

Wyoming's Credible Data Legislation: Monitoring Water Quality and Extension's Role



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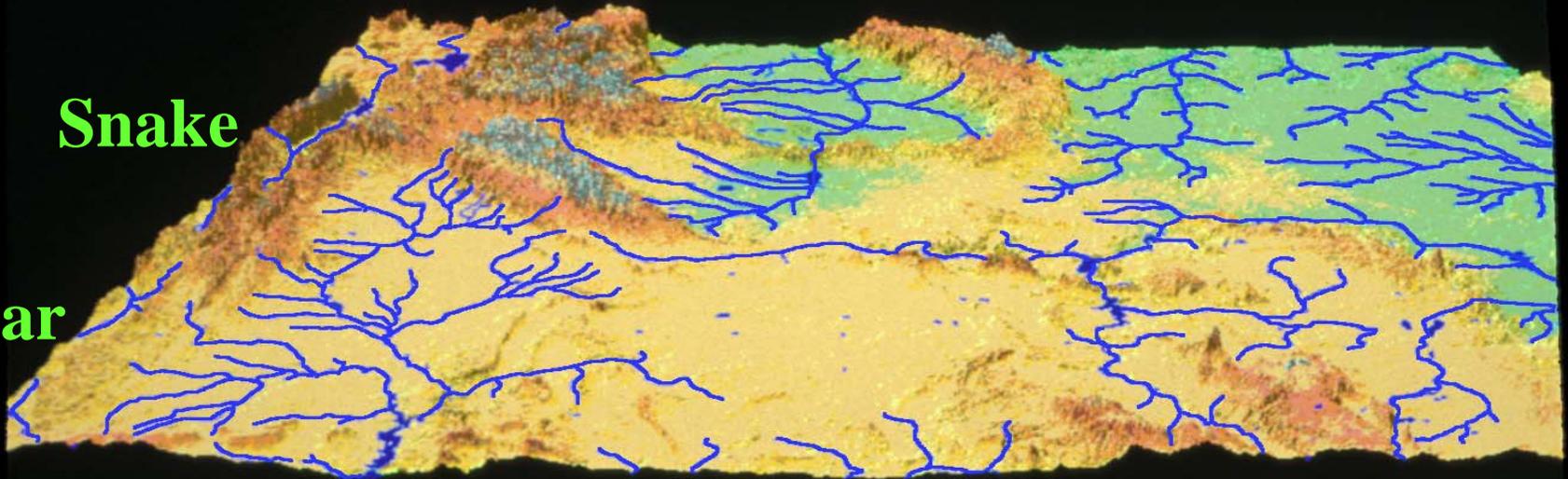


Wyoming as a setting for monitoring water quality
Background for “Credible Data Legislation”
Program history and CES role
Program status
Future activity

Missouri

Snake

Bear



Green-Colorado

9th largest state – 97,105 sq. miles – 500,000 pop.

