

US EPA ARCHIVE DOCUMENT

Ohio's Surface Water Monitoring Design in the 3rd Millennium:

The Age of the TMDL

Holly Tucker



Division of Surface Water
Ecological Assessment Section

THE FRAMEWORK:
Ohio's Watershed Assessment Units
(USGS 11-digit Hydrologic Units)



Ohio's Large River Assessment Units

(23 Rivers with > 500 mi² watersheds)



Aquatic Bioassessments by Ohio EPA

The Integrated Biosurvey

Where

- Mainly rivers, streams, and small waterways
- In use and development for Lake Erie, Ohio River, and wetlands

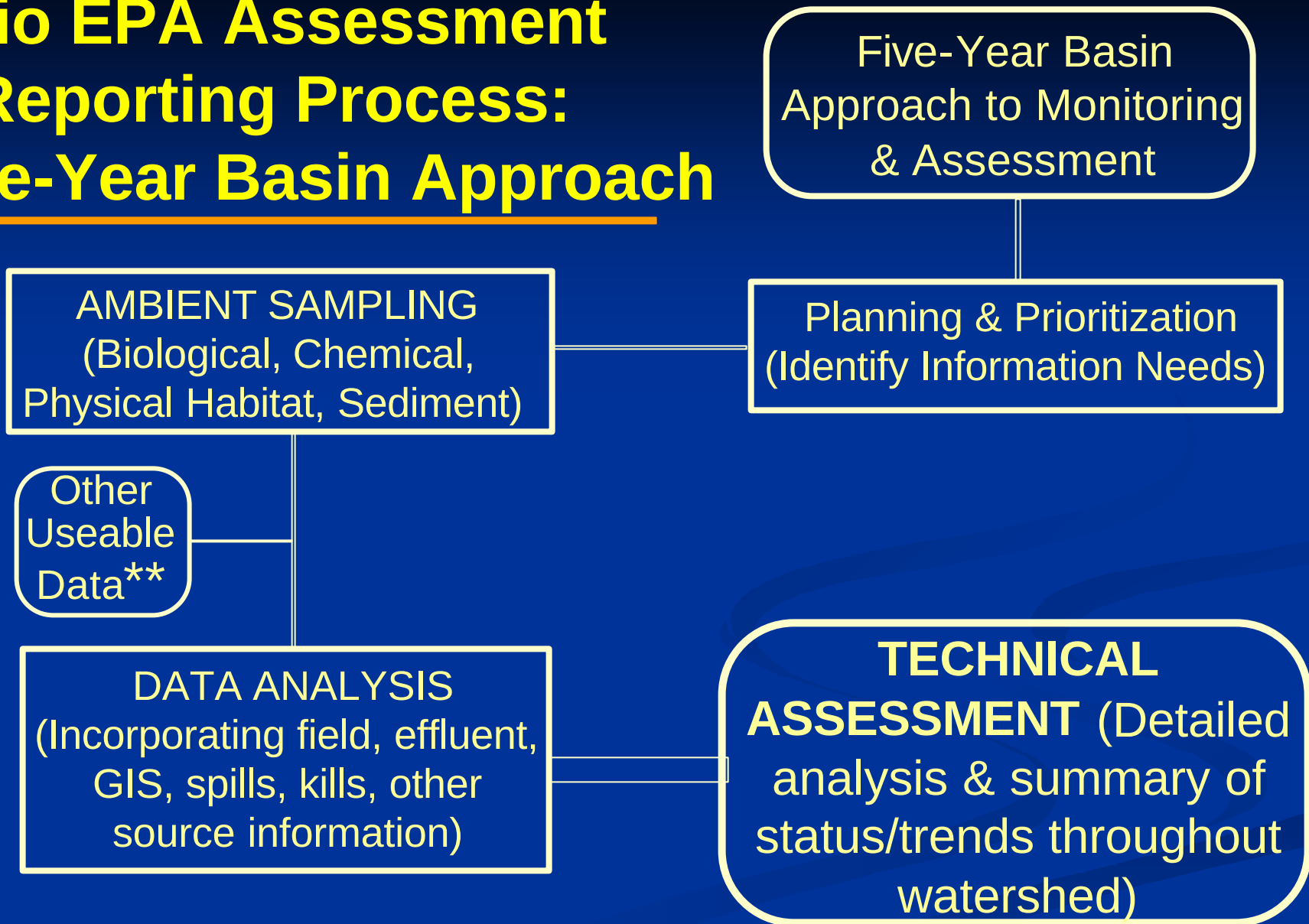
What

- Fish, macroinvertebrates, physical habitat
- Sediments, water quality, fish contamination
- Chlorophyll

