

Dollar? Acre? Pound?

A ↗ of protection a day, keeps the 303(d)
list away...

Evaluating progress towards protecting waters

2020 National CWA 303(d) Training Workshop

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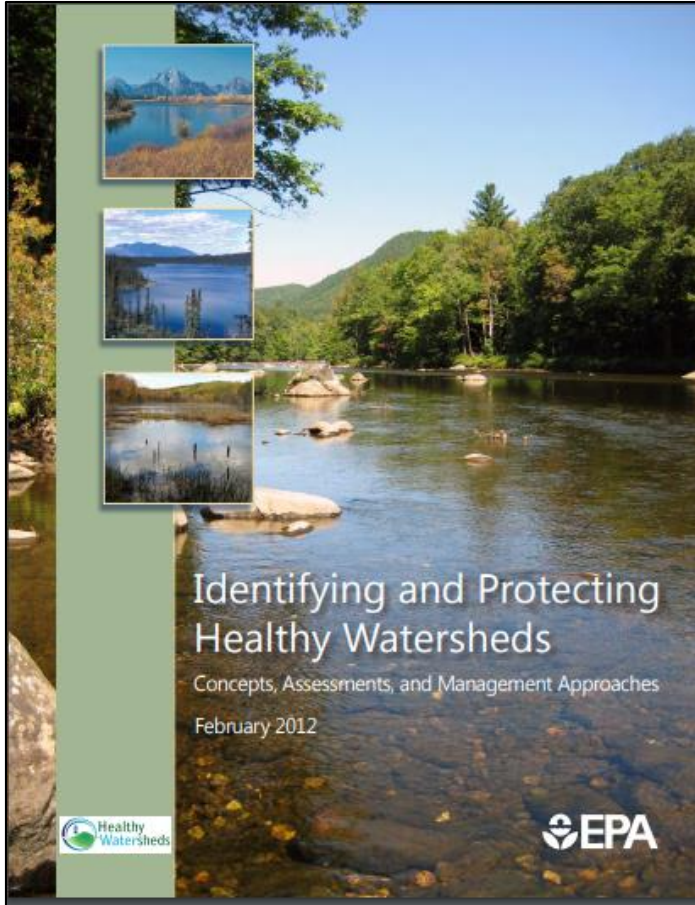




Today's Presentation

1. What is protection?
2. Compared to restoration, what is different about evaluating progress towards protection?
3. How are NPS programs tracking protection work?

Defining Protection



Landscape Condition

Patterns of natural land cover, natural disturbance regimes, lateral and longitudinal connectivity of the aquatic environment, and continuity of landscape processes.



Habitat

Aquatic, wetland, riparian, floodplain, lake, and shoreline habitat. Hydrologic connectivity.



Hydrology

Hydrologic regime: Quantity and timing of flow or water level fluctuation. Highly dependent on the natural flow (disturbance) regime and hydrologic connectivity, including surface-ground water interactions.



Geomorphology

Stream channels with natural geomorphic dynamics.



Water Quality

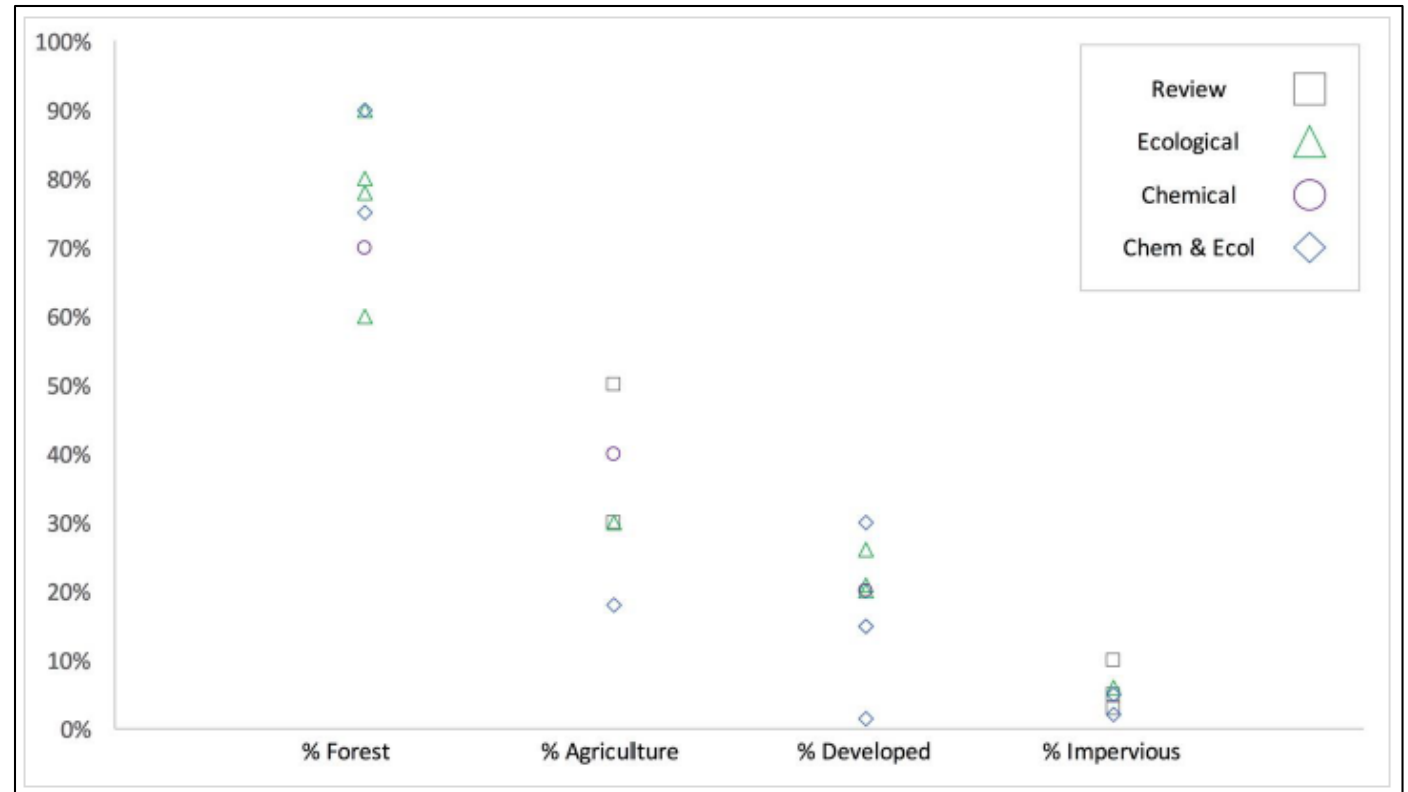
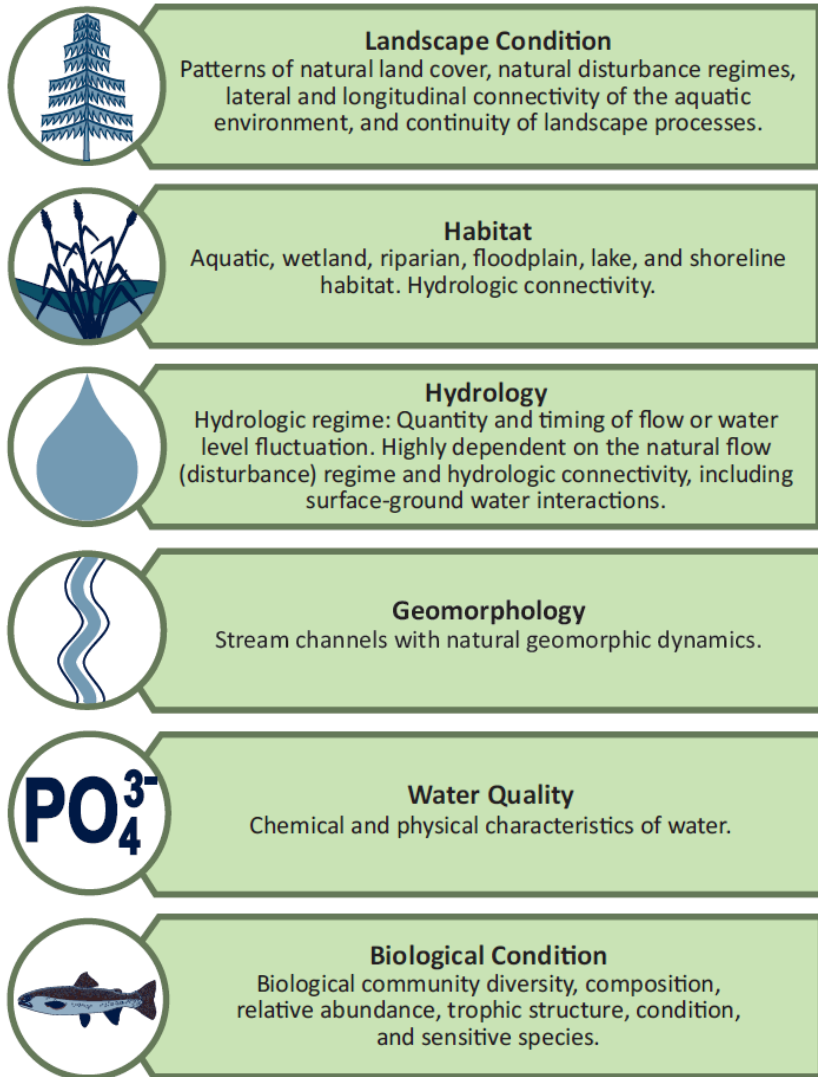
Chemical and physical characteristics of water.



Biological Condition

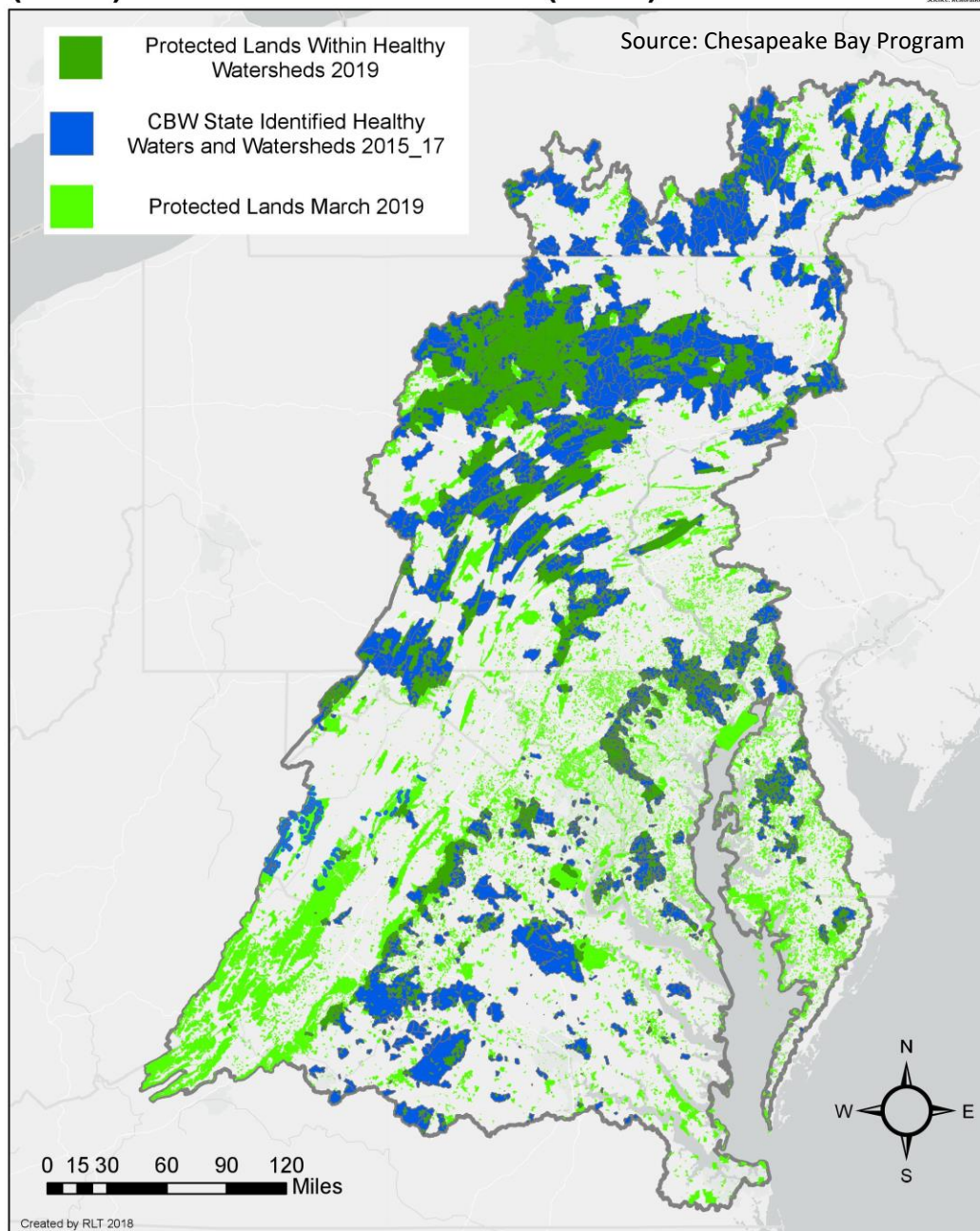
Biological community diversity, composition, relative abundance, trophic structure, condition, and sensitive species.

Defining Protection



Open Space Institute (2018). Literature Review: Forest Cover & Water Quality – Implications for Land Conservation

State Identified Healthy Waters and Watersheds (2017) and Protected Lands (2019)



MD:

Tier II-designated streams and their catchments

PA:

High Quality or Exceptional Value-designated waters

WV:

Tier III (ONRW)-designated waters

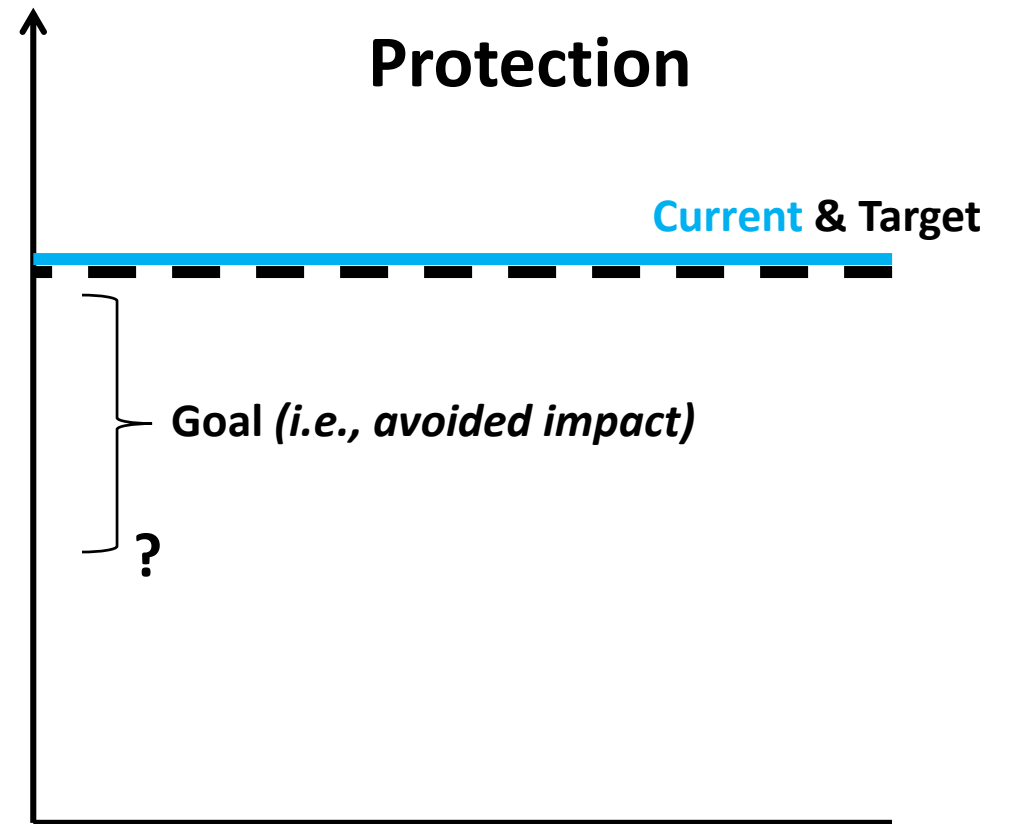
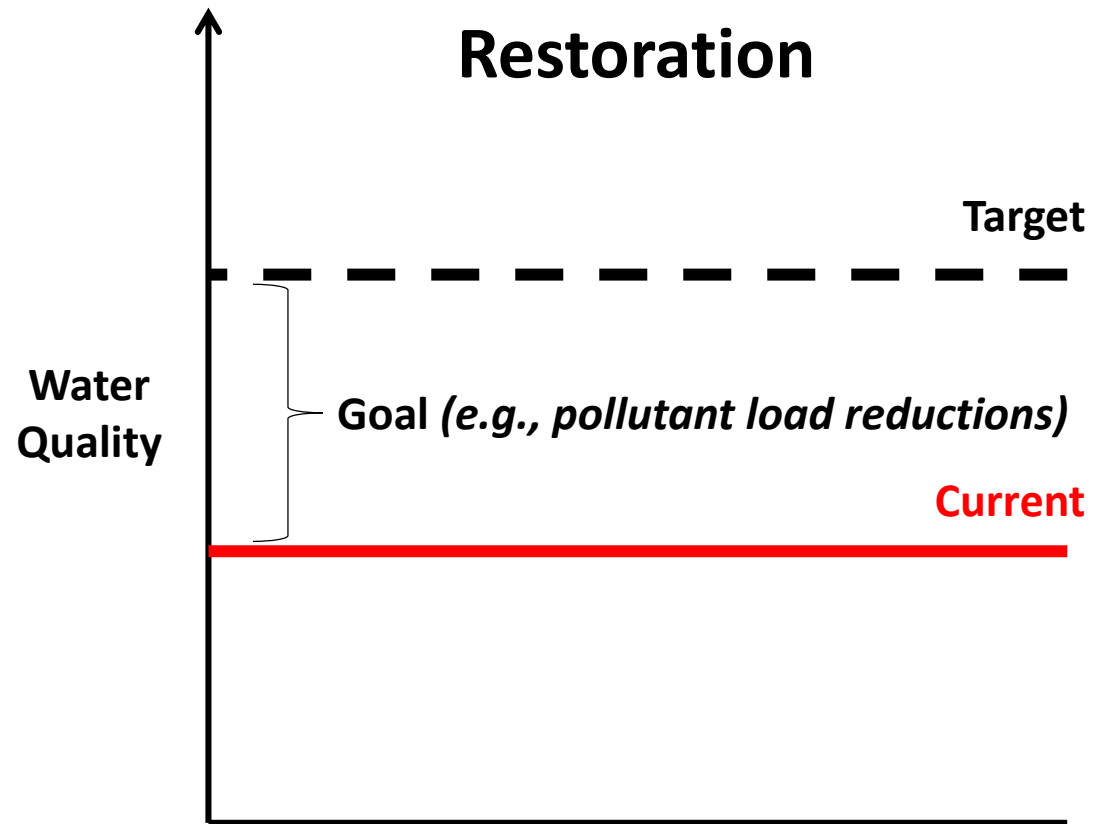
NY:

Waterbodies categorized as “No Known Impact” based on monitoring data and info indicative of no use restrictions

VA:

Waters and watersheds with high aquatic integrity scores.

Evaluating Protection: a different framework



National Nonpoint Source Program

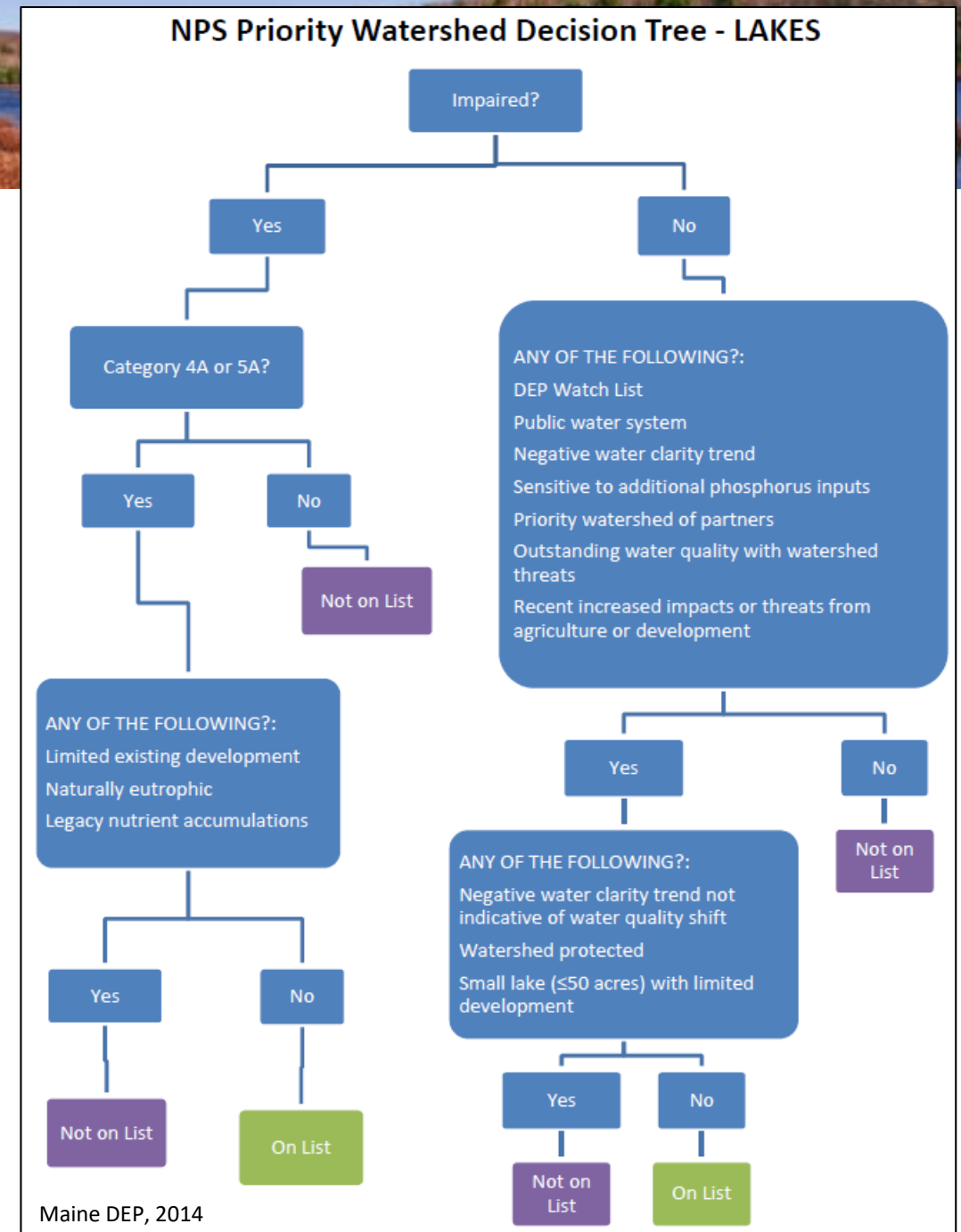


- NPS pollution: primary cause of impairment in US (85% streams/rivers, 80% lakes)
- CWA Section 319(h) grants = ~\$165M/year to states, territories and tribes
- Per 319 guidelines, states may target some resources to address unimpaired/high quality waters
 - E.g., DW supply, high quality/ONRWs, threatened waters
- Limited protection work done to date
 - < 4% of NPS projects since 2014

Key Management Question: How do we effectively target [in many cases, limited] resources for protection?

State Program Metrics

Management Goal	Example Metrics (e.g., in the next 5 years, develop...)
Identify priority watersheds to protect	<ul style="list-style-type: none"> • <u>Assessment method</u> to evaluate watershed health • <u>Prioritization framework</u> to target watersheds for protection



State Program Metrics

Management Goal	Example Metrics (e.g., in the next 5 years, develop...)
Fund # protection projects/year	<ul style="list-style-type: none">• <u>Criteria</u> to evaluate protection project proposals

Arizona DEQ – Watershed Preservation Grant proposal criteria:

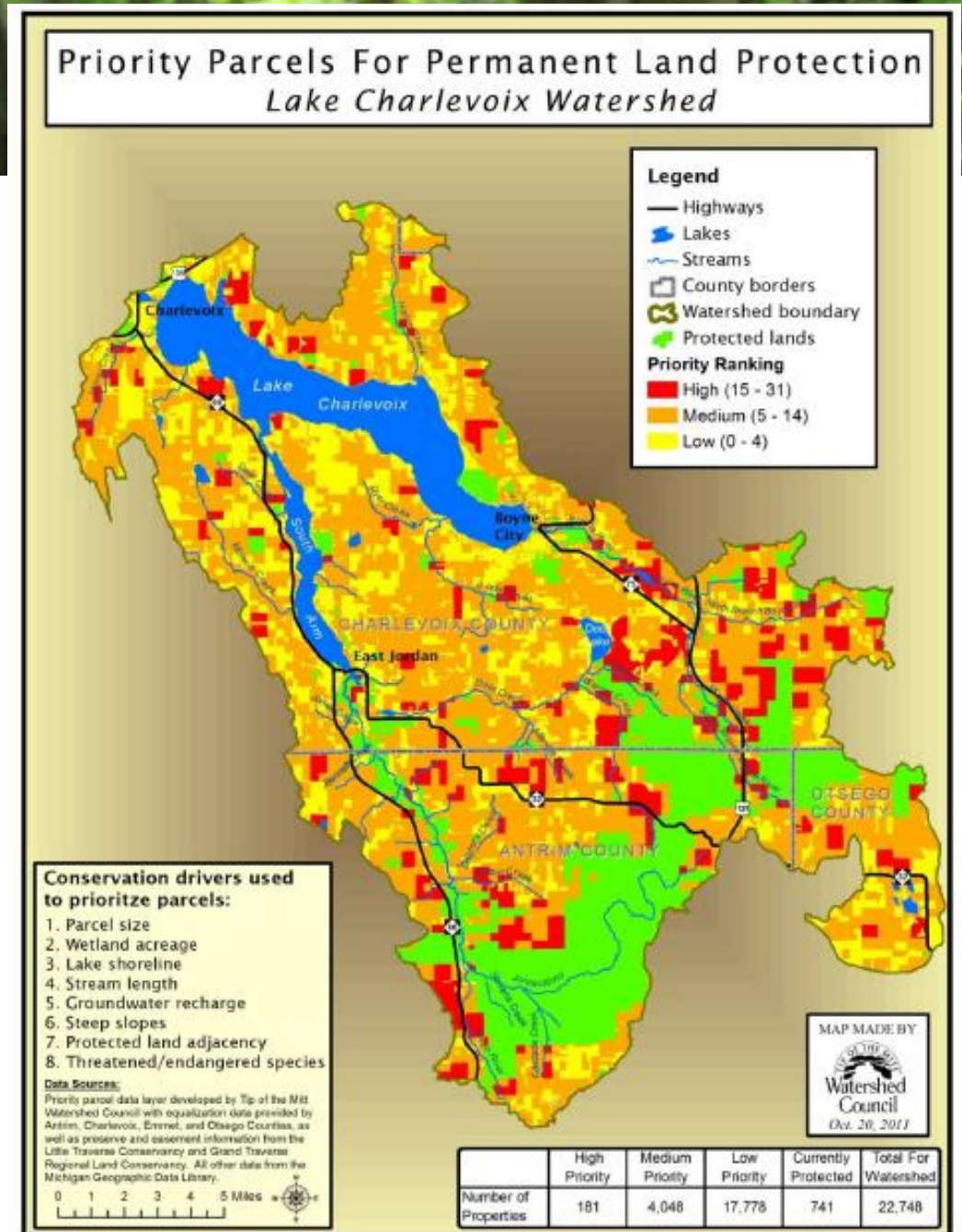
1. Waterbody is **not listed as impaired** for the pollutant of concern.
2. Pollutant/parameter of concern has applicable WQS or measurable **target number**.
3. There is a documentable NPS pollution concern **threatening water quality**.

Arizona DEQ Water Quality Improvement Grant Program Manual (2018)

Project Implementation Metrics

Management Goal	Example Metrics
Track implementation efforts	<ul style="list-style-type: none"> Acres of land protected in high priority areas within watershed Adopt protection-based ordinances in # jurisdictions

Lake Charlevoix
Watershed Management
Plan (Michigan, 2012)

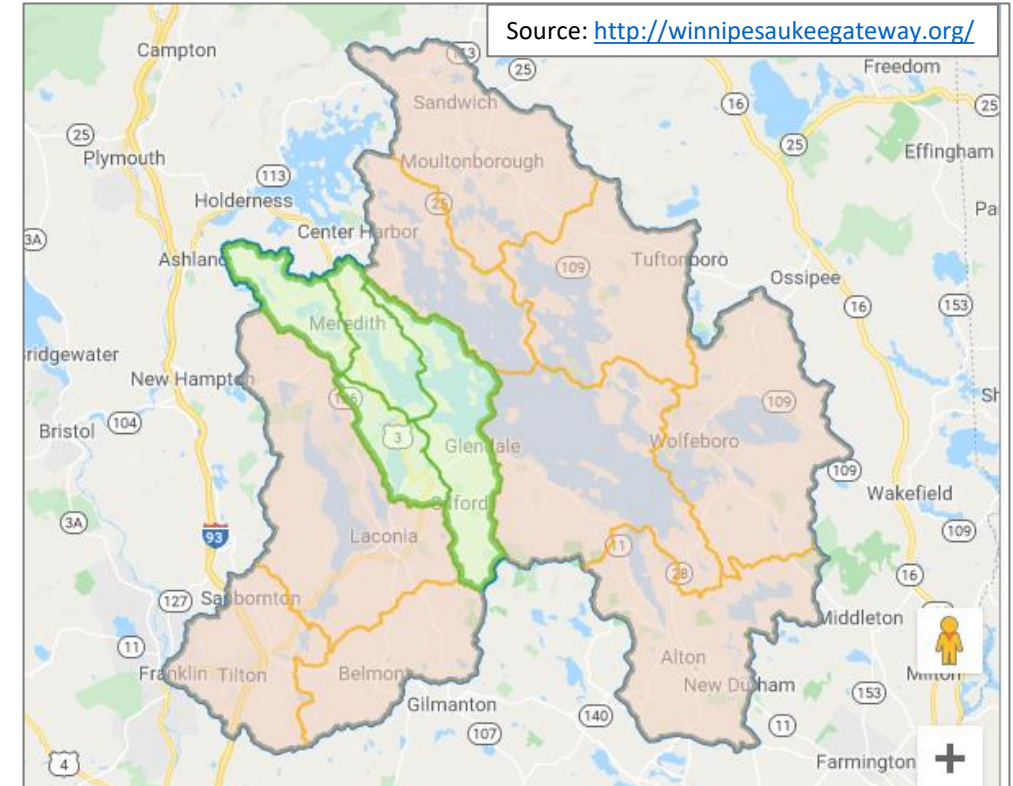


Project Implementation Metrics

Management Goal	Example Metrics
Demonstrate environmental results	<ul style="list-style-type: none"> # lbs pollutant loads prevented # waters with stable or improving trends in water quality # new NPS-impaired waters in targeted watersheds (target = 0)

Lake Winnepesaukee Watershed Management Plan (NH), Phase 1 Goal:

“...halt or minimize further water quality degradation attributable to nutrient inputs, primarily phosphorus in order to maintain our high quality water.”



	Median WQ (ug/l)	Reserve AC (ug/l)	Remaining AC (ug/l)
Tier 2: High Quality Waters	0.0 - 7.2	0.8	>0
Tier 1:	7.2 - 8.0	0 to 0.8	0
Impaired:	> 8.0	0	< 0

Wrap-up Thoughts

A scenic photograph of a sunset over a body of water. The sun is low on the horizon, casting a warm orange glow across the sky and reflecting on the water. In the foreground, there is a wooden pier or dock extending into the water, with its silhouette clearly visible against the bright light of the setting sun. The overall mood is peaceful and contemplative.

- In many cases, watershed protection goals and management strategies will be different than restoration efforts.
 - But, can complement restoration (e.g., headwater protection)
- Given limited resources, protection should be targeted in watersheds where there is documented (1) high quality conditions, and (2) vulnerability to degradation.
- Watershed planning is as important in a protection context, particularly in setting water quality goals.