

STATEWIDE

TERRESTRIAL HABITAT PROGRAM

In 2010, this program consisted of 8 regional terrestrial habitat biologists (THBs) 4 habitat extension biologist (HEBs) working in Natural Resources Conservation Services (NRCS) District Offices, the program manager, assistant manager and administrative assistant.

Implementation of SHP goals and objectives are planned and incorporated into individual annual work schedules and performance goals. The SHP contains a broad umbrella of habitat management, maintenance and improvement actions for the entire department. It also directly relates to the department and Commission five year strategic plan.

During calendar year 2010, section personnel were heavily involved with planning, on-the-ground implementation and/or oversight or verification of expenditures on approximately 130 projects involving WGFD trust funds. Numerous partners were instrumental including Wyoming Wildlife Natural Resource Trust (WWNRT), NRCS, Farm Service Agency (FSA), numerous NGOs, local, county, state and federal agencies, conservation districts, weed and pest districts and private landowners. These habitat enhancements amounted to over \$11 million in total on-the-ground expenditures. The various partners and their contributions are highlighted in the regional sections of this report. Additional SHP implementation actions included habitat protection, inventory and assessment work, monitoring project function and habitat response, habitat education efforts, training and adjusting activities to address habitat related opportunities and/or needs that arise during the year. Lastly, Section personnel spend a tremendous amount of time planning, coordinating and developing funding applications for future habitat related actions and activities.

On a statewide basis, THB personnel coordinated efforts with other Wildlife Division personnel to address habitat portions of the season setting meetings. They also conducted, coordinated with and collated information collected by Wildlife Division personnel from over 200 established annual vegetation production and utilization transects. Another important task is collection of vegetation and habitat monitoring information on over 110 vegetation monitoring transects associated with past habitat enhancements. HEB's attended area Conservation District and NRCS meetings to promote wildlife habitat and USDA Farm Bill programs. Personnel also attend coordination meetings with federal land management agencies relative to wildlife habitat enhancement projects and larger federal projects that may affect wildlife habitat. They provided assistance at hunter check stations to collect tissues for chronic wasting disease analysis and other biological information from harvested animals and participated in sage-grouse and sharp-tailed grouse lek surveys. Most section personnel also serve on one or more department species working groups (moose, bighorn sheep, sage grouse, pronghorn and mule deer) and are routinely tasked to serve on various committees to address an issue or need with habitat implications.

Finally, in 2010, the department emphasized identifying and reducing obstacles to getting habitat enhancements on-the-shelf and ready for future implementation. In this spirit, funds were allocated to the Section for developing three projects: Star Valley Front to address aspen and associated vegetation community enhancements; South Pass Aspen to address aspen and willow enhancements; and Wetland Development engineering plans to create wetland habitat on private lands in SE Wyoming. Coordination with partners, grantees and potential contractors occurred so that these habitat efforts can be initiated in future years.

INFORMATION, EDUCATION AND PUBLICATIONS BRANCHES

Goal 4 - The mission and purpose of Wyoming Wildlife magazine is the same today as it was in 1937 when Governor Leslie Miller offered this definition: "It was deemed advisable to issue from the department each month a bulletin containing material relating to department activities and wildlife and correlated activities of interest to the people of the state." Over the years, variations of the same mission and purpose were modified or expanded in the department's annual reports. Today, the mission of the magazine remains what it was for more than seventy years: to increase support for wildlife conservation in Wyoming.

Wyoming Wildlife News replaced a number of newsletters that covered various topics relating to wildlife and conservation. The mission of the News is to provide news and related articles about hunting, fishing, trapping and also increase support for wildlife conservation in Wyoming.

HABITAT RELATED ARTICLES (BY TITLE) AND AUTHORS CAN BE FOUND IN THE INDEX OF THE DECEMBER 2010 WYOMING WILDLIFE MAGAZINE.

Habitat-related Articles - Wyoming Wildlife Magazine

- Carcajou
- Helping them all: Wyoming's SWAP
- Jeepers! Creepers!
- DOT diverts mule deer traffic
- USFWS won't list black-tailed prairie dog
- Another hundred million
- Blizzard!
- Snowshoe
- Forest survey shows losses to beetles
- Deer need habitat, not handouts
- Exotic mussels haven't invaded - yet
- The tundra connection
- The world on its head
- Schwabacher beavers
- Snake River cutthroats
- LaBarge landowner helps deer
- Drawing the line
- Water for waterfowl
- Chukar summer
- Research improves feeding strategies
- Leaves of grass
- Keeping their cool
- Jackson wetland improvements
- Russian olive
- Eating on the fly
- Sagebrush Huns
- Plants behaving badly
- Fish hawk
- Biologists help cutthroats
- Rocket bird
- Sand Pike
- Whitebark pine nut crop poor
- Survivors
- Golden
- Hunting for answers
- Commission policy on wind energy
- The first quarry
- The Lewis bird
- Wired
- Gunnison's sage grouse listing
- Wyoming Mule Deer Initiative

Habitat-related Articles - Wyoming Wildlife News

TITLE/ISSUE

- "Invasive grass targeted in habitat project" - March/April
- "Fisheries biologists going native in Western Wyoming" - May/June
- "Healthy habitat supports robust trout population on Snake River - May/June
- "WGFD seeks comments on Wyoming's aquatic invasive species draft management plan" - July/August
- "Public access increases for 2010 hunting season" - Sept/Oct
- "Sportsmen weigh in on mule deer management" - Sept/Oct

- “New addition to Springer WHMA to provide more sportsman opportunity” - Sept/Oct
- “Sage grouse hunting amid concerns for the species” - Sept/Oct
- “Bump-Sullivan managed goose hunt open for business again”- Sept/Oct
- “Take advantage of walk-in area access during dove season” - Sept/Oct
- “Camping sites improved at Kerns WHMA” - Nov/Dec
- “Know the rules when hunting on state trust lands” - Nov/Dec

Habitat-related Articles - News Releases

TITLE/DATE

- Feeding Deer - Bad Idea - January
- Underpasses Working Well for Migrating Deer - February
- Wildlife Faring Well This Winter - February
- Diamond H Ranch Conservation Easement - March
- Improvements Ongoing at Yellowtail WHMA - March
- Flushing Flow Aid North Platte River Trout - March
- Collecting Shed Antlers Prohibited . . . - April
- Volunteers Needed for Deer Mortality Surveys - April
- Game and Fish Implements new Elk Feeding Strategies - April
- Steve Kilpatrick Honored by University of Nebraska - June
- Potential Impacts of AIS to WY Waters - June
- First Bypass on Clear Creek Operational - June
- G&F Commission Approves Amendment to Wind Energy Recommendations - September
- Fewer Whitebark Pinecones Could Mean Increase Bear Conflicts This Fall - September
- More Water This Year Should Help Waterfowl Hunting - October
- G&F Biologist Honored by Conservation District - November
- Governor’s Big Game Task Force Taking Project Apps. - December
- Do Not Feed the Deer - December

The mission of the regional information and education specialists is to support the department and division missions by working cooperatively with department personnel to increase understanding and support for Wyoming’s wildlife resources and the department. The section provides media outreach and wildlife conservation education programs for students, teachers, and other citizens of Wyoming. There are seven positions within this section; however, throughout much of this past year, only six positions were filled and one position was vacated mid-year. The positions are stationed in WGF D regional offices around the state. Working closely with their respective aquatic and terrestrial habitat biologists, each specialist maintains and posts habitat related information under the “Habitat Counts” tab in the “Regional News” pages on the department’s website.

They also work closely with the Information and Publications personnel preparing information and programs for Wyoming Wildlife, Wyoming Wildlife News and other news release information. This section along with Cheyenne branch personnel produce news releases for local papers, radio and television stations. They conduct conservation education workshops and make numerous presentations to youth groups, classroom, civic and sportsmen’s groups.

On a statewide basis, the regional information and education specialists were involved in 134 efforts directed towards goal 4 and another 64 efforts with habitat as a component of the message. These efforts are further summarized on a regional basis as follows: 1) Casper – 14 habitat and 9 indirect habitat; 2) Cody – 22 habitat and 5 indirect habitat; 3) Green River – 34 habitat and 6 indirect habitat; 4) Jackson and Pinedale – 35 habitat and 19 indirect habitat; 5) Sheridan – 24 habitat and 21 indirect habitat and 6) Laramie – 5 direct habitat and 4 indirect habitat.

Examples Of 2010 Habitat Related Information And Education Efforts

- January - Conducted two, 30-minute, live radio programs for KVOW/KTAK out of Riverton on Ocean Lake Christmas Trees for fish habitat, don't feed deer and how a person can protect/provide quality mule deer habitat, Burbot study in Lander Region and what the native burbot habitat requirements are.
- January - Coordinated on Nature Mapping and provided an interview and information for feature story in the Jackson Hole News & Guide about habitat fragmentation and the value of the program in county land use planning.
- February - Partnered with Murie Audubon for a "Walk and Talk" program to teach 45 elementary students about wildlife habitat needs.
- February - Field trip, instructed 37 junior/senior Powell High Students on the importance of habitat and winter range for South Fork Shoshone River valley big horn sheep and hunting opportunities.
- February - Gave habitat/wildlife conflict prevention presentations to Highland Park Elementary (54 students), Clearmont Elementary (46 students), Gillette Twin Spruce High Freshman (365 students - 5 classes), and Tongue River Elementary Winter Outdoor Lab in the Bighorns (52 students).
- February - Coordinated with UW researchers, GTNP and WGFD personnel on Teton bighorn sheep study and importance of habitat and migration corridors for a story to appear in Powder magazine and the JH News & Guide.
- March - Gave a presentation to 46 members of the Casper Kiwanis Club on habitat loss.
- March - Conducted an Early Childhood Project WILD/Project Learning Tree Workshop in Rawlins for 25 child care providers and teachers with 15 activities all beginning with the basic need for habitat for any and all wildlife.
- March - Completed 10 new interpretive signs on fish habitat, migratory bird habitat, illegal ling introduction and its effects on local fish habitats and invasive plant species (Russian olive and saltbush) potentially destroying the Killdeer Wetlands.
- April - Participated in watershed day activities at Meeteetse elementary by setting up the watershed demonstration trailer. The activities focused on erosion and watershed management.
- April - Two live spots for Riverton radio about impacts to sage grouse habitat from wind energy, habitat improvement work done in the N. Fork Popo Agie and Wind River for trout and sauger habitat improvement project in Bighorn River Drainage.
- May - Taught Wildlife Conservation to 22 students of all ages and highlighted local habitat improvement projects.
- May - Taught 15 elementary students from Baggs Elementary School about the importance of wetlands and how wetlands function, using activities from NatureScope and Project WILD.
- May - Taught 65 people about the importance of migratory birds and the troubles they face (limiting factors) en migrating each year, including loss or alteration of habitat. Used the Bird Hurdles Obstacle Course from Flying WILD in a snowstorm and people still "flew" the course and had fun. Part of the annual Bear River Festival.
- May - Gave watershed presentations to 130 students in Buffalo and more than 300 in Gillette utilizing the watershed education trailer.
- May - Provided information and photos to RMEF on brucellosis and Gros Ventre prescribed burn for Bugle magazine article.
- August - Distributed a news release on the Dead Indian Creek Yellowstone cutthroat trout restoration project.
- August - Taught a session on wildlife habitat assessment at the department's Youth Conservation Camp.
- August - Assisted in conducting a series four of public meetings on the Wyoming Range Mule Deer Initiative. Habitat was a primary focus of the meetings.
- September - Two live radio programs for Riverton Radio about why the fish habitat and fishing has improved in Torrey and Trail Lakes, reported healthy populations of Yellowstone Cutthroat Trout in the East Fork of the Wind River, radio tagging efforts in fish, and Trout Unlimited and Dubois Elementary School's "Adopt a Fish" Program.

- September - Coordinated with the Wildlife Conservation Society on a joint news release for pronghorn research being initiated on habitat needs and migration corridors, follow-up interview w/AP writer.
- October - Participated in the Wyoming Youth Congress event sponsored by the Teton Science School (TSS) in Jackson and assisted local fish managers with an electro-fishing demonstration and habitat discussion to students at the South Park WHMA.
- November - Distributed a news release on the importance of habitat.
- November - Wrote an article on the Bolton Creek habitat project for Wyoming Wildlife News
- December - Assisted with mule deer collaring project-photographed and expose featured full page in the Rock Spring Rocket Miner; able to convey habitat issues relating to the mule deer herd in the Bridger Valley.
- December - Provided news release and media interviews on wildlife in developed areas based on lack of available forage and how residents can reduce conflicts.

HABITAT AND ACCESS MAINTENANCE BRANCH

The habitat and access maintenance program in 2010 consisted of 6 regional supervisors, 1 statewide supervisor, 7 crew leaders, 6 specialists, the branch manager, the assistant branch manager and 5 temporary positions stationed across the state.

The branch is responsible for the management of department managed lands that include 36 Wildlife Habitat Management Areas (WHMAs), 184 Public Access areas and 22 feedgrounds. In addition, there is a statewide crew which assists with habitat development projects. The WHMAs are managed for specific wildlife habitat purposes and are included within the SHP. The branch incorporates specific objectives and strategies from the SHP into regional work schedules.

As part of the SHP, the branch manages and maintains approximately 413,000 acres, 95 wetlands, 140 miles of ditches/drains, 3,500 acres of irrigated meadows, 2,000 acres of farmland, 250 acres of food plots and over 1,000 miles of fence for wildlife habitat purposes. To assist hunters and fisherman, another 1,100 miles of road, 388 parking areas, 45 boat ramps, 25 docks, 196 outhouses and over 6,000 signs are maintained.

During 2010, the branch also worked on other habitat development projects including sagebrush rejuvenation, guzzler developments, meadow improvements, wetland developments and riparian projects. This included the involvement and administration of 9 projects involving WGF Trust Fund and 7 projects involving the WWNRT. These projects will provide almost \$735,000 on-the-ground project expenditures. The habitat development projects are highlighted in the regional sections of this report.

LANDS ADMINISTRATION BRANCH

The Lands Administration Branch functioned throughout 2010 with two permanent employees and included a change in supervision. During the year, Lands Administration personnel worked on addressing Commission objectives involving property rights functions for habitat conservation, permanent public access, and property rights monitoring. During the past year, branch personnel worked on a variety of habitat related projects around the state pursuant to the goals and objectives of department regulations, Commission policies, the SHP, and other administrative directives.

Ocean Lake Acquisition (Goal 1) - Dave Hunt

Lands Administration secured 80 acres adjacent to the Ocean Lake WHMA. The property has been incorporated into the WHMA and is being managed for wildlife and public hunting and fishing opportunities. This project is consistent with the department's acquisition priority for fee title acquisition of land located in proximity to existing Commission-owned land.

North Platte River – Miles Land and Livestock (Goal 1) - Kerry Olson

Lands Administration had been working with The Conservation Fund (TCF) on the acquisition of 380 acres of private lands along the North Platte River (Figure 1). Negotiations began several years ago and initially involved acquisition of a public fishing easement by the Commission. TCF has purchased the property with financial assistance from the Commission and will eventually turn the property over to the BLM.



Figure 1. North Platte River - Miles Property.

Sommers and Grindstone Conservation and Public Access Easements (Goal 1) - Kerry Olson and WLCI

The department helped to facilitate the acquisition of conservation easements on approximately 19,000 acres of high value wildlife habitat (Figure 2). The conservation easements are now held by the Wyoming Stock Growers Agricultural Land Trust. The project also included transfer of some mineral rights and a permanent public fishing easement along the Green River to the department. Lands Administration assisted in grant acquisitions and in developing various documents and reports for the project. Several non-traditional funding partners were recruited to participate including the Doris Duke Foundation, the National Fish and Wildlife Foundation, the Ted Turner Foundation, and others.



Figure 2. Sommers – Grindstone Conservation and Fishing Easements.

Conservation Easements (Goal 1) - Kerry Olson and Butch Parks

While no conservation easements were finalized during the year, Lands Administration currently has seven projects in various stages of completion. Five current projects involve greater sage-grouse core areas, and three involve private lands in the Black Hills of northeastern Wyoming. Regional personnel continue to provide support and assistance with conservation easement projects. Details of all completed projects will be included in the next annual report.

Lands Administration also provided information and met with landowners for several conservation easement projects throughout the state. For example, Lands Administration attended meetings with local personnel, landowners and federal agencies for easement projects in the Smiths Fork Basin Conservation Easement and Public Access Opportunities:

- Regional personnel completed prescreening process potential conservation easement and access opportunities along the Smiths Fork River at the Hobble Creek confluence and near Cokeville on lower Pine Creek. Three landowners have expressed a strong interest in exploring these opportunities. Habitat and Access Evaluation Process (HAEP) forms were drafted and circulated to other regional personnel for their properties. Prescreening evaluations were also initiated for several other landowners in the Lower Bear River basin. Habitat for numerous species will be permanently protected and important public access will be secured if these opportunities come to fruition.

Other meetings were attended with private non-profit land trust organizations and other partners for projects in the Sheridan, Casper and Cody areas. Lands personnel remain committed to communicating conservation easement topics and opportunities with landowners, local personnel, and others.

Department efforts in acquiring high quality conservation easements continue to be aided by a supportive Commission and department administration. Landowner contacts by department biologists continue to assist easement efforts at local levels. Landowner confidence in the department's easement program also seems to be growing. In addition, the ability of the Commission to acquire conservation easements continues to be supported by the Farm and Ranch Lands Protection Program administered by the NRCS, the WWNRT, and other partners.

Other Lands Projects (Goal 1) - Kerry Olson and Butch Parks

Lands Administration completed various other projects during the year including acquisition of two warden stations (Cody and Pinedale), disposal of the old Pinedale warden station, highway right of way coordination (North Platte River Hartnett, Thorne Williams Wildlife Research Center), assistance with the Bitter Creek fish by-pass, exchange of easement rights at the Windmill Public Fishing Area, the Boulder Rearing facility weather station, and others.

WYOMING LANDSCAPE CONSERVATION INITIATIVE

In 2010, the Wyoming Landscape Conservation Initiative (WLCI), working with partners, was instrumental in the continuing development of the WLCI, a long-term science based effort to assess and enhance aquatic and terrestrial habitats at a landscape scale in Southwest Wyoming, while facilitating responsible development through local collaboration and partnerships. Numerous coordination meetings, field trips, and work sessions occurred (over 16 Local Project Development Team (LPDT) and Executive Committee meetings alone) to help develop projects and identify LPDT priorities. The WLCI coordination team members met with NGOs, permittees, landowners, other agencies and entities to coordinate WLCI activities. Beginning in late 2009, WLCI started an effort to address a Conservation Action Plan (CAP) that will incorporate the LPDTs areas of concern and the issues involved with those areas. All of the LPDTs have identified large areas with priorities they want to address (Figure 3). The WLCI Coordination Team is reviewing those areas and discussing them with local managers to reduce the size to reflect what could truly be accomplished within five years. The CAP should serve as a guide to all involved with WLCI to address ecological functions throughout the WLCI area. This is a shift away from shelf ready projects to projects that are more encompassing and occur at a landscape level. The WLCI helped fund 31 projects in 2010; a number of these projects are multi-year projects that began prior to 2010. The WLCI-USFWS Partners Projects funded eight projects in 2010.

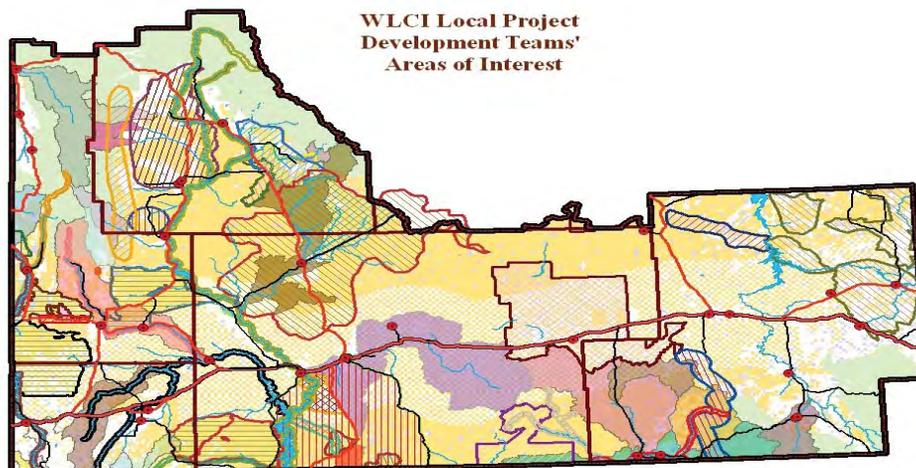
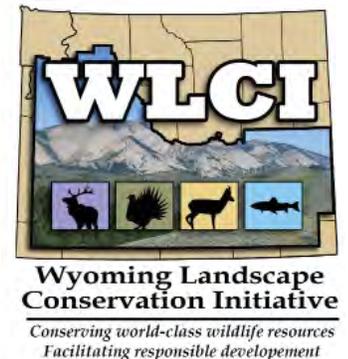


Figure 3. WLCI Local Project Development Teams' Areas of Interest.

Projects within a specific WGFD region are described in the regional sections of this report. One WLCI area-wide project continued in 2010:

Wyoming Native Plant Development (Goal 2)

This project is intended to provide a source of native seed and plant material and to develop and maintain a supply of native plants seed, vegetative propagules, and native seed reserves to assist in providing native plant material and seed for restoration projects. Several sagebrush obligates and key habitat including crucial habitat for deer, elk, pronghorn antelope, greater sage-grouse and a number of non-game, sagebrush obligate species would benefit from this project. Seven different collections were made during FY10 collection season. A storage shed to temporarily house the collected seeds was built as part of the project.

AQUATIC HABITAT PROGRAM

The aquatic habitat program in 2010 consisted of 6 regional aquatic habitat biologists (AHABs), a statewide fish passage coordinator, aquatic habitat supervisor, aquatic habitat program manager, water management supervisor and the water management instream flow biologist for a total of 11 permanent full time employees. Two At Will Contract Employees (AWEC's) worked for the section: one in Cody assisted the fish passage coordinator primarily collecting and compiling information about passage obstructions across the state; and one in Kemmerer worked on Bear River drainage projects. The Kemmerer AWEC left in November and that position is currently advertised to be filled in the Casper region. Finally, two seasonal biologist technicians assisted in the Laramie and Jackson regions. The flexibility and work assistance provided by hiring seasonal and AWEC employees continues to be a tremendous help in getting habitat benefits on the ground.

The Casper aquatic habitat biologist position was lost to the agency during the state government hiring freeze in 2009 and 2010. The Cody AHAB position was reclassified into a fish passage coordinator in recognition of the importance of this work statewide. The program is now essentially down 2 positions with no permanent AHAB personnel in Casper or Cody. Without an ability to implement habitat projects in the Casper and Cody regions the fishery resources in those regions will suffer at the same time stretching fish management personnel as they take on additional duties.

During calendar year 2010, the aquatic habitat section was involved in 50 projects involving funding from the Game and Fish trust fund, dedicated G&F fish passage funds, the WWNRT, the USFWS, and Landowner Incentive Program (LIP) funding. These projects entail over \$6.2 million in estimated total project cost and nearly \$2 million in department funding. The WWNRT are partners on 14 of those projects and many are highlighted in the regional sections of this report. In addition, regional AHABs worked on SHP actions not directly related to funded projects. These actions included habitat protection, inventory and assessment work, monitoring project function and habitat response, and habitat education efforts and training. Section personnel spend a tremendous amount of time planning, coordinating and developing project funding applications throughout the year for future habitat related actions and activities.

In 2009, the department emphasized identifying and reducing obstacles to getting projects on the shelf and implemented. In this spirit, funds were allocated to Fish Division for developing two projects: Encampment River below Riverside channel restoration and Green River corridor Russian olive mapping and project development. Encampment River habitat inventory, assessment, and channel restoration design work was conducted in 2010 and channel restoration work is beginning in 2011. Also in 2010, the Teton Science Center conducted the Russian olive mapping and control projects were identified for further funding development and implementation in 2011. Both projects are described in more detail in the regional section of this report.

Again in 2010 funds were targeted toward two new planning efforts to develop habitat projects. This time, projects were identified on the Middle Popo Agie River through Lander and the Green River at Seedskaadee National

Refuge. Coordination with partners, grantees and potential contractors occurred so that these project development efforts can begin in 2011. It is anticipated that projects with our partners will be identified and developed in late 2011.

In addition to the fish passage efforts highlighted here in the statewide section of this report, other cooperative projects continued. Trout Unlimited received grant payments for projects involving the Franc's Fork Creek Road Crossing, Twin Creek BQ Diversion, and the Boulder Creek Ditch Screen. A new funding grant was signed with Trout Unlimited for the White's Water upstream passage and screening project on the Smiths Fork and a grant was provided to the Sheridan County Conservation District to continue efforts on several ongoing passage projects. Several fish passage designs were reviewed for department and non-department personnel. One of the larger projects scheduled for 2011 is the Upper Sunshine Diversion Dam.

Finally, the Aquatic Habitat Section used its annual meeting in fall 2010 as an opportunity to conduct a detailed stream channel assessment on the property of the YMCA Camp on Middle Clear Creek in the Sheridan Region. While training by reviewing the important field and data analysis techniques necessary for a full Rosgen channel assessment, the group developed information to help the property owner manage the stream to its full fishery habitat potential.

Instream Flow Fishing Articles (Goal 4) - Tom Annear

Four educational articles were written that appeared in the department's Wildlife News publication. These articles were intended to direct readers to instream flow segments, make them aware of department actions in the instream flow program, and encourage support for instream flow water rights in general. Articles focused on Pine Creek, Jakeys Fork, Smiths Fork, and Coantag Creek.

Instream Flow Water Rights (Goal 1) - Mike Robertson and Tom Annear

No applications for instream flow water rights were filed, though 4 filings will be made in early 2011 for streams in the Snake River drainage. Three new instream flow studies were initiated that focused on native Snake River cutthroat trout habitat in the Hoback and Little Greys river drainages.

Four new instream flow studies were conducted on streams within the WGFD Grizzly WHMA (Figure 4). Filings for those streams will occur in late 2011. The length of stream segments has not yet been determined and filings will be prepared in late 2011. All of the targeted stream miles were located on public lands owned by either the WGFC or USFS. The length of stream segments has not yet been determined.

Personnel supervised aquatic impact assessment and mitigation development studies that were done by a contractor hired by the Wyoming Water Development Commission on a proposed dam on West Battle Creek near Baggs. Field studies were completed in the 2010 field season and data analysis and recommendations will be completed in 2011.



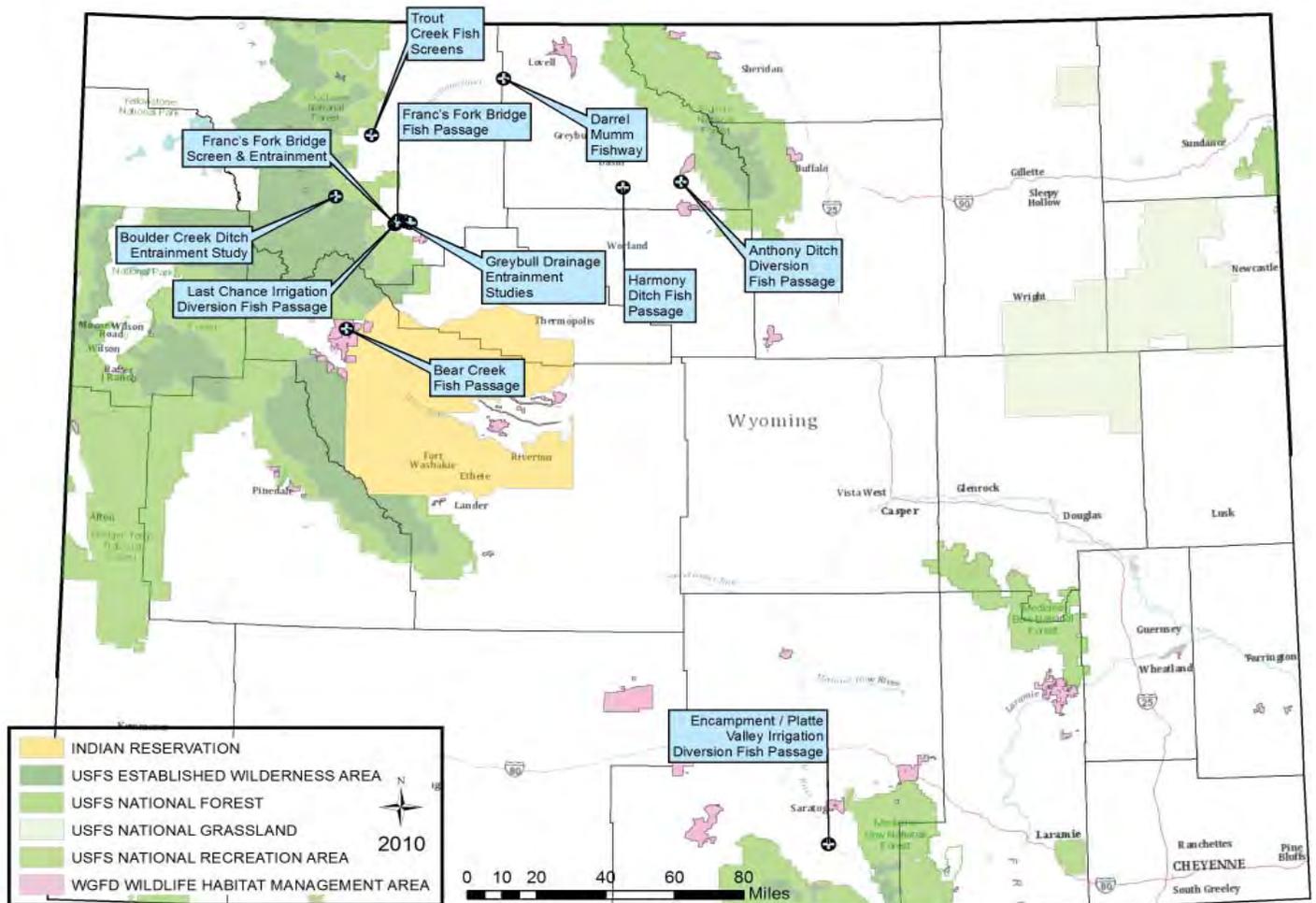
Figure 4. Instream flow studies were conducted on four streams flowing through the WGFD Grizzly Wildlife Habitat Management Area including Little Muddy Creek shown here. Field studies require collecting flow data at several different flow levels.

Fremont Lake Water Management (Goal 1) - Tom Annear

Actions were taken to facilitate acquisition and change of use of a storage right in Fremont Lake for using the water to maintain or improve instream flow and fisheries in Pine Creek. The Board of Control considered this proposed action at meetings in August and November and held a public hearing in October. All input and considerations were favorable to this action.

Statewide Fish Passage Habitat Program 2010

In 2010 several projects were initiated and developed for the Fish Passage program as depicted on the map. Individual projects are described below.



Fish Passage Inventory (Goal 2) - Lew Stahl

Determining where fish are blocked from accessing important habitat is a key step in identifying and prioritizing potential projects. Inventory efforts have been ongoing for several years and involve gathering detailed structure information during on-site evaluations, entering data and linking photos and PDF files to the fish passage database, and refining data from outside sources. On-site data were collected at 59 points of diversion and included type of structure, structure dimensions, photographs, and characterization of passage potential or entrainment issues. The department's fish passage database now contains 845 records. Drainages surveyed included portions of the Enos Creek, Five Springs Creek, Francs Fork Creek, Gooseberry Creek, Greybull River, Grass Creek, Meeteetse Creek, Piney Creek, Rawhide Creek, Shell Creek, Tensleep Creek, and Timber Creek in the Cody Region and Elkhorn Creek, Little Bighorn River, Pass Creek, East Pass Creek, West Pass Creek, Red Gulch Creek, Smith Creek, Tongue River, Wolf Creek, and the Middle Fork, Red Fork and North Fork Powder River in the Sheridan region.

Additional site information was collected from a variety of sources. Natural barrier locations and photos were provided by department fisheries biologists, additional diversion dam data were obtained from the Bureau of Reclamation, the Army Corps of Engineer's National Inventory of Dams, and the State Engineer's Office. Culvert information from the Bighorn Forest, Medicine Bow/Route Forest, and the Shoshone Forest was added to our existing Teton Forest data (Figure 5). WGFD stream identification numbers were added to more than 80 points of diversions, originally obtained from other sources, to aid in data management. A draft report was written summarizing 2009 efforts including types of data collected, number of diversion locations documented, structures evaluated on-site, sources of data, detailed contact information, and where to access additional data beyond what is entered in the department's fish passage database.

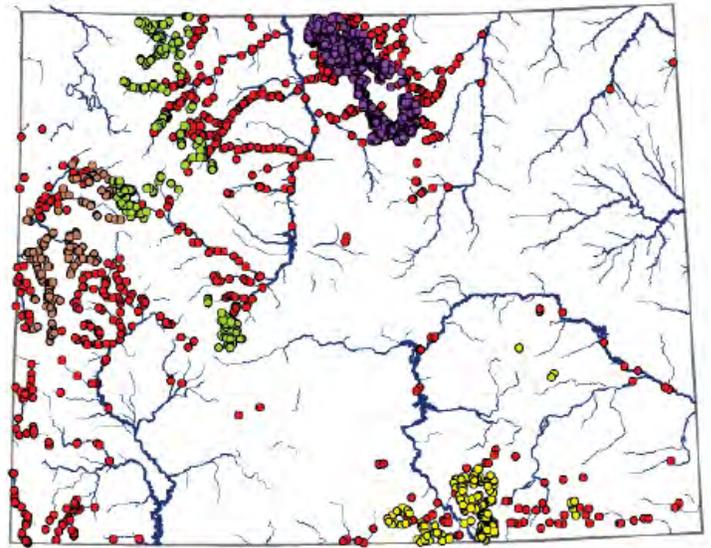


Figure 5. Points of diversion (red) and culverts from the Bighorn (purple), Shoshone (green), Teton (north zone – gray), and Medicine Bow/Rout National Forests (yellow). These represent a fraction of the barriers and diversions in the state.

Bear Creek Fish Passage (Goal 2) - Lew Stahl

Bear Creek is a tributary to the East Fork Wind River in the Lander Region. Designs were finalized and construction of the Bear Creek fish passage project was initiated in October 2011 and continued until the December 1 Inberg/Roy WHMA winter closure. Remaining work will be completed after the 2011 irrigation season. This year an instream irrigation diversion was replaced with two low elevation dams with associated pools and riffles (Figure 6). These fish friendly structures will allow upstream passage of Yellowstone cutthroat trout, while providing adequate water supply to the elk meadows on the Spence Moriarity WMA. Low flow channels, constructed in each dam, concentrate water into deeper, narrow channels allowing fish movement during low stream flows. Pools and riffles developed below each dam reduce water energy, stabilize the creek, and improve fish habitat (Figure 7). Next year's efforts will include a new irrigation headgate with associated bedload sluice, a fish screen in the irrigation ditch, and a bypass pipe to return entrained fish back to the stream. Cooperators include the Wyoming State Land Board, WWNRT, and the USFWS.



Figure 6. Bear Creek's upstream diversion dam under construction showing the low elevation concrete dam backed up by boulders which will be grouted into place and concrete blankets used to keep concrete warm while curing.



Figure 7. Post construction view of Bear Creek's downstream dam showing boulders with grout covered in snow, low flow channel in the middle, and the associated downstream pool. Stream flows are still diverted around the construction site in this photo.

Darrel Mumm Fishway (Goal 2) - Lew Stahl

The Darrel Mumm fishway is being constructed on Bitter Creek, a tributary to the Shoshone River, in the Cody Region. Designs were finalized and construction of the Darrell Mumm Fishway was initiated in late fall 2010. Cold weather conditions stopped the project but completion is expected in early spring of 2011. The fishway will allow upstream passage of fish currently blocked by a large concrete, box culvert carrying Sidon Canal irrigation water across Bitter Creek (Figure 8 and 9). Cooperators include the Sidon Canal Irrigation District who allowed attachment of the fishway to their existing infrastructure, and Mrs. Pat Mumm who provided a permanent easement in memory of her late husband. Project funding is provided by the WWNRT, USFWS, and WGFD.



Figure 8. Upstream fishway walls formed at the right edge and on top of the concrete box culvert crossing Bitter Creek. The downstream curve will lead to the rest of the fishway when completed.



Figure 9. Concrete pump truck delivering concrete to the tall walls immediately below the box culvert and forming the curve that turns the fishway into the uplands, where it will curve in a horseshoe shape, gradually decreasing in elevation until returning to the creek.

Greybull Drainage Entrainment Studies (Goal 2) - Lew Stahl

Entrainment studies were undertaken between September 7 and October 5, 2010 on the Ashworth #3 Irrigation Ditch, taking water from Francs Fork Creek, and the Greybull/Pitchfork Irrigation Ditch, taking water from the Greybull River (Figure 10). The goal was to identify juvenile Yellowstone cutthroat trout numbers entrained into these irrigation ditches during their downstream migration. Numbers of fish netted were extrapolated to reflect the total number of entrained trout during the September through October time period. Although results could vary from year to year, these studies indicate that as many as 10,184 Yellowstone cutthroat trout were entrained from Francs Fork in the fall of 2010 and an estimated 1,163 Yellowstone cutthroat trout along with 680 long nosed dace were entrained from the Greybull River. The rest of the irrigation season was not sampled but there is no doubt that additional fish are lost then as well. Francs Fork and Greybull River trout are part of a core conservation metapopulation of Yellowstone cutthroat trout. This population is extremely important to the long term management of Yellowstone cutthroat trout, which have been suggested for T&E listing twice. Based on these entrainment studies, fish screens on these irrigation ditches are being considered.



