

Executive Committee Meeting

June 5, 2014

Meeting Materials:

Meeting Agenda

Meeting Minutes

2014 Minnow Action Team Recommended Actions

2014 Rio Grande Silvery Minnow Spawning Pulse [presentation]



**Middle Rio Grande Endangered Species
Collaborative Program
EXECUTIVE COMMITTEE
MEETING AGENDA
Thursday, June 5, 2014
9:00am – 12:00pm**

Location: BIA, 1001 Indian School Rd., Albuquerque, NM

1. **INTRODUCTIONS AND REVIEW OF PROPOSED AGENDA*** 10 minutes
2. **DECISION – APPROVAL OF April 17, 2014 EC MEETING SUMMARY*** 10 minutes
3. **AGENCY FISCAL AND POLICY PLANNING UPDATES** 30 minutes
 - A. US Army Corps of Engineers (*LTC Gant*)
 - B. Bureau of Reclamation (*M. Hamman*)
 - C. US Fish and Wildlife Service (*M. Shaughnessy*)
 - D. Non-Federal update (*TBD*)
 - E. Collaborative Program Projects (*CC Co-chairs*)
 - i. CC 2014 Work Plan and Work Group Transition Period Recommendation Table*
 - ii. **Decision** - approval of 2012 Program Annual Report*
4. **POPULATION MONITORING DISCUSSION/SURVEY (*J. Wolfe*)** 30 minutes
 - A. Population Monitoring (CPUE) workshop (*R. Billings*)
- BREAK** 15 minutes
5. **OTHER ACTIVITIES** 30 minutes
 - A. Hydrology Forecast (*M. Hamman / LTC Gant*)
 - B. Species Update (*USFWS*)
 - C. Update on recruitment flows and egg collection efforts (*TBD*)
6. **DECISION – 2014 MAT RECOMMENDATIONS*** 30 minutes
7. **OTHER ACTIVITIES**
8. **MEETING SUMMARY**
9. **PUBLIC COMMENT**
10. **ANNOUNCEMENTS**
11. **DECISION - NEXT SCHEDULED EC MEETING July 17, 2014 @ Reclamation**

**denotes read ahead*

Members

ABCWUA
ISC
NMDA
Sandia Pueblo
UNM

APA
Isleta Pueblo
NMGF
Santa Ana Pueblo
USACE

CABQ
NMAGO
MRGCD
Santo Domingo Tribe
USFWS
Reclamation

**Middle Rio Grande Endangered Species Collaborative Program
Executive Committee Meeting
June 5th, 2014 – 9:00am to 12:15pm**

**Bureau of Indian Affairs
1001 Indian School Rd.,
Albuquerque, NM**

Decisions

- The April 17th, 2014 EC meeting summary was approved for finalization with two corrections:
 - On page 4, under the MAT 2014 *Recommendations and Options for Potential Spawn and Recruitment Flows* Biology Subgroup update, the sub-bullet referencing “juvenile fish can be salvaged after approximately June 15th” will be corrected with July 15th as the accurate date.
 - On pages 1 and 2, the name of environmental group involved in the recent Notice of Intents will be corrected to WildEarth Guardians.
- It was decided to postpone the approval of the 2012 Program Report until the July 17th EC meeting in order to allow more review time.

Actions

- Rick Billings will provide the EC with regular updates on the progress of the Population Monitoring (CPUE) Workshop planning efforts.

Requests/Recommendations

- It was requested that the Population Monitoring (CPUE) Workshop planning group provide the EC with regular updates on the progress. Should feedback or input be needed quickly, the 3rd Party Management EC subcommittee will be made available for assistance. While the current draft workshop objectives were developed from the April 2012 EC discussion, the intent is to ensure the entire EC is “all in” – the current direction of the workshop is acceptable and everyone is ready to support the outcomes.

Announcements

- Rhea Graham has been reassigned to a high priority project within Reclamation and will no longer be the Interim Program Manager. Ali Saenz will continue to address the Program’s administrative needs.
- This was LTC Antoinette Gant’s last Program meeting as the Corp’s EC representative. The formal Change of Command Ceremony is scheduled for Thursday, June 26th, 2014. Command will be assumed by LTC Patrick Dagon. Please contact Susan Bittick for ceremony details.
- Non-federal participants are reminded to submit their 2013 Cost Share reports as soon as possible.

Next Meeting: July 17th, 2014 from 9:00am to 1:00pm at Reclamation

- Tentative agenda items include: (1) Decision – Approve 2012 Program Report; (2) Decision – Approve 2013 Program Report; (3) Decision – Approve Population Monitoring (CPUE) Workshop Objectives, Structure, and Logistics; (4) Hydrology updates – summer drying, salvage efforts, etc.
- Potential Future Agenda Items: (1) Discussion on chartering (if/when) of MAT;

Upcoming Dates and Deadlines:

- June 10th – MAT meeting, 9:00am to 11:00am at Reclamation
- June 11th – CC meeting, 9:00am to 11:00am at Reclamation

- June 15th – end of continuous river requirements
- June 17th – HRW/ScW meeting, 9:00am to 11:30am at ISC
- June 24th –MAT meeting, 9:00am to 11:00am at Reclamation
- June 26th – USACE Change of Command, 10:00am at USACE, 4101 Jefferson Plaza NE
- July 2nd – CC meeting, 9:00am to 11:00am at Reclamation
- July 17th – EC meeting, 9:00am to 1:00pm at Reclamation

Meeting Summary

Introductions and agenda approval: Brent Rhees brought the meeting to order and introductions were made. A quorum was confirmed and the agenda was approved with the following changes:

- (1) The Hydrology Update (Agenda Item #5a) will be addressed under Agenda Item #3b to accommodate a scheduling conflict;
- (2) The 2014 MAT Recommendations decision item (Agenda Item #6) has been changed to an informational acknowledgement of MAT activities;
- (3) An update on the drafting of a drought relief bill will be addressed under Agenda Item #3b.

Approval of the April 17th, 2014 EC Meeting Summary:

- The April 17th, 2014 EC meeting summary was approved for finalization with two corrections:
 - On page 4, under the *MAT 2014 Recommendations and Options for Potential Spawn and Recruitment Flows* Biology Subgroup update, the sub-bullet referencing “juvenile fish can be salvaged after approximately June 15th” will be corrected with July 15th as the accurate date.
 - On pages 1 and 2, the name of environmental group involved in the recent Notice of Intents will be corrected to WildEarth Guardians.

Agency Fiscal and Policy Planning Updates:

- *U.S. Army Corps of Engineers (USACE or the Corps):*
 - This is LTC Gant’s last Program meeting as the Corp’s EC representative. In review of her time as Commander, LTC Gant highlighted the Corps’ participation in the Program as a vital part of the work being done in the Middle Rio Grande (MRG): habitat restoration work and mapping of habitat features relative to stream stage; continued Rio Grande Silvery Minnow (minnow) monitoring; the recent release of water for the spawning and egg collection efforts; Corps funding of several projects, including the Bosque Ecosystem Monitoring Program (BEMP); improvements in the decision making processes for endangered species; improvements in understanding species needs; and continued participation in the Minnow Action Team (MAT). The Corps has remained an active participant in all levels of the Program and has committed to continued participation.
 - The Corps is nearing completion of a recommendation on their consultation.
 - LTC Patrick Dagon will be the incoming Commander for the Albuquerque Office.
- *Bureau of Reclamation (Reclamation):*
 - Reclamation is finally able to move past the hiring freeze constraints and is looking to start re-staffing vacant positions. Reclamation is looking to modify the Interagency Agreement (IA) with the Service in order to help fill their staffing gaps. The proposed idea is that Reclamation would hire two biologist positions and detail those employees to the Service. It is unknown how this will eventually work out.
 - The contract leadership assures us that the necessary contracts will be in place before the end of the fiscal year.

