

National Biological Assessment
and Criteria Workshop

Advancing State and Tribal Programs



Coeur d'Alene, Idaho
31 March – 4 April, 2003

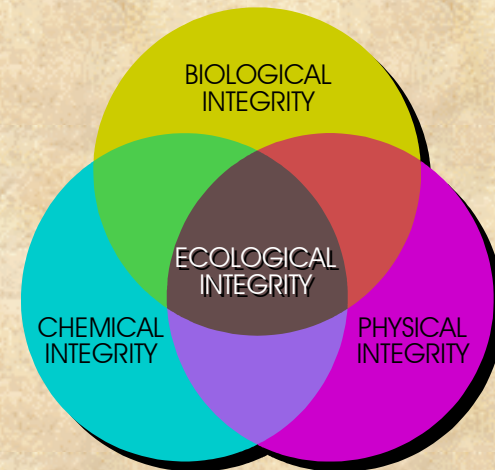
PLENARY SESSION

USING BIOLOGICAL ASSESSMENTS TO REFINE DESIGNATED AQUATIC LIFE USES: EPA/STATE WORKGROUP

Susan Jackson, US EPA

Clean Water Act

- Objective: “restore and maintain the chemical, physical and biological integrity of the Nation’s waters”
- Interim goal: “water quality which provides for the protection and propagation of fish, shellfish and wildlife ... wherever attainable.”



Using Biological Assessments to Refine Designated Aquatic Life Uses

**Long Term
EPA Goal:**

All States & Tribes have refined aquatic life uses and biological criteria in their water quality standards

**Program
Priority:**

Guidance on Use of Biological Assessments and Criteria to Refine Aquatic Life Uses in WQ Standards

Using Biological Assessments to Refine Designated Aquatic Life Uses

Why?

**Direct and More Accurate
Description of CWA Goal for
Aquatic Life**

- **prioritize & target resources**
- **appropriate level of protection**
- **communication to public**

Using Biological Assessments to Refine Designated Aquatic Life Uses

**How? Build on what works in existing
State and Tribal programs**

EPA/State Workgroup: Objectives

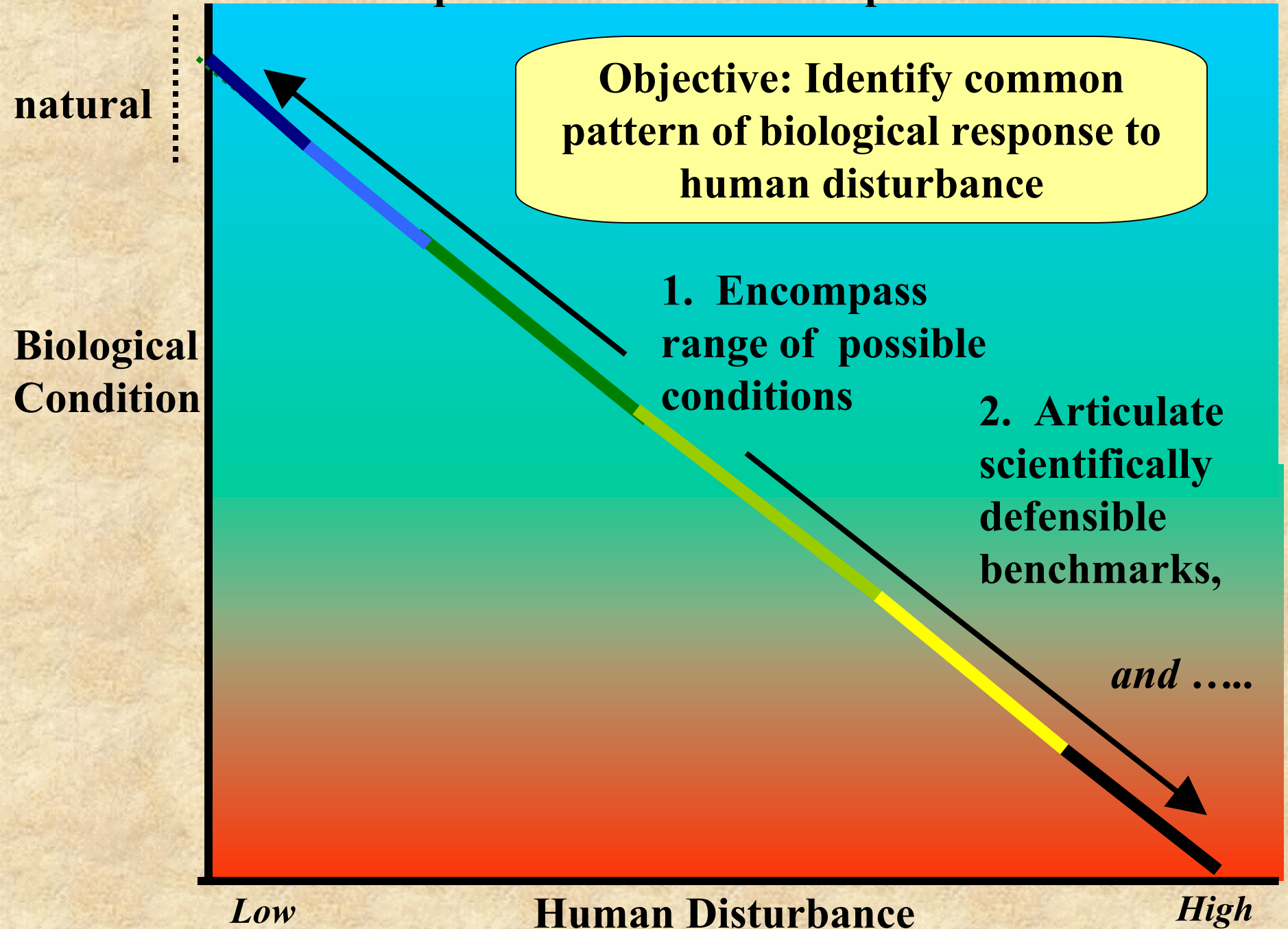
- ◆ **Develop national framework for use of biological assessments and criteria to refine designated aquatic life uses (quality gradient);**
- ◆ **Propose how to apply to existing State & Tribal WQS programs;**
- ◆ **Identify pitfalls and barriers to implementation;**
- ◆ **Problem solve and propose solutions.**

