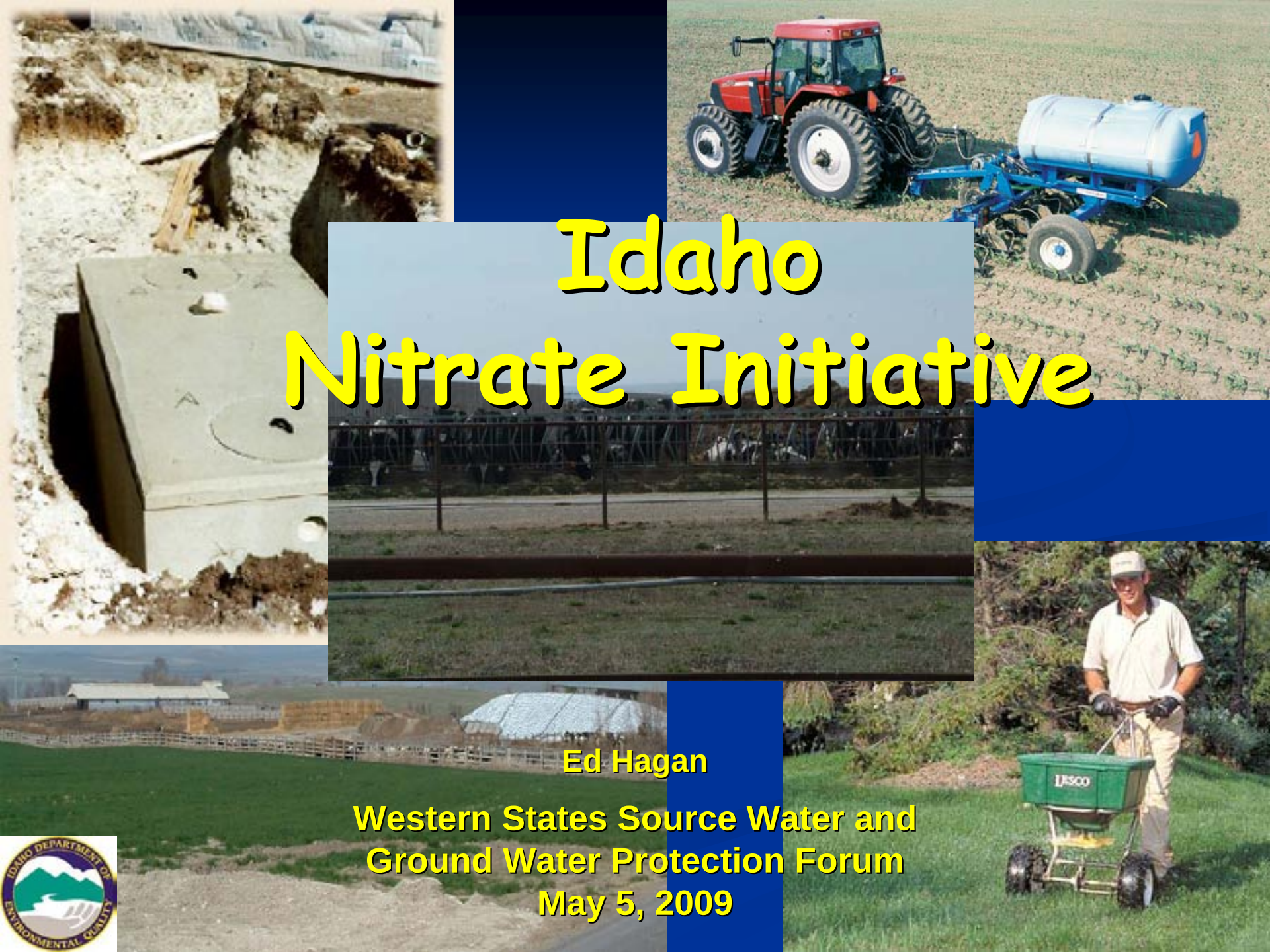


Idaho Nitrate Initiative

Ed Hagan

Western States Source Water and Ground Water Protection Forum
May 5, 2009

Overview

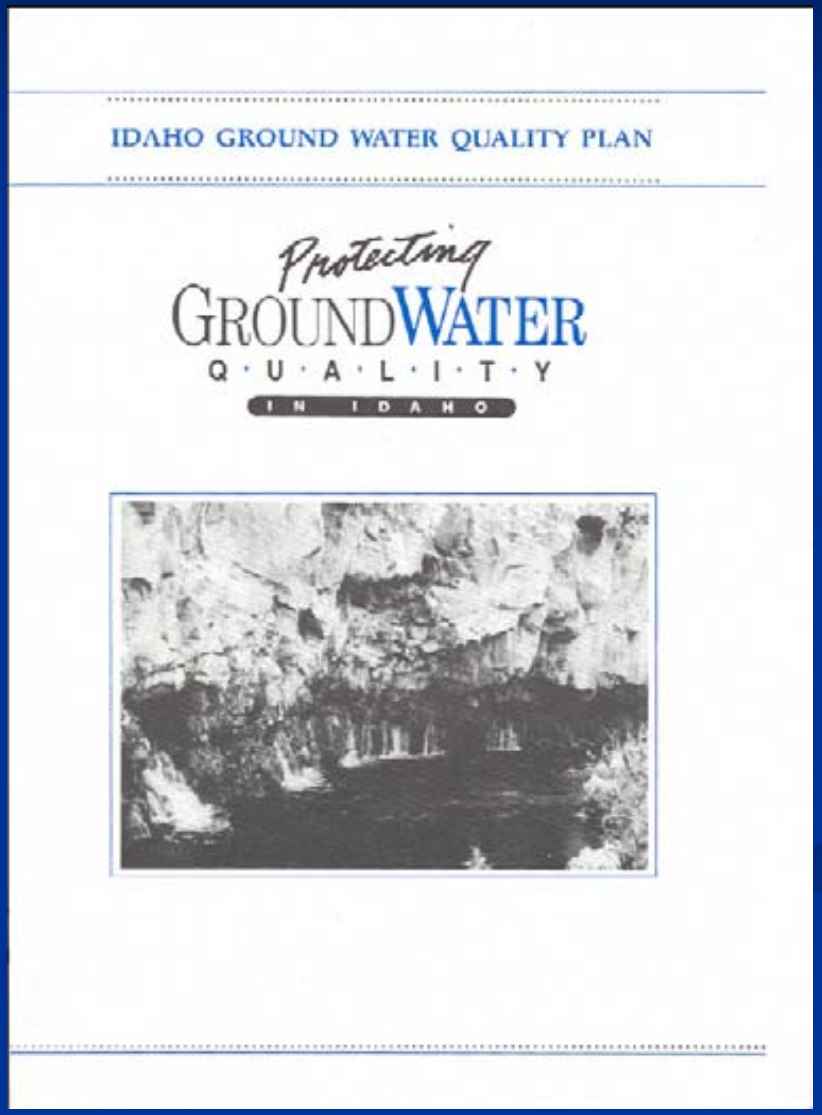
- Provide Background information
- Discuss four components
- Describe three different approaches used to develop Ground Water Quality Improvement Plans

The Origin

Idaho Ground Water Quality Plan -1992

Idaho Ground Water Quality Rule - 1996

DEQ Policy for Addressing Degraded Ground Water Quality Areas - 2000



IDEQ Policy for Addressing Degraded Ground Water Quality Areas:

To improve areas with degraded ground water quality by providing education, encouraging the use of **voluntary** measures, modifying current practices, and implementing best management practices.

