

March 27, 2018

Documents:

Meeting Agenda

Meeting Minutes

Read-Aheads and Presentations:

Long-Term Plan Priorities

Scope of Work Ideas [not included]

Scope of Work Descriptions [not included]

Draft Scopes of Work [not included]

Draft Scope of Work Description Template

ScW/HR Long-Term Plan Proposed Future Activities

MRGESCP Habitat Restoration Effectiveness Monitoring: 2010-2012 [report not included]

4-Part Review Comment Table [spreadsheet not included]

New Geospatial Datasets Covering New Mexico's Rio Grande [presentation]



Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Science and Habitat Restoration Work Group Meeting Agenda

March 27, 2018 1:00 AM - 4:00 PM

Location: U.S. Army Corp of Engineers, 4101 Jefferson Plaza NE

Conference Call Information:

Phone: (712) 451-0011 Passcode: 141544

1:00-1:10	Welcome, Introductions, and Agenda Review ➤ Decision: Approve meeting agenda	Ashley Tanner
1:10-1:20	Review of January 16, 2018 Science and HR Work Group meeting ➤ Decision: Approve February 27, 2018 meeting minutes	Ashley Tanner
1:20-1:25	Updates on Implementing the Genetics and Tamarisk SOWs	Reclamation Lynette Giesen
1:25-1:40	Update on “The Impact of Temperature Degree Days on Reproductive Readiness and Survival of Rio Grande Silvery Minnow” SOW (formerly “RGSM Early Life History”)	Ashley Tanner
1:40-1:50	Update on the “jiggle” meeting.	Ashley Tanner
1:50-2:00	Break	
2:00-3:00	Discuss existing and potential SOW • Review SOW outlines submitted by the group ➤ Action Item: Prioritize SOW outlines and further develop 3-5 SOW outlines for submission in mid-April	Ashley Tanner
3:00-3:45	Discuss DBMS “wish list” for consideration by the USGS ➤ Action Item: Compile items for USGS consideration in DBMS development.	Debbie Lee
3:45-3:55	Additional Items • Egg collection/fish salvage call for volunteers ➤ Decision: When would the group like to hear an update on the tamarisk leaf beetle from Matt Johnson (Colorado Plateau Research Station/Northern AZ University)? ➤ Decision: Decide on the continuation of future seminar series/brown bags prior to ScW/HR meetings.	Ashley Tanner
3:55-4:00	Meeting Summary, Next Step, and Adjourn ➤ Next meeting: TBD (pending potential EC structure decision)	Ashley Tanner



Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Science and Habitat Restoration (ScW/HR) Work Group Meeting Agenda

March 27, 2018 1:00 PM – 4:00 PM

Location: U.S. Army Corp of Engineers, 4101 Jefferson Plaza NE

Decisions

- ✓ The minutes of the February 27, 2018, ScW/HR meeting were approved with the following changes:
 - These and future minutes will not contain a person’s name or affiliation unless associated with a presentation that person is giving, action item, or task.
 - In the RGSM Early Life History SOW portion of the minutes, “treatment” will be corrected to “Cochiti Lake upstream.”
 - The Dave Wegner and Mike Marcus Action Item on peer review prioritization is in progress (it is not “Complete”).
- ✓ Continue the Brown Bags before each ScW/HR meeting as speakers are available.
 - The group would like to hear an update on the tamarisk leaf beetle from Matt Johnson (Colorado Plateau Research Station/Northern Arizona University)

Action Items

WHO	NEW ACTION ITEMS	BY WHEN
WEST	Make corrections to the February 27, 2018 meeting minutes and make available to the group.	ASAP
Michael Porter	Send WEST the four-part comment structure utilized by U.S. Army Corps of Engineers (USACE).	3/30/18
All	Send focus questions concerning peer review to WEST to compile for the April 24 th meeting.	4/17/18
WEST	WEST will pull together focus questions and help define peer review for the next meeting.	4/24/18
WEST	Develop a Brown Bag presentation on Peer Review.	In 2018
Vicky Ryan	Confirm with Bureau of Reclamation (Reclamation) on youth volunteer availability and get back to WEST.	ASAP
WEST	Send out Kathy Lang’s and Thomas Archdeacon’s volunteer expectations to the mailing list.	ASAP after receipt
WEST	Send Mike Marcus the SOW template.	ASAP
Mike Marcus, Matthew Peterson	Consolidate habitat restoration SOW (using SOW template) and forward to WEST.	3/28/18
Rick Billings, Grace Haggerty	Consolidate fish SOW (using SOW template) and forward to WEST.	3/28/18

WHO	NEW ACTION ITEMS	BY WHEN
WEST	Put together final list of all SOWs and send to group.	3/29/18
All	Rank top 3 SOW choices (by agency) to WEST for submission in mid-April. Include the time commitment for those SOWs and submit to WEST.	4/3/18
US Geological Survey (USGS) Developers	Send WEST examples of DBMS formats that work well.	Before May meeting with USGS
All	Develop a list of DBMS questions, wish-list, and requirements especially as it pertains to GIS map components.	Before May meeting with USGS
WEST, USGS	Schedule a half-day meeting in May to have a group discussion on the GIS map components of the DBMS.	ASAP
Lynette Giesen	Check on Matt Johnson's availability to give Brown Bag on the Tamarisk Leaf Beetle the hour before the ScW/HR meeting on April 24.	ASAP
ONGOING ACTION ITEMS		
WEST	Look at the Tetra Tech/SCWA HR study provided by Mike Marcus and determine whether it covers #5 under the draft Proposed 2018 Science/Habitat Restoration Work Plan. Send the study's final report to the group (<i>Complete</i>), and determine whether it has been added to the DBMS.	Ongoing
All	Send any map files in any format to John Peterson at USACE or to WEST for inclusion in the DBMS.	ASAP

Next Meeting

- April 24, 2018, 1:00pm to 4:00pm, location TBA.

Updates on Implementing the Genetics and Tamarisk SOWs

- The Development of RGSM High Throughput Markers (Genetics SOW) is currently in acquisitions and is still on track to be awarded in FY18.
- The Identifying Restoration Priorities for Threatened Tamarisk-Dominated Habitat to Benefit Future Habitat for Southwestern Willow Flycatcher (Tamarisk SOW) was awarded to Tetra Tech. There is no new update from the last meeting.

Update on “The Impact of Temperature Degree Days on Reproductive Readiness and Survival of Rio Grande Silvery Minnow” SOW (formerly “RGSM Early Life History”)

- At the last meeting of the Early Life History (ELH) Work Group, the SOW underwent some changes to address comments by the U.S. Fish & Wildlife Service (USFWS). Fundamentally the SOW has not changed; however, more detail was requested to bridge science and field work.
 - Michael Porter is finalizing the draft “The Impact of Temperature Degree Days on Reproductive Readiness and Survival of Rio Grande Silvery Minnow” SOW, after which WEST will fill in details recommended at the ELH meeting.

Peer Review and Comment Process for SOWs

A discussion began around how to best structure the comment process for developing SOWs, and how to best use peer review to improve the SOW-to-proposal process. It was agreed that a structure of comments which required the reviewer to give a basis for concern as well as a path forward would be productive. The reviewer should provide detail on what the issue may be and helps the writer correct or address the issue properly. Other questions were raised as well and it was agreed that the topic could be discussed at the next meeting of the group but would also be a good topic for a brown bag session.

- Michael Porter will send WEST a four-part comment structure utilized by the USACE.
- WEST will pull together focus questions and help define peer review for the next meeting.
- WEST to develop a Brown Bag presentation on Peer Review; keeping in mind, September is the deadline for completed SOWs.

Update on the “Jiggle” Meeting

- A “jiggle” coordination meeting took place last Friday (March 23, 2018). The water managers for the Middle Rio Grande Conservancy District (MRGCD) and the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) discussed the mechanics of creating a “jiggle,” an increase in flow on the Rio Grande, by scheduling water management actions. Coordinating efforts at Angostura, Alameda, and Isleta Dams will cause a “jiggle” that should also be felt downstream. The water management actions are scheduled to begin May 8 and end on May 29.
 - This group will meet again on May 3rd.
- SWCA, under contract with ABCWUA, will be monitoring Rio Grande Silvery Minnow (RGSM) reproductive response to the “jiggle.” They will monitor at fixed sites above and below the dam. SWCA, under contract with the New Mexico Interstate Stream Commission (NMISC), will also provide staffing support to the City of Albuquerque BioPark (BioPark) in their effort to collect RGSM eggs. Kathy Lang with the BioPark noted that they will not be monitoring at fixed sites and will “chase” the flow downstream to optimize egg collection.
- Kathy Lang is asking for volunteers to help the egg collection effort. She is requesting volunteers for the actual egg collection in the river, and to help transport Moore egg collectors to collection sites. Volunteers (who are willing to get the call at any time) will be needed between May 1 and May 14.
- Thomas Archdeacon (USFWS) is in need of fish salvage volunteers, mostly for weekends in mid-April unless the river is dry or there are too little fish.
- WEST is helping to coordinate the volunteer efforts by collecting names, contact information, and available days from interested parties. There will be an official call for volunteers forthcoming.
 - Vicky Ryan will confirm with Reclamation on youth volunteer availability and get back to WEST.
 - WEST will send out Kathy Lang’s and Thomas Archdeacon’s job hazard descriptions for each volunteer position to the mailing list.