EPA/State Workgroup: Objectives

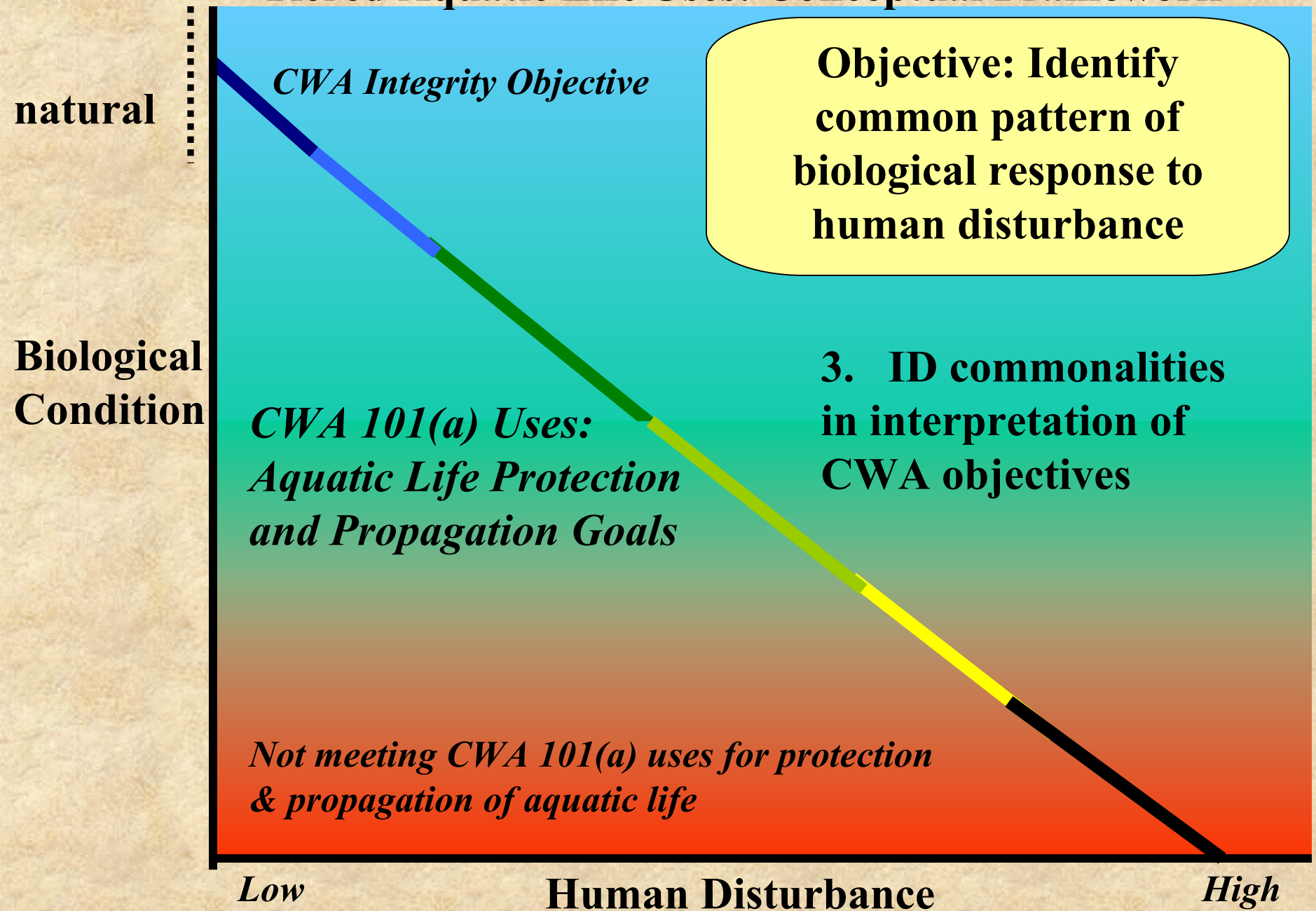
First Task:

- ◆ **Develop national framework for use of biological assessments and criteria to refine designated aquatic life uses (quality gradient);**
- ◆ **Propose how to apply to existing State & Tribal WQS programs;**
- ◆ **Identify pitfalls and barriers to implementation;**
- ◆ **Problem solve and propose solutions.**

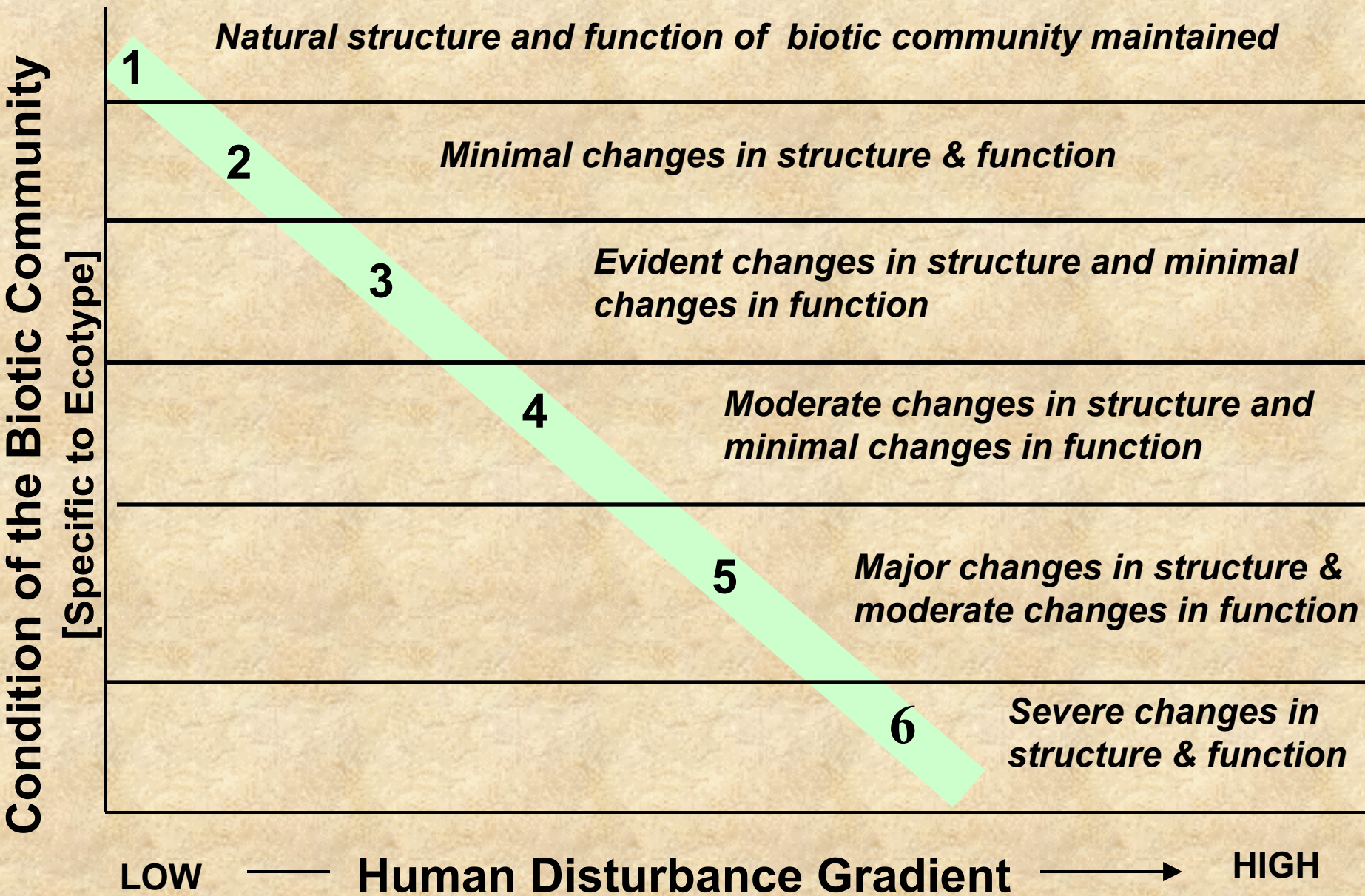
Tiered Aquatic Life Uses: Conceptual Framework



