

**Utah Water Quality Task Force Meeting
Minutes**

August 7, 2013 9:30am-12:00am
Utah Division of Water Quality
195 N. 1950 W.
Salt Lake City, Utah

Attendance

Name	Representing
Jim Bowcutt	DEQ/DWQ
Scott Daly	DEQ/DWQ
John Whitehead	DEQ/DWQ
Gertrudys Adkins	Utah Division of Water Rights
Gordon Younker	UACD
Ben Radcliffe	USBR
Kate Johnson	UDDW
Nancy Mesner	USU Extension
Carl Adams	DWQ
Rhonda Miller	USU Extension
Craig Walker	UDWR
Geoff Mcnaughton	UDFFSL
Jay Olsen	UDAF
Greg Bevenger	USFS
Taylor Payne	UDAF
Jeremy Jarnecke	BLM
Lon Richardson III	Utah Anglers Coalition/ TU

John Whitehead- Welcome and Introductions

Jay Olsen- Update on Development Utah Environmental Stewardship Program (see attached Power Point)

- There have been a few changes to the Program since the last time it was presented to the Task Force. One is the name of the program has been changed to the Agriculture Certificate of Environmental Stewardship (ACES).
- There have been a few updates to the signature page of the document.
- It was suggested there needs to be verification that landowners are following grazing permits on Forest Service, BLM, and State lands to qualify for the Grazing and Pasturelands certification.
- If there were an incident where a land owner had a pollutant discharge the Division of Water Quality would still need to investigate the situation even if they

had their ACES certification. They will verify that all plans were being followed, and could serve as a “buffer” between the producer and special interest groups.

- Educational material should be made available to help educate both the public and landowners about the purposes of the practices implemented.
- The final ACES program will be presented to the Water Quality Board at the end of August, to the UCC the end of October, and will go back to the Water Quality Board In November.
- Federal Agencies should be included in the development of the ACES Plans. Hopefully this will simplify the grazing permit process.
- An Evaluation Criterion should be included in the plans for grazing and will be required to meet long term grazing objectives of the plan.
- If permittees did their own monitoring it would be a big step in the right direction.
- Agricultural producers tend to struggle with record keeping and hopefully this program will help them improve.
- Land owners will be able to register online for the program and can obtain many of the forms from the website.
- A certified letter will be sent out every year reminding landowners of obligations and when their contracts are set to expire.
- Unannounced visits could be helpful, but right now the program states that no unannounced visits will occur.
- Program success will depend on the environmental certainties that can be provided by the program.
- UDAF needs to work with the Forest Service and BLM to solidify program requirements.
- If a producer complies with the certification program they are then covered by the permit by rule. DEQ prefers that people go the route of the Environmental Stewardship program. They will still need to file with the Division of Water Quality to verify that their operation has met the permit by rule requirements.

Greg Bevenger- Watershed Restoration Effects to Reduce Catastrophic Wildfires (see Attached Presentation)

- Currently there are four main issues that need to be addressed on Utah Forests: the impacts of fire suppression, insect mortality, invasive plants, and climate change.

- At the regional level they have been working on a business plan, the development of the watershed condition framework, and integrated resource restoration.
- Previously, Congress would give the Forest Service a very detailed budget, but under the Integrated Resource Restoration program they will allow more flexibility and let them lump funding together in targeted areas.
- Watersheds are currently classified as functioning, functioning at risk, and non-functioning. The watershed condition framework shows which areas of the state currently fall under each of these classifications.
- The Framework also identifies areas that the Forest Service have begun work, or plan on doing work in the future.
- The question was raised of why all of the projects are not located in watersheds identified as non-functioning. The response is that the presence of non-native fish could be one of the reasons why the watershed was classified as non-functioning. It does not necessarily mean that the forest is in bad health. It is possible that the Forest can get more “bang for the buck” in watersheds that are classified as functioning at risk.
- It would be beneficial for the Forest Service to give a presentation just on the Watershed Condition Framework.
- Forests selected for focused investments: Dixie NF, Ashley NF, Fish Lake NF, and Uinta-Cache NF.
- The Manti NF submitted a proposal but was not funded.
- Fuel reduction and bark beetle funds are also used in all watersheds.
- The appeal process for NEPA has been revised, and it is now more difficult for entities to appeal a NEPA decision. Emergency Resource Response efforts are exempt from NEPA requirements.
- Coordination between the State DEQ and the Forest Service is ongoing in the Uinta Basin to target funding, specifically in the Cart Creek Watershed.

Nancy Mesner- Utah’s 319 Program Report (See the Attached Presentation)

- When watershed coordinators were hired to implement projects the state began spending more on staffing and support than they spent on projects.
- When the study began, it was much more difficult to identify projects that had taken place than they had originally anticipated.

- During several site visits they found that cooperators were implementing nutrient management plans because of perceived regulatory requirements, not because they understood the environmental benefits of it. The same was discovered with grazing management plans.

Taylor Payne- Utah Grazing Enhancement Program (See attached Power Point Presentation)

- Over the years the number of sheep has drastically decreased.
- Many current grazing systems are managed like they were when the land was first settled over 100 years ago.
- Reducing the numbers of livestock is not always the answer. The timing, intensity and duration of grazing needs to be addressed in many situations.

Jim Bowcutt- NPS Program Report

- The NPS Management Plan has now been submitted to EPA and is now awaiting approval.
- A hand out was distributed showing the grants that were selected for funding during the FY-2014 Fiscal Year.
- A grant was awarded to the Division of Water Quality that will be used to procure monitoring equipment for the local watershed coordinators that will improve the program's ability to document environmental benefits and project success.
- NRCS, UDAF, and the Districts need to sit down and discuss available funding for watershed coordinator positions.
- There will be an I&E subcommittee meeting on the 5th of September at 1:00
- The next Water Quality Task Force Meeting will be held on November 19th at 9:00 AM at the DWQ office.
- Possible topics should include: a presentation from Paul Dremann about drought mitigation guidelines, what was discussed at the I&E subcommittee meeting, and the Watershed Condition Framework.

Watershed Restoration

Efforts to Reduce Catastrophic Wildfire Risk on National Forest System Lands in Utah

Purpose and Need

- Restore and maintain the functions and processes characteristic of healthy, resilient forests and watersheds
- Required to address build-up of hazardous fuels due to:
 - Decades of fire suppression
 - Insect mortality
 - Invasive species
 - Effects of climate change

National-level

- USDA - Strategic Plan for FY 2010-2015
- USFS - Increasing the Pace of Restoration and Job Creation on Our National Forests
 - Collaborative Forest Landscape Restoration (CFLR) Program
 - Watershed Condition Framework
 - Integrated Resource Restoration (IRR) Program
 - Bark Beetle Strategy
 - New Forest Planning Rule
 - NEPA efficiency improvements
 - Expanding stewardship contracting
 - Expanding markets for forest products from national forests
- NEW - Western Watershed Enhancement Partnership

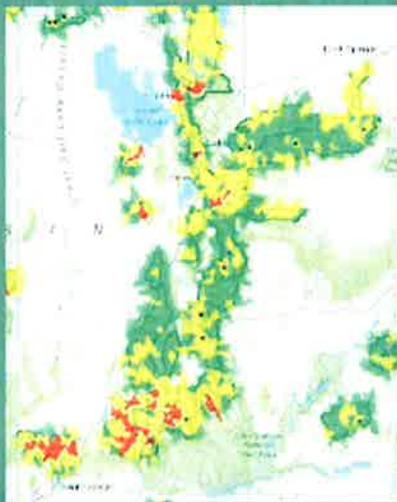
Regional-level

- Business Plan
 - Water Stewardship Legacy
 - Watershed Restoration at the Landscape Scale with an Emphasis on Municipal Watersheds
- Watershed Condition Framework
 - Priority Watersheds
 - Essential Projects
- Integrated Resource Restoration
 - Focused Investments

Utah State-level

- Watershed Condition Framework Priority Watersheds
- Integrated Resource Restoration Focused Investments
- Other

Priority Watersheds



Focused Investments

- **Dixie Forest**
 - Escalante Headwaters - \$780,000
 - Tropic Reservoir - \$1,075,000
- **Ashley Forest**
 - Swift Creek - \$70,000
- **Fishlake Forest**
 - Monroe Mountain - \$700,000
 - Twitchell Fire Area - \$400,000
- **Uinta-Wasatch-Cache Forest**
 - Left Hand Fork Blacksmith Fork - \$327,500
 - Mill Creek Drainage - \$144,000

Other

- **Fuels Reduction**
 - Ashley Forest – 5,255 acres
 - Dixie Forest – 11,693 acres
 - Fishlake Forest – 6,303 acres
 - Manti-Lasal Forest – 6,230 acres
 - Uinta-Wasatch-Cache Forest – 5,863 acres
- **Bark Beetle**
 - Ashley Forest – 3,192 acres
 - Dixie Forest – 942 acres
 - Fishlake Forest – 4,475 acres
 - Manti-Lasal Forest – 0 acres
 - Uinta-Wasatch-Cache Forest – 55 acres

