layer. If you encounter any problems, try uploading only one or a small number of polygons at a time.

Final hint: If any of the above steps do not seem to work in the expected fashion, try backing out of the WMU Tool and logging in again. Even though the Tool is pretty stable, there is a tendency for an occasional glitch, but a reset seems to set things right.

FOR ANY COMMENTS OR ASSISTANCE WITH THIS PROCESS OR THE DEFINTIONS, PLEASE FEEL FREE TO CONTACT BLAINE ELLIOTT, blaine_elliott@fws.gov, 601-206-5457 (work), 601-415-0999 (cell).