Discussion of Existing and Potential SOW

- The goal was to identify SOWs to put forward in mid-April for funding which could be implemented in 2020. Those not indicated for submission will not “disappear” but could be developed further in the following years. The ScW/HR’s Long-Term Plan of Proposed Future Activities may help the group prioritize SOWs and what is needed at the river.
- After some discussion on several SOWs, and the reminder that ScW/HR would make recommendations as to SOWs that have merit and not based on money, it was suggested that the group do a quick run through of each SOW and then rank top choices. Key comments follow:
 - SOW #8 - Data Synthesis Project: a legacy project which could support SOW #1 and #3. It was agreed it could be a predecessor or an initial task of those, and perhaps other SOW. Data synthesis efforts will require specific objectives and a clear description of desired deliverables to prevent this task from becoming enormous.
 - SOW #9 - ...Communal Spawning for the... [RGSM]: would need to come after the high throughput markers study and thus should be pushed to next year.
 - SOW #10 – Habitat Restoration Feature Data Synthesis...: another good place to start data synthesis; it could be merged with SOWs #6, 7, 10 and 15.
 - SOW #11 - Program Economics: is actually a duplication of SOW #4.
 - SOW #12 - PIT Tagging and Genetic Characterization of Broodstock: is another SOW that comes after high throughput markers study and should be pushed to next year.
 - It was decided the ideas submitted within SOW #14 would not be considered.
 - SOW #16 – RGSM Food Availability...: would capture a lot of information on life stage of RGSM but would be hard to implement. It could be revised to make it merge with SOW #2 as a line task.
- Mike Marcus and Mathew Peterson will consolidate the habitat restoration SOW and forward to WEST by 3/28/18.
- Rick Billings and Grace Haggerty will consolidate fish SOW and forward to WEST by 3/28/18.
- WEST will put together a final list of all SOWs and send to group 3/29/18.
- The group will rank their top 3 SOW choices (by agency/organization) and send them to WEST. These SOWs will be considered for submission to the funding agencies in mid-April.

Database Management System (DBMS) Development Discussion

- The DBMS developers from USGS joined the group discussion via conference phone.
- All pieces of the former DBMS were gathered and given to USGS developers who then put up a beta version on the website. The developers have discovered a number of problems with the previous site. For example, the former DBMS had no real encryption and all information, user names, passwords, and profile information was not secure. WEST will be sending an email to all past users with this information and the suggestion to change their passwords at other sites with the same log-in information. The developers have now switched the site to an encrypted system and users will be asked to create new profiles once the site is ready for use. The site will undergo an update of templates for uploads, fixes to the search engine, and work on the GIS database over the next couple of weeks, with a new URL to be sent out to folks shortly after that.

- The DBMS developers requested feedback on what users would like and what the public might be thought to want from the site. In response, ScW/HR participants provided suggestions on how the GIS map function, what documents should be stored on the DBMS, and the need to create a partitioned system for external and internal users.
 - During the discussion, participants provided the following comments:
 - *Document Library*
 - There are probably too many documents being uploaded to the DBMS.
 - There were many errors on authorship in the current document library.
 - Draft documents should not be on DBMS. Final documents are the only things that are important. Drafts are internal, finals are for public dissemination. This may be suitable for a discussion on partitioning.
 - *Search Engine*
 - Too often, need to know the “trick” to find desired document.
 - Good key words search, which includes synonyms. Standardized key words.
 - *Committee and Meeting Documents*
 - Thought needs to be given for how we search for meeting presentations. At the same time, meetings should always have the associated agenda, minutes and presentations, etc.
 - Want to be able to find things by meeting; a landing page for each committee rather than searching and finding everything that ever referenced the committee.
 - We need to think about groupings. So work groups that were once meeting separately and now meet together should have a landing page that shows both. Thus, it would also be necessary to be able to edit the landing page.
 - Technically, all meetings are public but there is a difference between meetings and their respective documents and reports.
 - *GIS Mapping Function*
 - Being able to toggle certain map layers, such as channels for different years, vegetation layers, to get to population monitoring year after year by toggling without having to pull each up year’s data individually. Having single geospatial layer per theme. Some efficient way to search for them or to be able to pull them out easily. Want to be able to search spatially, by year might be an attribute or maybe by agency.
 - Additionally, it was noted that language in meeting minutes might need some budget discussions redacted; in which case, a note could take its place, if details were needed to contact WEST.
 - During the discussion, WEST and/or the developers provided the following points of clarification or comments:

- WEST will develop procedures and requirements for all documents to be uploaded into the DBMS, including requiring information be provided for all the input fields.
 - In response to a question about capturing metadata from the existing pdf documents in the library, the developers noted that this is not an effective method because of variations in input formatting.
 - When a wish was expressed to be able to transfer data between agencies, such as a LiDAR database, the developers emphasized it was important to understand technology limitations. While the priority is accessibility to data and documents, the USGS/developer priority is to help keep it within bounds as well. There are challenges associated with large file sizes.
- USGS would like to have an ongoing conversation with the group, and with the Program as a whole. There will be discussions to elicit more comments, and specifically, to survey for the functions the group considers priorities.
 - Developers could meet with the group (in-person) to discuss map components but probably not with a demo, as that may not be the level of maturity at that point (May); could discuss architecture pieces we see elsewhere that we don't see here. There would be less backtracking this way.
 - Developers agreed that a discussion on the database could also take place, and emphasized that the group should think about the product in terms of audience; and that there are both internal and external audiences that require different experiences.
 - All will develop a survey of DBMS questions, wish-list, and requirements especially as it pertains to GIS map components.
 - USGS will send WEST examples of DBMS formats that work well.
 - WEST and USGS will schedule a half-day meeting in early May to have a group discussion on the GIS map components of the DBMS.

Additional Items

- The Draft MRGESCP FY16-FY17 Annual Report was sent out but WEST has received very few comments. The group was reminded that the deadline for comments is Friday, March 30.
- The group would like to hear an update on the tamarisk leaf beetle from Matt Johnson (Colorado Plateau Research Station/Northern Arizona University).
 - Lynette Giesen will check on Matt Johnson's availability to give Brown Bag on the Tamarisk Leaf Beetle the hour before the ScW/HR meeting on April 24.
- The group would like to see a continuation of future seminar series/brown bags prior to ScW/HR meetings as speakers are available.

Meeting Summary, Next Step, and Adjourn

- The group would like to meet in April, even if the Program structure changes at the Executive Committee (EC) meeting.
 - The next meeting is scheduled for Tuesday, April 24, 2018, location TBA.
- Update: Planning in the works to have the June EC meeting at Bosque School and a barbecue afterwards at Open Space.

Meeting Participants

	Participant	Organization
Rick	Billings	Albuquerque Bernalillo County Water Utility Authority
Lynette	Giesen	U.S. Army Corp of Engineers
Eric	Gonzales	Bureau of Reclamation
Grace	Haggerty	NM Interstate Stream Commission
Ondrea	Hummel	Tetra Tech
Alison	Hutson	NM Interstate Stream Commission
Debbie	Lee	WEST, Inc.
Mike	Marcus	Assessment Payers Association of the MRGCD
Kate	Mendoza	Albuquerque Bernalillo County Water Utility Authority
Lana	Mitchell	WEST, Inc.
Matthew	Peterson	City of Albuquerque Open Space
Micky	Porter	U.S. Army Corps of Engineers
Dana	Price	U.S. Army Corps of Engineers
Vicky	Ryan	U.S. Fish & Wildlife
Summer	Schulz	U.S. Army Corp of Engineers
Ashley	Tanner	WEST, Inc.

Joined by Phone for DBMS Discussion

Daniel	Pearson	U.S. Geological Survey
Justin	Robertson	U.S. Geological Survey
Toby	Wellborn	U.S. Geological Survey

DRAFT Scope of Work Description for
(Insert Title Here)

1. Background:

(Introduce the topic and provide content and rationale for this work/project/research. This section should naturally work up to your objectives.)

2. Objective:

(Clearly state the goal(s) of this work/project/research.)

3. Conservation Benefit:

(Justify how this work/project/research will benefit a species of interest/Middle Rio Grande conservation efforts.)

4. Estimated Cost:

(A breakdown of cost is not necessary. Provide a singular estimate or estimated range.)



LONG TERM PLAN PROPOSED FUTURE ACTIVITIES – Priority 2 and 3

Work Group Name: Science Work Group Date: April 16, 2010

Work Group Members (*primary (P) or alternate (A)*):

M. Porter (USACE, P), T. Perez (City of Albuquerque, P; co-chair), J. Bachus (FWS, P), D. Tave (ISC, A), D. Propst (NMDGF, P), R. Billings (ABCWUA, P), A. Hutson (ISC, P), J. Dye (BOR, P; co-chair), Y. Paroz (BOR, A), A. Monie (NMDGF, A), B. Wyman (MRGCD, P), D. Price (USACE, A), G. Dean (BOR, A), P. Wilkinson (ISC, A), S. Kopitsch (FWS, P; PMT Liaison)

Priority	LTP #	BRIEF DESCRIPTION
	7.1	Physical Habitat Restoration and Management
2	7.1.A.6	Better understand fish movement (i.e. longitudinal movement)
2	7.1.A.6	Evaluate need for fish passage
2	7.1.A.7	Continue evaluating entrainment
3	7.1.B.6	Look into whether fire has benefits in long-term habitat maintenance (also vegetation thinning)
3	7.1.B.6	Study grazing effects and develop management plans
2	7.1.B.6	Develop criteria for better multi-species HR projects, including sensitive and candidate species
2	7.1.B.6	Develop methods to determine the effectiveness of HR projects for both species
3	7.1.B.6	Develop scientific studies to determine benefits of HR projects
2	7.1.C.2	Evaluate and refine criteria for better multi-species HR projects
2	7.1.C.6	Develop methods to determine the effectiveness of HR projects for both species
3	7.1.C.6	Determine how best to integrate HR work so it benefits both SWFL and RGSM. Note: assigned to SCW/HRW
	7.2	Water Management
2	7.2.A.1	Improve understanding of the stream flows that will provide suitable habitat for all life stages of Rio Grande silvery minnow
2	7.2.A.1	Study sensitivity of population to recruitment flows vs. sensitivity to river drying. Note: assigned to SCW/PVA
3	7.2.B.1	When possible, study optimum timing and duration of overbank flows, including areas where overbanking occurs at low CFS (i.e. sediment plug)
2	7.2.B.2	Perform the feasibility studies listed in the SWFL recovery action plan
?	7.2.B.6	Include SWFL water needs in URGWOM
	7.3	Predator/Non-Native Control
3	7.3.A	Investigate the distribution and extent of non-native fish species and determine if control measures are needed
3	7.3.A	Implement non-native control measures
2	7.3.A	Improve our understanding of predation and competition effects on Rio Grande silvery minnow by other Rio Grande fish species