Head waters – Snake-Bear-Colorado-Missouri Rivers

Less than 25 perennial streams leave its borders

Over 50 % federal land ownership

Basin to foothill streamside zones - private ownership

State claims the water- permitted Appropriation Doctrine

Largest city 50,000 people

Water Development Flood Irrigation



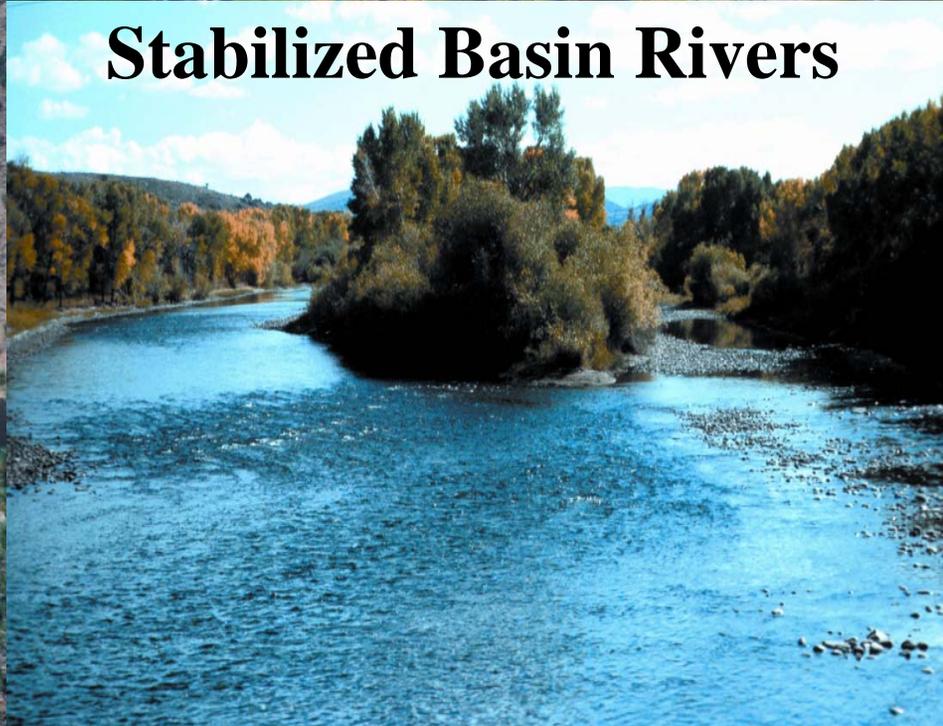
Expanded Riparian Zones



Reservoir Storage



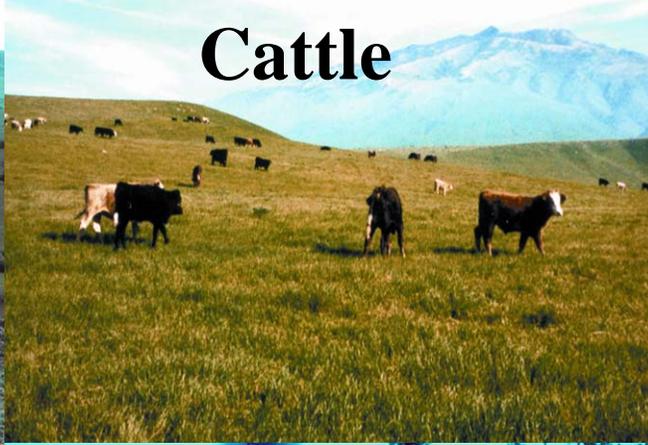
Stabilized Basin Rivers



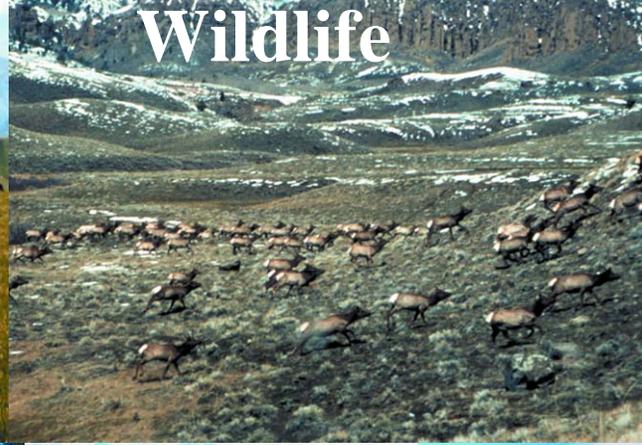