Why

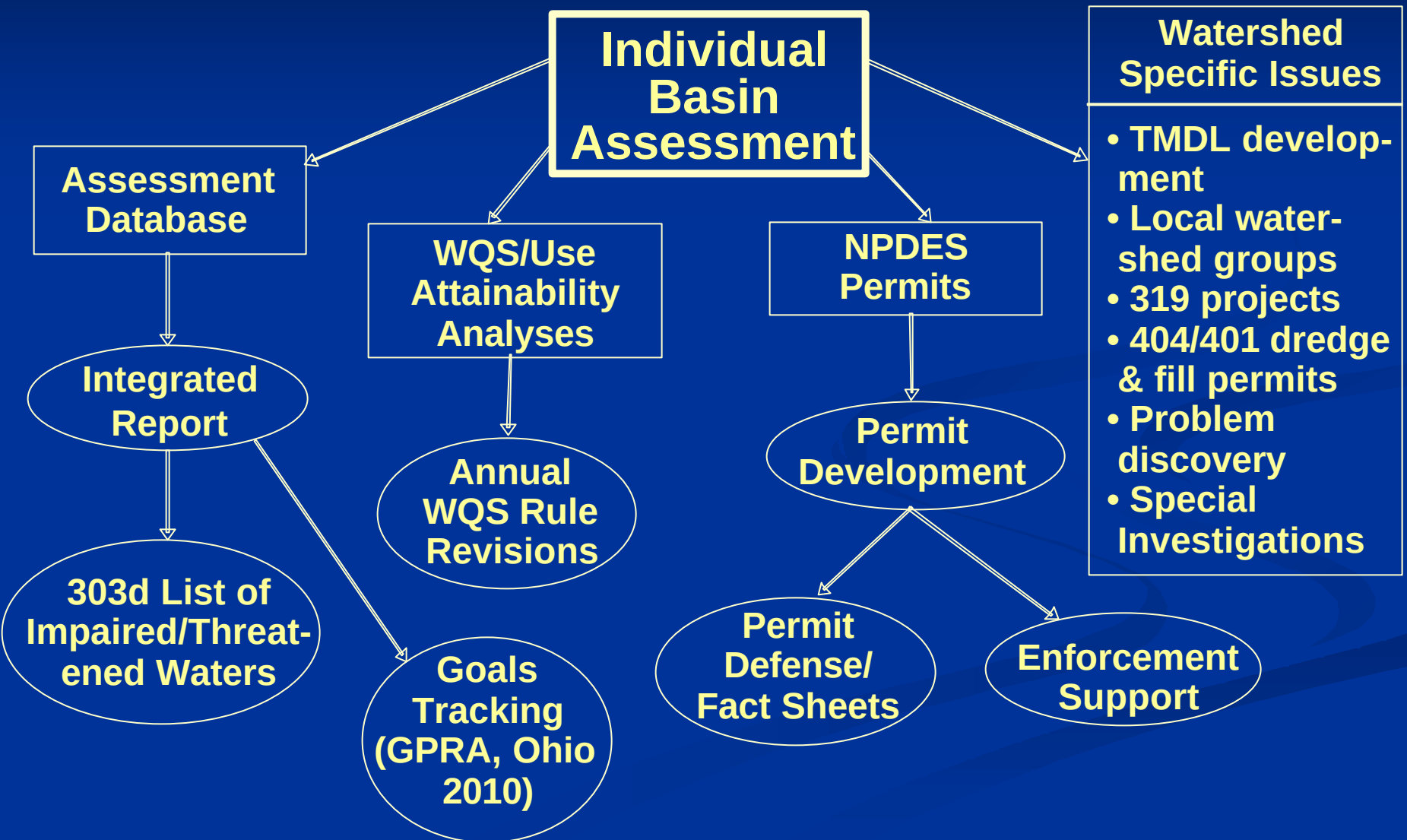
- Provide empirical information for water quality management and decision-making
- Determine status of Ohio's aquatic resources
- Assure that waters are correctly classified

Ohio EPA Assessment & Reporting Process: Five-Year Basin Approach



****** - Must meet Data Quality Objectives per Ohio EPA 5-Year Monitoring Strategy

Functional Support Provided by Annual Rotating Basin Assessments



Ohio TMDL Process Overview

1. Design survey
2. Collect data
3. Assess data
4. Define goal
5. Develop targets
6. Select scenario
7. Prepare plan
8. Submit report
9. Implement internally
10. Implement externally
11. Annual validation
12. Check status