DEQ Goal

Plans developed for top 10 areas by 2010

Four Components of Nitrate Initiative

1) Identify & Rank Areas of significant degradation
2) Develop plans or strategies
3) Implement plans or strategies
4) Monitor & evaluate effectiveness

Collaboration

- Requires collaboration of state agencies during all 4 steps of process.
- Different agencies are involved depending on stage of process.
  - Local governments generally minimal involvement during Components 1 & 4
  - Local governments and public involved during Components 2 & 3

1) Identify & Rank Areas

1) Compile Data
2) Delineate Areas
3) Rank Areas

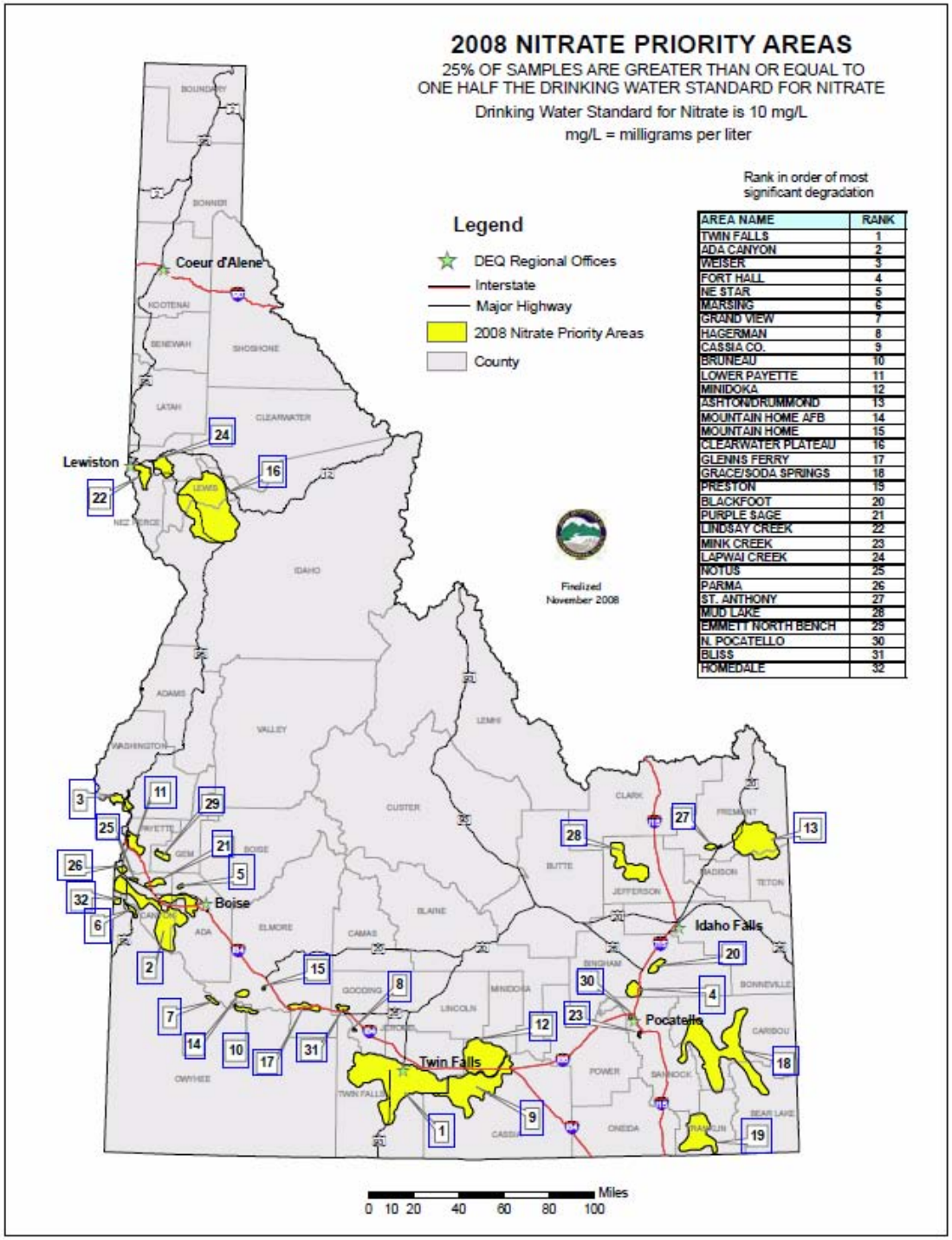
Ground Water Monitoring Technical Committee

