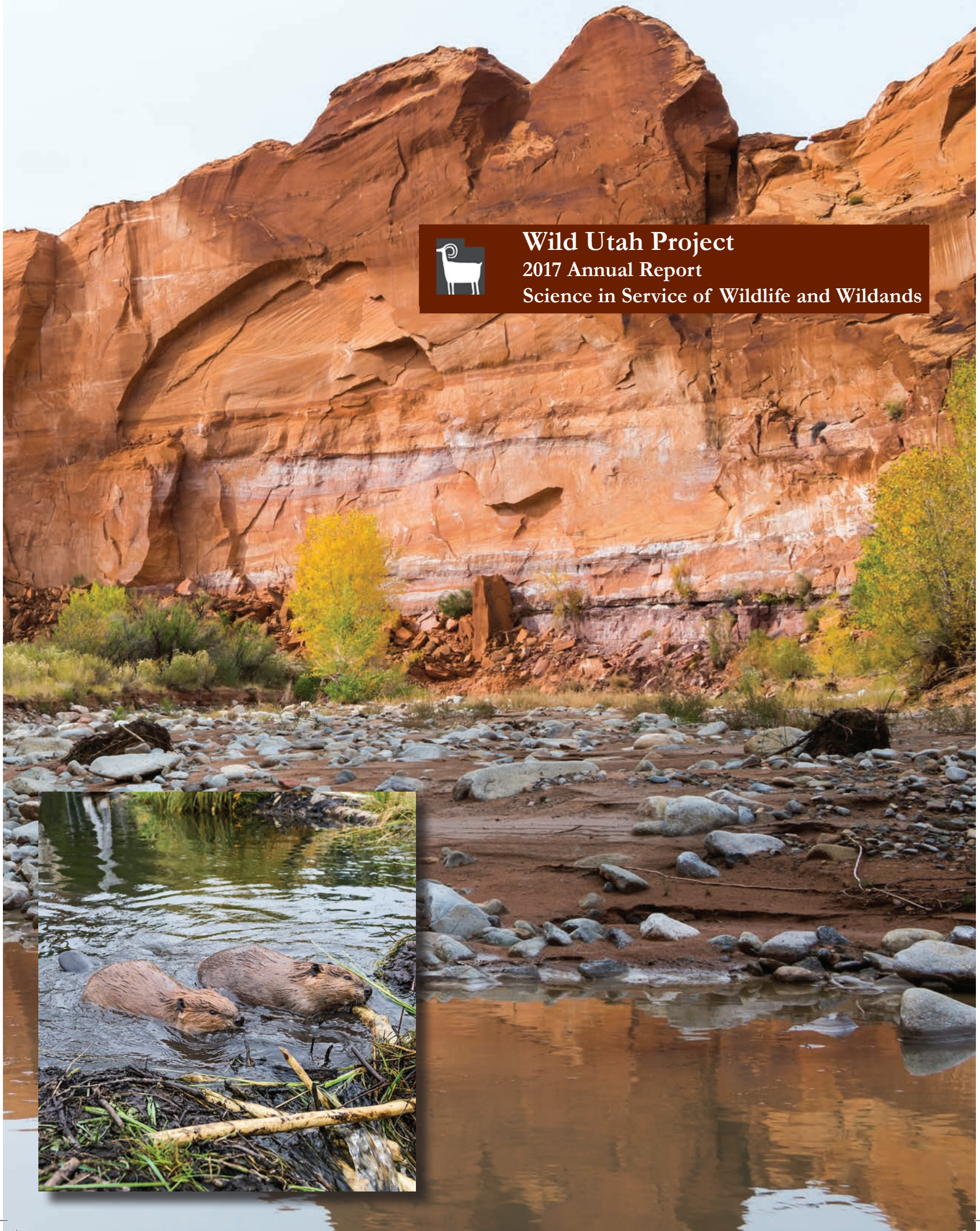




Wild Utah Project

2017 Annual Report

Science in Service of Wildlife and Wildands





Learn more at wildutahproject.org

Wild Utah Project

The mission of Wild Utah Project is to provide science-based strategies for wildlife and land conservation.

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Photo front/back cover, courtesy Scott T. Smith © 2018, beaver habitat and dam on Trachyte Creek, near Hite Utah; front cover inset photo of beaver © Tom & Pat Leeson; photo this page © Jeff Clay | Clayhaus Photography, Lake Blanche to Lake Florence Stream, Big Cottonwood Canyon



Science in Service of Wildlife and Wildlands

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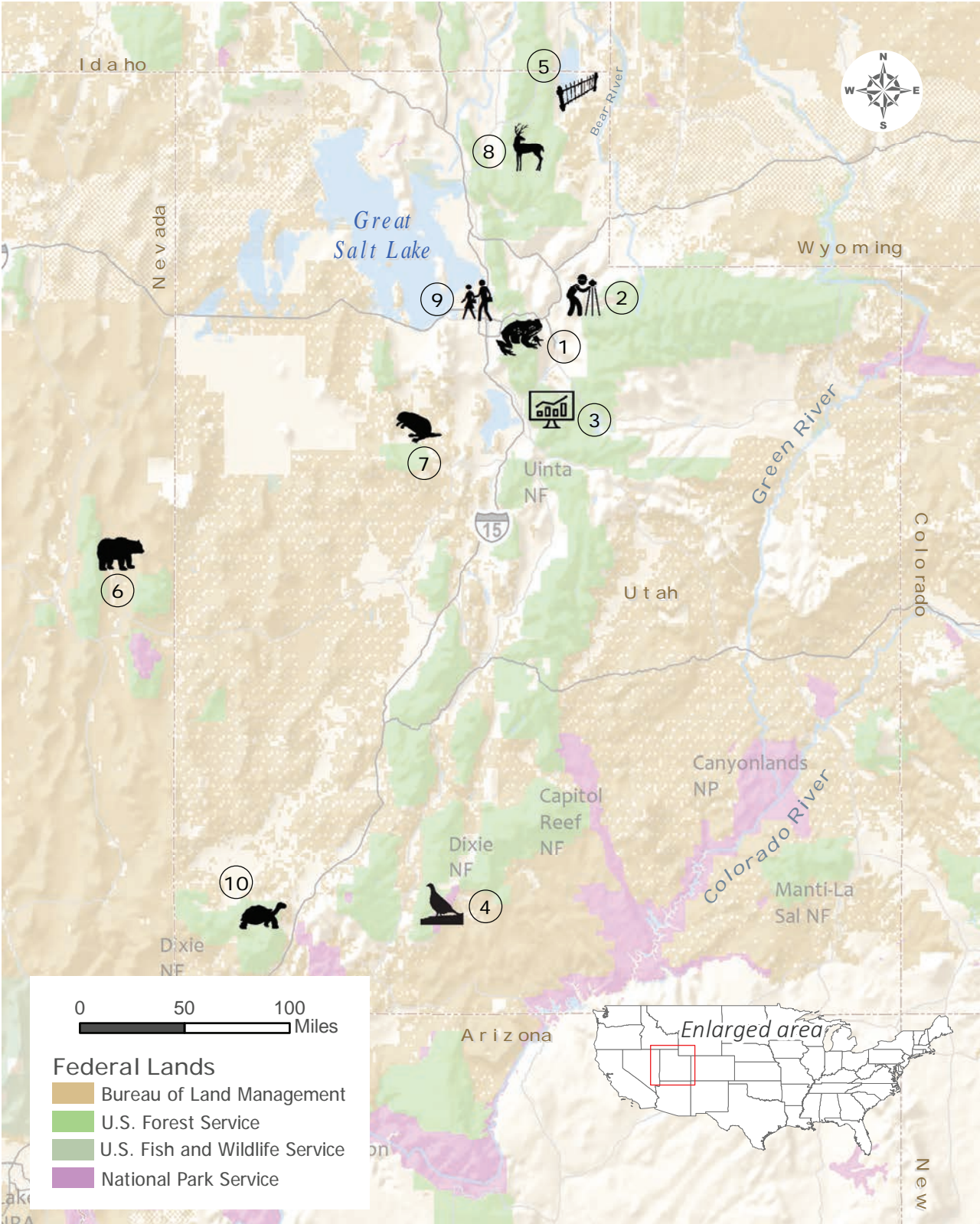
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Thank You and
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Map of Wild Utah Project's Top 10 List for 2017 by Vivian Chan, GIS Analyst