Totals

- Watershed Acres Restored Annually – FY13
 - Ashley Forest – 14,437 acres
 - Dixie Forest – 27,071 acres
 - Fishlake Forest – 27,198 acres
 - Manti-Lasal Forest – 6,103 acres
 - Uinta-Wasatch-Cache Forest – 34,571 acres

Post-fire Recovery

- Suppression Damage
 - Responsibility of the Incident Commander
 - Financed by suppression funds
- Burned Area Emergency Response (BAER)
 - Responsibility of the Forest Supervisor
 - Financed by suppression funds
- Long-term Restoration
 - Responsibility of the District Ranger and Forest Supervisor
 - Financed by non-emergency funds

BAER

- Identify imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources
 - Seven days after containment
 - Three business days if less than \$500,000
 - Three more business days if greater than \$500,000
- Take immediate actions, as appropriate, to manage unacceptable risks
 - Before damage or loss is likely to occur and no later than one year after containment

Questions



Assessment of Utah's 319 Program

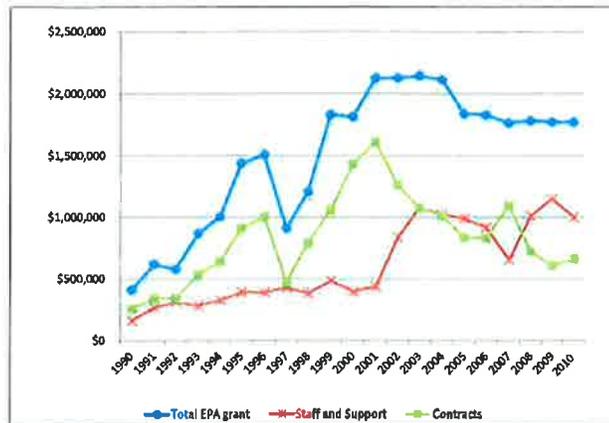
Utah State University :
Nancy Mesner, Doug Jackson-Smith,
Phaedra Budy, David Stevens

Utah WQ Task Force
August 7, 2013

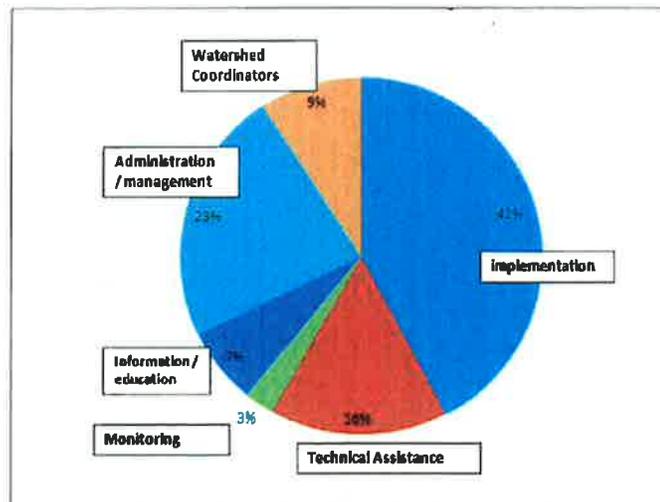


Project objectives

1. Evaluate efficiency and effectiveness of Utah's NPS Program
2. Assess the water quality impact and effectiveness of representative 319-funded projects.
3. Assess long-term maintenance and impact of representative 319-funded projects.



Annual 319 grants to Utah



Allocation of 319 grant funds in Utah from 2001 through 2010

Program strengths

- Identification and focus on key wq pollutants / stressors.
- Local leadership provides flexibility to address local problems / solutions.
- Watershed framework for TMDLs
- Recent modifications of funding cycles.

Part 1. Key recommendations

- Improve coordination with state / federal partners
- Improve record keeping and management
- Increase focus on urban runoff
- Improve monitoring efforts to detect real impacts
- Improve outreach - tell Utah's "319 story"

A map of Utah showing several watersheds outlined in black. The watersheds are labeled: Middle Bear Watershed, Chalk Creek Watershed, San Pitch Watershed, Upper Sevier East Fork Watershed, Upper Sevier Watershed, Jordan River Watershed, and Beaver Watershed. Major cities like Salt Lake City, Ogden, and Provo are marked. A scale bar at the bottom indicates 0, 100, and 200 km.

Part 2- BMP effectiveness

Focus on:

- animal waste
- irrigation
- grazing
- riparian – rural
- riparian – urban

COMPLETED EVALUATIONS						
	Animal Waste	Irrigation	Rural Riparian	Urban Riparian	Upland grazing	Total
Chalk Creek	-	3	7		4	8
Middle Bear	9	-	-		3	12
Beaver	5	4	4		2	10
San Pitch	2	6	4		4	10
Upper Sevier	-	3	5		1	9
Jordan River				13		
Total BMP projects	16	16	20	13	14	66

* = Seventeen interviews were done on farms that had implemented multiple types of BMPs.

Evaluation methods were all after the fact, using existing data

	Animal Waste	Irrigation	Upland	Rural Stream	Urban Stream
LOCAL FILE REVIEW	●	●	●	●	●
INTERVIEWS	●	●	●	●	●
FIELDWORK					
Field visual assessment	●	●	●	●	●
Repeat photo comparisons				●	●
Proper Functioning Condition (PFC)				●	
Historic aerial photography				●	
Fish habitat suitability analysis				●	
WATERSHED MODELING					
Sensitivity analysis	●	●	●	●	

Part 2 Key results / recommendations

- Most BMPs still in place and functional
- Most BMPs appreciated by landowners
- 60% likely or definitely produced wq improvements
- 25 % likely had little impact on wq due to:
 - location of BMP
 - BMP targeted other goal (eg irrigation efficiency).

Animal waste BMPs (16 projects / 4 watersheds)

- All still in place, generally functional
- Containment of manure generally focused on P.
- N impacts (especially on ground water) generally not addressed.
- Numeric impacts relied on UAFRRI results – input data / assumptions poorly documented.
- Little evidence that nutrient management plans or soil P tests guided manure spreading decisions

Irrigation BMPs (16 projects in 4 watersheds)

- Operators overwhelmingly satisfied with operational benefits
- Operators often unaware that funding was intended for wq improvement
- Very little pre-project data prevented quantitative assessment of impacts.

Upland grazing (14 projects in 5 watersheds)

- Projects improved forage quality / availability
- Greatest impact from projects directly linked to improved riparian zones or sediment capture / retention.
- Few producers linked improved grazing management to wq goals.

Rural stream BMPs (20 projects in 4 watersheds)

- Most still in place. Failures associated with extreme runoff events or planting failures.
- Producers saw clear connection with BMP and wq impacts.
- Different monitoring approaches addressed different objectives / scales

Urban stream BMPs (13 non-319 projects in 1 watersheds)

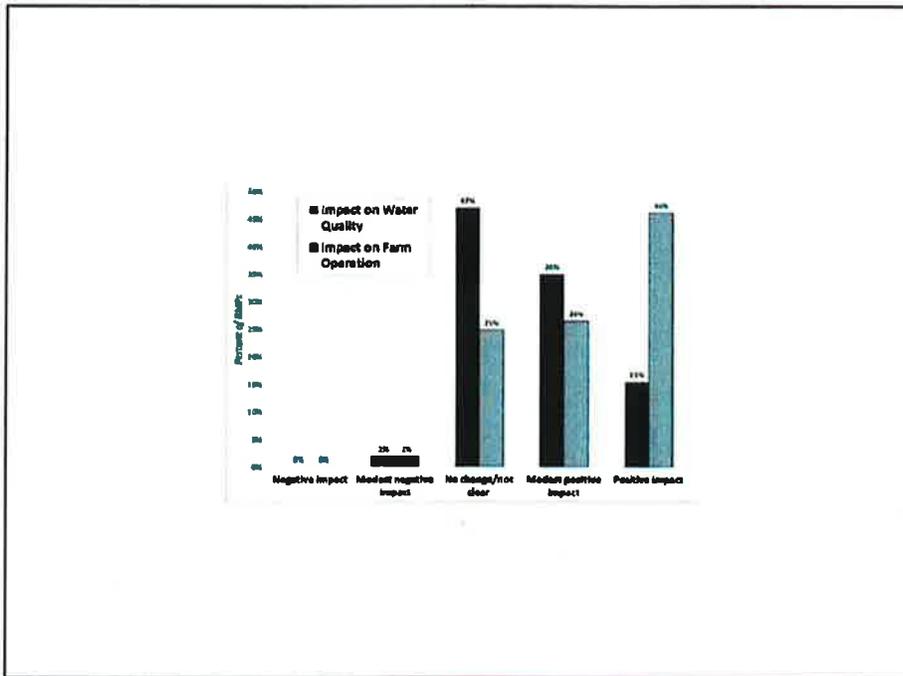
- Successfully implemented and maintained.
- Focus on reduced erosion and improved channel stability.
- Unique challenges from constraints (built environment), different hydrology, different objectives

