Ohio's Efforts to Eradicate Grass Carp from Lake Erie and Close their Direct Water Connections

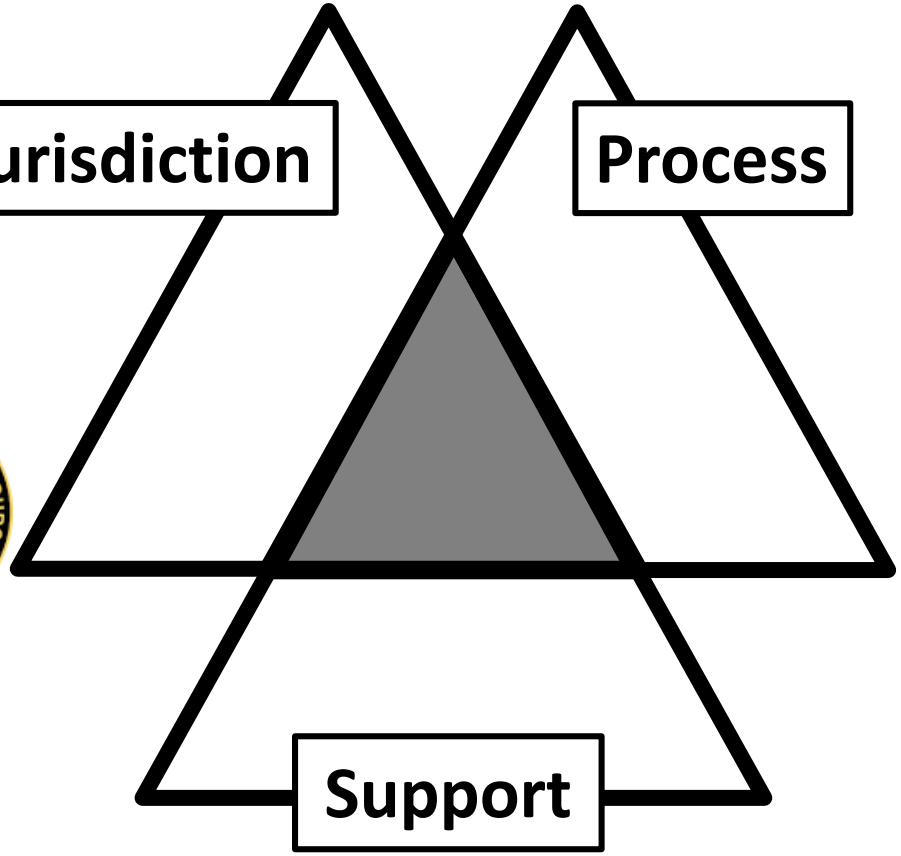
Ohio AIS Committee

December 9, 2020

ODNR Division of Wildlife

John Navarro, AIS Program Administrator

Planning & Coordination



Responsibility & Authority

Planning & Coordination

Great Lakes Fishery Commission

Lake Erie Committee

Grass Carp SDM Workgroup

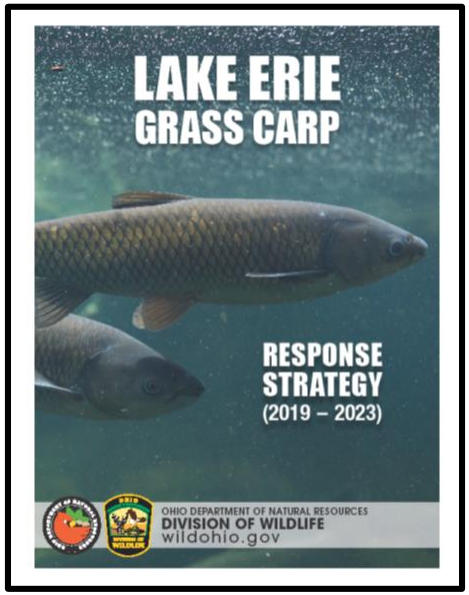
Research & Additional Resources

USGS science for a changing world

THE UNIVERSITY OF TOLEDO 1872

MICHIGAN STATE UNIVERSITY

Lake Erie Grass Carp Response Strategy Planning



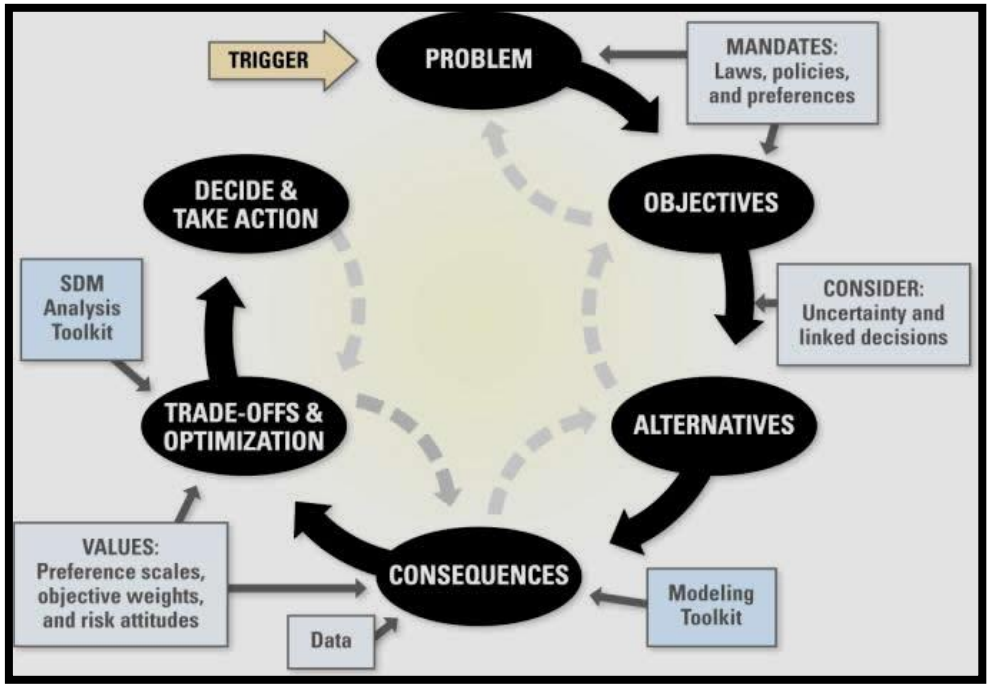
<u>Goal 1</u>: Prevented Expansion Beyond Western Basin of Lake Erie

<u>Goal 2</u>: Prevent Population from reaching levels that compromise aquatic communities.

Structured Decision Making

Objective Way to Make Complex Decisions

- Clear Objectives
- Explore Tradeoffs
- Deal with Uncertainty
- Transparent
- Integrate Public Values



SDM Outcomes

1. **Removal target:** We set an annual removal target of 390 diploid Grass Carp to suppress spawning in the Sandusky River

2. **Sampling method:** The paired gear method of electrofishing and trammel net surrounding heavy shoreline vegetation/woody debris was selected.

