An Urgent Call to Action:

Nutrient Innovations Task Group Report

A Watershed Academy Webcast

Tuesday, December 1, 2009
1:00pm – 3:00pm Eastern

Ephraim S. King, US EPA

Craig Cox, Environmental Working Group

Walter L. Baker, Utah Department of Environmental Quality

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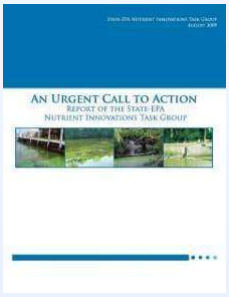
Overview of Today's Webcast

- State-EPA Nutrient Innovations Task Group
- Agriculture and Nutrient Pollution
- Case Study: Utah's Approach to Nutrient Pollution from livestock and publicly owned treatment works

State-EPA Nutrient Innovations Task Group



Ephraim S. King
Director
Office of Science and Technology
U.S. EPA's Office of Water

Overview

- State-EPA Nutrient Innovations Task Group
- Charge and Approach
- Extent of Problem and Sources
- Tools to Address the Problem
- Call to Action-Findings & Recommendations
- Next Steps

NITG Background and Purpose

- Initiated in Response to State “Call for Change”
- EPA, ASIWPCA and ASDWA Partnership of Senior Water Program Managers
- Synthesis of Input from State and National Water Program Experts (Drinking Water, Surface Water, Water Quality, Permits, Nonpoint Sources)
- Final Report is Product of Nutrient Innovations Task Group
  - Introduction
  - Scope and Impact of Nitrogen and Phosphorus Pollution
  - Primary Sources of Nutrients
  - Tools and Authorities
  - Findings and Recommendations

NITG Approach

- Charge
  - To Evaluate the National Nutrient Issue
  - Frame Innovative Solutions for Greater Results
- Participants
  - 9 States (CT, DE, IL, KS, OK, OH, UT, VA, WI)
  - 3 Associations (ASIWPCA, ORSANCO, ASDWA)
  - All OW Offices & EPA Regions
- Methodology
  - Data Review
  - Evaluation of Existing Tools
  - Identification of New Options

Existing Data and Analysis

- **EPA Science Advisory Board**
  - Reactive Nitrogen in the United States (USEPA 2009)
  - Hypoxia in the Northern Gulf of Mexico (USEPA 2007)
- **USEPA**
  - National Coastal Condition Report III ((USEPA 2008)
  - Wadeable Streams Assessment (USEPA 2006)
- **National Research Council**
  - Mississippi River Water Quality . . . Challenges and Opportunities (NRC 2008)
  - Urban Stormwater Management (NRC 2008)
- **National Oceanic and Atmospheric Administration**
  - Effects of Nutrient Enrichment in the Nation's Estuaries (Bricker et al 2007)
- **Numerous Published Articles, State Reports, and University Studies**

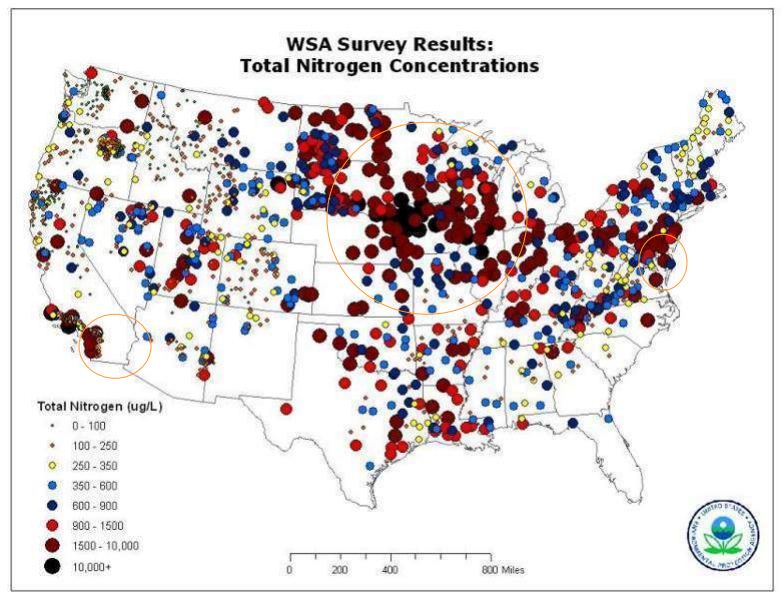
Efforts to Date

- Major Investment in Research and Science
- Substantial Guidance Development, Technical Assistance, and Information Transfer
- Impressive Number of State and Local BMP Pilots and Technology Demonstration Projects
- Continued State Innovation, Incentives, Cost-share, Limit of Technology, Trading, and Collaborative Approaches
- Different State Oversight and Regulatory Models