- Regarding the Consultation, Reclamation continues to move forward with the partners and the Service. The current work is focused on a structured decision making process called the Matrices of River System Impacts (MRSI). This process is a qualitative analysis to evaluate the effects of the proposed conservation measures.
- Reclamation is also working on the response to the Notice of Intent (NOI) received in May.
- Senator Udall's office is developing a Draft Drought Bill (based on a larger drought bill written in California) to address the conditions and situation here. The California bill included language for several states, but was not considered adequate enough for our senatorial leadership so his office is working on a NM-focused bill. It was rumored that the bill was to be introduced this week, but that has not happened yet.
- *Hydrology Update:*
 - Recent help from Mother Nature has improved the hydrologic setting for the time being. More snow has entered into the system than this time last year. Last year, Reclamation had 17,000 ac-ft stored in El Vado and this year that amount is around 51,000 ac-ft total (~49,000 ac-ft is native).
 - A lot of supplemental water had already been used this time last year. There may be a full allocation for the San Juan/Chama, provided there are summer rains.
 - If the Coalition approves, with caveats, there is expected to be an 18,000 ac-ft cap on Prior and Paramount (P&P). This means nearly 21,000 ac-ft for the District and 9,000 to 10,000 ac-ft for Reclamation's ESA relinquishment.
 - The longer the District operates, the longer we can expect to be able to keep the system "going." However, this is dependent on what happens with the summer monsoons. Should we have to go into P&P-only operations, Reclamation is confident there is currently enough to meet demands.
 - Things are tentatively looking more optimistic, but remember this is still a below-average runoff year.
- *Fish and Wildlife Service (Service):*
 - David Campbell is currently the Acting Branch Chief and Joel Lusk is assuming the Minnow Technical Specialist lead and will continue his work on the Biological Opinion (BO).
 - At this time, the Service still has the waiver requirement to hire any positions which are being addressed on a case by case basis.
 - As mentioned previously, the Service is involved in the refining of the MRSI analysis structure and content.
 - With respect the policy issues, the differences with the Corps on how to proceed with the Section 7 consultation are being worked through with assistance from Headquarters. The situation is being evaluated as described and the Service expresses concerns about the delays. No date or timeframe is available, but it is hoped to be resolved as soon as possible.
- *Non-Federal Update:*
 - NMISC – Estevan Lopez had his Senate confirmation hearing for Reclamation Commissioner. ISC has to go through the personnel process to fill their Director position. The process is moving forward but timeframes are not available.
- *Collaborative Program Projects:*

- *CC 2014 Work Plan and Work Group Transition Period Recommendation Table:* The main task of the Coordination Committee (CC) over the few last months has been to provide guidance and recommendations for the various work groups through the transition. Instead of having individual work group work plans, this document will become the CC's 2014 Work Plan for the transition. It is considered a consensus document as there have been quorums at the meetings.
 - The CC recommendations have been provided as a 3-part table hand out:
 - *Part 1 Ongoing* – groups that maintain some functionality through the transition period include: CC, Science (ScW), Habitat Restoration (HRW), Population Viability Analysis (PVA, activity pending), Public Information and Outreach (PIO), and MAT;
 - *Part 2 Inactive/Disband* – groups that have completed their chartered objectives or are no longer active include: Monitoring Plan Team (MPT), Population Habitat Viability Analysis (PHVA), San Acacia Reach (SAR), Species Water Management (SWM), and Database Management System (DBMS);
 - *Part 3 RIP Work Groups/Future Groups:* Program Management Subcommittee, Adaptive Management Team (AMT), Implementation Teams, Action Team.
 - In response to a question regarding addressing water quality issues related to fires, it was shared that several management agencies work on controlling and managing for fires while other agencies have water quality projects and monitoring. Through the Program, water quality has been discussed at the ScW and HRW work groups in the past.
- *2012 Program Annual Report:*
 - The Final Draft 2012 Program Report was reviewed at the CC level and is considered ready for EC review and approval.
 - The Draft 2013 Program Report is being developed and expected for the July 17th EC meeting.
 - Please note that due to the closing of projects and decreasing budgets, the 2012 Program Report is smaller than previous years and the 2013 Program Report is expected to be even smaller.

Population Monitoring Discussion/Survey

- *Population Monitoring (Catch Per Unit Effort - CPUE) Workshop:* Originally discussed in detail at the April 20th, 2012 EC meeting, the Population Monitoring (CPUE) Workshop has experienced many delays due to a variety of reasons. However, the workshop planning group intends to host the workshop in December of this year.
 - *Purpose:* The purpose of the workshop is to assess how to move forward in the Recovery Implementation Program (RIP) and to address changing needs. The current population monitoring program has been in place 20 years – and while this provides for a great for a data set, it is time to review what has been/is being done and assess the applicability and appropriateness for the future.
 - *Objectives:* The listed objectives are basically the same as those first identified several years ago. CPUE has been specifically identified because it has been the “meat” of the Program’s monitoring for the last 2 decades.
 1. Evaluate statistical properties and interpretations of the current RGSM monitoring program, including precision and accuracy of CPUE.
 2. Discuss, evaluate, and reconcile areas of concern/ disagreement over CPUE.

3. Discuss and evaluate population estimation for RGSM and compare and correlate with CPUE.
 4. Identify and evaluate other potential methods for monitoring the RGSM, including methods used in other river systems.
 5. Identify, discuss, and reconcile uses of CPUE for RGSM, including demographics recovery criteria, sufficient progress metrics, and inputs and parameter estimates for Population Viability Analysis.
- *EC Survey:* With the goal of shaping the future monitoring program to best meet the needs of the EC and RIP and in order to better guide the workshop agenda, an EC survey has been distributed to signatories. If your agency has not yet contributed, please fill out and submit a survey as soon as possible.
 - *Time:* The current timeframe for the workshop is the second week of December. The planning group is working to contact possible experts to participate.
 - *Funding:* There are expenses incurred when hosting a workshop such as this – venues, compensation for experts, etc. Contributions from Program partners are needed to make this workshop happen.
 - A concern was expressed that there could be an appearance of conflict of interest with agencies “paying for their preferred expert.” Ideally, the Program itself would fund this workshop, but that is unlikely considering the time constraints for completing it this year. Instead, a random selection process whereby expert’s names are drawn randomly for entity funding could be implemented.
 - *Next Steps and Issues for Resolution:* The planning group is generating a list of experts and criteria for selection. Approximately 30 experts have been identified to date. Using the surveys, the group will continue to develop the recommended structure of the workshop – length (1 ½ day versus 2 days), venue and meeting logistics, and specific topics, etc.
 - In response to a question regarding the original intent to critique CPUE as the current and future method for monitoring the minnow, it was shared that the focus of the workshop is to develop a population monitoring program that meets the needs of the RIP. The original proposal accepted by the EC (April 20th, 2012) had a focus on CPUE because it has been the Program’s monitoring for the last 20 years. However, there are other methods that could potentially be better to address needs that the CPUE isn’t addressing. The intent was not to analyze the current CPUE-based monitoring but determine what is appropriate and best as we move forward with the RIP. It was shared that this workshop is probably just the first of many. Following the structure of the San Juan RIP, workshops will be held as often as necessary to revisit and refine what is being implemented.
 - Concern was expressed that the Service relies on the CPUE data to evaluate the species but there are critics of the current methodologies. The issue needs to be resolved and members were asked to consider the immediacy of that need relative to the multitude of things that could be worked on during the workshop.
 - After a quick review of the draft workshop objectives, some members expressed the opinion that the CPUE issues were captured.
 - One attendee expressed concern that review of the recovery criteria was also included in the workshop objectives. The Recovery Criteria will be addressed in the 5-year review which will be a more open and inclusive process.

- Some attendees expressed concern that there needs to be full EC support of the workshop direction – to avoid any more workshop start/stops and to be prepared to support the workshop outcomes. However, it was cautioned to avoid adding yet another “decision-level” step which would only further delay the workshop.

Other Activities:

- *Species Update:*
 - *Rio Grande Silvery Minnow:* The population monitoring data is only available through December 2013. However, surveys completed in May 2014 by the Service’s Conservation Office for Angostura and Isleta report a preliminary minnow density of 0.29 fish/100m². All the fish caught in May were hatchery-reared fish.
 - *Southwestern Willow Flycatcher:* flycatcher surveys are being completed; there is nothing new to report at this time.
 - *Yellow-Billed Cuckoo:* In October 2013, it was announced that the Service proposes to list the cuckoo as threatened with critical habitat. However, the comment period has been extended twice (once in December 2013 and again in April 2014) to ensure sufficient comment time for the public. A final rule is anticipated this fall or winter.
 - *New Mexico Meadow Jumping Mouse:* In October 2013, the Service announced a proposal to list the meadow mouse as endangered with critical habitat. A final rule is anticipated this month and critical habitat ruling should be finalized in September. Last year, no mice were observed on the Bosque del Apache Wildlife Refuge (Refuge). However, water dedicated to the mouse and the flycatcher has improved habitat and 5 mice were found earlier this week.