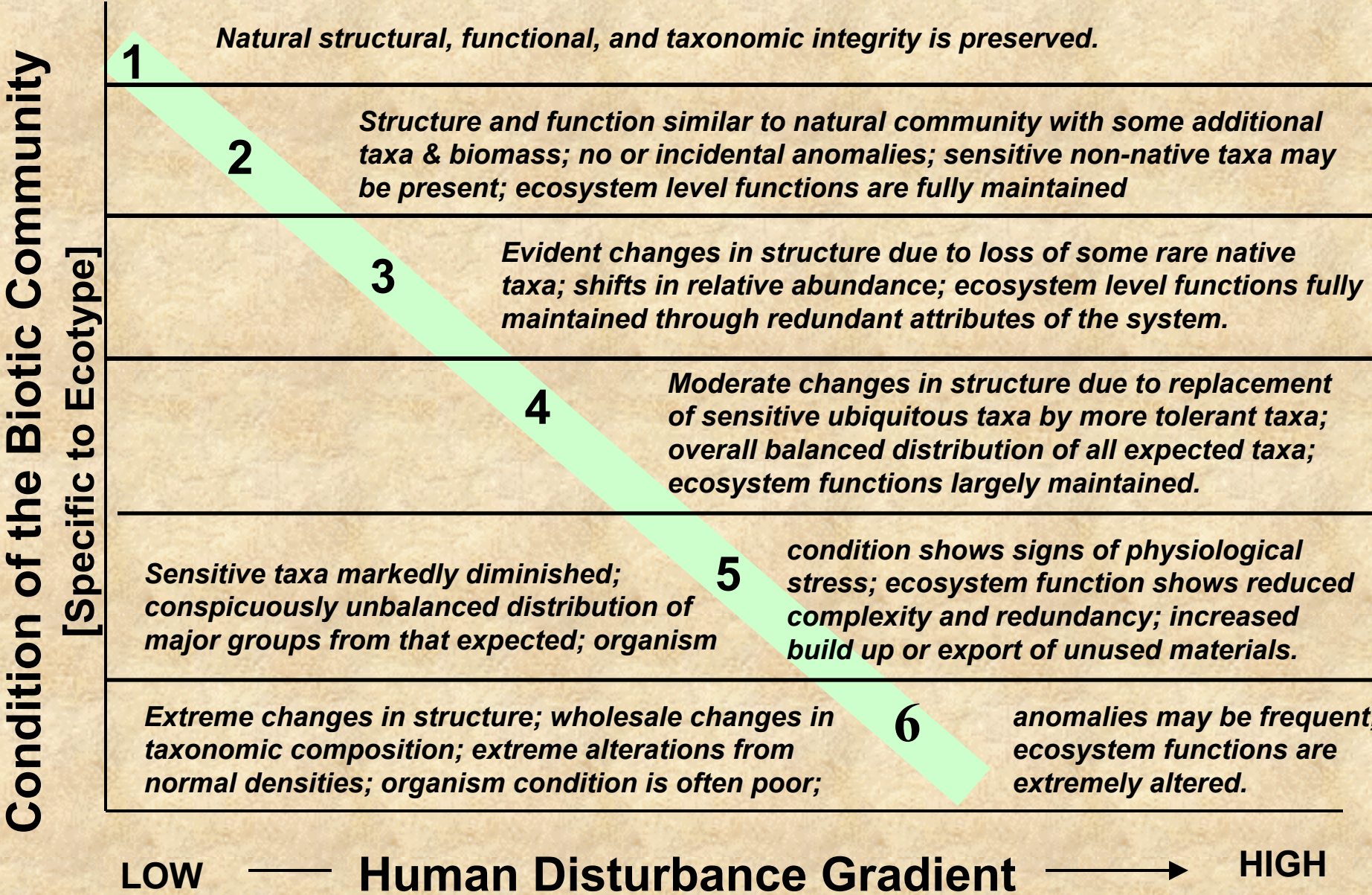
Tiered Aquatic Life Uses: Conceptual Framework