General Conclusions

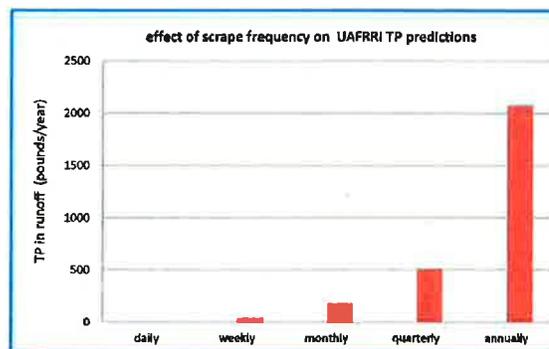
- More consistency in project files and record keeping
- Collect and preserve pre-project condition data in all cases:
 - At a minimum, collect and preserve photo points, written descriptions of site specific conditions leading to wq impairment, and the plan that was followed.
 - Consider specific bmp objectives in establishing other monitoring / assessment protocols.
 - Keep technical and monitoring data with project files

General Conclusions

- Most effective projects engaged landowners at multiple levels
- We found high value and low value projects with all types of BMPs – those with little impact reflected poor implementation / planning decisions (location, design)
- Even minimal post-implementation followup reaps huge benefits.



Implications of inaccurate assumptions about behavior changes



When using models to calculate or predict pollution reductions, carefully consider ALL the assumptions.

Many of these are assumptions about changed behavior. What will happen to your prediction if the assumptions are not met? How will you know?

1A. Best Estimate of Total 319-funded BMP Projects in Watershed (based on annual reports and file reviews)

	Animal Waste	Irrigation	Rural Stream	Upland grazing	Total
Chalk Creek	-	8	12	11	31
Cub & Amalga/Benson	24	1	4	5	32
Beaver	4	9	8	11	32
San Pitch	1	15	6	11	33
Upper Sevier	-	8	16	1	25
Total	27	41	46	39	153

COMPLETED EVALUATIONS

	Animal Waste	Irrigation	Rural Riparian	Urban Riparian	Upland grazing	Total
Chalk Creek	-	3	7		4	8
Middle Bear	9	-	-		3	12
Beaver	5	4	4		2	10
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Field interviews / file inspection: → current condition compared to expectations, landowner understanding, maintenance issues

PFC → Reach scale assessment, much more powerful with pre-project data
 Photo comparisons → many "pre-project" photos were of backhoes
 Historical aerial photos → watershed scale, considerable background relative to BMP impacts
 HSI → sensitive to each parameter.

Site	Watershed	Fieldwork Assessment					Perceived Producer Benefits		PFC	Site Photo Comp	Historical Aerial Photos			Habitat Suitability Index (HSI) Analysis			
		I	M	WQ	WQ	Op	Score	Trend			LCM	CW	Veg	C/V	D	S	P
A	CC	+/-	+/-	-	+/-	+/-	nd	nd			+	+/-	-	nd	nd	nd	nd
B	CC	+	+	+	+	+	+/-	+	+	+	+	+	-	-	+/-	+/-	
C	CC	+	+	+	+	+	+	+	+	+	+	+	-	-	+/-	+	
D	CC	-	-	-	-	-	nd	nd			nd	nd	nd	nd	nd	nd	nd

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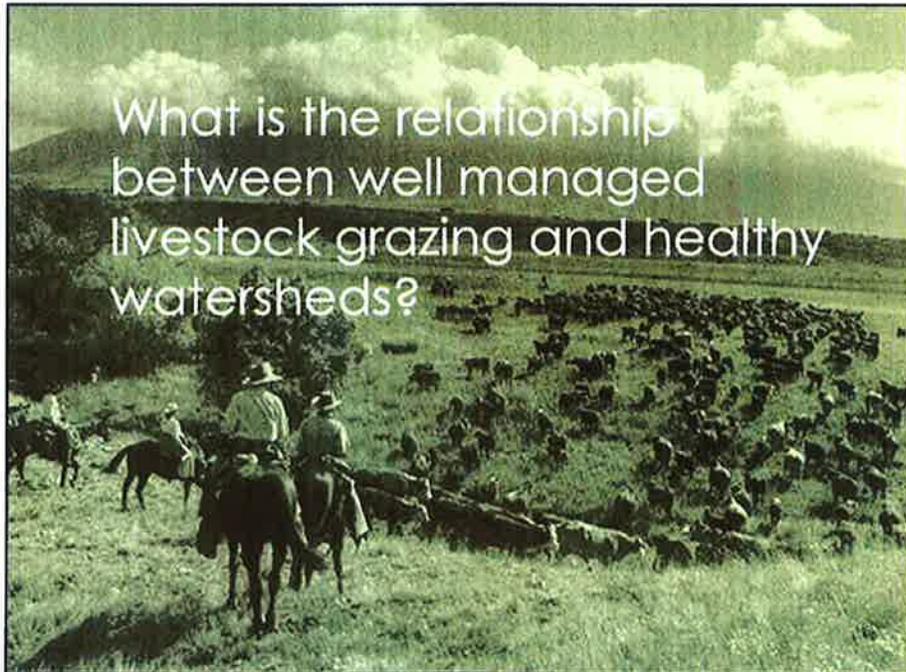
HSI → sensitive to each parameter.

Water Quality and Grazing Management

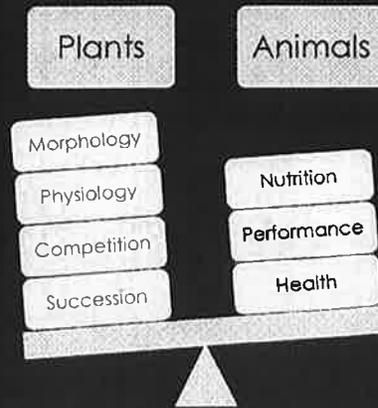


Presentation by Taylor Payne
Utah Grazing Improvement Program

What is the relationship
between well managed
livestock grazing and healthy
watersheds?



Grazing Management



Grazed Range Acres in Utah

Rangeland Resources of Utah, 1989—USU Extension

Federal Grazing Land-----26 Million Ac.

Private Grazing Land-----9 Million Ac.

State Grazing Land-----3 Million Ac.

***Total Utah Grazed Land----38 Million Ac.**

The acreage of rangeland manipulation projects done by WRI, UGIP, and other conservation efforts are dwarfed by the acres grazed in Utah annually.

What has happened to livestock grazing in Utah?

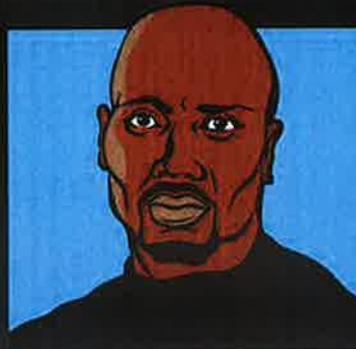
Utah Agriculture Statistics-2007

Utah's sheep population-----220,000 ewes
(peak population for Utah—2.88 million in 1901)

Utah's beef cow population---344,000
COWS
(peak population for Utah ---374,000 in 1983)

Numbers vs. Management

- ◉ Simile from the Extension department.



Why Grazing Management?

- ◉ Sustain land health and productivity
- ◉ Demonstrate good land stewardship
- ◉ Ensure a future for livestock grazing

Grazing Management

- ◉ Why should we do it?
 - > Plants need the opportunity to complete their life cycle: to grow, to set seed, and to reproduce.
- ◉ How do we do it?
 - > Through proper application of grazing management principles and practices.
- ◉ How do we know if we did it?
 - > Monitor to evaluate and document vegetation change.

Grazing Management Principles

- Time (duration)
- Timing (season)
- Intensity (amount of forage removed)

Time

- **Time** is the duration of the grazing period
- How is time managed?
 - > Fewer herds, greater stock density, and more pastures allow for time controlled grazing.
 - > Shortened grazing periods during the growing season
 - > Increased length of rest periods
- Why is time important?
 - > To prevent plants being re-grazed. (Grazed plants re-grow enough in 7-10 days to be re-grazed if growing conditions are favorable.)
 - > Most rangeland plants should be grazed infrequently because they have a limited opportunity to re-grow (limited moisture).
 - > Most pastures (irrigated or meadows) can be grazed more frequently (several times per year).