Assess

Develop

Implement

Validate

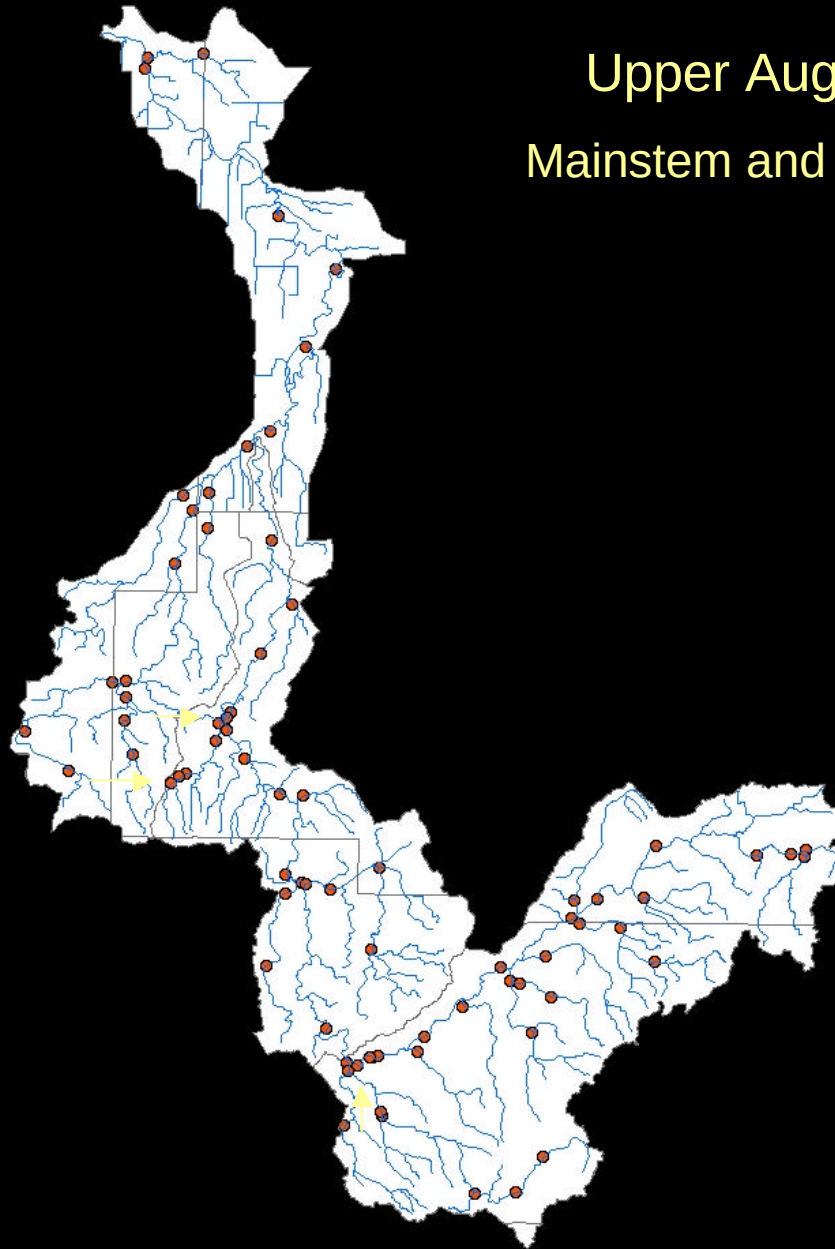
Upper Auglaize River, 1991

(Mainstem and 2 Tributaries - 21 Sites)



Upper Auglaize River, 2000

Mainstem and 25 Tributaries – 76 Sites



WAKATOMIKA CREEK



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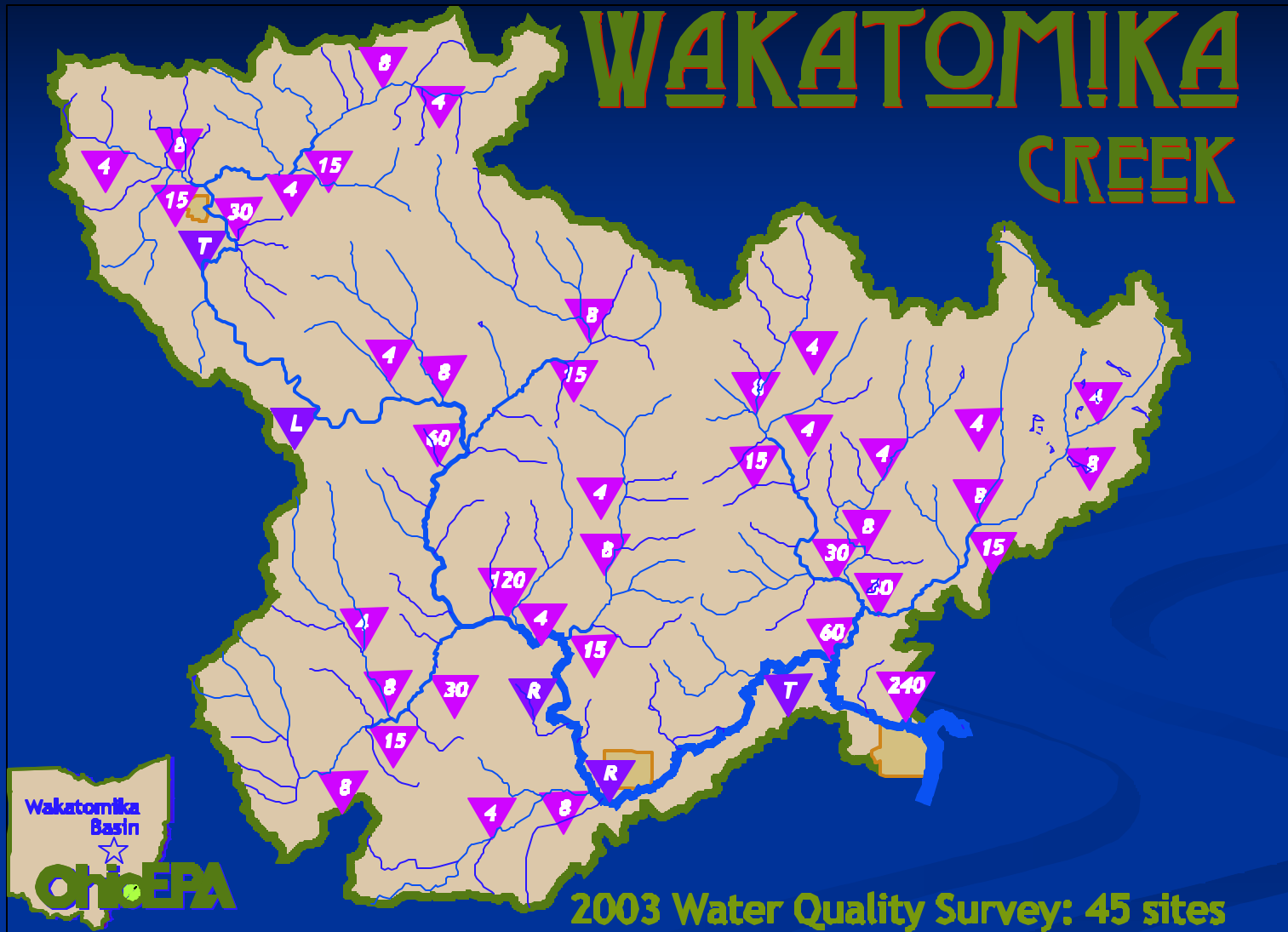
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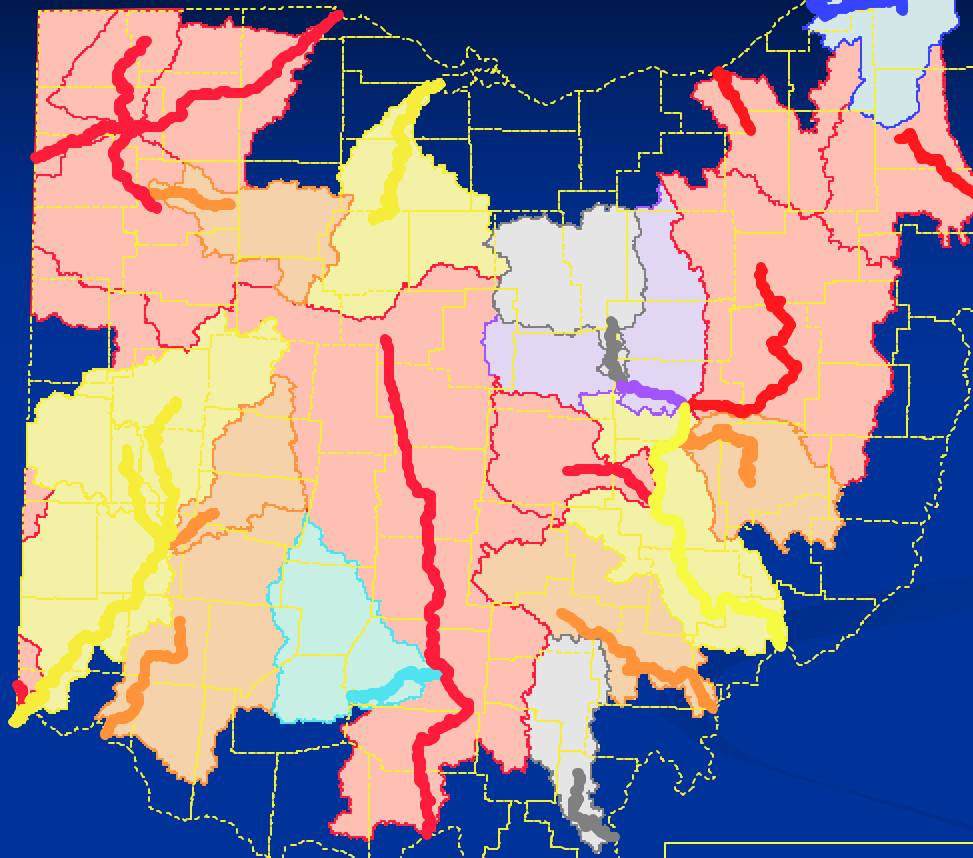
2003 Water Quality Survey: 45 sites