3	7.3.A	Improve understanding of the effects of different flow regimes (timing, magnitude, duration) on non-native fishes
3	7.3.A	Investigate competitive interactions between congeners at various life stages
2	7.3.A	Determine the nature and extent of predation on Rio Grande silvery minnow by avian and other predators
2	7.3.B	Continue to identify rates of cowbird parasitism
2	7.3.B	Implement cowbird management programs if warranted by baseline data on parasitism rates
2	7.3.B	If cowbird parasitism rates are on an upward trend, re-evaluate the need for a cowbird management program
2	7.3.B	Reconsider assessments of habitat quality or other threats if cowbird control and/or other measures increase reproductive output but not the number of breeding flycatchers
3	7.3.B	Conduct research on means of increasing reproductive success by reducing losses of flycatcher eggs and nestlings to general nest predators
2	7.3.B	Continue to determine if anything is needed to control cowbirds
2	7.3.B	Continue to determine if we need to continue to monitor for parasitism and predation
	7.4	Population Propagation/Augmentation/Reintroduction (RGSM only)
2	7.4.A.1	Estimate the minimum viable population size for maintaining healthy populations for reintroduction areas
3	7.4.A.1	Determine the level and rate of hybridization between Rio Grande silvery minnow and plains minnow
2	7.4.A.2	Continue the investigation of new tagging techniques
2	7.4.A.2	Conduct a pilot study to determine the role of environmental parameters in minnow sex determination
2	7.4.A.2	Determine the role of endocrine disruptors in sex determination
2	7.4.A.2	Improve our understanding of the effects of various stocking conditions and release sites on Rio Grande silvery minnow
2	7.4.A.2	Determine the effects of hatchery-to-release site transport conditions on stocked Rio Grande silvery minnow
	7.5	Water Quality Management
2	7.5.A.1	Continue to collect and evaluate existing data on water quality and sediment quality and identify future investigations that are needed.
3	7.5.A.1	Design and undertake studies to assess the effects of point and non-point source discharges on Rio Grande silvery minnow food sources
2	7.5.A.1	Design and undertake studies to assess the effects of storm water pulse-flows (water quality and contaminants) on Rio Grande silvery minnow
3	7.5.A.1	Determine turbidity and sediment levels that reflect ecological conditions suitable for the Rio Grande silvery minnow
3	7.5.A.1	Develop water quality criteria for protection of the Rio Grande silvery minnow
2	7.5.A.1	Study water quality elements such as temperature tolerance and toxicity through the use of lab studies
2	7.5.A.2	Determine habitat quality at low flows
3	7.5.A.2	Monitor toxicity in drain/canal upstream of minnow sanctuary
2	7.5.A.3	Determine which chemical elements need to be monitored for
2	7.5.A.3	Review previous water quality studies to see what they tell us and evaluate recommendations
	7.6	Research, Monitoring, and Adaptive Management
2	7.6.A.1	Determine relationship between river drying and population dynamics. Note: assigned to PVA/SCW
2	7.6.A.1	Analysis and refinement of recruitment flow threshold targets (i.e. 3,000 cfs for 7 to 10 days at Central)
2	7.6.A.1	Develop and conduct studies to identify and fill data gaps related to establishing self-sustaining populations
2	7.6.A.2	Identify appropriate health monitoring, then develop and Implement RGSM health monitoring

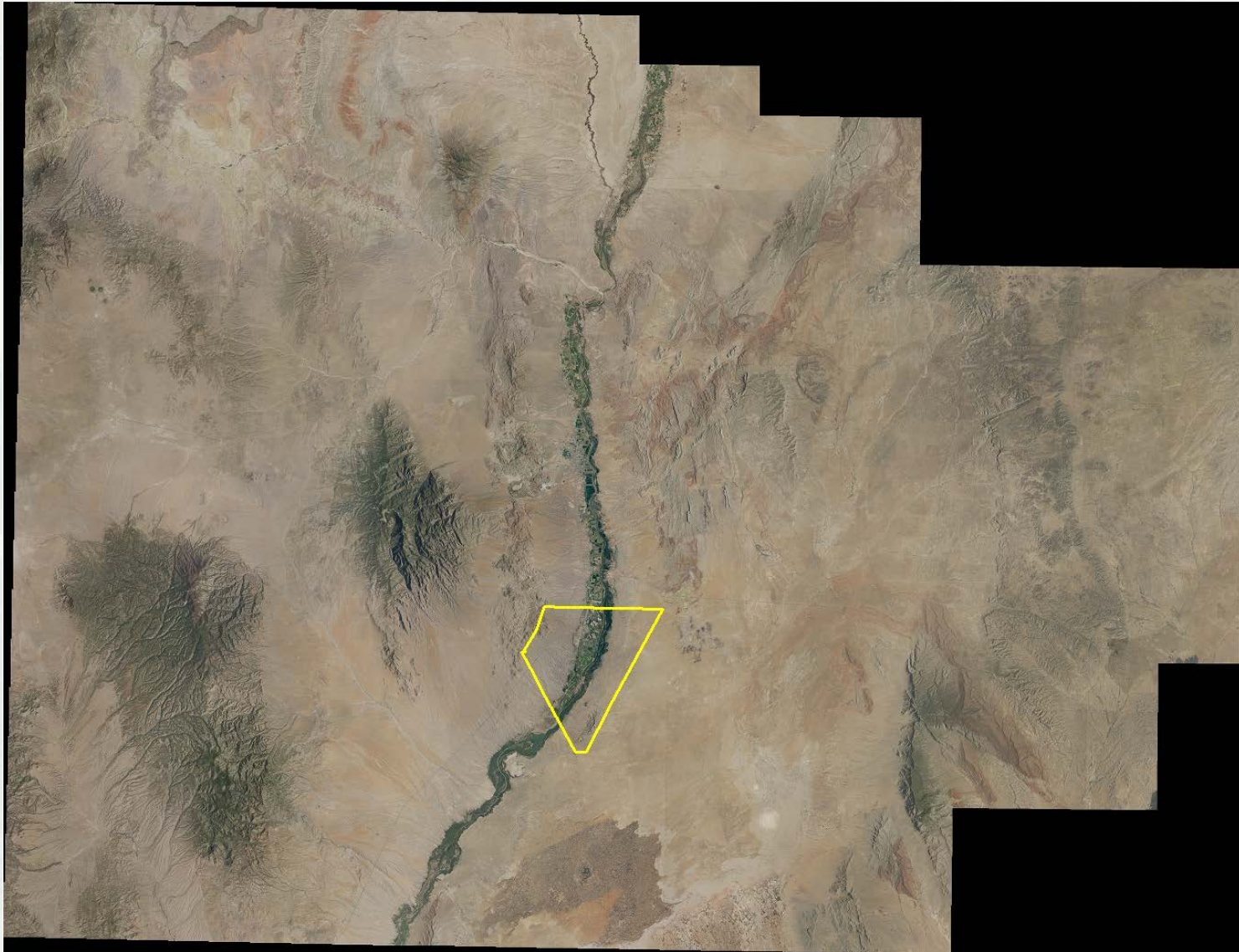
		plan
2	7.6.A.3	Peer Review of Genetics and/or Rescue Projects
2	7.6.B.1	Identify riparian habitats within the program area and San Marcial population. Note: assigned to HRW/SCW
2	7.6.B.1	Determine long-term ecological productivity of native habitats vs. exotic habitats
2	7.6.B.1	Conduct a study to determine: habitat area needed by breeding birds; effects of conspecifics and physical microclimate on site occupancy and reproductive success; and use vs. availability of exotics in occupied sites. Note: assigned to HRW/SCW
2	7.6.B.1	Conduct research to determine why increases in reproductive success due to cowbird control, or other measures, may not lead to increases in numbers of breeding birds
2	7.6.B.1	Conduct limiting factor analyses
2	7.6.B.1	Review current PVA and determine if it should be re-evaluated with the current status of the flycatcher, or if it is still holding true with the current status.
3	7.6.B.1	Review and synthesis of current flycatcher research and other pertinent research.
3	7.6.B.1	Study more definitively water needs for SWFL
2	7.6.B.2	Acquire demographic and dispersal information for the recovery unit, including San Marcial
2	7.6.B.2	Consider where to expand SWFL monitoring
2	7.6.C.1	Implement hypothesis testing studies identified in the Adaptive Management Plan
2	7.6.C.3	Develop scientific studies to determine benefits of HR projects

Agenda

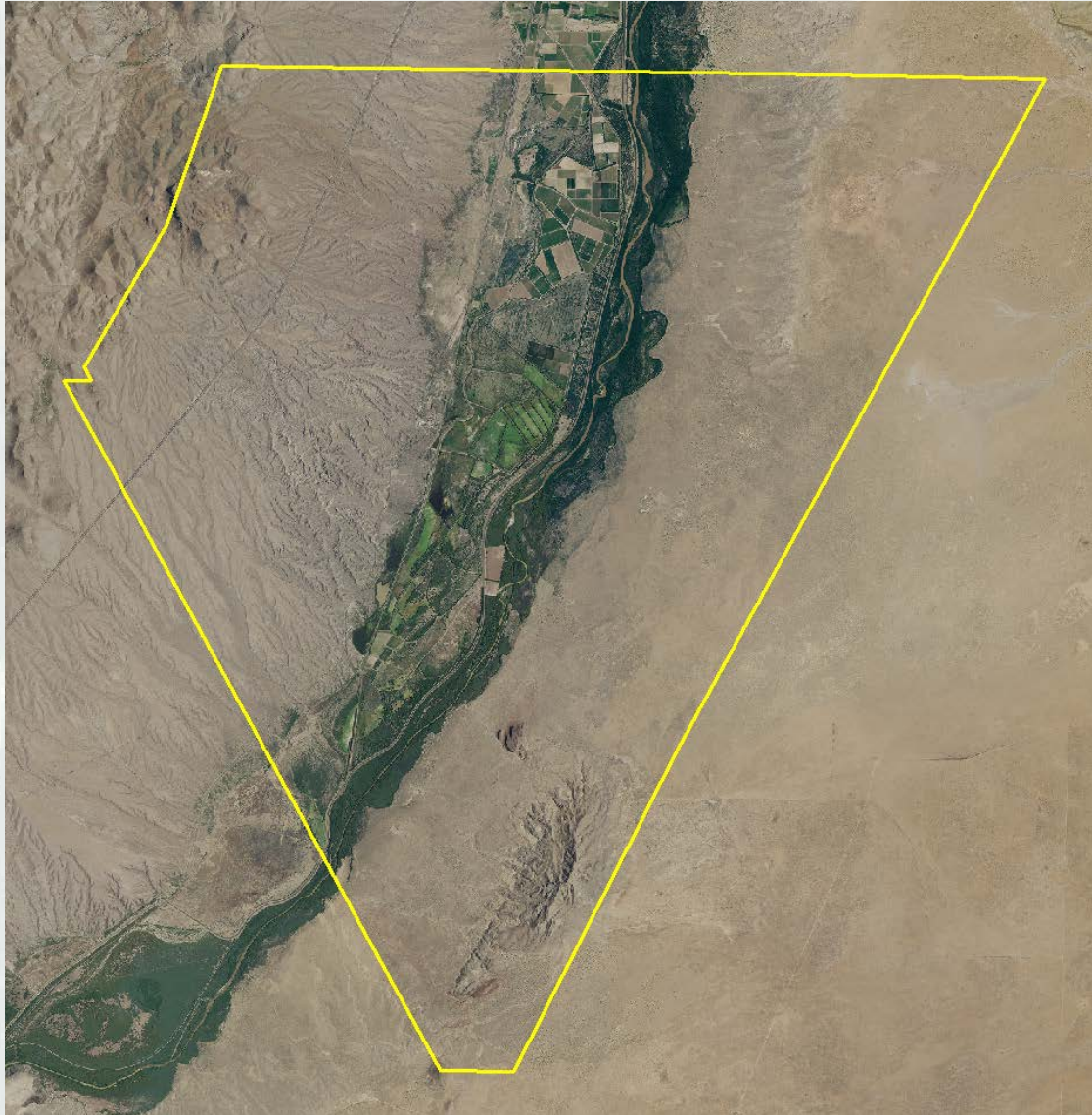
- **Overview of Statewide Collection Programs**
 - **NAIP Ortho Photography**
 - **3-D Elevation Program (3DEP) LiDAR Collections**
- **Overview of Regional Collection Efforts**
 - **MRCOG OrthoPhoto/LiDAR Collections**
- **Overview of Special Project Collection Efforts**
 - **1962 Historical Mosaic Project**
 - **550 Bridge-Isleta High Resolution Ortho/LiDAR**
 - **2017 Cochiti/White Rock Canyon**