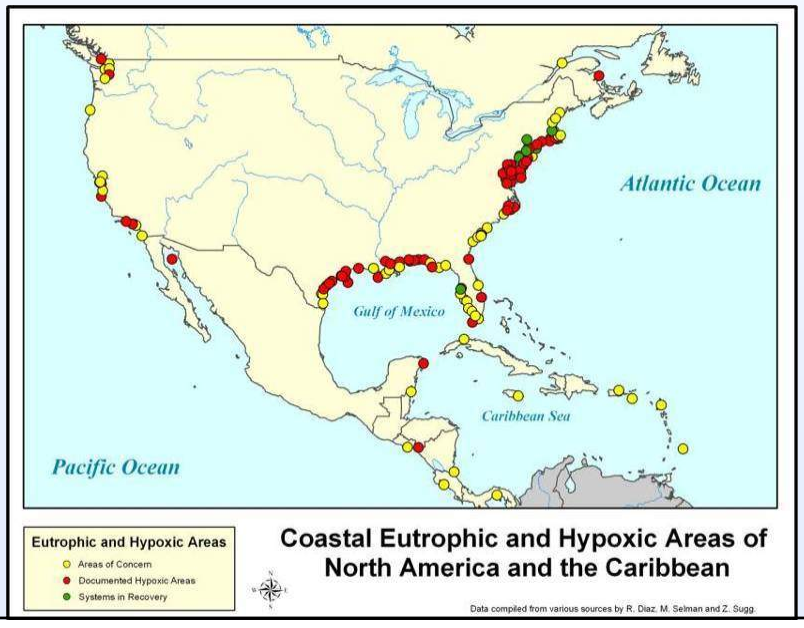
National Scope of Nutrient Problem

- 14,000 Nutrient-related Impairment Listings in 49 States
  - 2.5 Million Acres of Lakes and Reservoirs
  - 80,000 Miles of Rivers and Streams
  - And This is an Underestimate . . .
- Over 47% of Streams Have Medium to High Levels of Phosphorus and Over 53% Have Medium to High Levels of Nitrogen
- 168 Hypoxic Zones in U.S. Waters
- 78% of Assessed Continental U.S. Coastal Area Exhibits Eutrophication Symptoms

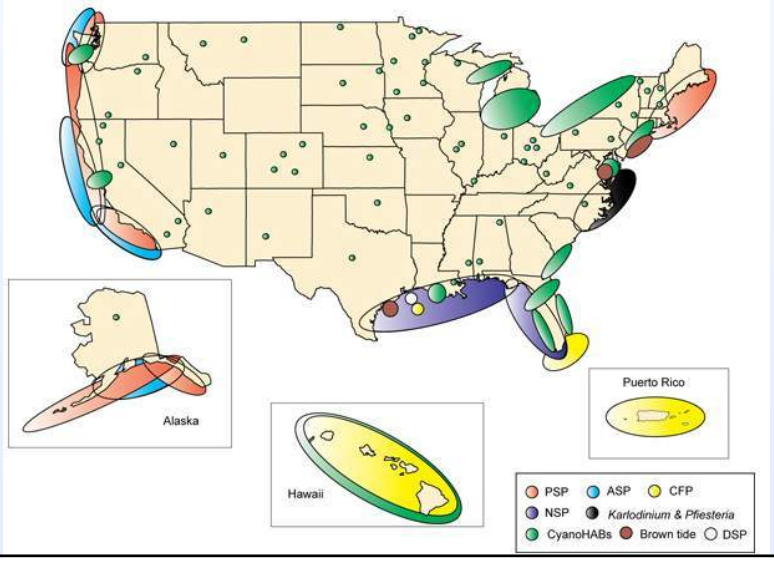
Concentrations of Nitrogen Nationally



Hypoxic Zone Locations

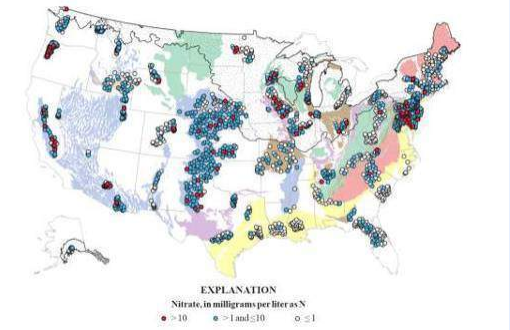


Algal Bloom Occurrences in the United States (WHOI 2007)



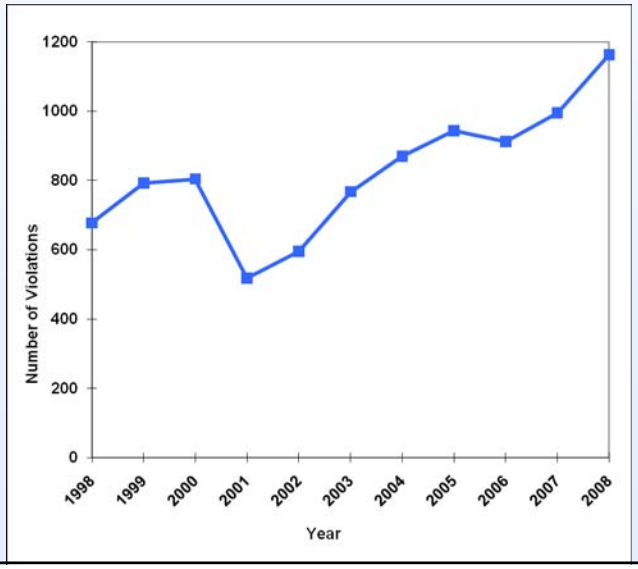
National Drinking Water Impacts

- **Public Health Risks – Drinking Water**



- Disinfectant by-products; significant & costly
- Contaminated drinking water supplies
- Rate of nitrate violations in community water systems has doubled over past 7 years
- Harmful algal blooms
- Increased treatment costs
  - Large Systems
  - Small Systems
  - Private Wells

