

Classifying & Assessing Waterbodies: 3 Water Quality Standards Rules

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Photo: Bad River

Classifying & Assessing Waterbodies: 3 Water Quality Standards Rules



required
for



required
for

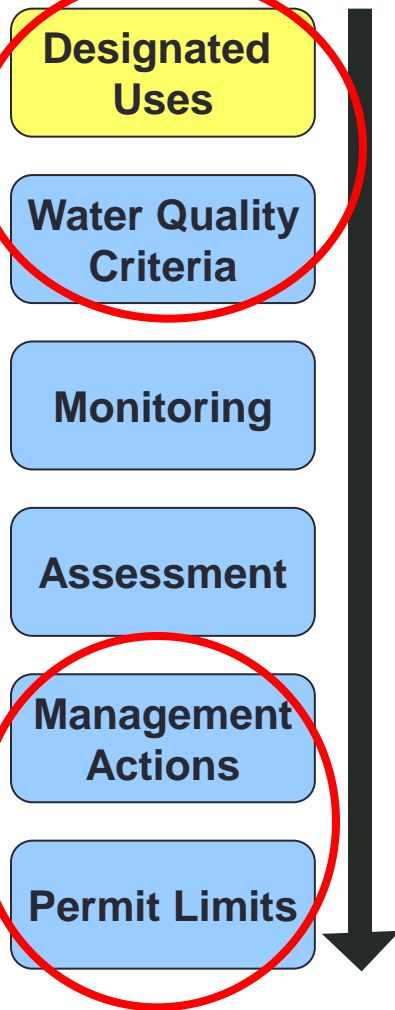


What are our expectations for this waterbody?

Can biology tell us whether it's meeting these expectations?

Is the phosphorus criteria right for the waterbody?

Designated Uses...The Foundation



- All waters are assigned “Uses” they are expected to support
- Criteria are set based on protection of the Uses
- The Uses & criteria are the foundation for management actions, including permit limits

All waters are assigned Designated Uses

- Fish & Aquatic Life
- Recreation
- Public Health & Welfare
- Wildlife



Wisconsin's current Designated Uses

- Fish & Aquatic Life
 - Recreation
 - Public Health & Welfare
 - Wildlife
- 
- Coldwater
 - Warmwater Sport Fish
 - Warmwater Forage Fish
 - Limited Forage Fish
 - Limited Aquatic Life

Needs Improvements:

- System was designed in the 70's
- Current categories don't accurately reflect the wide variety of waterbodies in WI
 - Need Stream categories for Cool, Large River, & small Non-Fish streams
 - Need Lake categories
 - Thousands of waters have no classification
- Needs adjustment to better classify & protect different waterbody types
- Goal: Set correct expectations for permits & resource management

New structure for Fish & Aquatic Life (FAL) Designated Uses

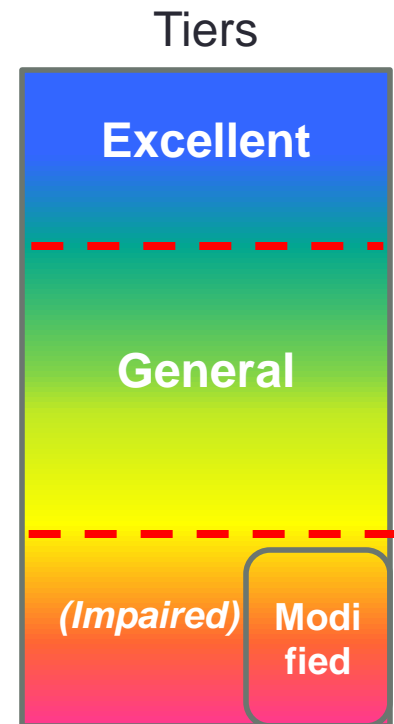
- Implementing a new Use structure: FAL Use will have two parts:

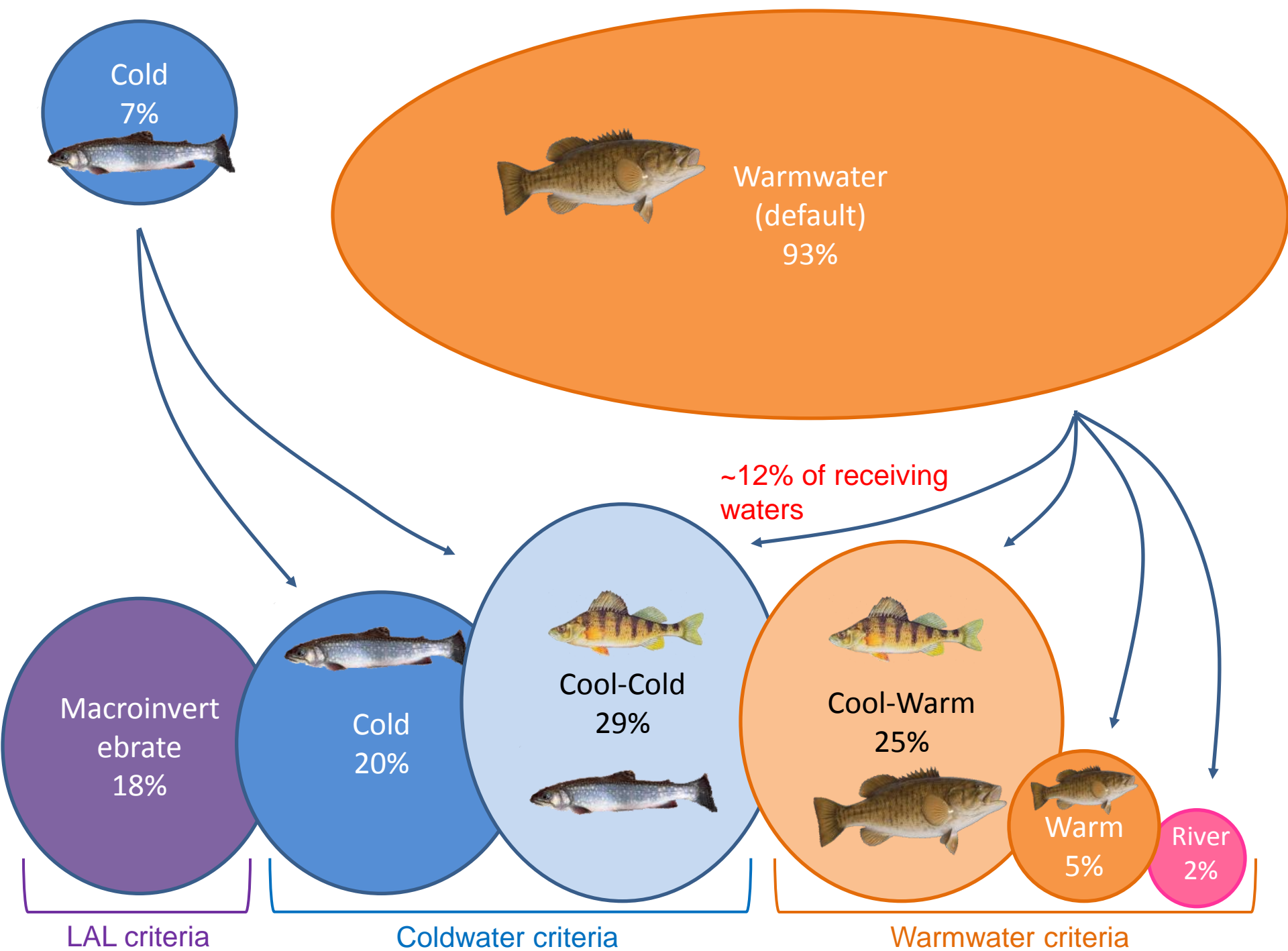
Natural Community + Tier

(waterbody type)

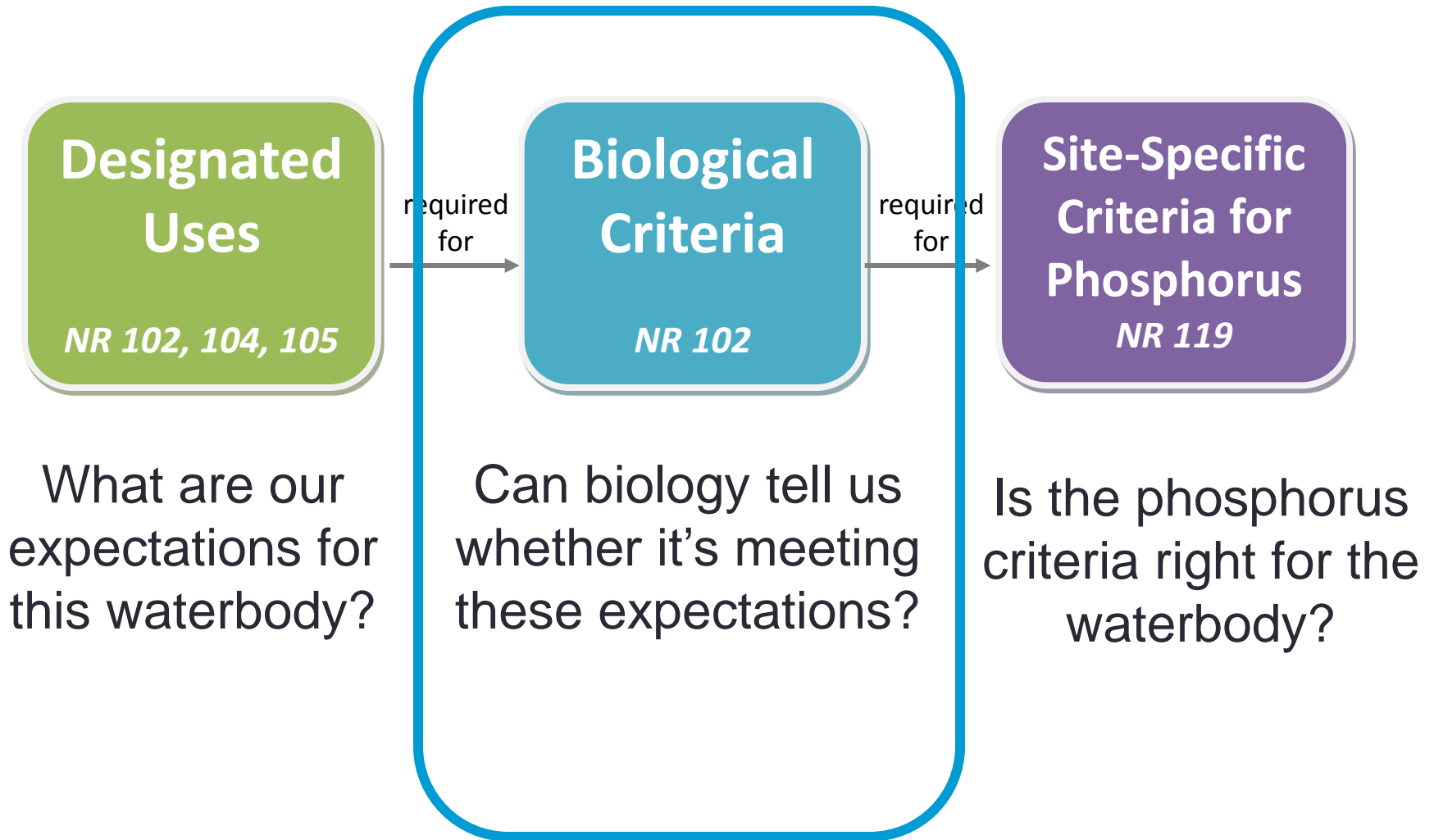
(quality expectation)

- Implements the national concept of “Tiered Aquatic Life Uses”
- MN & other states are working on similar updates





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Using Biology to Assess Waters

- The best way to assess the overall quality of a waterbody is by measuring the health of the *living things* in it
- To do this, we're developing "Biological Criteria" for each waterbody type
 - Assess health of fish, plants, aquatic insects, algae
 - Many are well-established
 - Not likely to affect permits



Using Biology to Assess Waters

Use biology to tell us two things:

- How's the overall biological health?
→ **Community-level biocriteria**
 - Fish, insects, plants
- Is the biology showing a response to phosphorus?
→ **Phosphorus response indicators**
 - Algae, chlorophyll, plants