Ranching



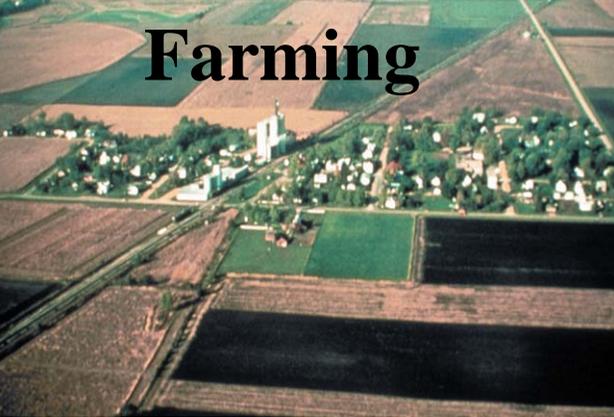
Cattle



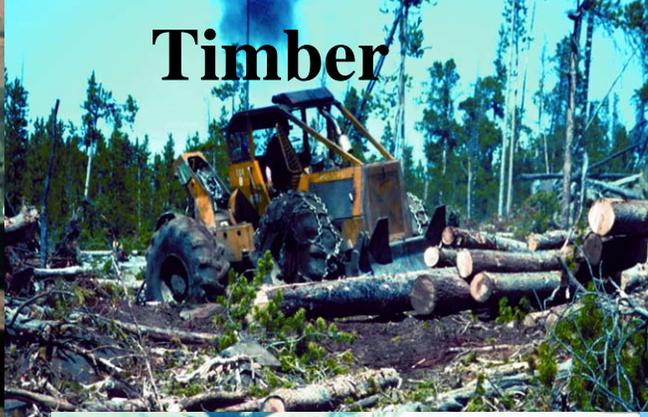
Wildlife



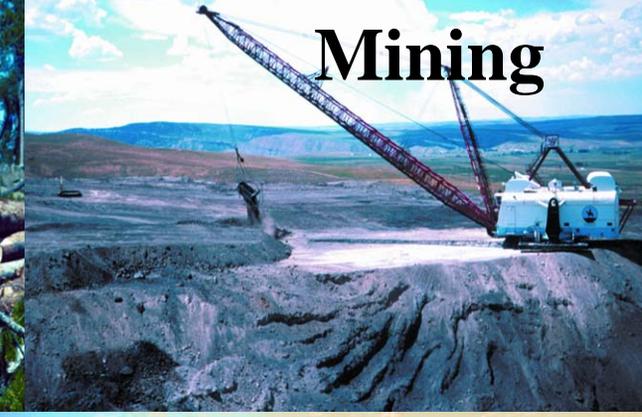
Farming



Timber



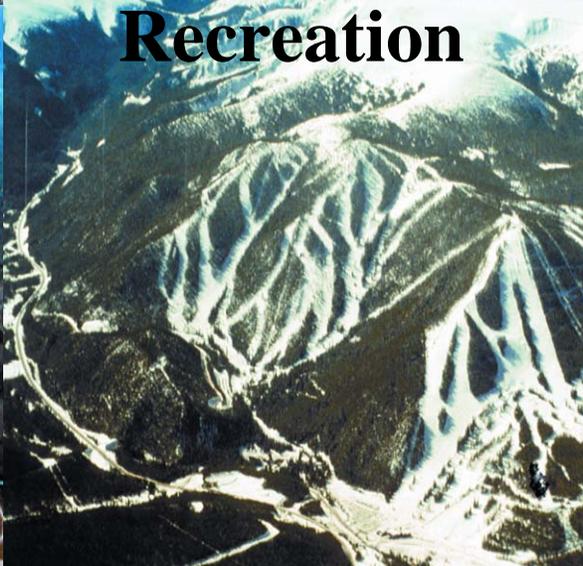
Mining



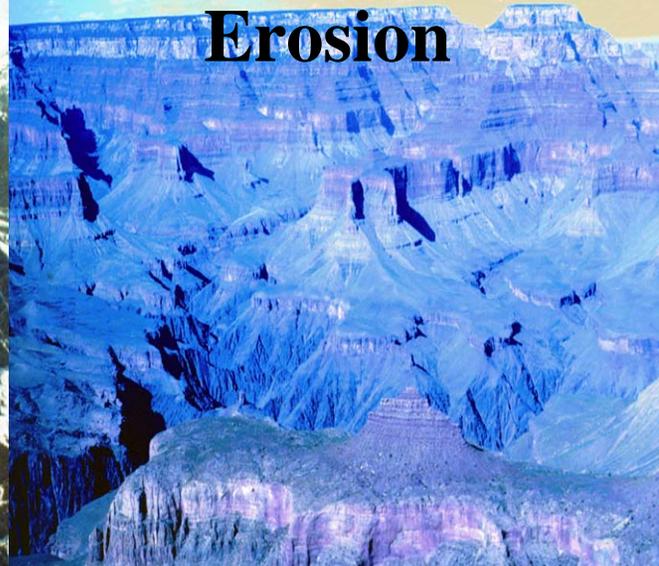
Oil and Gas



Recreation



Erosion



Background for Credible Data Legislation

Prior to 1996 – Public reviews 303d list CWA

Results clearly illustrated many impaired streams were listed with less than adequate scientific data

