

A Use Attainability Analysis Conducted on a TMDL Stream For An Aquatic Life Designated Use

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Designated Use

Amongst other Designated Uses, in Virginia, all waters are designated for the propagation and growth of a balanced and indigenous population of aquatic life, including game fish, that might reasonably be expected to inhabit them

Criteria

- Criteria are designed to protect the designated use
- The Narrative or “General Criterion” asserts that State waters...shall be free from substances...in concentrations...harmful to aquatic life
- In Virginia, this criterion has been assessed through a benthic macroinvertebrate assessment guideline

Background

- Central Appalachian headwater stream
- 303(d) listed for Aquatic Life Use
- A Total Maximum Daily Load (TMDL)
 - TSS
 - TDS
 - *De facto* standard
- Stakeholder Group
 - Use may not be attainable
 - Commissioned a UAA

Use Attainability Analysis

- A UAA is a structured scientific assessment of the factors affecting the attainment of the Designated Use
- Includes assessments of non-pollutants & pollutants
- The ultimate goal is to determine the highest attainable use

The Process

- Existing federal regulations (CWA)
- Virginia legislation facilitates UAAs
 - Reasonable grounds
 - Integrated Implementation Plan
 - Negotiated Study Plan
- Technical workgroup
 - Includes VA DEQ
 - Includes EPA

Three Questions A UAA Must Address

- Is The Designated Use An Existing Use?
 - Use actually attained in the water body on or after November 28, 1975
- What Is Preventing Designated Use Attainment?
 - Relate biological condition to watershed stressors / pressures
- What Is The Highest Attainable Use?
 - Predictive Tool

Study Design

- Existing Use determination
 - Historical data
- Stressor/Pressure determination
 - Define relationships v biological condition
- Predictive Tool
 - Define post remediation stressor/pressure level
 - Define highest attainable use based on stressor/pressure relationships

General Impervious Cover Model

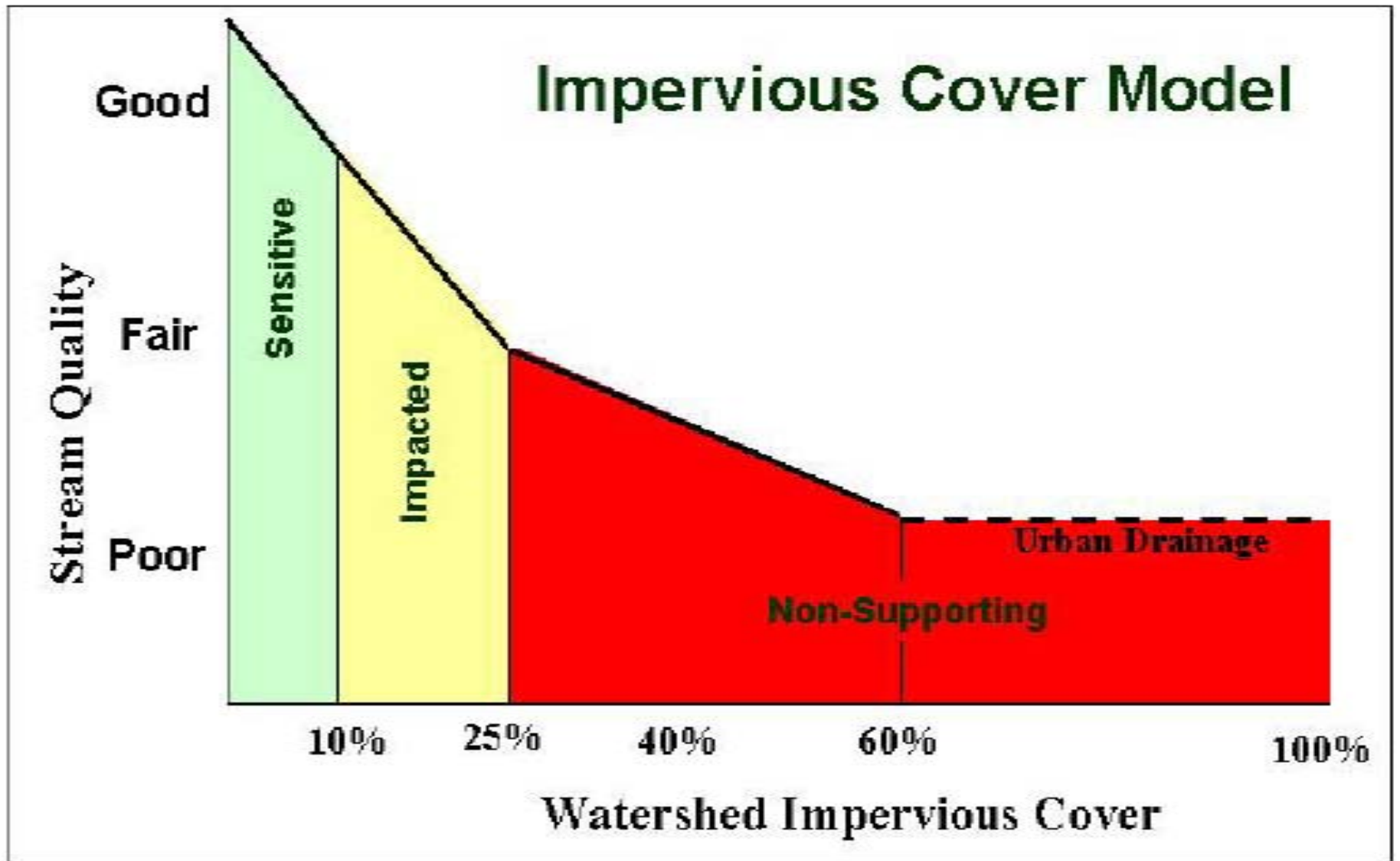
Impacted Biological Condition Natural

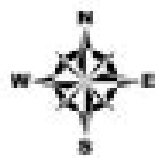


Low

% Impervious Cover

High

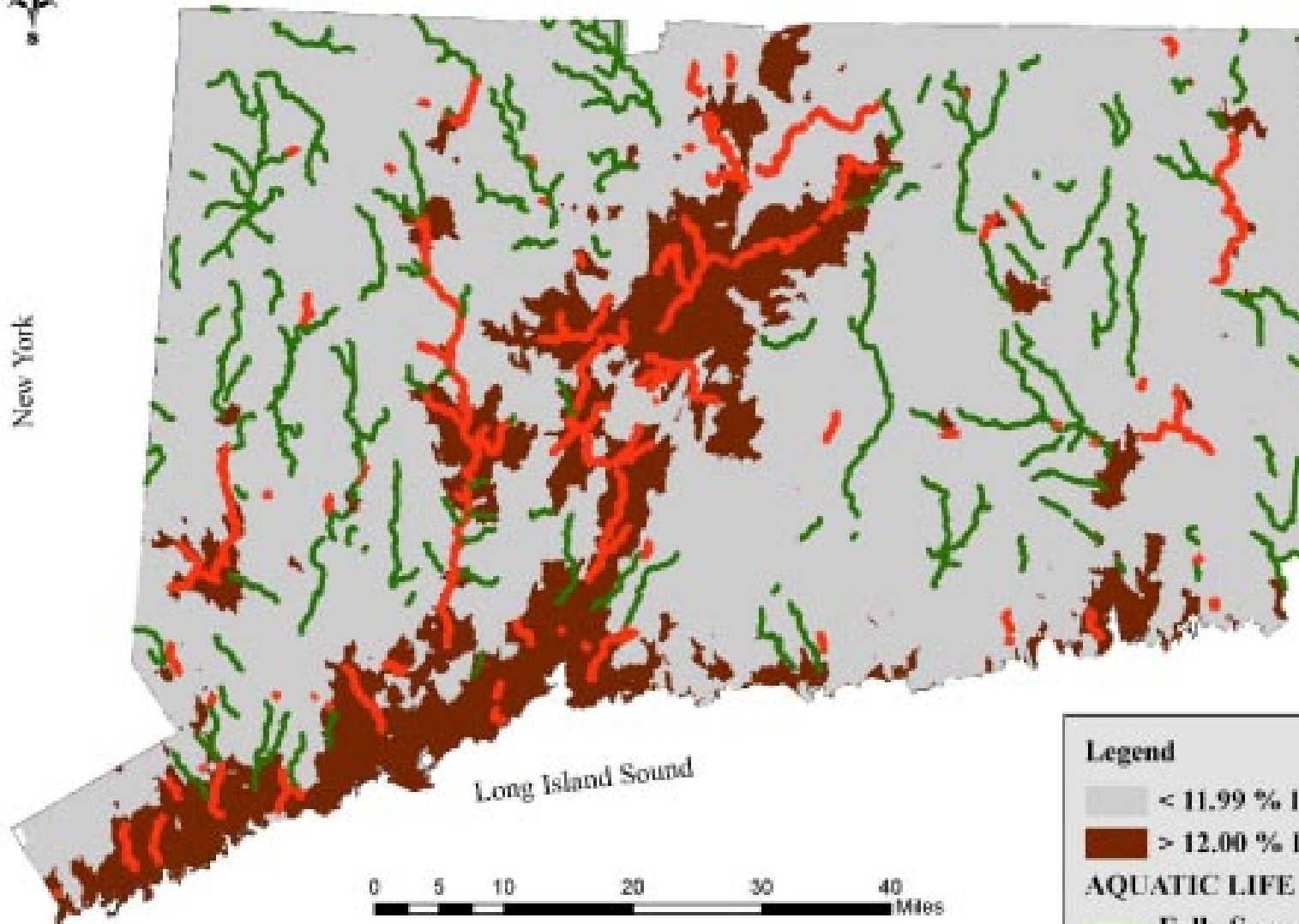




Massachusetts

Rhode
Island

New
York



Legend

< 11.99 % Impervious Cover

> 12.00 % Impervious Cover

AQUATIC LIFE

Fully Supporting

Not Supporting

Impervious Cover Estimated from 2002 Land Cover using ISAT and
Aquatic Life Assessments are from 2008 Assessments

Highest Attainable Use



Then What?

- Retain Designated Aquatic Life Use (DALU) and Criteria
- Retain DALU With Site-specific Criteria
- **Subcategory Of DALU With New Criteria**
- Remove DALU

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