2016 NAIP 4-Band, 1 meter Digital Imagery Statewide Coverage



2016 NAIP 4-Band, 1 meter Digital Imagery Statewide Coverage



BUILDING STRONG®

2016 NAIP 4-Band, 1 meter Digital Imagery Statewide Coverage



BUILDING STRONG®

National 3-D Elevation Program (3DEP)

<https://nationalmap.gov/3DEP/>



USGS Home
Contact USGS
Search USGS

3D Elevation Program (3DEP)

About

News

Get Data

Data Partnership
Opportunities

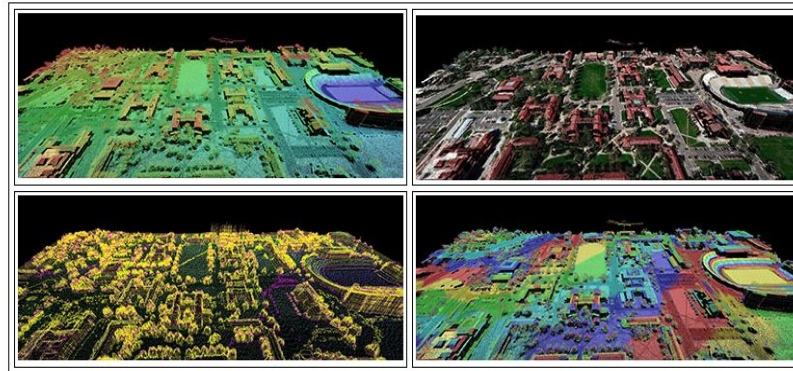
Benefits

Resources

Contact Us

[The National Map Home](#) >> [3D Elevation Program \(3DEP\)](#) >> What is 3DEP?

What is 3DEP?



The U.S. Geological Survey (USGS) National Geospatial Program is developing the 3D Elevation Program (3DEP) to respond to growing needs for high-quality topographic data and for a wide range of other three-dimensional (3D) representations of the Nation's natural and constructed features. The primary goal of 3DEP is to systematically collect 3D elevation data in the form of light detection and ranging (lidar) data over the conterminous United States, Hawaii, and the U.S. territories, with data acquired over an 8-year period. Interferometric synthetic aperture radar (IfSAR) data will be acquired for Alaska, where cloud cover and remote locations preclude the use of lidar in much of the State. The 3DEP initiative is based on the results of the [National Enhanced Elevation Assessment](#) that documented more than 600 business uses across 34 Federal agencies, all 50 States, selected local government and Tribal offices, and private and nonprofit organizations. A fully funded and implemented 3DEP would provide more than \$690 million annually in new benefits to government entities, the private sector, and citizens.

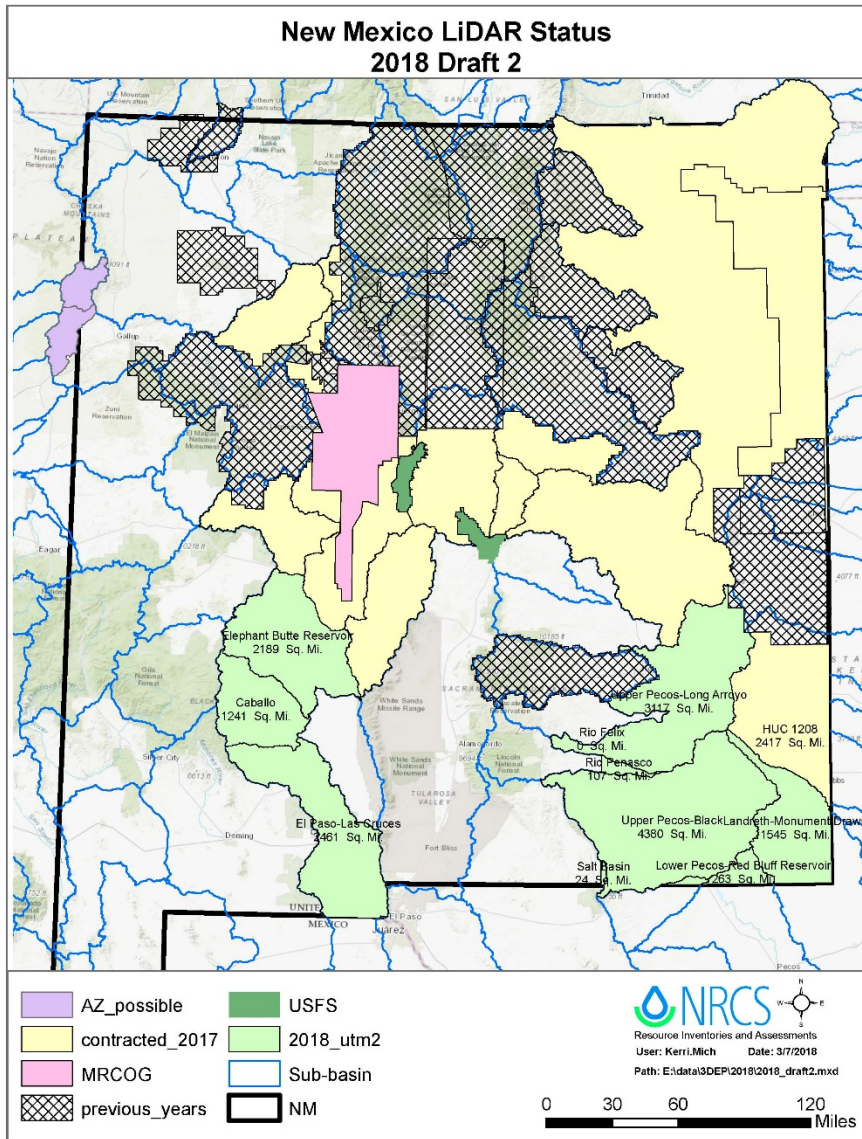
Today, about \$50 million is invested annually in lidar and IfSAR data by all public agencies, and the **U.S. Interagency Elevation Inventory** shows that around 14 percent of the lower 49 States and territories has lidar data that meet the quality levels needed. An additional \$96 million is needed annually to implement 3DEP. This would result in a nearly 5:1 return on investment, save lives, and improve our environment through informed decisions.

3DEP is a "Call for Action" because no one entity can accomplish it independently. 3DEP presents a unique opportunity for collaboration between all levels of government, to leverage the services and expertise of private sector mapping firms that acquire the data, and to create jobs now and in the future. When partners work together, they can achieve efficiencies and lower costs so that 3DEP can become a reality. When 3D elevation data are available to everyone, new innovations will occur in forest resource management, alternative energy, agriculture, and other industries for years to come.



