

UGS BOARD MEETING
Department of Natural Resources
Utah Geological Survey, Utah Core Research Center
240 N. Redwood Road, Salt Lake City
Wednesday, April 12, 2023

The meeting of the UGS Board was called to order at 8:31 a.m.

ATTENDANCE

Board members: Elissa Richards – Chair, Becky Hammond, David Garbrecht, Riley Brinkerhoff and Tom Faddies. Ken Fleck – Vice Chair, attended remotely. Sam Quigley and Rick Chesnut were not in attendance.

UGS Staff: Bill Keach, Mike Hylland, Jodi Thacker, Cheryl Wing, Hollie Brown, Jay Hill, Jackie DeWolfe, and Michael Vanden Berg. Mark Milligan and Jeremiah Bernau joined to make their presentation.

ACTION ITEMS

Approval of Minutes from Previous Meeting

Riley Brinkerhoff motioned to approve the minutes of the January 18, 2023, UGS Board meeting. Becky Hammond seconded the motion. The Board voted unanimous, and the motion carried.

Formal Approval of Project Proposals

Enclosed in the board meeting materials is the Contract Proposal spreadsheet from 2019 forward. This is a good indicator of how the survey is doing with outside funding awards, both federal funds and dedicated credits, and what's on the horizon. Although contract proposals for external funding are provisionally approved by the Board by email, they require formal approval at the next Board meeting. The proposals are:

Bryce Canyon National Park; funding from the National Park Service; new funding to the UGS \$35,000; total project \$70,000; estimated start date 3/15/2023; estimated end date 12/30/2023.

Utah Statewide Carbon Storage Assessment; funding from the Department of Energy; new funding to the UGS \$446,725; total project \$1,131,388; estimated start date 9/1/23; estimated end date 8/31/2025.

USGS Earth MRI Geochemical Analysis of the Colorado Plateau; funding from the New Mexico Bureau of Geology and Mineral Resources; new funding to the UGS \$118,162; total project \$118,162; estimated start date 8/1/2023; estimated end date 7/31/2026.

Utah State Paleontological Database; funding from the Bureau of Land Management; new funding to the UGS \$15,000; total project \$30,000; estimated start date 7/1/2023; estimated end date 6/30/2024.

Red Rocks DAC Hub; funding from Fervo Energy Company (originally from DOE/NETL); new funding to the UGS \$95,323; total project \$119,153; estimated start date 9/1/2023; estimated end date 9/30/2025.

Wet meadow mapping and remote sensing analysis to identify habitat restoration opportunities in northeast Utah; funding from the U.S. Fish and Wildlife Service; new funding to the UGS \$108,627; total project \$144,836; estimated start date 10/1/2023; estimated end date 9/30/2026.

Hydrogeological Study for the Town of Castle Valley with emphasis on creating a water budget; funding to the UGS \$54,498; total project \$108,997; estimated start date 4/15/2023; estimated end date 12/31/2025.

Riley Brinkerhoff motioned to formally approve the project proposals. Becky Hammond seconded the motion. The Board voted, and the motion carried.

Director's Report – April 2023

Personnel Changes

Retirements:

None known at this time.

Resignations:

Miles McCoy-Sulentic – Wetlands Assistant

Martha Jensen – GIS Manager. Accepted a position with the BLM

Jessie Pierson – GIS Analyst. Transferred to DNR Division of Wildlife

Katie Cummings – Core Center Curator

New positions:

Ben Erickson – Promoted to Senior Landslides Geologist, Hazards Program

Jackson Smith – Promoted to Geologist, GIO Program

Trevor Schlossnagle – Promoted to Project Geologist, Groundwater Program

Zach Anderson – Promoted to Senior Geologist, Mapping Program

Positions to fill:

GIS Manager - in progress.

GIS Analyst Groundwater & Wetlands starting April 18th

Several GIS related positions - interviews in progress

New hires:

None (that have started yet)

Recent Activities – Looking Forward

UGS will host 2024 annual AASG meeting in Park City, June 1st-6th

Energy and Minerals

The Energy and Minerals Program continues to work on several grant funded projects investigating critical minerals, oil and gas potential in the northern Paradox Basin, geothermal resources in the West Desert, and carbon storage opportunities in several places across the state. Notably, a second edition of the popular *Critical Minerals of Utah* report was published in February 2023, and we received notice that our ~\$10 million Uinta Basin CO₂ storage assessment proposal (written in collaboration with EGI) was recommended for funding by DOE and we have entered the negotiation period. Bathymetric LiDAR has been funded at \$1.8 million.