Community Water System (CWS) Drinking Water Nitrate Violations



National Population Growth

- Nutrient Impacts Reflect Doubling of U.S. Population Over Past 50 Years
- Additional 135 Million People by 2050
- Nutrient Pollution Expected to Accelerate

Year	U.S. Population
1950	152 million
2008	304 million
2050	439 million

Sources – Key Facts

- **Municipal Wastewater Treatment**
  - Among the most heavily regulated sectors in U. S.
  - Treat over 18 million tons of human waste annually
  - Of more than 16,500 municipal treatment system permits, however, only about 4% have numeric limits for nitrogen and 9.9% for phosphorus
- **Atmospheric Nitrogen Deposition**
  - Regulated under the CAA, mobile and stationary account for 55% and 45% of NOx emissions respectively to the atmosphere

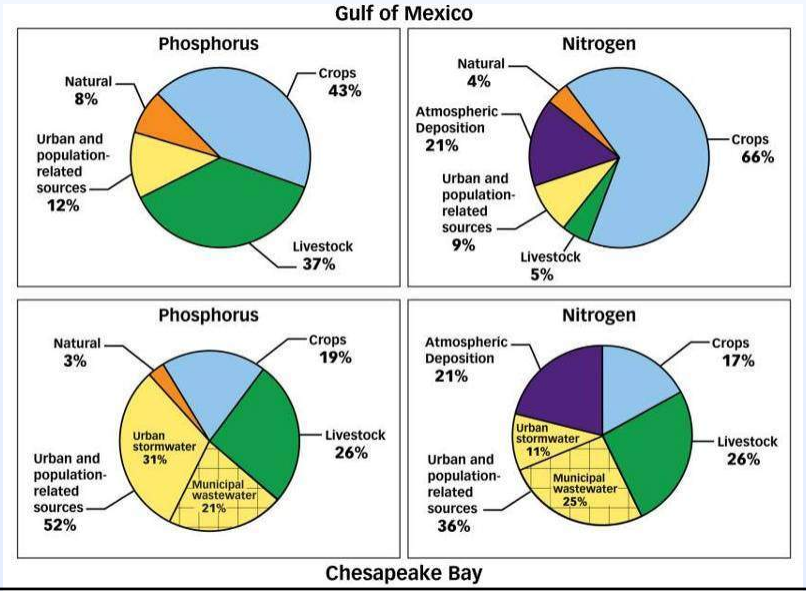
Sources – Key Facts

- **Urban Stormwater**
  - 80% of the U.S. population live on 10% of the land with urban population heavily impacting coastal areas
  - 50% of the existing urban landscape will be redeveloped by 2030
  - An additional 30% of needed built environment does not exist
  - Urban Stormwater is a major source of nutrient pollution in heavily populated areas and is expected to increase dramatically with accelerating population

Sources – Key Facts

- **Agricultural Livestock**
  - Livestock Production in U.S. is a $130 Billion Industry
  - Generates over ***1billion tons*** of manure annually
    - 96 million cattle, 68 million pigs, and 9.4 billion chickens
  - Substantial Portion of Livestock Production is Largely Unregulated by the Recent CAFO Rule
- **Agricultural Row Crops**
  - Row Crop Agriculture is a $120 Billion Industry
  - Agricultural Stormwater Runoff and Irrigation Return Flows Exempt from the Clean Water Act
  - Subject to Variable Controls at the State Level

Relative Contributions of Nutrients for the Chesapeake Bay and the Gulf of Mexico



Tools and Authorities – Key Facts

- Incentives – voluntary agreements, corporate stewardship, trading
- Non-regulatory: volunteer monitoring, nutrient load reduction strategies, tracking of implementation plans
- Existing & Alternative Regulatory: point source caps, NPDES & WQS regulations, NPS regulations
- Legislative

Tools and Authorities – Key Facts

Partially Utilized	Under Utilized
NPDES	Urban Stormwater Controls
Numeric Nutrient Criteria	Technology-based Requirements
303 Assessments & listings	CZARA section 6217 Implementation Reqs
TMDLs	Limits on Discharges to Impaired Waters
Livestock	Antidegradation

Key NITG Findings

- Knowledge, Collaboration, and Incentives Will Fail Absent Joint Accountability
- Current Tools Underused and Poorly Coordinated
- Additional Tools Rarely Used
- Current Regs Disproportionately Address Certain Sources in Watershed to Exclusion of Others
- Localized Aspects of State Nonpoint Source Programs Highly Successful, but Broader Application Undercut by Absence of Common Multi-Source Accountability Frameworks Within and Across State lines

Call to Action

- **Common Accountability**
  - All Major Sources of Nutrients Must be Held Accountable for Their Contributions to the Problem.
- **Full Use of Existing Tools**
  - Supporting and Requiring a More Consistent and Full Utilization of Existing Tools From State to State and Source to Source is Essential
- **Profound Change**
  - Combating the Challenge of Nutrient Pollution Will Require a Profound Change in How We Share Accountability Between Sources, Within Watersheds, and Across State Lines
- **National Leadership**