2014 Minnow Action Team (MAT) Recommendations and Actions - Presentation

- Starting early in 2014, the MAT has been meeting often to develop this year’s options based on 2014 predicted conditions.
- *2014 Spring Minnow Spawning Pulse*
 - Compared to this time last year, it tentatively appears that it is more likely we will be able to stay within the requirements of the 2003 Biological Opinion (BO).
 - For the spring season, MAT provided the recommendations to maintain a continuous river prior to spawning and aim to produce a spawning pulse with a manufactured flow spike (either 1,500 cfs or 1,800 cfs) for 7 days at Central Avenue gage. The flow spike was intended to achieve the biology recommendations to (1) maximize potential for minnow spawning and subsequent egg collection during the 2014 spring runoff and (2) to create conditions for recruitment in the river.
 - A minimal nature flow of 800 cfs at Cochiti and 100 cfs at San Marcial were needed prior to the pulse to accommodate legal conditions on the movement of the water. The pulse was thus timed with “natural” runoff conditions which meant that supplemental water was not released for this action.
 - The natural conditions were slightly better than the minimum requirements and the pulse flows were released from Abiquiu and passed through Cochiti on May 7 through May 14.
 - A “cold snap” caused a decline in temperatures which resulted in a delay of the pulse compared to the timing estimates that were modeled.
 - With the manufactured pulse, the smaller secondary pulse accomplished through changes in MRGCD operations at Isleta, and a “natural” pulse courtesy of Mother Nature, there were 3 opportunities for the minnow spawn.

- *Spawning Pulse Monitoring/Egg Collection*
 - With a lot of cooperation and coordination, many agencies participated in spawning pulse monitoring of 23 sites up and down the river.
 - On May 11th, the single largest collection of minnow eggs occurred at the US 380 site near San Antonio, NM with 8,684 eggs.
 - In total, the location and number eggs collected were:
 - Rio Rancho (habitat restoration backwater) – 300
 - Rio Grande Nature Center (habitat restoration side channel) – 8,000
 - US 380 (BioPark egg monitoring site) – 8,684
 - San Marcial RR Bridge (BioPark egg monitoring site) – 1,095
 - Silver Canyon (ASIR egg monitoring site) – 10,188
 - Total: 28,267 minnow eggs
 - 25,000 of the minnow eggs were transported back to the BioPark and resulted in approximately 15,000 larval fish – 5,000 of which were delivered to the Dexter facility for rearing. The BioPark is maintaining the remaining 10,000 larval fish for rearing.
- *Rio Grande Nature Center (RGNC) Habitat Restoration Monitoring*
 - This habitat restoration monitoring is a Corps' project funded by the Collaborative Program.
 - Monitoring began at the start of the pulse on Friday, May 9th. ASIR and the BioPark came out to salvage eggs at the bottom part of the high flow channel. The minnow appeared to have spawned in the high vegetation areas. Very few eggs were found in the sandy substrate areas that were sampled.
 - RGNC will continue to monitor for young of year leading up to the October population monitoring.
- *Rio Rancho Habitat Restoration Project*
 - In general, inundation of the Middle Rio Grande (MRG) features tends not to happen until flow has reached several thousand cfs. However, most flow in the MRG can be characterized as “low flow.” This Program project focused on construction of backwaters, flow channels, and floodplain areas to inundate at much lower flows.
 - The vegetation has grown in and using the same methodology as used at the RGNC, most minnow eggs were found in the margins and vegetation. It is noted that the vegetated areas were used by many different fish, not just minnow.
 - At the Atrisco site, the backwater area can be manipulated for refugial habitat if needed.
 - Monitoring following the pulse found both areas were inhabited by minnow. In fact, one ~90mm wild minnow was discovered but the marked fish were smaller and younger.
- *Water Temperature Monitoring*
 - There is much interest in understanding how water temperature affects the minnow. The spawning period ranges from late March through June.
 - This spawning pulse event was used to capture thermal and spatial variation in the MRG – to get a temperature profile during the spawning event to help inform and predict for the future.
 - Water temperatures were recorded at 15-minute increments for 15 stations distributed the length of the river (between Cochiti and the South Boundary of the Bosque del Apache National Wildlife Refuge).
 - Water temperature, along with discharge and silvery minnow egg monitoring will be used to assess the environmental conditions and spawn during the 2014 snowmelt pulses.
- *MRG Inundation Observations*
 - Reclamation “floated” the river during the spring pulse to get a good photo log and anecdotal data sheet of information. Staff observed the habitat, took notes on feature details and photographed sites to document the event.

- *2014 MAT Summer Recommendations*
 - As recommended, the spawning pulse and subsequent egg collection actions were achieved. Going forward, monitoring efforts will need to be continued.
 - Mother Nature has helped “bolster” the situation and at this time, it appears that the District will be able to continue operations into June.
 - If there are good monsoons this summer, there is a chance of continuing to meet the flow targets. However, if there is little or no monsoon, then we can expect to use supplemental water quickly which results in a much greater chance of drying (even into Albuquerque).

Other Activities

- No additional activities were reported on.

Meeting Summary: Reese Fullerton (facilitator) provided a brief meeting summary:

- The EC approved today’s meeting agenda with slight changes in order. A quorum was present.
- The April 17th, 2014 meeting summary was approved for finalization with 2 corrections.
- LTC Gant was thanked for her participation during her time as Army Corps Commander.
- Agency updates were provided. Thanks to Mother Nature, the outlooks for 2014 are slightly more positive. Reclamation is beginning to work on filling staff positions.
- The Hydrology Report indicated a tentatively more optimistic outlook, but remember this is still a below-average runoff year and the summer monsoons (or lack thereof) will impact how the summer season turns out.
- UNM and NMED are looking at water quality issues and how individual agencies manage for fire seasons.
- The approval of the 2012 Program Report was delayed until the July meeting to allow for more review time.
- The Population Monitoring (CPUE) Workshop is moving forward for December 2014. However, agency funding contributions are needed.
- MAT presented their 2014 options/recommendations and highlights of implementation. It has been a collaborative effort to meet a species need for spawning (since this is the 4th consecutive poor water year and there has not been observable spawning for several years).

Public Comment

- There was no public comment.

Next Meeting: **July 17th, 2014 from 9:00am to 1:00pm at BIA**

- Tentative agenda items include: (1) Decision – Approve 2012 Program Report; (2) Decision – Approve 2013 Program Report; (3) Decision – Approve Population Monitoring (CPUE) Workshop Objectives, Structure, and Logistics; (4) Hydrology updates – summer drying, salvage efforts, etc.
- Potential Future Agenda Items: (1) Discussion on chartering (if/when) of MAT;

Executive Committee Meeting Attendees June 5th, 2014

Attendees:*Representative*

Brent Rhees
Rick Billings (A)

Organization

Bureau of Reclamation
Albuquerque/Bernalillo County
Water Utility Authority
NM Interstate Stream Commission
NM Attorney General's Office
U.S. Army Corps of Engineers
Bureau of Reclamation
City of Albuquerque
Middle Rio Grande Conservancy District
U.S. Fish and Wildlife Service
University of NM
NM Department of Agriculture
Pueblo of Santa Ana
Pueblo of Sandia

Seat

Federal co-chair
Non-federal co-chair

NMISC
NMAGO
Corps
Reclamation
COA
MRGCD
Service
UNM
NMDA
Santa Ana
Sandia

Others

Jim Wilber
Ali Saenz
Mary Carlson
Jennifer Faler (A)
Kris Shafer (A)
Susan Bittick
Ryan Gronewold
Beth Pitrolo
William DeRagon
Mick Porter
Joel Lusk
Wally Murphy
Steward Jacks
Jason Davis
Thomas Archdeacon
Kevin Cobble
Maria O'Brien
David Gensler
Brooke Wyman
Brian Bader
Kyle Harwood
Rick Carpenter
Kathy Lang
Ann Moore (A)
Joe Jojola
Kalani Vehara
John Fleck
Janet Wolfe
Reese Fullerton
Marta Wood