Geologic Hazards

The Geologic Hazards Program has selected Ben Erickson to fill the vacant Landslide Hazards Geologist position and we are working to backfill his current position. With the very heavy snowfall this winter season, we are expecting numerous landslides and rockfall as the snow melts through spring and early summer, and will respond to them as appropriate and resources allow. Once the snow melts substantially, we will visit selected landslide areas on our annual landslide reconnaissance. Data preservation project continues adding historical aerial images to the Utah Aerial Imagery Database as well as other projects.

Groundwater & Wetlands

Groundwater: Our Emery-Johns Valley-Bryce Canyon City Hydrogeology and Water Budget report is nearly a reviewable draft. You may recall that a few years ago we had to rush an open-file report to publication and Janae had to provide a deposition in a legal case involving water rights in the valley. The Division of Water Rights is excited to have this publication to help resolve groundwater development issues there. The report will also include bonus content - results of a septic tank density analysis and groundwater classification petition. Our replacement for our GIS Analyst is Kiersten Winwood who will move over from the Division of Water Rights on April 18. Kiersten replaces Nathan Payne who transferred to our Data Management Program in January. We anticipate hiring two new employees that were partially funded by the legislature in the 2023 General Session and beginning development of our groundwater web app.

Wetlands: Wetland mapping continues apace. Our Central Basin Plant ID book and Montane Wetlands Assessment projects are delayed due to the recent departure of Miles McCoy-Sulentich to the Colorado Natural History Museum. We eagerly await the RFP for the next round of EPA Wetland Program Development Grants, which have been the foundation of the Wetlands program since its inception. We are currently pursuing a wetland mapping project with the U.S. Fish and Wildlife Service to investigate remote sensing approaches to map critical wet meadow habitat embedded in sage-steppe ecosystems. Groundwater/Wetlands continues to grow and we will need to find accommodations for this growth.

Geologic Mapping & Paleontology

Mapping: The Geologic Mapping group received notification of award for the recently submitted STATEMAP proposal. We were funded at ~\$620k based on a total ask of ~\$800k. These projects include a range of new geologic maps, a 3D geologic data project, State Geologic Map revisions, a geoheritage sites project, and a stratigraphic study of the Flagstaff and adjoining

formations. We will resubmit a down-selected project list to the USGS by the end of April. We had a debrief with the STATEMAP USGS leads last Tuesday. They gave feedback on our program and recent proposal. They commended us for the quality of our work and proposal. Our proposal was within 2 points of the highest scoring proposal, we received 95 (the highest was 97). We also had the largest number of projects proposed.

We are nearing completion on hiring two additional GIS staff to work on map-related GIS and cartography. One of these positions will replace Kent Brown who retired last year and the other will replace a position that was previously in Editorial. With these hires the mapping group will have restaffed following our year of retirement.

We are continuing work on archiving our extensive geologic map collection. We are actively scanning these maps and we intend to make many of these available online as part of the newly named "Lehi F. Hintze Geologic Map Archive". Lehi contributed ~1/3 of the total maps in our collection and safely stored these for many years in his personal garage. We believe this naming is an important acknowledgement of his importance to geologic mapping in Utah. We will be attending the introductory meeting of the Intermountain Coalition in Denver next week. This group will likely yield some new sources of funding for mapping that can support current federal and state geologic mapping goals.

Paleontology: The Paleontology group is working on finalizing plans for the upcoming Mesozoic Terrestrial Ecosystems Conference that will be hosted at the DNR in June. This is a global plenary conference that is being hosted for the first time in the U.S. here in Utah. The speakers list includes nearly all the top dinosaur researchers from across the globe. There will be unique field trips hosted both before and after the conference.

Paleontology staff have also begun fieldwork for paleontological assessments in Glen Canyon and Canyonlands. These assessments will be completed in April and May. The Paleontology group has also submitted a proposal to assist with the collection of a unique Hadrosaur skeleton located in Bryce Canyon.