Next Steps

- Brief and Communicate Findings to Senior State and Federal Decision-Makers
- Define Alternative Frameworks of Accountability
- Engage Key Stakeholders to Define Options for Multi-Sector Accountability
- Look for Opportunities at Local, State, and Federal Levels to Fully Use All Tools and Support Multi-Sector Accountability

Next Steps – Larger Context

- Litigation and Petitions
  - State Request for Technology-Based Stds (Nov 2007)
  - NRDC Secondary Treatment Petition (Nov 2007)
  - Mississippi River Watershed Petition (July 2008)
  - Florida Wildlife Federation Lawsuit (July 2008)
  - Florida Utility Council Notice of Intent (August 2009)
- Chesapeake Bay Executive Order (May 2009)
- EPA Inspector General Report (August 2009)
- State-EPA NITG Report (August 2009)
- Next Generation of Tools & Actions (Sept 2009)
  - Draft Chesapeake Bay Report

For More Information:

www.epa.gov/waterscience/criteria/nutrient

Questions?

Agriculture and Nutrient Pollution

Remarks by Craig Cox
Midwest Vice President
Environmental Working Group

Starting Point: We Aren't Getting the Results We Need

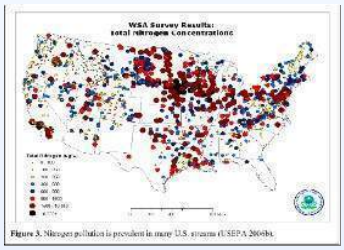


Figure 3. Nitrogen pollution is prevalent in many U.S. streams (USEPA 2006b).

Figure 4. Hypoxic zone locations (Selman et al. 2008).

- "Nitrogen and phosphorus pollution has the potential to become one of the costliest, most difficult environmental problems we face in the 21st century."
- "Current efforts to control nutrients have been hard-fought but inadequate…"

Starting Point:
Agriculture is a (or the) Major Player

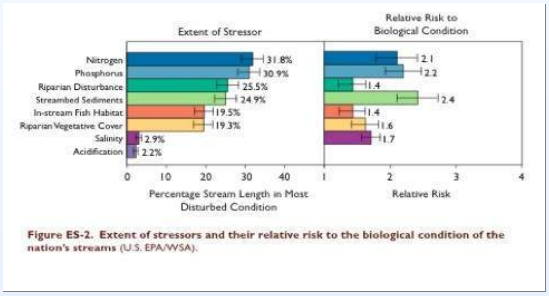
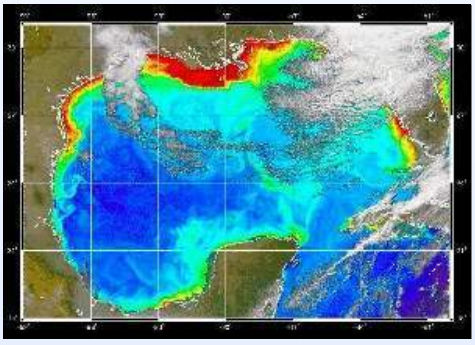


Figure ES-2. Extent of stressors and their relative risk to the biological condition of the nation's streams (U.S. EPA/WSA).

- Agriculture is a major player in top six stressors.
- Agriculture is the dominant land use in most watersheds.
- U.S. is an urban nation but an agricultural land.

Starting Point:
Stakes are Getting Higher



- Climate Change:
  - 10-fold expansion of dead zones?
  - Double rates of cropland erosion and runoff?
- 135 million more Americans over next 40 years.

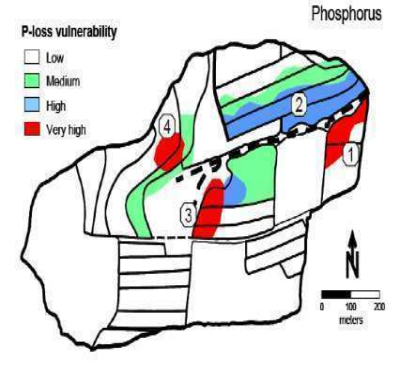
Not a Technical Problem…Yet

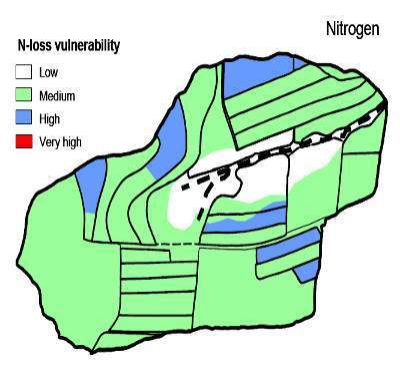
- Well-understood practices are already available to reduce nutrient pollution.
- Every one of these practices is being used today by some farmer somewhere in the U.S.
- Our problem is primarily poor policy and institutional inertia.

Business as Usual Won't Get It Done We must…

- Focus voluntary programs to get results.
  - Priority watersheds.
  - Precision conservation.
- Use regulations that work in agriculture.
  - Carrots with strings.
  - Precision regulation.
- Strengthen our technical and scientific network.

Precision Conservation in Priority Watersheds





- Right practices in the right places for maximum effect.
- Most program funds must go to watershed water quality projects to harness precision conservation.

Precision Conservation in Priority Watersheds

- Dozens of studies going back decades argue for focusing funding, but…
  - Most program dollars are still too broadly dispersed to get water quality results.
  - Watershed water quality projects get a lot of attention as success stories, but a small share of the money.
- Political expediency?
  - Positive politics of targeting: solve pressing problems that matter to constituents.
  - Failure is good politics?