- Formed in 1996 to helps govt. agencies coordinate sampling efforts & share info
- Participants include ground water quality professionals from local, state, and federal agencies, universities, health districts & non profits.
- Help DEQ to:

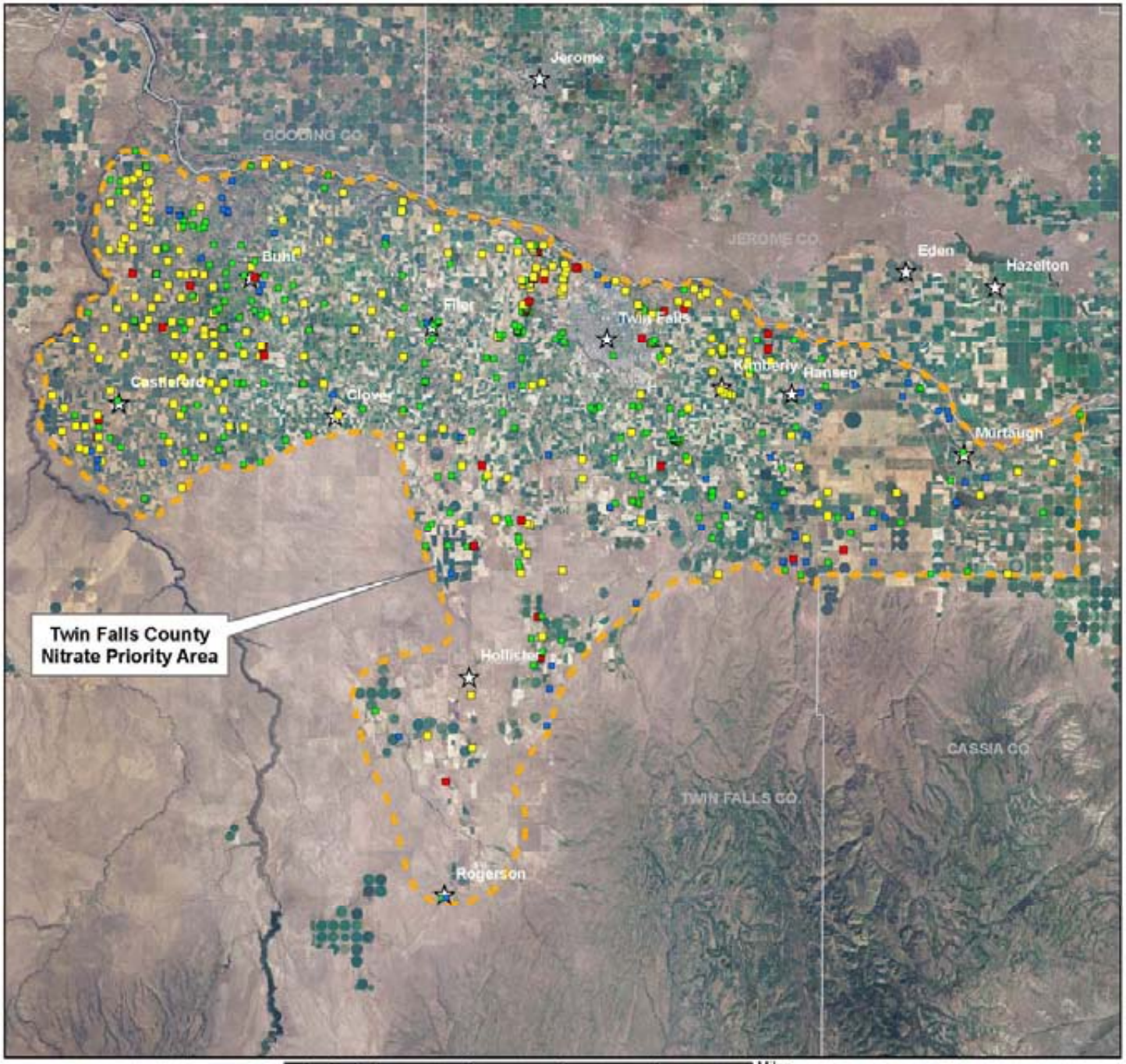
  Develop methodology to designate and delineate degraded areas