Timing

- ◉ **Timing** is the season of use.
- ◉ How is timing managed?
 - > Season of use can be alternated to limit negative impacts of grazing during rapid growth periods.
 - > Rest or deferment during the growing season in each pasture allows plants to recover (at least 1 in 3 years)
- ◉ Why is timing important?
 - > Grazing during rapid growth every year damages plants leading to loss of plant diversity and forage production.
 - > Allowing for total rest of some pastures annually builds flexibility.

Intensity

- ◉ **Intensity** is the level of use on individual plants during the grazing period.
- ◉ How is intensity managed?
 - > Number of livestock
 - > Duration of grazing
 - > Size of the pasture
- ◉ Why is intensity important?
 - > Plants need adequate leaf material following grazing to continue photosynthesis and re-grow.
 - > If all plants and pasture locations are grazed more uniformly, pressure is reduced on the most desired plants and locations.

Some benefits of applying Grazing Management Principles for Water Quality are:

- Increase disaster flexibility (drought, fire, flood)
- Sustain plant and animal diversity
- Decrease variability in annual production
- Decrease selective grazing
- Serve as a tool to address objectives with grazing, for example:
 - > Weed control

Monitoring to Evaluate Vegetation Change

- Documenting changes that result from improved grazing management is important!
 - How will you know if it's worth the effort?
 - How will you convince others it's working?
 - How will you make decisions and adjust management (Adaptive Management)?
- Monitor upland and riparian vegetation cover and species changes – for example, photo points, transects.
- Monitor stream channel characteristics
- Remote sensing techniques can make monitoring less expensive and more accurate
- Track livestock use faithfully – what kind, when, how many, how long, and the utilization levels
- Monitor wildlife use – what kind, when, how many, how long.

It's about Management

- Healthy watersheds are the common denominator for clean abundant water, diversity and abundance of wildlife and sustainable grazing opportunity for livestock. (Hopkin, 2009)
- Well managed livestock grazing is the most effective **landscape scale tool** to maintain and improve watershed health including wildlife habitat and forage production for livestock. (Hopkin, 2009)

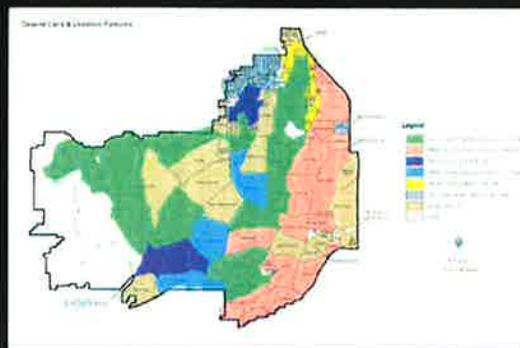
DESERT LAND LIVESTOCK ANNUAL GRAZING PLAN

Each color represents a specific herd.

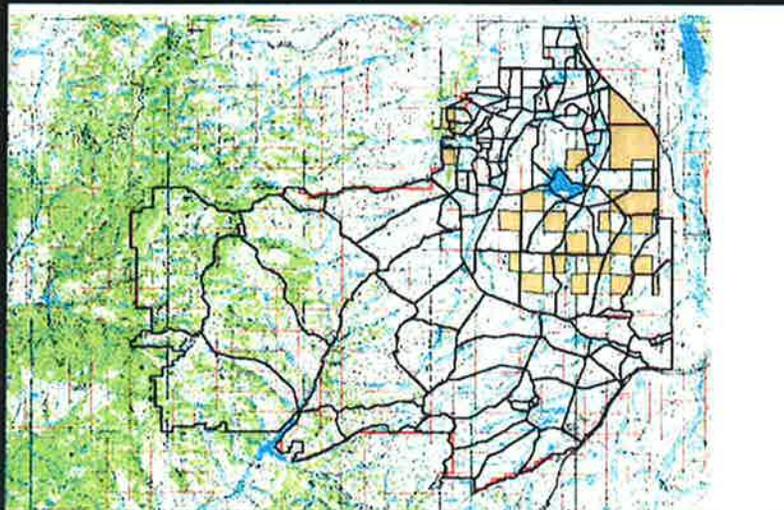
Each herd is assigned to a certain person who will take responsibility for that herd's performance

Desert Land and Livestock is approx. 200,000 acres with some intermixed BLM allotted ground

Desert Land and Livestock has around 5,500 cattle and sub-lease their sheep permits to a Northern Utah producer