Voluntary Programs Alone Not Enough

- Inherent weaknesses of voluntary programs:
  - Producers who volunteer are not necessarily the ones who can make the most difference.
  - Producers' priorities may differ from program priorities especially if they are picking up part of the tab.
  - Concerns about equity and equal access loom large when distributing government money; a serious barrier to effective targeting.
- It takes heroic effort to overcome these weaknesses and our track record is sobering.

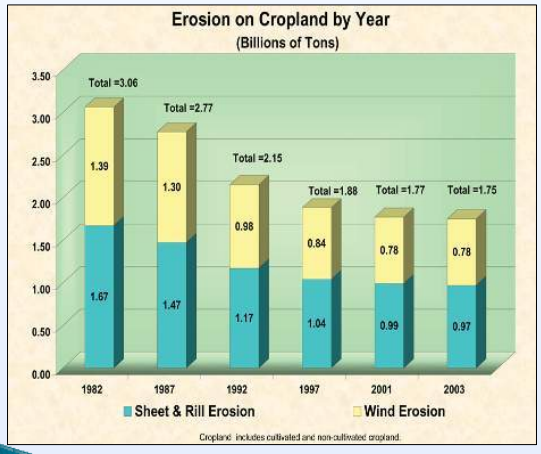
Just a Few Sore Spots Defeat a Lot of Voluntary Effort




Regulation that Works

- “We can’t expect taxpayers to pay for everything.”
- “Agriculture is going to need a speed limit.”
- Regulation that works in agriculture:
  - Carrots with Strings: Conservation Compliance.
  - Precision Regulation: Restrict particularly risky practices in vulnerable locations.
    - Manure on frozen/snow-covered ground.
    - Set back crop production from waterways.
    - Unrestricted and unmanaged access of livestock to streams.

Carrots with Strings “Conservation Compliance”



- 1985 Farm Bill required a soil conservation plan to stay eligible for farm subsidies.
- Cut erosion on the most erosive cropland by 40 percent.
- Stimulated a new generation of tillage equipment and crop residue management systems.

Carrots with Strings
"Conservation Compliance"

- Right Now
  - Ramp up spot checks each year to ensure plans are in place and working.
  - Statistically sound sample of current conservation plans to see how good they are.
- Next Farm Bill
  - Expand agricultural land covered.
  - Expand requirements with an emphasis on water quality.

Precision Regulation

Target risky practices in vulnerable locations…




Precision Regulation

- Objective:
  - Socially acceptable answer to the question: What taxpayers should pay for and what producers should be expected to do on their own.
  - Affect the least number of producers needed to achieve the greatest improvement in water quality.
  - Push the right producers into voluntary programs.
  - Level the playing field for “good actors.”

Technical Assistance and Scientific Support

Essential for both precision conservation & regulation…

Technical Assistance and Scientific Support

- Fraying network is a major, if not the major, barrier to moving forward now.
- Primary role for federal government should be building this network.
- Strategic investments in:
  - Agencies
  - Universities
  - Businesses
  - NGOs

We Can Solve the Problem

- Act with a sense of urgency.
- Focus voluntary programs--precision conservation.
- Put regulations in place that work in agriculture--precision regulation.
- Build our technical assistance and scientific support network.
- “Get real, get results.”

Thank You And Good Luck

Craig Cox
craig@ewg.org
www.ewg.org/agmag

Questions?

Addressing Nutrient Pollution: The Utah Approach

Walter L. Baker, P.E.
Director
Utah Division of Water Quality
Utah Department of Environmental Quality

Utah's 4-Tier Approach

- Animal Feeding Operations

- POTW Cost Study

- GSL Wetland Assessment
- ~~Nutrient Criteria for Rivers and Streams~~

China's Approach

- Beijing Olympic Venue

State-wide POTW Nutrient Study

- Assess 30 mechanical WWTPs and 1 lagoon
- Growth; plant capacity and capability; including optimization
- Identify the economic impacts of establishing state-wide discharge standards for nutrients
  - Biological: 1.0 mg/l P; 20 mg/l N
  - Chemical: 0.1 mg/l P; 10 mg/l N
- Determine the environmental benefits that would result, i.e., waterbody response

Why Perform A Nutrient Cost Study for POTWs?

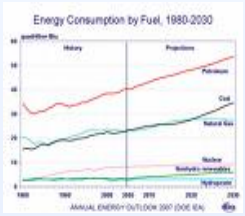
- NRDC Petition on Secondary Treatment
- POTWs are reading the nutrient “tea leaves”
- Boards, councils and the legislature need to know that nutrient pollution is “real” and costly to address
- In discussing nutrient pollution we need to be prepared to answer the questions “what’s the price tag?” and “what’s the benefit?”