  Develop criteria to rank degraded areas

- 25% of tested wells have nitrate levels > or = 5 mg/L
- Ranked from 1 to 32 based on severity of degradation, population, & trend
- Over 1600 wells with nitrate > 5 mg/l
- Over 500 wells > 10 mg/L
- 2.2 million acres of land overlie aquifers within Nitrate Priority Areas
- Almost 300,000 people live within Nitrate Priority Areas (20% of pop)



AREA NAME	RANK
TWIN FALLS	1
ADA CANYON	2
WEISER	3
FORT HALL	4
NE STAR	5
MARSING	6
GRAND VIEW	7
HAGERMAN	8
CASSIA CO.	9
BRUNEAU	10
LOWER PAYETTE	11
MINIDOKA	12
ASHTON/DRUMMOND	13
MOUNTAIN HOME AFB	14
MOUNTAIN HOME	15
CLEARWATER PLATEAU	16
GLENNS FERRY	17
GRACE/SODA SPRINGS	18
PRESTON	19
BLACKFOOT	20
PURPLE SAGE	21
LINDSAY CREEK	22
MINK CREEK	23
LAPWAI CREEK	24
NOTUS	25
PARMA	26
ST. ANTHONY	27
MUD LAKE	28
EMMETT NORTH BENCH	29
N. POCATELLO	30
BLISS	31
HOMEDALE	32



TWIN FALLS COUNTY NITRATE PRIORITY AREA FOR GROUND WATER

Legend

Nitrate Concentrations

Milligrams per Liter (mg/L)

- Non-Detect - 1.99
- 2.00 - 4.99
- 5.00 - 9.99
- >= 10.00
- Draft Nitrate Priority Areas
- Cities
- County Boundaries

Nitrate Priority Area - 25% of samples are greater than or equal to 1/2 drinking water standards or 5.00 mg/L

EPA Drinking Water Standards for Nitrate is 10.00 mg/L

N

April, 2008

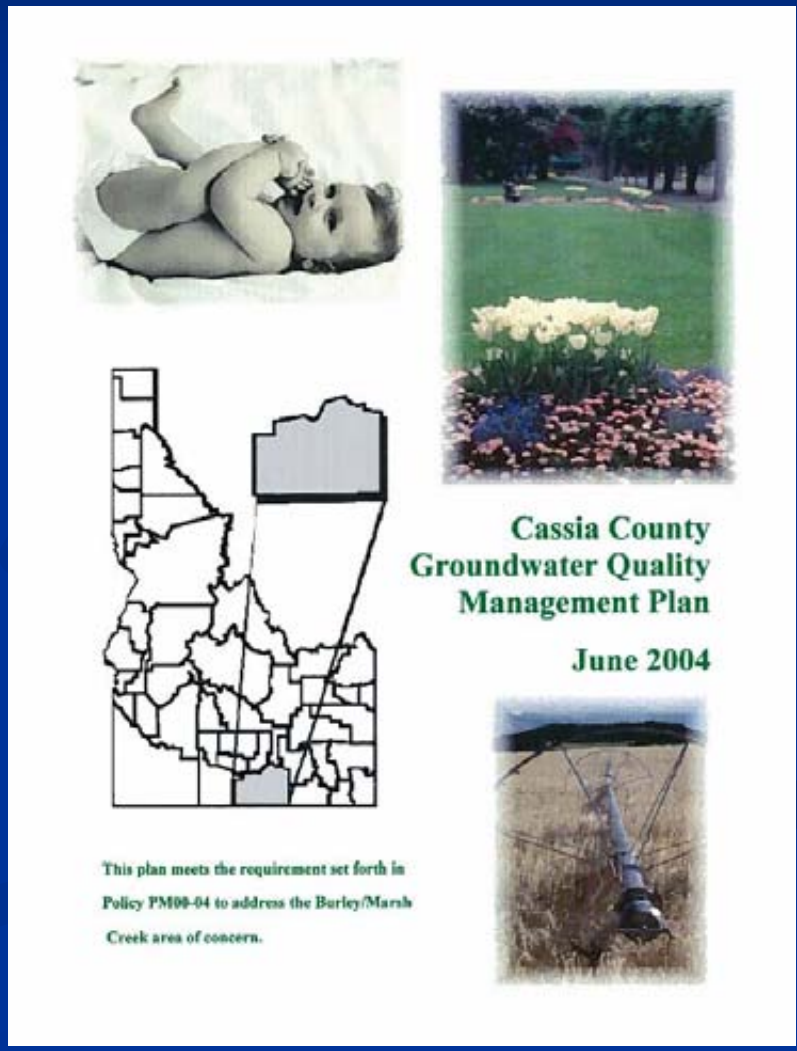
Four Components

1) Identify & Rank Areas of significant degradation
2) **Develop plans or strategies**
3) Implement plans or strategies
4) Monitor & evaluate effectiveness

Ground Water Quality Improvement Plans

With local input develop GWQIP

- DEQ facilitated
- Include state and federal agencies, local stakeholders – govt, business, civic groups
- Identify sources
- Identify relevant strategies - BMP's, land use planning, education
- Identify agency roles



Pause to Consider

Who are the end users of the ground water management plan and do they need the same product?