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U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service/BdA NWR
ABCWUA
MRGCD
MRGCD
SWCA
BBD/City of Santa Fe
BBD/City of Santa Fe
City of Albuquerque/BioPark
NM Attorney General's Office
Bureau of Indian Affairs
Senator Lujan Grisham's Office
Public/Albuquerque Journal
D.B. Stephen's & Associates
GenQuest (Facilitator)
Alliant Environmental (note taker)

2014 MAT Recommended Actions – IMPLEMENTED

I. Hydrologic Recommendations for Rio Grande Silvery Minnow Spawning in 2014

- 1. *Maintain continuous river to Elephant Butte prior to spawning events***
 - a. Used 4,523 ac-ft of Supplemental Water
 - b. Pumping from the LFCC began March 31
 - c. River Eyes monitoring conducted daily since April 11
- 2. *Produce a spawning pulse through the MRG resulting in flows of 1,500 cfs (Option 1) at Central Avenue gage for duration of 7 days with a 250 cfs/day receding limb***
 - a. Spawning pulse resulted from planned movements of SJC and ACAP Water to Elephant Butte totaling 17,649 ac-ft (Figures 1 and 2)
 - b. Supplemental Water was not released during the spawning pulse, some Supplemental Water will be used to offset a portion of SJC loss
 - c. Natural flow was approximately 1,043 cfs at Cochiti and 111 cfs at San Marcial prior to spawning pulse
 - d. Ramp up from Abiquiu began May 5, flows released from Cochiti May 7 - May 14
 - e. Peak flow of approximately 1,650 cfs was reached at Central Avenue gage
 - f. LFCC pumping ceased for the duration of the higher flows
 - g. Careful monitoring of flows and diversions occurred during the spawning pulse
- 3. *Ramp down from spawning hydrograph and support continuous flow through June 15, continue to maintain compliance with 2003 BO, if possible***
 - a. Ramp down occurred May 15 - May 18 at a rate of about 100 cfs/day
- 4. *Produce one or more additional short duration spawning spikes in mid-May to June to ensure egg collection is maximized***
 - a. First spike was produced May 25 at the Isleta Diversion, second spike was produced May 27 at the San Acacia Diversion
 - b. Achieved through coordination with MRGCD operations, no additional water required
 - c. Each spike had a duration of 1-2 days with BioPark in the lead for egg collection
 - d. No significant spawning was detected as a result of these short duration spikes

II. Biologic Recommendations for Rio Grande Silvery Minnow Spawning in 2014

- 1. *Maximize potential for silvery minnow spawning and egg collection during the 2014 spring runoff***
 - a. Created an approximate 150% flow increase for 8 days at Central Avenue gage to encourage silvery minnow to spawn and release eggs
 - b. Collected and transported approximately 25,000 eggs to the BioPark facility
 - c. Inundation was observed at several restoration sites in the Albuquerque Reach, and likely occurred within the Isleta and San Acacia Reaches
 - d. Monitored silvery minnow spawning (eggs) and measured water temperatures (temperature data are being analyzed and may be within the ranges that support egg hatching and allow silvery minnow development)
- 2. *Maximize potential for fish development by silvery minnow during the 2014 spring runoff***
 - a. Maintained habitat conditions favorable for fish development as long as possible
 - b. Continued to monitor biological and physical parameters to evaluate effects

2014 MAT Recommended Actions – PENDING IMPLEMENTATION

- 1. *Engage in a flexible, interagency decision-making process - ongoing***
 - a. Ability to quickly incorporate changing conditions, water supplies, and species needs into water management and operations is required
 - b. As storage and/or flow conditions change and monitoring information is available, the recommended emergency actions may be modified
- 2. *Seek to maintain continuous river flow in all reaches of the MRG through June 15***
- 3. *Seek to maintain continuous river flow in the Angostura Reach***
 - a. May require deviation from 2003 BO flow requirements to conserve supplemental water for later use to maintain wetted refugia (described below in No. 5)
- 4. *Manage river recession to meet endangered species needs***
 - a. Post June 15 river recession following 2003 BO prescribed recession rates
(Note: The MAT was informed that the Service and Reclamation are discussing possible changes in LFCC pumping operations to address the habitat needs of southwestern willow flycatcher and NM meadow mouse on Bosque del Apache National Wildlife Refuge)
- 5. *Seek to create and maintain perennially wet refugia in the Isleta and San Acacia Reaches***
 - a. Based on MAT's Recommended Emergency Actions for 2013, selected refugia locations may be modified
 - b. Provide real-time monitoring of refugia to ensure that refugia habitats are adequate for silvery minnow survival
- 6. *Continue to monitor for and collect silvery minnow eggs for captive propagation***
 - a. May require emergency rearing locations to accommodate silvery minnow
- 7. *Conduct silvery minnow rescue/salvage operations***
 - a. Salvaged fish may be released into upstream reaches of the MRG, as needed
 - b. Provide staff necessary to work with the Service on rescue efforts to reduce mortality in drying reaches
- 8. *Monitor hydrologic conditions and available water supply***