The Approach

- Review current growth and expansion needs
- Assess process optimization and capital improvements
- Develop capital and O&M cost estimates for nutrient removal
- Determine the aggregate economic impact
- Determine the environmental benefits

Environmental Benefits

- Receiving stream and nutrient load reduction
- Changes in chemical use
- Changes in residual disposal
- Changes in air emissions
- Changes in lab cost
- Changes in energy consumption
- DWQ will determine the improvement to the receiving stream



Schedule

Task No.	Task Description	Orig Finish Date	Rev Finish Date	% Comp
1	Project Management Plan	1/12/2009	1/12/2009	100%
2	Kickoff Conference	2/6/2009	2/6/2009	100%
3	Treatment Plant Data	4/10/2009	7/31/2009	80%
4	Cost Model	3/13/2009	4/30/2009	90%
5	Treatment Plant Alternatives	5/28/2009	10/9/2009	75%
6	Designs for Plant Upgrades	8/14/2009	11/15/2009	50%
6A	Additional Plant Meetings			0%
7	Construction Cost Estimates	8/28/2009	12/31/2009	10%
8	O&M Cost Estimates	9/24/2009	12/31/2009	10%
9	Financial Impacts	11/10/2009	1/31/2010	0%
10	Environmental Impacts	11/17/2009	1/31/2010	0%
11	Final Report	2/23/2010	3/15/2010	0 %

Utah Animal Feeding Operation Strategy 1999-2009

- A Partnership Between
- Utah Farm Bureau Federation
- Utah Association of Conservation Districts
- Utah Agricultural Commodity Groups
- Utah Department of Agriculture & Food
- Utah Division of Water Quality
- Utah State University Extension Service
- Natural Resources Conservation Service

Utah's AFO/CAFO Strategy

- **Goals:**
- **Control polluted runoff from animal feeding operations**
- **Inventory Utah's animal feeding operations**
- **Complete nutrient management plans**
- **Maintain a viable agricultural industry**
- **Maintain decision-making at the local level**
- **Provide technical assistance/education**

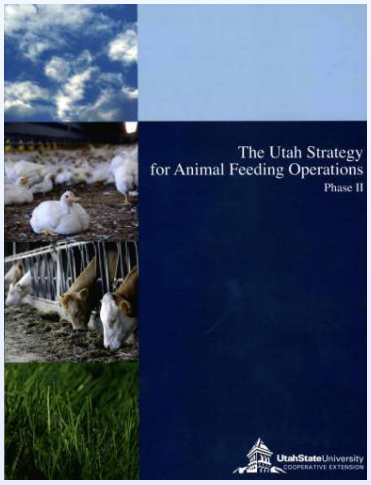
Phase I On-farm Assessments (As of December 31, 2006)

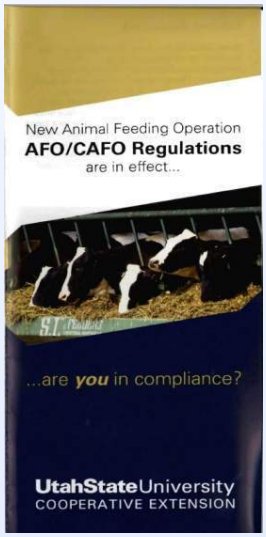
- 2,926 facilities inventoried
- 2,062 no water quality problems
- 407 found not to be AFOs
- 59 CAFOs
- 398 potential CAFOs
  - Develop CNMPs
  - Modify practices
  - Implement projects

The Results? (For 398 pCAFOs)

- 93% - Nutrient Management Plans Completed
- 90% - Obtained Funding
- 70% - Runoff Controlled
- 65% - NMP Fully Implemented
- 58% - Full Compliance

Utah Strategy: Phase II
December 2008 – December 2012





Why a Phase II?

- 2nd Circuit Court Ruling changed the field
- There was a desire to build upon the initial work and keep up AFOs implementation
- Maintain the partnership
- Increase state accessibility to on-farm inventories and to monitor progress
- Funding for Phase I was exhausted

Elements of Phase II

- Annual report of AFO and pCAFO compliance
- Reassess all AFOs within 2,000 feet of water
- Reassess all dairies
- Provide education/outreach (USU)
- Continue NMP development/implementation for AFOs
- Perform periodic AFO inspections
- Run nutrient loading reduction model (UAFRI)
- Implement projects
- Implement new administrative rules

New Rules

- NMP will be part of the permit
- Permit by Rule
  - Voluntary
  - Available to all medium and small AFOs
  - No fee
  - Certifying statement by owner
  - NMP required but not public-noticed
  - Offers some enforcement protection for storm events beyond a 25-year, 24-hour event
  - Provides for periodic inspections and tracking
- Farm Bureau maintains the database; DWQ has access to the information

Financial Assistance Programs for Water Quality Improvements

NonPoint Source Pollution (NPS) Projects

Eligibility: Individuals, businesses, corporations, associations, private entities, and government agencies are eligible for loans and grants.

Purpose: Financial Assistance is to be used for activities within watersheds that address a critical water quality need, protect human health, improve environmental conditions that affect waters of the State, provide incentives for project implementation, and to augment other funding sources.

How to Apply: Submit a financial assistance request form to:
Utah Division of Water Quality,
P.O. Box 144870
Salt Lake City, UT 84114-4870

Eligible Projects:
- Reduce untreated or uncontrolled runoff
- Improve critical aquatic resources
- Conserve soil, water or other natural resources
- Protect and improve groundwater quality
- Preserve and protect beneficial uses of water

The highest priority projects are those that address a critical water quality need, will improve human health concerns, or would be not be economically feasible without the grant. Conservation easements, stream restoration, animal waste treatment, and erosion control would be considered high priority projects.