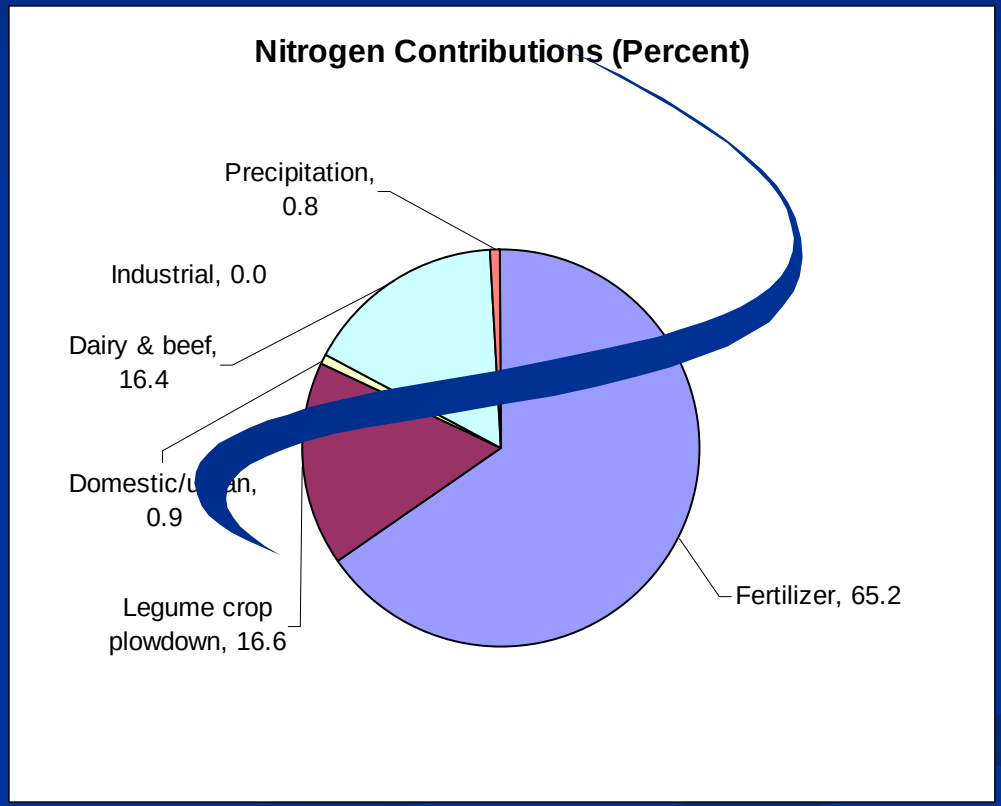
- **COUNTY COMMISSIONERS, PLANNING/ZONING & CITY OFFICIALS**
- **REGULATORY AGENCIES**
- **GENERAL PUBLIC**

Advisory Committees

- Committee Formation
  1) Advertise – anyone can be involved
     - Not all stakeholders represented, dedication lacking.
  2) Advertise & invite – best results in areas with worst degradation
     - Stakeholders had incentive because individuals are impacted
  3) Invite selected stakeholders – limit size
     - Exclude general public, entrenched positions, very dedicated - difficult

Committee Process

- Education
  - Explain the problem
    - Health threats
    - Identify sources
    - Identify BMPs
- Develop a plan
  - Strategies
  - Roles of govt & public
  - Timeline/schedule
  - Funding options



Advisory Committee

PROs

- Local stakeholders
- Decision makers
- Local ownership
- Regular meetings
  - Yearly
  - Quarterly
  - Monthly

