

Anti-Degradation Pre-Rulemaking Meeting #2

Identification and Protection of High Quality Waters and Existing Uses

Vermont DEC

February 16, 2010 – Skylight Conference Room,
Waterbury, VT

Agenda

- Introductions
- Background on Existing Uses
- Determination of existing uses through use of procedures in basin planning and wastewater permitting
- Determination of high quality waters - assessment, and monitoring
- Overview of Act 43 report
- Description of Tier 2 ½ Concept

Existing Uses

- Designated Uses
- Criteria
- UAA
- Existing Uses: *“Existing uses only come into play in the context of removing a designated use. For example, State X wants to remove a primary contact recreation designated use (swimming) from a lake. No one swims in this lake (water smells bad, covered in algae, there’s a better lake down the road, etc etc). One of the first questions this state needs to address is whether or not swimming is an existing use of the lake. If it is, the state may not remove the use. Why not? The WQS regs say that you may not remove a designated use that is an existing use. If swimming is NOT an existing use, the state may proceed forward with a UAA analysis.”*

Existing Uses

- Existing uses are the “floor” of water quality protection
- “Existing Uses” = “a **use** which has actually occurred on or after November 28, 1975, in or on waters, whether or not the use is included in the standard classification of the waters, and whether or not the use is presently occurring.”

Existing Uses

- Tier 1 Protection – Existing uses and the level of water quality necessary to protect those existing uses, must be maintained and protected.
- A determination of what constitutes an existing use of a particular water is made either during the basin planning process or on a case-by-case basis during consideration of an application.
- Once an existing use is designated by the Secretary, that use cannot be eliminated.

Existing Uses

- How are existing uses defined?
- EPA guidance is limited.
- Some helpful guidance:
 - April 7, 1986 “Determination of Existing Uses for Purposes of Water Quality Standards Implementation”
 - December 1983 “Questions and Answers on Antidegradation”
 - EPA Water Quality Standards Handbook

Existing Uses

- 1986 “Determination of Existing Uses” Guidance
 - EPA’s water quality regulation does not establish a level of specificity which each state must apply in determining what “uses” exist.
 - However, the regulation directly or indirectly establishes the following principles applicable to that process:

Existing Uses

- The state selects the level of specificity it desires for identifying existing uses (e.g. whether to treat secondary contact recreation as a single use or to define subcategories of secondary recreation) There are two limitations to the State's decision:
 - The state must be at least as specific as the uses listed in Sections 101(a) and 303(c) of the CWA and
 - The State must be at least as specific as the written description of the use classifications adopted by the State

Existing Uses

- Section 101(a) of CWA: “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of **fish, shellfish, and wildlife** and provides for **recreation** in an on the water.”
- Section 303(c) of CWA: “Such standards shall be established taking into consideration their use and value for **public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial** and other purposes and also taking consideration their use and value for **navigation**.”

Existing Uses

- Must be at least as specific as the written description of the use classifications adopted by the State: (Use designations for A(1), A(2), (B) waters in VWQS)
 - Aquatic biota, wildlife and aquatic habitat
 - Aesthetics
 - Public Water Supply
 - Irrigation of crops, and other agricultural uses
 - Swimming and other primary contact recreation
 - Boating, fishing and other recreational uses

Determination of Existing Uses

- VWQS Section 1-03.B.1
 - In making a determination of existing uses, “the Secretary shall consider at least the following factors:
 - Aquatic biota and wildlife that utilize or are present in the waters;
 - Habitat that supports existing aquatic biota, wildlife or plant life;

Determination of Existing Uses

- The use of the waters for recreation or fishing;
- The use of the waters for water supply or commercial activity that depends directly on the preservation of an existing high level of water quality.”
- With regard to the above factors, evidence of the use’s ecological significance in the functioning of the ecosystem or evidence of the uses’ rarity.

Existing Uses and “Artifacts”

- While sustaining a small coldwater fish population, a stream does not support an existing use of a coldwater fishery. The existing stream temperatures are unsuitable for a thriving coldwater fishery. The small marginal population is an **artifact** and should not be employed to mandate a more stringent use (true coldwater fishery) where natural conditions are not suitable for that use.

Existing Uses and “Artifacts”

- A use attainability analysis or other scientific assessment should be used to determine whether the aquatic life population is in fact an artifact or is a stable population requiring water quality protection.

Existing Uses and Mixing Zones

- Mixing zones are an example of when the entire extent of the waterbody is not required to be given full existing use protection. The area within a properly designated mixing zone may have altered benthic habitat and a subsequent alteration of the portions of the aquatic community. Any effect on the existing use must be limited to the area of the regulatory mixing zone.

Existing Uses and Wetlands

- A literal interpretation of the antideg policy would prevent any 404 wetland fill permit
- Therefore, EPA interprets 40 CFR 131.12(a)(1) to be satisfied with regard to fills in wetlands if the discharge does not result in “significant degradation” to the aquatic ecosystem as defined under Section 230.10(c) of the Section 404(b)(1) guidelines.

Outstanding Questions regarding Existing Uses

- What constitutes an elimination of an existing use?
- How does the concept of elimination work in various permitting programs?
- Must existing uses be maintained in all parts of the waterbody segment in question?
- Must species that are in the waterbody consistent with the designated use be protected, even if not prevalent in number or importance?

Outstanding Questions regarding Existing Uses

- What is most efficient process for identification of existing uses? Basin planning or during permit application review?
- During permit application process who investigates existing uses? Applicant? Agency? Public?



Existing Uses – Tier 1

Identification & protection of existing uses:

A) Case & site specific in the context of an application.

OR

B) During the river basin water quality management planning process.

Existing Uses – Tier 1

A) Case or site-specific related to an application.

DEC procedure (NOV 1996) - used to determine the presence of an existing use (contact recreation – swimming) in situations involving the direct discharge of effluent containing pathogenic waste.

- New discharge
- Existing discharge with increase to effluent flows

Existing Uses – Tier 1

Examples of situations/cases where procedure applied:

Bristol – New Haven River

Cabot – Winooski River

Stowe – West Branch Winooski River

Colchester – Lamoille River

Existing Uses – Tier 1

Consideration of an application (cont'd) –

Finding 1. Evidence that people have access to the waters for contact recreation.

- parking or pull off areas, trails, land ownership

Finding 2. Evidence of attractive contact recreation sites in & along the affected water.

- out of water beach/rest area, water depth, geologic setting, aesthetic nature of water's quality

Information gathered under Findings 1 & 2 will be used by the Agency to determine the level of documentation deemed necessary to make Finding #3.

Existing Uses – Tier 1

Consideration of an application (cont'd)

Finding 3. There is more than incidental contact recreational use of the affected waters.

- Observed regularity of seasonal use, local accounts of regularity of use
- Linked to “prime” season of use

Take home message:

Swimming determined to be present as an Existing Use under this procedure (findings 1, 2 & 3) is/shall be protected.

Questions ??

Existing Uses – Tier 1

B) During river basin water quality management planning process.

Four underlying principles within DEC procedure (JUNE 2008):

- (1) ANR presumes that all lakes & ponds that exist within a basin have existing uses of fishing, contact recreation and boating.
- (2) Each river basin plan will include a list of existing uses of contact recreation, fishing, boating in/on flowing waters & a list of public drinking surface water supplies identified using criteria.
- (3) To determine the presence of an existing use for uses noted in #2, positive findings with respect to several conditions need to be made.
- (4) The list of existing uses in each river basin plan is not intended to represent an exhaustive list of all existing uses, but merely an identification of very well known existing uses. Additional existing uses noted in #2 may be identified during ANR's consideration of an application or in future iterations of the basin plan.

Existing Uses – Tier 1

B) During the basin planning process (cont'd)

Contact recreation (swimming) – flowing waters

* More than an incidental level of use

* Positive findings for BOTH:

Condition 1. There is documentation and/or physical evidence that people have access to the waters for contact recreation.

- public lands or easement for public use

Condition 2. There is documentation and/or physical evidence of attractive contact recreation sites in and along the affected water.

- features/conditions/appearances from those in (A)

Existing Uses – Tier 1

B) During river basin planning process (cont'd)

Recreational boating - flowing waters

* More than incidental level of use

* Positive findings for BOTH:

Condition 1. There is documentation and/or physical evidence that people have access to the specified reach of water for recreational boating.

- public lands or easement allowing access (put in – take out)

Condition 2. There is documentation and/or physical evidence of attractive recreational boating in, on or along the specified reach of water.

- flat/whitewater, geologic feature, aesthetic appearance of quality

Existing Use – Tier 1

B) During basin planning process (cont'd)

Recreational fishing – flowing waters

* More than incidental level of use

* Positive findings for BOTH #1 & #2 OR for #3 or #4

Condition 1. There is documentation and/or physical evidence that people have public access to the waters for recreational fishing.

- public lands or easement allowing access

Condition 2. There is documentation and/or physical evidence of sites to fish in, on or along the specified reach of water.

- Land areas to engage in angling, sufficient habitat structure & diversity, presence of fish populations targeted by Vermont anglers

Existing Use – Tier 1

B) During basin planning process (cont'd)

Recreational fishing – flowing waters

Condition 3. There is documentation of reaches where special regulations for fishing have been imposed by the State of Vermont (whether stocked fish or not).

OR

Condition 4. There is documentation of reaches or affected waters that are stocked as a result of being identified on the State's Managed Request for Cultured Fish.

Existing Uses – Tier 1

B) During basin planning process (cont'd)

Public drinking surface water supply

* More than incidental level of use

- excludes non-public & domestic supplies

Condition 1. Documentation and/or physical evidence exists that the specified waters are used as a source for public drinking water supply.

- recorded regular use of specified waterbody as an active public source, recorded use of specified waterbody as a designated emergency (not in active use) public source, physical intake for treatment & distribution of water for public drinking water supply from specified waterbody.

Table 2. Recreational Boating as an Existing Use of Specific Waters within the Lamoille Watershed.

Location	Documentation	Rating	Classifications (if appropriate)	Put in	Take out
Lamoille River- Greensboro Bend to Hardwick (7-8 miles)	<i>Vermont's White Water Rivers</i>	Highly Important	Class I-III, longest stretch of Class III in northern Vermont	Upstream of Greensboro Bend with portage in East Hardwick	Upstream of Hardwick Village
Lamoille River- Wolcott Ledges (1.4 miles)	<i>Vermont's White Water Rivers</i>	Highly Important	Class III can be run in wet summers and fall	Behind the Pottersville Dam powerhouse	Downstream of Wolcott Village
Lamoille River (34 miles) Morristown to Fairfax	<i>Vermont's White Water Rivers</i>	High Importance	Class II-IV, whitewater and general touring	Duhamel Road, Morristown below Cady Falls	Upstream of Fairfax Falls (many portages)
Lamoille River (4.6 miles) Fairfax to Georgia	<i>Vermont's White Water Rivers</i>	Highly Important	Class II-III, one of two rapids on large rivers in the state	Road southwest of Fairfax Village	Route 104A Georgia
North Branch (9 miles)	<i>Vermont's White Water Rivers</i>	Not rated	Class II-IV, excellent to outstanding scenery and pristine	Bog Road Bridge, Belvidere	Church Street covered bridge, Waterville
Gihon River (1.5 miles)	<i>Vermont's White Water Rivers</i>	Not rated	Serious Class IV-V used by expert paddlers	Whitcomb Island Road, Johnson	Pearl Street, Johnson
Wild Branch (7 miles)	<i>Vermont's White Water Rivers</i>	Important	Fast, twisty, and highly technical Class II-III	North Wolcott Road upstream of Wolcott-Craftsbury line at town bridge right-of-way	Route 15 at state bridge
Waterman Brook	<i>Let it Rain</i>	Not rated	Class IV-V used by expert paddlers	Waterman Road covered bridge, Johnson	River Road East, town bridge Johnson
Kenfield Brook	Vermont Paddlers Association recommendation	Not rated	Class IV- outstanding scenery	Tyndal Road, Morristown	Duhamel Road, Morristown

Table 3. Water Supply as an Existing Use within the Lamoille River Watershed.

Silver Lake	Georgia and Fairfax	Silver Lake is the drinking water supply for St. Albans
Unnamed Tributary to the Brewster River	Cambridge	This impoundment is a drinking water supply for Smugglers Notch Resort
Caspian Lake	Greensboro	This lake is an emergency drinking water supply for the Town of Greensboro
Arrowhead Mountain Lake	Georgia and Milton	This lake is used by Georgia Dairy Industrial Park and is a non-community privately owned water system
French Hill Brook	Johnson	This stream had been the drinking water supply for the Town of Johnson until the Town developed an aquifer

Table 4. Recreational Fishing as an Existing Use of Specific Waters within the Lamoille Watershed.

Site Name/Waterbody	Location	Documentation
Fisher Bridge, Lamoille River	Route 15, Wolcott	VFWD access
Wolcott F&W Access, Lamoille River	Route 15, Wolcott	VFWD access
Town Ball Field	Off Route 15, Wolcott	VFWD access
Elmore Pond Road Bridge, Lamoille River	Elmore Pond Road, Wolcott	VFWD access
Cady Falls Bridge, Kenfield Brook and Lamoille River	Cady Falls Road, Hyde Park	VFWD access
Hog Back Road, Lamoille River	Hog Back Road, Johnson	VFWD access
Cambridge Junction Covered Bridge and Greenways Trail Access, Lamoille River	off VT Route 109, Cambridge	VFWD access
Horse Pond	Route 16, Greensboro	VFWD access
Flagg Pond	Flagg Pond Road, Wheelock	VFWD access
Wolcott Pond	Wolcott Pond Road, Wolcott	VFWD access
Elmore Pond	Route 12, Elmore	VFWD access
VFWD owned riparian lands along Lamoille River in Sheffield, Hardwick, Morristown, Hyde Park, and Johnson and along Porter Brook (direct Lamoille River drainage) in Greensboro and Hardwick, Alder Brook in Hardwick, Greensboro Brook in Greensboro and Hardwick, and Kenfield Brook in Morristown	(see description to left)	VFWD access

Fishing

Waterbody	Location of Use	Town	Documentation of Existing Use
West River	Stoddard Market to Thompsonburg bridge	Londonderry	Trout Stocking
West River	Cobb Brook to Jamaica State Park entrance bridge	Jamaica	Trout Stocking
West River	Rte 5 bridge above confluence with the Connecticut River	Brattleboro	Special Fishing Regulation Area
West River	Rte 5 bridge above confluence with the Connecticut River to Townshend Dam	Townshend, Jamaica	Special Fishing Regulation Area
West River	Above Townshend Dam to Rte 100 bridge in Jamaica	Townshend, Jamaica	Special Fishing Regulation Area
Grassy Brook	Mouth to first bridge above confluence with the West River	Brookline	Trout Stocking
Rock River	Hunter Brook Rd bridge to Williamsville Fire Depart		Trout Stocking
Utley Brook	Landgrove School to FR 10 & 279	Mt. Tabor, Landgrove	Trout Stocking
Wardsboro Brook	Mouth to first Rte 100 bridge above confluence with the West River to W. Wardsboro Cemetary	Wardsboro, Jamaice	Trout Stocking
Winhall River	Winhall Brook Campground bridge to IP road bridge		Trout Stocking
Williams River - upper	Cavendish Gulf Rd to Rte 11 bridge	Chester	Trout Stocking
Williams River - lower	RR crossing on Green Mountain Turnpike to Parker Hill rd bridge	Chester, Rockingham	Trout Stocking
Williams River - Middle Branch	Chester Rod & Gun Club to Rte 103 bridge	Chester	Trout Stocking
Williams River	Mouth to first Rte 5 bridge above confluence with the Connecticut River	Rockingham	Special Fishing Regulation Area
Williams River	First Rte 5 bridge above confluence with the Connecticut River to above Brockways Mills Dam	Rockingham	Special Fishing Regulation Area

APPENDIX A.13 – Existing Uses in Basin 11 Waters

Determination of Existing Uses for Flowing Waters in Basin 11

Contact Recreation

Site	Waterbody	Location of Use	Town	Documentation of Existing Use
Brookline Bridge	West River	West River crossing Newfane/Brookline town line	Brookline/Newfane	Swimming hole below bridge
Dummerston Covered Bridge	West River	Rte. 30 jct. of Eastwest Rd.	Dummerston	Swimming hole below bridge
Dumplings	West River	Jamaica State Park	Jamaica	Swimming hole in state park
Jamaica State Park Beach	West River	Jamaica State Park	Jamaica	Swimming beach in state park
Salmon Hole	West River	Jamaica State Park	Jamaica	Swimming hole in state park
Scott Covered Bridge	West River	USACE lands	Townshend	Swimming hole below bridge
South Londonderry	West River	USACE lands	South Londonderry	Swimming hole below bridge
Townsend Lake Beach	West River	USACE lands	Townshend	Swimming beach at USACE dam
Winhall Campground	Winhall & West confluence	USACE lands	Winhall	Swimming beach at USACE campground
Kendall Farm Road – end of road	Winhall River	GMNF lands	Winhall	Swimming hole
Indian Love Call, Rock River 1 mi up	Rock River	Town legal trail along Depot Rd.	Newfane	Series of swimming holes from mouth to 1 mile up river
Hamilton Falls	Cobb Brook	Jamaica State Park	Jamaica	Swimming hole in state park
Pikes Falls	North Branch Ball Mountain Brook	Town of Jamaica conservation lands along Pikes Falls Rd.	Jamaica	Swimming hole in town preserve
Saxtons River Falls	Saxtons River	Below falls under Rte. 121 bridge crossing	Saxtons River	Swimming hole at end of town road

Existing Uses – Tier 1

Take home message:

Swimming, boating, fishing or public surface water supply determined to be present as an Existing Use under this basin planning procedure is/shall be protected.

Questions ??

Existing Use Wrap-up

- Questions?
- Discussion?



Tier 2 – High Quality Waters

How does VTDEC Determine Water Quality Condition?

- DEC maintains a comprehensive Surface Water Quality Monitoring Program;
- Guided by a strategy document that is developed per USEPA Guidance;
- Monitoring Program Strategy is comprised of several elements;
- Monitoring Program Strategy is periodically updated in collaboration with EPA.

VT Surface WQ Monitoring Program Strategy

- Program Goals and Objectives
- Monitoring Designs
- Core and Supplemental Indicators
- Quality Assurance Program
- Data Management Program
- Analysis and Assessment
- Reporting

Goals / Objectives

Goal 1: Predict and monitor the condition of Vermont's aquatic and wetland resources to:

- identify emerging problems...;
- ...protect, maintain and/or restore the integrity and use of these resources;
- achieve comprehensive monitoring coverage of all Vermont waters;
- identify water quality conditions, impairments, causes, and sources; and,
- evaluate the success of current policies and programs.

Goals / Objectives

Goal 2: Communicate, collaborate and coordinate with organizations, agencies, and the general public to:

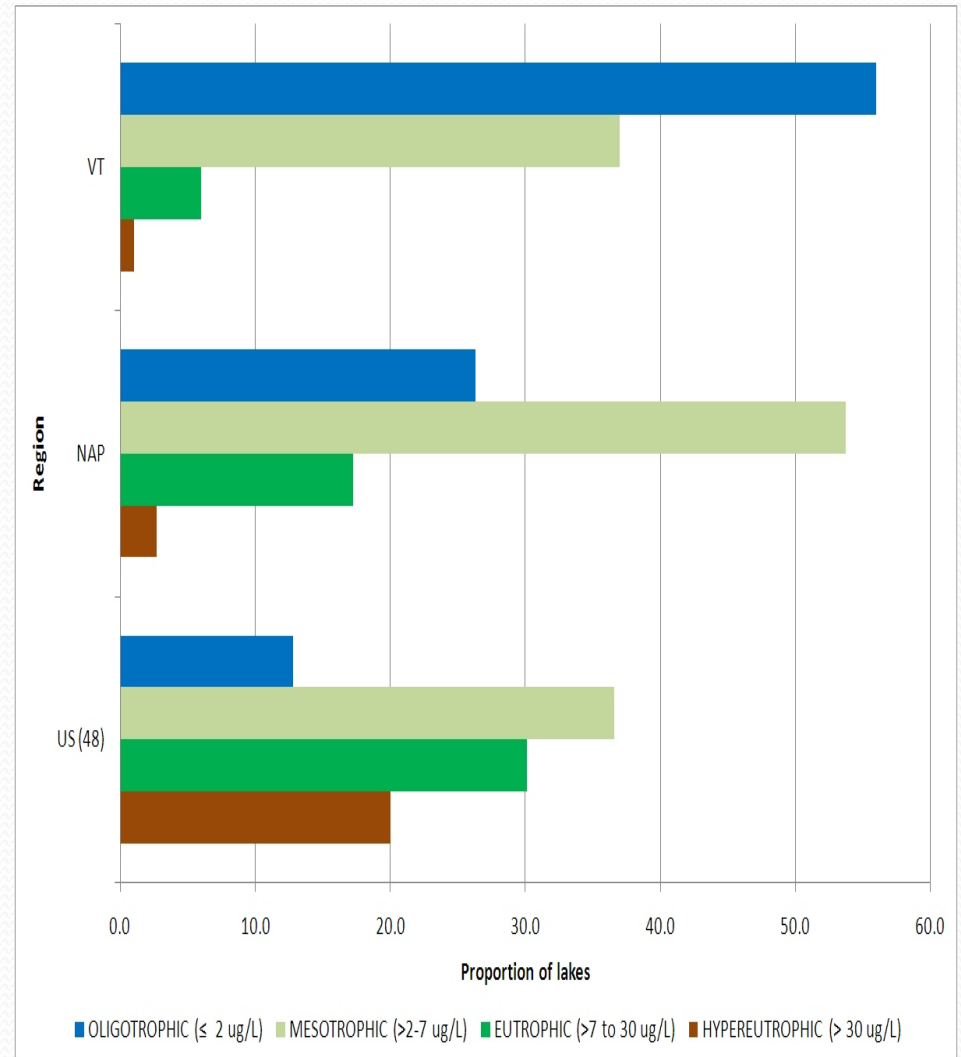
- increase public knowledge and involvement ...;
- promote efficient and effective monitoring and assessment ...;
- ...supplement state monitoring and assessment programs.

Monitoring Designs

- Probability Monitoring
- Fixed-station Monitoring
- Rotational assessment approach to support Basin Planning

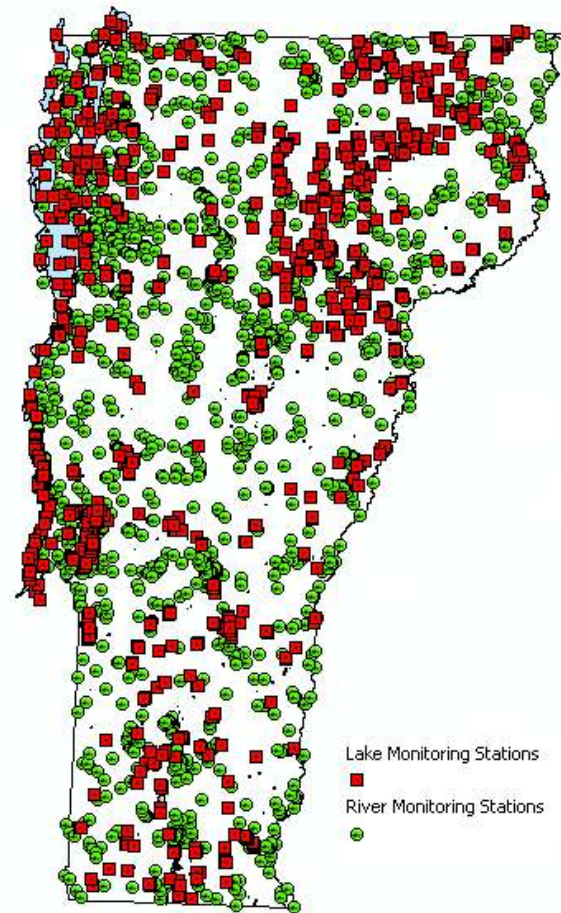
Probability monitoring

- Conducted in parallel with USEPA national assessments;
- Provides statewide estimates of condition;
- Not typically used for site-specific assessments.

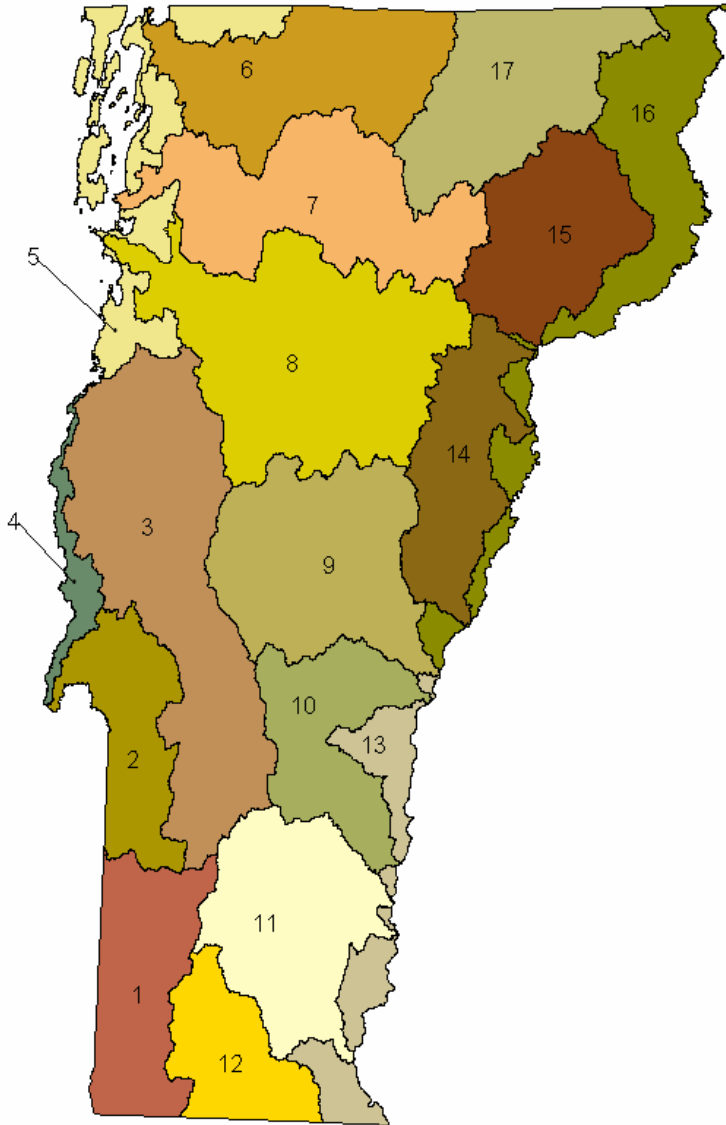


Fixed-station monitoring

- Supported by numerous media-specific monitoring projects;
- Provides site-specific data;
- Extent of site representativeness dependent upon upstream conditions and data quality.



Rotational approach



- Waters assessed in a basin-specific rotation.
- Target waters determined in conjunction with Basin Planning, WWTF permitting schedule, and other resource programs.

Core /Supplemental Indicators

- A series of indicators directly address WQS...many of these are monitored regularly, some are directly identified in WQS, others are indicators of WQS attainment.

Example of indicators:

Chemical	Physical	Biological	Rec.
Temp.	Stream Bioassessment	Biocriteria	<i>E. coli</i>
Total P	Littoral Hab. Assessment	-streams	
Total N	Stream Geomorphic Assessment	-lakes	
Nitrate	Secchi transparency	-wetlands	
TSS	Wetland soils	Chlorophyll-a	
Alkalinity		Aquatic plants	
pH		Wetland plants	
Turbidity			
Toxic Subs'			
Diss. O ₂			

Quality Assurance & Data Management

- QAPP archive
 - Defines project-specific QA goals and procedures
- Water Quality Data Archive
 - Lake Water Quality Information
- Biomonitoring Data Archive
 - Biomonitoring information (mostly streams, some lakes/wetlands);
- Annually uploaded to EPA WQX Data System*.

*)Currently, only records in WQData are uploaded. The biomonitoring archive is in the process of being made WQX-compliant

Assessment and Listing

- Surface Water Assessment and Listing Methodology
 - Defines thresholds and methods for determining compliance with WQS
 - Biennially updated in collaboration with EPA
- EPA ADB databases for lakes and rivers
- Biennial issuance of Integrated Assessment Report and Impaired/Priority Waters Lists

Condition of assessed waters

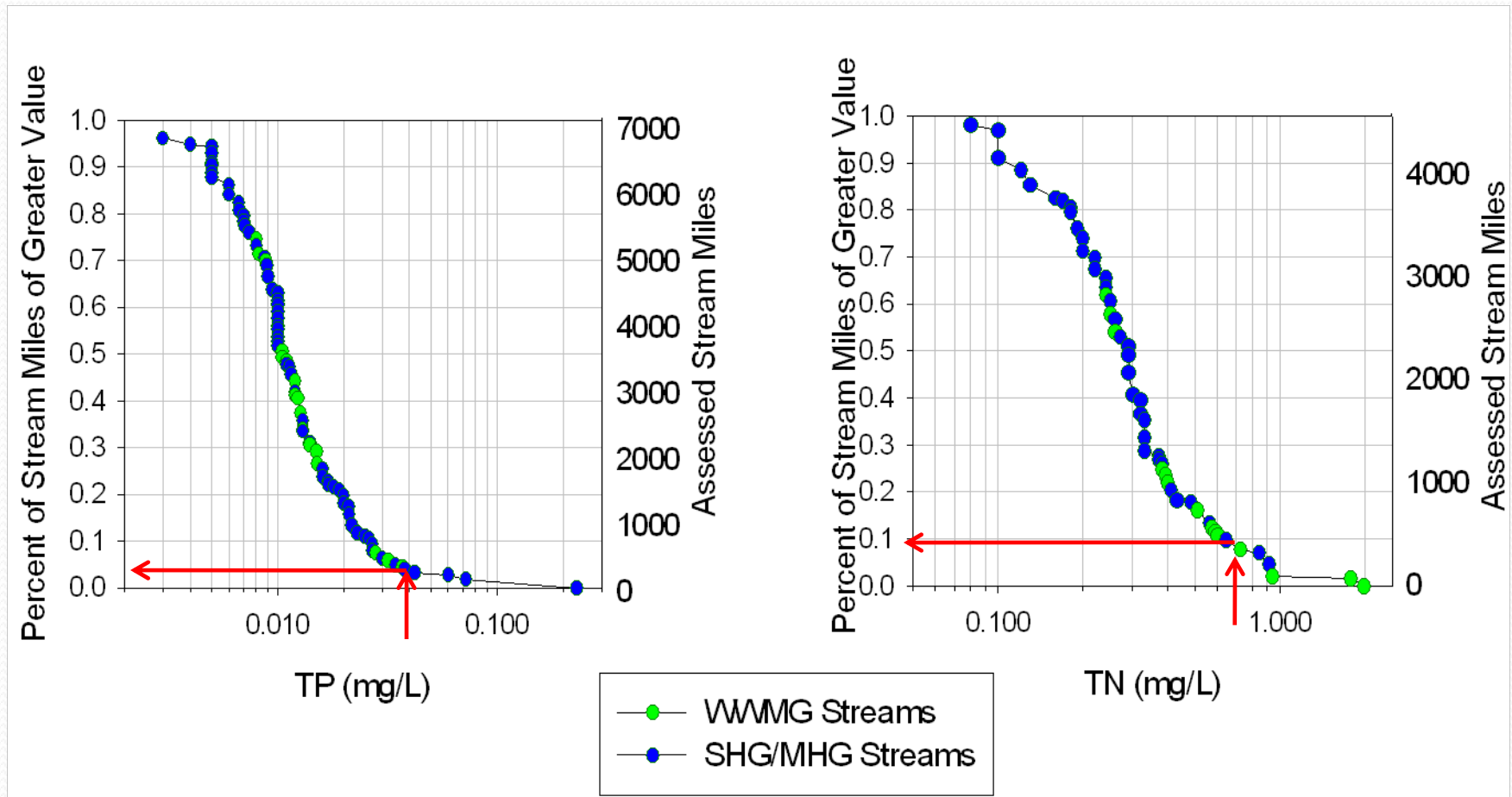
- Integrated Reports provide detail on WQS attainment at the statewide or basin level. Example:

WB Type	Use	Meeting (%)	Altered (%)	Impaired (%)	Not Assessed (%)
Inland Lakes (55,661 ac)	Aq. Life	63%	14%	22%	2%
Rivers statewide (7,100 mi)		71%	4%	3%	21%

More about the condition of waters

- The majority of VT's assessed waters are High Quality Waters as defined by WQS.
- These waters occur along a spectrum of condition that can be documented chemically or biologically.
- Assessing this spectrum chemically is a parameter-specific exercise – relatively easy.
- Assessing the spectrum biologically relies on biological assessments and biocriteria.

Gradient of Nutrients in VT Streams



~ 5% of streams may violate draft nutrient criterion for P, ~10% for N

Aquatic Biota

Biological Integrity - Fish and Macroinvertebrate Communities Wadeable Streams

Fish and Bug communities are structured by environmental conditions

Communities react in a predictable fashion to stresses

Reference condition- biological condition of minimally impacted streams

Community response can be quantified by population parameters called *metrics*

WQS Criteria - calibrated metrics that respond to a gradient of stress

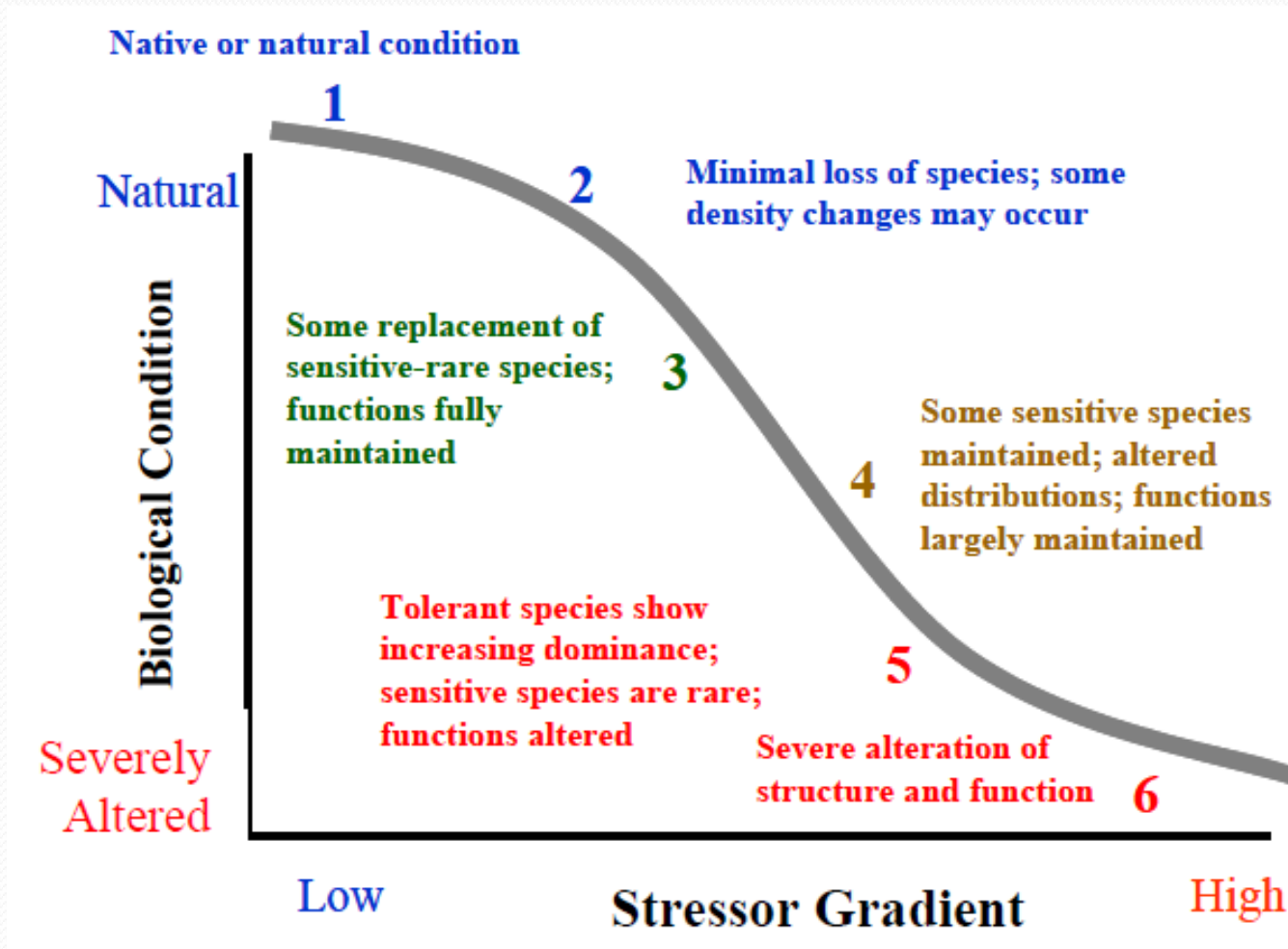
Since 1984 - State wide:

Macroinvertebrates – >3600 assessments, >1350 sites on >550 streams

Fish - > 900 assessments, > 780 sites >380 streams

Biological Condition Gradient

EPA's framework for qualifying biological condition



Vermont's use of Biocondition Gradient

Natural Condition
(reference)

Excellent (Class A1)
Minimal change from reference condition

Very Good
Minor change from reference

Biological Integrity

Good Moderate change from reference
(Class B)

Degraded

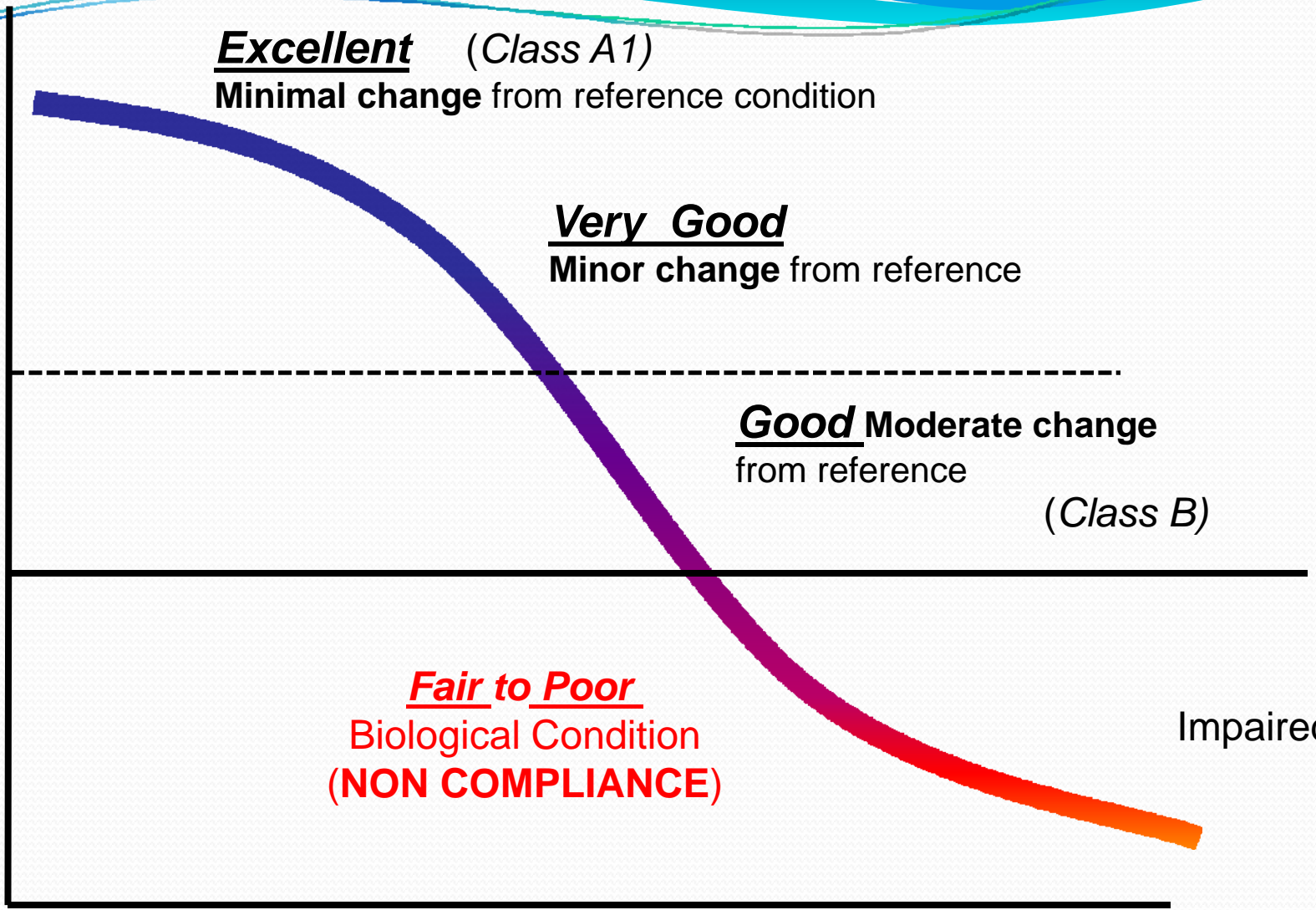
Fair to Poor
Biological Condition
(NON COMPLIANCE)

Impaired

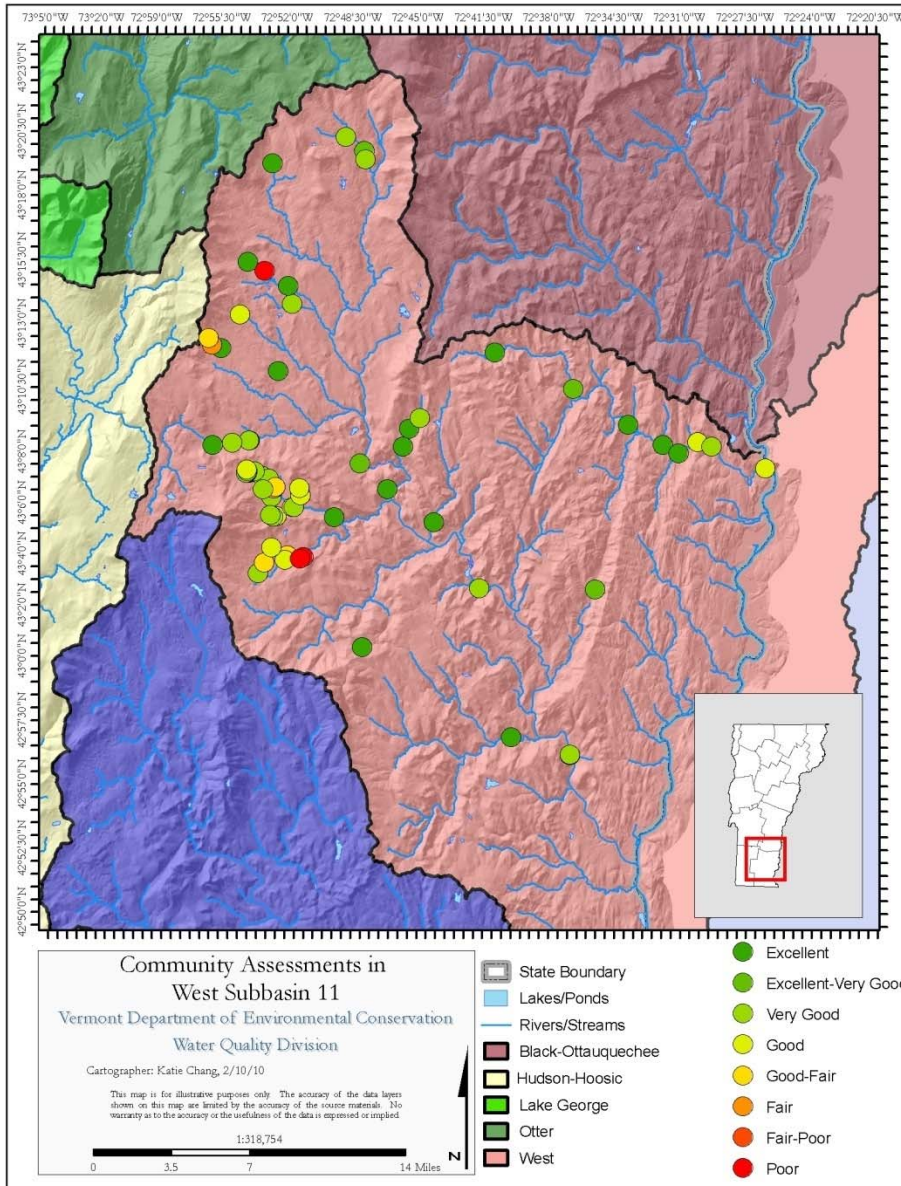
Low

Stressor Gradient

High



Example application using biological attainment in the West River Watershed





Condition gradients offer a possibility of differential treatment of waters under anti-degradation

- VT data indicates that most waters are indeed HQ and therefore merit Tier 2 protection
- Some states have more finely described certain HQWs in order to protect them at a higher level
- These “special” HQWs have characteristics that merit additional protection

Anti-degradation Tier II Protection

- Most of the waters in the State are High Quality
- Most of the waters in the State are Class B – Cold Water
- Tier II analysis: Management of Assimilative Capacity/
Socio-economic Justification
- Act 43 Report Overview

Act 43 Report:

Alternatives to WMT

- Description of Water Management Typing
- Comparing Goals of WMT and Anti-deg
- Approaches Relying on Anti-deg Policy
 - Existing Uses
 - High Quality Waters
 - Waterbody Designation
 - Tier 2.5
- New Classification of Waters

Act 43 Report: Alternatives to WMT

- The report summarizes possible methods to utilize the antidegradation rule in place of WMTing. In addition, the report offers additional alternatives that merit consideration such as the creation of new classes of waters.

Act 43 Report: Alternatives to WMT

- Description of Water Management Typing

Water Management Typing was introduced into the Vermont Water Quality Standards during the last comprehensive revision to the Vermont Water Quality Standards in 1999-2000. The concept of WMTing is to assign Class B waters to one of three types -WMT B1, B2 or B3, where each type represents a more refined description of Class B waters due to more detailed water quality criteria for aquatic biota, wildlife and aquatic habitat, hydrology, boating and aesthetics.

Act 43 Report: Alternatives to WMT

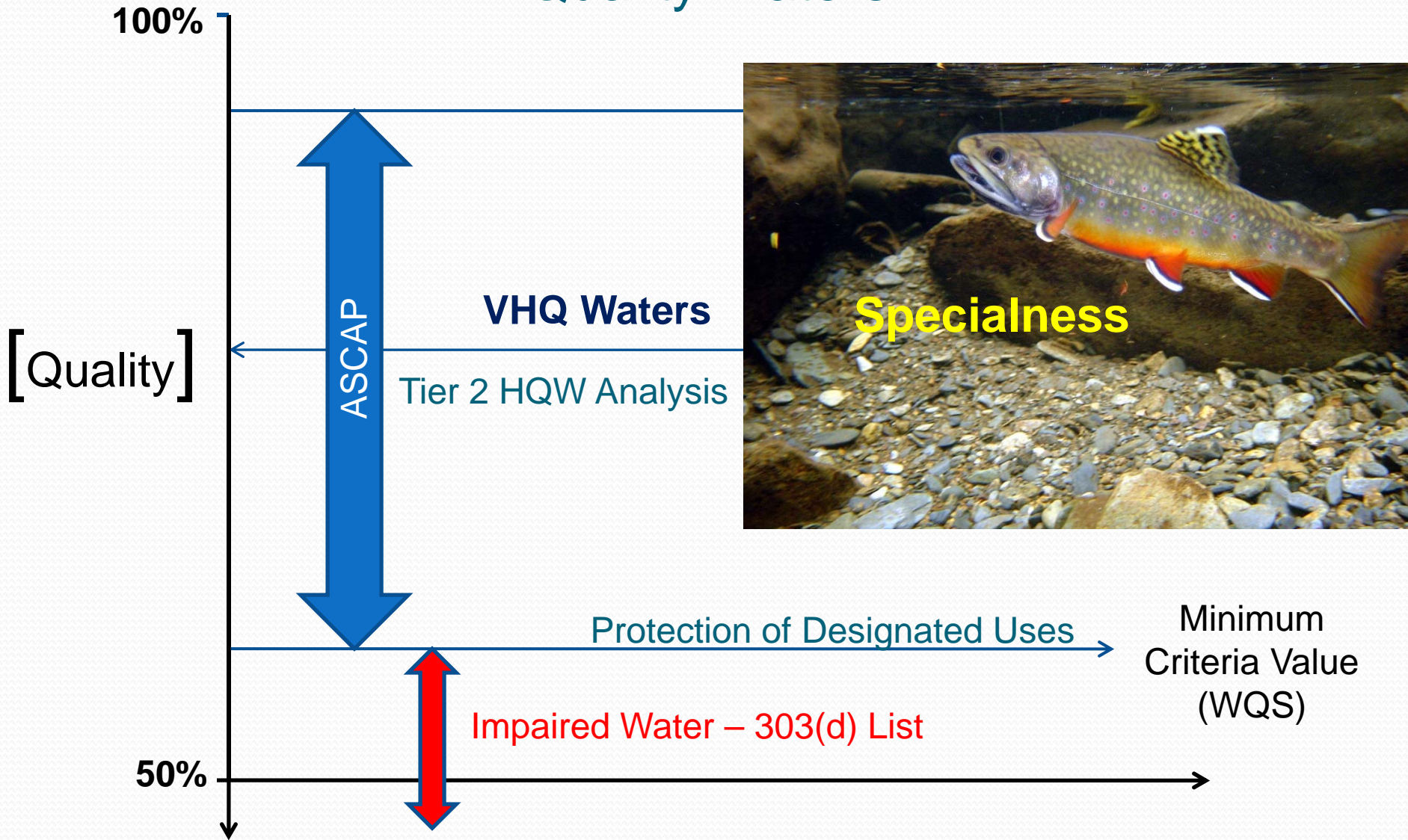
- Comparing Goals of WMT and Anti-deg

As stated in the VWQS, Section 3-06, WMTing was in part conceived as a means to enhance those protections already afforded by the anti-degradation Policy. It therefore makes sense to evaluate the components of the Antidegradation Policy that could be used in place of WMTing.


Act 43 Report: Alternatives to WMT

- Approaches Relying on Anti-deg Policy
 - Existing Uses
 - High Quality Waters
 - Waterbody Specific Designation
 - Tier 2.5
- New Classification of Waters

Assimilative Capacity, High Quality, and Very High Quality Waters





Tier 2 Antidegradation Framework

Gradient of Quality	Condition
Highest 	<i>High Quality Water</i>
Lowest	Impaired

- Begin with concept that waters exhibit a gradient from impaired to the highest quality;
- Per WQS, anything that is not impaired is HQW.

Tier 2 Antidegradation Framework

Gradient of Quality	Condition	Assimilative Capacity	Use of SEJ
Highest 	<i>High Quality Water</i>	<u>Site X</u> 	Use of available ASCAP subject to SEJ
Lowest	Impaired	Impaired	No ASCAP

- In HQW, Assimilative capacity may be used, subject to a SEJ.

Conceptual Tier 2 Antidegradation Framework Incorporating “very HQW”



Gradient of Quality	Condition	Assimilative Capacity	Size of ASCAP
Highest ↑	<i>Very High Quality Water - Tier 2.5 - subject to public process</i>	Site X ↑	Use of this smaller ASCAP subject to SEJ
	<i>High Quality Water - Tier 2</i>		Use of ASCAP subject to SEJ
Lowest	Impaired	Impaired	No ASCAP

← Tier 2.5

← Tier 2

- A site may be identified using data as “Very HQW”
- VHQW attribute may have a smaller ASCAP
- Public process around codification of VHQW?

Antidegradation framework with Tier 2 and Tier 2.5

Gradient of Quality	Condition	Assimilative Capacity	Size of ASCAP	Ecological Characteristics		Recreational Characteristics	
				Biological	Physical	Gamefish Population Status	Swimming
Highest 	<i>Very High Quality Water - Tier 2.5 - subject to public process</i>		Use of this smaller ASCAP subject to SEJ	Specific thresholds for identifying VHQW status, based upon this array of characteristics.			
	<i>High Quality Water - Tier 2</i>		Use of ASCAP subject to SEJ	Provides for protection of Designated and Existing Uses			
Lowest	Impaired	Impaired	No ASCAP	Restoration via TMDL or other Process			

Example using Biocondition Gradient

Natural Condition
(reference)

Excellent (Class A1)
Minimal change from reference condition

Very Good (Tier 2.5)
Minor change from reference

VHQW

Biological Integrity

Good (Tier 2)
Moderate change from reference

HQW

Degraded

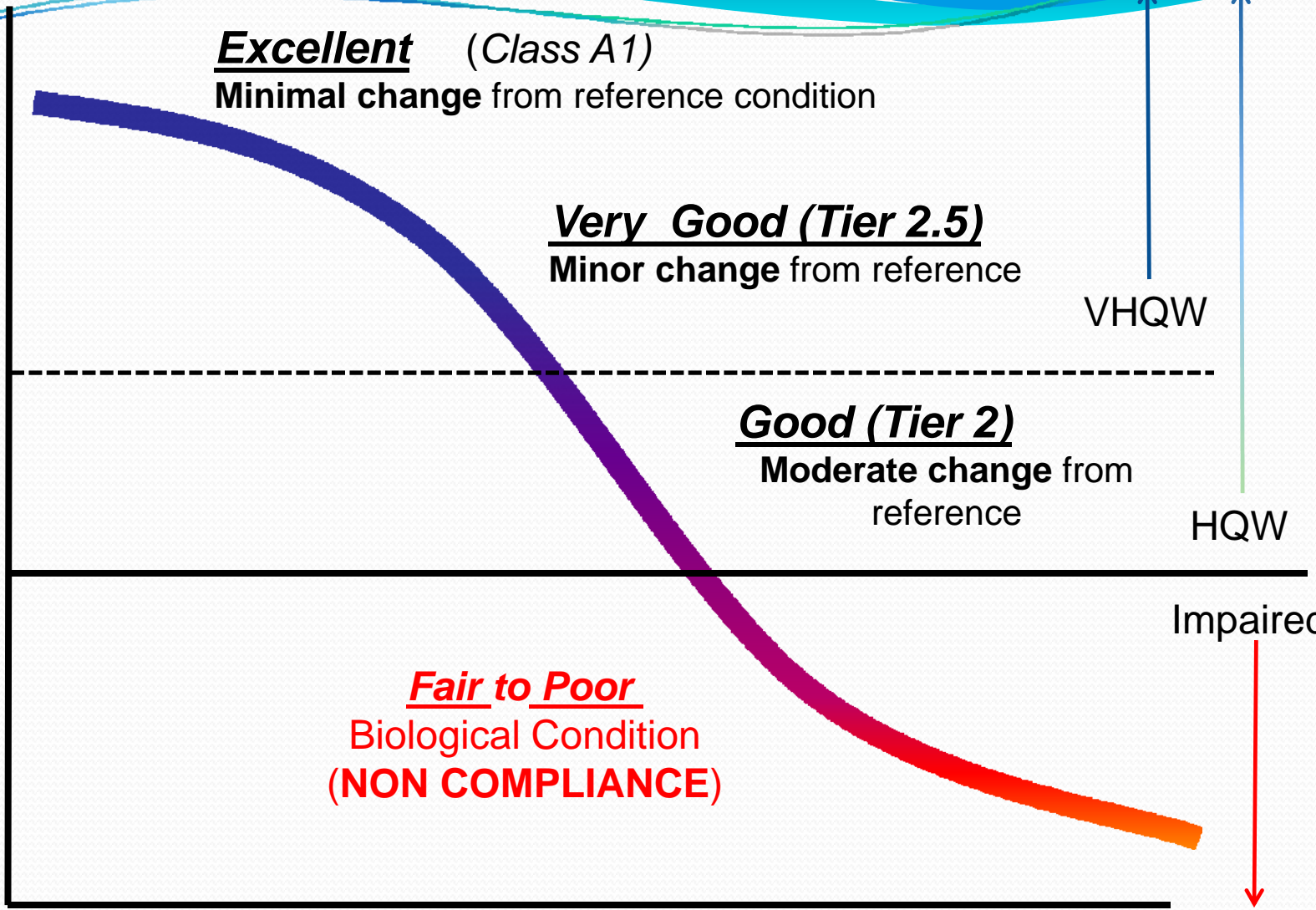
Fair to Poor
Biological Condition
(NON COMPLIANCE)

Impaired

Low

Stressor Gradient

High



High Quality Waters – Tier II Protection

- Questions?
- Discussion?