Wild Utah Project's Top 10 List for 2017

Last year was a challenging one for our western community, agency staff and non-profits that work on wildlife, wildlands and public land manage-

ment issues. However, because there are still many positive developments that have occurred in relation to either Wild Utah Project's efforts or the issues we hold dear, we've picked our 'top 10 list' of inspiring news from 2017 which we would like to share:



Rowland Hall High School Environmental Studies class students – Milo Yeats at left and Marguerite Tate at right – on field trip to Bryce Canyon National Park for sage-grouse study, photo © Ben Smith

#1 Active Toad Breeding: Citizen scientists found mating boreal toads during Wild Utah Project's 4th annual

boreal toad surveys and amphibian habitat assessments in the Central Wasatch Mountains. There are few known active breeding sites in this area, so to find pairs mating was a particular bonus.

#2 Habitat Assessment Tool: In 2017, several agencies – Utah Division of Wildlife Resources, US Forest Service, and Utah Geological Survey – used the same field form for boreal toad surveys across Utah. This is the form that Wild Utah Project and Utah Geologic Survey developed! By using standardized methods and field forms, field data on habitat

conditions and boreal toad locations can now be entered in a consistent fashion into a new state-wide habitat model developed by the Utah Geological Survey. This will allow wildlife and habitat managers to make more informed decisions regarding future habitat improvements and land-use planning.

#3 Planning Tool: Throughout 2017, Wild Utah Project continued to provide biological expertise to the team building the Central Wasatch Environmental Dashboard – a spatially explicit conservation planning tool which scores habitat and ecosystem variables to rate how these systems are functioning. The Dashboard will be used to inform upcoming National Environmental Policy Act analyses for planning future transportation solutions in the Central Wasatch Mountains.

#4 Students on the Lek: Our annual April trip to Bryce Canyon National Park with the Rowland Hall High School Environmental Studies class to study sage-grouse habitat resulted in successful viewing of sage-grouse on a lek – where population trends were up, unlike many Utah leks.

#5 A Paper Published: *The Rangelands Journal* published a Wild Utah Project and Yellowstone to Uintas Connection seminal article on six

Top Ten List continued on page 4

Top Ten List continued from page 3

years of data on the Rich County Duck Creek grazing allotment, showing that building more fences and water troughs does not reduce livestock grazing impacts on sagebrush habitat. This paper fills a large gap in the ecological literature.

#6 Black Bear Comeback: There is some great news on the large-scale wildlife connectivity front. For the first time in decades, black bears have recently been moving out of the Sierra Mountains across Nevada and repopulating central and eastern Nevada Mountain Ranges. This is a sign that permeability for dispersing wildlife like black bears has increased in Nevada.

#7 Building Dams and Partnerships: With our partners at the Utah Division of Wildlife Resources and our citizen science volunteers, we built 13 Beaver Dam Analogues, or BDAs, (human-made beaver dams) on Vernon Creek in the Sheeprock Mountains, to help raise the water table and restore degraded stream and riparian conditions on this entrenched stream channel. Through this collaboration, we have developed a stronger partnership with Utah Division of Wildlife Resources, which has led to UDWR use of the Rapid Stream Riparian Assessment protocol in northern region BDA projects.

#8 Maps Maps Maps: We launched a successful partnership with the Yellowstone to Uintas Connection, which involves Wild Utah Project conducting GIS analyses identifying some of the most important wildlife

movement pathways through the Bear River Range and where they intersect with fencing. Based on the outcome of Wild Utah Project's GIS analyses, Yellowstone to Uintas Connection will then work with landowners on wildlife-friendly fence retrofits to enable easier and safer passage for wildlife.

#9 Marching for Science: Hundreds of thousands marched in a total of 500 cities around the country, on Earth Day, advocating for science in the first national 'March for Science.' Here in Utah, Wild Utah Project joined thousands who marched in support of science in Salt Lake City, Logan, Moab, Park City, and Saint George.

#10 Tortoise for the Win: As described in one of Wild Utah Project's editorials in the Salt Lake Tribune, Utah's Bureau of Land Management made the decision not to allow construction of a road through the Red Cliffs Desert Tortoise Preserve in Washington County, thus preserving habitat connectivity for this long-lived, slow-moving species.



Desert tortoise, photo © David Lamfrom.



2017 Key Wild Utah Project Collaborations

- **Mountain Accord:** Over 200 stakeholder groups working to implement the Mountain Accord 'blueprint' for future planning in Utah's Wasatch Mountains
- **Three Forests Coalition:** A coalition of groups working to positively affect land management on Southern Utah's three national forests
- **University of Utah Biodiversity and Conservation Ecology Lab:** New lab working with Wild Utah Project to launch a cutting-edge mammalian camera study
- **Utah Riparian Forest Restoration Working Group:** Partners writing new guidelines for restoring Utah's degraded streams and riparian areas
- **Utah Watershed Restoration Initiative:** Collaborative state-wide habitat restoration initiative that funded the 13 Beaver Dam Analogues Wild Utah Project and our partners built in the Sheeprock Mountains
- **Wildlife Action Plan Partners:** Multi-agency and stakeholder effort to implement Utah's 2015 state-wide Wildlife Action Plan



In 2017, Wild Utah Project conducted the 4th annual season of boreal toad surveys and aquatic habitat assessments in the Central Wasatch Mountains. Rainbow over Secret Lake, Albion Basin, Little Cottonwood Canyon, photo © Howie Garber

Partner Support: GIS and Ecological Services

Wild Utah Project provides a variety of services for our non-profit, state and federal agency, and academic partners. Whether teaming up on a research grant or a competitively bid contract, or providing fee-for-service work, we help partners meet their conservation planning goals through Geographic Information Systems (GIS) services, ecoregional planning expertise, or by designing and carrying out novel ecological studies in the field.