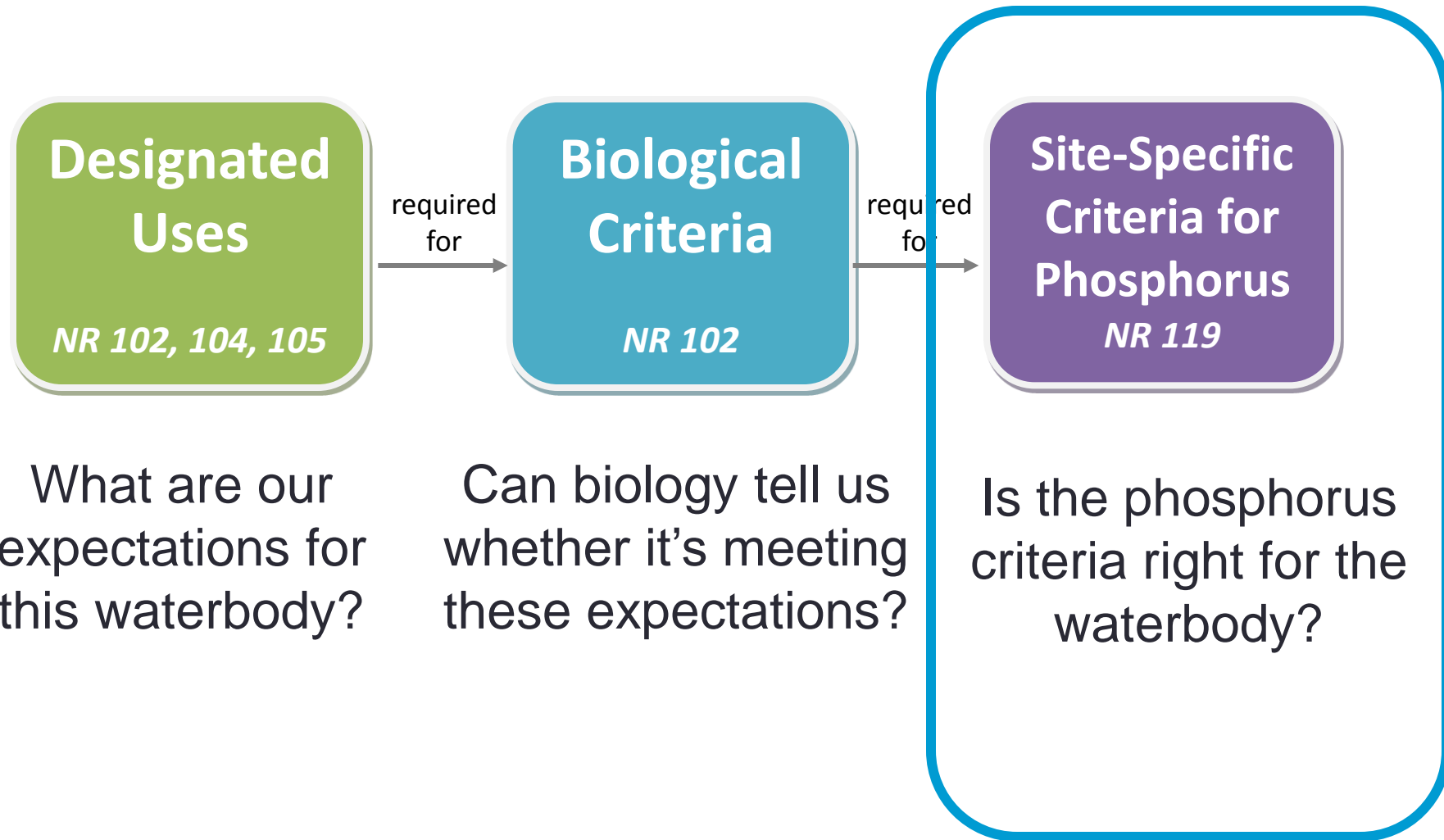
Using Phosphorus Response Indicators:

1. For Assessment & Impairment Decisions

- Use biology & phosphorus in conjunction to determine TP impairments
 - If phosphorus exceeds criteria (within certain range), check biology for impairment
 - If no biological impairment, water is not listed as impaired
- Similar to ME's & MN's approach



2. To determine Site-Specific Criteria eligibility



Site-Specific Criteria for Phosphorus (SSC)



- Use SSC if the statewide phosphorus criteria are over- or under- protective; modify accordingly
 - There's a wide range of waterbody responses to P levels, based on physical/chemical factors
 - Enables more appropriate assessments & permit limits

Site-Specific Criteria for Phosphorus (SSC)

- SSC are based on protecting the receiving water (& downstream waters).
 - Protect Fish & Aquatic Life uses & Recreation uses
 - Demonstrated using **biological metrics (P response)**
- SSC are not based on economics, and they're not for every waterbody



Determining SSC eligibility

There are two main types of SSC:

- Less-stringent SSC (raise the TP criterion)
- More-stringent SSC (lower the TP criterion)

Which one depends on 2 questions:

1. Is waterbody meeting its statewide TP criterion?
2. Is the waterbody meeting its biological criteria?



Compare TP & Biology

***Biology
Not Met***

Biology Met

***TP Criterion
Exceeded***

**Not eligible
for an SSC**

**CASE A.
May be
eligible for a
less stringent
SSC**

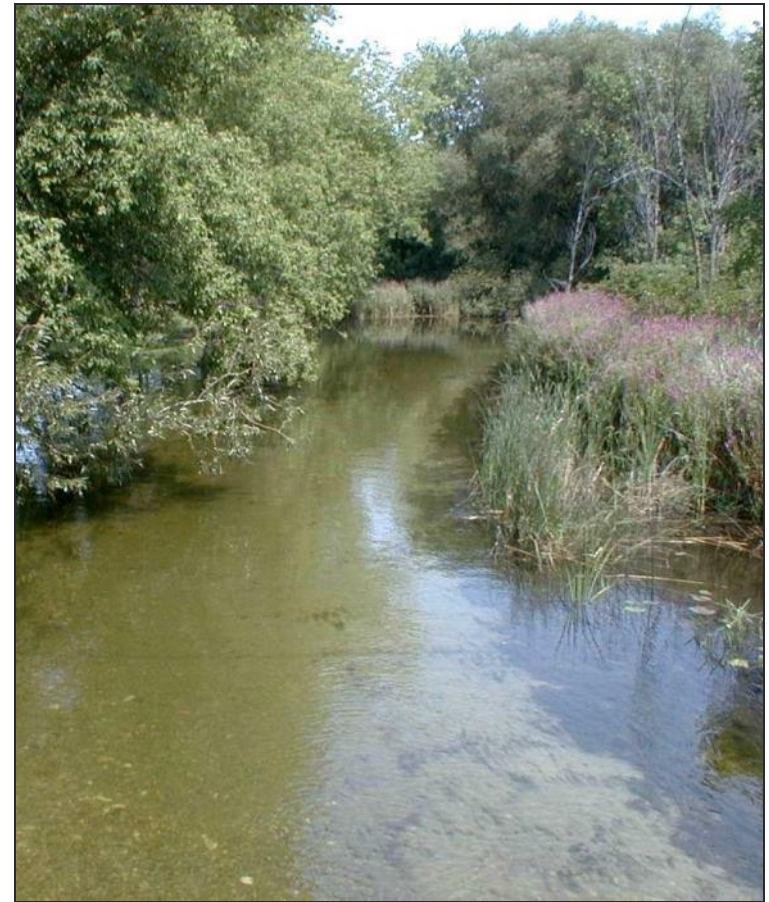
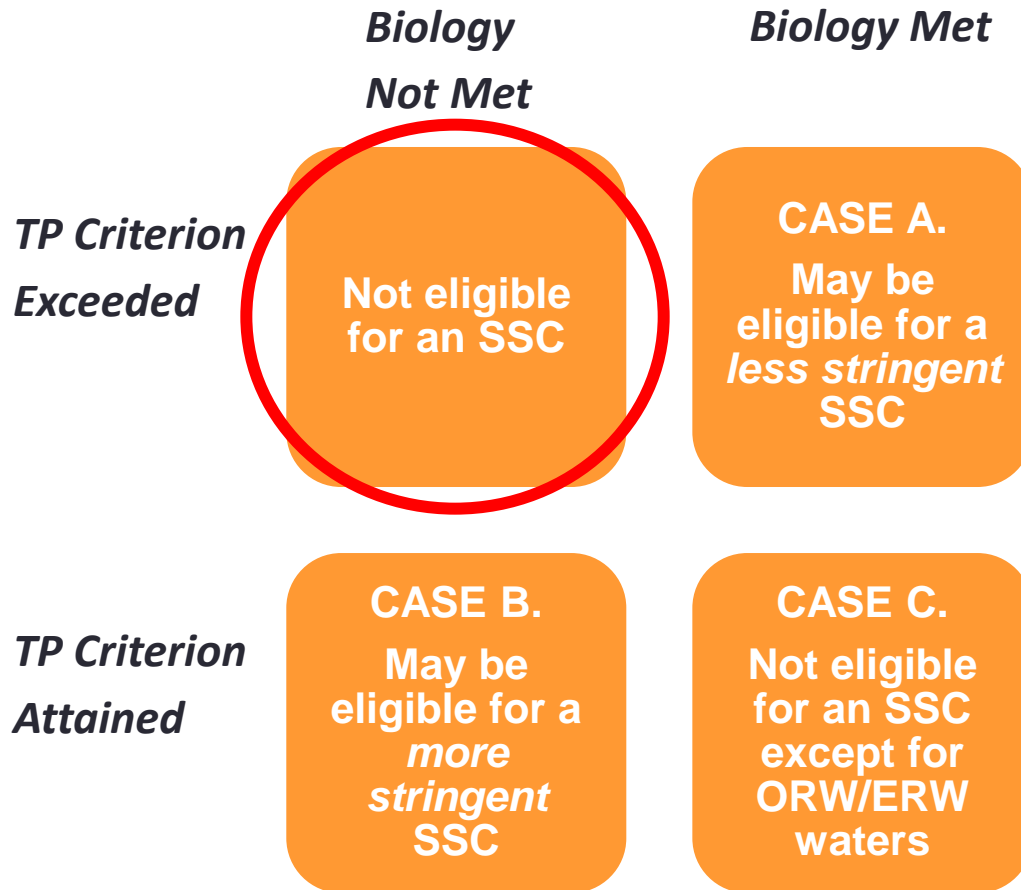
***TP Criterion
Attained***

**CASE B.
May be
eligible for a
*more
stringent*
SSC**

**CASE C.
Not eligible
for an SSC
except for
ORW/ERW
waters**

Compare TP & Biology

Not eligible



Phosphorus: Exceeding 75 ug/L TP
Biology: Algae problem

Compare TP & Biology

	<i>Biology Not Met</i>	<i>Biology Met</i>
<i>TP Criterion Exceeded</i>	Not eligible for an SSC	CASE A. May be eligible for a <i>less stringent</i> SSC
<i>TP Criterion Attained</i>	CASE B. May be eligible for a <i>more stringent</i> SSC	CASE C. Not eligible for an SSC except for ORW/ERW waters