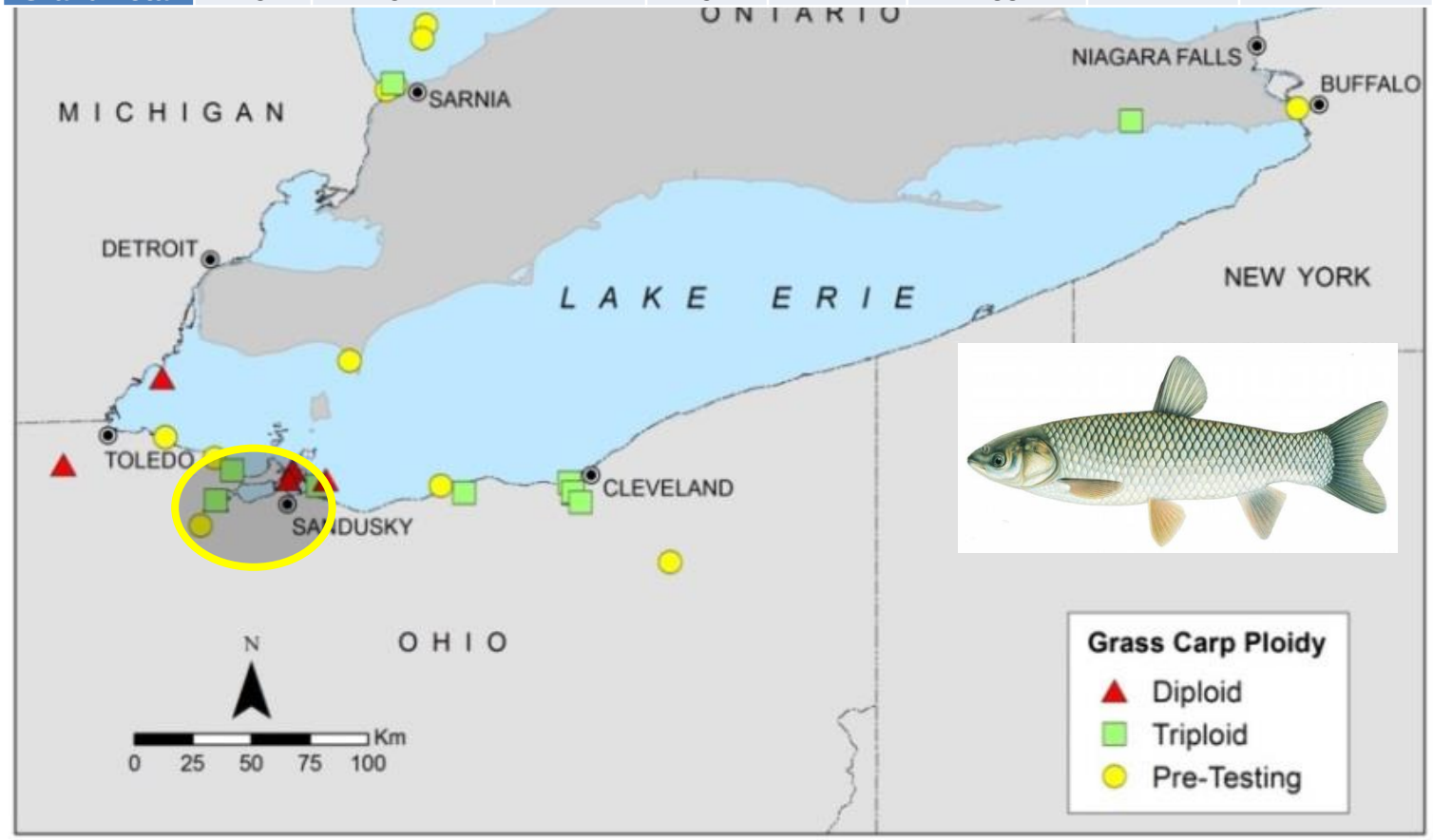
3. **Concentrated removal:** Direct removal through commercial catch and planned management actions where grass carp are most likely to be present and under conditions that improve sample gear efficiencies.

4. **Address critical uncertainties:** The key uncertainties of abundance and gear efficiency will hinder our ability to evaluate the effectiveness of current actions.

5. **Barrier evaluations:** The Sandusky River is a known spawning location and reducing spawner passage coupled with removal actions would be beneficial.

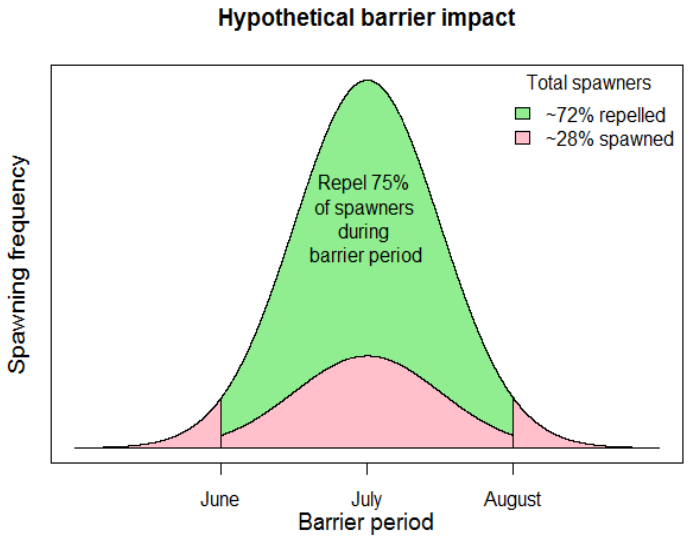
We are Not Reaching the 390 Goal

Year	Lake Erie	Cuyahoga River	Maumee River	Muddy Creek	Huron River	Sandusky River	Black River	Grand Total
2018	6	0	3	0	0	38	0	**47**
2019	5	54	11	5	0	58	1	**134**
2020	14	0	7	0	1	92	1	**115**
Grand Total	25	54	21	5	1	188	2	**296**