Wild Utah Project GIS team, clockwise from top left: Janis, Mercede, Emanuel and Vivian.

GIS Lab - Analyzing and Visualizing Data

Mapping and Cartography:

From small to large format maps, we offer map design services using the principles of cartography and graphic design. GIS tools allow us to develop a variety of mapping processes and data transformations and to render maps for different audiences and purposes.

Web GIS:

Using the combined advantages of the internet and GIS, we offer our partners several web-based mapping applications. Without the need for specialized software, our users can access critical conservation related geographic data at any time.

Spatial Analysis and Modeling:

Data analysis is a critical element to understanding underlying processes in wildlife habitat and wildlands conservation. Through spatial analysis, geo-statistics, and spatial modeling, we offer our partners an array of analytic services that explain or predict implications of opportunities and threats to wildlife and wildlife habitat interactions.



Wild Utah Project Ecologist and Conservation Biologist, Mary Pendergast, carefully handles three boreal toads with gloves to protect toads from potential chytrid fungus transmission from one site to the next during a field trip surveying toads and assessing habitat conditions in the Central Wasatch Mountains. Chytrid fungus is responsible for many amphibian population declines in the West and worldwide.

Ecoregional Planning, Studies and Analyses

Ecoregional Planning:

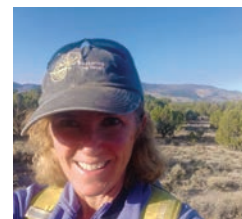
Wild Utah Project has a long history of ecoregional planning, conservation area design and large-scale conservation assessments. Our staff's formal ecological training, knowledge of environmental regulations, and expertise with computerized mapping enable us to develop effective conservation plans and associated products. We have extensive experience developing flexible, user-friendly tools that can help guide effective conservation planning, communications and strategies.

Ecological Studies and Analyses:

In addition to monitoring and field studies, Wild Utah Project

also provides science-based analyses of land-use plans and projects, scientific literature reviews, expert testimony, and Best Management Practices

documents that help to better incorporate ecological science into land-use policy. Past analyses have examined impacts of off-road-vehicle use and renewable energy development. For an extensive list of projects and studies we have performed for both our non-profit and agency partners, check out the Partner Support section of our website at www.wildutahproject.org.



Wild Utah Project Executive Director Allison Jones' selfie in Hamlin Valley west of Cedar City in 2017. She conducted an expert ecological evaluation of an area proposed for a pinyon-juniper chaining.

2017 Examples of Partner Support Services

- **Save Our Canyons:** Wild Utah Project provided cost-effective mapping services, including GIS data acquisition, preparation, publishing, and maintenance, as well as basic training on implemented web GIS applications developed by Wild Utah Project.
- **The Nature Conservancy:** We provided image analysis and subsequent geographic information analysis of drone-acquired imagery to detect pool habitat for northern leatherside chub on a major tributary to the Bear River.
- **Western Resource Advocates:** We conducted conservation mapping depicting various water and air resource values and impairments on the Mati La-Sal National Forest.

2017 Wildlife Science Program

Wild Utah Project undertakes fieldwork and monitoring efforts, conducts and publishes original peer-reviewed research studies to fill data gaps, and supports informed agency management decisions affecting native wildlife and habitats in Utah. We also engage in landscape-level planning processes to ensure that wildlife corridors, migration routes, and habitat connections are identified, maintained, and improved where needed. We develop and conduct studies, literature reviews and GIS support to aid managers and researchers working on wildlife and land management.



Wild Utah Project and our partnering team members at the University of Utah DIGIT Lab, Colorado Natural Heritage Program, and Brendle Group were selected to develop an Environmental Dashboard Framework for the Central Wasatch Mountains.

In 2017, our Wildlife Science Program focused on continuing efforts to bring science-based strategies to the Environmental Dashboard, an important landscape-level decision-support tool for the Central Wasatch; kick-starting a new greater sage-grouse brood-rearing habitat study; and launching new state-wide beaver-related habitat monitoring studies.

Development of the Environmental Dashboard for the Central Wasatch

Wild Utah Project continues to play an important role in the implementation of the Mountain Accord process, a landscape-level transportation, recreation, and environmental plan-

ning process for the Wasatch Mountains (www.mountainaccord.com). The development of the Environmental Dashboard, a spatially explicit, applied ecosystem assessment tool for the Central Wasatch will continue into 2018. We are coordinating with municipalities, state and federal agencies and others to complete the formal guidance document for this decision-support tool. In addition, we are helping to create an online dashboard and associated database with a public-facing interpretation interface that will provide a necessary understanding of the current level of function and condition of critical ecological systems of the Central Wasatch Mountains. These mountains will soon be a focus area for Utah Department of Transportation planning.

This work has been part of a contract that we received along with partners at University of Utah DIGIT Lab, Brendle Group, and Colorado Natural Heritage Program.

Greater Sage-Grouse Brood-Rearing Habitat Study

When greater sage-grouse chicks are about 2-6 weeks of age, insect protein is critical to their survival and health. Therefore, the habitats in which they grow up, called early brood-rearing habitats, must foster healthy insect



*Can you see the well camouflaged bird in this photograph? It's a sage-grouse chick, which depends on brood-rearing habitat with sufficient numbers of insects for survival.
Photo © Todd Black*

populations during this important time of a sage-grouse's life cycle. Indeed, greater sage-grouse early brood-rearing habitats are considered by experts to

be one of the most important habitat types for conservation management of the species in the Intermountain West.

Unfortunately, habitat attributes indicating insect availability adequate for chicks to survive are absent from the existing assessment framework and other applicable management documents. Scientific literature and current studies have yet to identify the habitat characteristics related to vegetation structure necessary to support the insect community required for functioning brood-rearing habitat.

In 2017, along with our partners at Tracy Aviary, we produced a literature review demonstrating the need for a novel research project to fill this gap in our ecological understanding. We also established an academic and agency working group to discuss the potential for developing a 'brood-rearing habitat assessment protocol' that could aid existing frameworks in assessing whether an area is functioning as habitat for greater sage-grouse adults as well as their chicks.

We also identified academic research partners in the Ecosystem Science and Management Department at the University of Wyoming, who have been engaged in sage-grouse habitat research in Utah, Idaho, and Wyoming for decades. Together, we are now developing a novel research study to establish vegetation and insect metrics for functional brood rearing habitat, which we hope will lead to better identification and more informed management of this important sage-grouse habitat type.

Beaver Habitat Assessments and Stream Restoration Monitoring

In 2017, Wild Utah Project worked on two new concurrent projects regarding beaver, which are increasingly recognized as important to ecological function.

1) Ground-truthing the BRAT model: Last summer our ecological field intern Casey Brucker helped Utah State University scientists ground-truth their statewide beaver habitat assessment model, called the Beaver Restoration Assessment Tool (BRAT). The BRAT is a predictive computer model based on remotely-sensed stream and riparian data, which identifies watersheds and perennial streams that are most in need

Wildlife Science Program continued on page 10

Wildlife Sciences Program continued from page 9

of beaver recovery in order to attain better riparian/stream function.

