

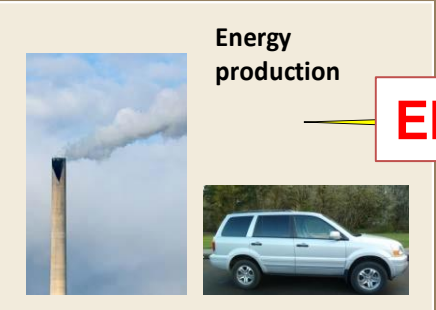


# **Nutrients Management in the Office of Water**

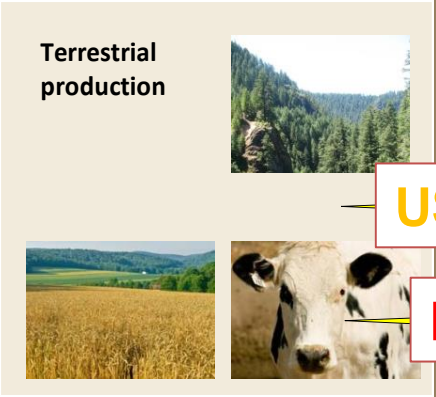
*For the*  
**National Nutrient Management Kickoff Workshop**  
January 21, 2015

**Mary Reiley**  
*Office of Water*

# Regulatory authority or incentives

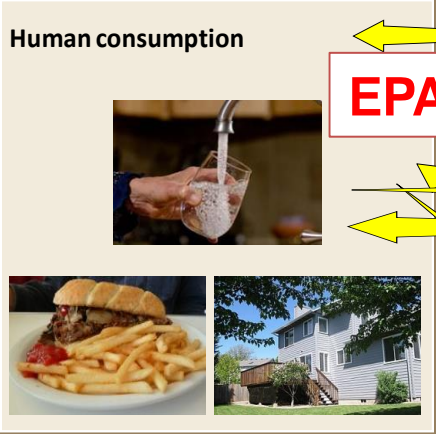


**EPA**



**USDA**

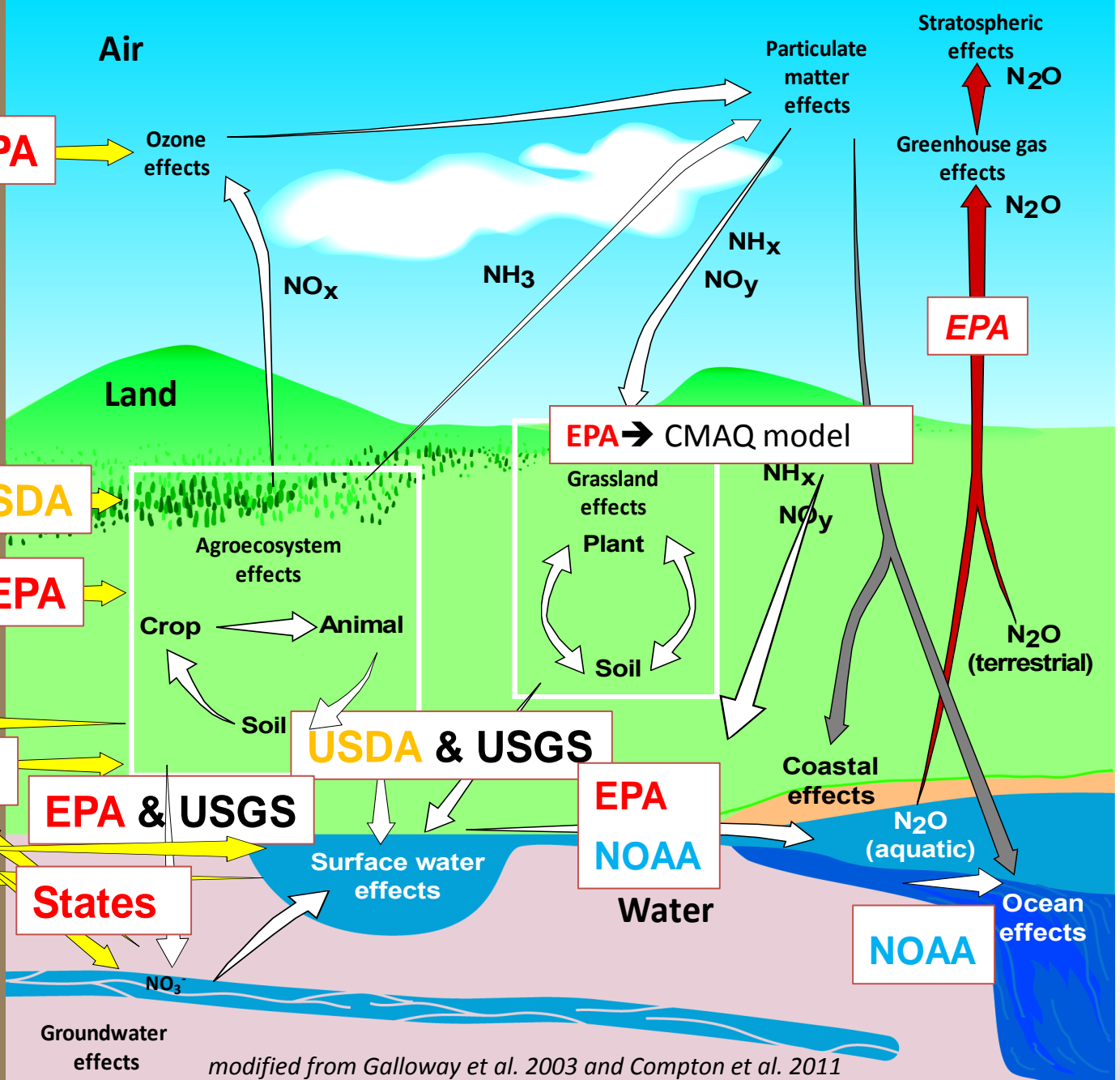
**EPA**



**EPA**

**EPA & USGS**

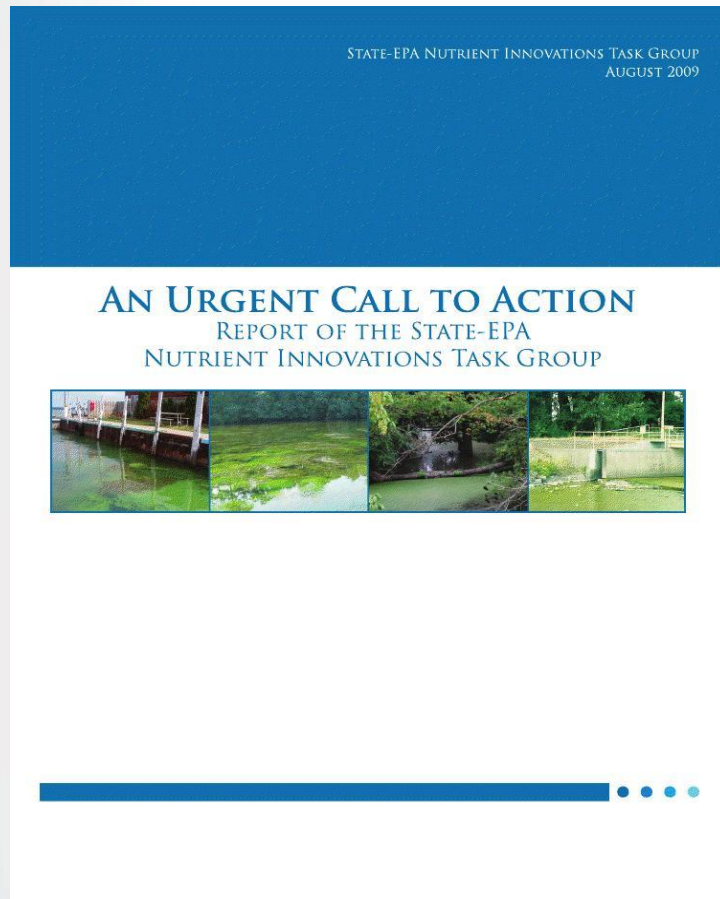
**States**



- Multiple**
- Media
  - Sources
  - Scales
  - Agencies

modified from Galloway et al. 2003 and Compton et al. 2011

# What we've heard from the States



## OW “Nutrients Management Road Shows”

- More states are focusing on developing numeric nutrient criteria for phosphorus than nitrogen
- Some states are developing numeric target values to implement their narrative criterion but face challenges to adopt them into water quality standards
- The states are asking for help on approaches to effective/affordable nutrient management
- A lot of states are interested in using diatoms as an assessment endpoint
- States are also interested in user perception studies as an assessment endpoint for recreational uses

# Questions OW is Acting On

- 1: Where should we target reductions in nitrogen & co-pollutant loads?
- 2: How do we set nitrogen & co-pollutant reduction goals for priority areas?
- 3: What's in our toolbox to manage and reduce nitrogen & co-pollutant loads and does it work?
- 4: What are some new, innovative approaches we haven't tried before?
- 5: Are we getting the reductions and ecosystem and human health benefits we expect?
- 6: How do we best maintain accountability, assess progress, and communicate results to the public?