Barrier Scope

- **<u>Goal:</u> Reduce the reproductive potential to amplify the effects of removal and other possible control technologies.**
- **<u>Criteria:</u> Block passage of at least 75% of adult grass carp that encounter the barrier.**
- **<u>Uncertainty</u>: AECOM developed an evaluation matrix that looked at technologies and impacts.**



Barrier Type:

- **Acoustic**
- **Light**
- **Air Bubble**
- **Chemical**

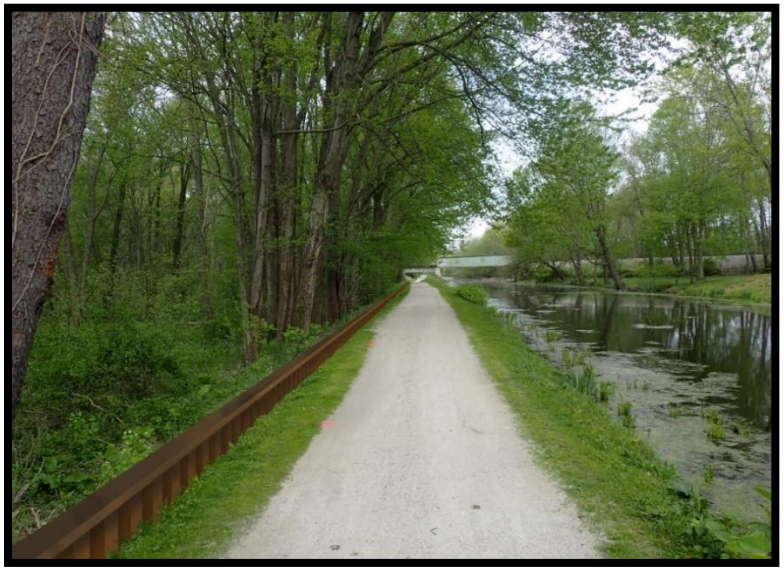
Pathway Progress:
Ohio Erie Canal Hydrologic Separation

Ohio Erie Canal

Ohio – Erie Canal
Lake Erie Watershed

Tuscarawas River
Ohio River Watershed

Bundle of Deterrents



Progress - Next Steps:

- 3 Million Dollar Project
- Closed in Spring of 2020
- Dedication Delayed - COVID
- ODNR Long-Term Maintenance