Casey was trained in a new field method and she conducted field work in the agreed-upon pilot watershed – the Weber River Basin. Along with other Utah State University technicians, Casey visited nearly 50 different sites to determine whether areas identified by the BRAT model as good habitat have suitable existing conditions for beavers or already show signs of current beaver activity. She also determined whether other sites that are in need of beaver services (e.g.



dams or dam analogues) have the necessary resources to support beaver recolonization or reintroduction. Our Utah State University partners are now fine-tuning the model for the Weber watershed based on this new input.

2) Pre- and Post-Beaver Dam Analogue Stream and Riparian Habitat Assessments:

Once the BRAT model is used to identify potential sites for beaver reintroduction or natural recolonization, a beaver dam analogue (BDA) can be installed. Used to rapidly improve riparian conditions, potentially attract beavers to an area and/or provide suitable habitat reintroductions, BDAs are man-made structures created by pounding wood stakes into the channel bottom and weaving locally-



Two Utah State University technicians ground-truth the Beaver Restoration Assessment Tool (BRAT), a state-wide beaver habitat assessment model. Photo by Wild Utah Project summer intern Casey Brucker



This photograph shows a naturally occurring beaver dam and ponds on UM Creek, a tributary to the Fremont River on the Fisblake National Forest. Beavers are being encouraged to return to their native habitat West-wide, as agency habitat managers and planners recognize their importance to well-functioning streams and adjacent riparian areas. Photo courtesy of Scott T. Smith © 2018

sourced branches through the stakes to simulate natural beaver dams and to create new ponds.

BDA's are especially promising restoration tools, as they are quickly being recognized as a rapid and cost-effective engineering solution for highly degraded and down-cut stream channels.

Indeed, all over the western U.S., restoration practitioners are embracing use of this tool and, where appropriate, are encouraging beavers to return to degraded watersheds to enable beavers to heal the wounds inflicted by past human disturbances to streams and other natural watercourses.

Wild Utah Project launched a new assessment program to capture the level of pre-BDA stream and riparian function before the analogue is installed. These assessment data can be compared to post-BDA habitat data using the same assessment protocol one or two years after analogue installation. This allows us to capture restoration effects of BDA's or the dam-building work of native beavers in aquatic ecosystems and associated

riparian vegetation communities.

Consistent before-and-after comparison data of beaver-recovered reaches or BDA sites have often been absent in stream and riparian system restoration planning in Utah. Wild Utah Project, along with our partners, is now working to fill this gap.

In a 2017 joint effort with Utah Division of Wildlife Resources, US Forest Service and Wild Utah Project, we installed a series of BDA's along sections of the incised and entrenched Vernon Creek in the Sheeprock Mountains of central Utah. The project partners agreed that the most appropriate assessment tool for collecting pre- and post-BDA installation data at this site and others is the current Rapid Stream Riparian Assessment (RSRA) Protocol, co-authored by Wild Utah Project nearly 15 years ago.

See page 15 of this report for the full story on baseline data collection field trips and Rapid Stream Riparian Assessment trainings for Utah Division of Wildlife Resources staff and citizen scientists in the Sheeprock Mountains. In 2018, we will be conducting a stream assessment with our partners on five different streams in central and northern Utah scheduled to receive BDA's.

2017 Wildlife Policy Program

Wild Utah Project assembles, delivers, and advocates for the use of best available and up-to-date science to effectively inform wildlife and habitat policy and management decisions in Utah. Our 2017 policy program work supported science-based wildlife policies at both state and federal levels.

Implementing Utah's 2015-2025 Wildlife Action Plan

In 2015, Utah Division of Wildlife Resources, along with many stakeholders including non-profits as well as state and federal agency partners, revised the state's old Wildlife Action Plan (WAP) and unveiled the new 2015-2025 WAP. The updated WAP identifies Species of Greatest Conservation Need and their habitats, analyzes threats to those species and habitats, develops goals and objectives for improving conservation and management of those species and their habitats, and outlines data gaps that need to be filled.

Because Wild Utah Project was an active member on the steering

committee and working group which developed the WAP, we continue to engage on the current implementation phase in development with state and federal agency partnerships. This ongoing process, which relates to a number of our current habitat assessment and research programs, is crucial to advancing Wild Utah Project's mission and provides opportunities for more agency and conservation partner collaborations (e.g. filling data gaps and completing habitat restoration projects).

Specifically, we have made some advances in WAP implementation on the beaver restoration front. Restoring beaver dams/analogues of dams and increasing the potential for native beavers to persist in streams and watersheds where they have been extirpated is a strategy that is becoming an important tool for land managers West-wide and is key to WAP implementation. Restoring this keystone species leads to significant concomitant benefits to a wide range of wetland and riparian dependent plants and animals, some of which are Species of Greatest Conservation Need under the updated WAP.

Utah Riparian Forest Restoration Guidelines

Last year we continued to serve on the Utah Riparian Forest Restoration Working Group and participated in



Beaver mother with three kits: Beaver are important ecosystem engineers whose dam building activities are often central to resilient and functioning watersheds. Restoring beavers on landscapes – where social and environmental factors permit – in order to increase cover and extent of native riparian vegetation is one of the key potential action items included in Utah's current Wildlife Action Plan. Photo © Tom & Pat Leeson



Wild Utah Project Executive Director Allison Jones is shown here testifying before the summer 2017 Wildlife Board meeting about the proposed increase in cougar hunting permits. She urged that the board use the Precautionary Principle (the idea of not acting in the face of uncertainty) regarding the lack of precise estimates for the cougar population in Utah.

Forest Service Plan Revisions

We worked to bring up-to-date conservation science principles into Forest Plan revisions on both the Ashley and Manti-La Sal National Forests. During the initial scoping period for the Ashley National Forest Plan revision, we submitted formal comments in coordination with The Nature Conservancy, which were assimilated into a draft assessment document to be considered as the Forest Plan revision process continues in 2018. Additionally, Wild Utah Project participated in the Manti-La Sal National Forest Plan revision process in coordination with the Three Forests Coalition. This coalition, now in its thirteenth year, includes about a dozen local and regional conservation groups focused on improving resource management on the Fishlake, Dixie and Manti La-Sal National Forests of southern Utah. Along with the coalition, we submitted a citizens alternative for the Manti-La Sal Forest Plan revision, outlining how conservation science could guide how natural resource issues – ranging from livestock grazing to ORV route management and route proliferation to vegetation treatments – are managed. We will continue to participate in both Forest Plan revision processes and will engage in efforts to promote the use of conservation science-informed and evidence-based strategies to develop updated Forest Plan revisions.

the development of riparian forest restoration guidelines for the state. Our partners on this working group include Utah Department of Natural Resources, Bureau of Land Management, US Forest Service, Natural Resources Conservation Service, Grand Canyon Trust, and others. The guidelines will recommend that managers follow a multi-step process that allows them to select from a suite of tools to address the stressors that have been identified as causing stream and riparian forest degradation.