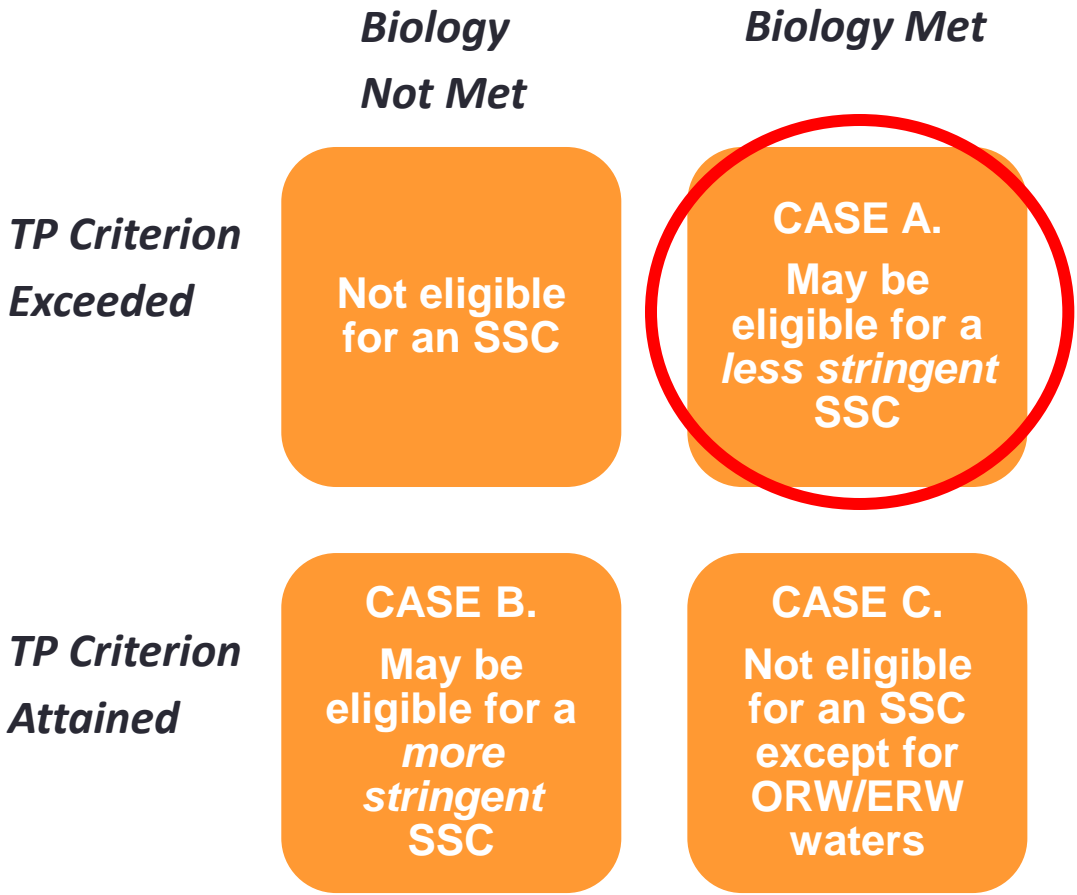
Not eligible



- Needs to go on the Impaired Waters List
- Clean-up/ restoration

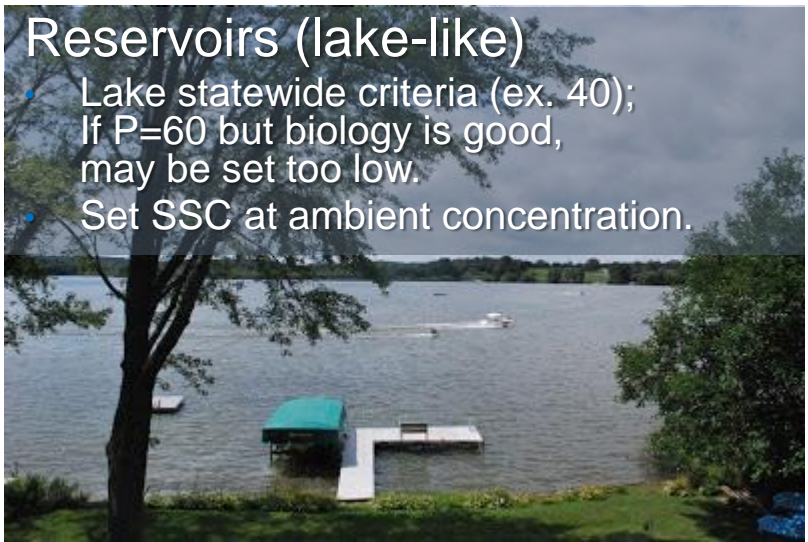
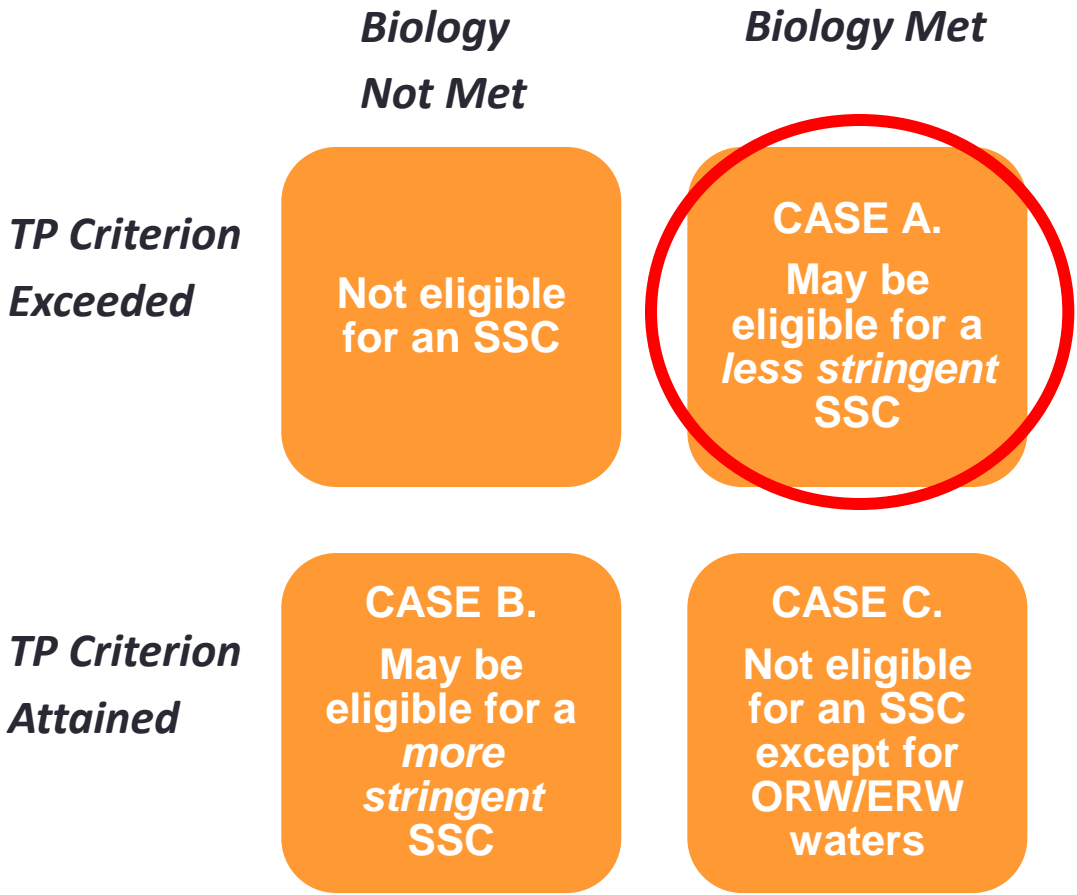
Phosphorus: Exceeding 75 ug/L TP
Biology: Algae problem