CONs

- Extensive Education
- Authority?
- Time consuming
- Need dedicated volunteers

Result of Committee Approach

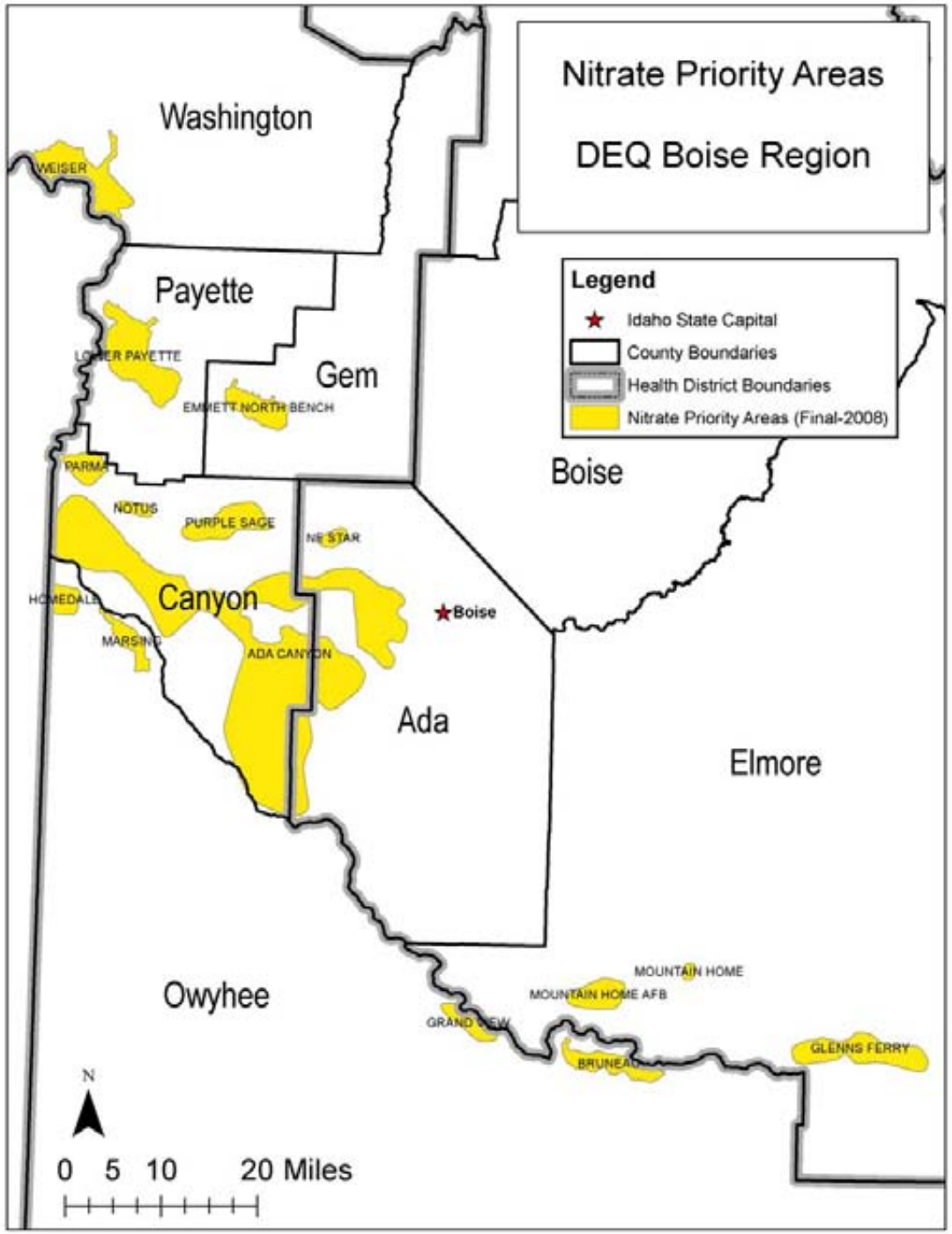
- Plan with strategies is created
- Implementation is responsibility of state agencies
- Plans are similar
- Local leadership uncertain
- Long term viability of committee uncertain

Open House

- Abbreviated public involvement
  - Use known strategies
  - Two or three advisory committee meetings to identify strategies
  - Prepare Plan
  - Open house to inform public & receive input

SW Idaho

- 15 of 32 NPAs
  - 7 Counties
- 11 still to do
- Sought more efficient approach



Direct to local government

- No need to reinvent the wheel – select strategies that are proven
- Target decision makers
- Requires local governments to assume leadership role
- Less agency staff time
- **Focus on implementation**

CON

- Less public involvement

Status of GWQIPs

- Eight plans have been completed
  - Seven w/ local advisory committee
  - One open house approach
- Five are in process
  - Three local advisory committee
  - One open house approach
  - One direct to county government approach - covers multiple areas within a county

Four Components

1) Identify & Rank Areas of significant degradation
2) Develop plans or strategies
3) **Implement plans or strategies**
4) Monitor & evaluate effectiveness

Funding Sources

Federal funds

- 319 Grants
- Drinking Water Source Protection Grants

State Funds –

- Special projects –
  - Education efforts
  - Agricultural BMPs
- Research activities