NPS Loans:
- Terms may be as low as 0% interest for up to 20 years repayment
- Must be secured with collateral and must be repaid
- Can be used as a matching source of funds for other funding sources*

NPS Grants:
- Do not need to be repaid
- Address a critical water quality need or human health concern
- Can be used as a matching source of funds for other funding sources*

* Other funding sources may include (State Revolving Fund (SRF); 319 Nonpoint Source Management

Environmental Quality Incentives Program (EQIP) Grants

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. Through EQIP, the Natural Resources Conservation Service (NRCS) provides assistance to agricultural producers in a manner that will:
- Promote agricultural production and environmental quality as compatible goals
- Optimize environmental benefits
- Help farmers and ranchers meet Federal, State, Tribal, and local environmental requirements

National Priorities
- Reductions of nonpoint source pollution, such as nutrients, sediment, pesticides, or excess salinity
- Reduction of groundwater contamination
- Reduction of point sources such as contamination from confined animal feeding operations
- Reduction of emissions, such as particulate matter, nitrogen oxides (NOx), volatile organic compounds, and ozone precursors
- Reduction in soil erosion and sedimentation from unacceptable levels on agricultural land; and
- Promotion of at-risk species habitat conservation

Payment Limitation
- $300,000 per person over a 6-year period
- For conservation programs: persons or legal entities are eligible if the average non-farm adjusted gross income (AGI) is less than $1,000,000 or 2/3 of the average total AGI is from farming, ranching, or forestry

Agriculture Resource Development Loans (ARDL) Loans

Low-interest Agriculture Resource Development Loans (ARDL) loans are administered by the Department of Agriculture under the direction of the Utah Conservation Commission. The ARDL program provides low interest loans to farmers and ranchers for conservation and pollution control projects. Some examples of eligible projects are: animal manure management; riparian improvement; rangeland improvement; reseeding watershed; and wind erosion control.

Objectives
- Conserve soil and water resources
- Increase agricultural yields for croplands, orchards, pasture, range, and livestock
- Maintain and improve water quality
- Conserve and/or develop on-farm energy
- Reduce damages to agriculture as a result of flooding, drought, or other natural disasters

Payment Limitation
ARDL loans are made for a maximum of 12 years at 3% interest with a one-time administration fee of 4%. Payments may be made in annual, quarterly, or monthly installments.

How to Apply for EQIP Grants

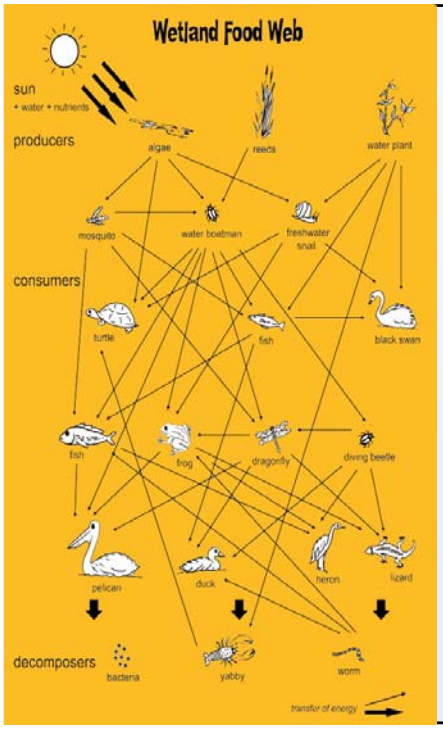
Apply at your local USDA Service Center with NRCS or the Farm Service Agency (http://offices.sc.egov.usda.gov/locator/app?state=UT) or online at USDA Online Services.

How to Apply for ARDL Loans

An application can be obtained from your local Conservation District supervisor, from your local Conservation Service Office, or from the Utah Department of Agriculture.

Great Salt Lake Wetlands

- ~ 475 K acres of wetlands (75% of those identified in Utah)
- Three major rivers provide about 60% of freshwater input to Great Salt Lake
- Provides seasonal and nesting habitat for millions of birds, e.g., 2/3 of the world's population of Wilson's phalaropes use the wetlands
- 75% of Utah's wastewater flows through the wetlands into Great Salt Lake
- Two major classes of wetlands:
  - "sheetflow" – flowing water along lake margins
  - "impounded" – rivers are diked to create a series of ponds; both public and private



Previous Research

A five-year study with two major goals:

- Develop nutrient criteria
- Create an assessment framework

Data were collected to answer numerous questions about the condition of GSL wetlands.

Data were collected at both "impounded" and "sheetflow" wetlands

16 impounded wetlands selected to represent a range of nutrients…

These data were compiled to create a MMI for impounded wetlands

Regulatory Framework

- State-owned Waterfowl Management Areas (WMAs) were assigned 3B (warm-water fishery) and 3D (waterfowl and shorebird) aquatic life uses in the 1970's.
- Not all wetlands are explicitly protected in standards
- Numerous "types" of freshwater ecosystems are encompassed by the WMAs
- Water quality was not addressed until recently

Parameters and Summary Statistics Included in the WQI

N
- Water: ammonia, nitrate/nitrite, DON
- Sediment: total
- Minimum, Maximum, Geometric Mean