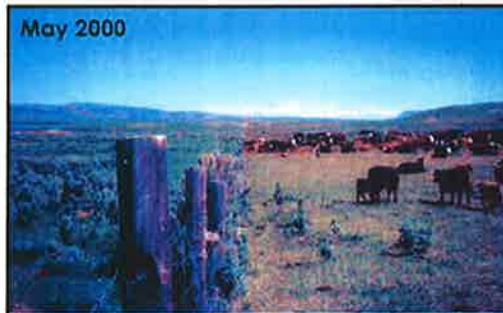


90% of cattle will be using just 10% of range during the rapid growing season

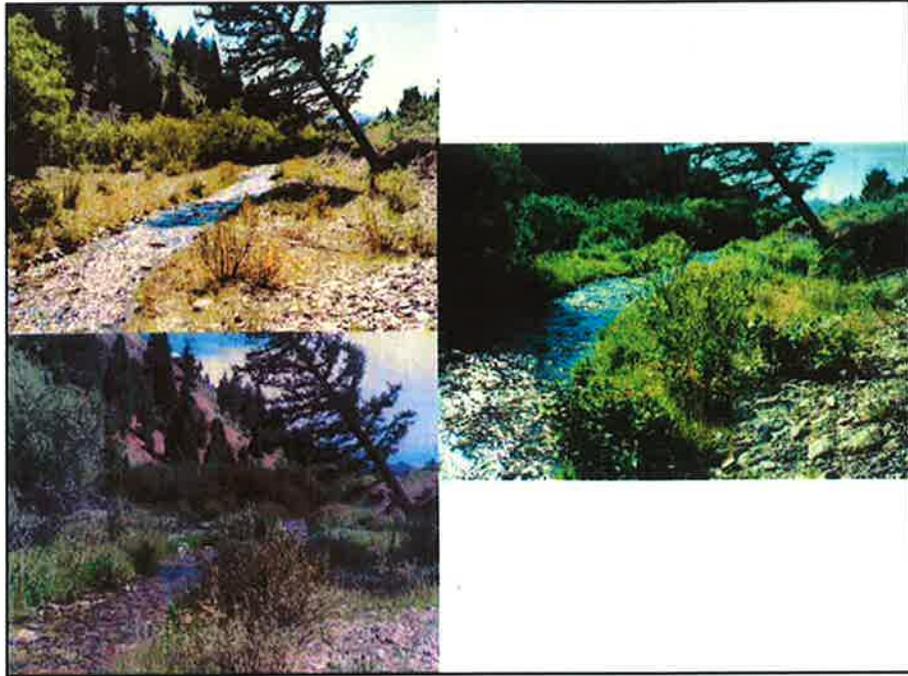


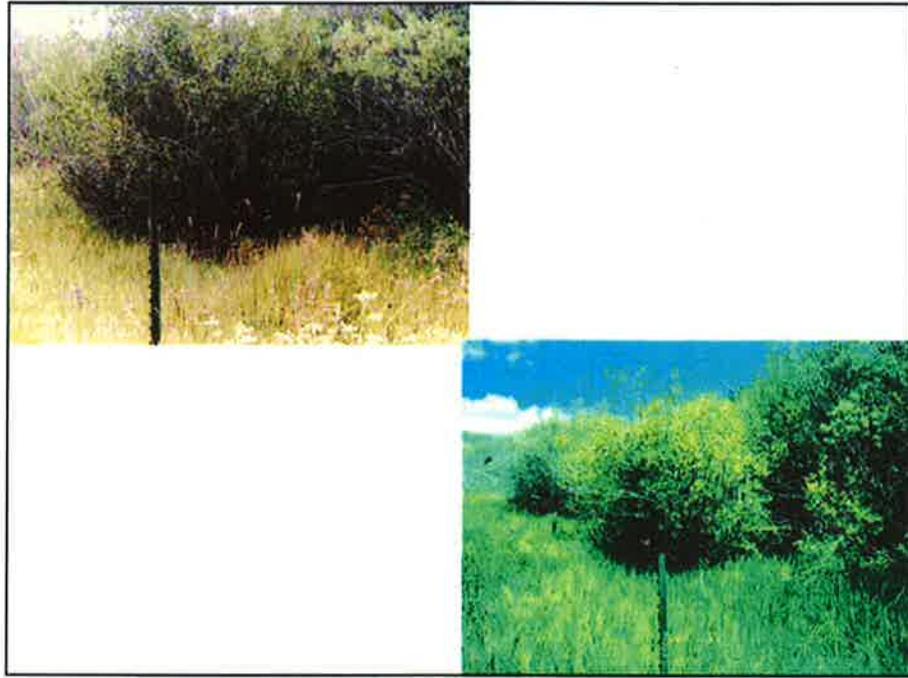
DLL Stocking Rate Change 1983 to 2001

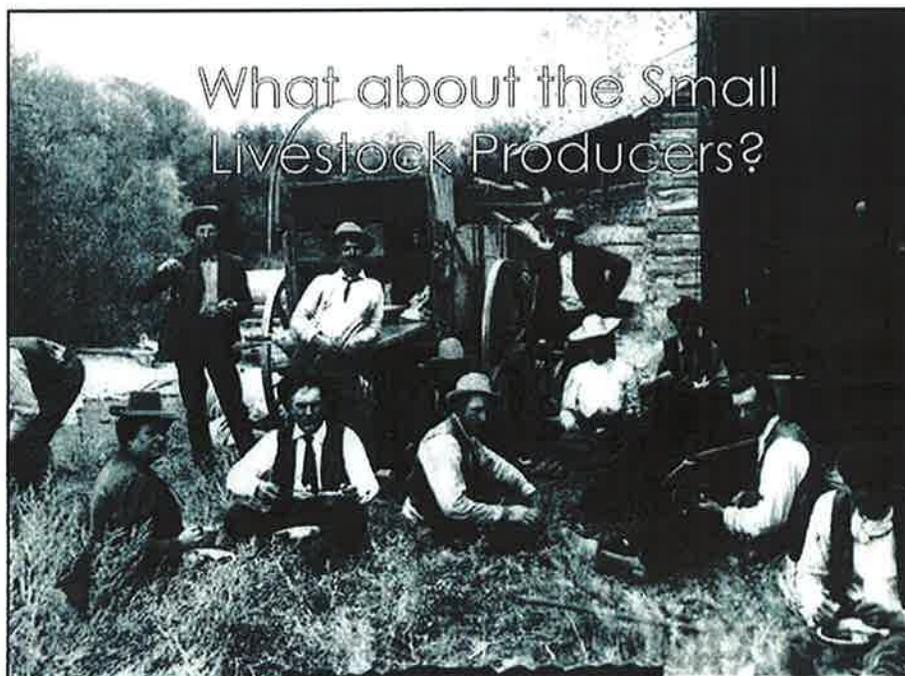
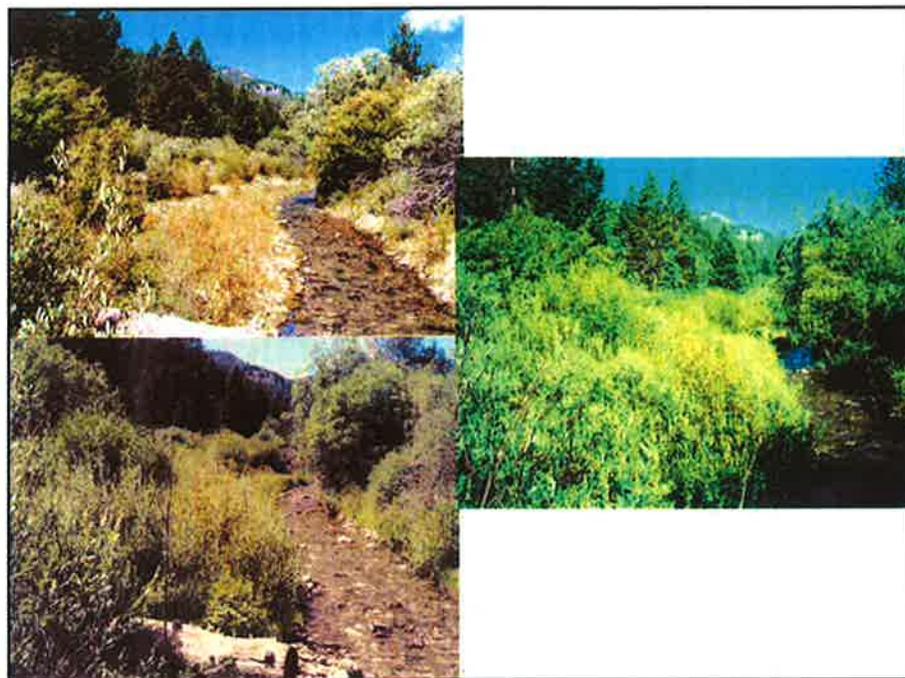
Species	1983	2001
Mother Cows	2,600	5,500
Yearling Cattle	3,000	4,000
Elk	1,500	2,400
Mule Deer	4,500*	3,500
Antelope	0	600
Moose	50	200
Bird Species	?	260
Sage Grouse	120	600

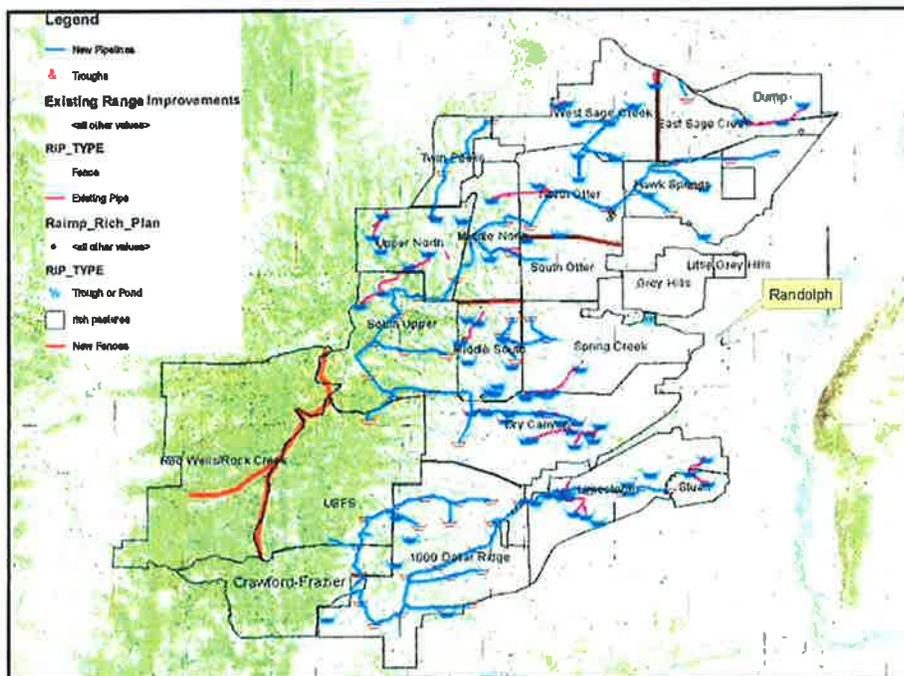
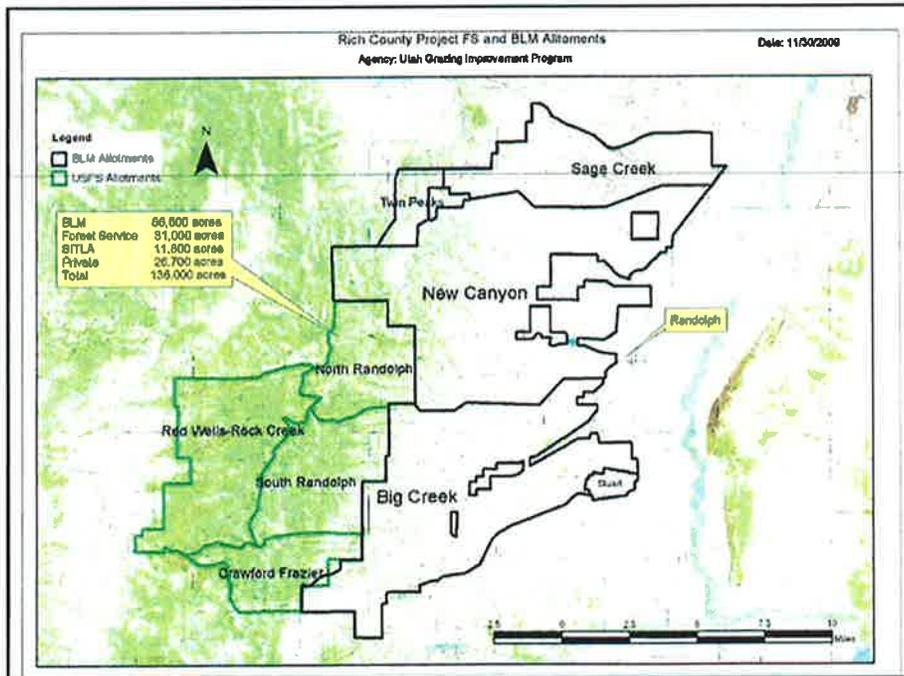
<p>May 2000</p> 	<h3>Cattle Grazing Management</h3> <ul style="list-style-type: none">• Provide rest for recovery• Reduce re-biting of individual plants• Decrease selectivity, increase diet breadth• Maintain or increase diversity of plant growth forms (grass, forb, shrub)
<p>Sept 2000</p> 	<ul style="list-style-type: none">• Increase opportunities for seed production• Increase herbaceous plant density, cover and production, improve water infiltration and riparian health• Allow greater management flexibility (i.e. treat and rest pastures, varied season of use)• Increase wildlife abundance and diversity











Project Benefits

- ◉ Superior sustainable management
- ◉ Permittees take responsibility
- ◉ Big Creek and Sage Creek off the 303d impaired water list
- ◉ Blue Ribbon fisheries (Otter & Big Creek)
- ◉ Increase nutrition for all wildlife (buffet)
- ◉ Increased Recreation opportunity (less than 20% of the range with livestock—80% available for recreation)

Project Benefits (cont.)