Benefits of Geometric Site Selection Process

- Organizes watershed issues in proportion to the occurrence of resource types
- Corresponds to scales of management and implementation
- Prioritization can account for severity and extent of impairments and threats

Status of Aquatic Life in Ohio's Large Rivers 1980-1990

(expressed as a percentage of monitored length in FULL attainment)



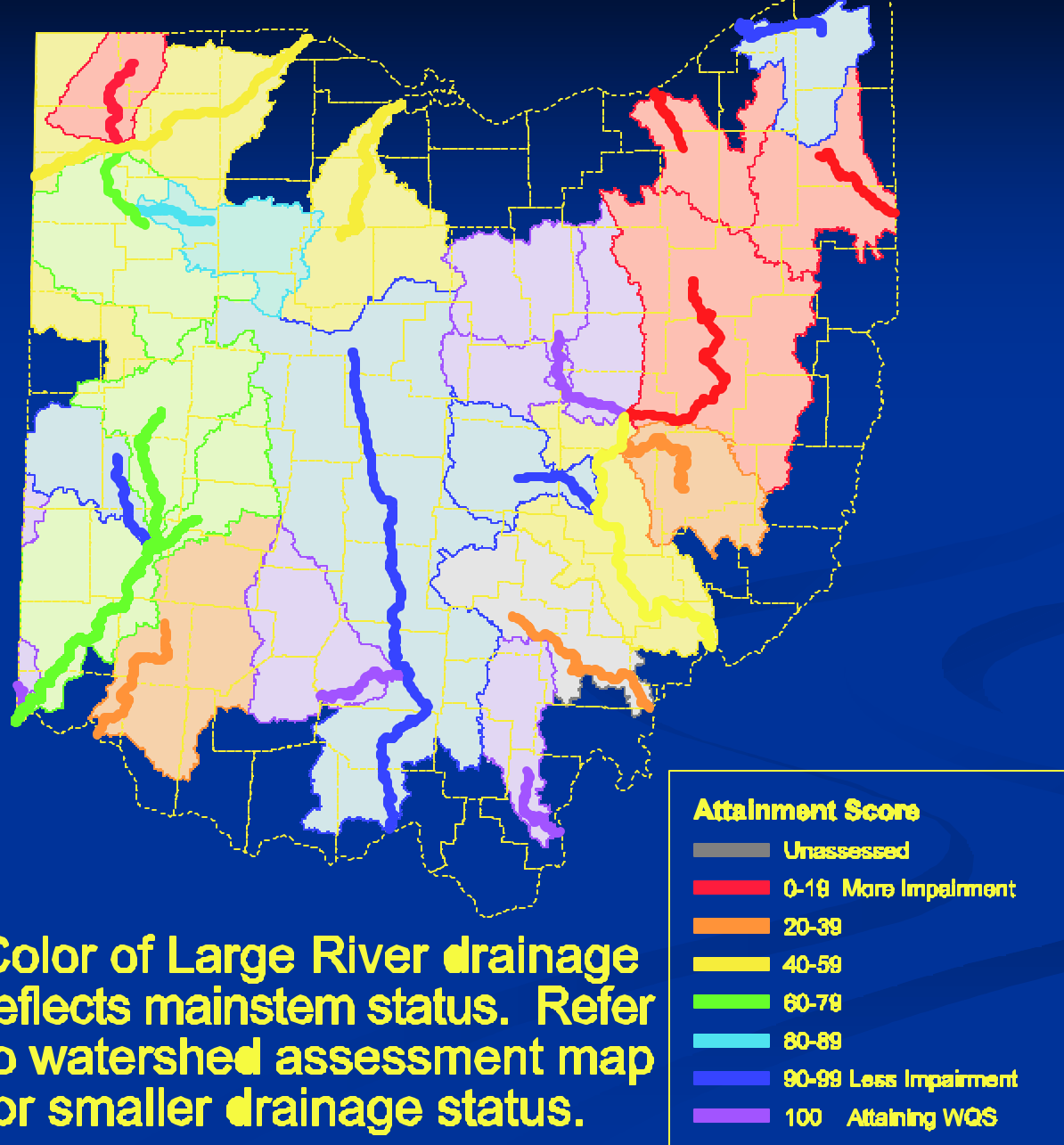
The drainage basin of the large river is shown, but the color only reflects the status of the mainstem

