

**UTAH  
NONPOINT SOURCE  
POLLUTION MANAGEMENT PROGRAM**



**FISCAL YEAR 2011  
ANNUAL REPORT**

**January 2012  
Prepared by:  
The Utah Department of Environmental Quality  
In cooperation with NPS Task Force**

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Cover Photo: River Restoration Project, East Canyon Creek, Park City Utah

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## **1. Introduction And Program Overview**

This report fulfills the requirements of Section 319(m)(1) of the federal Clean Water Act of 1987. The Utah Department of Environmental Quality's Division of Water Quality annually prepares this report to inform the public, the U.S. Congress and the U.S. Environmental Protection Agency (EPA) on the state's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete enumeration of all nonpoint source activities, it describes the most important features of Utah's nonpoint source program.

The mission of the Utah Nonpoint Source Pollution Management Program is to support the environmental protection goals of the state as described in the Utah Administrative Code R317-2 in part to: 1) to conserve the waters of the state; 2) to protect, maintain, and improve the quality of the waters of the state for public water supplies, species protection and propagation and for other designated uses; and 3) to provide for the prevention, abatement and control of new or existing sources of polluted runoff. The Utah NPS Management Program works to achieve these goals by working in concert with numerous local, state and federal agencies and private parties pursuant to the Utah NPS Pollution Management Plan.

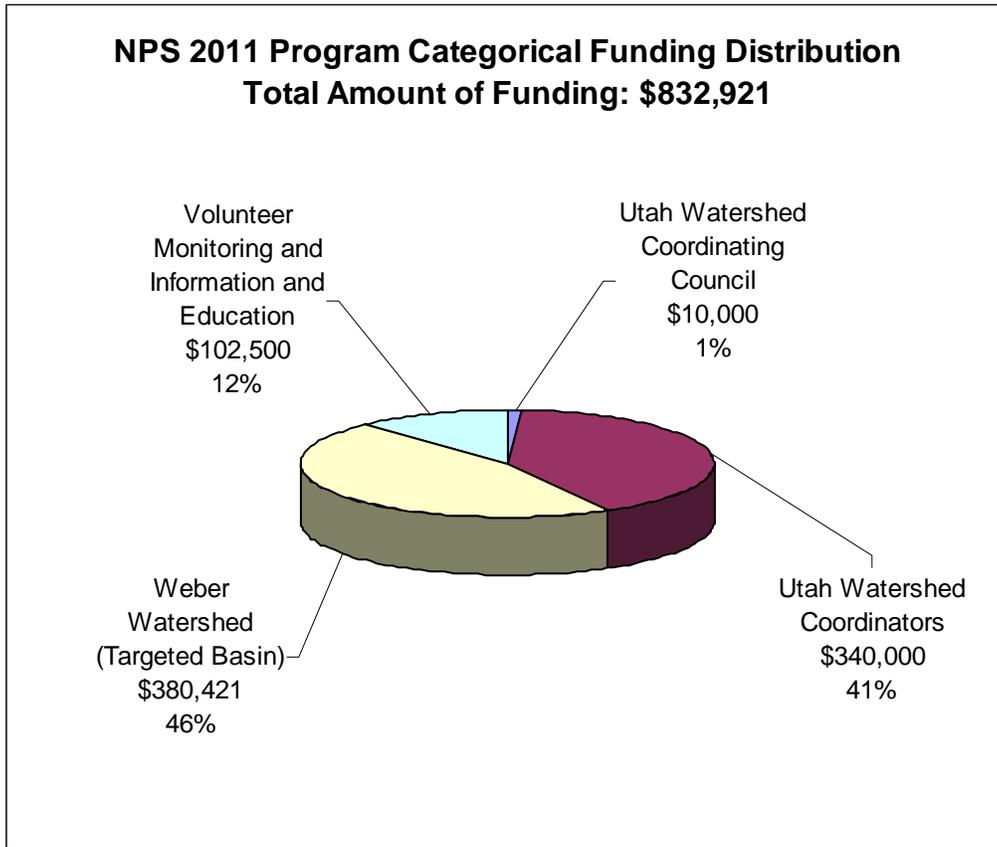
Nonpoint source pollution refers to diffuse pollutants that when added together from an entire watershed can significantly impact water quality in streams and even have more cumulative impacts in lakes and reservoirs. Non point source (NPS) pollution is diffuse, generally not coming from a discrete point such as a pipe but as a result of land runoff, percolation, precipitation or atmospheric deposition. Rain and other forms of precipitation wash pollutants from the air and land and into our streams, lakes, reservoirs and groundwater. Such pollutants can include sediment, nutrients, pathogens (bacteria and viruses), toxic chemicals, pesticides, oil, grease, salt and heavy metals. In Utah our most common problems are sediment, nutrients, metals, salts and pathogens. These pollutants alter the chemical, physical and biological integrity of the water and can impair their designated uses. Most assessment units (waterbodies) that are listed on the State's 2008 303(d) List of Impaired Waters are on the list because of nonpoint source pollution. Some of the common sources of NPS pollution include agricultural activities, runoff from parking lots, streets and residential areas, mining and forestry operations, recreational activities, onsite septic treatment systems, construction, stream/riparian habitat degradation and natural sources.

## **2. Grant Management and Program Administration**

In Fiscal Year 2011 (FY-11) the Utah NPS program received \$1,541,000 in federal Section 319(h) funds. Of these funds, \$708,079 was used for staffing and support, while the remaining \$832,921 was dedicated to 4 project grants. Due to budget cuts, the FY-2011 grant was reduced by 13% from the previous fiscal year.

Section 319(h) funds are distributed at the local level to help address water quality issues contributing to nonpoint source pollution. Recipients of these funds can include local government entities, watershed groups and individual cooperators. The projects selected for funding consisted of an information and education project, support of local watershed coordinators, Best Management Practice (BMP) implementation, and watershed group support, (See Figure 1).

**Figure 1**



In addition to the FY-11 funds Utah continues to manage five other federal grant awards, which have been partially or completely expended. Table 1 summarizes grant awards by year and the approximate percentage that has already been expended in each grant.

**Table 1**

<b>Current Section 319(h) Nonpoint Source Funding Project Allocations</b>				
<b>Federal Fiscal Year</b>	<b>Grant Award</b>	<b>Expenditures in FY-10</b>	<b>Total Expenditures</b>	<b>Percent Expended</b>
FY-06	\$1,219,600	\$148,350	\$1,055,795	87%
FY-07	\$1,126,500	\$95,624	\$764,033	68%
FY-08	\$1,161,585	\$165,816	\$848,444	73%
FY-09	\$1,119,400	\$402,186	\$700,094	63%
FY-10	\$1,065,000	\$413,578	\$416,101	39%
FY-11	\$823,921	\$0	\$0	0%
<b>Total</b>	<b>\$5,516,506</b>	<b>\$1,225,554</b>	<b>\$3,784,467</b>	<b>67%</b>

## 2.1. Staffing and Support

In FY-2011 the Division of Water Quality devoted 6.8 FTEs to the NPS Pollution Management Program that are funded 60% with 319 funds and 40% state revenue. Table 2 shows the positions and FTEs funded by the Division of Water Quality using section 319 funds.

**Table 2**

<b>PERSONNEL (# FTE's)</b>	<b>SALARY</b>	<b>FRINGE (44%)</b>	<b>TOTAL EXPENSES</b>	<b>STATE (40%)</b>	<b>EPA 319 (60%)</b>
Program Coordinator (1.0)	\$64,064	\$28,188	\$92,252	\$36,901	\$55,351
Environmental Scientist (0.5)	32,155	14,148	46,303	18,521	27,782
Environmental Scientist (1.0)	57,691	25,384	83,075	33,230	49,845
Environmental Scientist (0.50)	30,454	13,400	43,854	17,542	26,312
Environmental Scientist (0.30)	17,307	7,615	24,922	9,969	14,953
Environmental Scientist (0.50)	28,846	12,692	41,538	16,615	24,923
Monitoring Specialist (1.0)	50,383	22,169	72,552	29,021	43,531
GW Hydrogeologist (0.50)	33,042	14,538	47,580	19,032	28,548
Two Seasonal Temps (0.70)	59,266	26,077	85,343	34,137	51,206
Watershed Section Manager (0.60)	41,856	18,417	60,273	24,109	36,164
Asst. Div. Director (0.30)	24,630	10,837	35,467	14,187	21,280
Division Director (0.10)	<u>10,768</u>	<u>4,738</u>	<u>15,506</u>	<u>6,202</u>	<u>9,304</u>
<b>TOTAL 6.8 FTEs</b>	<b>\$450,462</b>	<b>\$198,203</b>	<b>\$648,665</b>	<b>\$259,466</b>	<b>\$389,199</b>

Section 319 funds allocated to staffing and support functions are also utilized to pay for laboratory support and report preparation. This includes laboratory analysis of water samples. Phytoplankton samples are also collected annually from selected lakes and reservoirs by DWQ monitoring staff. Macroinvertebrates are also collected in various locations. The analysis of these samples and annual reports are paid for in part with 319 funds.

The Utah Department of Agriculture and Food's (UDAF) Environmental Quality Section via contract with DEQ has management and statewide responsibility for the agricultural component of the NPS Program. UDAF received \$203,682 in FY-11 319(h) funds to help fund 4 positions which include: NPS Information and Education Coordinator; Account Technician; Program Tracking Specialist; and an Environmental Quality Section Manager.

## **2.2. Milestones**

- Utah closed out the FY-05 Section 319 Grant, and all information has been entered into the Grant Recording and Tracking System (GRTS)
- The Water Quality Task Force joined forces with other supporting agencies to sponsor the 21<sup>st</sup> Water Quality Conference held August 30<sup>th</sup>-September 1<sup>st</sup> in Logan, Utah. The title of the conference was changed from the Nonpoint Source Conference to The Water Quality Conference allowing some of the presenters to cover a wider variety of Water Quality Topics. Over 130 people registered for this conference.
- The NPS Task Force continued to meet throughout the year. Meetings were held November 1<sup>st</sup>, 2010, April 5<sup>th</sup>, 2011, and June 30<sup>th</sup>, 2011.
- The Utah Watershed Coordinating Council (UWCC) met 3 times during the 2011 fiscal year. This included a training offered by Utah State University dealing with Best Management Practice (BMP) monitoring, and a BMP monitoring manual that was recently published by USU and their partners.
- The Utah State Monitoring Council continues to meet 3 times a year. This council consists of several state and federal agencies that have a vested interest in water quality monitoring. Monitoring effectiveness and monitoring goals of the various agencies are discussed in these meetings.
- Utah State University continues to work on an in-depth evaluation of the Utah NPS program. This evaluation will help determine more effective ways to administer and implement the NPS program. It will also look at the effectiveness of the practices that are currently being installed to reduce nonpoint source pollution. This evaluation has already begun, and is scheduled to be completed by the spring of 2012.
- The Department of Environmental Quality has developed a handbook for watershed coordinators and planners. This handbook covers the basics of watershed planning, project implementation, grant reporting, and BMP monitoring.
- A nonpoint source management plan for abandoned mines has been completed, and has been sent out for public comment. It is anticipated that this plan will be completed by the end of the 2011 calendar year. This plan will be included in the Statewide NPS management plan when it is revisited in 2012.
- The storm water management plan is in the final stages of development, and will be integrated into the revised statewide nonpoint source management plan.
- The Emigration Creek TMDL has been completed and submitted to EPA for approval

## **2.3. Summary of Active Utah 319(h) Grants During FY-11**

For an entire summary of active Utah 319(h) projects see Table B in the appendices.

## **2.4. Watershed Based Plans/ TMDLs**

Section 303(d) of the federal Clean Water Act (CWA) requires states to develop and submit for approval a list of waters targeted for Total Maximum Daily Load (TMDL) development every two years. This is referred to as the 303(d) list. The most recent version of the 303(d) list published for the state of Utah was issued in 2008. Currently the State of Utah has 64 waterbodies that are currently implementing TMDLs or watershed plans, with Emigration Creek awaiting approval from EPA. (See Table C and D in the appendices). The Utah Nonpoint Source Management Plan that was developed in October of 2000 determined that all impaired waterbodies in the state of Utah should have a TMDL established by 2010. However, due to the

increased complexity of the TMDLs currently in progress within the more heavily populated watersheds of the state, the pace of TMDL submissions has decreased. It should be noted that all waters listed in 1998 have, or are in the process of having, TMDL studies completed on them. Additionally, a comprehensive tracking tool for TMDLs and waterbody assessments has been provided by EPA that will assist in accurately reporting TMDL completion status.

**2.5. Project Proposals Approved for Funding During FY- 11 Solicitation Process**

Due to the high demand for 319(h) funds the State of Utah has required that entities applying for funding submit pre-proposals to the State for review. Sixty-one pre-proposals were accepted from the middle of April to the end of May for the 2011 fiscal year. These pre-proposals were reviewed by the Utah Division of Water Quality using a project selection ranking criterion developed by the Water Quality Task Force. Of the proposals received only four projects were selected for funding with Section 319 funds. The Weber Watershed received the majority of Project funds available, since it was the targeted basin in FY-2011. The local watershed coordinators, the Utah Watershed Coordinating Council, and an information and education grant through Utah State University were also funded (See Table 3). The Projects that were not selected for funding with section 319 funds were then considered for funding with state NPS funding.

**Table 3**

**2011 Project Implementation Plans (PIPs) for CWA Section 319 Funding  
(Prepared June 30<sup>th</sup>, 2011)**

<u>Proposal Type &amp; Title</u> <u>Information &amp; Education (I &amp; E) and T.A.</u>		<u>Requested</u> <u>Amount</u>	<u>Base Funds</u>
			<u>Final</u> <u>Allocation</u>
1.	Utah Watershed Coordinating Council Support	\$ 35,000	\$10,000
2.	USU Volunteer Monitoring and I&E	<u>\$ 102,500</u>	<u>\$102,500</u>
<b>Sub Totals</b>		\$ 137,500	\$112,500
<u>Planning, Tech. Assist. and Implementation</u>			<u>Incremental Funds</u>
4.	Local Watershed Coordinators	\$ 400,000	\$340,000
15.	East Canyon Restoration	<u>\$1,000,000</u>	<u>\$380,421</u>
<b>Sub Totals</b>		\$1,400,000	\$720,421
<b>Grand Total</b>		\$1,537,500	\$832,921

**3. NPS Program Strategic Approach**

To be eligible for funding, NPS projects must be located on a waterbody, or a tributary to a waterbody, identified on the state 303(d) list of impaired waterbodies. A current watershed plan should also be in place which identifies areas of concern and possible sources of pollution in the watershed. Using a targeted basin approach will allow watershed planners time to develop watershed plans between funding cycles. To help facilitate the development of watershed plans

and identify sources of pollutant loading, the Utah State Division of Water Quality will conduct annual intensive monitoring runs two years before funding is scheduled to be received by the targeted basin.

### 3.1. Targeted Basin Approach

The State of Utah has decided to implement a targeted basin funding approach to reduce nonpoint source pollution. In FY-2011 the state was able to fully implement the targeted basin approach (see Table 4). This approach allows the state to focus implementation efforts on a given watershed instead of spreading the funding across the entire state. By using this method the State will implement TMDLs and watershed plans more effectively.

The Weber River Watershed obtained 100% of the 319 funds allocated for BMP implementation, and will also receive an additional \$150,000 in State Nonpoint Source funds in FY-2012 and FY-2013. The majority of these funds will be used to implement projects on East Canyon Creek, as identified in its watershed plan.

**Table 4**  
Basin Priority Funding Schedule

Watershed	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1) Jordan/ Utah lake											
(2) Colorado River											
(3) Sevier, Cedar-Beaver											
(4) Bear River											
(5) Weber River											
(6) Uinta Basin											

### 3.2. Utah State NPS Funding

While 319 funds have historically been the main source of funding for NPS pollution projects in the State of Utah, additional state funding has become available to help implement NPS projects throughout the state. This additional funding will occur in the form of State NPS funds. These funds are acquired from interest generated from hardship grant loans given by the water quality board for private and municipal water treatment facilities. Individuals, businesses, private entities, associations, and government agencies are eligible to receive these grants. Much like section 319(h) funds all project proposals received are prioritized. The highest priority projects are those that address a critical water quality need, will improve human health concerns, and would not be economically feasible without the grant. In the 2011 fiscal year, 23 projects were funded, totaling \$876,761, Using State NPS funds. In addition to these projects an additional \$123,239 was used to conduct Cultural Resource Inventories on all stand alone 319 projects. For a complete summary of FY-11 funded projects see table E in the appendices.

### 3.3. Program Match Status

The 319(h) federal money received by the State requires a 40% non-federal match for both the staffing and support funds used by DEQ and UDAF and the dollars allocated for projects. Most of the match for projects is provided at the local level by individual producers and landowners. The DWQ has begun to provide State NPS funds as match to selected 319 projects to provide an additional incentive to implement BMPs.

There are several State and local programs which have been very helpful in generating match for the 319 projects. The Division of Wildlife Resources manages several state general funding grant programs, which include Habitat Council funds, Blue Ribbon Fishery program, and Watershed Restoration Initiative funding. These funds are dedicated to the improvement of wildlife habitat on public and private lands, while improving water quality. Table G in the appendices gives a summary of these funds used in conjunction with section 319 funding.

The Utah Conservation Commission manages an Agriculture Resource Development Loan Program, ARDL, which in recent years has been expanded to include water quality improvement purposes on farms and ranches. These state programs are tremendous assets to the improvement of water quality in this state. The Grazing Improvement Program at the Utah Department of Agriculture and Food also provides state revenue to improve upland and riparian areas throughout the state. All of the programs mentioned above have provided match for 319 revenues in jointly funded projects. Table G in the appendix reflects the project match accrued in FY-11 using these additional state and local funding sources.

The Department of Environmental Quality provides state revenue to match the staffing and support 319(h) funds that are part of the Performance Partnership Grant. The Utah Department of Agriculture and Food also provides state revenue to match the portion of those funds passed through to UDAF via an annual contract. Table 5 shows the amount of match accrued for all open Section 319 grants.

**Table 5**

<b>Grant Year</b>	<b>319 Funds Spent in FY-10</b>	<b>Match Accrued in FY-10</b>	<b>Total 319 Funds Spent</b>	<b>Total Match Accrued</b>
FY-06	\$148,350	\$98,900	\$1,055,795	\$703,863
FY-07	\$95,624	\$63,749	\$764,033	\$509,355
FY-08	\$165,816	\$110,544	\$848,444	\$565,629
FY-09	\$402,186	\$268,124	\$700,094	\$466,729
FY-10	\$413,578	\$275,719	\$416,101	\$277,401
FY-11	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$1,225,554</b>	<b>\$817,036</b>	<b>\$3,784,467</b>	<b>\$2,522,977</b>

### **3.4. Integrating Watersheds and NPS Funding (Basin wide summary)**

Watershed coordinators have proven to be very effective at helping implement water quality projects on the ground. Local watershed coordinators develop relationships with landowners and educate the public on the benefits of installing Best Management Practices (BMPs). They also oversee all project planning, design, project implementation, and reporting. They help organize and facilitate meetings for local watershed groups. These groups are involved in watershed planning and the project selection process.

#### Middle and Lower Sevier River Watershed- Lynn Koyle

During FY-11 work was completed on the Stream Visual Assessment Protocol (SVAP) survey of the Middle Sevier River and will be used to update the Sevier River Watershed Management Plan. Aerial photography was used to identify problem areas along the river. Mr. Koyle feels as though these images will be useful information for years to come.

Lynn has been actively involved with information and education activities in the watershed. He has been working with Jack Wilbur from UDAF to address septic issues throughout the watershed. He also assisted with the planning of the 2010 NPS Conference, which was held in Richfield Utah in September of 2010. He planned the watershed tour and helped facilitate the location in which the conference would be held.

There are several river restoration projects planned for the near future. The local watershed coordinator is working with several sources of funding to fund these projects including ARDL Loans and State NPS Funding.

In 2011 six projects were completed. These projects included five stream bank restoration projects and one animal feedlot relocation. The watershed plan was also completed for the Middle Sevier Watershed and submitted to EPA for approval.

#### Southeastern Colorado River Watershed- Tessa Groff

The position of watershed coordinator is new to the Southeastern Colorado River watershed therefore the majority of the Coordinator's time has been spent aiding the development of a local watershed group, the Moab Area Watershed Partnership (MAWP). During the 7 months the local watershed coordinator has been employed she has coordinated meetings for MAWP, developed a website, and assisted with the development of the local watershed plan. She has also assisted with the collection of water quality data that will be used in the development of this watershed plan.

The local watershed coordinator has been involved in local nonpoint source educational activities such as the organization of a streamside science workshop in Moab as well as a storm drain marking activity.

#### Scofield and West Colorado Watershed- Daniel Gunnell

Phase 3 of a project focused on restoring the riparian corridor on the Price River was completed. Noxious/invasive woody biomass was removed, and stumps were treated, and fencing was installed along the riparian area to eliminate grazing access. Five re-vegetation projects were also implemented. These projects were supported largely by volunteer efforts and helped improve

both the riparian and upland areas along the Price River. The local watershed coordinator has been able to work well with the Division of Natural Resources. The DNR has provided funding for projects along Mud Creek above Scofield Reservoir as well as riparian planting along the Price River.

A Moab storm drain marker project was completed in May of 2011. The local Girl Scout troop 224 placed over 170 markers and spoke about the importance of keeping pollution from the storm drain with EVERY passerby. An Enviroscope Pollution model was purchased for educational purposes throughout the West Colorado River Watershed Management Unit. The model has been used in various middle schools, at the Moab storm drain marker kickoff and the UACD Zone 7 area conference. In addition, the model has been added to the USU Water Quality extension website and listed for use in Emery, Carbon, Grand and San Juan Counties. 3,193 Noxious weed calendars were also developed and distributed throughout Utah.

#### Jordan River Watershed- Marian Hubbard

In 2011 excessive snowpack in the mountains and heavy precipitation caused delays in some of the construction projects. With the use of various funding sources, Salt Lake County is ready to construct an overland flow wetland complex for improvement of water quality in the 8600 South Storm Drain which discharges into the Jordan River. There have been some land acquisition issues that are currently being addressed. An ecosystem restoration project along 8600 South to 9000 South along the Jordan River is mostly completed, but vegetation still needs to be established. The Alta Fen mining project is also currently being redesigned by Salt Lake County and should be completed by August of the coming year.

Salt Lake County has begun a large restoration project with \$1.5 million in grant funds to restore 7,000 feet of the Jordan River. Major excavation and rock placement has been completed and a pre-emergent weed spray was applied to the disturbed areas to prevent emergence of invasive/noxious weeds. The irrigation system has been installed, top soil applied and the area re-vegetated and seeded. Salt Lake County is also partnering with Salt Lake City using ARRA funds to treat four additional sites, by restoring bank stability. Construction has been completed on these sites and re-vegetation is currently taking place.

In addition to project implementation, monitoring has also been one of the main areas of focus on the Jordan River. The data collection includes: *E. coli*, flow, and a suite of multi-parameter analyses such as DO, pH, TSS, Salinity, Conductivity, ORP, and Temperature, as well as macroinvertebrate sampling. This data will be used to create water quality models and update future watershed plans. Also, Salt Lake County completed the Stream Function Index (SFI). The SFI is a monitoring tool to measure the effectiveness of project implementation.

An ongoing effort to educate the general public about the Jordan River, and the environmental issues that exist continues. To do this the County launched the "I Love the Jordan River Campaign". This campaign includes interactive games and a fun booth. Prizes are awarded to participants, which also help spread the message of the Jordan River and watershed stewardship. Since the program began in April 2010 they have participated in approximately nine events and have many more planned throughout the year.

### Weber River Watershed- Lars Christensen

There are currently four TMDLs that are being implemented in the Upper Weber Watershed. These TMDLs include: East Canyon Creek, Chalk Creek, Echo Creek and Silver Creek. In FY-2011 the Weber River was the targeted basin receiving the majority of the Section 319 funding. However, due to delays in issuing those funds the majority of the implementation activities will take place in FY-2012. Currently the coordinator is working with Snyderville Basin Water Reclamation District, SWCA Environmental Consultants, and the East Canyon Watershed Committee to facilitate the planning and implementation of restoration work along East Canyon Creek. The coordinator has been working with landowners to gain access to properties in need of restoration. He has also worked with Swaner Nature Preserve to implement restoration practices which will reduce bank erosion and increase shading along East Canyon Creek on the preserve. Along with the work being done on East Canyon Creek the local watershed coordinator is also identifying projects in other areas of the watershed, such as the upper Weber Watershed. Many of these projects will be funded using FY-2012 funding.

The local watershed coordinator has also assisted with monitoring efforts in the watershed. This includes the installation of a permanent monitoring station on East Canyon Creek, and gathering information using datasondes. This data will be used for future watershed planning and to document project effectiveness in the coming years. He has also taken an active role working with local conservation districts and watershed groups.

The Coordinator has also been heavily involved in Information and Educational activities in the watershed. These activities have focused on the disposal of pet waste and other nonpoint source issues.

### Middle and Lower Bear River Watershed- Justin Elsner

In FY-2011, due to staffing changes, the Middle and Lower Bear River Watershed Coordinator position was vacant for several months. However, Justin Elsner was hired and is currently implementing several projects in the Middle Bear River Watershed. Justin is working with two cooperators on riparian enhancement projects. There are three animal feeding operations that are either under construction or in the planning process.

There are currently two projects that are in various stages of planning in the Lower Bear River Watershed. There is one riparian protection project, and one animal feedlot improvement project. The riparian project should be completed by Summer of 2012 and the feedlot is still in the initial planning stage.

The coordinator continues to work with the Cutler Reservoir and Lower Bear River Advisory Committees. He is also assisting with monitoring to assist with the revision of the Lower Bear River TMDL. He has established educational activities dealing with pharmaceuticals and other NPS issues in the watershed.

### Upper Bear River Watershed- Brady Thornock

In FY-2011 five nonpoint source projects were completed in the Upper Bear River Watershed. These projects include one animal feeding operation, one stream bank restoration project, and three grazing management projects. In addition to the projects that were completed, the coordinator also began planning two additional projects; a grazing management contract and a

stream bank stabilization project. The coordinator has been actively involved in implementing and planning the 3 Creeks grazing allotment project in Rich County.

Education and outreach have also been areas of focus this past year. The Producer's dinner was held for the third consecutive year. This dinner acknowledges the producer's that have been actively involved in implementing water quality projects. The coordinator has also actively participated on several of the water quality related committees in the watershed.

#### San Pitch Watershed- Alan Saltzman

The San Pitch Watershed coordinator position was vacant for the majority of FY-2011. Because of this vacancy very little funding was spent in FY-2011. In May of 2011 a new watershed coordinator was hired, and he has been very efficient at identifying projects that will be implemented before the end of the year. In FY-2011 the watershed coordinator helped complete the implementation of 2 stream bank projects. He has also identified five additional projects that should use up the remainder of the FY-06 grant received by the San Pitch Watershed. These projects include 2 animal feeding operations, two stream bank stabilization projects, and one irrigation project.

The local watershed coordinator continues to assist the local conservation districts and watershed groups. He also helped plan a watershed educational day for the local elementary school.

#### Upper Sevier Watershed- Wally Dodds

Five projects were completed in FY-11 in the Upper Sevier watershed. Of these projects one was a range project focusing on reducing woody debris that would serve as fuel for range fires. There was also an animal feeding operation that was removed from the riparian corridor. Two stream bank projects took place which stabilized both sides of the river for nearly a mile of the East Fork of the Sevier River. An irrigation project was also completed which increased irrigation efficiencies, thus reducing the amount of pollutants entering the river via return flows. The coordinator is currently working on three additional stream bank stabilization and fencing projects.

The Upper Sevier Coordinator is extensively involved in outreach and educational activities. These activities included a fall watershed tour, the production of educational newsletters, and participation in a local natural resource field day. He also put on two workshops that helped inform local watershed groups of the success that they are having in their planning efforts.

The local coordinator is actively involved in local conservation district meetings. He helps facilitate and support the Upper Sevier Committee. He also serves on the Sage Grouse Planning Committee and as chairman of the Color County Cooperative Weed Management Area. He is constantly approaching landowners in need of financial assistance to improve the riparian corridor, and is currently working with three different individuals to obtain additional funding for project implementation.

#### The Uintah Basin- Gary Wieser

In FY-2011 Phase I of the Lower Strawberry/Middle Duchesne Riparian Restoration Project was completed. Funding for the project came from the Utah Watershed Restoration Initiative, Duchesne County, and the Utah Association of Conservation Districts. The project cost for Phase I was approximately \$ 71,500. The funding was used to fund and support the AmeriCorps crew

that completed the work. Approximately 3.45 miles of riparian stream habitat was restored which included 2 islands within the river channel. The work included removal of Russian olive, Tamarisk, and knapweed from the riparian corridor followed by re-seeding the open sites with a seed mix designed to integrate desirable plants into the ecosystem. A funding request for Phase II of the project has been requested for FY 2012. If funding is approved, Phase II will be scheduled to begin after July 1, 2011.

The local watershed coordinator helps facilitate meetings for the Uinta Basin Watershed Council. There was a large effort to recruit additional members of the council. Once the larger group is formed, it will be divided into smaller sub-watershed work groups that will assist with the development of watershed plans.

### **3.5. NPS Water Quality Task Force/ Monitoring Council**

The mission of the Utah Water Quality Task Force is to facilitate coordinated and holistic management of Utah's watersheds for the protection and restoration of Utah's surface and ground waters.

The Utah Nonpoint Source (NPS) Program is administered by the Division of Water Quality (DWQ) of the Utah Department of Environmental Quality (DEQ) through the coordination and assistance of the Utah Water Quality Task Force, and its established ad hoc committees. The responsibility of the Utah Water Quality Task Force is to advise the DEQ and Utah Department of Agriculture and Food (UDAF) in the holistic management of Utah's watersheds, with a focus on reduction of nonpoint source pollution.

The Utah Department of Agriculture and Food has been delegated management and implementation responsibility for eliminating agriculture NPS pollution via a memorandum of understanding with DEQ. The chairmanship of the Water Quality Task Force is shared by the Executive Directors of the DEQ and UDAF or their designated representatives. The UDAF is responsible for chairmanship on even numbered years and the DEQ is responsible on odd numbered years. The Task Force meets quarterly, but may meet more frequently if deemed necessary.

#### **Specific functions of the Utah Water Quality Task Force include:**

- Serve as a coordinating body for the review and direction of federal, state and local NPS management programs to assure that these programs are implemented consistently with the Utah Nonpoint Source Management Plan (approved by EPA in 2000 and as amended or revised);
- Promote and foster better alignment of relevant programs to assure efficient and effective watershed management efforts that improve water quality, in addition to other benefits;
- Provide a forum for the exchange of information on activities which reduce nonpoint source pollution;
- Provide a forum for discussion and recommended resolutions to program conflicts;
- Work with partner agencies to coordinate the prioritization of watersheds for nonpoint source activities. Prioritization criteria should include local involvement (e.g. locally led watershed committees), effective use of partnerships, and evidence of leveraged sources of funding;
- Establish and implement a process for field inspections of nonpoint source reduction activities on public and private lands to ensure that best management practices are installed and functioning as designed to protect water quality; and

- Serve as a coordinating body for outreach and education to increase public awareness regarding nonpoint source pollution abatement.

**Specific Products of the Utah Water Quality Task Force include:**

- The Annual Utah Nonpoint Source Program Report. This report is required by EPA, but is not restricted to 319 funded efforts. The report is prepared by DEQ in coordination with UDAF. The task force will assist in providing content, advice and review. The report will highlight the planning efforts, projects, and successes statewide that are possible with the broad coalition of partners encompassed in the Water Quality Task Force;
- Presentation of the Annual Utah Nonpoint Source Program Report each year to the Utah Water Quality Board, the Utah Partners for Conservation and Development, and the Utah Conservation Commission.
- Organize an annual NPS Conference to share information, highlight successes, and improve networking throughout the state and region.
- Provide annual water quality awards to individuals and organizations whose actions or products have protected water quality and exemplified good stewardship of our waters.
- An institutional repository (e.g. a web site) that includes originals or links to documents, reports, minutes, etc.

**Membership:**

The Task Force includes representation of those entities with programs that could potentially cause or prevent nonpoint source water pollution. As new NPS program components are developed and implemented, additional entities will be invited to participate. Current membership includes representatives of:

Local Governments

- U.S. Army Corps of Engineers, Intermountain Civil Works Office
- U.S. Department of Interior Bureau of Land Management
- U.S. Department of Interior Bureau of Reclamation
- U.S. Department of Interior National Park Service
- U.S. Department of Agriculture Forest Service
- U.S. Department of Agriculture Natural Resources Conservation Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Utah Department of Environmental Quality
- Utah Department of Natural Resources
- Utah Department of Transportation
- Utah Farm Bureau, Trout Unlimited, the Nature Conservancy, and other NGOs
- Utah State University Cooperative Extension

**Utah Monitoring Council- Jim Harris**

The Utah Water Quality Monitoring Council has now in its third year of working with cooperators, Utah State University, citizen monitors, and the Division of Water Quality. During

this time we have established a solid community of volunteers. We are working to enhance a Lake Watch program and expanding our citizen based monitoring by providing monitors with equipment and lab services for chlorophyll a analysis. This can be used with secchi depth to identify lakes in Utah that might be impaired. Samples will be shipped by volunteers to the Unified Laboratory Services to be analyzed.

In addition, we have begun working with the new USU Extension Citizen Monitoring Coordinator, Brian Greene, to develop monitoring strategies for citizens and a tiered approach for using their data for DWQ's assessment program. DWQ's new data base is now on line and we are in the process of setting up customized portals for our cooperators to enter data. They will also be able to download and submit data without having to go through DWQ's staff.

### **3.6. Grants Reporting and Tracking System**

The Section 319(h) Grant Reporting and Tracking System is a national database developed by EPA to track projects and activities funded with CWA Section 319(h) funds. The primary purpose of the database is to track project progress, accomplishments, funding information and environmental results using several nationally mandated information items that are reported to Congress annually by EPA. Information extracted from this system forms part of the justification to Congress for funding the Section 319 Program. EPA Region VIII uses GRTS to enable the States to electronically fulfill reporting requirements using the Project Evaluation Form and other attachment features in GRTS such as final reports, GIS maps or other project publications.

DEQ is the lead agency for administering the 319 Program. Because many of the project grants are agricultural related, much of the grant funds are passed through to UDAF. As a result, UDAF plays a critical role in maintaining the GRTS database. Essential training of UDAF staff in this system continued during FY-11 through attendance at the national user group conference. UDAF will continue to maintain GRTS information for all active 319 projects in the State of Utah. DWQ will continue to oversee DWQ administered contracts including the tracking and review of all reports. Upon completion, annual progress reports will be forwarded to UDAF for entry into GRTS. Also as 319 Project Final Reports are completed and approved by DEQ with EPA concurrence, those reports are sent to UDAF for entry into the GRTS database.

## **4. Water Quality Information**

### **4.1. Sampling and Assessment Activities- Jim Harris**

As more restoration projects are being implemented around the state, monitoring of individual projects is becoming more difficult to perform. The majority of 319 projects in Utah address impacts to stream and riparian habitats in order to restore aquatic life beneficial uses. Often, these projects substantially reduce erosion and inputs of nutrients to streams and rivers, in addition to improving the localized conditions of aquatic habitats. Unless restoration is widespread and inclusive of a large portion of a watershed, it is often difficult to document improvements in ambient water quality trends given the resources available. The DWQ's monitoring strategy identifies a couple of key changes in the approach to assessing the effectiveness of nonpoint source projects.

The first of these monitoring approaches involves the direct measure of the aquatic communities affected by restoration utilizing UCASE protocols in a BACI (Before-After-Control-Impact)

approach. DWQ staff have already performed UCASE monitoring at sites where restoration projects are planned and linking them to sites of similar condition not anticipating management or restoration changes (Before-Control). In coming years, those same sites will be visited again to assess the changes from restoration activities (After-Impact). The BACI design provides statistically rigorous comparisons between the control site(s) with the restored site (impact) to quantify changes in biological and physical parameters that have occurred since the restoration was conducted. In reality, grab samples of chemistry are sufficiently variable that even statistically rigorous approaches like BACI may not demonstrate discrete changes in the chemical composition of surface waters following restoration activities. However, similar analyses will be conducted for measures of biological composition, which may help demonstrate relatively rapid improvements that result from remediation activities. Measures of biological composition are also useful because they directly measure improvements of the biological designated uses the numeric criteria are intended to protect. Of course, measures of both biological and chemical improvements will be dependent on the relative size of the watershed and restoration activity.

In FY 2011, the majority of the biological monitoring occurred as part of the Probabilistic Surveys performed in the Sevier, Cedar, and West Desert basins and as a result there were few sites targeted specifically for the evaluation of nonpoint source projects utilizing UCASE protocols. However, the focus of the Targeted Monitoring Program which collects primarily water chemistry data was centered on the Uinta Basin and Jordan River and Utah Lake watersheds as well. These sites were targeted with several objectives in mind: supplying data for assessment and listing, Total Maximum Daily Load analysis, permitting and compliance and nonpoint source assessment. As such many of these sites may fulfill more than one of these objectives and to create an efficient annual monitoring plan the monitoring section consults with Water Quality Management and Watershed Protection staff to identify particular assessment and evaluation needs to meet their program objectives.

Another proposed improvement to monitoring nonpoint source projects on a watershed or sub-watershed scale is the installation of long-term continuous monitoring stations. Depending on the parameters of concern and the nature of restoration activities, these automated stations could measure a variety of constituents, including dissolved oxygen, specific conductivity, pH, turbidity and discharge. Since these probes collect a limited set of water quality parameters, surrogate measures may be used and additional water chemistry monitoring implemented to develop relationships between parameters of concern and the surrogate measures. For instance, positive relationships may be developed between continuous turbidity data and chemistry data such as nutrients to provide the necessary linkage between changes at long-term stations and project effectiveness. While the installation of long-term stations isn't feasible for the assessment of individual projects on a small scale, they could be used to document the effects of a number of projects implemented as part of a watershed-scale implementation strategy as in the case of irrigation efficiency projects to reduce TDS or range improvements to reduce TSS (turbidity).

Currently, Sandy Wingert is implementing a long-term monitoring project in the Strawberry River Basin in conjunction with Division of Wildlife Resources and the Forest Service. This project seeks to evaluate the relationship between phosphorus and other measures such as turbidity to generate data sets sufficient in size to perform trend analysis. In this way, watershed improvements due to restoration activities may be discernable over time.

## **4.2. Data Analysis and Assessment**

Data analysis for evaluating the effectiveness of nonpoint source projects will vary depending on the type of project and the available data sources. Biological monitoring will provide background condition of the biotic community for both the “Before” and “Control” collection events. Once implemented, projects will be assessed by revisiting the “Control” and “Impact” site. Data will be compared using similar tools described in the biological monitoring component of the probabilistic and targeted assessments. Scores of biological condition can be evaluated for the “Impact” or restoration site (Before vs. After) in conjunction with the “Control” site not receiving treatment (Before vs. After). In this way, changes in the biological condition can be evaluated against year-to-year variability.

Methods for long-term trend analysis have yet to be developed. However, these sites will likely utilize a combination of continuous monitoring data coupled with water chemistry to establish a relationship between the surrogate measures and chemical parameters of concerns linked to PIPs and TMDLs. For example, correlations can be readily established between total dissolved solids collected by grab samples and specific conductance as measured by probe sensors. Continuous monitoring datasets are sufficiently large enough to perform trend analysis with a level of confidence not possible through periodic grab sampling. Developing correlations between probe data and other parameters such as nutrients and sediment prove more difficult than the above described scenario. In these cases, measures for dissolved oxygen, turbidity or other surrogates may need to be evaluated. As mentioned above, specific monitoring plans will be developed individually for implementation strategies and QAPPs and subsequent reporting documentation will detail specific data analysis for each project.

Since much of the work performed during FY2010 was part of the new Strategic Monitoring Plan, TMDL and NPS staff have not had the opportunity to evaluate or analyze these initial datasets. Results of these analyses will likely be published on a watershed basis as these analyses become available.

## **4.3. Ground Water Protection**

Ground water protection remains an area of interest in the State of Utah. In the past, various projects were funded using 319(h) funds to help analyze ground water around the state. In FY-2011 \$85,000 of State NPS funds were used to conduct ground water monitoring around the state. Recently the State has noticed an increase in nutrients in various ground water sources. This monitoring will help assess the problem, and identify the sources of the contaminants.

## **5. Outreach Activities**

### **Utah Department of Agriculture and Food- Jack Wilbur**

As of October 1, 2011, funding for the statewide Information and Education (I&E) coordinator ceased. Until that time the I&E coordinator continued to support the Utah Nonpoint Source Conference, continued publishing Utah Watershed Review and continued the watershed outreach mini grant program in three watersheds, among other highlights.

The statewide I&E coordinator was asked to chair the annual Utah Water Quality Conference planning committee for 2011. The conference, which was held Aug. 30 through Sept. 1, 2011 in

Logan, Utah, was attended by about 150 water quality professionals from throughout Utah, as well as faculty, staff, and students from Utah State University. The event featured conference sessions on Tuesday and Wednesday, an awards barbecue on Tuesday night, and a day-long watershed tour on Thursday. Wilbur reported on the success of the event in the October 2011 Water Quality Task Force meeting, where it was decided that no conference would be held in 2012. The future of the conference beyond that point will be determined based on the availability of funding and level of interest.

The Statewide I&E coordinator continued working with local watershed groups in FY 10, including the three watersheds which were awarded outreach mini-grant funding from Utah State University, by way of Wilbur and UDAF. By the end of 2010 outreach plans had been developed for the Price River, San Pitch and Cutler/Lower Bear River watershed. During 2011 each watershed began to move forward with their plans. Each watershed went in a somewhat different direction. The San Pitch watershed committee plans to use their remaining funds to create a septic system map of the watershed which can overlay a map of the critical recharge areas and other vulnerable areas of the watershed. In the Price River and Cutler/Bear River watersheds, the local committees were preparing advertisements promoting positive water quality behaviors. In Price River the issue of general storm water awareness and behavior changes such as recycling used oils and not letting fertilizers run off into ditches were promoted. In the Cutler area of Cache Valley properly disposing of prescription medications is the main issue being tackled.

Wilbur continued to work with the East Canyon Watershed I&E committee to research and implement social marketing and education campaigns designed to change behaviors among specific audience groups within the watershed. The first phase of the effort, targeting dog owners, continues to be in the implementation phase. Additional posters and store front window signs were printed for 2011 reminding residents to pick up after their pets and properly dispose of the waste. In 2010, a campaign began targeting storm water pollution in yards and neighborhoods. That effort continued through 2011.

Utah Watershed Review was published three times in 2011. The most recent issue, from summer 2011 is the last scheduled issue of the publication for the time being.

Wilbur completed one water quality video in 2011. A day in the life of a dairy animal feeding operation was the subject matter. Grant Koehler in Midway, Utah granted us access to his operation at all hours of the day and night as we tried to create an accurate portrayal of the large workload that AFOs face, which includes daily and seasonal manure management issues. The video was shown at the 2011 Utah Water Quality Conference as part of a series of presentations on Utah AFO/CAFO program in Utah.

### **Utah State University Extension- Nancy Mesner (USU Water Quality Extension Specialist)**

Utah State University Water Quality Extension has provided outreach and education programs and materials for Utah's Nonpoint Source Program since the program began in the early 1990s. Each year we coordinate efforts with the UDWQ staff and with our various partners and clients throughout the State to assure that we are providing programs that are needed, meaningful and effective. Some programs, such as water quality education for youth, have been delivered almost every year. These programs have been fully evaluated over time and improved and updated as needed. Other programs are developed and implemented in response to short term needs. We fund our efforts in part with an annual outreach grant from 319, but also utilize other funding such as grants from USDA, internal USU grants, and support from the University's Extension program.

In 2011, we continued a number of our ongoing programs, including youth outreach, teacher education and training, Utah's water quality awards, and assistance to watershed coordinators through trainings, web page support and watershed-specific fact sheets. In addition, we began a major statewide effort to develop and implement a citizen monitoring program. We are continuing our work on an integrated watershed education program and interactive display in the Upper Weber basin, and we have continued to provide training and guidance on BMP effectiveness monitoring within the State and Region. Using funding from other grants, we also completed an assessment of the effectiveness of short term (1 hour to 1 day) field days in increasing knowledge of fourth graders.

Our materials and water quality tools, as well as links to all our programs, are available at [www.extension.usu.edu/waterquality](http://www.extension.usu.edu/waterquality). Some of the significant outcomes of our work this past year are highlighted below.

Citizen Monitoring: We have just begun a major effort to develop and implement a citizen monitoring program for the state. The goals of this program are to fill data gaps through the collection of credible data, and increase citizen engagement in their local watersheds. In October we hired a state coordinator who is working closely with the UDWQ Monitoring Council and is meeting with other partners throughout the state to identify monitoring opportunities and priorities. We anticipate that Utah Water Watch will have three tiers. The first tier will focus on education, outreach and screening methods. We will incorporate elements of our Lake Watch program, an *E coli* screening technique, and other simple monitoring methods developed in our Utah Stream Team Monitoring program. The second and third tiers will require increasing levels of training and experience, resulting in increased data credibility. We anticipate a multitude of monitoring activities and opportunities throughout the state, as well as state-wide "big day" or high profile events to reach a broader audience. We are using or modifying materials and tools from previous projects, such as an online database for citizen collected data, an online database that provides detailed interpretation of water analytical results, methods for tier one monitoring developed for our Utah Stream Team program, and training techniques that we have developed for other programs. We will assess the program at multiple levels and will use this feedback to modify and improve the program as it moves forward.



Youth education and teacher training: In 2011, USU Water Quality Extension reached thousands of youth and their families through tested, age-appropriate, hands-on water quality activities. We provided activities in 13 of Utah's 29 counties, including all the most populated areas, but also some of the most rural areas of the state. We provided stream-side or other experiential activities to over 5000 youth in 9 counties throughout the state. These programs include at least an hour of activities and instruction focused on understanding watershed and water science and the importance of protecting our water quality. We also trained 172 educators on the use of hands-on watershed and water science lesson plans and curricula. We conducted 13 workshops offered in 7 counties throughout the state, each providing at least a day of



watershed science and field training on specific activities. We used feedback from a survey of teachers who have taken our trainings as well as feedback from a 2009 focus group to enhance our Stream Side Science curriculum. We have developed a new lesson plan on aquatic invasive species which has been reviewed for pedagogy and scientific content and is now being tested by teachers in the classroom. We also developed a “watershed detectives” lesson plan, in which students conduct water tests and determine who the pollution culprit is in a watershed.

A major youth program assessment was also completed in 2011. Tiffany Kinder, a graduate student in the WQ Extension lab, completed her review of the effectiveness of a field day at increasing 4<sup>th</sup> graders’ knowledge and interest in rivers and water quality. She found that as little as an hour of high quality hands-on activities can significantly increase children’s knowledge of aquatic biology and pollution impacts, that the students retained this knowledge for at least 8 months and that additional activities in the classroom or additional field days improved the student’s retention and understanding (Kinder, T. “Using short term environmental education programs to increase student learning and elicit positive attitude change”. Masters Thesis, Utah State University, 2011.) These findings are significant because so many water quality outreach programs in the state and nation rely on short term activities that are rarely assessed for real long term changes in knowledge or attitude. A paper of Kinder’s full results will be submitted to the Journal of Environmental Education this spring.

Watershed Council Support: We continue to work closely with the Utah Watershed Coordinating Council. We provided two training workshops for Utah Watershed Coordinators on how to effectively monitor for impacts from BMP implementation, and on best practices for outreach activities. We completed new watershed fact sheets for the Scofield Reservoir watershed, the San Rafael River, the Price River and the Middle Bear River watershed. These are distributed to watershed coordinators, the UDWQ, other agencies and extension as hard copies, and links are available on the extension, UDWQ and other websites. We have provided mini-grant funding to several watershed coordinators, which have been used for different aspects of their outreach programs.

### **USU Extension AFO/ CAFO Education Efforts- Rhonda Miller**

Activities have focused on educating producers about the new Animal Feeding Operation (AFO) regulations. Nine workshops for AFOs were held in January and February, 2011. These workshops covered the latest developments in the AFO regulations, and the options available to producers. Information on risk assessment, and nutrient management plans (NMPs), which are required for all of the permits were presented. Current efforts are focused on developing factsheets aimed at helping producers with their NMPs. A Producer’s Website, which provides “one-stop” shopping for the producers, is being maintained and expanded. This website provides information, in laymen’s terms, on the regulations producers are likely to encounter.

## **6. State Agency Contributions**

### **1) Utah Conservation Districts/Utah Association of Conservation Districts- Gordon Younker**

Utah Conservation Districts have statutory authority for the prevention of nonpoint source pollution. They are trusted and provide local leadership to identify resource needs and assist private property owners/managers obtain the resources to addresses those needs. The districts and UACD work in partnership with the Utah Division of Water Quality, Utah Department of

Agriculture and Food, and other state and federal agencies to implement the Clean Water Act, Section 319 projects throughout Utah.

Assistance available through Utah conservation districts includes conservation planning, engineering, and GIS/GPS services. Further, districts promote and fund educational activities for children including fairs, field days, and in-classroom presentations.

UACD provides for state-level NPS contract administration and coordination of member conservation districts' contracting with NPS program participants. Various reimbursable contracts are entered into with the Utah Department of Agriculture and Food and the Utah Division of Water Quality for cost-sharing with landowners implementing agricultural related projects. Further, UACD provides payroll, accounting, and personnel management for conservation districts employing staff, including NPS program watershed coordinators.

## **2) Utah Division of Natural Resources- Rory Reynolds**

The Watershed Restoration Initiative focuses on protecting and managing core values that are important for our present and future quality of life: water quality and yield, wildlife, and agriculture.

This is accomplished through the Utah Watershed Restoration Initiative a diverse group of state and federal agencies working together with non-governmental organizations, industry, local elected officials and stakeholders. Locally led teams identify conservation issues and develop plans to address local needs.

In fiscal year 2011 with support of \$1.7 million from the Utah Legislature, the Watershed Initiative has implemented over 127 rangeland and river restoration projects involving over 111,000 acres and 33 miles of river enhancements. For a full list of WRI projects implemented go to: <http://wri.utah.gov/WRI/Projects.aspx?display=Complete>. Through the partnership effort funding from the Legislature has been successfully leveraged over 7 to 1 in on-the-ground projects.

The long-term results from this effort will be measured in the reduced cost of fighting wildfires, reduced soil loss from erosion, improved water quality and yield, improved wildlife populations, reduced risk of additional federal listing of species under the Endangered Species Act, improved agricultural production, and resistance to invasive exotic plant species.

## **3) Utah Department of Agriculture and Food-WD Robinson**

During 2011 the Conservation Division has collaborated with state and federal agencies that share our interests of sustaining Utah's agricultural lands and protecting Utah's natural resources. The Division believes that creating strong Utah partnerships provides a portfolio of technical and financial resource options to the Utah's agriculture producer while promoting agricultural sustainability. A watershed approach in solving resource issues is being applied by developing conservation projects and providing funding options from multiple state and federal programs. There are few organizations in the state that rival the work that is done in the division.

### Environmental Quality Section

Various types of conservation practices were funded using Section 319 grants managed by the Department of Agriculture and Food. To see a pie distribution of this effort by the various open Section 319 grants that are currently being managed by the Department of Agriculture during the 2011 fiscal year see figure 2 in the appendices:

These funds have historically been provided from Utah's EPA Nonpoint source implementation grant (Section 319 of the Clean Water Act) through the UDAF. This delivery mechanism has been cut significantly this year which will seriously impact the amount of projects and technical services provided by UDAF.

### Colorado River Basin Salinity Control Program

The Division currently receives approximately \$2 million from the Colorado River Basin States Salinity Control Forum to reduce salt that enters the Colorado River, which has increased significantly from the initial \$350,000 received in 1997.

Historically, these funds have been allocated solely to improve irrigation practices. However, in 2009 the Forum allowed UDAF to test salt control measures on rangelands. The division has acquired \$500,000 for the purpose of testing the feasibility of using rangeland management methods for salinity control. This project has the potential to provide ranchers with another funding source for increasing production and protect natural resources.

The irrigation projects installed through the salinity program are an economic benefit to the agriculture in eastern Utah. The new irrigation systems increase watering efficiency, decrease water use, and improve crop production and uniformity.

### Agriculture Resource Development Loan Program (ARDL)

Projects eligible for ARDL loans include animal waste management, water usage management (irrigation systems), rangeland improvement, on farm energy projects, wind erosion control and disaster mitigation and cleanup. Most of these projects have direct water quality protection or water pollution reduction benefits.

In FY2011, 57 loans totaling \$4,064,651 were made. The vast majority of these (>90%) were for irrigation water management. Irrigation water management at least protects Utah's water quality and often reduces water pollution impacts by reducing contributions of leachates to groundwater or by reducing the amount of water percolating through and dissolving salt or other pollutants from subsurface geologic materials. Additionally with irrigation water management, less end-of-field tail water runoff is available to carry erosion and other pollutants into receiving water bodies.

The division is also working with the State Revolving Fund (SRF) under the Division of Water Quality to underwrite and book loans to finance projects for eliminating or reducing nonpoint source water pollution on privately owned lands. That program was recently expanded to include grants as well as loans. The loans are now included in the ARDL program with some modifications.

### Conservation Commission

The mission of the Conservation District Section is to enable Utah's private land managers to protect and enhance their soil, water and related natural resources, and thereby protect and improve water quality. This is done in cooperation with the state's Conservation Commission and Utah's 38 Conservation Districts (CD). Conservation Districts are authorized by state law. Together, they work with many other state and federal natural resource-oriented agencies and special interest organizations to bring about many short and long-term public benefits.

Districts are the local leaders that influence conservation on local, state, and federal lands. Their efforts towards conservation improvements can be directed at a large scale watershed approach or assisting an individual landowner. The grass-roots nature of conservation districts brings positive change and sustainability of Utah's farm and range lands.

### Utah Grazing Improvement Program

The Utah Grazing Improvement Program (UGIP) is a broadbased program focused on rangeland resource health. Its mission is to "improve the productivity and sustainability of our rangelands and watersheds for the benefit of all." A keystone benefit is the reduction of NPS water pollution and the protection and improvement of water quality and habitat components.

A staff of Range Specialists located in five regions throughout the state offer the livestock industry sound information and assistance regarding grazing issues. A main focus of the program is to invest in and help facilitate improved resource management. Grants are provided for projects that will enhance grazing management and rangeland resource health.

From 2006 to August 2011, over \$6.7 million in UGIP funds have been obligated to 330 projects. Including matching funds from producers, NRCS (Natural Resource Conservation Service), BLM (Bureau of Land Management), USFS (U.S. Forest Service), SITLA (State Institutional and Trust Lands Administration), DWR (Division of Wildlife Resources), and other sources, over \$18 million have been invested in the program. For FY2011 specifically, total funds spent by the UGIP program amounted to just over \$1.56 million dollars.

Most of the projects are focused on improving grazing management by increasing water availability and building fences to enhance control of livestock. By summer 2012, we estimate that the program will have benefited 2.1 million acres. An example of how these projects were distributed in FY2011 was tallied for the Southeast Area GIP:

725 seeded acres

1800 acres of grazing management plans

42,600 acres affected by improved water distribution or implementation

725 acres of brush management with improved ground cover by seeding

400 acres protected after a burn on HEL (Highly Erodible Land) on US Forest Service lands.

UDAF/UGIP is currently working with partners in three large-scale projects in Rich, Carbon, and Box Elder Counties that total over 1.5 million acres. We believe that investing human and financial resources to create financial, social, and ecological wealth from the public and private rangelands of Utah will elevate the lives of every Utahn.

#### **4) Forestry, Fire and State Lands- Bill Zanotti**

Forestry, Fire and State Lands received a grant from Department of Environmental Quality to monitor timber harvesting on private and state lands within the State of Utah. This grant is called Forest Water Quality Guideline (FWQG) Monitor. The overall goal of this grant is to implement a forest water quality monitoring and evaluation program in conjunction with demonstrated application of Utah's Forest Water Quality Guidelines (FWQG) identified in Utah's Non-Point Source Management Plan for Silvicultural Activities. Protocols for conducting FWQG's monitoring have been developed for use by FFSL's service foresters.

During the SFY-2011, the following have been accomplished:

- Processed 12 notifications to conduct timber harvesting activities
- Conducted 5 post harvest inspections
- Conducted 5 pre/in progress inspections of timber harvesting activities
- Analysis findings in preparation for writing a report on the effectiveness of the FWQG's

#### **7. Federal Agency Contributions**

The original MOUs between the Department of Environmental Quality and the Forest Service and the Bureau of Land Management were executed in 1992. These MOUs have been reviewed and were revised in 2009. The following entities are now part of the MOU: Forest Service, Bureau of Land Management, National Park Service, Utah Department of Agriculture and Food, Division of Forestry, Fire and State Lands, and DEQ – Division of Water Quality.

##### **1) Natural Resource Conservation Service- Norm Evenstad**

NRCS employees work in partnership with land users to conserve natural resource on private lands. These employees are distributed among 26 field offices and 3 area offices that cover the state of Utah. These offices are managed by District Conservationists. NRCS employees along with Utah Association of Conservation District (UACD) employees report progress on activities in the USDA-NRCS system, which is the basis for the following information.

A total of \$ **19,203,037** was obligated to land owners, sponsors & managers in Utah during FY2011 through the various USDA-NRCS programs, not including Emergency Watershed Protection recovery measures. A considerable percentage directly benefited Non-Point Source AFO/CAFO concerns in Utah with 18 CNMP plans applied and 6 CNMP plans written in FY2011. Table H in the appendices shows the total number of acres contracted in FY-11 by the NRCS in Utah and the resource concerns they addressed.

##### **Colorado River Salinity Resource Concern**

Conservation work implemented by the NRCS and various partners reduces salinity, preventing salts from dissolving and mixing with the river's flow. Irrigation improvements and vegetation management reduce water available to transport salts vertically, laterally and on the soil surface. Point sources, such as saline springs are also controlled. A long term, interstate and interagency public/private partnership effort is being carried out to reduce the amount of salts in the river and its associated impacts in the basin. Table 6 summarizes the NRCS work addressing this resource

concern in approved salinity control areas of Carbon, Daggett, Duchesne, Emery, Uintah and Wayne counties.

**Table 6**

Colorado River Excessive Salinity (acres)	Contracts Obligated for Salinity (#)	Obligation Amount for Salinity (\$)
199.5	3	\$222,351.65
30	2	\$36,872.00
2418.2	55	\$2,194,271.55
2165.84	46	\$2,091,336.44
1280.5	31	\$1,282,110.00
1154.2	24	\$649,257.61
<b>7,248.2</b>	<b>161</b>	<b>\$ 6,476,199.3</b>

**2) Forest Service- Bill Goodman**

Each year, Congress appropriates funding specifically dedicated towards maintaining and improving watershed conditions, including water quality. During the federal government fiscal year 2011, non-point source pollutant control resulted either directly from projects designed for soil and water improvement or indirectly resulting from project mitigation measures, such as prescribing and implementing best management practices.

The Forest Service’s Watershed Improvement Program delivers direct benefits to improved water and soil quality on National Forest System lands in Utah. During fiscal year 2011, National Forests in Utah completed 23,365 acres of watershed improvement (Table 7). This total includes projects completed using other appropriated funding sources (i.e., non-soil and water funds).

Water quality monitoring programs include high elevation lake sampling, cooperative water quality sampling in conjunction with Utah DEQ, TMDL data collection, and Best Management Practices implementation and effectiveness evaluations.

The types of projects implemented to improve watersheds condition include the following:

- Road Decommissioning projects are intended to improve water quality by reducing or eliminating motorized impacts in sensitive watershed areas
- Routine maintenance (grading, surfacing and drainage improvement) of the road system improves water quality by decreasing erosion and sedimentation
- Exclosures and fences were constructed to protect sensitive riparian and wetland areas. The protection of these sites contributes to the overall water quality within a watershed.
- Project level monitoring, including implementation and effectiveness monitoring of BMPs. Projects monitored in 2011 include oil and gas developments, range allotments, timber projects, as well as portions of the Forest motorized travel system involved in the Travel Plan revision project.
- Fish Passage Projects, culverts that formed barriers to fish passage were replaced by designs which allowed for passage and more natural channel processes.

- Road Decommissioning, roads were decommissioned by blocking access, scarifying and reseeded the road surface. Numerous ATV-users created crossings and routes were obliterated thereby improving water quality and aquatic habitat.

**Forest Service Burned Area Emergency Response (BAER) Program**

Fires that had a BAER team included Twitchell Fire (Fishlake NF), Coffee Pot (Manti La Sal NF) in FY 2010. Implementation of projects that were part of the BAER treatments occurred during FY 2011. The BAER program includes several activities that aim to protect or improve water quality after wildfire. Examples include the, road and trail were improved to address increased runoff response, These treatments directly and indirectly address water quality, generally through reduction of erosion and reducing chemical and temperature alterations to water quality. Land treatments generally include mulching, and/or seeding. Both Twitchell and Coffee Pot fires BAER treatments included aerial seeding and mulching. Acres improved through the BAER program are included in the table 6 below.

**Table 7. Acres treated by the Burned Area Emergency Response Program (October 1, 2010 – September 30, 2011).**

Forest	Total Acres Improved
Ashley	441
Dixie	693
Fishlake	21,054
M-L	438
U-W-C	739
<b>Total</b>	<b>23,365</b>

**3) National Park Service- Rebecca Weissinger**

**National Park Service Water Quality Activities, Fiscal Year 2011 (October 2010 – September 2011)**

The National Park Service units in Utah work closely with the Utah Division of Water Quality to monitor water quality and mitigate non-point source impacts when noted. During fiscal year 2011 water quality in Utah National Parks was monitored at 24 sites, most of them on a monthly basis (Table 8).

**Table 8. Water Quality monitoring sites in Utah National Parks in fiscal year 2011**

<b>Park</b>	<b>Coop Sites Monitored by NPS</b>
Arches	1
Bryce Canyon	2
Capitol Reef	2
Canyonlands	<sup>1</sup> 10
Glen Canyon	3
Timpanogos Cave	2
Zion	4
<b>Total</b>	<b>24</b>

<sup>1</sup>Two sites on the Green River and Colorado River near their confluence in Canyonlands were monitored eight times in the 2011 river season. The Canyonlands site downstream in the rapids of Cataract Canyon and the site at Potash on the Colorado River upstream of the park, were both monitored seven times, and the site upstream of the park at Mineral Bottom on the Green River was monitored three times.

### **Northern Colorado Plateau Network Park Projects**

- Monthly monitoring of spring flow in the western part of Arches National Park has been ongoing since early 2001. In early 2011, Southeast Utah Group’s Mary Moran released a report: Courthouse Wash – Seven mile Canyon Spring Flow Monitoring, Arches National Park, 2010 Project Update.
- There were historic high water flows on the Green and Colorado Rivers during the 2011 snowmelt event, not rivaled since 1983-1984. A desire to capture the fluctuations in water quality during such events led Canyonlands staff to complete more water quality monitoring runs on the rivers than in any previous year. Eight runs were completed during the river season from mid-April through early November, 2011.
- The NPS Southeast Utah Group Resource Stewardship and Science staff continued preliminary planning for a funded riparian restoration project on the Green and Colorado Rivers in Canyonlands. The project is funded for 2013-2015. Some restoration efforts on these rivers is ongoing, including repeat invasive weed treatments, removal of limited beetle-impacted invasive tamarisk thickets from the popular confluence area, and this year’s efforts by river rangers to plant several Goodding’s willows at a key river campsite in conjunction with historic high flows.
- Restoration efforts in other Southeast Utah Group riparian areas in 2011 include limited continued treatment of Russian olive, and planning for a more extensive restoration effort in Courthouse Wash in Arches National Park; treatment of Russian knapweed in two reaches of Salt Wash in Arches; treatment of isolated tamarisk in Armstrong Canyon in Natural Bridges National Monument, clearing of beetle-impacted tamarisk for firebreaks under desirable native tree canopies in Salt Creek, Canyonlands, and treatment of a few invasive herbaceous species in the Goodman Point and Square Tower Units of Hovenweep National Monument.
- Integrated monitoring of riparian vegetation, shallow ground water and channel morphology was continued in Arches, Zion and Capitol Reef in 2011. A brief summary of project objectives is available on-line at:

[http://science.nature.nps.gov/im/units/ncpn/Link\\_Library/Web\\_Briefs/Riparian\\_Brief\\_2011.pdf](http://science.nature.nps.gov/im/units/ncpn/Link_Library/Web_Briefs/Riparian_Brief_2011.pdf)

- A cooperative study with Utah Division of Water Quality to determine the source and degree of bacterial contamination in the North Fork Virgin River was continued upstream from Zion in 2011. A vault toilet was installed at the Zion Narrows trailhead.
- In cooperation with EPA Region 8 analyzed 21 sites for waste indicator compounds and pesticides.
- Bacteria exceedances on the Fremont River at Capitol Reef National Park prompted increased coliform monitoring in 2011 at four locations.

## **Glen Canyon National Recreation Area**

### Water Quality Monitoring

During 2011, the Lake Powell Beach Monitoring Program at Glen Canyon National Recreation Area (NRA) sampled Lake Powell for *E. coli* to protect public health. 523 samples were collected from Lake Powell beaches. The National Park Service operates two state certified laboratories for sample processing. Lake Powell sanitary water quality in 2011 remained very good, with only one swimming closure event, related to cattle activity on the shoreline.

Monitoring of water quality parameters, nutrients, metals, and other constituents was conducted at over twenty sites throughout Lake Powell, including major inflows, the dam, and the tailwaters in cooperation with the Grand Canyon Monitoring and Research Center.

Other sites throughout the park including the Escalante River, Coyote Gulch, and a natural off-channel impoundment, were monitored for water quality parameters and constituents.

### Grazing Management

Grazing is managed on nearly a million acres of land within Glen Canyon NRA. The Park, working closely with the Bureau of Land Management, has undertaken many water quality pollution abatement activities associated with grazing.

### Dreissenid Mussel Prevention

Zebra and quagga mussel prevention continued for the twelfth year at Glen Canyon NRA. All vessels and equipment brought to Lake Powell were required to be screened for risk of spreading dreissenid mussels. Over 15,000 watercraft were sent to the decontamination station. Sixteen watercraft were found to be harboring adult mussels and were decontaminated (including a desiccation period) prior to being released. Over 350 citations were issued to visitors who failed to comply with park regulations.

The dreissenid monitoring program was operational nearly all year, with only a slight backlog in sample analysis due to the mussel technician positions being vacated for a short period of time. The continuing development of an in-house PCR laboratory is ongoing; however, a PCR laboratory able to analyze plankton samples for mussel veliger detection is projected to be operational in the next fiscal year. Nearly 200 plankton samples were collected lake-wide and analyzed for early detection of dreissenid mussels in 2011. Thus far, no evidence of the presence of mussels has been found and Lake Powell remains mussel free..

### Riparian Restoration

Riparian restoration and invasive plant control efforts continued in 2011. Weeds, including Russian olive, tamarisk, Ravenna grass, and others were removed from riparian areas. Glen Canyon is organizing and participating in the new Escalante River Watershed Partnership, which is focused on watershed level management of both public and private lands in the Escalante River watershed.

### Special Projects

- Glen Canyon continued work on an Off-Highway Vehicle Environmental Impact Statement addressing public use on Glen Canyon's many miles of backcountry roads.
- Two large studies on Lake Powell which began in 2010 were continued into 2011. These studies, conducted in cooperation with the U.S. Geological Survey, will complete development of baseline data regarding hydrocarbon constituents and explore what contaminants are being accumulated in the sediment deltas of the San Juan and Escalante Rivers.
- A bonytail chub reintroduction project has been ongoing, including survey work done with USGS to gather bathymetric data of natural impoundment introduction location.
- A study of bank erosion on the Colorado River from Glen Canyon Dam to Lee's Ferry was started in 2011 with the placement of time-lapse monitoring cameras at a few locations to monitor changes in the sediment beaches along the river.

#### **4) Bureau of Land Management- Lisa Bryant**

In 2011, Utah BLM continued to implement a strong Healthy Lands and Watershed Restoration program, focused on improving habitat, vegetation, and improving water quality by reducing erosion from BLM lands. These efforts included many watershed improvement projects that will contribute to improved land health and long term reduction of erosion, and sediment, which also benefits the salinity program.

**Utah Watershed Restoration Initiative** - Utah BLM is in its seventh year of a cooperative effort in implementing the Utah Watershed Restoration Initiative through its participation in the Utah Partners for Conservation and Development. Table I in the appendices shows a partial list of some of the projects in which implementation was or will be completed by September 30, 2011 using Watershed Restoration Initiative funding.

### **Moab Field Office**

#### Weed Inventory (13,096 acres):

The Moab Field Office acquired aerial imagery along the Colorado River with FY10 end-of-year funds. This imagery was shared with the NPS/ Canyonlands Park, and the data is being analyzed by BLM-NPS GIS staff. To date analysis of the imagery has provided polygons with vegetation types and acreages to use with further planning of riparian restoration actions along the Colorado River from the stateline to the confluence with the Green River located within Canyonlands National Park. Additional funding for this project was provided by The Nature Conservancy, paying for some labor costs.

#### Water Resource and Lake Inventory:

The Moab Field Office assessed conditions on 25 acres of lentic resources and 70 miles of lotic resources following guidance in Technical References 1737-15 and 1737-16 (Proper Functioning

Condition). Each riparian reach was evaluated using an experienced Interdisciplinary Team, and involve the grazing permittee and interested publics as they choose. Western Watersheds is an interested public in several allotments and has sent a representative to our first PFC assessment in Ten Mile Wash ACEC.

Weed Treatment (50):

The Moab Field Office treated 50 acres for secondary weeds including Russian Knapweed and Kochia located within existing tamarisk treatments.

Stream Treatments (7):

The Moab Field Office completed 6 miles of stream treatments. Specifically, tamarisk removal was conducted along 5 miles of the Dolores River and 1 mile of the Colorado River. This involved cutting, piling and burning tamarisk trees. These treatment sites will need several years of maintenance, as secondary weeds move in and native species plantings are conducted. A volunteer planting day was conducted in March in cooperation with the Dolores River Restoration Partnership and The Tamarisk Coalition.



Volunteer planting day on Dolores River, planting willows with a water stinger

In addition, one perennial stream crossing was improved to accommodate heavy equipment used for a PJ treatment in the Black Ridge area. This involved water bars and gravel road base at the stream crossing to drain and harden the site.

Riparian Improvements (2):

The Moab Field Office constructed 2 riparian protection projects. Project #1 involved using a youth corps to construct almost 1 mile of fencing along the Dolores River riparian corridor near the Utah- Colorado state line. This fence was needed to protect the riparian resources adjacent to an agricultural lease where cows can graze year round. The riparian zone was rated as Functioning at Risk by an ID team the previous year. This project was finished with funding from the Dolores River Restoration Partnership, allowing the youth corps to remain 1 additional week to finish the fencing. See fact sheet for more information.



Fencing on Dolores River, adjacent to agricultural lease, protecting a narrow riparian section

Project #2 involved installing a cattle guard at the Midway route entrance to Ten Mile Wash ACEC. This site had a wire gate that was not functional anymore, therefore it was easy for cattle to wander into the Ten Mile Canyon pasture out of season.

## **Cedar City Field Office**

### Water Resource Inventory

The CCFO inventoried 13 acres of lentic and 6 miles of lotic riparian areas. Each riparian reach was evaluated using an Interdisciplinary Team. These assessments are being used in the development of the CCFO's riparian geodatabase, which will aid in the analysis of the management situation and impacts assessment for the CCFO Resource Management Plan.

### Riparian Structures

The CCFO purchased materials (wood posts and poles) using one-time funding (\$6,468.25) to construct NEPA-ready enclosure projects. Several enclosures have been approved through the grazing permit renewal process in order to make progress toward Standard 2 of the Standards and Guidelines for Healthy Rangelands. Enclosures were approved in areas where other management actions are not feasible (i.e. year-round grazing by wild horses). Funds for labor to construct the enclosures will be applied for through the Utah Partners of Conservation and Development and material cost will be used as matching funds. The CCFO has been successful in securing funding for these projects from UPCD the last two years.

### Riparian Treatments

The CCFO continued to apply treatments on streams in the field office. Specifically, the CCFO planted willows on 2 miles of stream where willow was historically present but no longer exists. This included a Boy Scouts of America Eagle project on Bear Creek which has historical Bonneville cutthroat habitat. This was a continuation of an Eagle Scout project from the previous year. Fencing materials were purchased and used to create micro-enclosures to exclude livestock and elk. Willows and fence materials were also completed in Upper Desert Spring in Modena Canyon.



**Bear Creek Eagle Project 2011**

### Monitoring

Quantitative monitoring was completed on 4 miles of stream. Streams monitored include Little Creek and Wildcat Creek. It is believed that Little Creek contains Bonneville cutthroat trout (pending DNA testing results). Monitoring results will be used to determine if any management actions are needed to improve riparian and fishery habitat. Wildcat Creek is in an area proposed for fuels management/reduction. The riparian area is dominated with pinyon and juniper trees which are impacting cottonwood health and regeneration. The monitoring data will be used as baseline, pre-treatment data.

### **St. George Field Office**

#### Water Resource Inventory and Monitoring

The St. George Field Office collected water quality samples on Leeds Creek. Characteristics measured: Nitrogen, Phosphorus, PH, Temperature, Dissolved Solids, Specific Conductance, Selenium, Zinc, Mercury, Lead and Aluminum.

The information collected was used in developing the riparian portion of the Draft Red Cliff National Conservation Area EIS.

**For a complete summary of funding used by the Bureau of Land Management across the state on riparian projects see Table F in the appendix**

### **5) US Army Corps of Engineers- Scott Stoddard**

The Rural Utah Environmental Infrastructure (Sec 595) Program- This program was authorized in 2004 and initially funded in 2005. The program assists rural communities in funding both improvements to, as well as new infrastructure, to provide clean, safe drinking water and wastewater collection and treatment to Rural Utah communities only on a cost-shared basis. At least one of our Sec 595 - Environmental Infrastructure Projects that is considered an NPS project:

Construction has commenced on the Elwood wastewater project (see picture below). This was after water quality testing identified that septic lines were impacting water quality in the area that will be serviced by the new facility.

The Corps of Engineers has also completed or is working on several other wastewater projects in Rural Utah - Moroni, Cedar City/Iron County, Richmond & Mona (which along with Elwood is still ongoing).



#### **6) United States Bureau of Reclamation- Ben Radcliffe**

The US Bureau of Reclamation funds irrigation improvement projects through the Colorado River Basinwide Salinity Control Program. Ongoing Reclamation Salinity Program projects include:

Cottonwood Creek Consolidated Irrigation Co.: Located in Emery County, Utah, the Clipper and Western Canals serve the area west and south of Orangeville, Utah. This project replaces approximately 60 miles of canals and laterals with approximately 15.5 miles of pipeline with an estimated off-farm salt load reduction of 2,094 tons/year. This off-farm project was fully funded by the salinity program at \$6,509,548. The Company is building an associated project including a pipeline and regulating reservoir to serve this distribution system as well as future projects.

Ouray Park Irrigation Co.: Located in western Uinta County, Utah, the Ouray Park canal has had multiple salinity projects in the past which piped significant portions of their system. This most recent project will pipe the remaining 5.2 miles of open canal with an estimated off-farm salt load reduction of 1,662 **tons/year**.

The Huntington-Cleveland Irrigation Company is continuing construction of their salinity control project in Emery County.

#### **8. Federal Consistency Review and NPS Project Tours for FY-2011**

During FY-2011, DEQ continued to use a combination of approaches to work collaboratively with federal land management agencies and others to promote federal consistency with the state NPS Pollution Management Program. As part of this program tours of projects implemented by

federal agencies are organized every year. The following is a summary of a tour that took place in the Strawberry Valley and surrounding areas.

## **Strawberry Valley National Forest Tour August 15, 2011**

### **Participants:**

National Forest Service: Jeff Bruggink, Greg Bevenger, Bill Goodman, Charlie Condrat, Utah DEQ: Carl Adams and Jim Bowcutt; BLM State Office: Lisa Bryant

### **Objectives of the Trip**

#### Watershed Improvement Program

- a. Evaluate the effectiveness of selected watershed improvement projects in meeting forest desired conditions.

#### Water Quality Program

- a. Field visit with Utah Division of Water Quality to review water quality and non point source issues and concerns.

#### General

- a. Determine needs for improving Regional Office coordination and direction of the soil and water programs.

### **FIELD SITES VISITED**

#### **A timber sale along in Telephone Hollow.**



Three timber sale sites were visited. The first area was a site where a section of road cut was manipulated to address seepage. Rock riprap was placed on the cut, apparently for stabilization purposes. It appeared the rock was initially stockpiled on the opposite side of the road, which expanded the area of disturbance considerably. Additional rehabilitation work is necessary to allow full recovery of disturbed areas.

At the second area a landing, multiple slash piles, temporary road, and skid trail were observed. It appeared harvest activity was on-going in this area as obliteration of the temporary road and removal of decked material was incomplete. Large slash piles were located in a small meadow

and within 15 feet of an intermittent stream channel. The channel, which was parallel to the road, did not have a culvert at the crossing. A few large logs were placed in the channel to facilitate a crossing. There was active rill and gully erosion on the landing, with subsequent sediment delivery to the channel.

It is unclear if the large piles would be burned or if firewood permit holders would be allowed to cut from the slash piles. Due to the size of the piles (10 to 15 feet high and 25-30 feet long) and the amount of large logs in the pile, soils would be sterilized if the piles were burned in their current condition.

The third area was a landing that was along the ridge line and well away from any watercourses, meadows, or wet areas. Conditions were acceptable from a soil and water perspective.

The Forest Service will conduct a review of the sale after closure to determine if handbook and plan direction for soil and water resources was implemented and effective.

**The second stop was at Strawberry Creek upstream of Strawberry Reservoir and the visitor center.**



UWC NF and UT DWR have been working together to restore the riparian system. Historically, willows had been sprayed and mostly eradicated which lead to bank instability. The channel downcut and there were raw unstable banks up to ten feet high. Willows have been replanted and sections of the stream have been restored using a combination of willows and bio soil engineering – geotextile erosion mat and soil lifts with willows planted. They have also placed a rock or log J hooks and barbs to redirect flow off the eroding banks and back to the center of the stream channel. This has been an improvement over the previous condition. The stream is still wider than it most likely was prior to ranching and willow spraying activities and may still be trying to create more meander, which could erode out some of the areas partners are trying to revegetate with willows. A majority of the willows planted in the last two years have not resprouted (low success rate). It appeared that these willows may be too close to the stream. The willows that were thriving were farther from the waters edge. It was speculated that the last few years had low flows and this year the snow pack and runoff was high and the water levels are higher than previous years. There was some speculation that maybe planting the willows in a line perpendicular to the channel may get some willows farther from the waters edge and thus they

might have a better survival rate when we get high flow years. Currently the plantings are all within a foot or two of the waters edge and planted in rows parallel to the stream.

Overall the restoration work appears to be very effective and all partners are to be commended for their efforts

**The third stop was along Willow Creek to look at two AOP culverts**



The tour included stops at two AOP culverts that were installed in 2010 along Willow Creek. These culverts work to reduce erosion that leaves the roadways. It also allows for safe fish passage during spawning season for cutthroat trout in the area. While there were some issues with the installation, Overall the project seemed to serve the purpose of reducing NPS pollution in the upper section of the watershed.

## **NPS Tour September 12-15, 2011**

In 2011 the Utah Nonpoint Source tour focused primarily on projects that had been implemented throughout the Northern end of the State. The tour consisted of visits to several Best Management Practices (BMPs) that had been installed using 319 funding. The tour also focused on some of the wetland issues that have arisen along the Great Salt Lake.

### **Day 1 – Tour of the Great Salt Lake Wetlands**

Participants- Jim Bowcutt(UDEQ), Jodi Gardberg(UDEQ), Jim Harris(UDEQ), Gary Kleeman(EPA Region 8), Emily Flemer(UDEQ)

Since Gary Kleeman had recently been assigned to be the EPA contact for the Great Salt Lake wetlands it was requested that he tour the wetlands surrounding the lake to become more familiar with the wetlands and the issues.

### **Willard Spur**

Day one of the tour mainly focused on the Willard Spur wetlands. Currently there has been much debate regarding the Willard/ Perry Waste Water Treatment Facility that will discharge to the Willard Spur Wetlands. The State Division of Water Quality is currently conducting a study on the spur to help determine what the impact will be. The tour visited several of the monitoring locations as well as the current and proposed discharge locations.



### **Antelope Island**

The second stop was Antelope Island. At this location the participants were able to observe many of the causeways that have drastically changed the internal flows within the lake. It was also helpful to help understand the history of the lake in general.

### **Day 2 Weber River Watershed**

Participants- Jim Bowcutt(UDEQ), Gary Kleeman( EPA Region 8), Carl Adams(UDEQ), Lars Christensen(Kamas Conservation District), Kari Lundeen(UDEQ), Jennifer schuller(EPA Region 8), W.D. Robinson (UDAF)

Since the Weber River Watershed is the targeted basin for FY-2011 and 2012 the tour visited several projects that had recently been implemented, as well as project sites that will be implemented in the next few years. It was also beneficial to determine what the impacts of the spring flooding had been due to a high water year that was experienced this spring.

### **Huff Creek**

Huff Creek is a tributary to the Chalk Creek River. The location visited is a proposed project site. The property is currently being grazed by 30-40 dairy cows which have free access to the river. The property is also irrigated using wild flood irrigation which has also created erosion issues along the creek. The property owner has agreed to fence the cattle off the river, and install designated watering sites. The fencing will be placed at least 30 feet off the river. This could also serve as a buffer strip, helping reduce the erosion that is occurring as a result of the current irrigation method. This project will be implemented in the next year.



### **Chalk Creek**

This project was a proposed stream bank project on the main stem of Chalk Creek. The site is currently under contract with the NRCS to fence the animals from the Riparian area and install rock structures as needed. Section 319 funding will also be used to acquire additional cost share. We observed large Rock deposits from the high water this spring. These rock bars are pushing the river against the opposite bank creating additional erosion problems.



### **Fish Creek**

The Fish Creek site consisted of a road/ culvert that had been washed out by high water. This was a significant source of sediment during the spring seasons. Due to the poor installation of this project by the oil company that installed it, water was able to penetrate the soil surrounding the culvert eventually sending thousands of tons of sediment down stream. The project is now being corrected using 319 funding as well as funding from the county, Trout's Unlimited, the Fish and Wildlife Service, and the Utah Division of Water Quality. They plan on removing the remaining soil from the site, re-vegetating the exposed soil, and installing drop structures to reduce the slope of the river.



### **East Canyon Creek- Bittner Property**

The Bittner Property was visited during the 2010 NPS tour immediately after projects implementation. It was revisited during the 2011 tour to see how it withstood the high flows that were experienced in the spring. The project is coming along very nicely. The flows had little to no effect on the project other than a few plants that had died due being continuously submerged in the high water. One issue that has arisen is the invasive weeds that have begun to take over the project site. The local conservation district is currently spraying the invasive plants, and will continue to treat them until they are gone.



### **Monitoring Station East Canyon Creek**

The Swaner Eco-center has recently installed a monitoring Station to help monitor the effectiveness of the projects that have been implemented. Since East Canyon Creek has been listed for temperature these monitoring stations will be very effective at showing the progress that is being made toward the TMDL endpoints. These stations are currently being used as match to support the 319 projects that have been implemented on the same stretch of river.



### **East Canyon Creek- Swaner Property**

The last site visited on day two was a stream bank project that had been implemented only days before. The project used coconut fiber netting, vegetative planting and a small amount of rock work to stabilize the eroding banks that previously existed at the site. Due to the quality of the work that has been done on the recent project some of the landowners downstream that had once been hesitant to implement these BMPs are now ready to participate in the program. Over all, great strides have been made to help restore the water quality in East Canyon Creek.



### **Day 3 – Price and San Pitch Watershed**

Participants- Jim Bowcutt (DEQ), Scott Daley (DEQ), W.D. Robinson (UDAF), Gary Kleeman (EPA), Craig Walker (DWR), Dan Gunnell (UACD), Alan Saltzman (UACD), Danny Boore (Gunnison Irrigation Company), Garrick Wilden (Jones and Demile Engineering).

#### **Mud Creek**

The Mud Creek restoration project was completed last fall. The Scofield TMDL has identified nutrient loading from tributaries as possible input into the reservoir. The Mud Creek Project allowed the Division of Wildlife Resources to acquire an easement which allowed them to fence cattle off of the river and implement 2 miles of river restoration. There were some places where the project was impacted by the high flows that took place in the spring of 2011. The DWR is

planning on spending an additional \$10,000 in state funding to make the required fixes to the project. They are also working with neighboring landowners to implement BMPs on their property as well.



### **San Pitch River**

Recently the San Pitch Conservation District has been trying to persuade landowner's to implement stream bank projects. To help showcase projects the district has identified projects close to areas that are regularly traveled by people in the community. The tour visited one such project located on Highway 116 just outside of Mount Pleasant. This project will fence the cattle off of the river, giving them restricted watering access, and re-vegetating the riparian area.



### **12 Mile Canyon**

A mud slide in 12 Mile Canyon has recently caused a large increase in the amount of sediment flowing down 12 Mile Canyon Creek. This has become a real problem for local landowners that irrigate their land with this water. The increase in sediment has plugged up settling ponds used for irrigation water. The excess sediment is also hard on sprinkler systems and equipment. In an attempt to catch a larger amount of this sediment local irrigation companies have proposed that larger settling ponds be installed to help remove the sediment from the water. This could also potentially have water quality benefits to the San pitch River, the receiving waterbody of 12 Mile

Canyon Creek. The local landowners are currently applying for additional 319 grants to help fund the project.

#### **Day 4- Bear River and Jordan River Watersheds**

Participants- Jim Bowcutt (DEQ), Carl Adams (DEQ), Gary Kleeman (EPA), Justin Elsner (USU Extension), John Hardman (NRCS), Jeff Barnes (NRCS), W.D. Robinson (UDAF), Marion Hubbard (Salt Lake County)

#### **Ballard Dairy**

The first site was a pork operation that had installed a methane digester to help control animal waste and improve air quality. Since the farm and the acreage they apply manure to is adjacent to both Cutler Reservoir and the Bear River, the management of that manure is important. By capturing the methane and using the digester the amount of manure produced by the operation was reduced by 2/3 what it was prior to installation. The landowner was also able to use the methane gas to power a generator that generated power that could then be sold to the local power company.



#### **Andrew Dairy**

Andrew's Dairy is located in close proximity to the Bear River. This dairy operation was having a difficult time containing all the liquids that the dairy produced. They used 319 funding to help build a liquid evaporation pond. This also allowed the manure to be dried out and composted, thus reducing the amount of animal waste that was being applied to the adjacent fields.

#### **Buttar's Dairy**

Before receiving 319 funding, the Buttars did not have any type of a storage facility where they could store their manure. To help better manage the manure their operation generated they constructed bunkers that could contain their manure, and allow it to be properly applied to their fields.

#### **Jordan River –Walden Park**

Walden Park is located on the banks of the Jordan River. This site had previously had erosion issues, along with large deposits of concrete slag along the bank. With Funding from Salt Lake County and the Utah Transit Authority, as well as an easement granted by Murray City they were able to restore the river bank for several hundred feet. The restoration included sloping the banks and creating a bench that could serve as a flood plain during high flows. They also installed several trees and planted grasses to help further stabilize the stream bank.



### **Jordan River- Modesto Park**

Modesto Park is located on 11<sup>th</sup> South in Salt Lake City on the Jordan River. This project was funded primarily by funds from the American Recovery and Reinvestment Act (ARRA). Before the project had been implemented there were cut banks in various locations. The project came in and sloped the bank back and installed riparian vegetation to reduce erosion and provide additional shading to the river. When the Jordan River begins to implement projects as the targeted basin they will do more projects similar to this one with the 319 funding.





**TABLE A 319 FINAL PROJECT REPORTS SUBMITTED IN FY-2011**

<b>Project Title</b>	<b>Total NPS Award</b>	<b>Date Received</b>
San Pitch River Watershed TMDL Implementation FY-05	\$225,000	2/8/11
Upper Sevier River Watershed TMDL Implementation FY-05	\$225,000	2/23/11
Scofield Reservoir TMDL Implementation FY-05	\$25,200	1/24/11
USU Extension Statewide NPS Pollution I&E FY-06	\$35,420	5/12/11
Scofield River TMDL Implementation FY-06	\$20,200	1/24/11
Upper Bear River Stream Bank Stabilization FY-06	\$34,000	4/28/11
TMDL Development and Watershed Planning Local Watershed Coordinators FY-06	\$387,800	12/28/10
Septage Treatment and Handling FY-07	\$29,500	12/16/10
USU Extension NPS I&E FY-07	\$19,900	2/23/11
State Riparian and Stream Restoration FY-07	\$340,920	7/27/10

**TABLE B SUMMARY OF ACTIVE UTAH 319(H) GRANTS FY-11**

<b>Project Title</b>	<b>Total NPS Award</b>	<b>Grant Status</b>
Fremont River TMDL Implementation FY-06	\$100,000	Ongoing
San Pitch River Watershed Implementation FY-06	\$200,000	Ongoing
Middle Bear River Watershed TMDL Implementation FY-06	\$37,500	Project Complete Awaiting Final Report
West Colorado River Watershed Implementation FY-06	\$70,000	Project Complete Awaiting Final Report
Middle Sevier River Watershed TMDL Implementation FY-06	\$104,680	Ongoing
Virgin River Watershed TMDL Implementation FY-06	\$100,000	Project Complete Awaiting Final Report
Bear River I&E Outreach FY-07	\$41,600	Project Complete Awaiting Final Report
Jordan River Watershed Council Capacity Grant FY-07	\$35,350	Ongoing
Oil & Gas Sediment Erosion FY-07	\$6,000	Ongoing
Watershed Coordinator	\$30,000	Project Complete Awaiting

Rich County FY-07		Final Report
Ag. Watershed Improvement Project FY-07	\$24,000	Ongoing
Alta Fen Rehab FY-07	\$87,500	Ongoing
Middle Sevier River Watershed TMDL Implementation	\$100,000	Ongoing
San Pitch River Watershed TMDL Implementation FY-07	\$153,000	Ongoing
Upper Sevier River Watershed TMDL Implementation FY-07	\$155,000	Ongoing
Virgin River Watershed Improvement FY-07	\$33,730	Project Complete Awaiting Final Report
West Colorado Watershed Improvement Project FY-07	\$70,000	Ongoing
Upper Bear River WS TMDL Implementation FY-08	\$30,000	Ongoing
Middle Bear River TMDL Implementation FY-08	\$32,100	Ongoing
Lower Bear River TMDL Implementation FY-08	\$212,500	Ongoing
Strawberry River/ East Daniels FY-08	\$61,600	Ongoing
San Pitch River WS TMDL Implementation FY-08	\$118,000	Ongoing
Middle Sevier River WS TMDL Implementation FY-08	\$137,085	Ongoing
West Colorado River Watershed Improvement Project FY-08	\$70,000	Ongoing
Matt Warner, Calder Reservoir/ Pot Creek FY-08	\$64,800	Ongoing
Scofield Reservoir Riparian Revegetation FY-08	\$35,500	Ongoing
Local Watershed Coordinators Support FY-08	\$400,000	Ongoing
USU Extension NPS I&E Outreach FY-09	\$33,500	Ongoing
Lower Bear River WS TMDL Implementation FY-09	\$84,000	Ongoing

Upper Bear River WS TMDL Implementation FY-09	\$110,140	Ongoing
Middle Sevier River WS TMDL Implementation FY-09	\$60,000	Ongoing
Upper Sevier River WS TMDL Implementation FY-09	\$122,790	Ongoing
West Colorado River WS TMDL Implementation FY-09	\$70,000	Ongoing
Forest Water Quality Guidelines Monitoring FY-09	\$33,870	Ongoing
Jordan River Ecosystem Restoration FY-09	\$96,000	Ongoing
Local Watershed Coordinator Support FY-09	\$509,100	Ongoing
Matt Warner/Pot Creek Road Rehabilitation FY-10	\$63,600	Ongoing
USU NPS I & E Outreach FY-10	\$37,000	Ongoing
Lower Bear R TMDL Impl. FY-10	\$80,000	Ongoing
Middle Bear R TMDL Impl FY-10	\$100,000	Ongoing
Upper Bear R TMDL Impl FY-10	\$70,000	Ongoing
West Colorado River Watershed Improvement FY-10	\$45,000	Ongoing
USU Septic System Ed. Enhancement FY-10	\$51,100	Ongoing
Utah Watershed Coordinating Council FY-10	\$30,000	Ongoing
Upper Bear Riparian Restoration FY-10	\$15,600	Ongoing
East Canyon Stream Restoration - Phase IV FY-10	\$50,000	Ongoing
Mud Ck/Scofield Riparian Restoration FY-10	\$50,000	Ongoing
Salt Lake County Stream	\$31,100	Ongoing

Guide FY-10		
Jordan River Council Capacity - I&E FY-10	\$41,600	Ongoing
TMDL Local Watershed Coordinators FY-10	\$400,000	Ongoing
Utah NPS Program - Management Review FY-10	\$66,582	Ongoing
Utah Watershed Coordinating council FY-11	\$10,000	Ongoing
USU Volunteer Monitoring and I&E FY-11	\$102,500	Ongoing
Local Watershed Coordinators FY-11	\$340,000	Ongoing
East Canyon Restoration	\$380,421	Ongoing

**TABLE C APPROVED TMDLS**

<b>Water Body</b>	<b>Date Approved</b>
Middle Bear River	February 23, 2010
Chalk Creek	December 23, 1997
Otter Creek	December 23, 1997
Little Bear River	May 23, 2000
Mantua Reservoir	May 23, 2000
East Canyon Creek	September 1, 2000
East Canyon Reservoir	September 1, 2000
Kents Lake	September 1, 2000
LaBaron Reservoir	September 1, 2000
Minersville Reservoir	September 1, 2000
Puffer Lake	September 1, 2000
Scofield Reservoir	September 1, 2000
Onion Creek (near Moab)	July 25, 2002
Cottonwood Wash	September 9, 2002
Deer Creek Reservoir	September 9, 2002
Hyrum Reservoir	September 9, 2002
Little Cottonwood Creek	September 9, 2002
Lower Bear River	September 9, 2002
Malad River	September 9, 2002
Mill Creek (near Moab)	September 9, 2002
Spring Creek	September 9, 2002
Forsyth Reservoir	September 27, 2002
Johnson Valley Reservoir	September 27, 2002
Lower Fremont River	September 27, 2002
Mill Meadow Reservoir	September 27, 2002
UM Creek	September 27, 2002
Upper Fremont River	September 27, 2002

Deep Creek	October 9, 2002
Uinta River	October 9, 2002
Pineview Reservoir	December 9, 2002
Browne Lake	February 19, 2003
San Pitch River	November 18, 2003
Newton Creek	June 24, 2004
Panguitch Lake	June 24, 2004
West Colorado	August 4, 2004
Silver Creek	August 4, 2004
Upper Sevier River	August 4, 2004
Lower and Middle Sevier River	August 17, 2004
Lower Colorado River	September 20, 2004
Upper Bear River	August 4, 2006
Echo Creek	August 4, 2006
Soldier Creek	August 4, 2006
East Fork Sevier River	August 4, 2006
Koosharem Reservoir	August 4, 2006
Lower Box Creek Reservoir	August 4, 2006
Otter Creek Reservoir	August 4, 2006
Thistle Creek	July 9, 2007
Strawberry Reservoir	July 9, 2007
Matt Warner Reservoir	July 9, 2007
Calder Reservoir	July 9, 2007
Lower Duchesne River	July 9, 2007
Lake Fork River	July 9, 2007
Brough Reservoir	August 22, 2008
Steinaker Reservoir	August 22, 2008
Red Fleet Reservoir	August 22, 2008
Newcastle Reservoir	August 22, 2008
Cutler Reservoir	February 23, 2010
Emigration Creek	Awaiting EPA Approval
Ashley Creek	Awaiting EPA Approval

**TABLE D WATERSHED PLANS**

<b>Watershed</b>	<b>Date Approved</b>
Middle and Lower Sevier	October 2010 completed approval pending
San Pitch	January 2006
Upper Sevier	June 2004
Virgin River	February 2006
Paria River	2006
Escalante River	2006
Strawberry Watershed	April 2004

**TABLE E STATE NPS FUNDS ALLOCATED IN 2011**

<b>Watershed</b>	<b>Applicant</b>	<b>Project</b>	<b>Funding Received</b>
Bear	Meikle Dairy*	Feedlot	\$75,000
Bear	Landowner - Scott Johnson*	Feedlot / Laketown	\$15,500
GSL	Wayne Wurtsbaugh	Student eutrophication study	\$1,067
Sevier	James Dairy Farm Inc.	Streambank stabilization	\$20,732
Sevier	Lee Christensen*	Animal waste management	\$7,539
Sevier	Dee Lynn Fautin*	Streambank stabilization	\$24,471
Sevier	Austin Hayward*	Streambank stabilization	\$13,682
Sevier	Michael Merline*	Streambank stabilization	\$8,469
Sevier	Kirby Parker*	Streambank stabilization	\$6,383
Sevier	Debbie Parsons*	Onsite Wastewater System	\$4,050
Sevier	Tim Westwood	Upper Sevier Restoration	\$20,000
Statewide	DWQ - Bill Damery	GW Monitoring	\$85,000
Statewide	USGS	Newcastle Res. Mercury Remediation	\$74,100
Statewide	DWQ - Jim Harris	MST Analysis	\$71,345
Statewide	Farm Bureau - Randy Parker	AFO Inventory / TA	\$150,000
Statewide	UACD - Gordon Younker	AFO CNMP / TA	\$150,000
Statewide	USU - Dr. Miller	AFO Workshops	\$44,632
Statewide	DWQ - Jeff Ostermiller	BOD - Nutrient Study	\$14,874
Statewide	Div of Water Quality	NPS Program Eval and SHPO Projects	\$123,239
Statewide	AWWA- Alayne Boyd	AWWA Water Week	\$3,500
Weber	USFWS / Wright	Rees Cr	\$15,000
West Colorado	DNR, DOGM	Mineland reclamation - Whiskey Creek	\$35,000
Uinta	Div of Wildlife Resources	Strawberry River Restoration	\$36,417