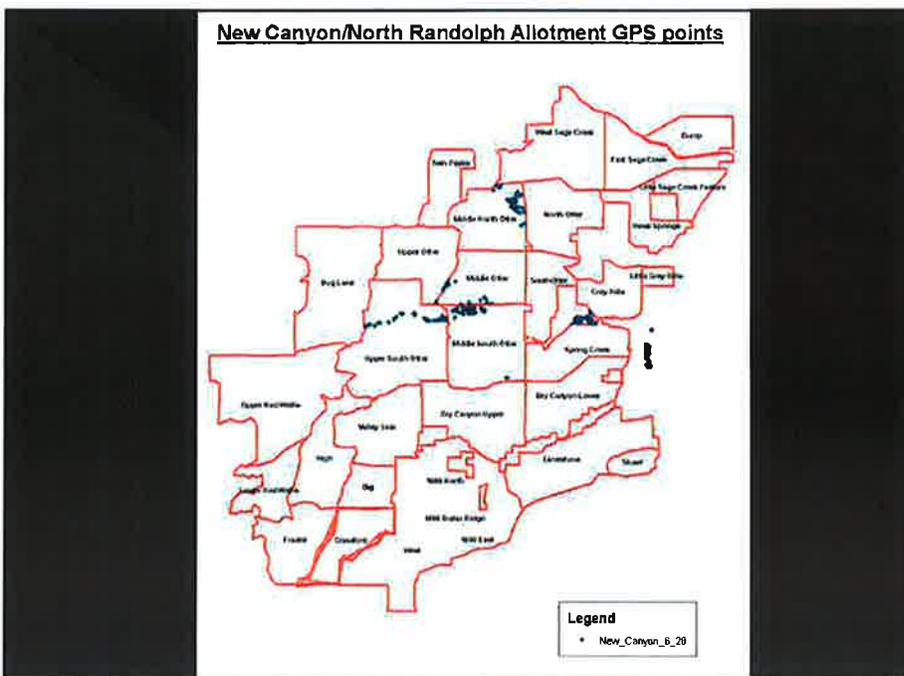
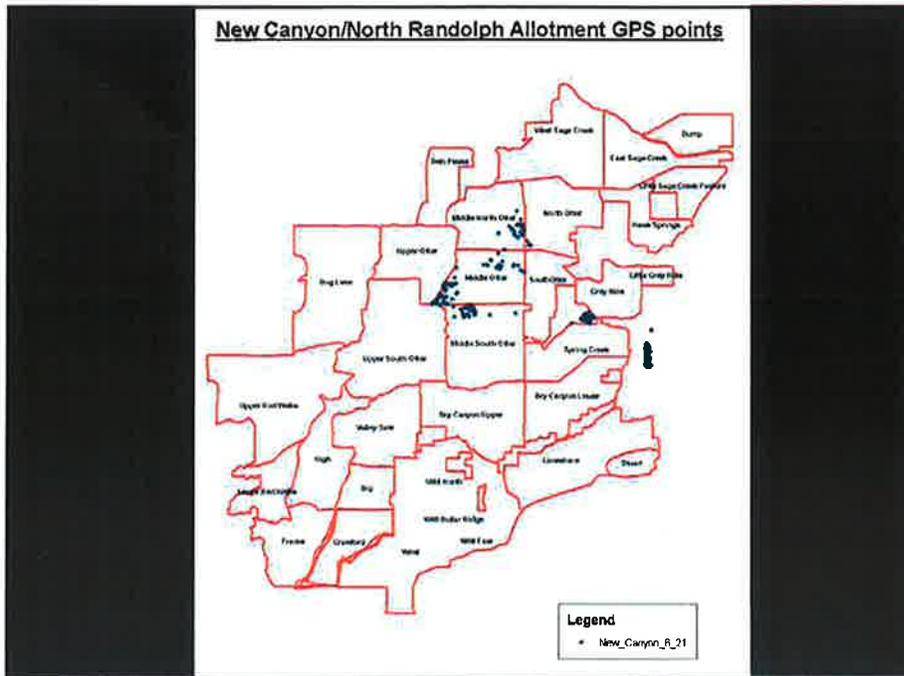
- ◉ Increased ground cover-less bare ground
- ◉ Drought flexibility
- ◉ Increased plant diversity (biodiversity)
- ◉ Improved Sage Grouse production
- ◉ Lower wildfire risk
- ◉ Greater management flexibility (rest following treatments)
- ◉ Higher Conception Rates
- ◉ Increased AUM capability of Exchange of Use AUM's
- ◉ Higher small producer profitability.

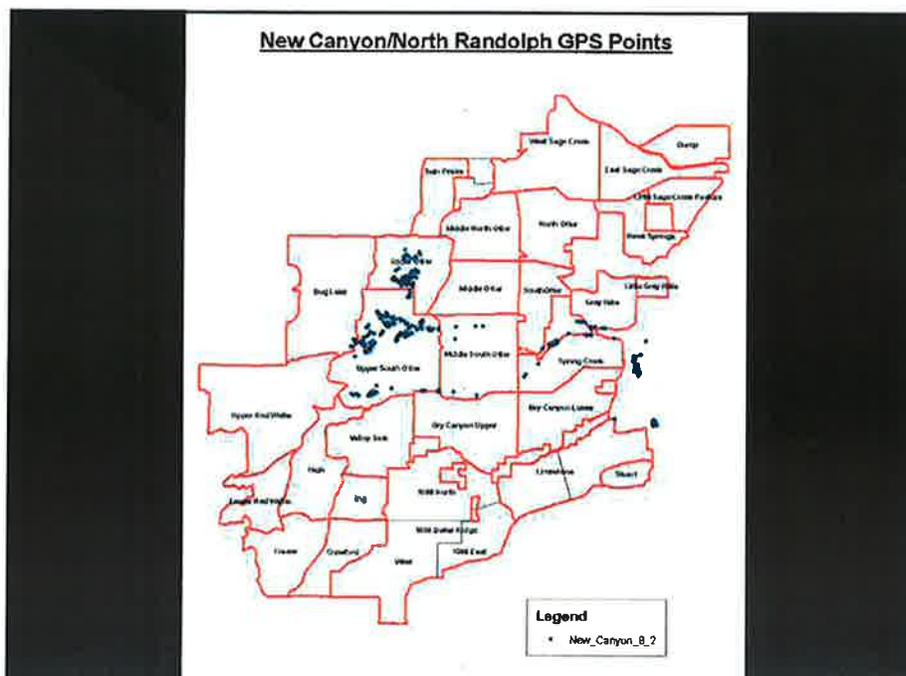
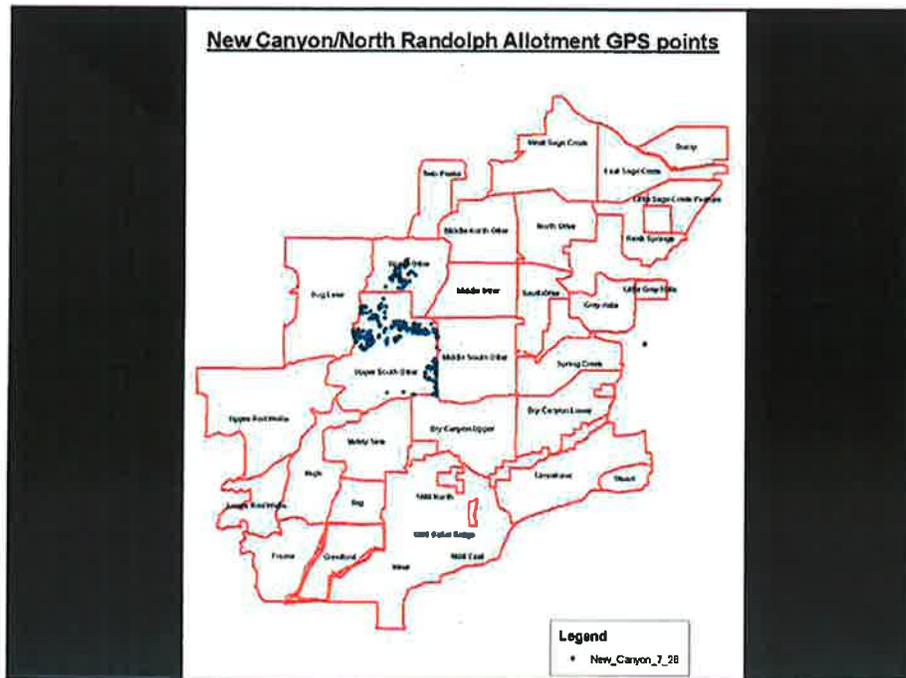
New Canyon/North Randolph 2012 Cattle Collar Distribution GPS Points