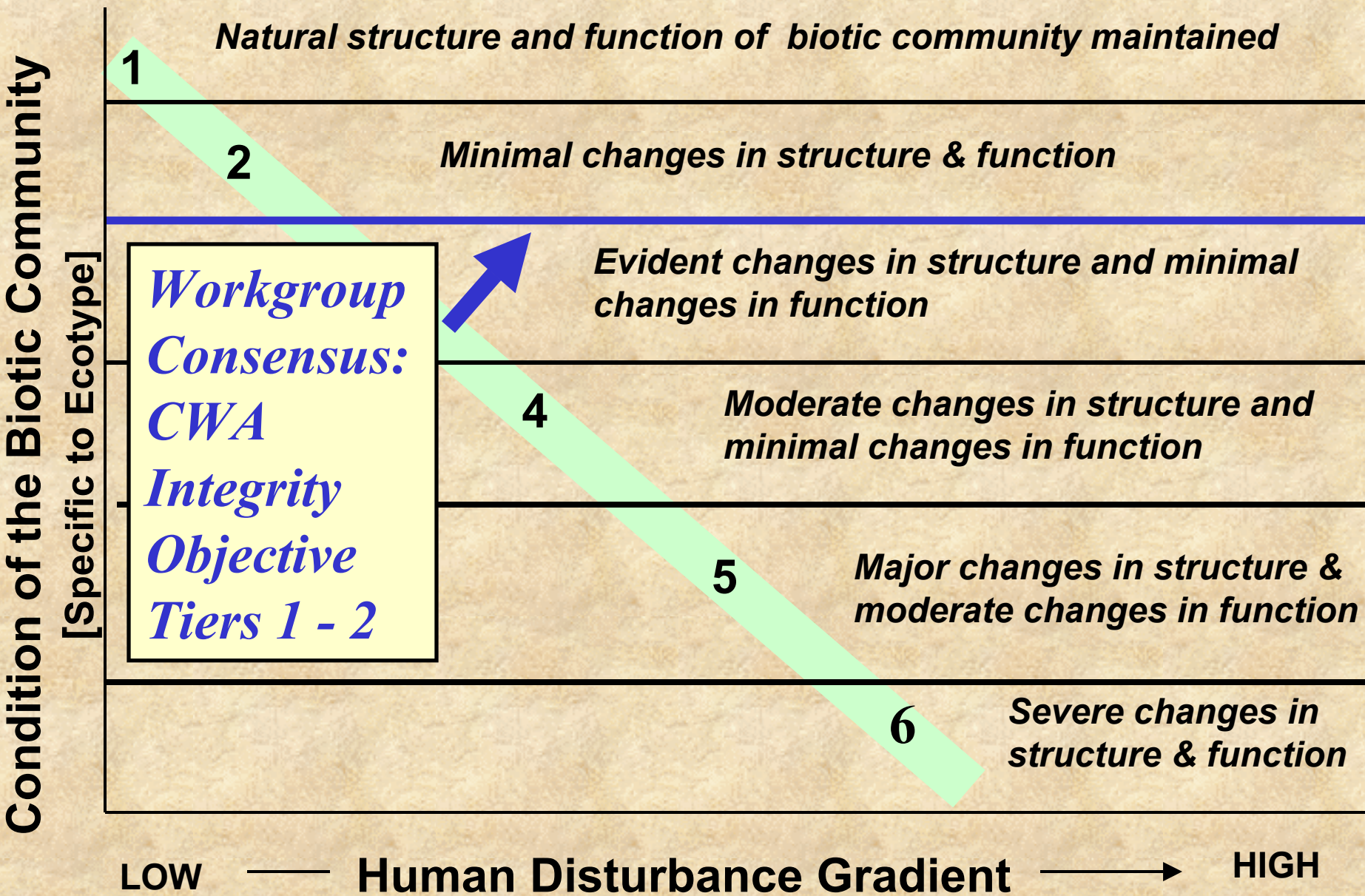
Tiered Aquatic Life Use Conceptual Model: Draft Biological Tiers -1



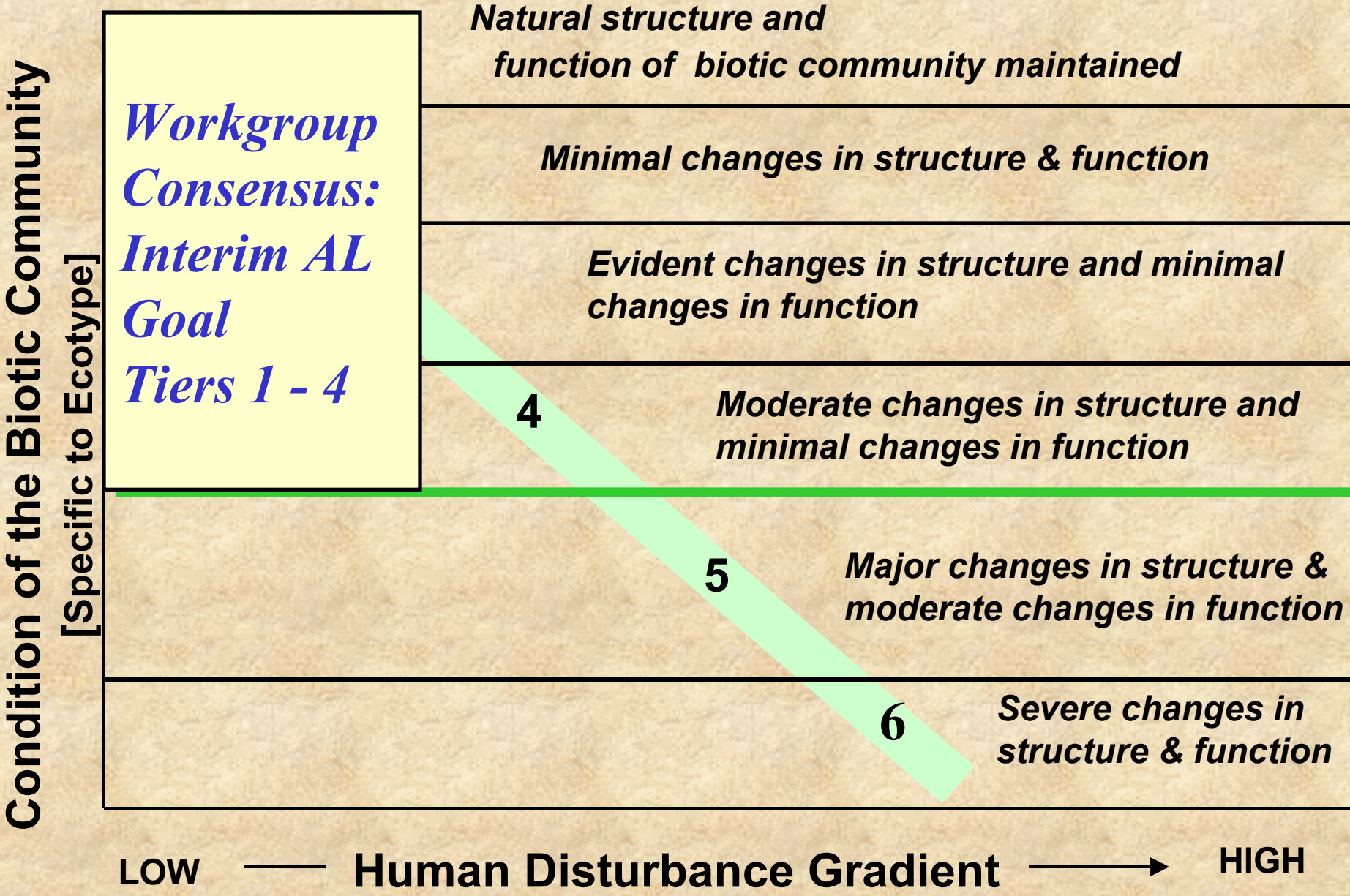
Tiered Aquatic Life Use Conceptual Model: Draft Biological Tiers -2