Attainment Score

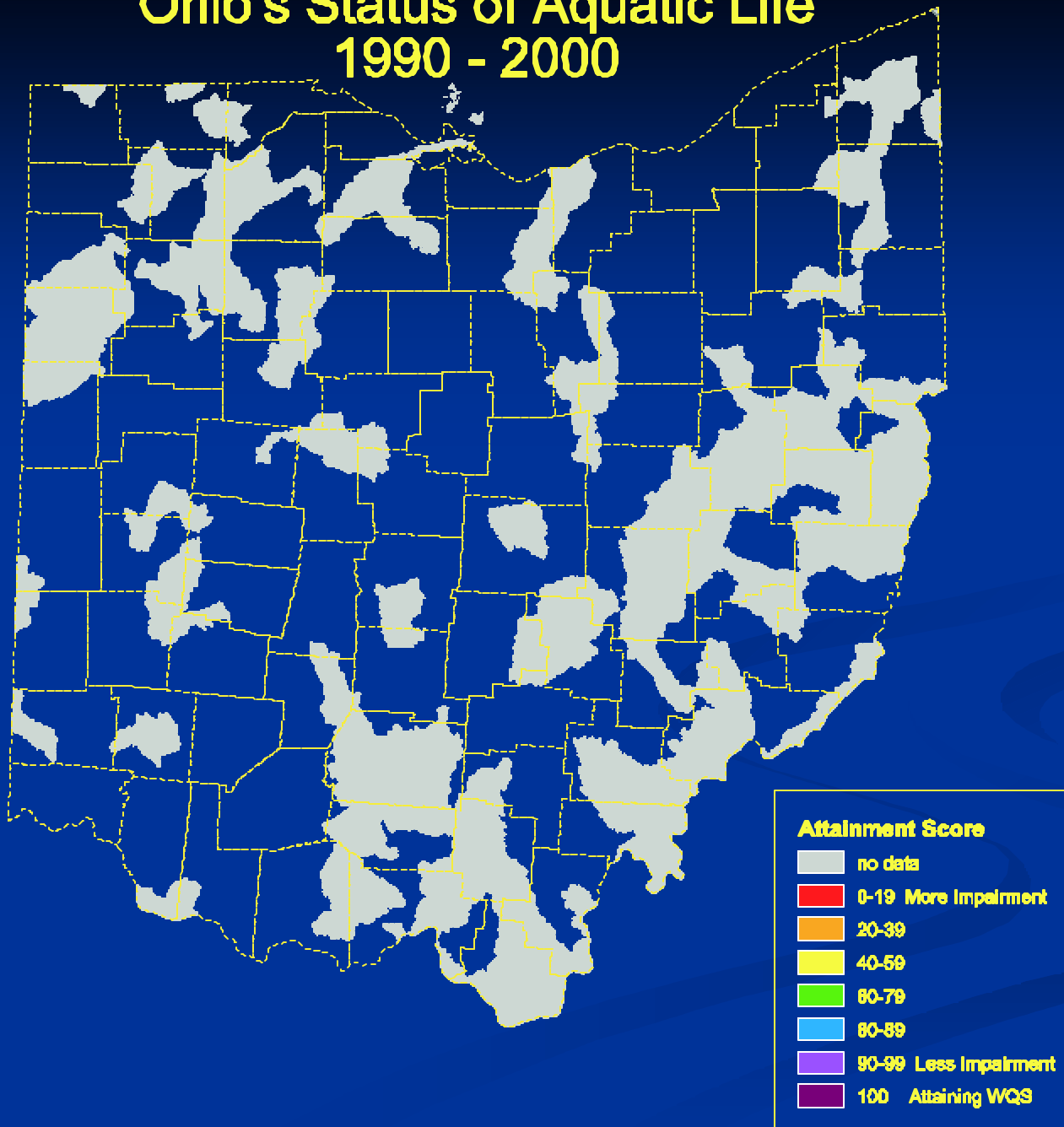
- Unassessed
- 0-19 More Impairment
- 20-39
- 40-59
- 60-79
- 80-89
- 90-99 Less Impairment
- 100 Attaining WQS