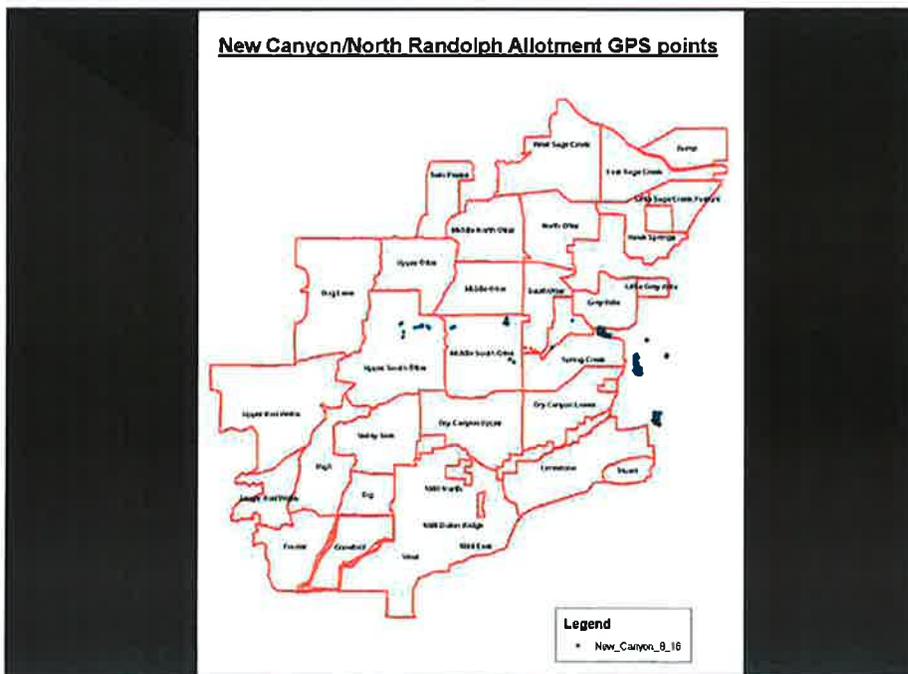
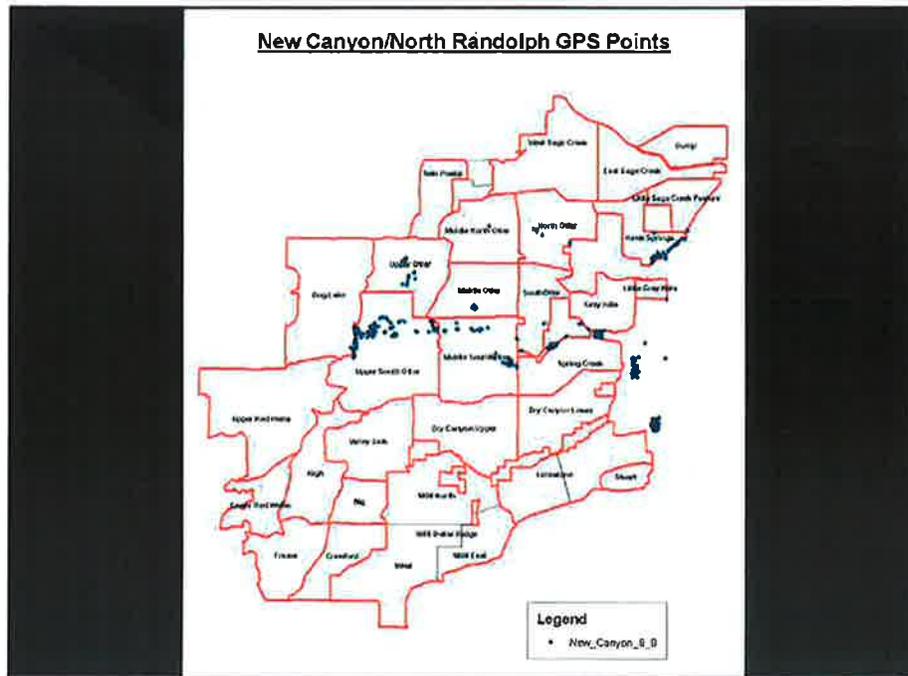


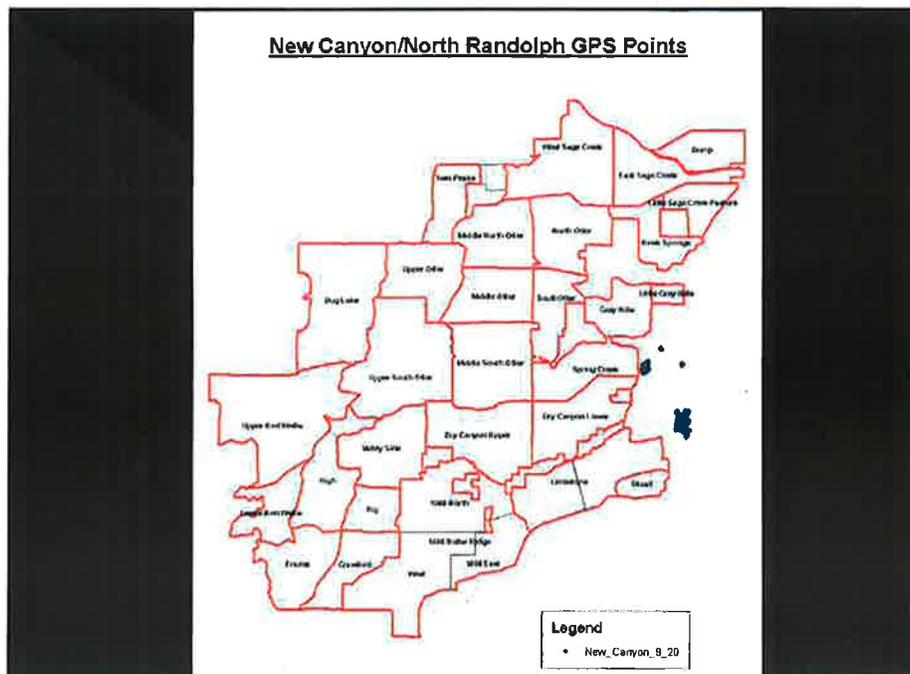
New Canyon/North Randolph Allotment GPS points