Paleontology – The ‘megablock’ and future directions. See separate document. The options in this document were discussed at length. The challenge is to find adequate funding to prepare, curate and reposit the block. No decisions at this time.

Information & Outreach

Jackson Smith, current bookstore manager/geologist, is filling the GIO Geologist position that will focus on K-12 education and outreach to teachers. This position has been vacant since a staff retirement a few years ago. We received 51 applicants.

We are currently working to fill the bookstore manager position.

Torri Duncan from the bookstore organized and staffed, with Mark’s help, a display at Outdoor Recreation Day on the Hill, at the Utah State Capitol in February. The event was well attended with a steady stream of interested and engaged people, including multiple legislators and their staff.

Last year the legislature changed Utah State Park passes to calendar year passes instead of being valid for one year from the date of purchase. Due to the change, the bookstore has seen a large spike in passes sold in the first quarter, but sales may drop significantly as the year progresses.

The bookstore informally tallied walk-in customers for 8 weeks to estimate who they are serving:

- Bookstore map and books sales: 34.3% (106)
- State Parks (e.g., passes): 35.3% (109)
- GIO (geology questions): 19.4% (60)
- DWR (e.g., hunters): 7.1% (22)
- Other Division: 3.9% (12)

Our Editorial team continues to help other state agencies with projects that include:

- DEM Floodplain Management webpages
- OED Energy Landscape webpages
- PowerPoint slides for DNR Executive Director Joel Ferry

Our Editorial team finished an excellent, updated and completely redesigned UGS brochure. Hollie, our PIO, was averaging at least two media inquiries a week in February but this has diminished, a welcomed lull before a possible storm when spring landslides are likely to occur. Mark Milligan, program manager, survived his first year as UGS Legislative Liaison.

Data Management

We currently have many projects on our plate, with over 80 feature-requests/bugs/new-app-requests in our queue to address. We're doing our best to keep a good handle on everything coming at us. The UGS website has been completely redesigned, the Geologic Map Portal's geologic maps can now “blend” with the basemap without increasing transparency (and decreasing color quality), the Wetlands application continuously gets new data and has many grant-funded feature requests, the Groundwater Monitoring Portal got a full rewrite and new user interface, and the Utah Rockhounder (a version 2 will be out later this year) and Visitor Guide to Utah Fossils web applications were released. Funding was received for FY24 to build a new “dashboard” that will archive and share data about Utah’s groundwater across the state. This project will be done in cooperation with the Utah Division of Water Rights.

Website activity and usage continue to be high.

Martha Jensen resigned as GIS Manager. For the moment Marshall Robinson (PM) has taken on that role.

Cedar City office – Please see the separate report from Tyler and Lance

Funding and Budget

Financially, the UGS is in good shape. Federal and other outside funding is strong. The UGS’ challenge to pursuing additional outside funding is limited by its ability to fund internal staff to satisfy “match” requirements.

Mineral Lease revenues to the UGS for FY22 came in at \$1,639,718.29, which is significantly higher than FY21. Strong prices for petroleum products pushed our initial Mineral Lease revenue forecast for FY23 to ~\$2.4 million. In January we dropped that forecast to ~\$2.2 million due to a softening of petroleum prices. The current forecast (a very inexact science) is back up to ~\$2.4 million, once again demonstrating the volatility in this revenue source.

In the January board meeting we discussed some of the challenges related to how the State Tax Commission interpreted the funding language in the 2021 Senate Bill 133, which established a restricted account with funds coming from severance taxes on production from oil, gas and mining operations. Since that time we have met with the commission and the Governor's Office of Planning and Budget. The final decision followed the interpretation of the commission which left us with ~\$14,000 in our restricted account. The upside is that the deposits to this account will be significantly higher in the next few years due to higher mining and petroleum prices, which in turn lead to higher severance taxes.

The 2023 legislature passed a bill clarifying the intent language of SB133.

In June of last year, we hosted Senator Evan Vickers along with staff from the Governor's Office of Planning and Budget on a trip to Parowan Valley and Enoch. The goal was to improve understanding of the subsidence and other issues related to over pumping of groundwater. The UGS proposed a building block to fund a new position to better monitor groundwater using satellite acquired data. This proposal (~\$143,000) was included in the Governor's FY24 proposed budget.