Status of Aquatic Life in Ohio's Large Rivers 1990-2000

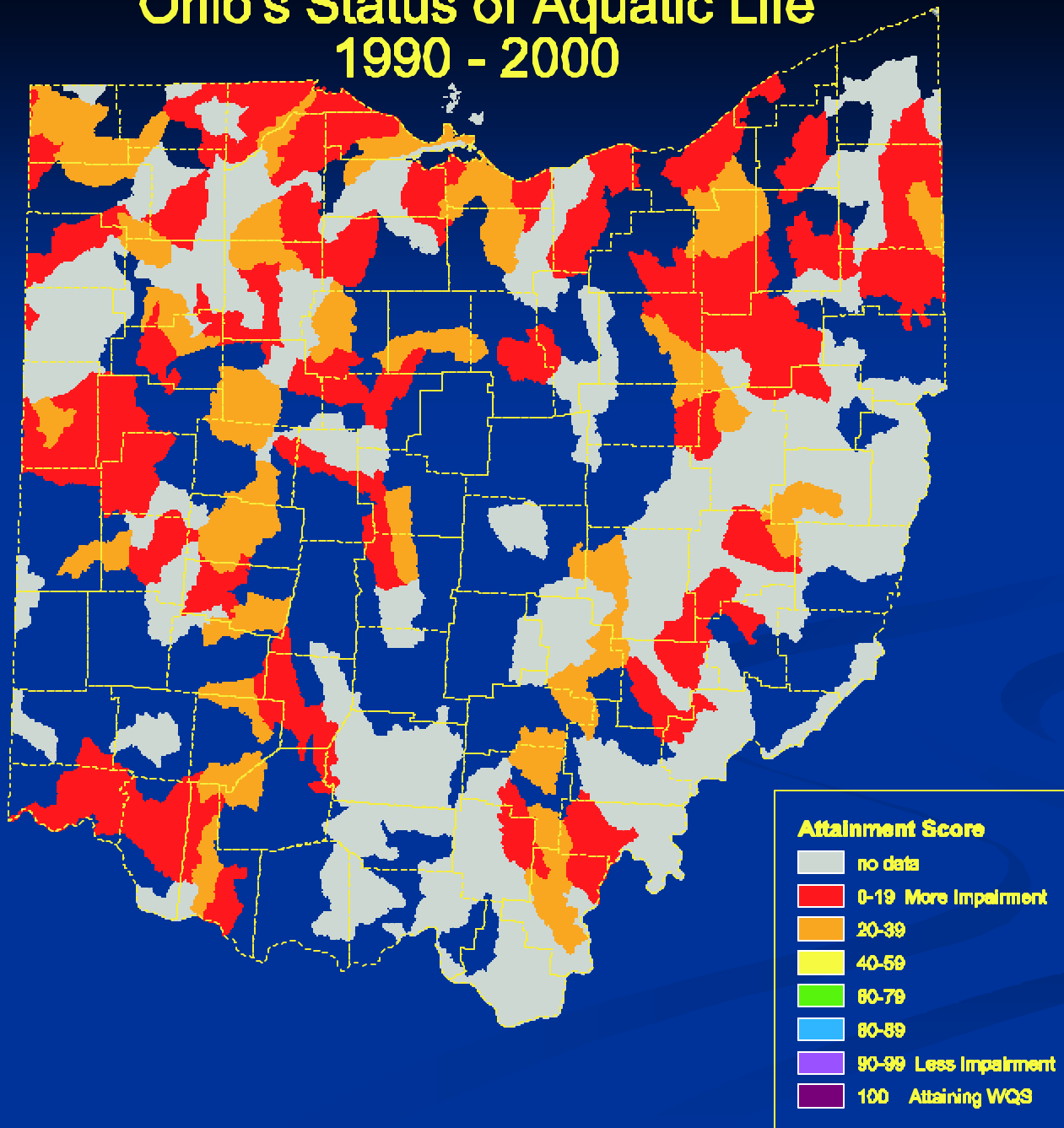
(expressed as a percentage of monitored length in FULL attainment)