Wyoming Department of Environmental Quality reviewed their protocol for listing impaired streams 1996-1998

Wyoming State Legislature appropriated \$367,000 for conservation districts to develop comprehensive water quality monitoring programs - 1998

Program history and CES role 1998

Planning and Strategy

Wyoming Association of Conservation Districts-WACD

USDA Natural Resources Conservation Service-NRCS

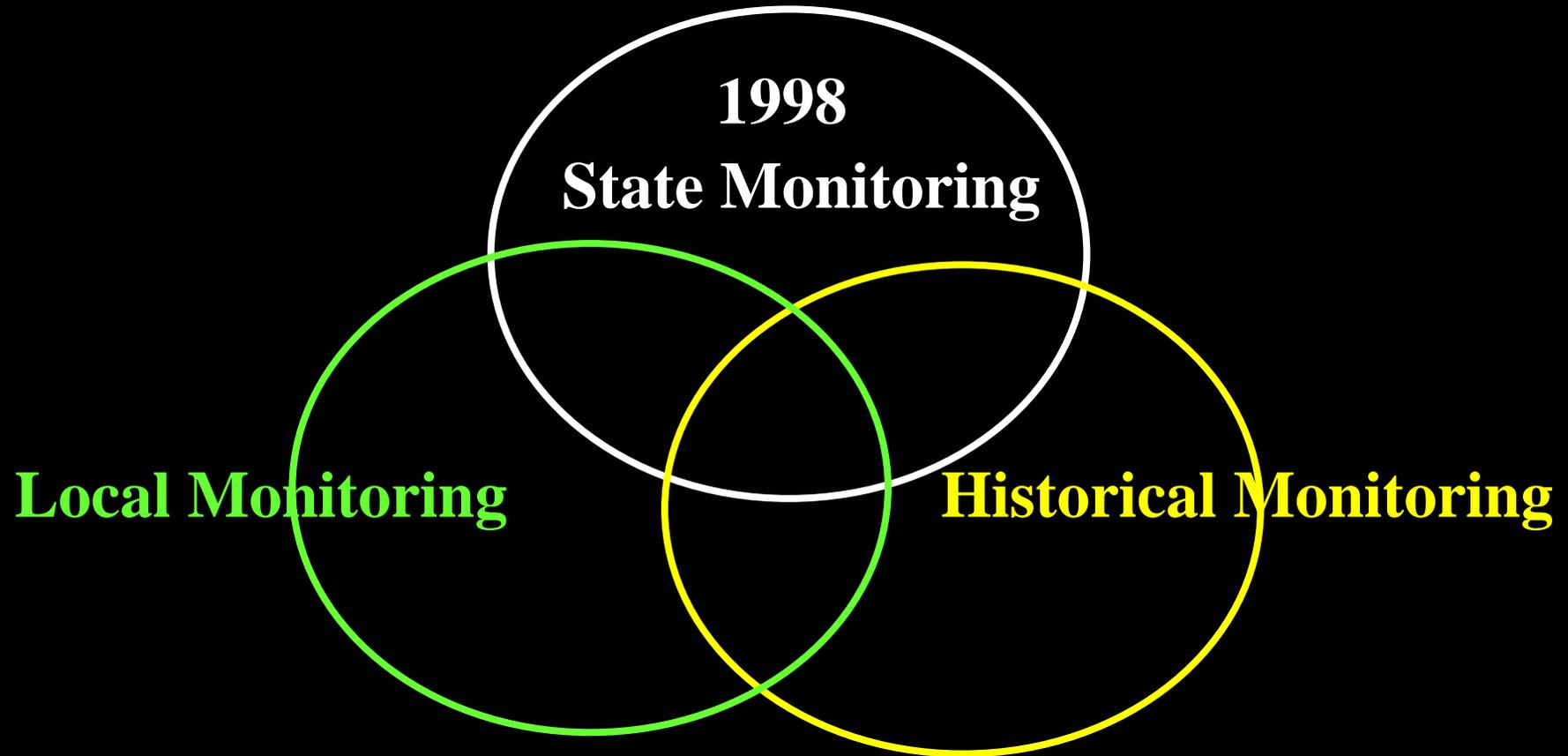
Wyoming Department of Environmental Quality-WDEQ