Figure 10. Sampling net in the Ashworth No. 3 Ditch to evaluate Yellowstone cutthroat trout entrainment.

Trout Creek Fish Screens (Goal 2) - Lew Stahl

Trout Creek is an important spawning trout tributary to the North Fork Shoshone River near Cody. Field evaluations were made on three different screens installed on Trout Creek irrigation ditches. The overshot self-rotating drum screen continued to work well after five years of operation, but has the down side of sediment build up in front of the screen. The horizontal traveling screen developed a few minor mechanical issues near the end of its first season of operation in 2009. The screen was removed and, because the screen is a prototype structure, Hydrolox engineers traveled to Cody to aid in improvement modifications (Figure 11). The screen was reinstalled in spring 2010 and worked flawlessly for the entire irrigation season (Figure 12). The horizontal, flat bottom, punch plate screen (Farmers Screen), operating for its first irrigation season, had plugging issues within 8 to 12 hours after each rainstorm in the upper watershed that washed burned wildfire debris into the stream. Several attempts were made to resolve the problem including replacing the screen plate with one having larger openings, modifying how water approached the screen, modifying how water channeled through the screen, and changing the volume of water flowing through the screen. Although rocks and vegetative detritus passed across and out of the screen without a problem, the screen could not adequately pass the lightweight, burned debris that was sucked down to the screen plate and plugged the openings. Screen designers don't know how to resolve the issue either, so replacement of this screen with another design is planned. The screen will be tried at a new location, once a suitable site is selected.



Figure 11. A Hydrolox engineer evaluates the horizontal traveling screen for potential modifications.



Figure 12. Reinstalling the traveling screen after modifications were complete.

Harmony Ditch Fish Passage (Goal 2) - Lew Stahl

The Harmony Ditch and associated diversion structure are located on the Nowood River in the Cody Region. Consultant engineers were hired to develop final designs for replacement of the instream diversion structure and installation of a fish screen on the irrigation ditch. Fish passage at this site has been affected by irrigation diversions since 1890. Entrainment study data indicated that approximately 55,400 fish representing 16 cool water species were entrained into this irrigation system in 2007. Final designs are expected in the spring with construction anticipated in the fall of 2011. Current funding is provided by the USFWS and WGFD. Additional funds will be requested from the WWNRT.

Encampment / Platte Valley Irrigation Diversion Fish Passage (Goal 2) - Lew Stahl

The Encampment / Platte Valley Diversion on the Encampment River in the Laramie Region blocks brown trout and other fish species from accessing diverse headwater habitats. Access agreements were developed with the Encampment / Platte Valley Irrigation District and with owners of the diversion site property. An engineering firm was hired and completed a topographic survey (Figure 13). A preliminary cost estimate for a fish bypass channel was developed to provide passage for hundreds of fish attempting to migrate upstream each year. Survey funding was provided by the department's Fish Passage Program and final designs are being pursued in 2011.



Figure 13. Fisheries biologist and consultant engineer evaluating the Encampment / Plate Valley Irrigation Diversion for potential installation of an upstream fish passage structure.

Anthony Ditch Diversion Fish Passage (Goal 2) - Lew Stahl

Medicine Lodge Creek provides diverse trout habitat as it flows off the west face of the Bighorn Mountain Range in the Cody Region. An instream diversion, located within the Medicine Lodge WHMA and supplying private land irrigation water, is scheduled for replacement. The existing push-up rock and concrete structure is a barrier to fish passage (Figure 14). After an on-site review, suggestions were made for a new structure and associated ditch work that would improve irrigation efficiency, while also improving fish passage. A second structure outside the WHMA is at least a partial barrier and recommendations were provided for this site as well. The primary structure was removed but not replaced by the end of this year. The Cody Habitat and Access Supervisor is working with the landowner and will help coordinate structure replacement.



Figure 14. Irrigation diversion made of boulders, rock, and plastic. This fish barrier was removed and should be replaced with a more fish friendly structure in 2011.

Upper Sunshine Diversion Fish Passage (Goal 2) - Lew Stahl

The Upper Sunshine Diversion is a major irrigation diversion on the Greybull River and is a barrier to Yellowstone cutthroat trout migration (Figure 15). Fish passage designs were reviewed and evaluations provided to engineers hired by the Wyoming Water Development Commission and the Greybull Valley Irrigation District concerning first draft plans for the Upper Sunshine Diversion Dam. Fish passage is being considered for inclusion in a larger dam replacement project that will provide more efficient irrigation flows and reduce cobble build up in the irrigation system. Passage at this site will provide habitat connectivity important to the Greybull River's core conservation metapopulation of Yellowstone cutthroat trout and would be extremely important to the long term management of Yellowstone cutthroat trout.



Figure 15. The Upper Sunshine Diversion Dam is tentatively scheduled for replacement in 2011. This structure is a barrier to upstream passage for Yellowstone cutthroat trout.

Boulder Creek Ditch Entrainment Study (Goal 2) - Lew Stahl

Fish passage funds were granted to Trout Unlimited to aid in site investigation and potential screen installation in the Boulder Creek Irrigation Ditch, which takes water from the South Fork of the Shoshone River. A topographic survey was completed by a contract engineering firm in preparation for design plans. To evaluate the magnitude of fish loss at this site prior to committing to screen installation, a WGF D volunteer, later hired by TU, was signed up to undertake the study, provided necessary equipment including nets, and aided with study design. Preliminary data indicate low numbers of fish entrained, especially Yellowstone cutthroat trout, but water usage this year may have been less than normal due to management changes. TU is writing a final report should be available after the first of the year.