UPDATE: The legislature approved the majority of this request due in part to our legislative outreach in the past year.

During the summer and fall the UGS partnered with Envision Utah and local water districts in hosting members of the legislature on visits/tours of Wasatch fault zone locations that affect the major aqueducts delivering water to the greater Wasatch Front. The first tour in August (reported to the UGS Board last August) was so successful that we were asked to host two more tours, one in Utah County and the other in southern Salt Lake County. A direct outcome of these tours was the Governor including \$50,000,000 for improving aqueduct resilience in his proposed FY24 budget. Though the UGS is not a direct recipient of this funding, it does show the impact we have to promote and ensure the safety of the community.

UPDATE: The legislature approved the \$50,000,000 request. A great example of the UGS' proactive efforts to reach out to the legislature to inform them of critical issues.

Financial Update

Financial documents in the Board packet include the FY23 UGS Budget-Actual-Forecast Summary (through February 2023) and the Contracts Proposals Tracking. The UGS February forecast indicates an FY23 surplus of \$2,611,919. Part of that surplus estimate is \$420,680 obligated for the Great Salt Lake Groundwater studies and \$331,370 obligated for the Bonneville Salt Flats Restoration project. The balance of \$1,859,869 is general operating. It will need to be adjusted with a combination of reduced revenue estimates and increased expenditure to get it

closer to the \$1,304,300 allowed; otherwise, we risk lapsing nearly \$500,000. Contributing to this larger than expected surplus is an increase in Mineral Lease funds and a decrease in personnel expenditures due to turnover savings.

We have non-lapse authority up to \$2,056,400, which includes \$420,700 for the Great Salt Lake Groundwater studies and \$331,400 for the Bonneville Salt Flats Restoration project, and \$1,304,300 for general operating items.

February represents 67% of the fiscal year completed. The total percentage of outside revenue billed is about 56% and expenditure to date is about 56%.

Legislative Update – Finance

Included in the Board packet is a Summary of all Budget Bills from the 2023 Legislative General Session. In addition to our base budget, we received \$628,400 for an estimated increase in Mineral Lease funds in FY23 and FY24. We also received partial funding for the Enhanced Groundwater Monitoring and Investigations Building Block at \$404,600. The legislature was very generous with compensation funding this session. Among other benefit adjustments, there will be a 5% COLA and 12 positions within UGS will be getting a targeted increase up to 10% or 15%. The compensation funding (\$1,130,400) will have a significant impact on the ongoing budget because only 45% (\$512,600) was general funds. The other 55% (\$617,500) will need to be made up from grant funding (\$341,300), Mineral Lease revenue, and the restricted account (\$276,200).

STAFF PRESENTATIONS

Mark Milligan presented on Legislative Bill Update

During the 2023 General Session, legislators proposed a record breaking 933 bills and resolutions (previous record, 892 in 2012).

- **House Bills** **567**
- House Concurrent Resolutions 10
- House Joint Resolutions 28
- House Resolutions 4
- **Senate Bills** **300**
- Senate Concurrent Resolutions 9
- Senate Joint Resolutions 11
- Senate Resolutions 4
- +Numerous Funding requests!

PASSED BILLS of interest to UGS

HB396, Paleontological Resources Amendments, Elison

- This bill was written for the St. George Dinosaur Discovery Site at Johnson Farm to address their concerns about keeping their collection intact and not having any specimens sent to the Natural History Museum of Utah in Salt Lake City.

- Introduced as “City Property Ownership Amendments,” the original bill stipulated that all cities & counties could elect to keep all paleo resources collected on lands they owned or controlled.
- In response to feedback from the UGS and Natural History Museum of Utah the bill was amended to stipulate that only first or second-class cities with a paleontologist at a paleontology museum with an approved repository or detailed plan to become one, can elect to keep their paleo resources.

SB123, Boards and Commissions, Harper

- The original bill repealed the Professional Geologist Licensing Board.
- The amended version requires review of the Board by Sept 30, 2023.

SB201, Radon Notice Amendments, Kennedy

- Stipulates that the DEQ, Radiation Control, Radon Program will provide radon information to counties, which can be included with property tax notices for 2023.
- The provided information is to include radon’s effects, presence in some homes, and the availability of testing.