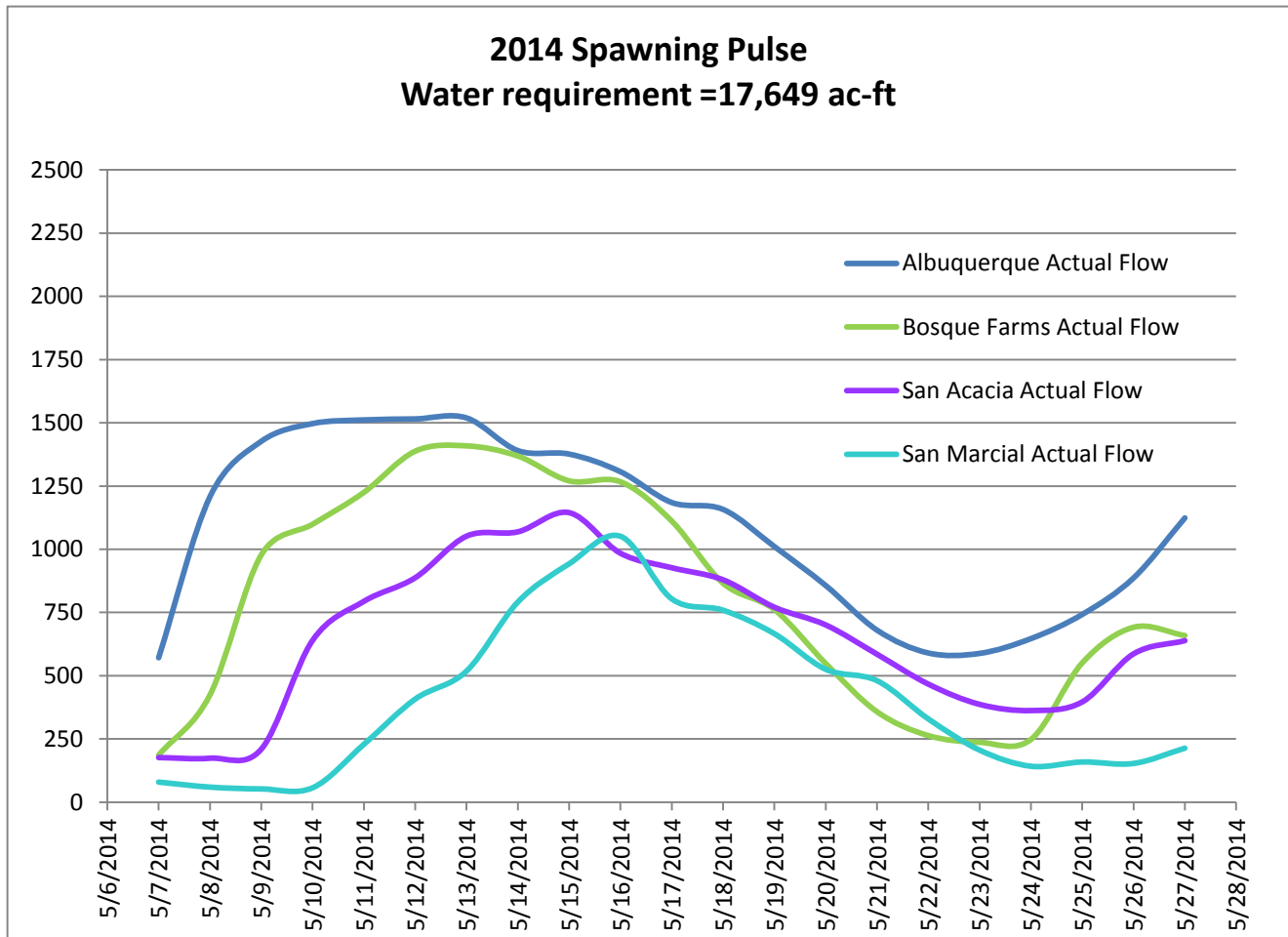


Figure 1. Observed 2014 hydrograph for spawning and egg collection

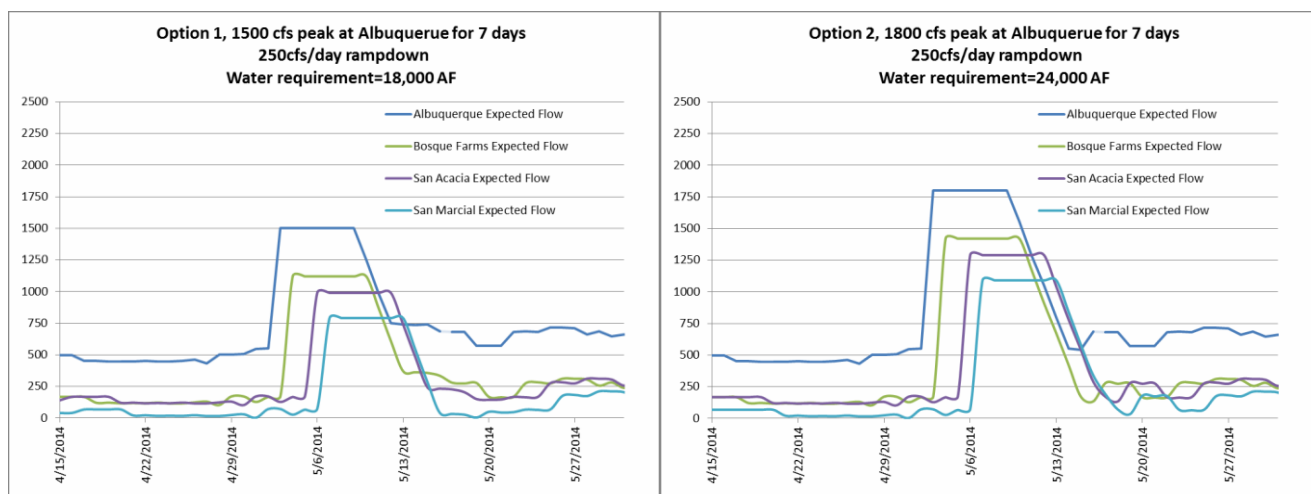


Figure 2. Modeled spawning spike for egg collection and larval recruitment based on 18,000 ac-ft and 24,000 ac-ft water requirements

2014 Rio Grande Silvery Minnow Spawning Pulse

**Minnow Action Team (ad-hoc)
presentation to the Executive Committee**

**Middle Rio Grande Endangered Species
Collaborative Program**

June 5, 2014



Spawning Pulse Recommendations

- Hydrologic Recommendations
 - Maintain a continuous river prior to spawning
 - Produce a spawning pulse with a 1,500 cfs peak for 7 days @ Central Avenue gage (Option 1)

or

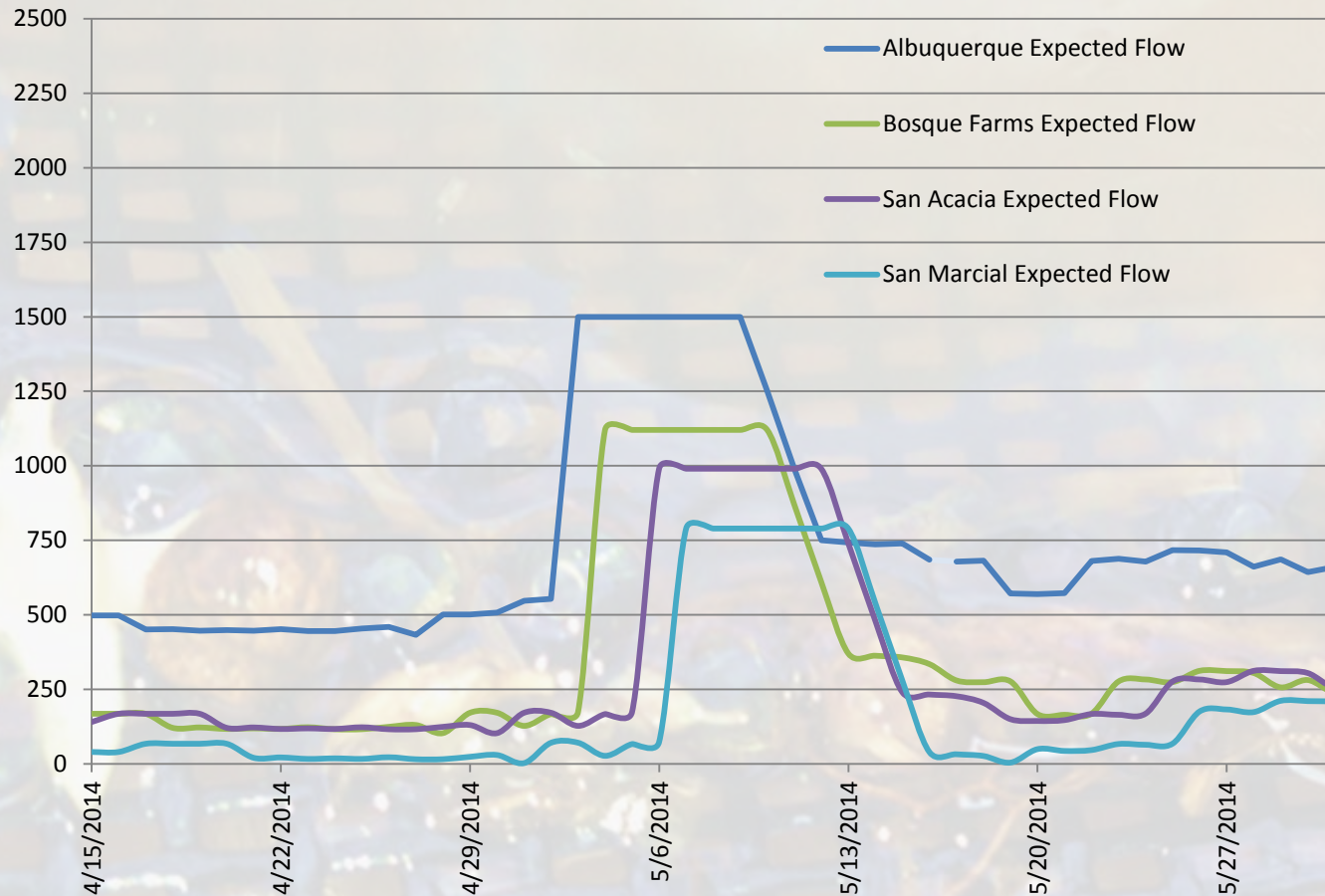
– Produce a spawning pulse with an 1,800 cfs peak for 7 days @ Central Avenue gage (Option 2)
 - Maintain a 250 cfs/day ramp down (Option 1 & 2)