Wyoming Department of Agriculture-WDA

US Geological Survey-USGS

U. of Wyoming Cooperative Extension Service-UWCES

Integrated Strategy for Collecting Water Quality Data

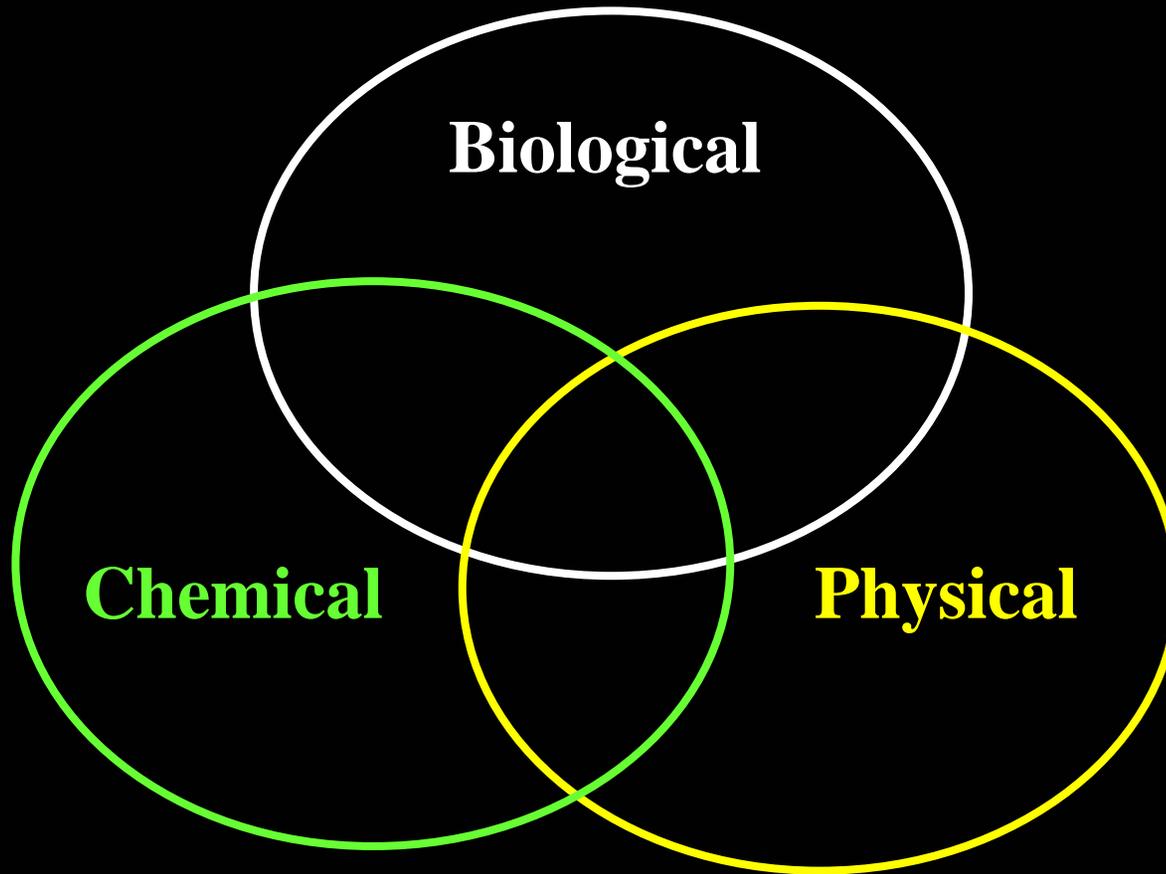


WDEQ – Establishing protocol and reference streams

WACD – Follow protocol - determine local water quality

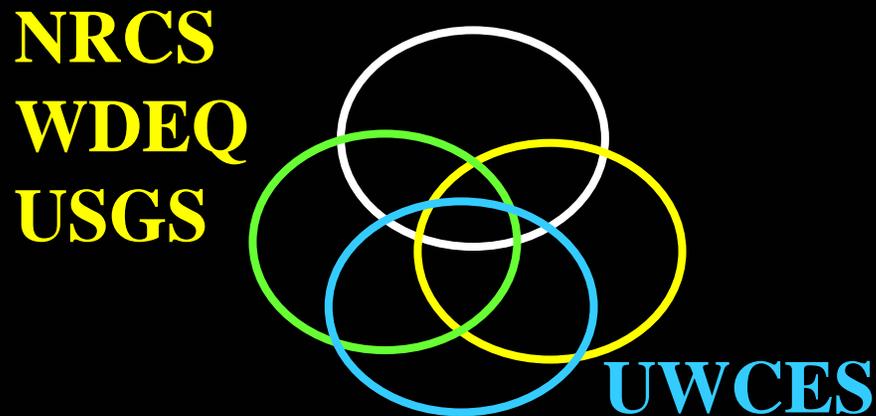
USGS – Data bank = historical conditions

WDEQ Integrated Sampling Protocol 1998



Measured benefit to fishery and aquatic habitat

Integrated Training and Educational Program 1998



Phase 1 – Understanding Wyoming watershed principals

Phase 2&3 – Developing a water quality monitoring plan, equipment calibration, care, use techniques, and lab coordination

Phase 4 – Infield water quality sampling training