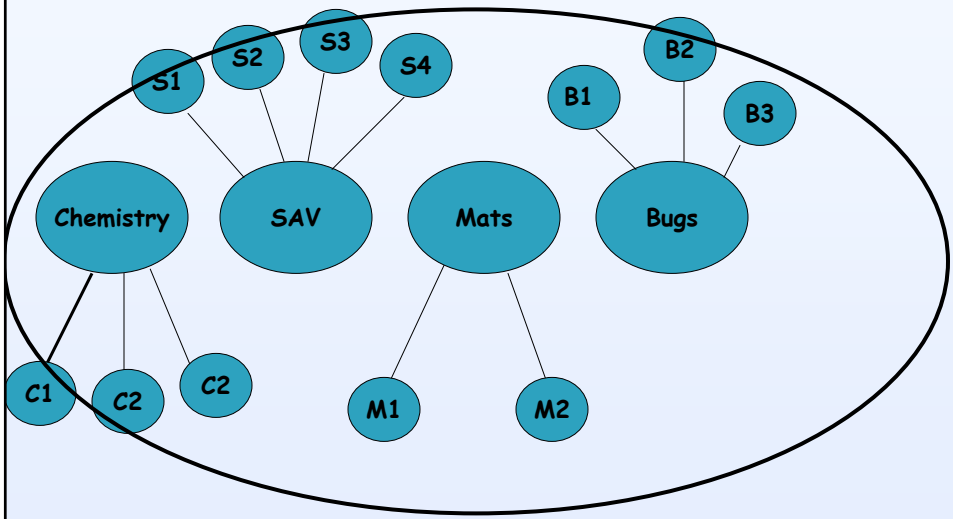
P
- Water: total and dissolved
- Sediment: total
- Minimum, Maximum, and Geometric Mean

DO
- minimum

TSS
- minimum and maximum

Chl-a
- minimum and maximum

Multiple Lines of Evidence to Assess Wetland Condition

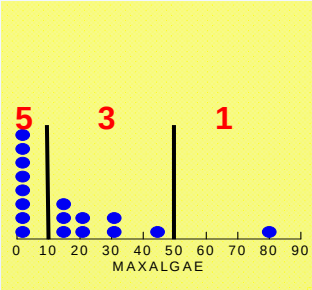


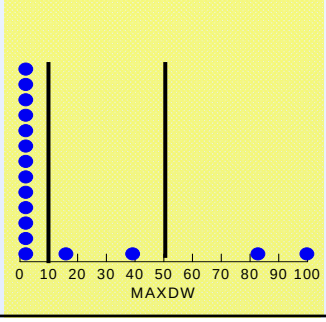
Multiple indicators will allow DWQ to incorporate existing data and accommodate new information as it becomes available.

Why develop a Water Quality Index (WQI)?

- Provides an overall measure of water quality, which can be used as a disturbance gradient
- Provides a relatively easy screening tool for wetlands that have not had more intensive surveys
- Useful for cooperative monitoring programs
- Helps stakeholders easily interpret water quality data

Surface Mat Measure of Condition





- Ponds can have mats that consist of algae, duckweed, or both.
- Most sites did not have algal mat problems.
- A 5, 3, or 1 scoring scheme was used due to the relatively small number of sites

The metrics were not correlated with each other, nor was there a significantly relationship with salinity.

Normalize and Combine WQ Measures

1. Calculate relative concentration for each summary statistic-value measured at the site/geometric mean across sites
2. Average all summary statistics for each class of chemical parameters (e.g., N, P)
3. Rescore and Rescale (maximum value = 100)

WQI = Average of scores across classes of parameters

Preliminary Results: It's not all About Chemistry

Good Biological Condition, High Nutrients	**Poor Condition, High Nutrients**
Algae Mat = 3	Algae Mat = 3
DW Mat = 5	DW Mat = 1
Maximum SAV = 5	Maximum SAV = 5
Sept SAV = 5	Sept SAV = 1
Percent "Tank" = 5	Percent "Tank" = 1
Total = 23	**Total = 11**
Relative N = 1.4	**Relative N = 1.4**
Relative P = 3.1	**Relative P = 4.0**

Preliminary Results: An Example of Extremes

The Best Site	The Worst Site
Algae Mat = 5	Algae Mat = 3
DW Mat = 5	DW Mat = 1
Maximum SAV = 5	Maximum SAV = 1
Sept SAV = 5	Sept SAV = 3
Percent “Tank” = 5	Percent “Tank” = 1
Total = 25	**Total = 9**
Relative N = 0.6	**Relative N = 2.7**
Relative P = 0.8	**Relative P = 5.5**

Speaker Contact Information

Ephriam S. King
king.ephraim@epa.gov
Director, Office of Science and Technology
U.S. EPA's Office of Water

Craig Cox
craig@ewg.org
Midwest Vice President,
Environmental Marketing Group

Walter L. Baker
wbaker@utah.gov
Director, Utah Division of Water Quality
Utah Department of Environmental Quality

Next Watershed Academy Webcast

Findings of the Draft National Lakes Assessment Report

January 2010 (Date TBD)

Registration will open approximately three weeks prior to the Webcast at: **www.epa.gov/watershedwebcasts**

Participation Certificate

If you would like to obtain participation certificates for multiple attendees, click the link below:

www.epa.gov/owow/watershed/wacademy/webcasts/pdf/2009_12_01_certificate.pdf

You can type each of the attendees names in and print the certificates