Modeled Spawning Pulse

Option 1, 1500 cfs peak at Albuquerque for 7 days

250cfs/day rampdown

Water requirement=18,000 AF

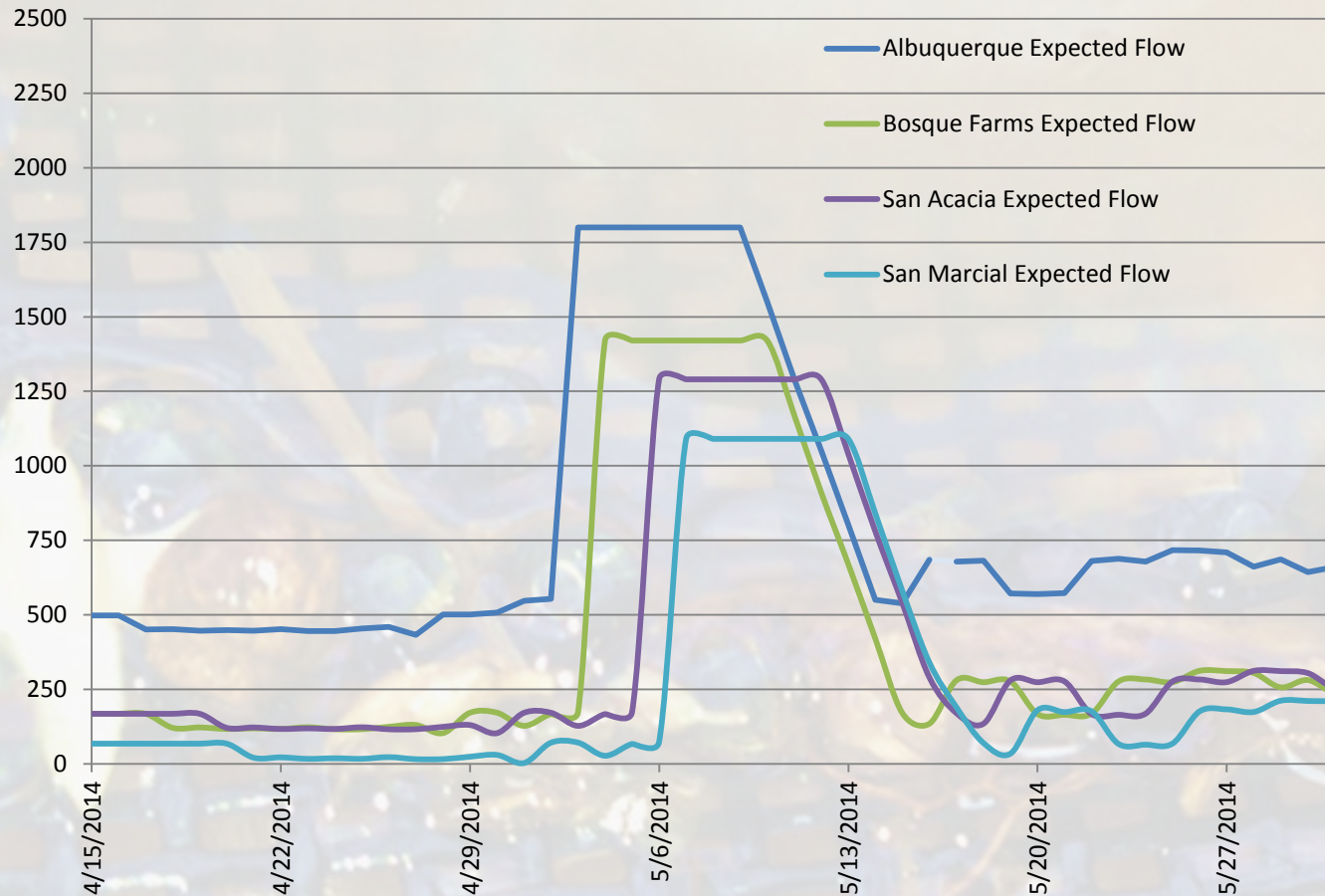


Modeled Spawning Pulse

Option 2, 1800 cfs peak at Albuquerque for 7 days

250cfs/day rampdown

Water requirement=24,000 AF



Spawning Pulse Recommendations

- Biologic Recommendations
 - Maximize potential for silvery minnow spawning and egg collection during the 2014 spring runoff
 - Create conditions for egg release
 - Collect/transport up to 1M eggs for captive propagation
 - Maximize potential for fish development by silvery minnow during the 2014 spring runoff
 - Create conditions to allow eggs to reach larval stage
 - Maintain as long as possible



Conditions for Implementation

- Minimum natural flow requirements prior to pulse (800 cfs @ Cochiti, 100 cfs @ San Marcial)
- Timed with 'natural' runoff conditions
- Results from planned movement of SJC and ACAP water
- Supplemental Water will not be released
- LFCC pumping will be curtailed
- Careful monitoring of flows and diversions