BUILDING STRONG®

2018 NM 3D Elevation Program (3DEP) Status

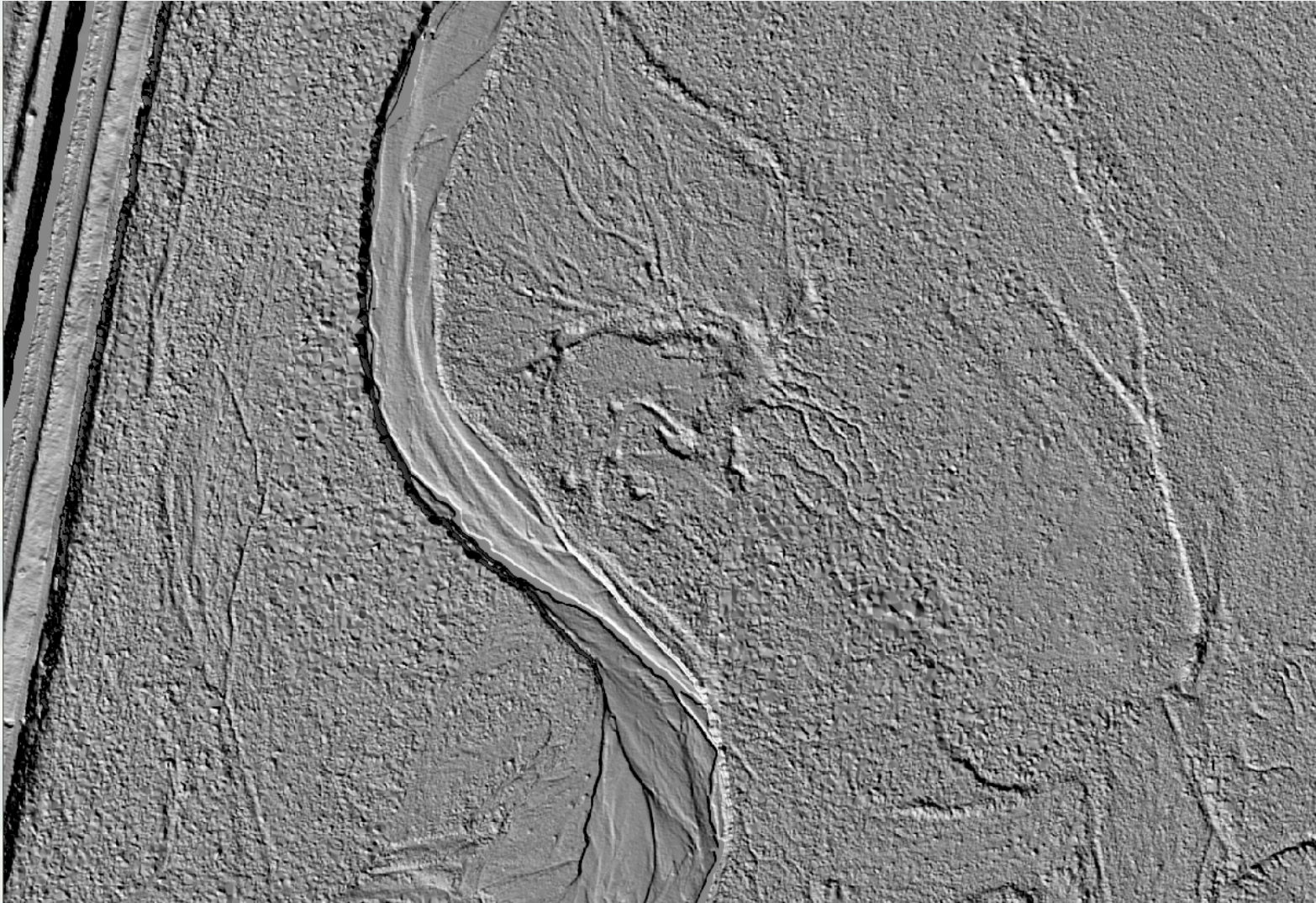


NM 3DEP Program POC:
Paul Neville,
505-277-3622 X244
pneville@edac.unm.edu

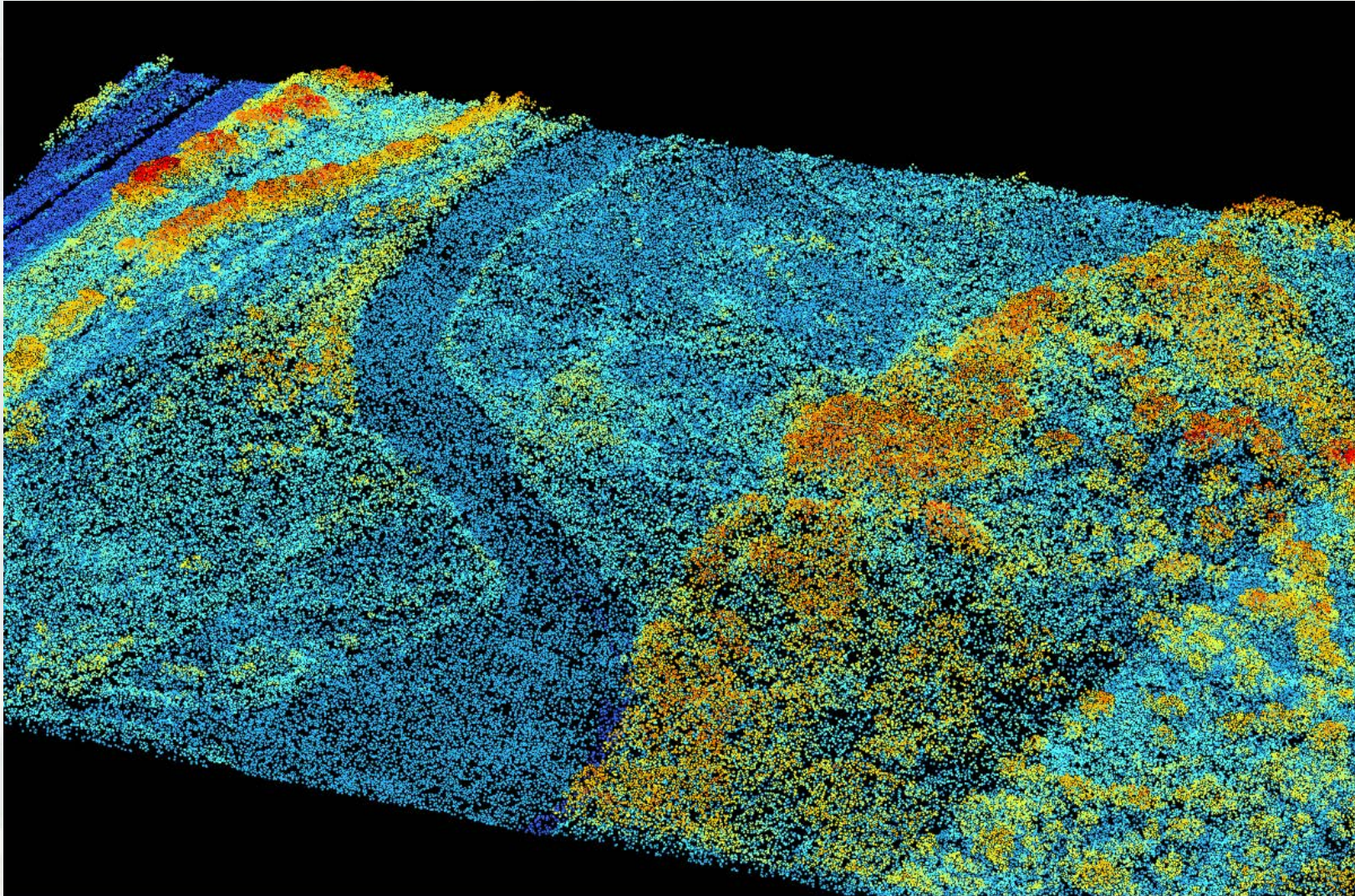
NM RGIS Program POC:
Laura Gleasner,
505-277-3622 X230
pneville@edac.unm.edu



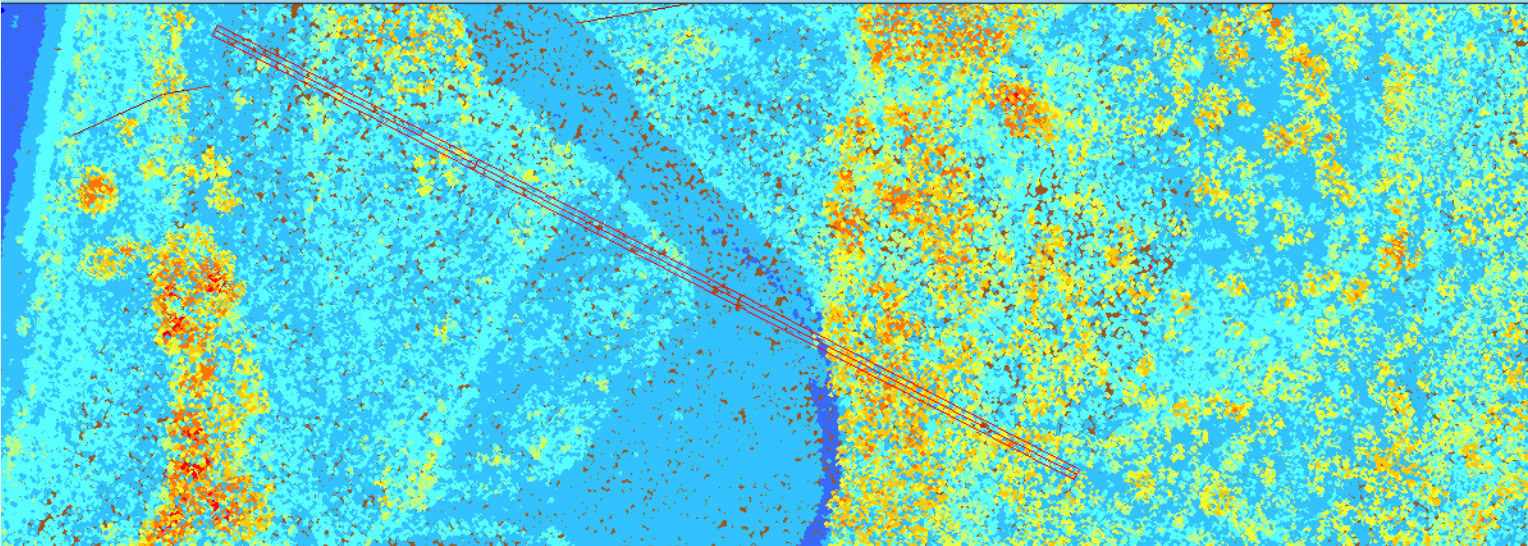
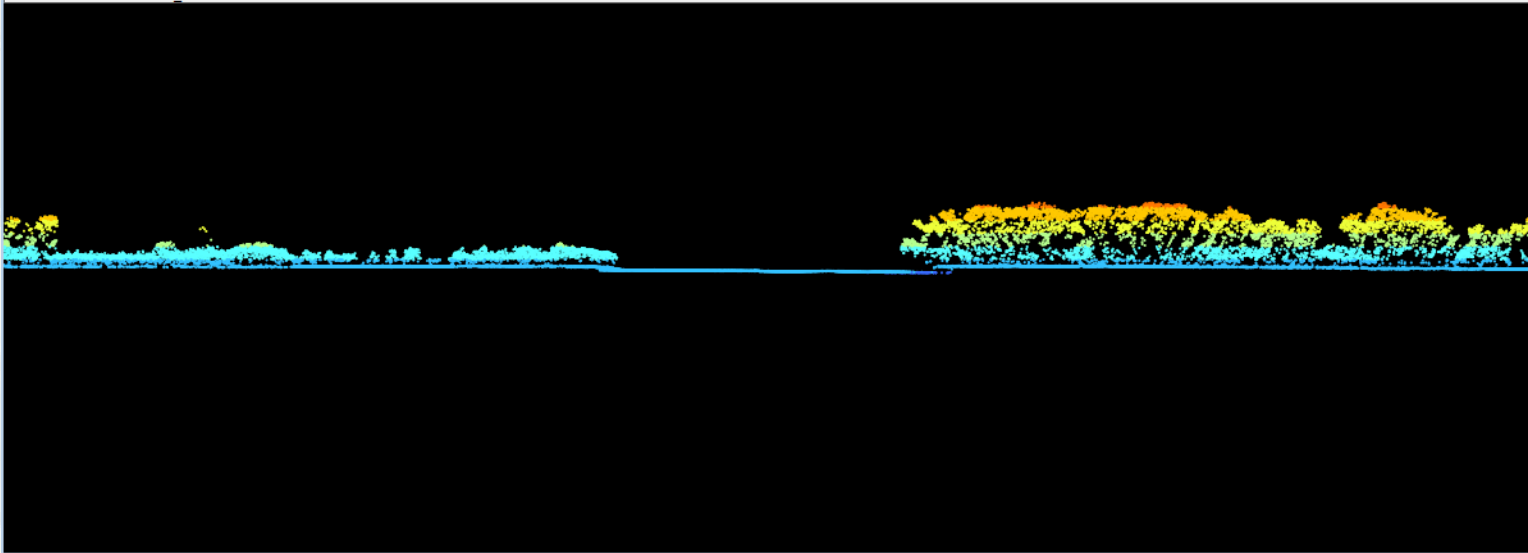
3DEP QL2 LAS Hillshade