Tiered Aquatic Life Use Conceptual Model: Draft Biological Tiers -1



Tiered Aquatic Life Use Conceptual Model: Draft Biological Tiers -1



EPA/State Workgroup: Objectives

- ◆ **Develop national framework for use of biological assessments and criteria to refine designated aquatic life uses (quality gradient);**

Current Tasks:

- ◆ **Propose how to apply to existing State & Tribal WQS programs;**
- ◆ **Identify pitfalls and barriers to implementation;**
- ◆ **Problem solve and propose solutions.**

Purpose of Framework

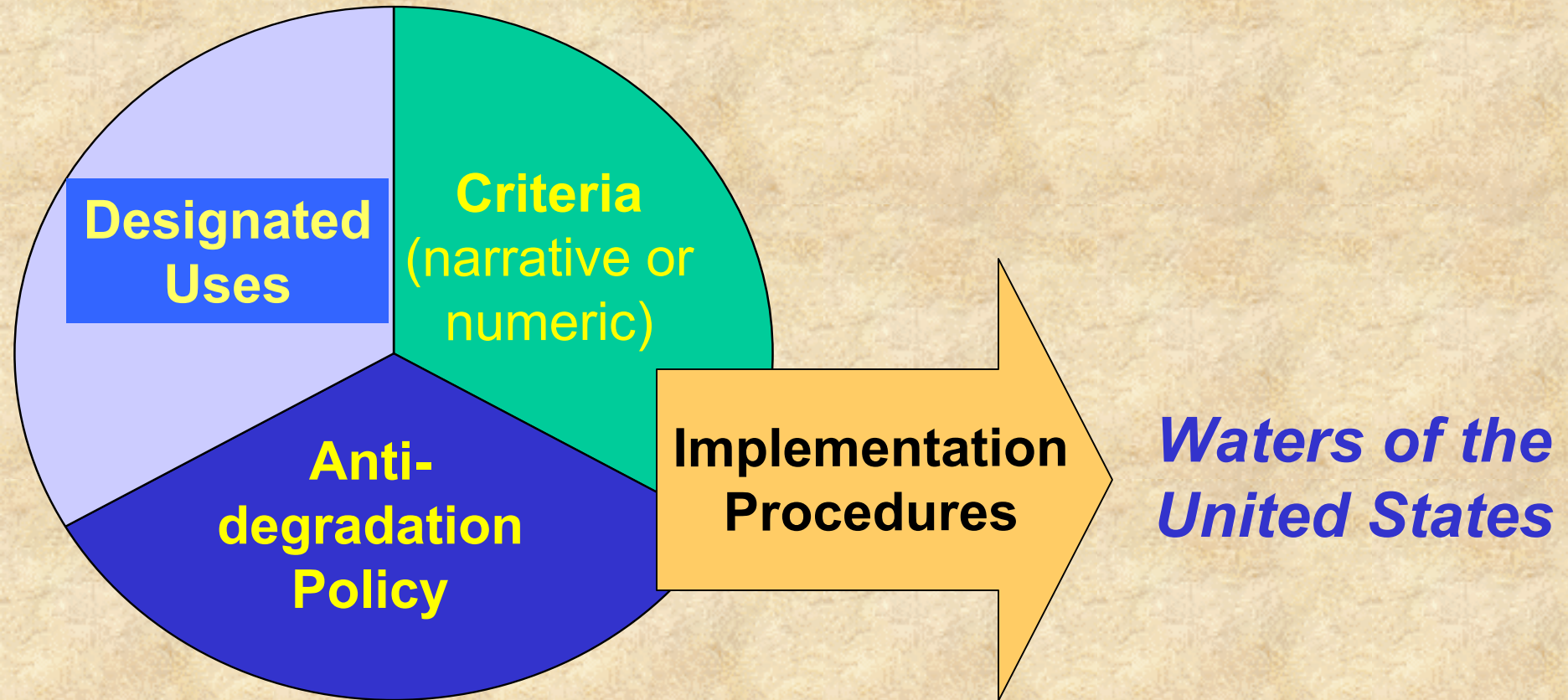
Nationally consistent approach for:

- ◆ **scientifically defensible benchmarks**
- ◆ **common framework for communication & evaluation - public, stakeholders, across political boundaries**
- ◆ **protection for excellent quality waters**
- ◆ **achievable goals for incremental restoration**

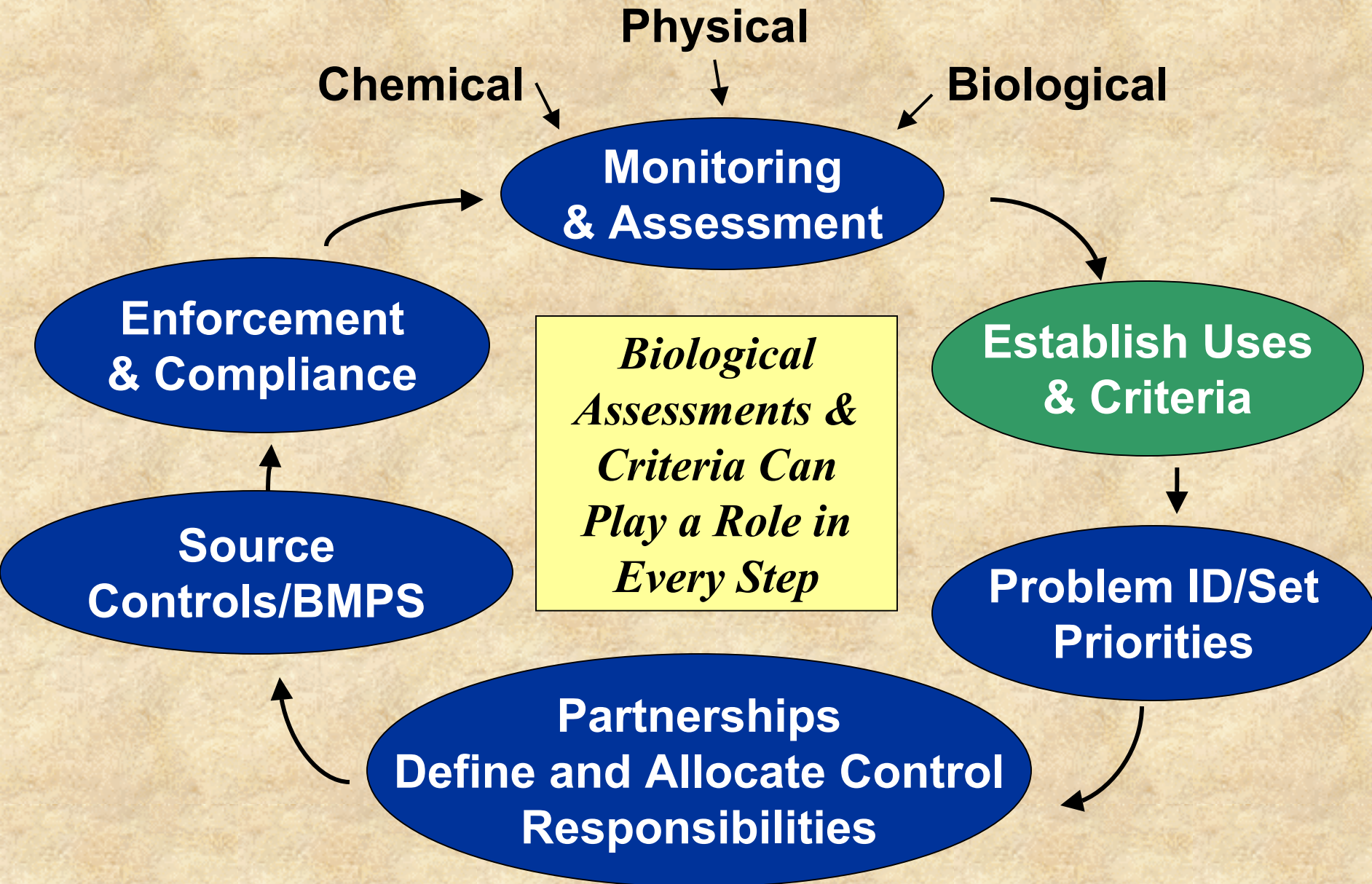
Key Points to Emphasize:

- #1: The framework is conceptual**
- #2: Number of tiers to be determined by State or Tribe**
- #3: “Best Fit” approach recommended**
- #4: The framework may be quantitatively defined by many possible methods**

Water Quality Standards



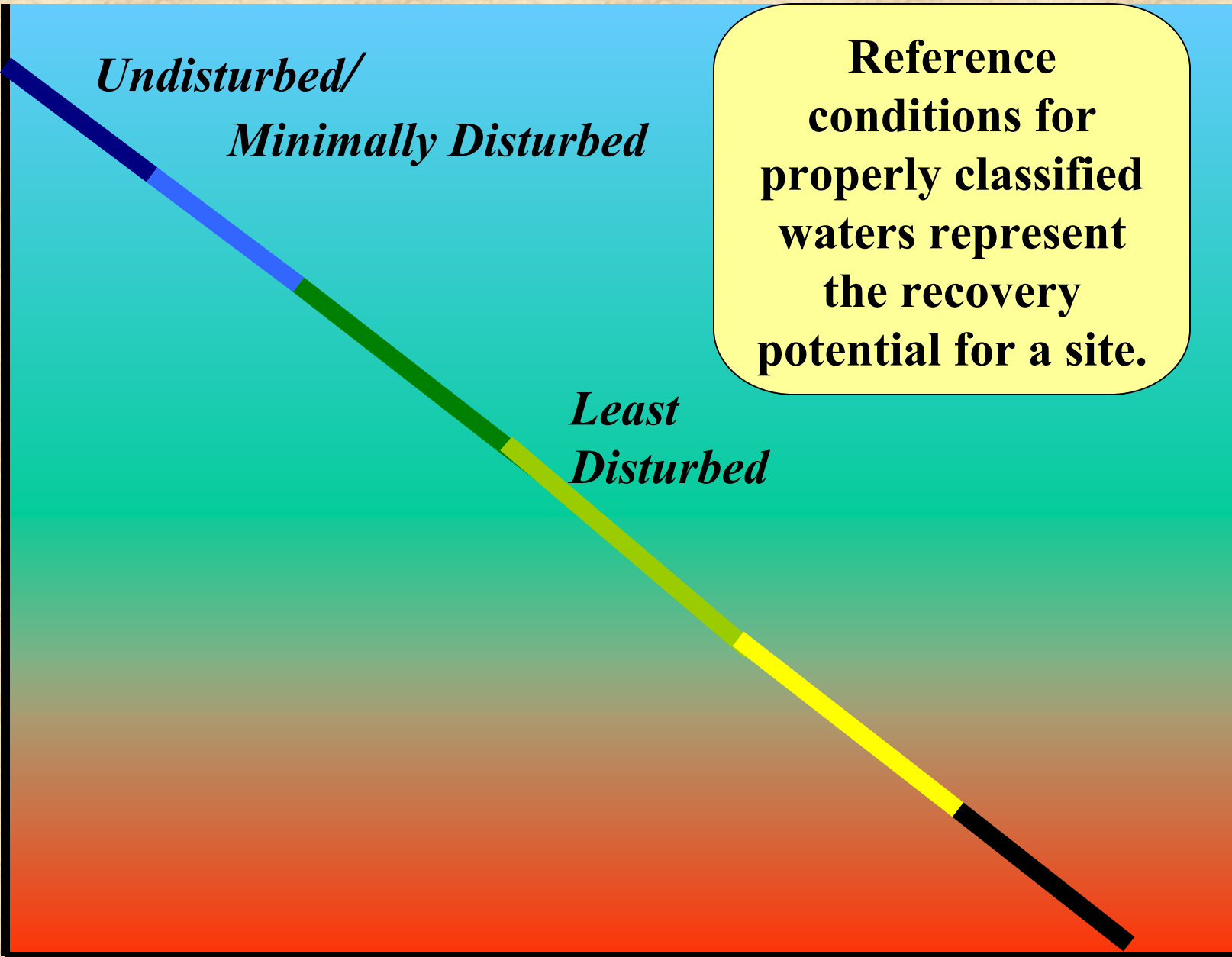
EPA's Water Program



Establishing Reference Conditions

natural

Biological
Condition



*Undisturbed/
Minimally Disturbed*

*Least
Disturbed*

**Reference
conditions for
properly classified
waters represent
the recovery
potential for a site.**

Low

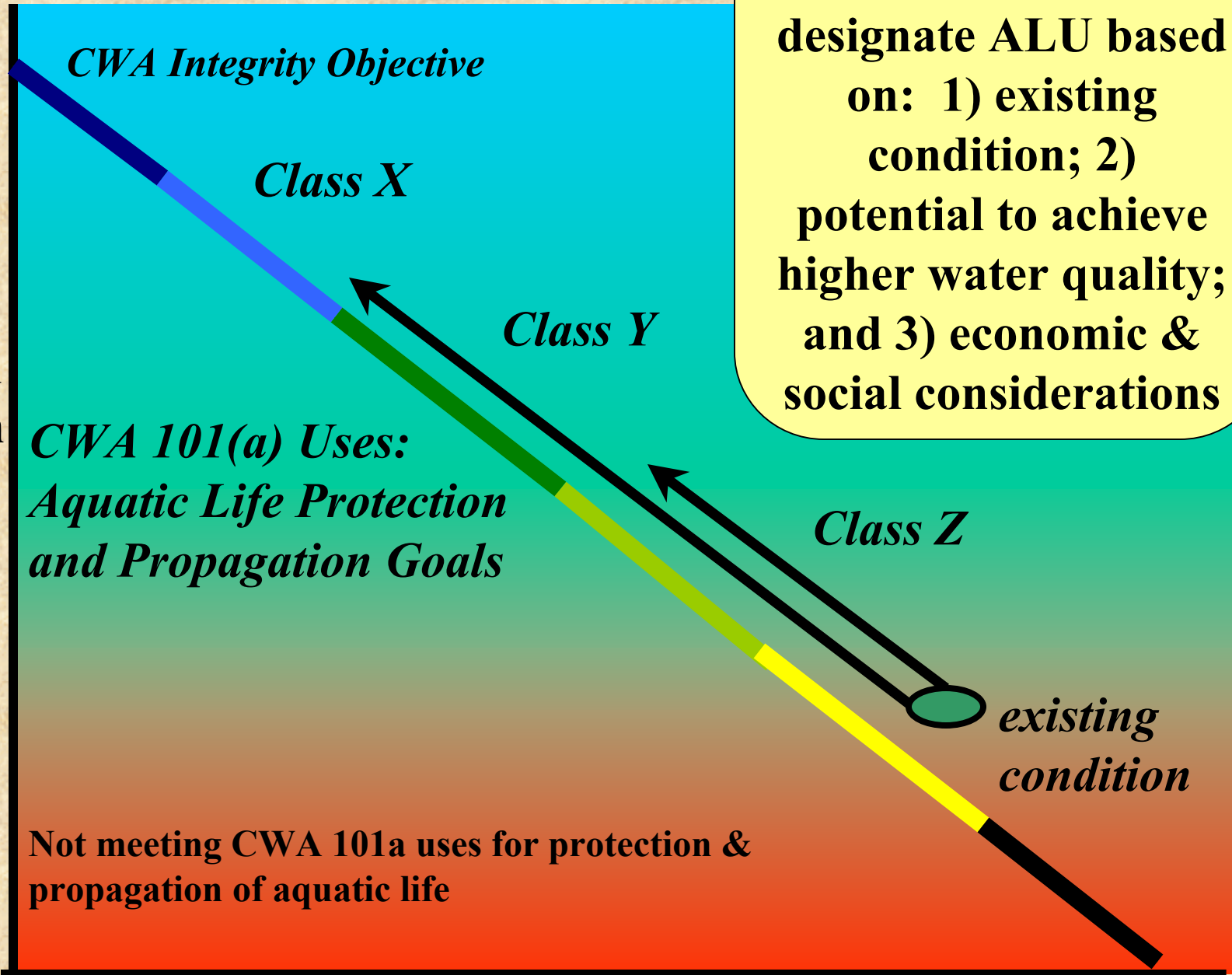
Human Disturbance

High

Designation of Aquatic Life Uses

natural

Biological Condition



CWA Integrity Objective

Class X

Class Y

Class Z

*CWA 101(a) Uses:
Aquatic Life Protection