Phase 5 – Data analysis & interpretation

WYOMING
WATERSHEDS AND RIPARIAN ZONES



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Phase 1 - UWCES – Watershed 101-3 days -1998 – 2004
WACD - NRCS – WDEQ – WDA – USGS – BLM
Other state agencies – Public interest groups - Industries



Phase 2 & 3 – NRCS, WACD, & WDEQ provide water quality monitoring plans, QAQC, and equipment use and care, lab coordination – 1998 – 2003 – 1 Week



Phase 4
Field Sampling

WDEQ

1 Week



Monitoring
1998 - 2004

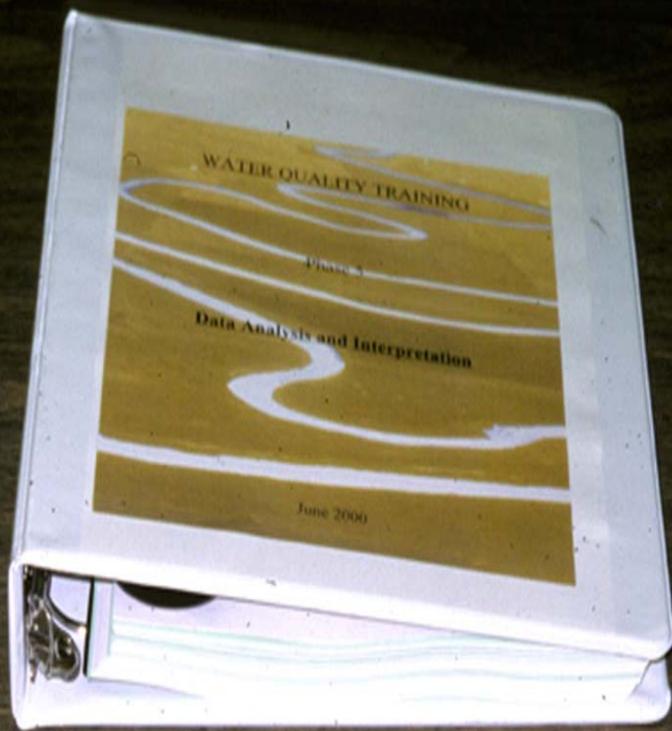
Credible Data 1999

Defined by Wyoming Legislature

“..scientifically valid chemical, physical, and biological monitoring data collected under an accepted sampling and analysis plan, including quality control and quality assurance procedures and available historical data”