Last fall the working group circulated a draft outline of the new riparian forest restoration guidelines for expert peer review and has received positive reviews and helpful feedback thus far. The working group's desired outcomes include formalized publication of the guidelines and adoption/implementation of the guidelines by stakeholders and restoration practitioners state-wide, resulting in more resilient, healthy and proper functioning riparian forests across Utah.



Utah does not have exact population estimates for cougar across the state. See the 'News Flash' section of this report on page 15 for information on an upcoming citizen science project that will fill data gaps for medium to large mammal species occupancy (including predators like cougars) in the Central Wasatch Mountain Range. Photo © Howie Garber

2017 Citizen Science Program

In 2017, volunteer participation in Wild Utah Project's Citizen Science Program included all age groups, ranging from high school students to retirees. Below, citizen scientists, accompanied by their children, study bats during one of two 'Bat Nights' that Wild Utah Project organized with Utah Division of Wildlife Resources and Salt Lake City Trails and Natural Lands. Photo © Emanuel Vásquez



One of Utah's bat species, the hoary bat, captured and released during Division of Wildlife bat surveys, photo © Adam Brewerton

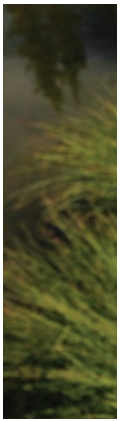
Wild Utah Project offers unique hands-on experiences to volunteers and interns involving the gathering and application of wildlife research data. We train citizens in the field to collect data and fill data gaps for native Utah species and associated habitats. Citizen scientists support our wildlife science and policy programs that contribute to data driven and conservation oriented outcomes for wildlife and habitat management.

'Bat Nights' at the Wild-Urban Interface

Along with Utah Division of Wildlife Resources (UDWR), Utah Bat Conservation Cooperative, and Salt Lake City Trails and Natural Lands Program, Wild Utah Project hosted two 'Bat Nights' this past summer in Parley's Nature Park. This park is located along the wild-urban interface where Parley's Creek flows from the canyon into park and residential areas. Citizen scientists participated in monitoring bat diversity and activity using acoustic equipment, supported trained wildlife biologists in mist-netting of bats, and identified and observed the diverse bat prey base of insects. Participants benefitted from presentation of informational materials from bat experts about living with bats and the importance of the continued function of their ecological roles in our communities.

Filling Aquatic Habitat Condition and Boreal Toad Distribution Data Gaps

2017 marked our fourth year conducting aquatic habitat assessments and boreal toad surveys in the Wasatch Mountains in collaboration with Hogle Zoo, Utah Division of Wildlife Resources, US Forest Service, and Utah Geological Survey (UGS). Wild Utah Project provides an expert citizen scientist training every April in preparation for the field season extending from May through September. Citizen scientists who have completed the training can check out field equipment, sign up for field sites of their choosing, download site forms and site maps from the project's website, and make site visits that best fit their personal schedule and preferred level of hiking difficulty. Data gathered by these trained citizen scientists are collected using a habitat assessment protocol (developed by Wild Utah Project) in coordination with state and federal wildlife/habitat agencies as well as UGS and are being consistently used throughout the state. Additionally, these data are contributing to a state-wide spatial database to inform UGS predictive models for aquatic habitat conditions for indicator species like boreal toads that help assess the condition of aquatic resources and relative function as habitat.





Boreal toads found during our the fourth year of aquatic habitat assessments and boreal toad surveys in the Wasatch Mountains, photo © Kayleigh Mullen, Hogle Zoo Wildlife Biologist

The boreal toad is a state-sensitive species and Species of Greatest Conservation Need under the Utah Wildlife Action Plan. Therefore, there are conservation management and habitat improvement projects associated with this species. Data gathered through our partners and Wild Utah Project citizen science efforts will help determine where boreal toads currently occur and where suitable habitat conditions are found for potential reintroduction as well as habitat improvement and/or monitoring purposes. To learn more about the program and volunteer opportunities, visit www.wildutahproject.org/citizen-science/.

'Pre-Beaver Dam Analogue' Stream Assessments and Training

We identified a prime location for our pilot project to demonstrate the restoration power of human-made beaver dams, Beaver Dam Analogues (BDAs), for degraded streams. Our partners US Forest Service (USFS)

and UDWR received funding from Utah Watershed Restoration Initiative to install a series of BDAs on the incised and entrenched Vernon Creek in the Sheeprock Mountains. We trained UDWR and USFS staff in the Rapid Stream Riparian Assessment (RSRA) method, which is being used to collect pre-BDA stream and riparian habitat data to compare to conditions a year or two later. This allows us to consistently and objectively monitor the effectiveness of BDAs in raising the water table and creating other ecological benefits.

In 2017, we led a five-day citizen science training for both agency employees and citizen science volunteers. Together, they assessed five reaches of Vernon Creek and its tributary that were slated for BDA installations. Our volunteers returned in the fall when, together with USFS and UDWR partners, we installed a dozen BDAs. We will return to the Sheeprock Mountains to re-assess those reaches in one to two years.

News Flash: 2018 Wildlife Camera Study

Collaborative efforts in 2017 with the University of Utah's Biodiversity and Conservation Ecology Lab prepared us for a novel and exciting wildlife camera study in 2018. The 2018 pilot citizen science project will allow us to fill important data gaps regarding the distribution of medium and large mammals in the Central Wasatch Mountain Range and along the wild-urban-interface spanning into Salt Lake Valley. In addition, the effort to fill these data gaps and produce useful corridor maps, species

occupancy models, and spatial databases will continue to enhance current coordinated efforts and partnerships with US Forest Service, US Fish and Wildlife Service, and Utah Division of Wildlife Resources. This will strengthen the application of the study results and the ability to inform future wildlife and habitat management in Utah's Central Wasatch Mountain Range, in the face of significant projected human population growth and climate change.

2017 Wild Utah Project . . .



Sage-grouse strutting their stuff on one of the Parker Mountain Leks where the species is responding well to habitat improvements, photo © Lindsey Christensen Nesbitt, Wild Utah Project board member



Wild Utah Project citizen scientists and Division of Wildlife Resources biologists conduct a riparian habitat assessment in Utah's Sheeprock Mountains.



Boreal toad, Central Wasatch Mountains, photo © Mary Pendergast



Citizen scientists take a break for a group photo.

Citizen Science Field Trip Photo Album

Pete Stacey, Research Professor, Department of Biology, University of New Mexico, teaches at a Wild Utah Project Rapid Stream Riparian Assessment training.



Pallid bat, one of Utah's bat species known for predating larger prey like centipedes and scorpions, photo © Adam Brewerton



Beth Peisner, long-time camp cook for Wild Utah Project citizen science field trips, makes sure our scientists are well fed!



Citizen scientists create beaver dam analogues (BDAs), man-made structures that function much like beaver dams, in the Sheeprock Mountains of Utah.