CASE A: Setting a Less-stringent (higher) SSC target



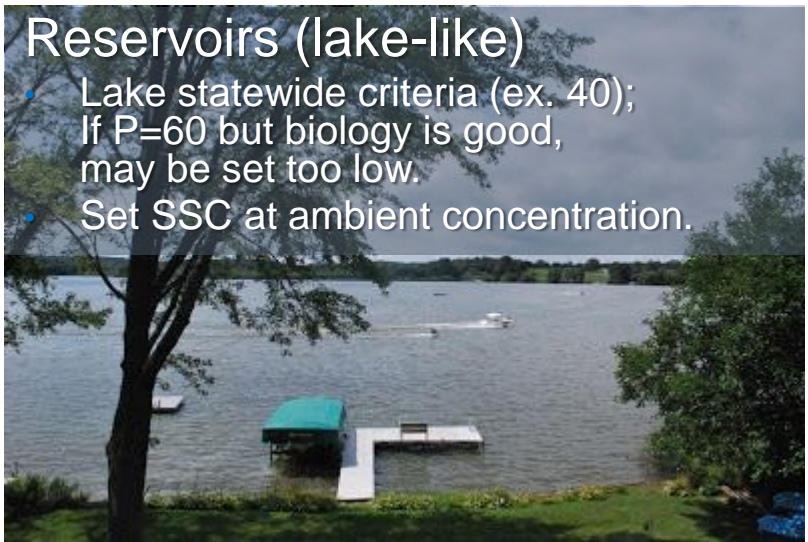
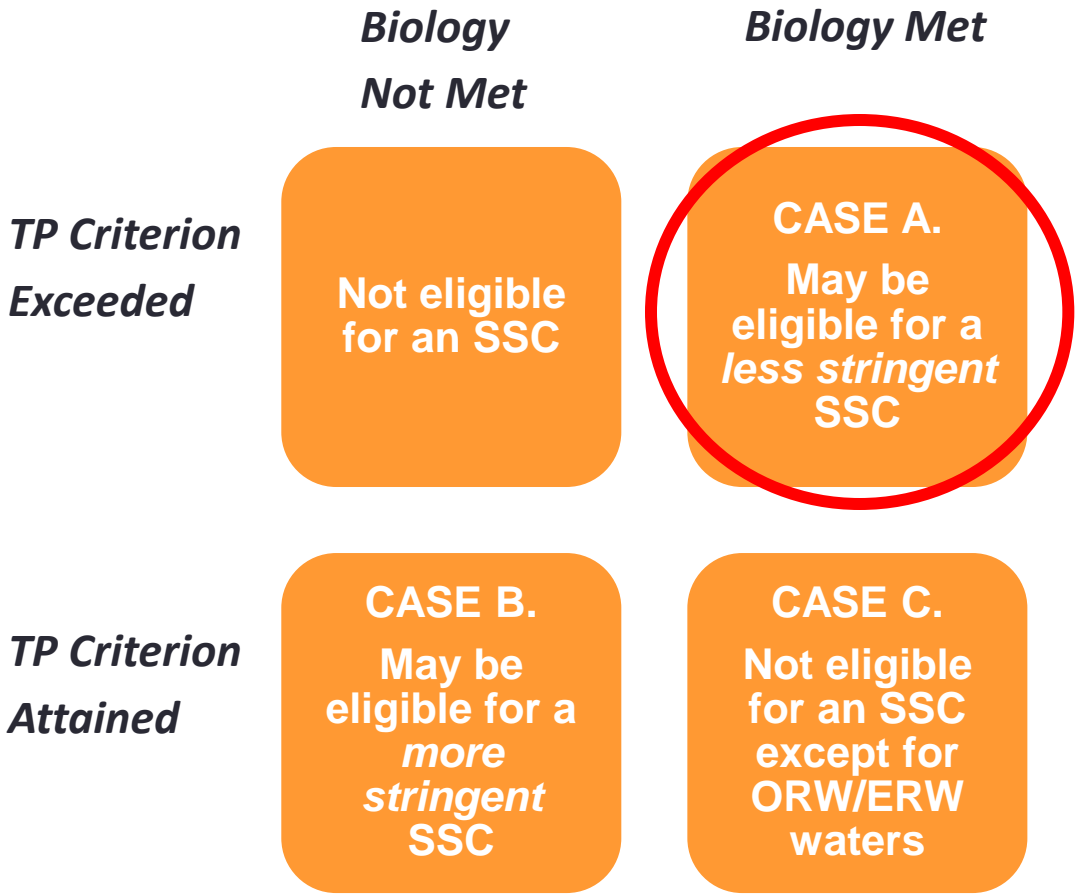
CASE A: Setting a Less-stringent (higher) SSC target