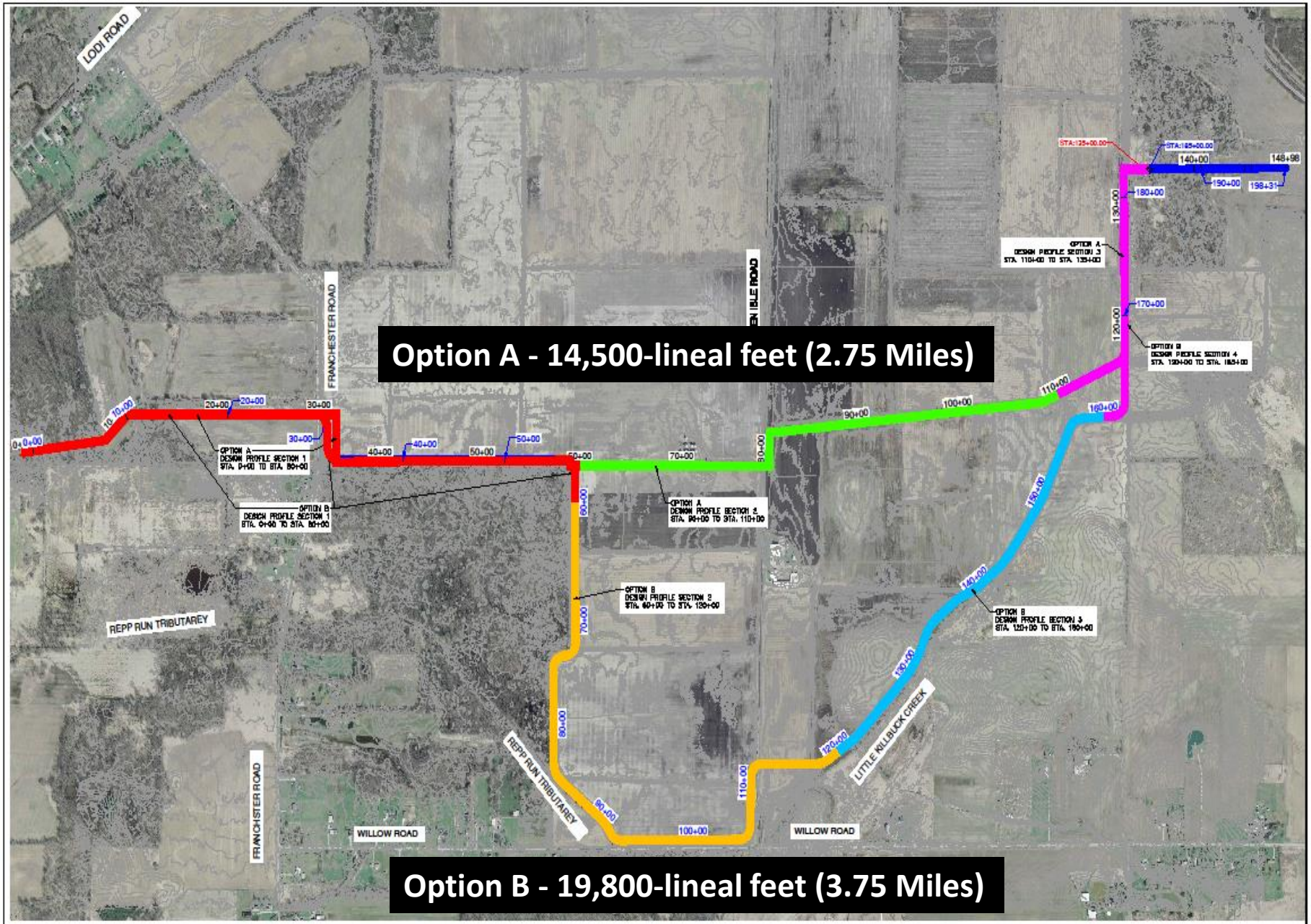
Pathway Progress:

Ohio Erie Canal Hydrologic Separation

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Pathway Progress:
Little Killbuck Creek Hydrologic Separation


Lake Erie
Watershed
The Connection
Ohio River
Watershed
MAY 26 2011



NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

ENGINEERING
Ohio Department of Natural Resources

LITTLE KILLBUCK CREEK
INVASIVE SPECIES CLOSURE
MEDIANA AND WAYNE COUNTIES, OHIO

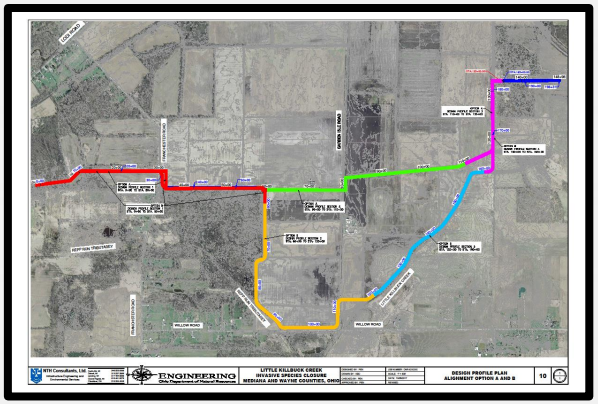
DESIGNED BY: PBN | JOB NUMBER: DNR XXXXXX
DRAWN BY: KBD | SCALE: 1" = 800'
CHECKED BY: PBN | DATE: 10/05/2017
APPROVED BY: PBN | REVISED

DESIGN PROFILE PLAN
ALIGNMENT OPTION A AND B

10

Next Steps:

- Landowner negotiation
- Final design
- Implementation
- Closure in 2024



Pathway Progress:

Little Killbuck Creek Hydrologic Separation

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Pathway Progress:

Grand Lake St Marys Hydrologic Separation

Grand Lake St Marys

Next Steps:

- **Hatchery Modifications - Complete**
- **Outlet Preliminary Design- 2020**
- **Outlet Final Design - 2021**
- **Closure - 2022**

Pathway Progress:

Grand Lake St Marys Hydrologic Separation

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE