

EPA's N-STEPS Program

Nutrient Scientific Technical Exchange Partnership and Support

Outline

- Background
- Current projects
- Program updates

States with Total Nitrogen or Total Phosphorus Criteria

1998 2008 2013 2014 2015 2016 2017 2018 2019 2020 2021 Current

	District of Columbia
	American Samoa
	Commonwealth of Northern Mariana Islands
	Guam
	Puerto Rico
	US Virgin Islands

Level 5	Complete set of N and P criteria for all watertypes*
Level 4	2 or more watertypes with N and/or P criteria
Level 3	1 watertype with N and/or P criteria
Level 2	Some waters with N and/or P criteria
Level 1	No N and/or P criteria

* "Watertypes" on the national maps and tables within this webpage refers to three watertypes: *lakes/reservoirs, rivers/streams, and estuaries*. Criteria for additional watertypes are included under the State/Territory Details tab.

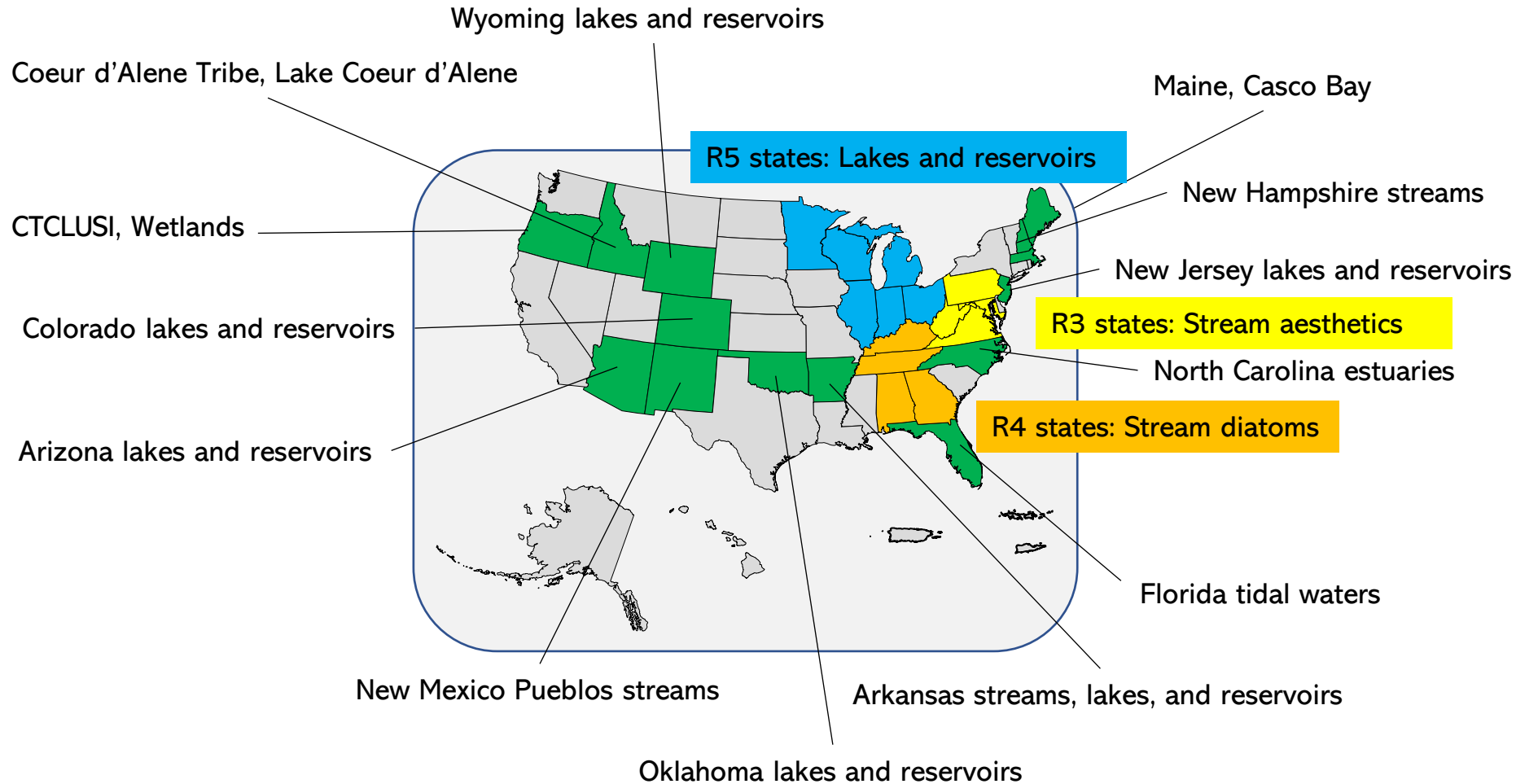
<https://www.epa.gov/nutrient-policy-data/state-progress-toward-developing-numeric-nutrient-water-quality-criteria#tb3>

Background

N-STEPS

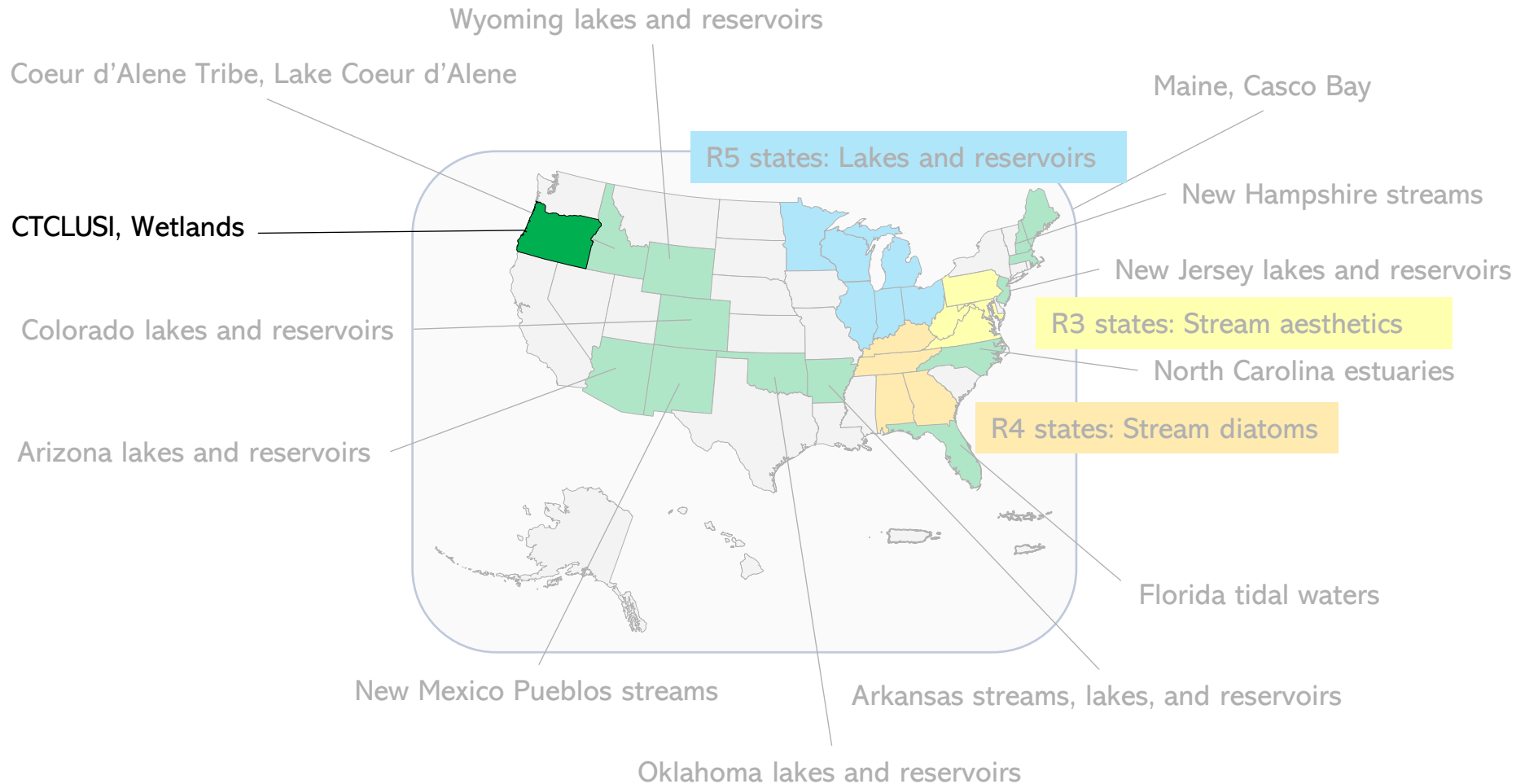
- EPA's technical support and outreach program for nutrient criteria development
- Projects range from planning to threshold development
- State and Tribal water quality agencies are encouraged to submit proposals

FY22 State and Tribal Projects



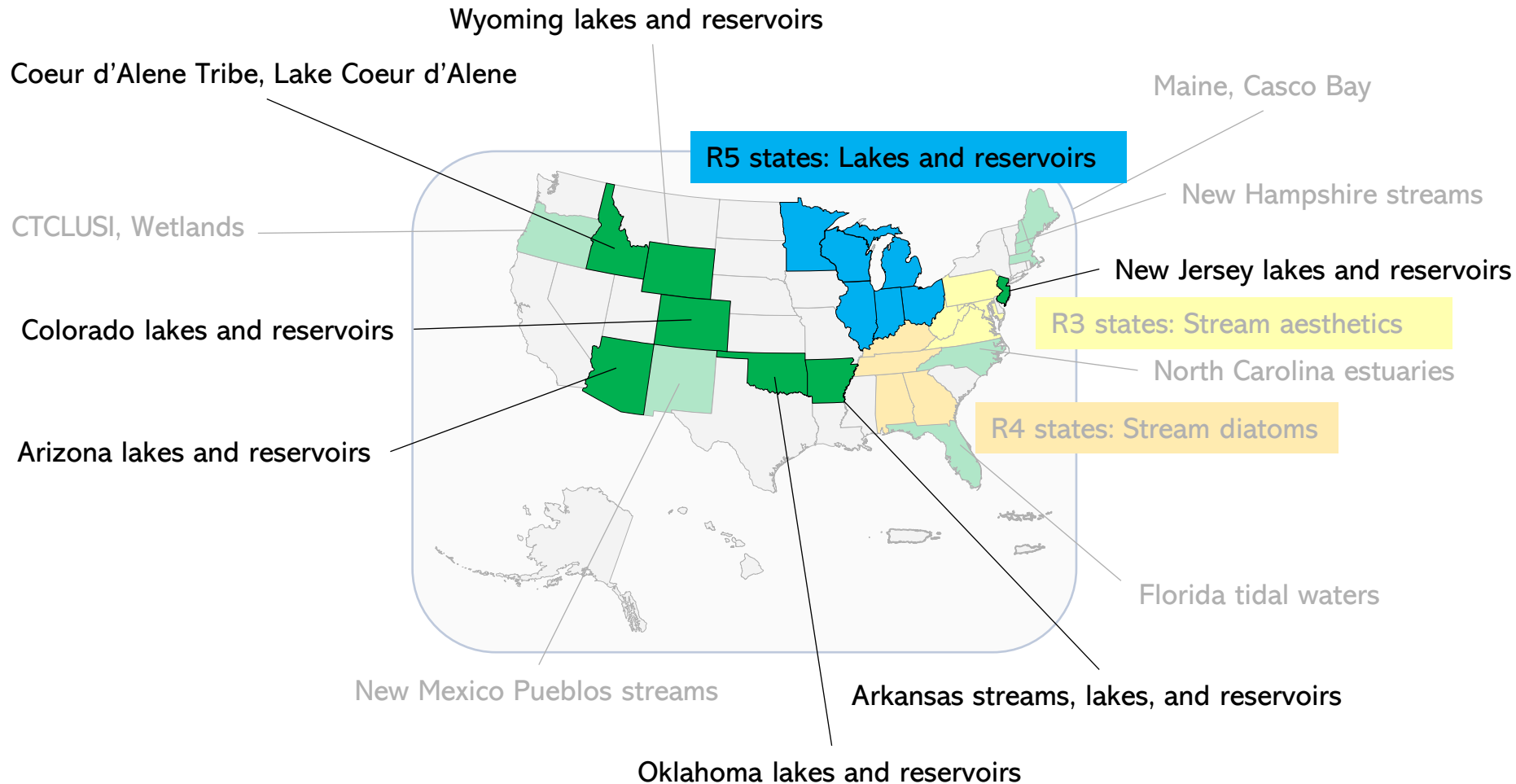
Wetlands

FY22 State and Tribal Projects



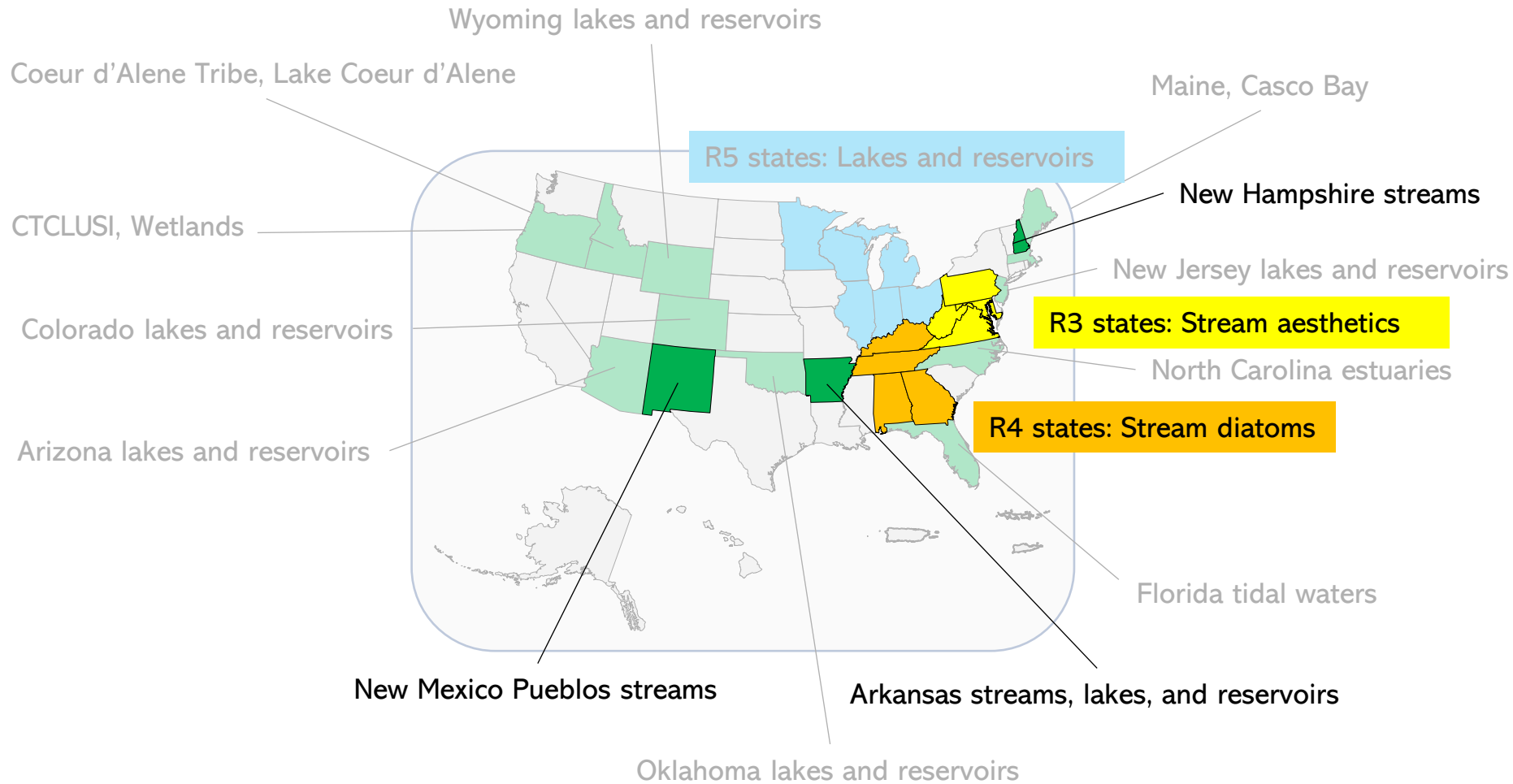
Lakes and Reservoirs

FY22 State and Tribal Projects



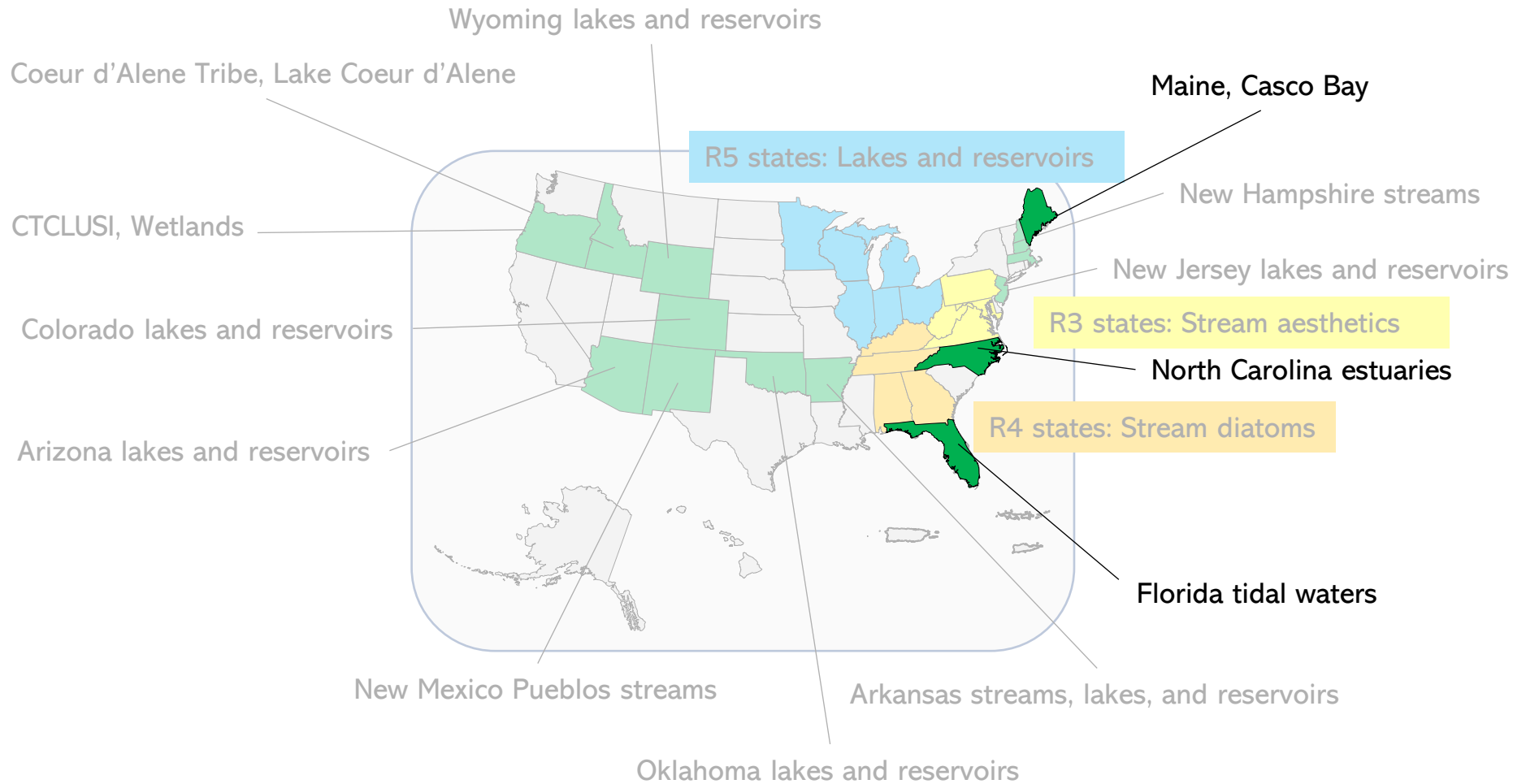
Rivers and Streams

FY22 State and Tribal Projects



Estuaries

FY22 State and Tribal Projects



N-STEPS Online (2021)



The screenshot shows the N-STEPS Online website interface. At the top is the EPA logo and navigation links: Environmental Topics, Laws & Regulations, and About EPA. A search bar is located on the right. Below this is a dark blue header with 'N-STEPS Online' on the left and 'Develop Criteria', 'Case Studies', and 'Resources' on the right. A 'CONTACT US' link and social media icons are on the far right. A left sidebar contains a list of navigation items: Home, Planning, Problem Formulation, Analysis, Criteria Derivation, Case Studies, and Resource Library. The main content area features the title 'Nutrient Scientific Technical Exchange Partnership & Support (N-STEPS) Online' with the subtitle 'A Resource for Numeric Nutrient Criteria Development'. Below this is a section titled 'Overview of Numeric Nutrient Criteria' followed by a paragraph of text.

Nutrient Scientific Technical Exchange Partnership & Support (N-STEPS) Online
A Resource for Numeric Nutrient Criteria Development

Overview of Numeric Nutrient Criteria

Nutrient pollution resulting from excess nitrogen (N) and phosphorus (P) is a leading cause of water quality degradation and an environmental challenge facing communities throughout the United States. N and P are essential elements that support the growth of algae and aquatic plants, which provide food and habitat for fish, shellfish, and other organisms that live in water. Excess N and P inputs from human activities, however, can result in *eutrophication*—stimulating the productivity of plant (e.g., algae and vascular plants) and microbial biomass. Eutrophication leads to depletion of dissolved oxygen, reduced transparency, and changes in biotic community composition through competition (Smith et al. 1999). In addition to the impacts on aquatic life, excess nutrients also can degrade aesthetics of recreational waters (Smith et al. 1995; Suplee et al. 2009; Sylvan et al. 2007) and increase the incidence of harmful algal blooms, which can endanger human health through the production of toxins that can contaminate recreational and drinking water resources (Anderson et al. 2008; Chorus and Bartram 1999). Figure 1 illustrates the process by which nutrient pollution can affect the uses of a water body.

[User Perception White Paper](#) (2021)

Development of User Perception Surveys to Protect Water Quality from Nutrient Pollution: A Primer on Common Practices and Insights

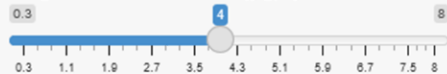
Office of Water | EPA 823-R-21-001 | April 2021



Clean Water Act § 304(a) Lake Criteria Recommendations (2021)

Chlorophyll – Microcystin Model

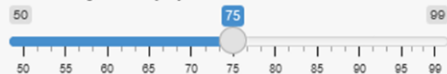
Target MC concentration ($\mu\text{g/L}$):



Allowable exceedance probability:

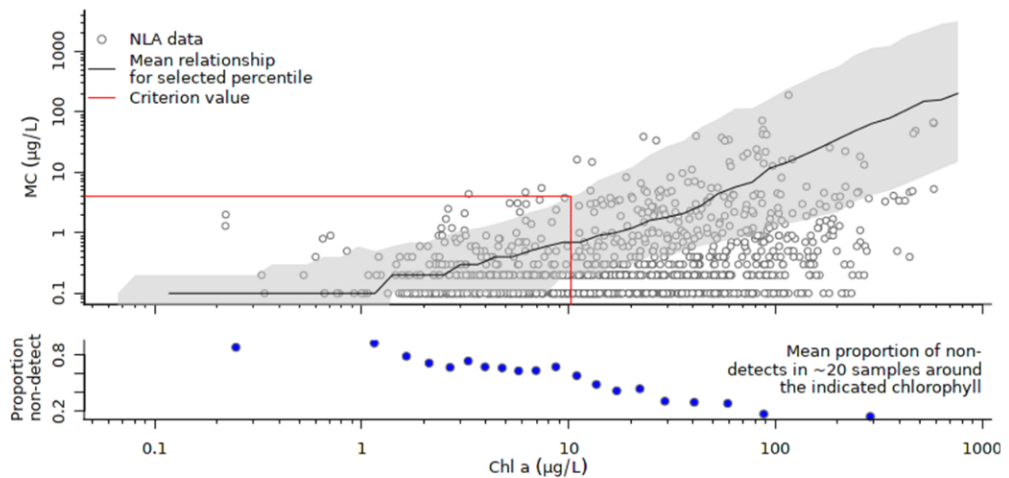


Certainty level (%):



Background

Model



Chl criterion ($\mu\text{g/L}$)

10.3

OW Memo (2022)

Related Topics: [Nutrient Policy and Data](#)

[CONTACT US](#)

2022 EPA Nutrient Reduction Memorandum

EPA's Office of Water plans to accelerate progress in controlling nutrient pollution in our nation's waters by scaling up existing, foundational approaches and more broadly deploying new data assessments, tools, financing approaches, and implementation strategies. EPA plans to integrate the objectives of both the Safe Drinking Water Act and Clean Water Act in a One Water approach to find durable solutions to the challenges and costs associated with reducing nutrient pollution. At the same time, EPA foresees incorporating promising innovations, creative partnerships, and unprecedented opportunities to invest in clean and safe water in the Bipartisan Infrastructure Law to accelerate progress in reducing nutrient pollution.

As outlined in EPA's 2022 Memorandum, the Agency plans to accelerate progress in controlling nutrient pollution in our nation's waters using five governing principles: (1) advance equity and environmental justice, (2) build and foster partnerships, (3) follow the science

Related Information

- [EPA's Efforts to Reduce Nutrient Pollution](#)
- [Previously Issued EPA Nutrient Reduction Policies and Supporting Documents](#)

Additional Programming

- **N-STEPS National Webinar Series**
 - May 12th, 2p.m. ET – Lisa Huff, Alabama Department of Environmental Management – *Biologically Based Tools to Examine Nutrient Effects in Alabama Streams – Alabama's N-STEPS Project and Beyond*
 - June 9th, 2 p.m. ET – Doug Ryan, USDA - *Biological Responses to Stream Nutrients: A Synthesis of Science from Experimental Forests and Ranges*
- **N-STEPS Circular**
 - *Quarterly Nutrient News*
- **POC: VanderWoude.Theresa@epa.gov**

Questions?

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 - walsh.brannon@epa.gov
- N-STEPS Program URL
 - <https://www.epa.gov/nutrient-policy-data/n-steps-program>