Funding Sources

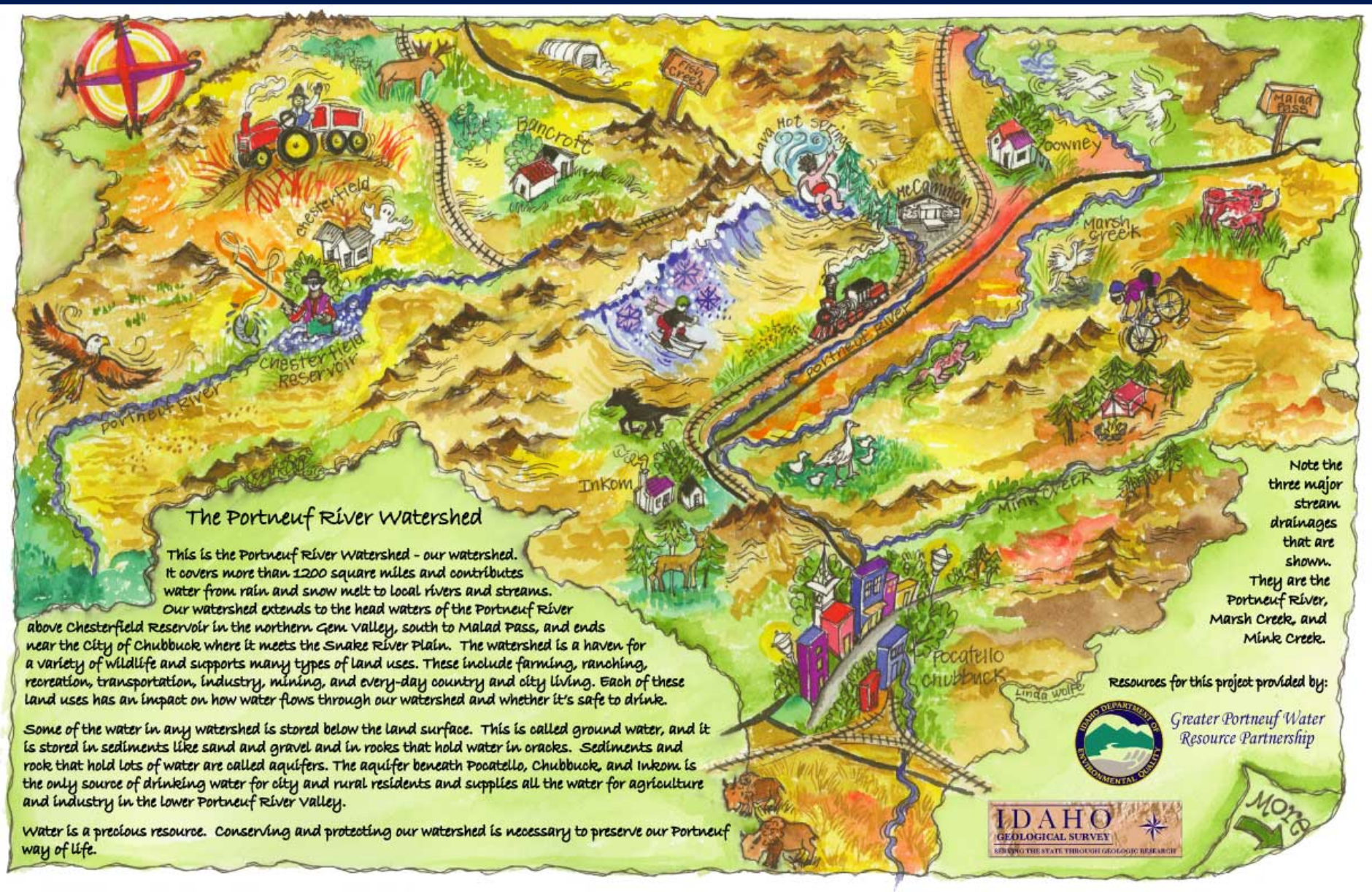
Local Funds - Aquifer Protection District

- Limited by Law to one aquifer in Idaho
  - Fee $8/year per tax lot
  - aquifer water quality testing and ground water quality improvement projects

Implementation Efforts

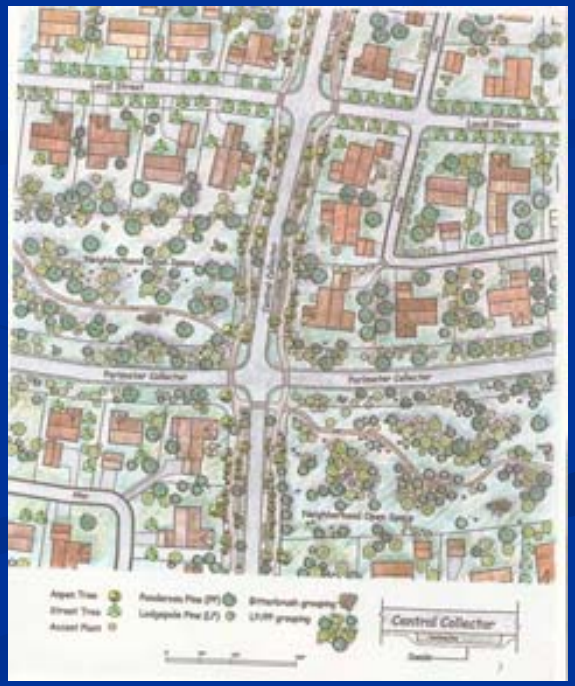
- Education events
  - Open houses with free nitrate testing of water
- Information distribution
  - Brochures in PWS bills
  - Placemats
  - Local speakers (PWS operator) at civic organizations (+)
- Agricultural BMPs
  - Reduced fertilizer application
  - Irrigation Water Management – drip lines

Placemat


Bancroft
Lava Hot Spring
McCammon
Downey
Malad Pass
Marsh Creek
Chesterfield
Chesterfield Reservoir
Portneuf River
Portneuf River
Inkom
Mink Creek
Pocatello
Chubbuck
Linda Wolfe
The Portneuf River Watershed
This is the Portneuf River Watershed - our watershed. It covers more than 1200 square miles and contributes water from rain and snow melt to local rivers and streams. Our watershed extends to the head waters of the Portneuf River above Chesterfield Reservoir in the northern Gem Valley, south to Malad Pass, and ends near the City of Chubbuck where it meets the Snake River Plain. The watershed is a haven for a variety of wildlife and supports many types of land uses. These include farming, ranching, recreation, transportation, industry, mining, and every-day country and city living. Each of these land uses has an impact on how water flows through our watershed and whether it's safe to drink.
Some of the water in any watershed is stored below the land surface. This is called ground water, and it is stored in sediments like sand and gravel and in rocks that hold water in cracks. Sediments and rock that hold lots of water are called aquifers. The aquifer beneath Pocatello, Chubbuck, and Inkom is the only source of drinking water for city and rural residents and supplies all the water for agriculture and industry in the lower Portneuf River Valley.
Water is a precious resource. Conserving and protecting our watershed is necessary to preserve our Portneuf way of life.
Note the three major stream drainages that are shown. They are the Portneuf River, Marsh Creek, and Mink Creek.
Resources for this project provided by:
Greater Portneuf Water Resource Partnership
IDAHO GEOLOGICAL SURVEY
SERVING THE STATE THROUGH GEOLOGIC RESEARCH
More