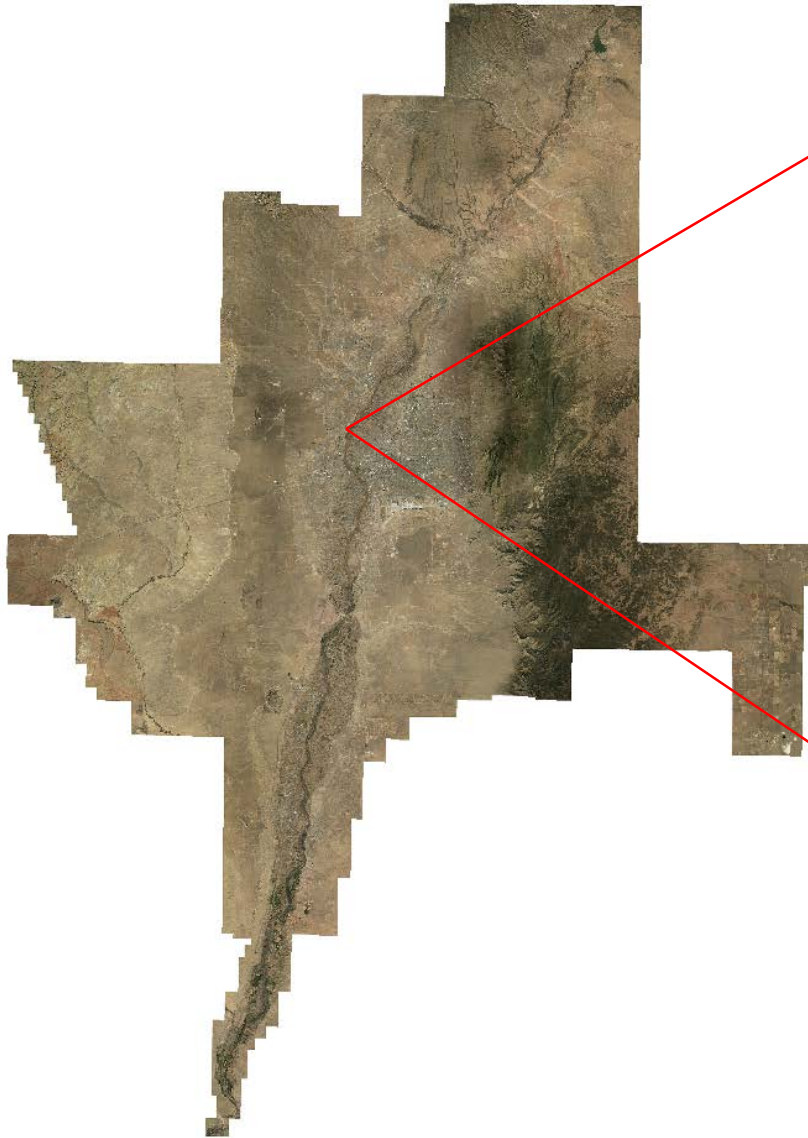
3DEP QL2 LAS Full Point Cloud



3DEP QL2 LAS Point Cloud & Profile

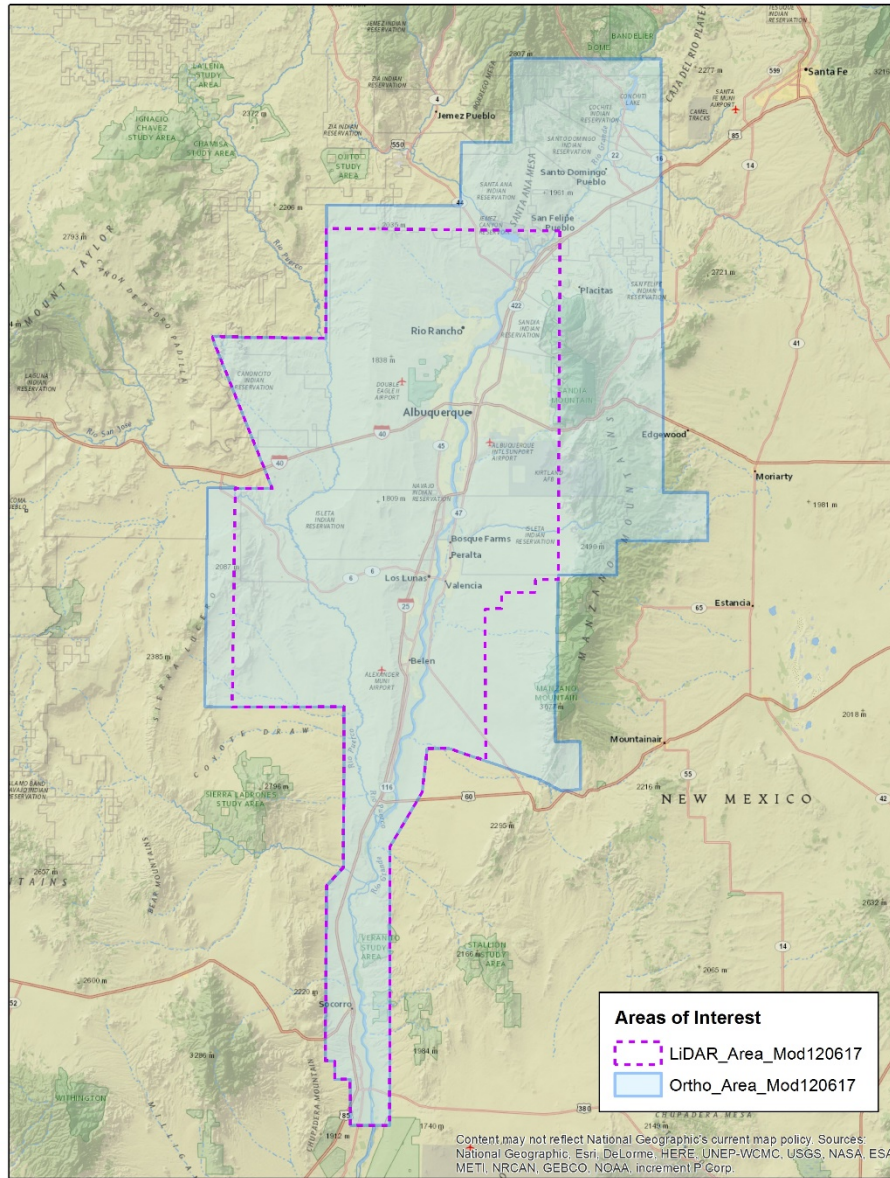


March 2016 MRCOG 4-Band 6in. Digital Imagery



BUILDING STRONG®

2018 MRCOG Ortho&LiDAR Collection AOIs



Special Project Collections



Building a 1962 Mosaic Set Using Structure From Motion (SFM)



Building a 1962 Mosaic Set Using Structure From Motion (SFM)