## By Developing

**Information, Models, tools & technologies, and approaches that incorporate scientific, social, economic and cross-media factors to inform regulatory and non-regulatory solutions to excess N & co-pollutants**

# The Nutrient Challenges OW is Trying to Solve

## Reduce Loadings to Surface Water

- Understand Nutrients from a Systems Perspective
  - watersheds
  - economics
  - social barriers
- Remove Nutrients from Wastewater:
  - achieving low N limits
  - low cost and effective
  - low energy use, low water use, resource recovery
- Reduce Non-point Loadings
  - air
  - land

## Protect Drinking Water

- Source water protection
- Drinking water treatment



# OW Working with States

## State to Region to EPA

- Nutrient Framework (Stoner Memo) Implementation Dialogue
- State Standards Package Development
  - Integrating causal (N & P) and response (Chl, DO) parameters into one water quality standard
  - Integrating biological response indicators into numeric nutrient criterion decisional framework
- Nutrient Roadshows
  - All the things we (EPA and the State) learned developing Florida nutrient standards
  - All the things EPA learned from the states as they develop their nutrient standards

## States and State Associations to OW

- EPA & State Nutrient Working Group (OW, Regions, ACWA & ASDWA)
- EPA & State Nutrient Criteria Implementation Workshop
  - Protecting downstream waters
  - Narrative translators
  - Small systems technology
  - Costs

<http://www2.epa.gov/nutrient-policy-data>



## Centers for Water Research using a Systems View of Nutrient Management (STAR) 2014-2019

Center for Integrated Multi-scale Nutrient Pollution Solutions  
*Pennsylvania State University*

Center for Reinventing Aging Infrastructure for Nutrient Management (RAINmgt)  
*University of South Florida*

Center for Comprehensive, Optimal, and Effective Abatement of Nutrients  
*Colorado State University*

Center for Resource Recovery and Nutrient Management  
*Water Environment Research Foundation (WERF)*