and Propagation Goals*

*existing
condition*

Not meeting CWA 101a uses for protection & propagation of aquatic life

Low

Human Disturbance

High

Public Process to designate ALU based on: 1) existing condition; 2) potential to achieve higher water quality; and 3) economic & social considerations

Designated Aquatic Life Uses: Example Maine

natural

Class AA/A: Habitat Natural.
Aquatic life as naturally occurs

Biological
Condition

Class B: Habitat unimpaired. Ambient
water quality sufficient to support life
stages of indigenous species. No
detrimental change allowed.

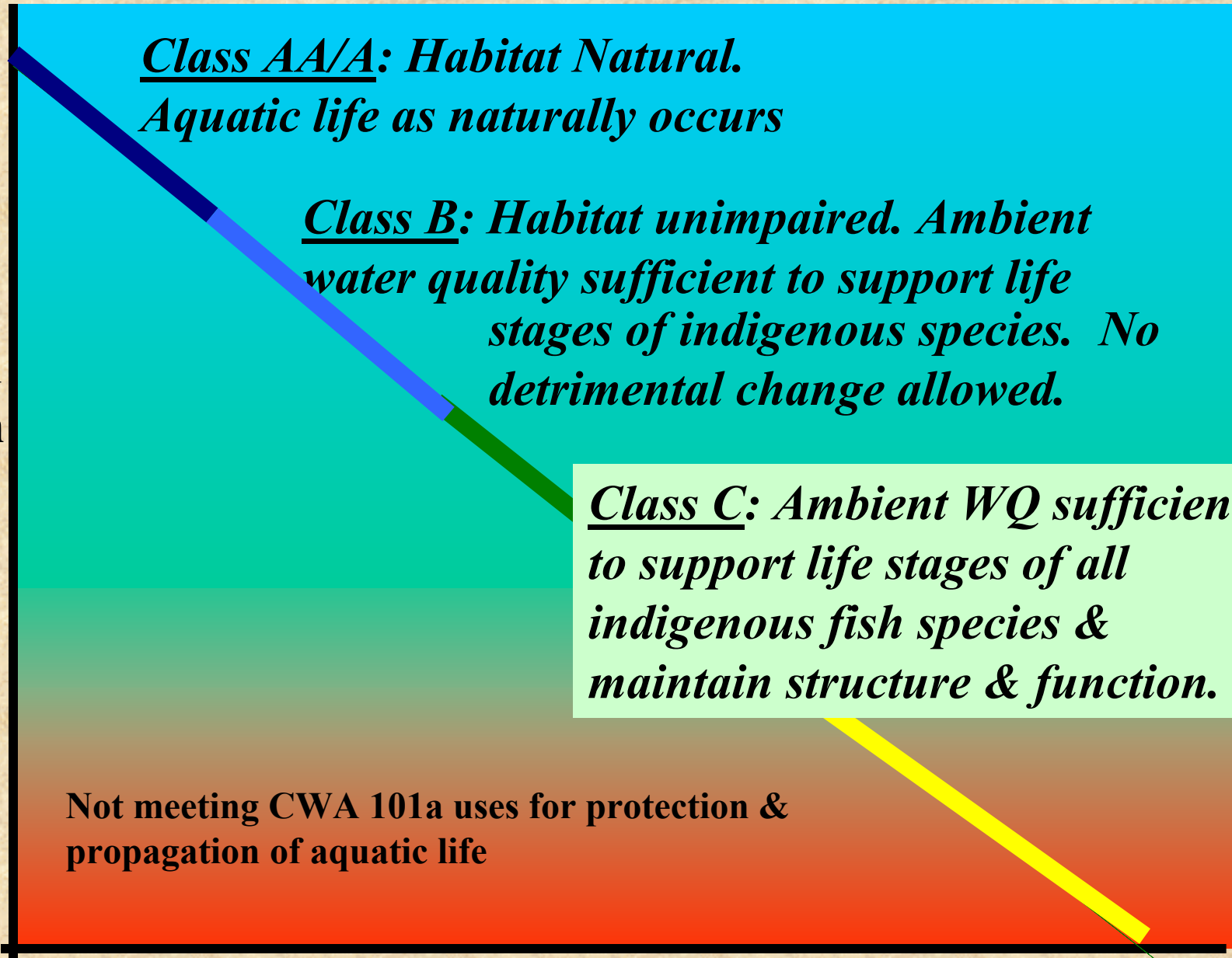
Class C: Ambient WQ sufficient
to support life stages of all
indigenous fish species &
maintain structure & function.

