

Overview of Water Quality Standards



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What Are WQ Standards?

- Fundamental tool of the Clean Water Act
- CWA objective:
 - ▣ “Restore and maintain the chemical, physical and biological integrity of the nation’s waters”
- Address three key questions:
 1. What and who are we protecting?
 2. What conditions are protective?
 3. How do we maintain high water quality?



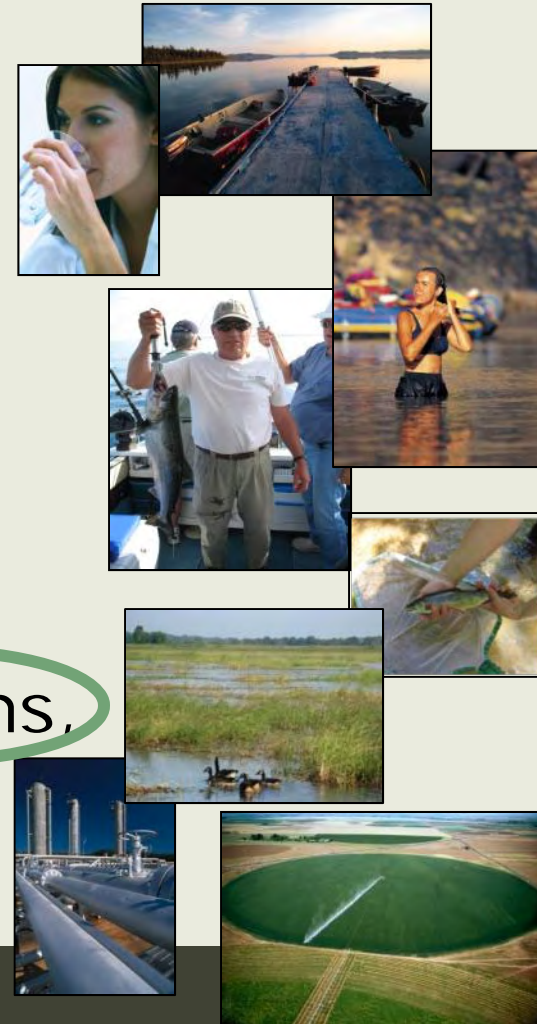
Who/What is Protected?

- Waters are assigned beneficial uses
- Clean Water Act (Section 303(c)(2)(A)):
 - ▣ "...use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agriculture, industrial, and other purposes, and also...use and value for navigation."
- Minnesota Statutes (Section 115.44, Subd. 3):
 - ▣ "...best usage in the interest of the public..."
- "Fishable and swimmable" interim goal



Beneficial Uses

- Seven classes in MN Rules:
 1. Drinking water
 2. Aquatic life and recreation
 3. Industrial use and cooling
 4. Agricultural and wildlife use
 5. Aesthetics and navigation
 6. Other uses
 7. Limited resource value
- Different expectations for streams, lakes, wetlands
- Classes developed in 1960-70s





What Conditions are Protective?

- Criteria identify the conditions needed to achieve and maintain the beneficial use
- Can be descriptive or numeric
- Supported by science
- Updated as science advances
 - ▣ Helps us understand and describe what we are protecting (the Beneficial Use), and
 - ▣ The water quality needed to achieve that Use



Aquatic Life & Recreation examples:

Criterion	"...no material increase in undesirable slime growths or aquatic plants, including algae..."	6.9 ng/L total mercury in water (outside of Lake Superior Basin)	5.0 mg/L oxygen as a daily minimum, 50% of the days when receiving water flow equals the 7 day, 10-year low flow ($7Q_{10}$)
Protects for:	Aesthetics, swimming	People eating fish	Fish growth and survival





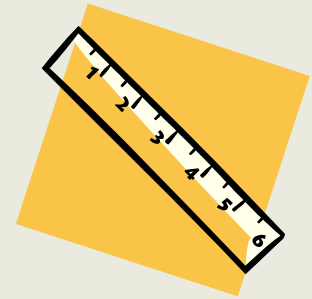
How Is Good Water Quality Protected?

- Antidegradation is a key protection tool
- Different levels of protection:
 1. Maintain existing uses
 2. Protect high quality waters – only allow degradation if:
 - Avoid and minimize impacts
 - Demonstrate need for important social or economic development
 - Protect existing uses
 3. Maintain ORVWs



How Are Standards Used?

- Measures/benchmarks
 - ▣ Monitoring and Assessment
 - ▣ Communication
- Controls/Restoration
 - ▣ Permits
 - ▣ Antidegradation review
 - ▣ TMDLs



WQ Standards: Summary

- **It all goes back to uses**
- Required by Clean Water Act and MN Stat.
- Public review at least every 3 years
- Three components:

1. Beneficial use classifications for waterbodies

2. Numeric and narrative criteria that protect those beneficial uses

3. Nondegradation requirements to provide extra protection to high quality waters



Tiered Aquatic Life Uses (TALU)

- Refined approach to aquatic life beneficial use
- Made possible by better biological data and understanding
- Beginning with rivers/streams, potential for other waterbody types in the future (lakes, wetlands)
- Planned adoption into rule in 2014
- Implemented in new/reissued permits and assessments





Questions??

Thank You!