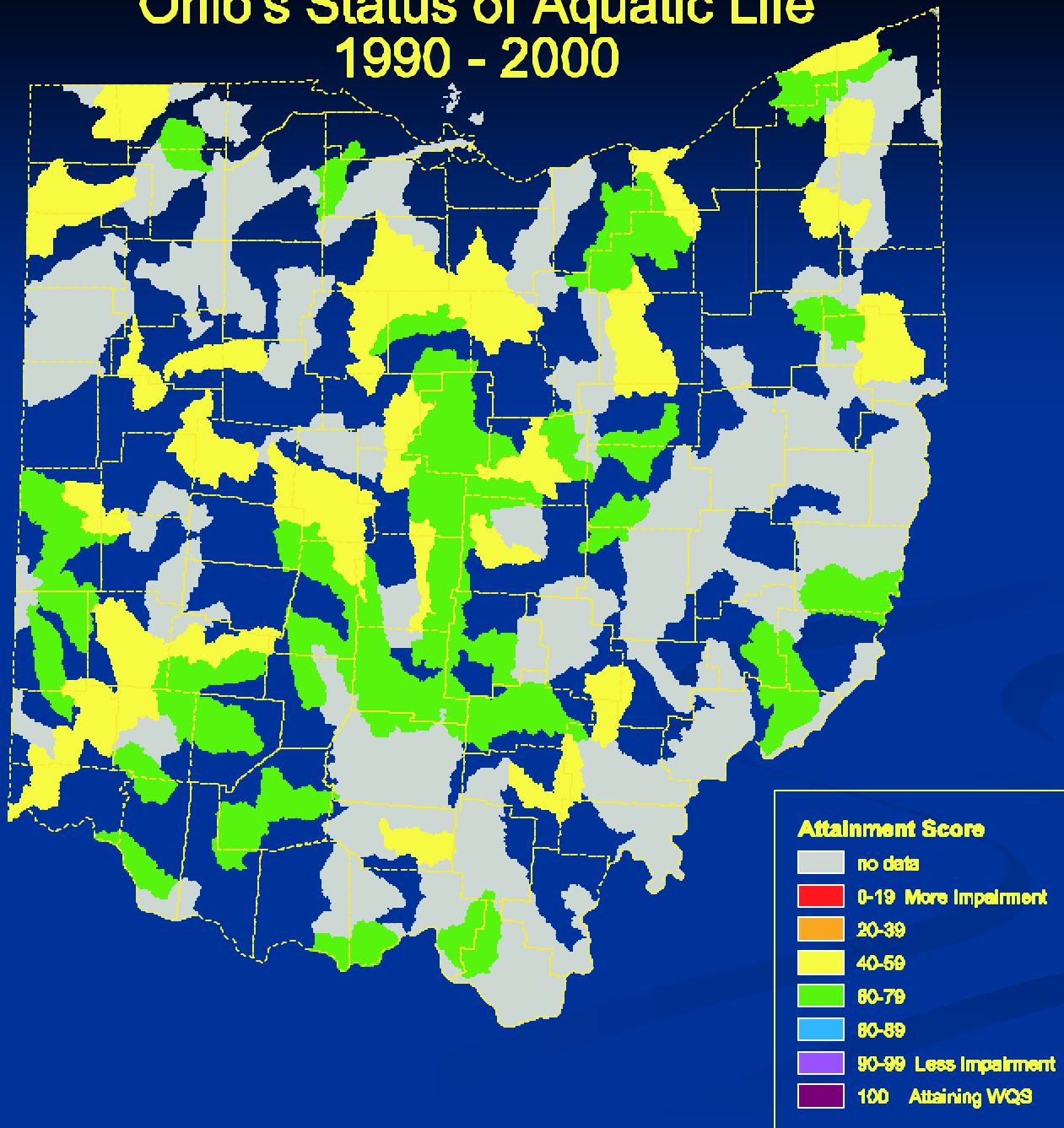
Ohio's Status of Aquatic Life 1990 - 2000



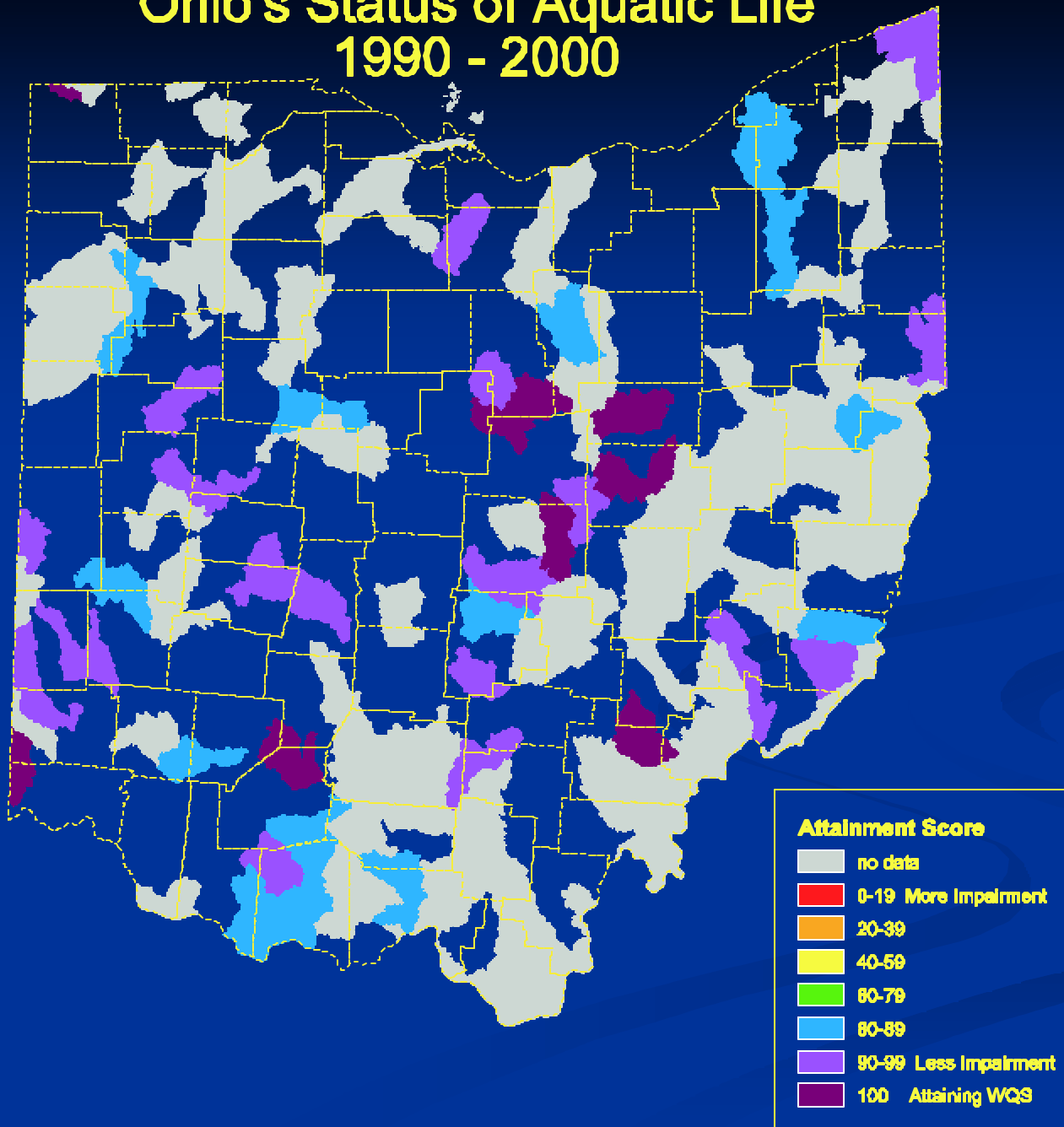
Ohio's Status of Aquatic Life 1990 - 2000