Beaver, a species now recognized as an important natural engineer able to repair riparian systems West-wide, photo © Lynn Chamberlain, UDWR

In the Field...

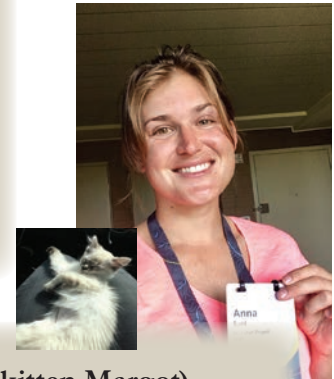
Citizen scientists who help us with ecological studies are critical to Wild Utah Project's success. Their work leverages our staff's resources so that Wild Utah Project can do far more than a typical organization of its size could otherwise be expected to accomplish. Thanks to everyone who has joined us in the field to implement the studies needed to fill data gaps and ultimately have a positive influence on wildlife and wildland management in Utah. See pages 14-15 for 2017 Citizen Science Program updates.

Wild Utah Project Intern/Contractor Spotlight – Thank you!



2017 GIS Intern: Vivian Chan (left, at ESRI Conference)

In 2017, Vivian graduated from her studies in sociology and urban ecology at the University of Utah. Congratulations! After her internship in 2016-2017 ended, she continued to work with Wild Utah Project as a volunteer and has been such an asset that we have recently hired her as a GIS contractor.



2017 GIS Intern: Anna Sahl (and her kitten Margot)

Anna was a tremendous help in 2017, both with field work and data analysis. She is completing her second (and final) year in the Professional Master of Science and Technology (PMST) program at the University of Utah. Her focus is in environmental science and GIS. After graduating, she plans to become an environmental consultant in the non-profit sector.

2017 GIS Contractor: Janis Chan (right, at ESRI conference)

Janis has contracted with our GIS Lab for the past two years. She is an enormous help to our over-stretched GIS Director, Emanuel Vásquez. Janis helps keep our many GIS projects on track!



2017 Field Biology Intern: Casey Brucker

A recent graduate of Utah State University with a B.S. in Conservation and Restoration Ecology, Casey worked on: a Rapid Stream Riparian Assessment training, a beaver dam analogue building project, and beaver restoration model ground-truthing in the Weber River Watershed. She's excited to continue her involvement in Utah's environmental community, and is now working as the ecological technician for one of our partners, Yellowstone to Uintas Connection.

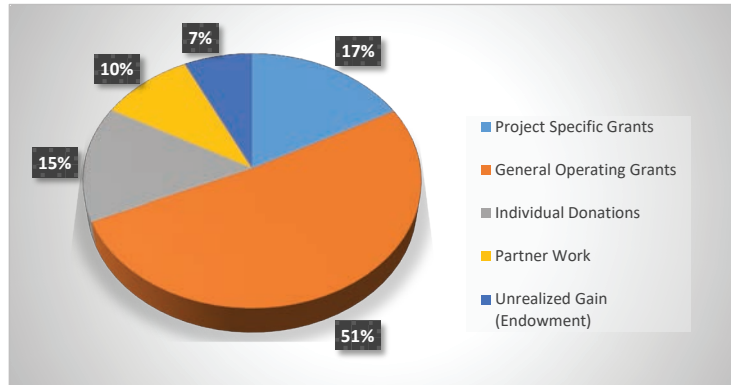


2017 GIS Intern: Mercede Shaw

Mercede is a recent graduate from the University of Utah with a degree in Geography emphasizing Ecology/Biogeography, as well as a certificate in GIS. Mercede is an important part of our GIS team. She applies her interest in conservation ecology and her skills in GIS to help address issues related to wildlife habitats.

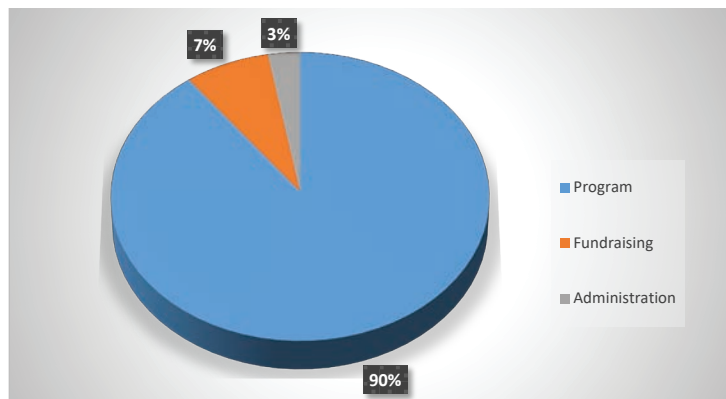
2017 Wild Utah Project Finances

Income: \$266,036



2017 was a great year at Wild Utah Project. We received the second installment of \$200,000 towards our \$1,000,000 endowment from Utah philanthropist Jennifer Speers via the Walbridge Fund. We have been fortunate in that we have not yet had to touch returns on this investment because our fundraising efforts continue to be strong. Here's a special thanks to ALL of our donors who enable our work!

Expenses: \$267,055



STATEMENT OF ACTIVITIES 2017 (January - December 2017)

REVENUE AND OTHER SUPPORT

Project Specific Grants.....	\$45,500
General Operating Grants.....	\$136,426
Individual Donations.....	\$39,680
Partner Work	\$26,094
Unrealized Gain (Endowment) ..	\$18,336

Total Revenue \$266,036

EXPENSES

Program.....	\$239,530
Fundraising.....	\$19,989
Administration.....	\$7,536

Total Expenses \$267,055

ENDOWMENT

Endowment fund value \$1,000,000



These Utah prairie dogs (courtesy Sandy Nervig © 2012; www.growingideas.tv) have each others' backs – just like Wild Utah Project and our many partners. Badgers, burrowing owls, and ferruginous hawks (inset photos left to right courtesy Sandy Nervig © 2009, © 2013, © 2009) all benefit from the presence of this keystone species. Wild Utah Project's science-based work – whether on sage-grouse, boreal toads, beaver, bats, or other important species – takes into account the holistic and interconnected nature of ecosystems.