Most Likely for
Less-Stringent SSC

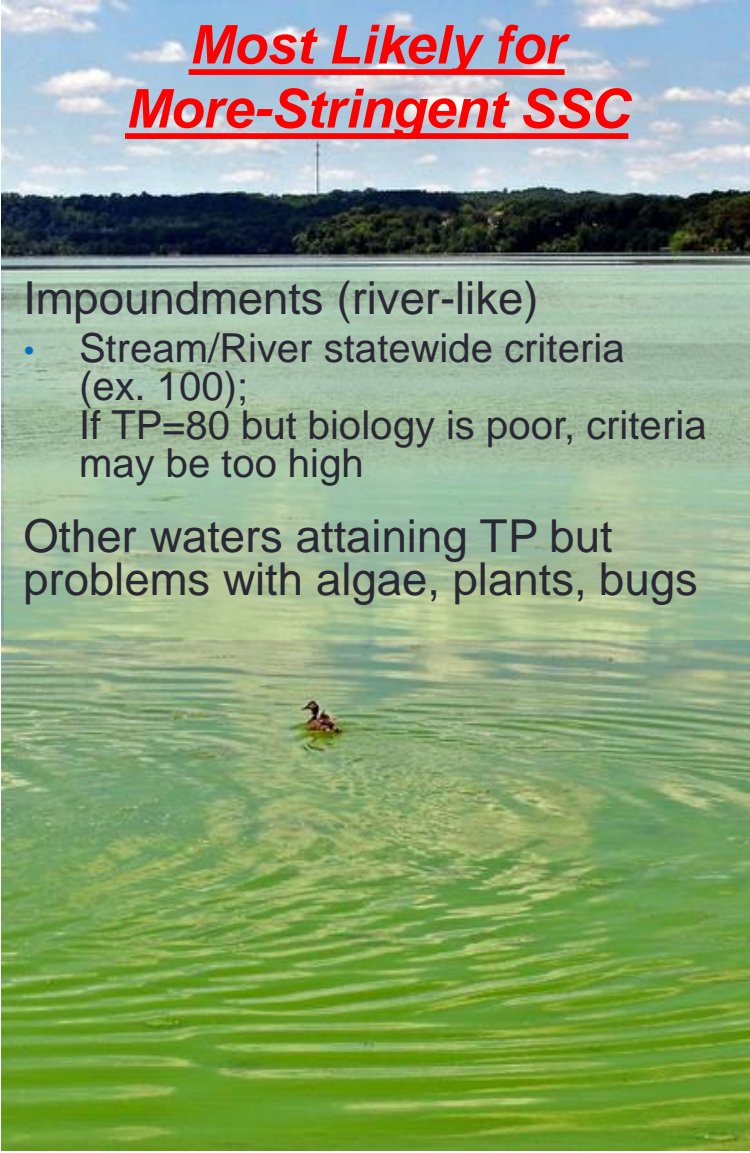
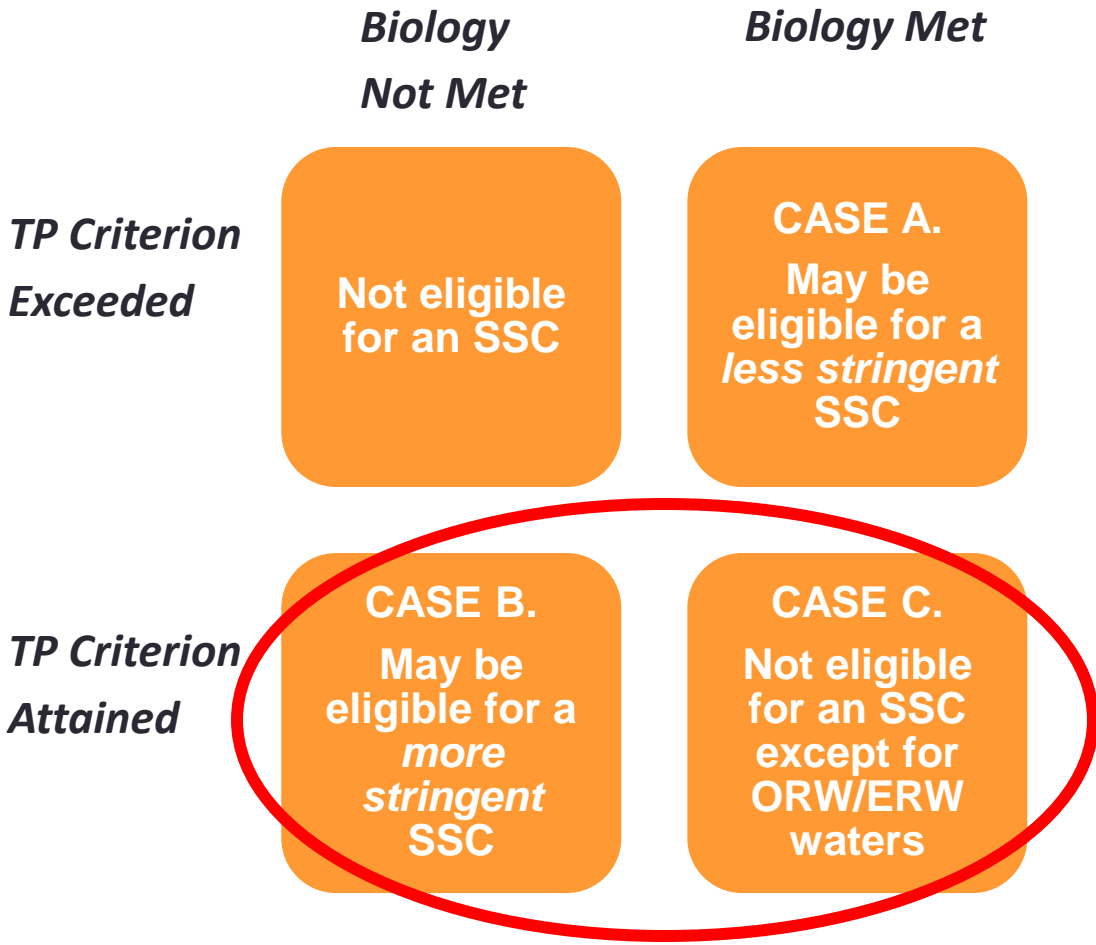