Not meeting CWA 101a uses for protection &
propagation of aquatic life

Low

Human Disturbance

High



Designated Aquatic Life Uses: Ohio/Streams & Rivers

natural

Biological
Condition

Exceptional Warmwater Habitat: an unusual, balanced integrated community of organisms having a species composition, diversity and functional composition comparable to the 75% ile of statewide reference sites

Warmwater Habitat:

... comparable to the 25%ile of ecoregional reference sites

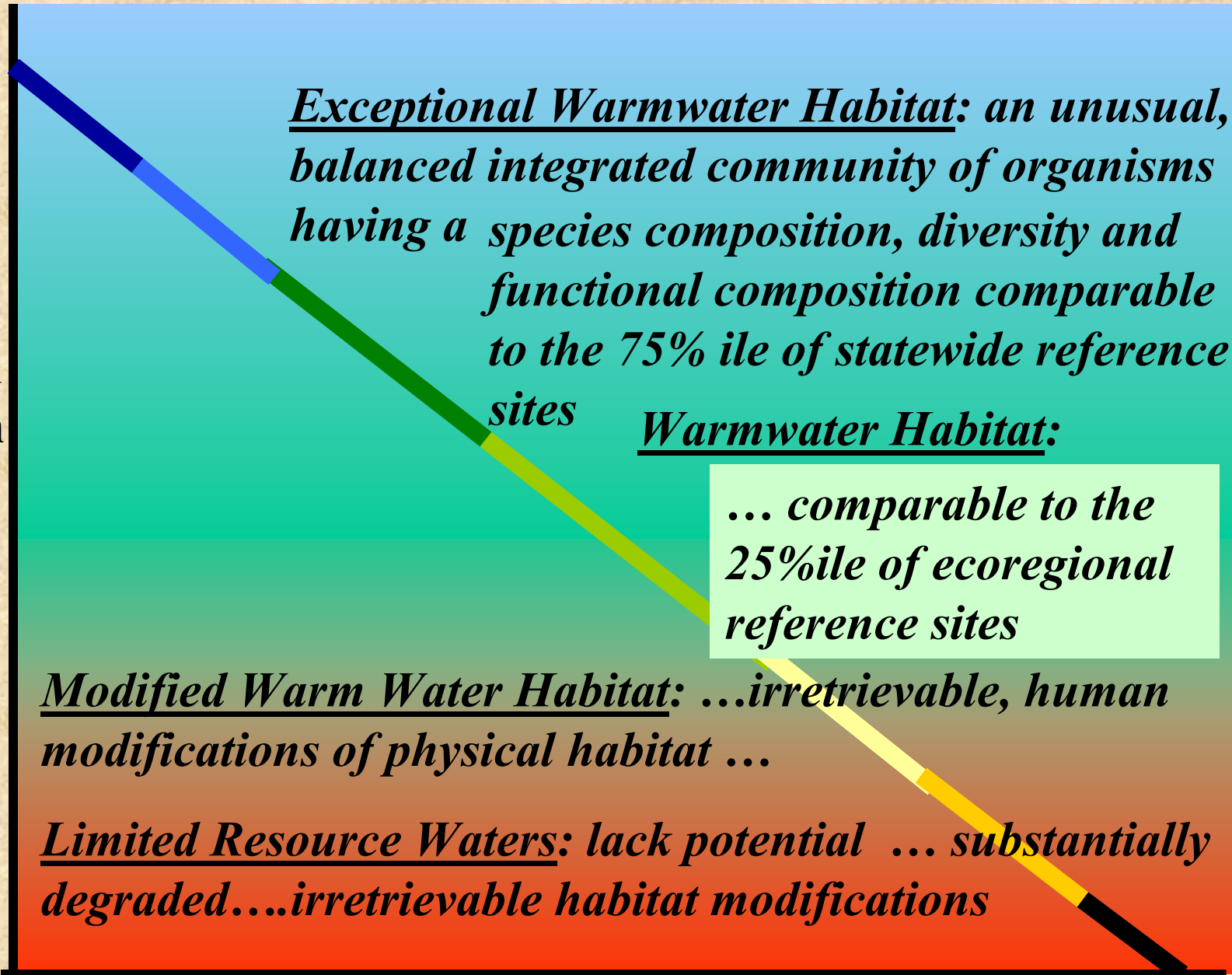
Modified Warm Water Habitat: ...irretrievable, human modifications of physical habitat ...

Limited Resource Waters: lack potential ... substantially degraded....irretrievable habitat modifications

Low

Human Disturbance

High



Status of Workgroup Effort

Draft Biological Condition Gradient (TALU 101)

Draft Human Disturbance Gradient (TALU 201)

Implementation (TALU 202)

Status of Workgroup Effort

Case Scenarios – *in process*

**Streams: Northern forested coldwater,
Great Plains, Arid West, MW Headwaters**

Rivers: Ohio and Upper Mississippi Rivers

Wetlands: depressional and riverine

Estuary: Narragansett Bay, RI

Workgroup Recommendations Going Forward to EPA This Spring:

- 1. Draft Conceptual Model (BCG and HDG)**
- 2. Implementation Options**
- 3. Technical Underpinnings:**
 - relationship between BCG and WQC**
 - critical elements of a biological assessment program**
 - strengths of current model and areas of uncertainty**
- 4. Case Examples: Different Places and Types of Waterbodies (streams, rivers, wetlands, estuaries)**