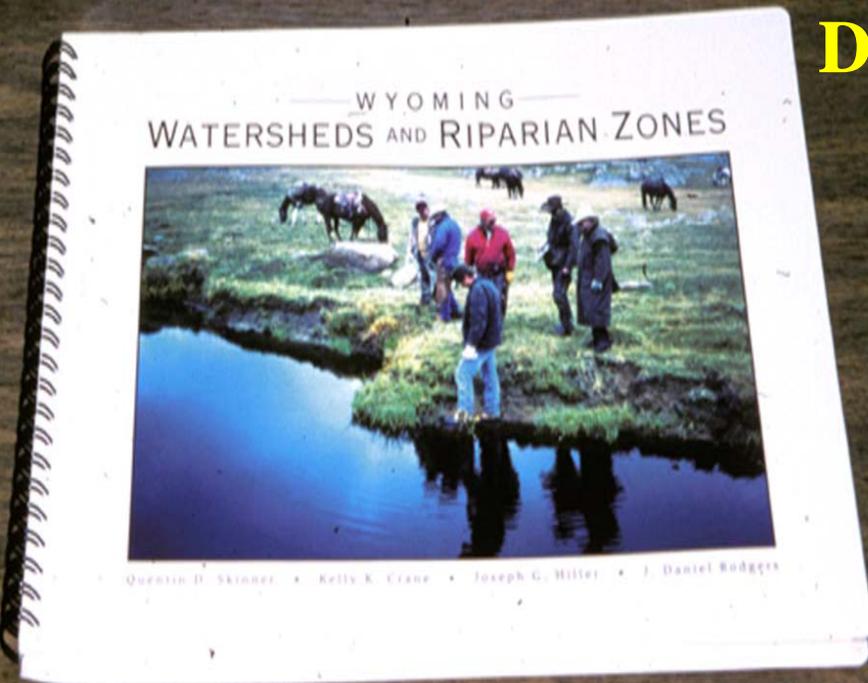
((W.S.) 35-11-103 (b) and c))

Federal regulations 40 Part CFR -130.4 (b) Water Quality monitoring. *The water monitoring program shall include collection and analysis of physical, chemical, and biological data and quality assurance and control programs to assure scientifically valid data.*



2000 Phase 5 Training Data Analysis and Interpretation

UWCES
WACD
NRCS
WDEQ
WDA



Progress

23 counties in Wyoming

34 local conservation districts

31 receive local funding

34 are now involved in monitoring water quality

State commitment to WACD Water Quality Monitoring

1998 - \$367,000

2002 - \$675,000

Federal Grant Funding EPA/319 Program

2003 – 217,014 Coordination Grant

Progress: Lessons Learned

Phases 1- 4 educational programming sufficient to train personnel for monitoring water quality

Monitoring and “quality/quantity” of data collected appears to be acceptable

Illustrating data collected meets the intent of “*credible data legislation*”. An integrated assessment of *Biological, Chemical, and Physical* data is yet to be determined.

Progress: Lessons learned



Conservation district personnel are not comfortable with analyzing and interpreting data sets to meet credibility

Conservation districts are not comfortable with letting WDEQ personnel interpret their data sets

WACD and WDEQ must continue to build trust in each other

UWCES Expanded Role: Testing Credibility

Analyzed and interpreted 2 district's 4 and 6 year data sets following WDEQ reference stream criteria

Submitting both reports for journal article review

Published review paper focused on monitoring, and in support of interpretation of rangeland water quality and riparian zone values of western landscapes

Future Activity

WACD and WDEQ agree to agree to combining data sets from similar bioregion landscapes to strengthen indices of biological integrity

WACD, WDEQ, and UWCES agree to agree that combining data sets will expand the reference stream data base to better reflect background conditions, historic use of water supplies, watershed function, and support meeting Wyoming's credible data legislation

UWCES has committed to a third party approach to analyze and interpret select and combined data sets to further confirm monitoring program credibility

Future Activity

The Wyoming State Legislature has committed 2004-2006 funding to create a volunteer water quality monitoring certification program to streamline the Phases 1-5 educational process of 1998, to meet WDEQ needs, and is to be conducted by UWCES faculty

UWCES hopes to carry this certification program forward to serve proposed commitments to the CREES Northern Plains & Mountains Regional Water Quality Program



In summary:

In Wyoming, the science of ocular estimation and professional opinion has been challenged and replaced by the science of collecting repeatable & recordable data

Repeatable and recordable volunteer rangeland and water quality monitoring data is being tested to insure credibility



Water quality and rangeland monitoring programs represent integrated efforts at different levels of government, and are inclusive of special interest groups

Data collected must be analyzed and interpreted before volunteers lose interest, support fades away, or data is not considered important when change in policy is considered or occurs