CASE A: Setting a Less-stringent (higher) SSC target

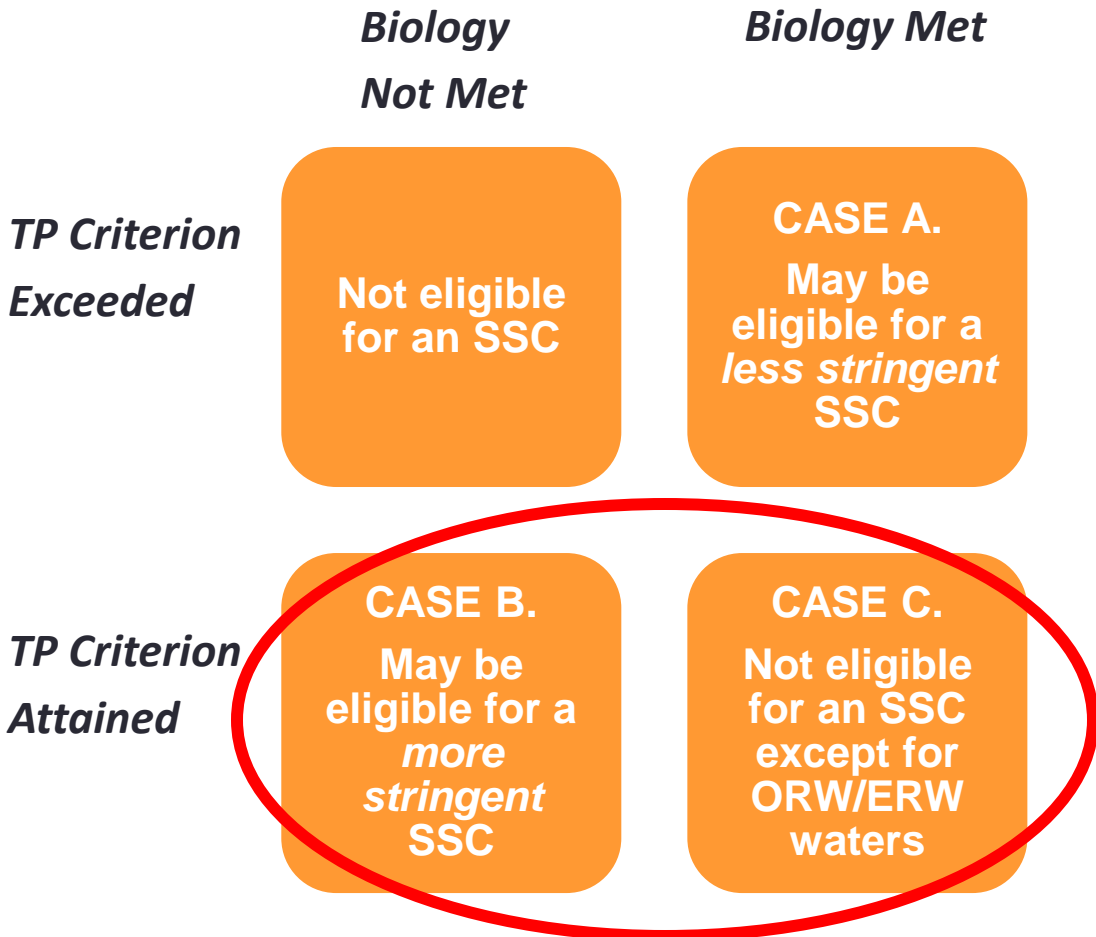
Most Likely for
Less-Stringent SSC



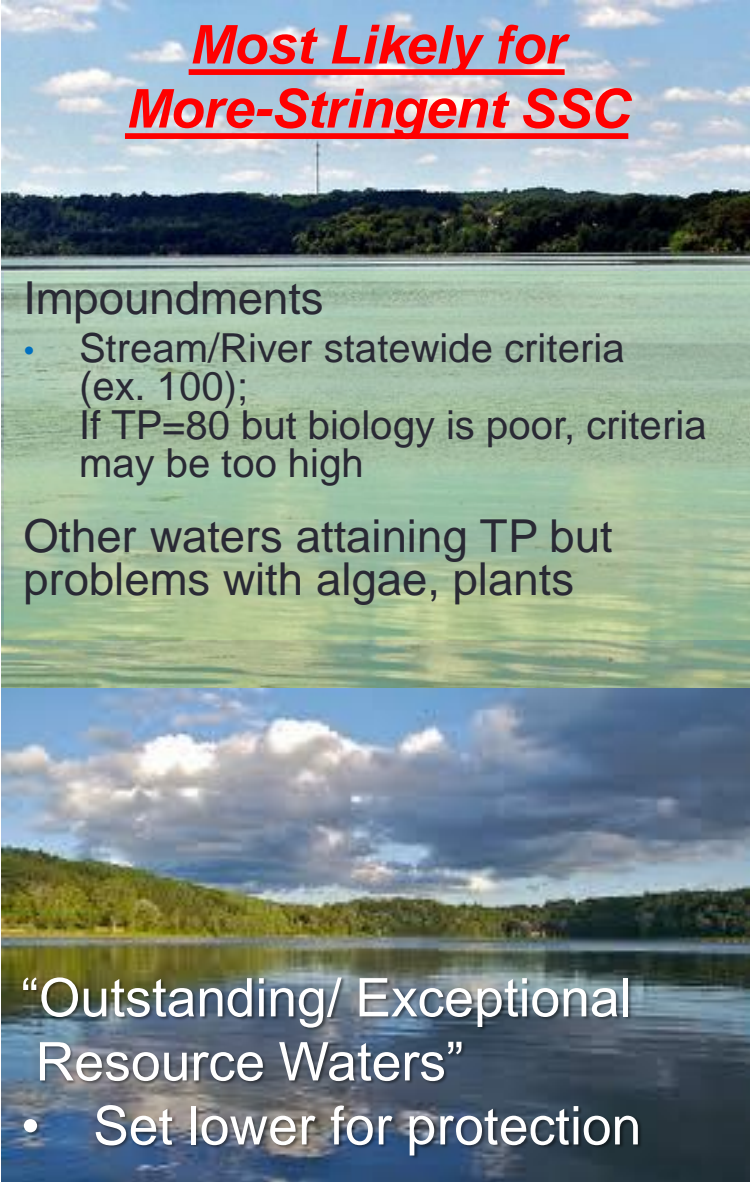
CASE B & C: Setting a More-stringent (lower) SSC



CASE B & C: Setting a More-stringent (lower) SSC



Most Likely for More-Stringent SSC



Impoundments

- Stream/River statewide criteria (ex. 100);
If TP=80 but biology is poor, criteria may be too high

Other waters attaining TP but problems with algae, plants

“Outstanding/ Exceptional Resource Waters”

- Set lower for protection

Economic Impact & Public Input



- Determining Economic Impact
 1. Assess which receiving waters will change use categories
 2. Identify which permits those changes will affect
 3. Solicit input on costs to dischargers
- External Advisory Team (summer)
- Public hearings & comment period

Summary of changes for waters near you...

- Designated Uses may be adjusted/updated
- Some permits may be affected
- Biological criteria used for assessments & impairment decisions
- Some waters may be eligible for Site-Specific Criteria



Photo: Turtle-Flambeau Scenic Waters Area

Discussion? Questions?



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