USGS Digital Scans



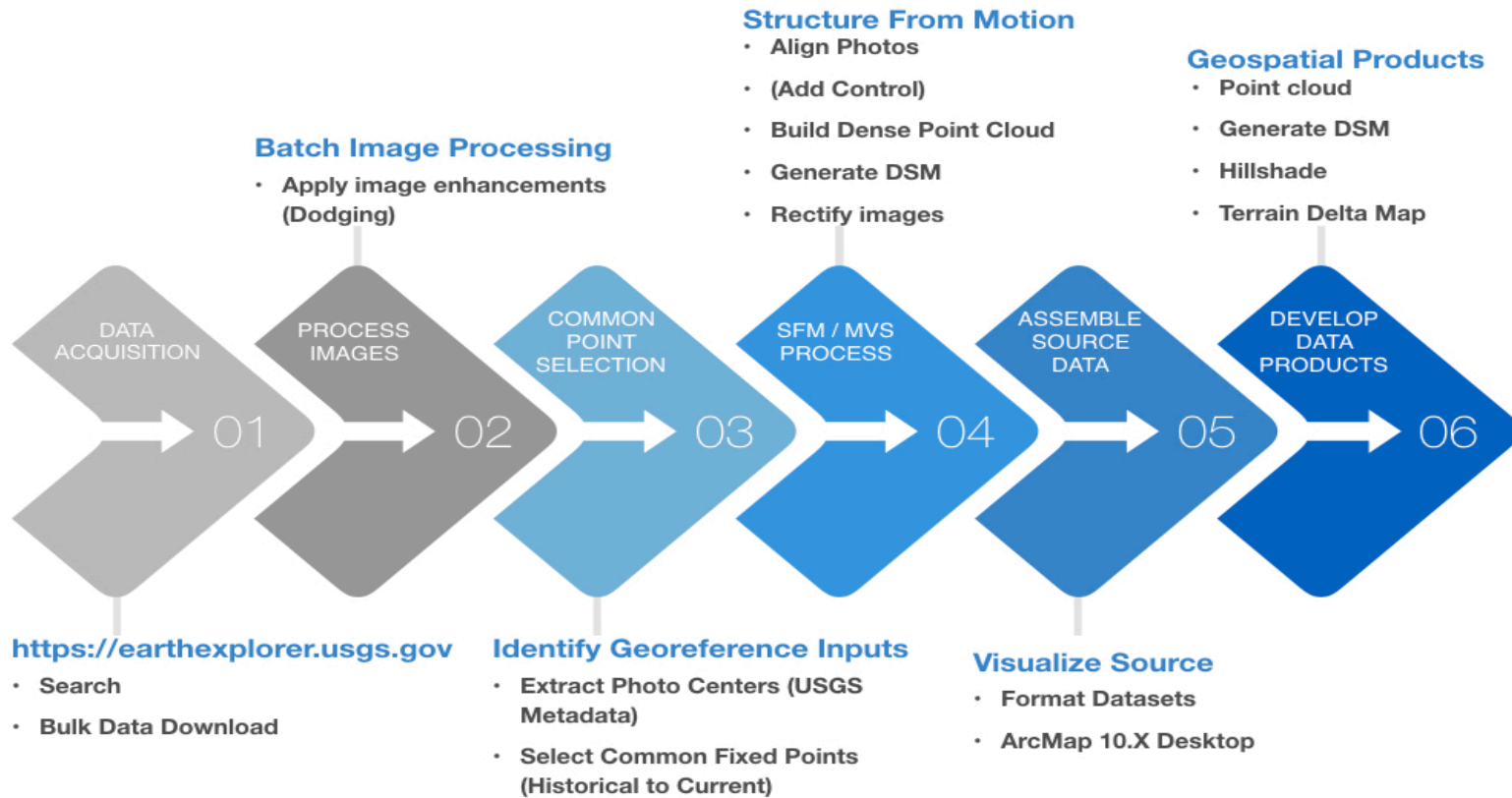
SFM Photo Mosaic



SFM Surface Mosaic



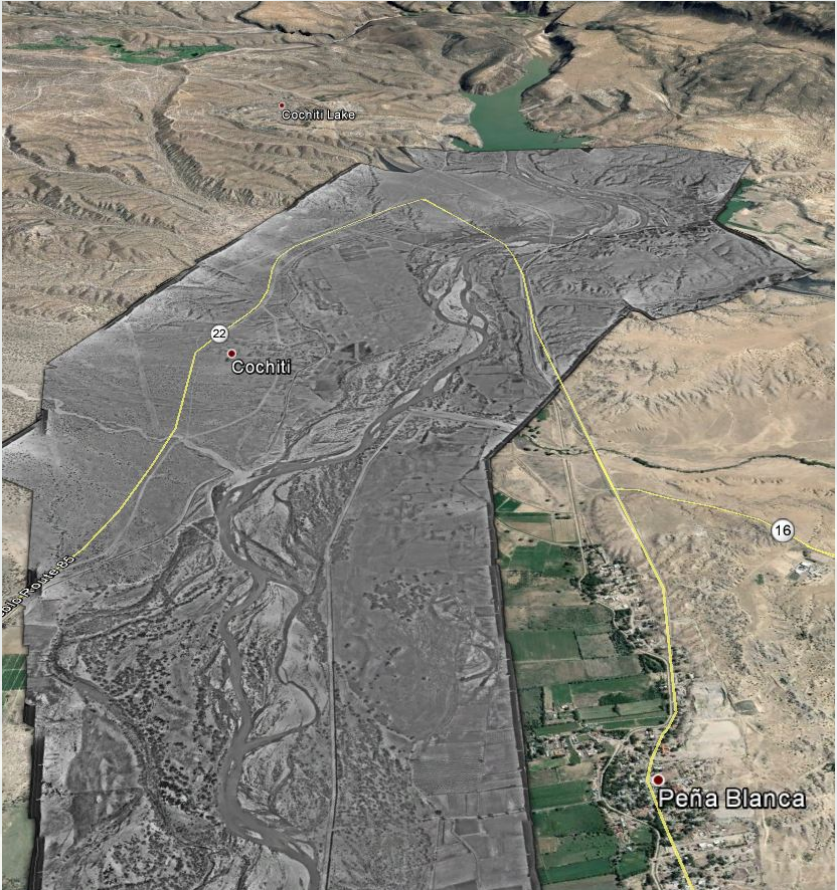
Building a 1962 Mosaic Set Using Structure From Motion (SFM)