Thanks to our Partners

Our work would not have been possible in 2017 without support from the following:

Aquarius Plateau Foundation
 The Community Foundation of Utah
 Lawrence T. & Janet T. Dee Foundation
 ESRI Conservation
 Fanwood Foundation
 George S. and Dolores Doré Eccles Foundation
 JEPS Foundation
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 Steven B. Achelis Foundation
 Tracy Aviary Conservation Fund
 The Walbridge Fund
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 XMission
and all of our generous individual donors

We are proud to work with these agency and university collaborators:

Brigham Young University
 Bureau of Land Management
 Colorado Natural Heritage Program
 National Park Service
 Natural History Museum of Utah
 Natural Resource Conservation Service
 University of Utah, Biodiversity and Conservation Ecology Lab
 University of Utah, The Digit Lab
 University of Utah, Department of Geography
 US Department of Agriculture - Agricultural Research Service
 US Forest Service
 US Fish and Wildlife Service

Utah Division of Wildlife Resources
 Utah Department of Natural Resources
 Utah State University
 Weber State University
 Westminster College

Wild Utah Project also works closely with:

Alta Environmental Center
 Back Country Hunters and Anglers
 Brendle Group
 Center for Biological Diversity
 Cycle Greater Yellowstone
 Friends of Alta
 Grand Canyon Trust
 Grand Canyon Wildlands Council
 Grand Staircase Escalante Partners
 Great Old Broads for Wilderness
 HawkWatch International
 Hogle Zoo
 National Parks Conservation Association
 Round River Conservation Studies
 Save Our Canyons
 Sierra Club
 Society for Conservation Biology
 Society for Conservation GIS
 Southern Utah Wilderness Alliance
 The Nature Conservancy
 The Wilderness Society
 Tracy Aviary
 TreeUtah
 Trout Unlimited
 Utah Conservation Corps
 Utah Farm Bureau
 Utah Grazing Improvement Project
 Utah Wants Wolves
 Wasatch Mountain Club
 Western Resources Advocates
 Western Watersheds Project
 Western Wildlife Conservancy
 Wild Earth Guardians
 Wildlands Network/Western Wildway Network
 Wolf Creek Ranch Homeowners Association,
 Environmental Preservation and Ecodiversity Committee
 Yellowstone to Uintas Connection

Special thanks to long-time partner ESRI which, for 20 years, has provided Wild Utah Project with our GIS platform at a tremendous discount. ESRI builds ArcGIS, the world's most powerful mapping and spatial analytics software. Without ESRI's generous support, we would not be able to provide the GIS services to our partner organizations at the discounted rates we are able to offer.

Wild Utah Project 2017 Board of Directors



A sixth-generation Utahn, **Kirsten Allen** holds a B.A. in English from Westminster College and a Master of Public Health degree from the University of Utah. She is the Publisher and Editorial Director at Torrey House Press. Her previous professional background includes public health data analysis, college writing instruction, private piano instruction, and freelance writing and editing. She loves to travel, read, hike, and cook. She has two grown children.

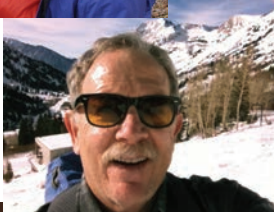


Mark Bailey is a retired partner from Wasatch Advisors, Inc., an investment management firm headquartered in Salt Lake City. A sixth-generation Utahn, Mark grew up in Utah, California, and Florida before returning to Salt Lake City in 1974 to study engineering and finance at the University of Utah. Founder of Torrey House Press, Mark is also a private pilot, cross-country and downhill skier, amateur astro-photographer, and avid reader. He writes about the intrinsic value of wilderness. He has two grown children.



Her work focused on the effects of climate on western U.S. watersheds. She moved back to Utah where she taught at the University of Utah. Currently, Dr. Nesbitt is a Research Associate in the Department of Geology and Geophysics, University of Utah, and the PMST Environmental Science Track Director. Her research focuses on the effects of climate, topography, and ecological factors on mountain streamflow.

Veronica Egan Born in Cleveland Ohio, Veronica (Ronni) has been an advocate for the environment and its creatures all her life. As a child, she and her siblings were not allowed near the water because of its toxicity, so the notion of a damaged environment became familiar to her at an early age. Her family moved to New Mexico in the mid-60s. There, she was a pack trip operator and used her saddle as a soapbox while enabling guests from around the world to experience some of the West's wildest places. She served on the boards or volunteered with no fewer than seven non-profit civic, animal and/or conservation groups, including Great Old Broads for Wilderness, which she eventually directed from Durango, Colorado starting in 2005. In 2014 Ronni moved to Teasdale, Utah, where she now resides.



Scott Berry is a lifelong resident of Utah, citizen conservationist since 1973, trial attorney, Wayne County home owner, and public lands explorer, on foot, raft, skis, and bike.



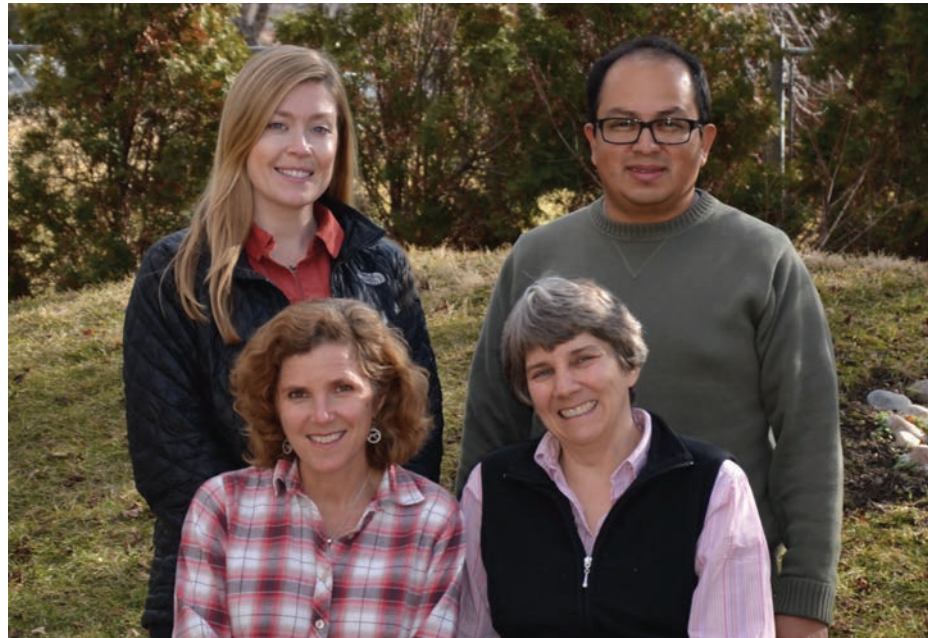
Lindsey Christensen Nesbitt graduated in Wildlife Biology from Brigham Young University, after which she conducted grizzly bear and caribou research as a wildlife biotechnician in Alaska. Dr. Nesbitt went on to receive her Ph.D. in Ecology from Colorado State University where she took a systems approach to understanding ecosystems. She continued this method while conducting postdoctoral work at the Center for Environmental Science and Policy at Stanford University. After her postdoc, she stayed in academia where she worked as a research scientist at Colorado State Univer-

Kathleen Metcalf holds a Masters in Environmental Humanities from the University of Utah and is Creative Director at Torrey House Press. Her previous professional background includes Art Director for Patagonia, Inc., and Designer & Marketing Director/Owner of Wingspan Design in Park City. A twenty-five year resident of Utah, she was raised on the West Coast which accounts for her love of the water. She and her husband Peter are longstanding conservation activists. She has three grown children, loves rivers and non-fiction, and is an avid Laser sailor, private pilot, and artist.