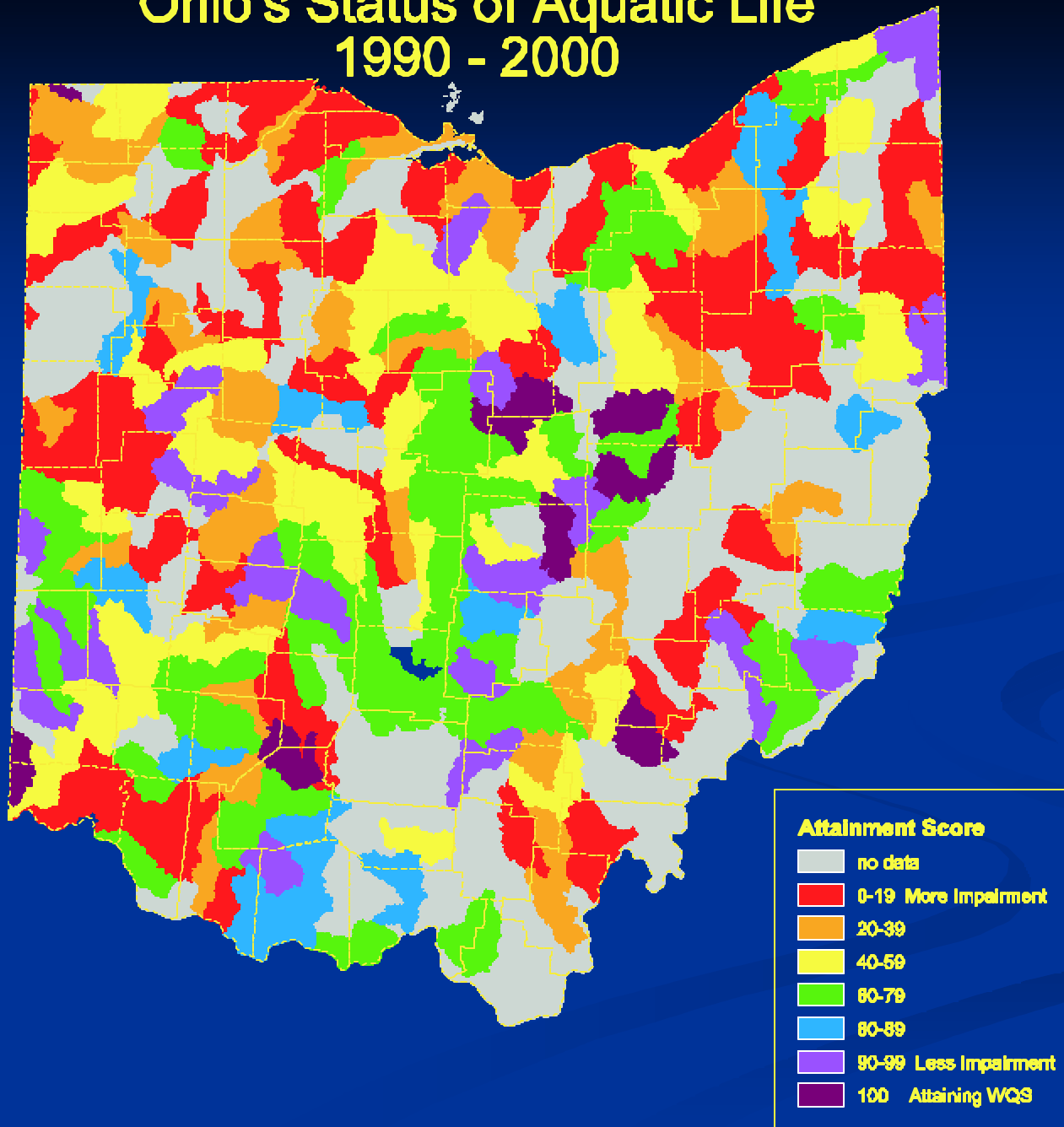
Ohio's Status of Aquatic Life 1990 - 2000



Ohio's Status of Aquatic Life 1990 - 2000



Ohio's Status of Aquatic Life 1990 - 2000



Wakotomika Creek RM 18.7