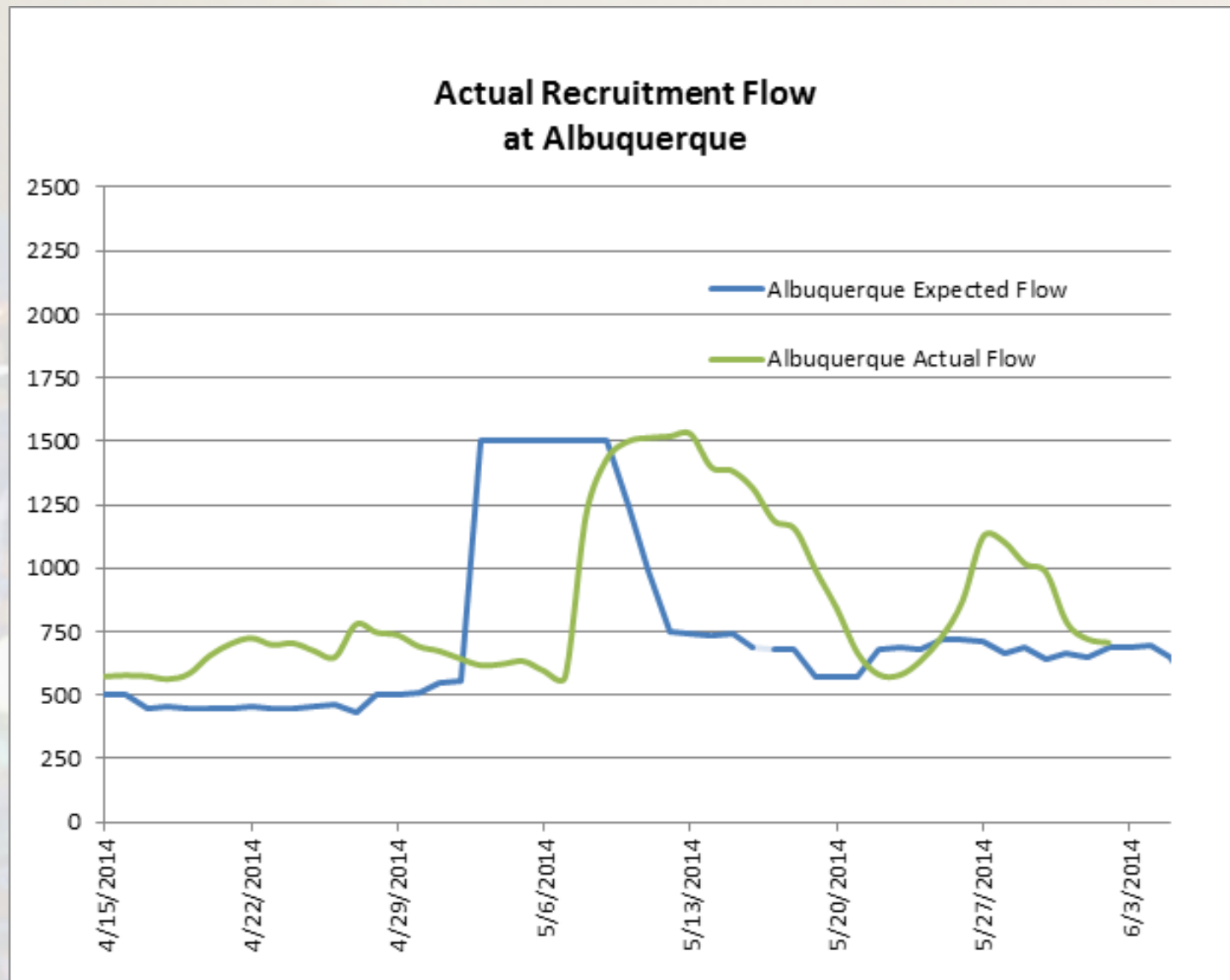


Observed Conditions

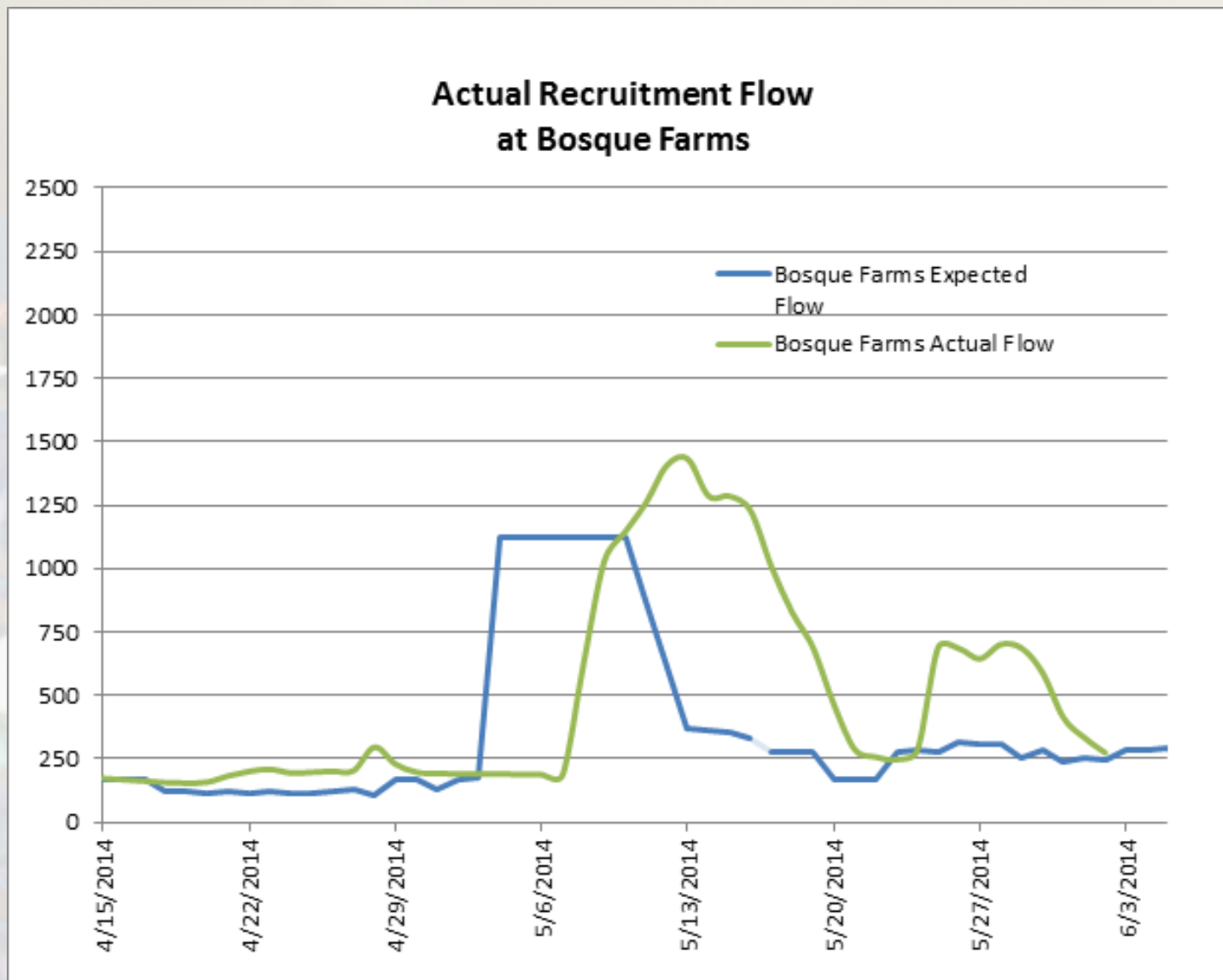
- Prior to spawning pulse, flow was 1,043 cfs at Cochiti and 111 cfs at San Marcial
- Pulse flows released from Cochiti May 7 – May 14 of about 900 cfs increase for 8 days
- Ramp down rate of about 100 cfs/day
- 17,649 ac-ft of SJC and ACAP water moved to Elephant Butte
- Supplemental Water releases were halted during pulse
- LFCC pumping was stopped during pulse