**TABLE F SUMMARY OF BLM RIPARIAN PROJECT EXPENDITURES BY REPORTING FO:**

Field Office	BPS #	Project Name / Description	1040		
			PE	Units	Cost
UT040 CCFO	055716 See CCFO CWWR Report	Inventory and assess lotic reaches within the Cedar City Field Office where PFC assessments do not exist or are out of date to prioritize management and monitoring. The CCFO also entered existing riparian (lotic and lentic) assessment data into a geodatabase in GIS.	BU	13	932
UT040 CCFO	055716 See CCFO CWWR Report	Inventory and assess lotic reaches within the Cedar City Field Office where PFC assessments do not exist or are out of date to prioritize management and monitoring. The CCFO also entered existing riparian (lotic and lentic) assessment data into a geodatabase in GIS.	BV	6	4,218
UT040 CCFO	057159	Purchased materials for NEPA-ready riparian enclosure projects.	JF	1	6,468
UT040 CCFO	See CCFO CWWR Report	Bear Creek and Modena Canyon willow planting projects and associated micro-enclosures	JG	2	3,229
UT040 CCFO	See CCFO CWWR Report	Continued maintenance of CCFO riparian enclosures	JI	32	2,406
UT040 CCFO	See CCFO CWWR Report	Seeps and springs monitoring	MN	10	4,339
UT100 SGFO		LUTC03100 (Red Cliff NCA)	BN	30	3,000
UT100 SGFO		LUTC03000 (St. George Field Office)	JI	2	3,000
UT100 SGFO		LUTC03000/LUTCO3200 (Beaver Dam Wash NCA)	MO	11	5,000
UT100 SGFO		LUTC03100	MU	25	3,000
UT050 RFO		Three wetland enclosures were maintained on the Hanksville Field Station.	JI	3	10,000
<b>Total Color Country District</b>					<b>45,592</b>
UT080 VFO		Collect water quality on 2 stations on Bitter Creek, 2 stations on Pariette Draw, 1 station on Red Creek, 3 stations on Willow Creek	BN	8	8,000
UT080 VFO		Russian olive treatment on Middle Green River. This entailed spraying new shoots from cut stumps from the previous year.	JF	30	5,000
UT080 VFO		This was accomplished in conjunction with Active Management at Pariette Wetlands	MN	2,508	17,500
UT080 VFO		Upper Green River. This was accomplished in conjunction with a	MO	17	1,700

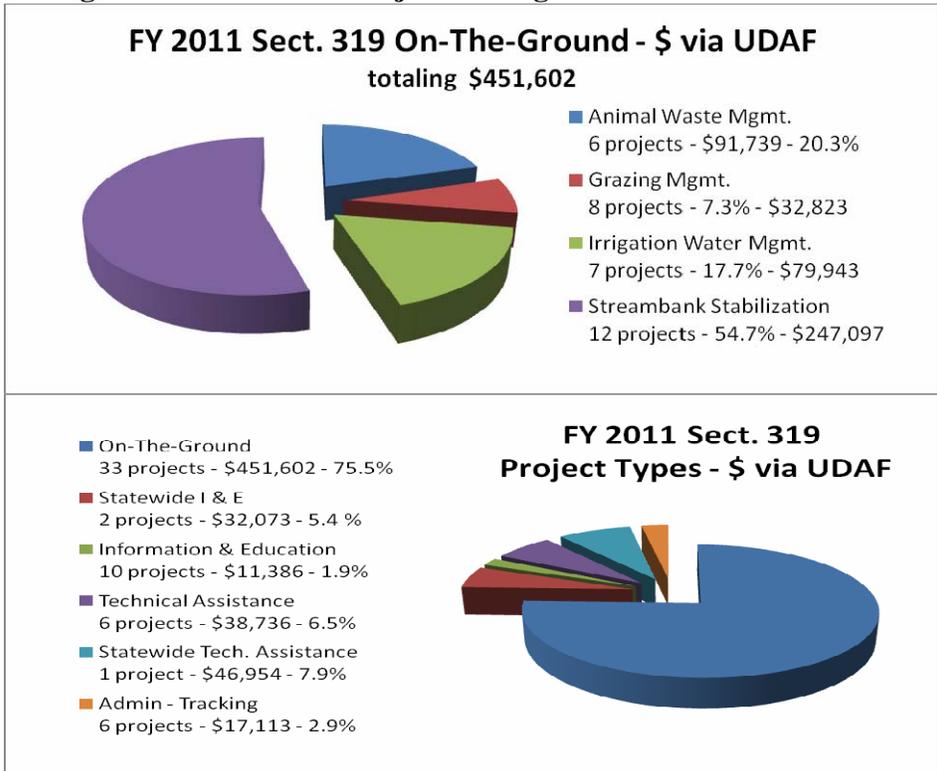
Field Office	BPS #	Project Name / Description	1040		
			PE	Units	Cost
		Green River Restoration Project.			
UT080 VFO		Upper and middle Green River. This was accomplished in conjunction with a Green River Restoration Project. Support of the project entailed funding training and safety equipment. Travel and labor was also charged to this project.	JD	260	17,800
UT070 PFO	046198	Maintained Mounds, Hambrick Bottom, Mud Springs, Soldier Canyon, Icelander and Coon Spring Riparian Enclosure Fences.	JI	6	3,000
UT070 PFO	042774	Re-treatment of Tamarisk in Buckhorn Draw (30 acres)	JD	30	5,000
<b>Total Green River District</b>			<b>58,000</b>		
UT020 SLFO		PFC for priority streams in Rich County	BV	7	18,816
UT020 SLFO		MIM for priority streams in Rich County	MO	7	18,484
UT020 SLFO		Monitoring priority wetlands in Rich County	MN	40	9,279
UT020 SLFO		Evaluate Rangeland Health on priority allotments in Rich County	MJ	3	23,367
UT020 SLFO		Maintained riparian enclosure projects in Rich County	JI	5	9,124
UT010 FFO		Priority PFC assessments completed on streams of the Deep Creek Mtns. an in DevilCreek in Tintic Valley.	BU	7	600
UT010 FFO		Maintain riparian enclosures in Amasa Valley.	JI	3	1000
UT010 FFO		Riparian monitoring of Bishop Springs	MN	575	1000
UT010 FFO		Devil Creek MIM	MO	2	1000
		Lentic priority PFC assessments	BV	15	300
<b>Total West Desert District</b>			<b>82,970</b>		
UT060 Moab	n/a	Inventory invasive species (tamarisk) along the Colorado River using aerial imagery purchased with end of year FY10 funds.	BS	13096	\$2,000
UT060 Moab	n/a	PFC assessments in lentic areas related to grazing permit renewals and rangeland health standards.	BU	25	\$1,138
UT060 Moab	n/a	PFC assessments in lotic areas related to grazing permit renewals and rangeland health standards.	BV	171	\$2,000
UT060 Moab	n/a	Weed treatments associated with recreation sites (campgrounds) and tamarisk treatments along the Colorado River.	JD	50	\$2,000
UT060 Moab	n/a	Tamarisk removal along the Dolores River (5 miles) and the Colorado River (1 mile in WestwaterCyn) and 1 improved creek crossing in Black Ridge PJ treatment project.	JG	7	\$2,000
UT060 Moab	n/a	Constructed 2 riparian protection fences: <u>Project #1</u> ) constructed 1 mile of fencing along Dolores River- a section	JH	2	\$2,000

Field Office	BPS #	Project Name / Description	1040		
			PE	Units	Cost
		assessed by ID team as FAR in 2009 <u>Project #2</u> ) replaced gate with fencing to better manage grazing in Ten Mile ACEC/ Texas Bob Dugway			
UT060 Moab	n/a	Repaired 7 riparian protection fences: <u>Project #1</u> ) replaced one non-functional gate with a cattleguard to better manage grazing in Ten Mile Wash ACEC/ Midway access <u>Project #2</u> ) repair swinging panel fence in Ten Mile Wash ACEC <u>Project #3</u> ) repair road closure fence in Kane Creek near Hole 'n Rock <u>Project #4</u> ) repaired riparian enclosure fencing at Cow Cyn in Ten Mile Wash ACEC <u>Project #5</u> ) maintained tamarisk treatments along Colorado River <u>Project #6</u> ) maintained tamarisk treatments along Dolores River <u>Project #7</u> ) maintained tamarisk treatments in Negro Bill Canyon	JI	7	\$3,000
UT060 Moab	n/a	Monitoring of wetland resources in Seven Mile Wash.	MN	20	\$2,000
UT060 Moab	n/a	Monitoring of lentic resources in Ten Mile Wash ACEC (8 miles), tamarisk treatments on Dolores River (5 miles) , Colorado River (10 miles) and Kane Creek (2)	MO	25	\$2,000
UT090 Mont		Riparian monitoring on Arch, Devil, and Squaw Canyons, Johnnies Hole, and Kane Gulch.	MO	20	3000
UT090 Mont		Riparian Inventory along Johnnies Hole and Kane Gulch	BV	3	2667
<b>Total Canyon Country District</b>					<b>23,805</b>
<b>State Office</b>					
Riparian Team Support, funds used to support PFC and MIM training sessions					17,812
PFC and MIM implementation					3,650
Snake Valley Wetland/Riparian groundwater monitoring					14,000
San Rafael River Restoration Plan					6,000
Riparian Mapping Support					7,000
Tamarisk and Russian Olive removal support					7,000
<b>Total State Office</b>					<b>55,462</b>
<b>State Total</b>					<b>265,829</b>
<b>CWWR Total from AWP</b>					

**TABLE G FUNDING USED IN CONJUNCTION WITH SECTION 319 FUNDING.**

Funding Source	Amount
Blue Ribbon	\$38,600.00
Habitat council	\$81,659.00
Watershed Restoration Initiative	\$100,070.00
Environmental Quality Incentive Program (EQIP)	\$468,584.13
Price River Mitigation	\$8,600.05
Moab City	\$2,524.69
Grazing Improvement Program	\$92,445.60
Utah Transit Authority Mitigation	\$55,000.00
Salt Lake County	\$750,571.00
South Valley Water Reclamation Facility	\$628,000.00

**Figure 2 UDAF 319 Project Management**



**TABLE H ACRES PLANNED BY NRCS IN FY-2011**  
**Resource Concern Category- Contracted Acres**

COUNTY	Plant Condition	Water Quality	Water Quantity	Air Quality	Soil Erosion	Soil Condition	Fish and Wildlife
BEAVER	0	0	635	0	0	0	0
BOX ELDER	0	0	2184.9	1555.2	2284	2124	3200
CACHE	5.8	1554.4	705.62	2472.6	0	109	0
CARBON	0.028	199.5	0	0	0.084	0.084	6274
DAGGETT	0	30	1	0	0	0	0
DAVIS	0	0	86.4	0	0	0	0
DUCHESNE	3	2418.2	12782	0	0	0	73.5
EMERY	0	2165.84	89.5	0	0	0	651.6
GARFIELD	0	0	105.8	0	0	0	0
GRAND	0	0	0	0	0	0	0
IRON	0	0	2367.3	0	0	0	2234.7
JUAB	0	0	192	0	0	0	3872.3
KANE	0	0	3566.8	0	0	0	0
MILLARD	0	0	36	0	0	0	0
MORGAN	0	0	50.9	0	0	0	0
PIUTE	0	0	212.2	0	0	0	105
RICH	0	0	218	0	0	0	0
SALT LAKE	7.4	0	7.4	0	0	18.1	0
SAN JUAN	0	0	2424.8	0	240	0	0
SANPETE	1	1003	391.5	0	0	0	401
SEVIER	0	0	181.5	0	0	0	0
SUMMIT	0	0	230.7	0	0	0	24
TOOELE	0	155.1	1361.5	155.1	0	0	0
UINTAH	0.5	1280.5	841	0	340	0	2777
UTAH	0.1	84	255.7	0	38.2	0	2.5
WASATCH	0	0	0	0	0	0	3.6
WASHINGTON	0	0	1175.3	0	0	0	0
WAYNE	0	1154.2	0	0	0	0	12.4
WEBER	0	0	170	0	0	222	222
<b>TOTALS</b>	<b>17.8</b>	<b>10,044.7</b>	<b>30,272.8</b>	<b>4,182.9</b>	<b>2,902.3</b>	<b>2,473.2</b>	<b>19,853.6</b>

**TABLE I BLM ACRES PLANNED WITH UWRI FUNDING**

#	Title	Acres/miles treated
#	Utah Watershed Restoration Initiative Project Name	Acres/miles treated
1718	Bittercreek Riparian Protection	1 mile
1663	Little Hole Cheatgrass Control	182 acres
1671	Deadman Bench Sagebrush Restoration	610 acres
1735	Phase II Green River Habitat Restoration	1645 acres
1653	Big Park Sagebrush Restoration	305 acres
1659	Brush Creek Bench Seeding	407 acres
1658	Archy Bench PJ & Sagebrush Restoration	1,122 acres
1657	Upper Kanab Creek	2,703 acres
1647	Reservation Ridge	83 acres
1662	Indian Springs Fuel Reduction	987 acres + 8.8 miles
1673	BLM Westwater Tamarisk Removal	865 acres +15.5 miles
1730	Black Ridge Fuels Reduction	9034 acres + 38.2 miles
1737	Delores River Invasive Plant Removal and Habitat Restoration	24.5 acres + 1 mile