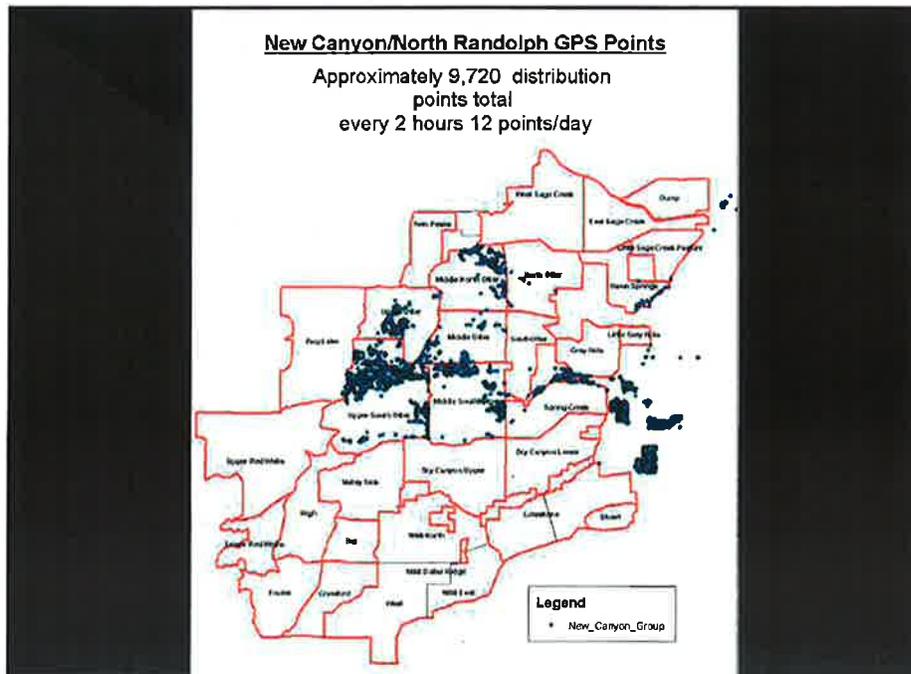
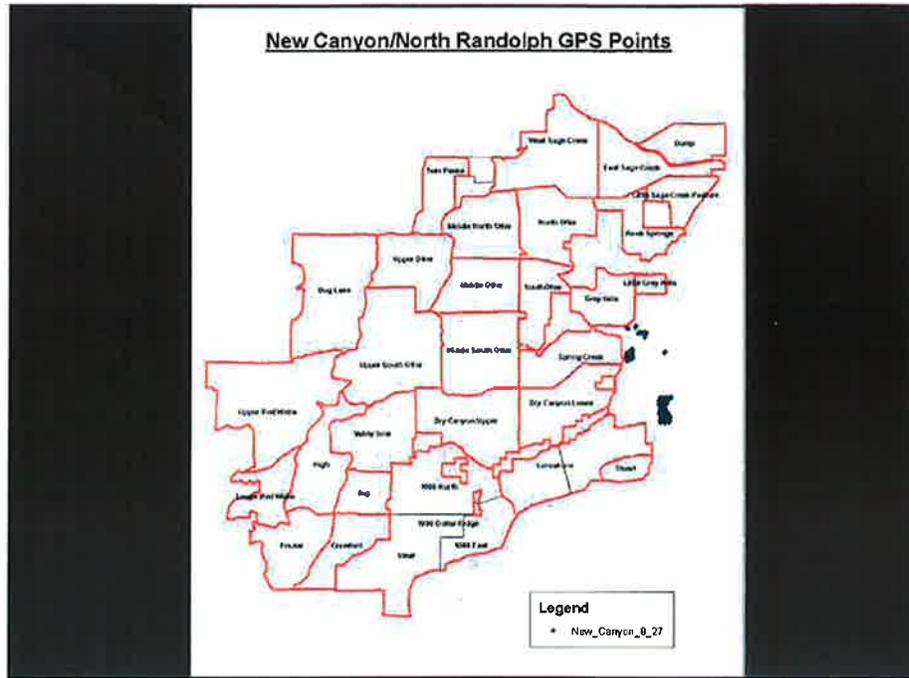


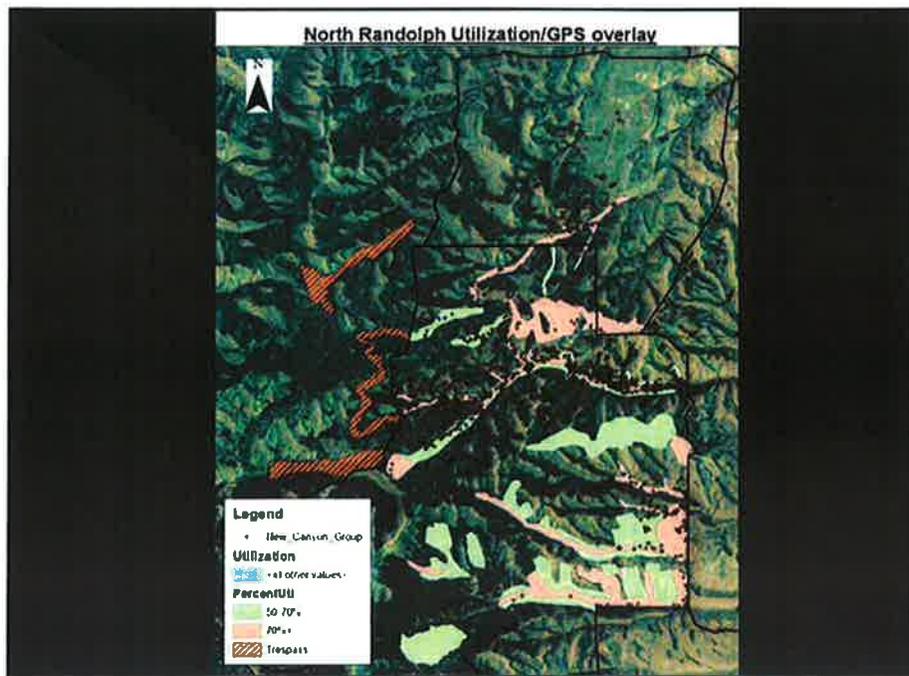
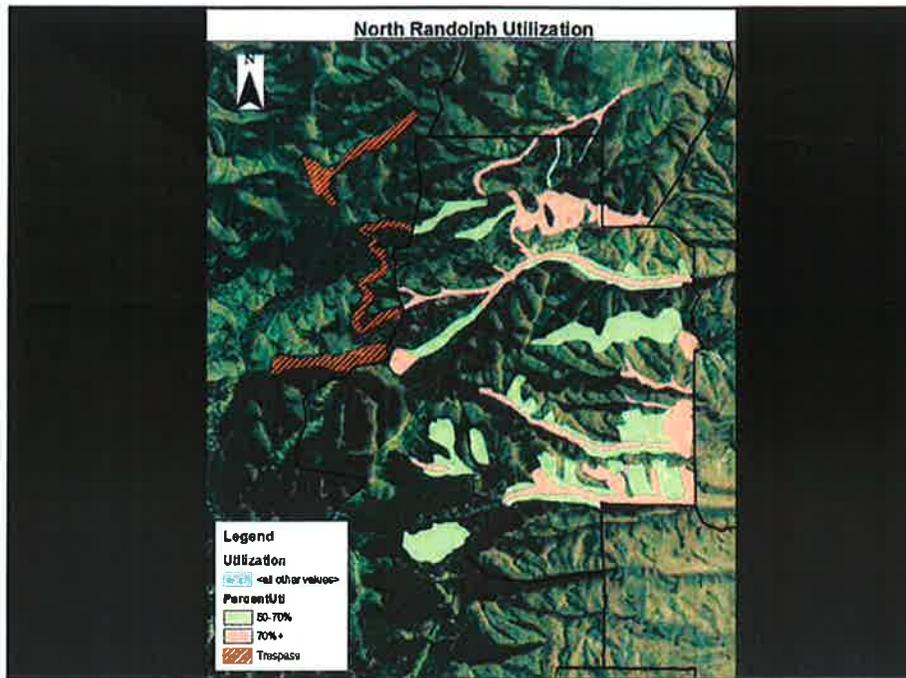












DWQ Watershed Hardship Grant

- ◉ Awarded to the 3 Creeks Association Project Area to perform maintenance.
- ◉ Increased ability to complete tasks once prohibitive because of cost
- ◉ Examples include: hired fence contractor, hired riders, water system maintenance

Sage Creek Allotment Trough

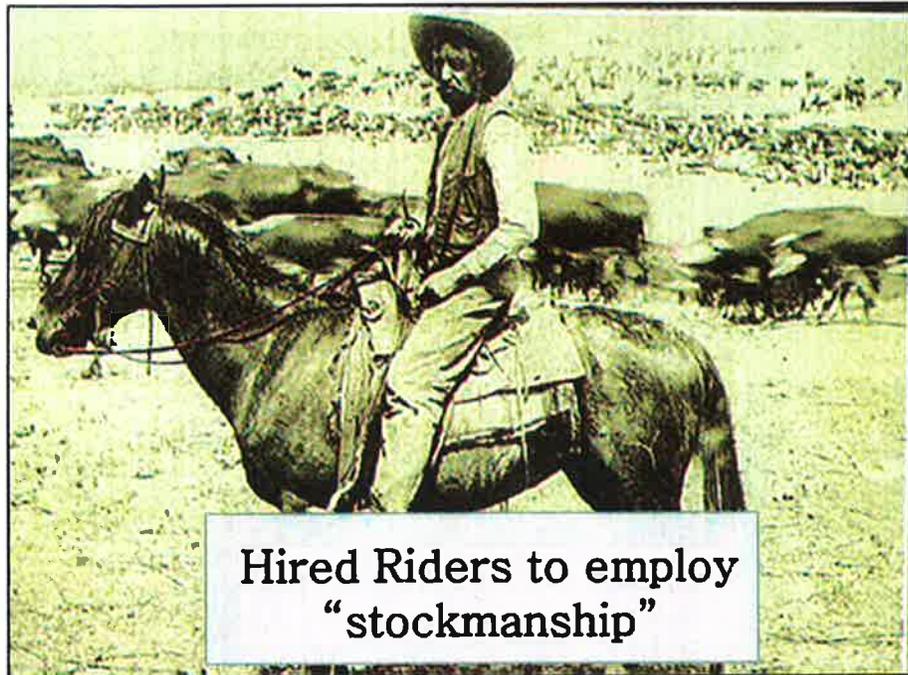


Fence Replacement Projects



Fence Replacement Projects





Hired Riders to employ
“stockmanship”