Bohannon ▲ Huston

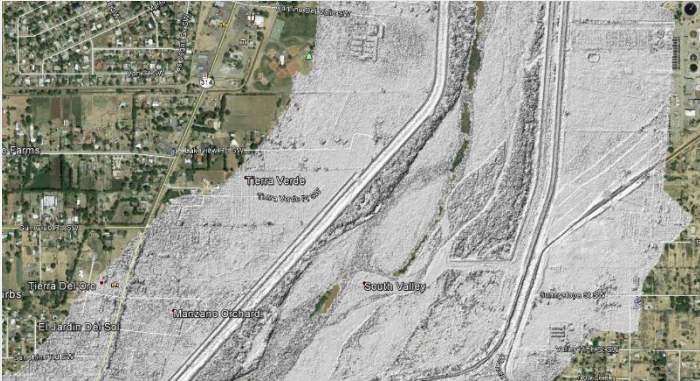


1962 Pre-Cochiti SFM Seamless Photo-Mosaic



1962 Pre-Cochiti SFM Seamless Digital Surface Model (DSM)

1962 Digital Surface Model (DSM)

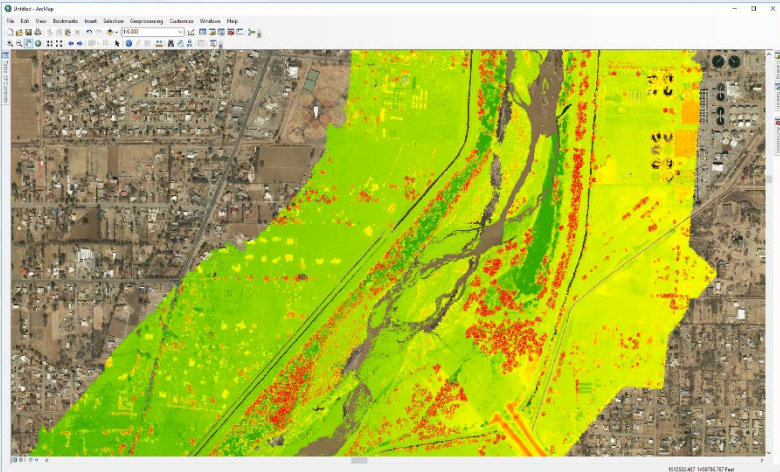


2010 Digital Surface Model (DSM)



Terrain Change Analysis

2010 minus 1962 DSM

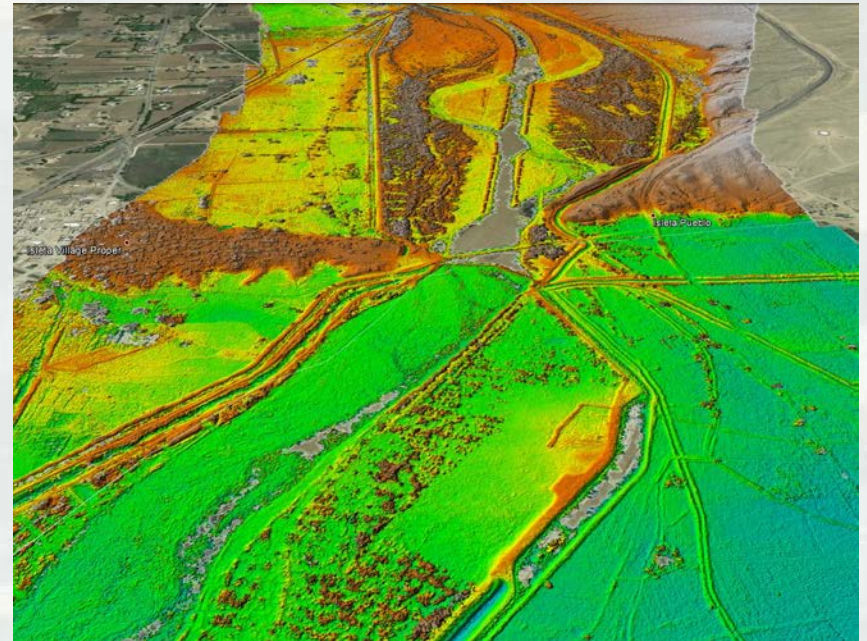


Temporal Analysis

2016 Imagery Oblique



1962 Color Ramped Shaded Relief Oblique DSM

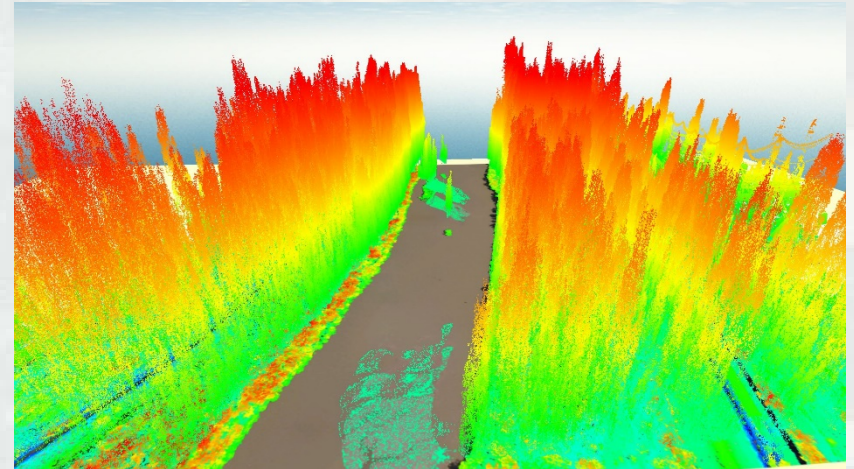


1962 SFM PRODUCT DEMO

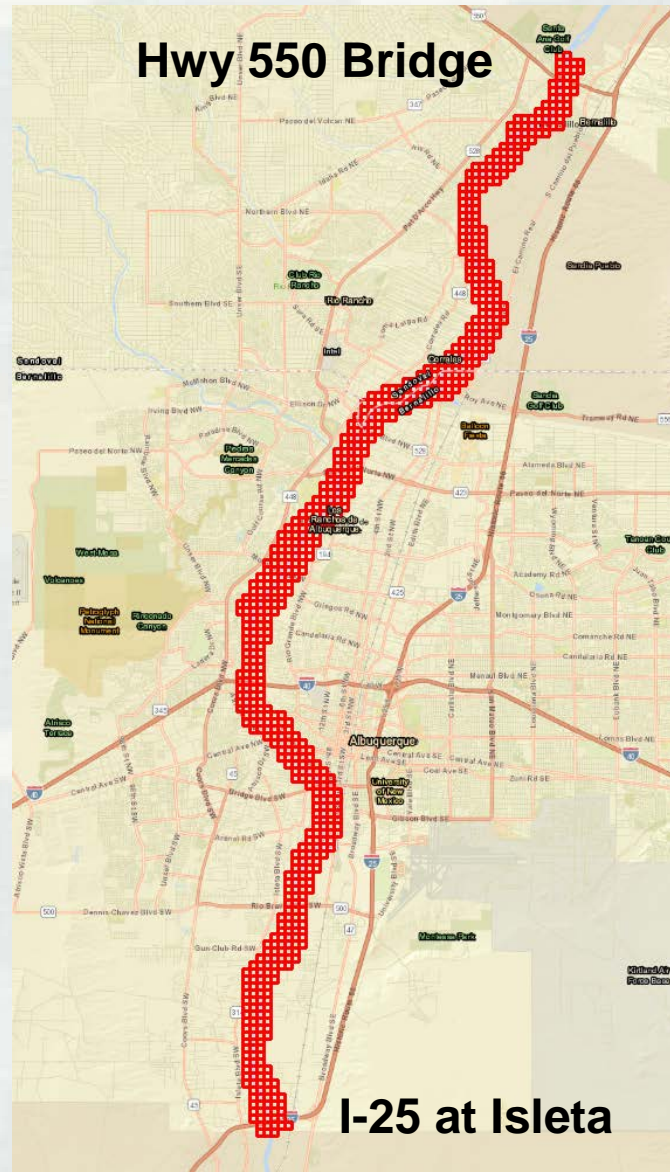


BUILDING STRONG®

2017 High Resolution Middle Rio High Flow Ortho-Photo/LiDAR Collection



2017 High Resolution Middle Rio High Flow Ortho-Photo/LiDAR Collection



2017 High Resolution Middle Rio High Flow 4-Band Ortho-Photo Collection



2017 High Resolution Middle Rio High Flow 4-Band Ortho-Photo Collection



Colorized LiDAR Flythrough



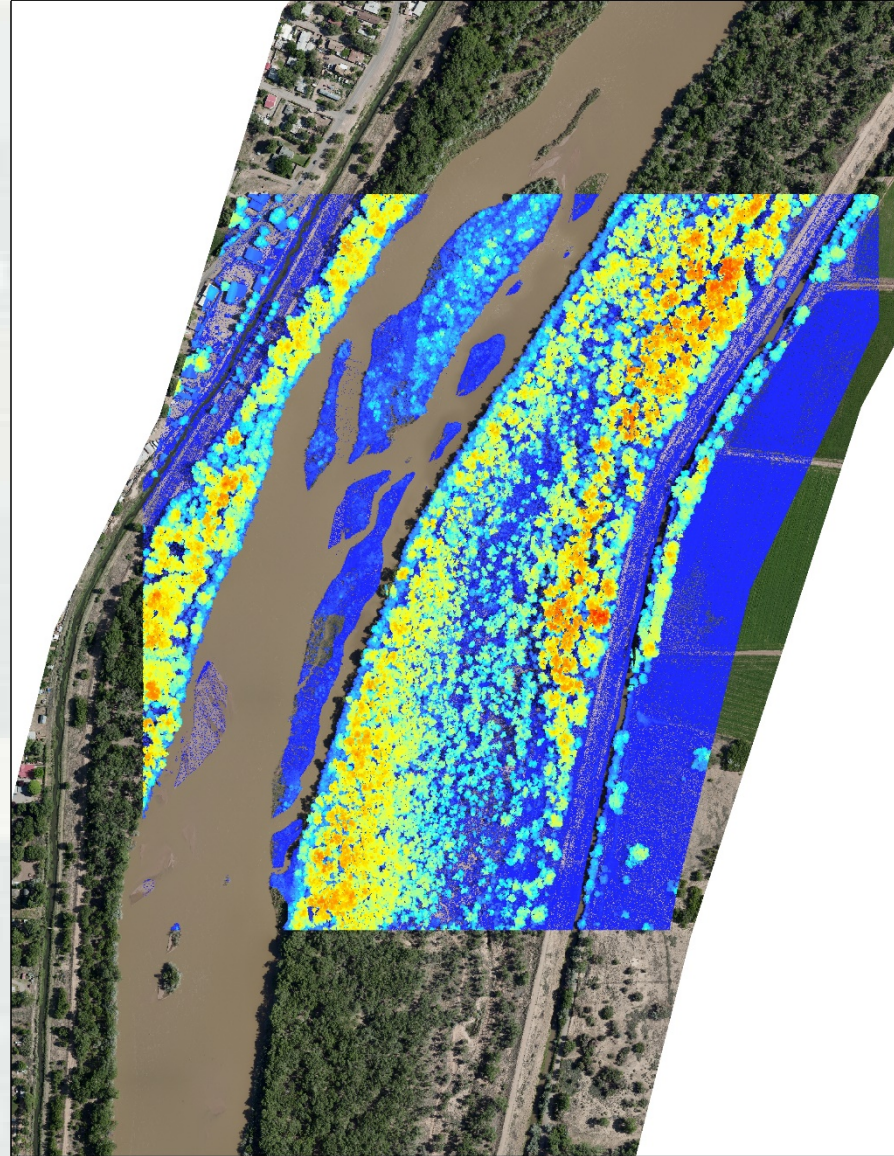
BUILDING STRONG®

MRG_Ortho



BUILDING STRONG®

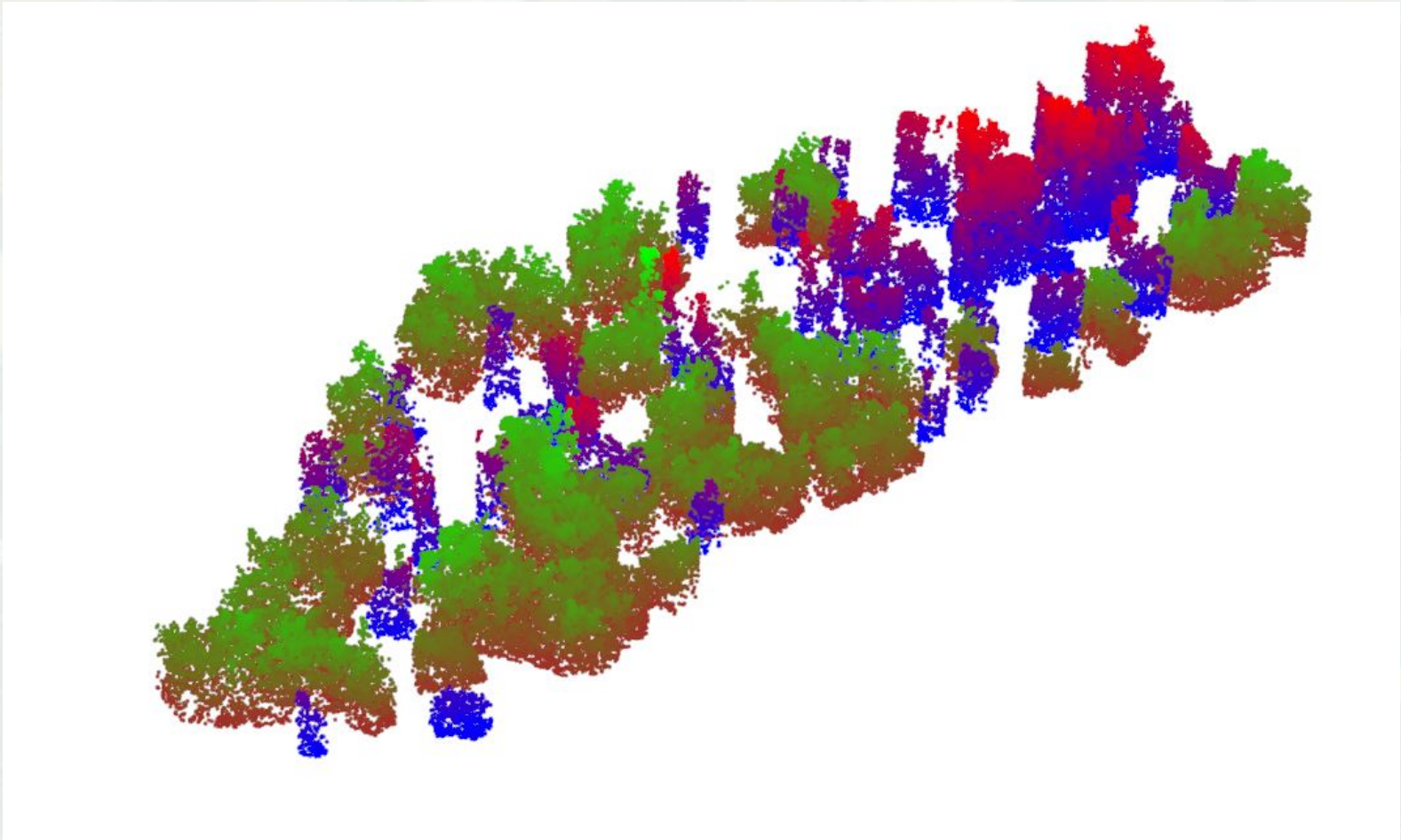
MRG_Ortho_LiDAR



Tree_Segmentation



Cottonwood_RussianOlive_3Dplot



2017 Cochiti/White Rock Canyon Ortho-Photography



2017 Cochiti/White Rock Canyon Ortho-Photography



Questions?

John Peterson
505-342-3664

john.l.peterson@usace.army.mil