Top to bottom: Kirsten Allen, Mark Bailey, Veronica Eagan, Scott Berry, Lindsey Christensen Nesbitt, Kathleen Metcalf

Wild Utah Project Staff



Top: Mary and Emanuel ; Bottom: Allison and Amy

Allison Jones, Executive Director, received her B.A. in Environmental Studies at the University of California at Santa Cruz under the guidance of her mentor and advisor, Dr. Michael Soulé. She completed her M.S. in Conservation Biology at the University of Nevada, Reno, in 1996. She then worked as an ecological consultant where she performed habitat assessments and surveys for federally threatened birds, small mammals and plants. Allison joined Wild Utah Project as staff conservation biologist in 1999. In 2014, she received the Jasper Carlton Conservation in the Trenches Award from Rocky Mountain Wild. Allison has led the organization as its Executive Director since 2014.

Emanuel Vásquez, GIS Director, joined the staff of Wild Utah Project in 2010 as our GIS Analyst. Prior to that, he worked for ten years in many conservation efforts

that include the creation of a municipal park and the preservation of 82,000 acres of forestland in the highlands of Guatemala, including nine of the country's 23 volcanoes. He earned an Associate's degree in Forestry from the National School of Agriculture in Guatemala and a B.S. in Business from Galileo University, Guatemala. He also received a certificate in GIS with emphasis in Remote Sensing and his Master's degree in Geographic Information Science from the University of Utah.

Mary Pendergast, Ecologist and Conservation Biologist, joined the Wild Utah Project in February 2014. Mary received her Ph.D. from Utah State University in Biology and Community Ecology under the guidance of her mentor and advisor, Dr. Jim MacMahon. Mary then worked as an ecologist and wildlife biologist with a local consulting firm where she coordinated and conducted

biological resource studies and habitat assessments with various stakeholders including federal and state agency biologists, the public, and project developers. Dr. Pendergast also teaches ecology and field biology as an adjunct faculty member at Westminster College.

Amy O'Connor, Development Director, brings 30 years of development experience to Wild Utah Project. While she began her career with a M.S. in biology from the University of Utah (1988), she spent eight years building the Southern Utah Wilderness Alliance's membership and outreach efforts. Subsequently, she ran an organization development consulting business for 17 years, serving hundreds of non-profits nationwide and specializing in fundraising, board development, and strategic planning. Amy previously worked for ACLU of Utah and Wild Utah Project.



Thank You!

Dear Friends,

It is a simple fact that the important conservation work at Wild Utah Project would NOT be possible without the generous support of individuals, foundations and businesses. Whether investment in our work comes in the form of donations, in-kind gifts, or volunteer time, our power to affect change in wildlife and land policy and management is derived from our supporters. Thank you for all of your invaluable help!

With gratitude —
on behalf of the board and staff of Wild Utah Project,

Allison Jones
Executive Director, Wild Utah Project

How you can invest in Wild Utah Project:

Donate your 4-wheel drive vehicle, a huge help for our field work

Make a contribution of cash

Become a Sustaining Donor by giving monthly

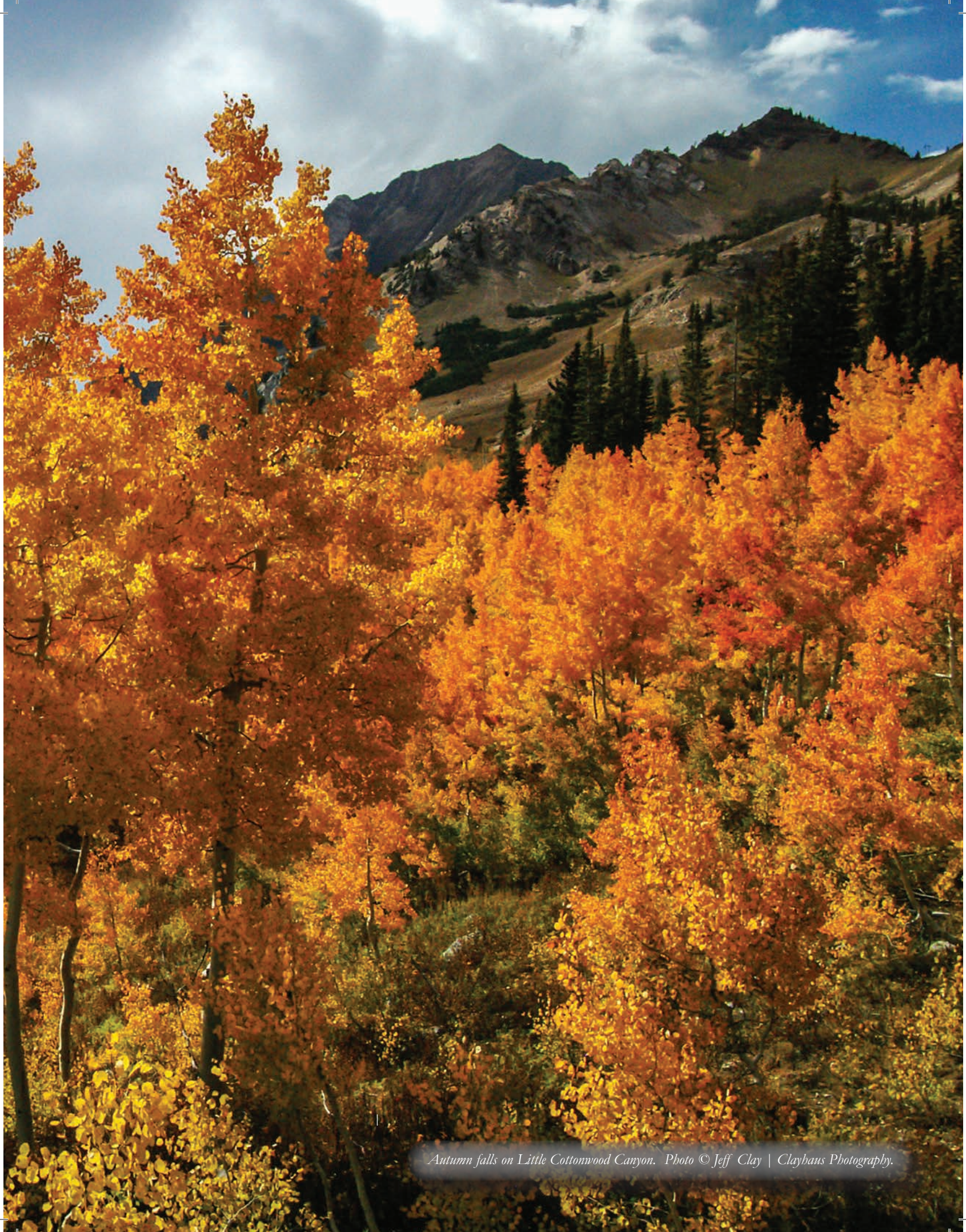
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Give to our new endowment – your gift will keep on giving!

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Apply for an ecology or GIS internship

For more information about Wild Utah Project and opportunities to get involved, visit us at our website wildutahproject.org



Autumn falls on Little Cottonwood Canyon. Photo © Jeff Clay | Clayhaus Photography.



Wild Utah Project

The mission of Wild Utah Project is to provide science-based strategies for wildlife and land conservation.

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