Implementing Agencies

- Local soil & water conservation districts
  - Encourage agricultural BMPs
- Local governments
  - Utilize land use planning
- State Agencies
  - Education efforts



Implementation Difficulties

- No single entity to coordinate efforts
- Ground water quality is not the priority
  - Ground water availability
  - Surface water quality
  - Air quality
- Unreliable funding or no funding

Four Components

1) Identify & Rank Areas of significant degradation
2) Develop plans or strategies
3) Implement plans or strategies
4) **Monitor & evaluate effectiveness**

Monitoring & Evaluation

- Primarily state role
  - IDWR - statewide
  - IDEQ – local projects
  - ISDA – dairy monitoring
- Special projects – if funding available

April 15, 2009

Summary

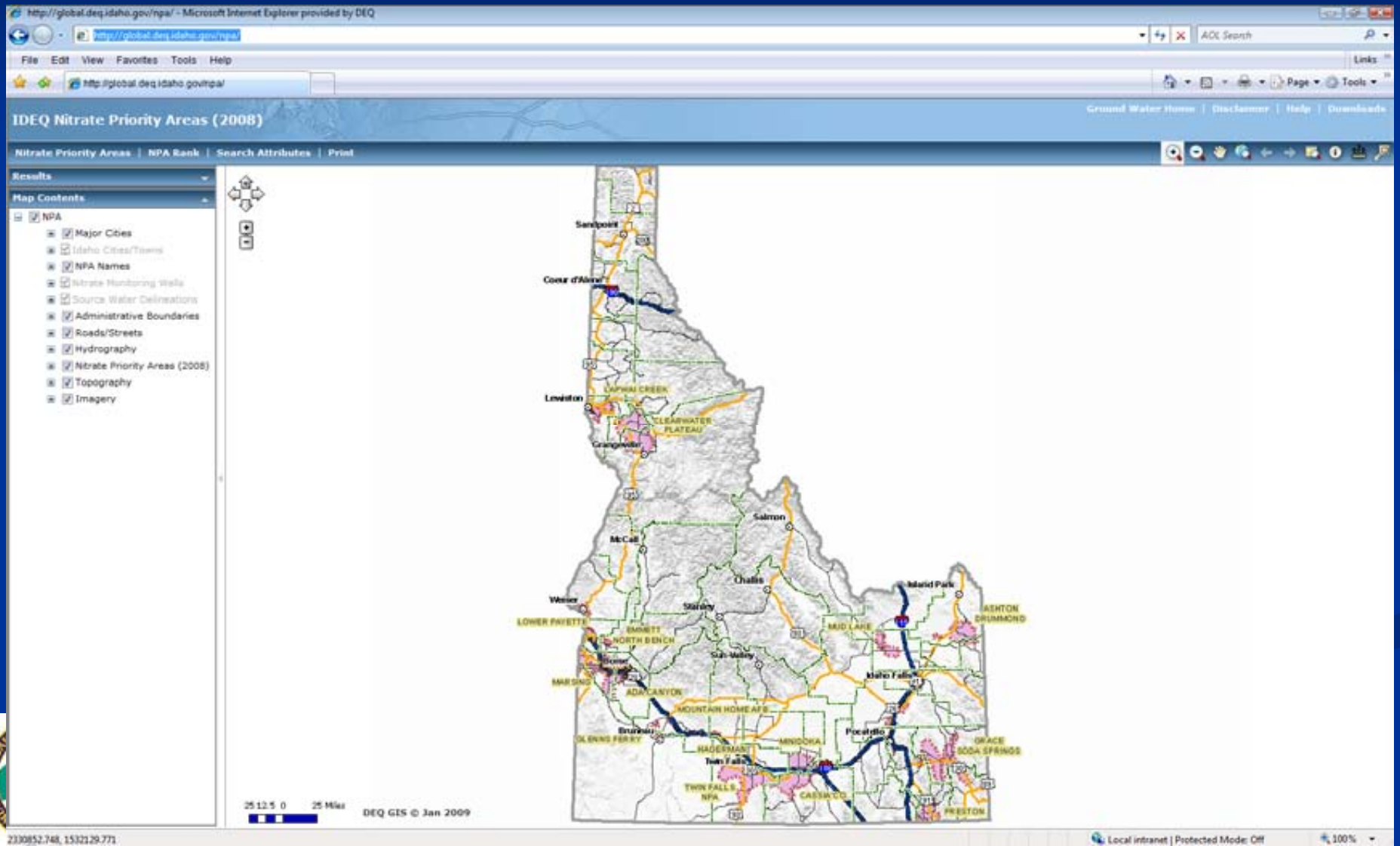
- Idaho identified aquifers with elevated nitrate levels
- Ground Water Quality Improvement Plans are being developed with public participation
- Plan development approaches vary
- Implementation efforts are moving forward

Successes

- Increased interest in ground water quality
- Numerous projects being implemented
- Fewer areas with increasing trends
  - 2002 – 9 areas
  - 2008 – 4 areas

Nitrate Interactive Mapping

http://global.deq.idaho.gov/npa/



More Information

- http://www.deq.idaho.gov/water/prog_issues/ground_water/nitrate.cfm
- Ed.Hagan@deq.idaho.gov
- DEQ.IDAHO.GOV