HB137, State Crustacean Designation, Lesser—brine shrimp.

HB220, Emissions Reduction Amendments, Stoddard—Air emissions inventory of point sources on the Wasatch Front (MagCorp).

HB321, Mineral Lease Amendments, Christofferson—Online option for disclosure of mineral lease applications.

HB513, Great Salt Lake Amendments, Snider—Severance tax on metalliferous minerals (e.g., lithium) in Great Salt Lake brines.

SB53, Groundwater Use Amendments, Vickers—Aquifer recharge

SB62, Hydrogen Amendments, Hinkins—Creates a hydrogen advisory council within OED.

SB107, Oil and Gas Severance Tax Amendments, Winterton—Above-trend revenue goes into a transportation fund (does not impact UGS).

SB119, Per Capita Consumptive Use, McKell—Prescribes how to calculate per capita water use.

SB256, Severance Tax Revenue Amendments, Hinkins—Clarifies UGS & OGM deposits. This bill was a response to the funds swept from UGS and OGM accounts last year.

SB296, Performance Reporting and Efficiency Process Amendments, Ipson—Increases the threshold for a funding item that requires a performance measure.

FAILED BILLS of interest to UGS

HB412, State Employment Revisions, Christofferson—Would have ultimately converted all employees to career service exempt status.

HB451, State Entity Restrictions, Hall—For state agencies, prohibited statements for hiring and paid training about racism, diversity, etc.

SB28, Radon Related Amendments, Sandall—Stipulated that DEQ, Radiation Control, would create an online map showing radon tests data. Also required testing and mitigation in public buildings.

SB110, Background Check Modifications, Grover—Required background checks for all volunteers who contact children (would have greatly impacted UGS Earth Science Week).

HB241, Labor Union Amendments, Teuscher—No UPEA deductions from paychecks.

HB273, State Trust Lands Administration Amendments, Lyman—SITLA land sales.

HB286, Great Salt Lake Funding Modifications, Briscoe—Provided money for Great Salt Lake water level management.

HB514, Fossil Fuels Tax Modifications, Briscoe—Created a carbon emissions tax.

HB527, Mining Operations Amendments, Stratton—Required the OGM Board to adjudicate permit challenges. Modified vested mining regulations.

SB268, Lithium Severance Tax Amendments, Blouin—Severance tax on lithium.

SCR6, Concurrent Resolution Regarding the Great Salt Lake Elevation Targets, Blouin—Recommended a target elevation of 4,198 feet.

Mike Hylland gave a UGS Strategic Planning presentation.

Governor’s Office of Planning and Budget (GOPB) has directed all state agencies to develop a strategic plan by June 30. Each DNR division/office is contributing to the DNR strategic plan. UGS planning components include goals (outcome-based, high-level target, 4-5 years time frame), objectives (several measurable and timely results per goal, 2-3 years time frame) and strategies (methods/projects anticipated to achieve goal/objective, 1-2 year time frame).

UGS goals that tie directly to DNR Key Themes include the following: (1) Enhancing the certainty and security of Utah’s water by ensuring federal, state, and local partners including the public have the information they need about Utah’s groundwater and wetlands to support scientifically informed decision-making. (2) Improving the health and resilience of our lands, resources, watersheds and wildlife by providing comprehensive data, information, and scientific emergency response to reduce Utah’s economic, property, and life-safety risk from geologic hazards. We also will continue to responsibly develop energy and mineral resources to meet the needs of our modern society. (3) Advancing the stewardship of our public lands and natural history by providing modern geologic mapping, 3D data, and geologic publications that address the resource and development needs of the State of Utah. (4) Promoting, conserving, and informing the public of Utah's unique paleontological resources, expanding Utah’s energy and minerals portfolio, and focusing on our culture, equity and employees.

Jeremiah Bernau presented on Bonneville Salt Flats research.

Board adjourned 11:28 am.

Jeremiah reported on the results to date of the project to understand the role of groundwater in the growth of salt on the Bonneville Salt Flats. Interpretation of the data suggests that groundwater flowing towards the salt flats is an important contributor to how much salt is on the flats. However, it appears that pumping of groundwater for the past ~20 years has reversed the flow of groundwater away from the salt flats.