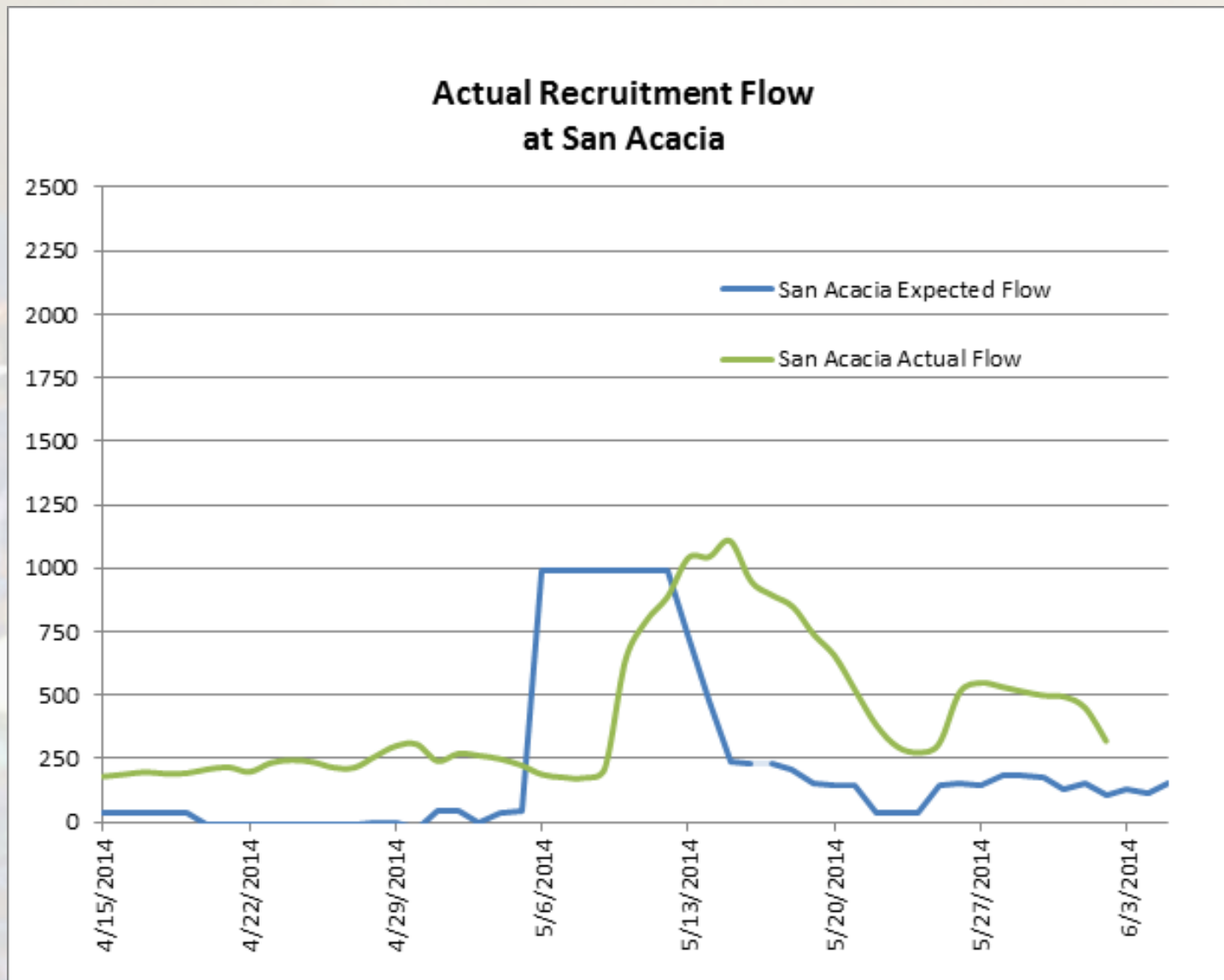
Observed Spawning Pulse



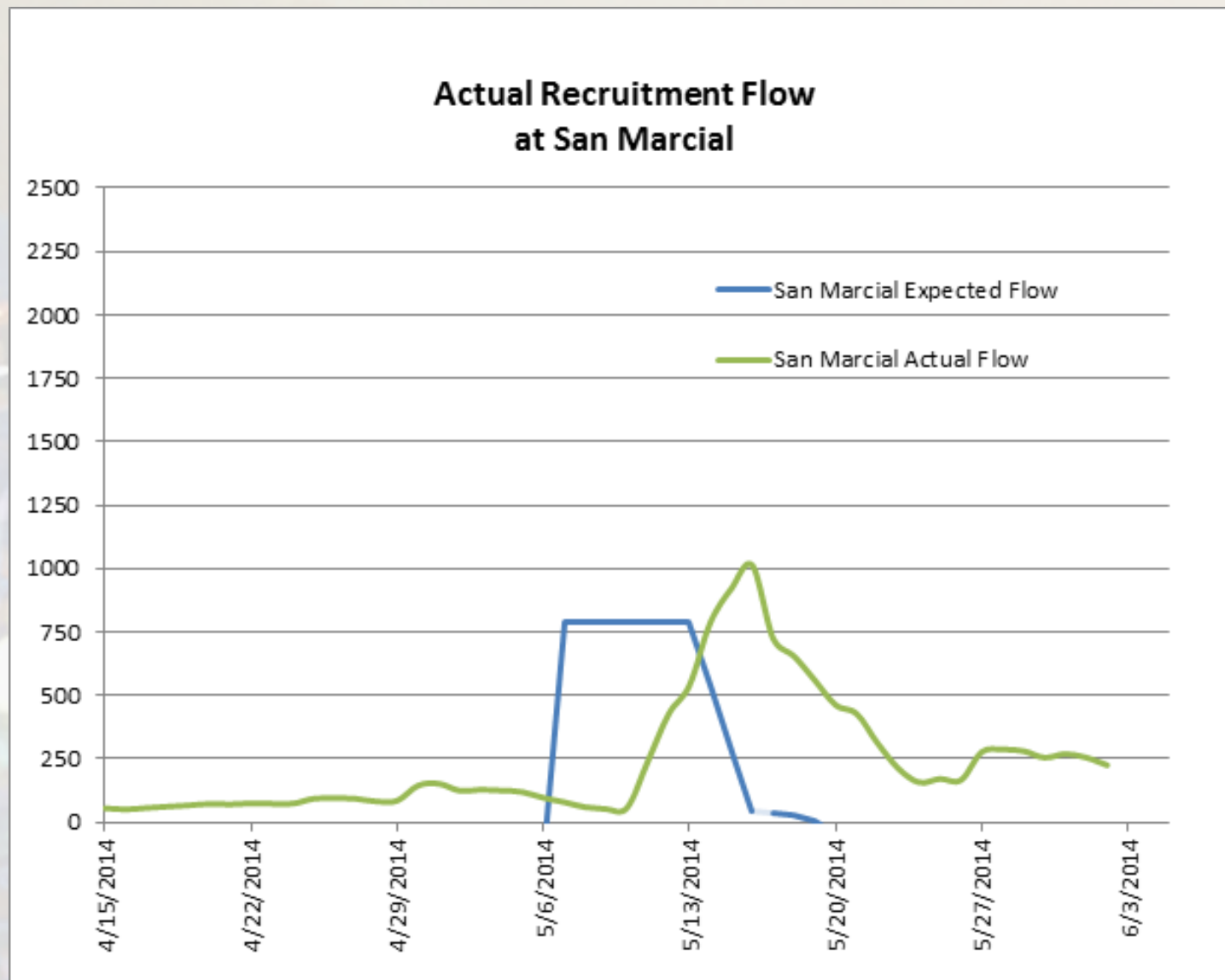
Observed Spawning Pulse



Observed Spawning Pulse



Observed Spawning Pulse

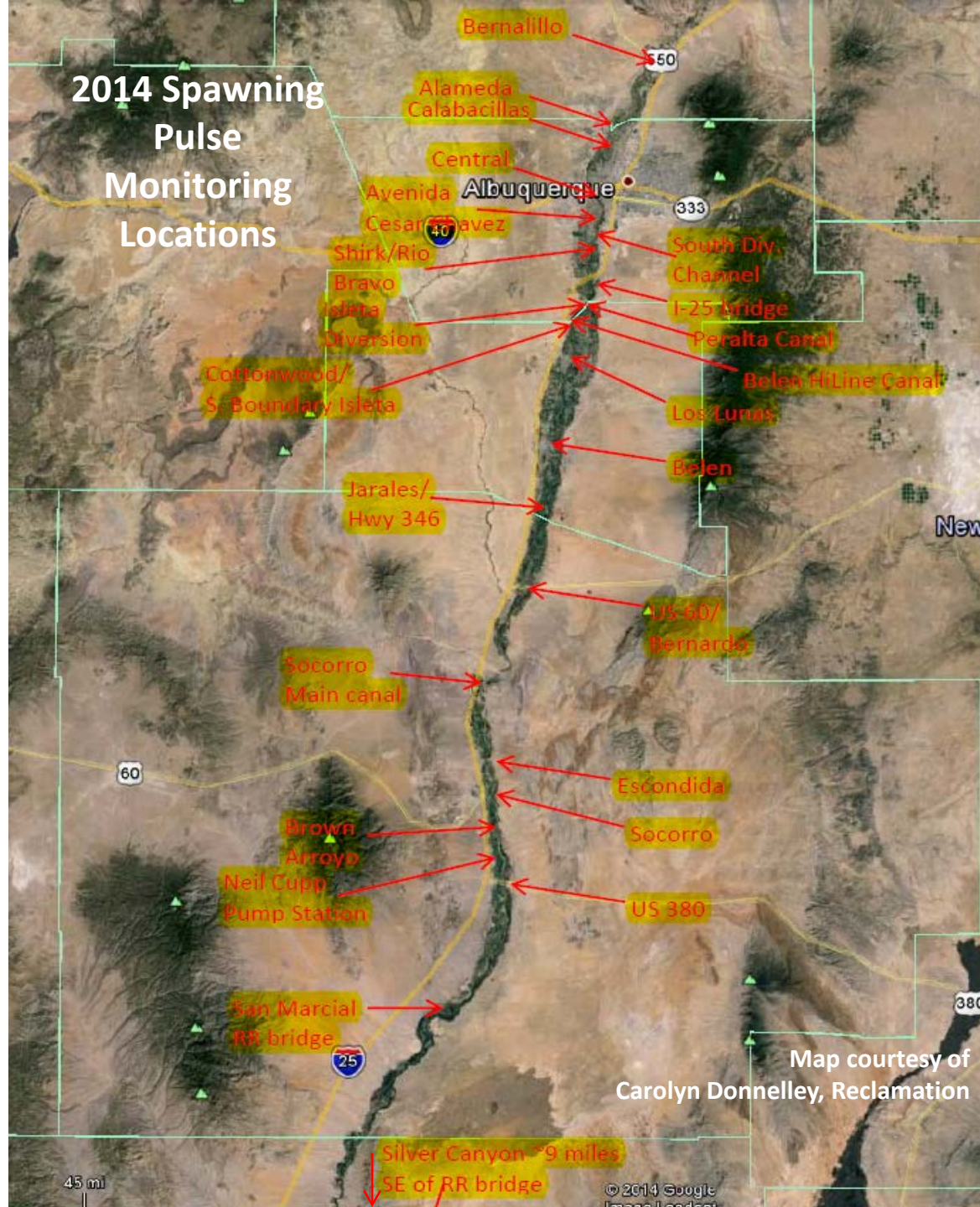


Spawning Pulse Monitoring

- Spawning monitoring: ASIR, SWCA and ABQ Biopark
- Entrainment monitoring: ASIR
- Habitat restoration monitoring: USACE, NMISC
- Continuous water temperature monitoring: USACE
- MRG inundation observations: Reclamation, USFWS, MRGCD, others
- Egg collection: ABQ BioPark with ASIR, SWCA, USFWS, and USACE. Included in-channel collections and floodplain collections.



2014 Spawning Pulse Monitoring Locations



Map courtesy of Carolyn Donnelley, Reclamation



Spawning Pulse Monitoring

Location	Spawning/Egg Collection/Entrainment				Water Temp
	BioPark	SWCA	ASIR	USACE	USACE
Below Cochiti					X
Bernalillo	X				X
Rio Rancho		X			
Alameda	X	X			X
Calabacillas Arroyo	X				
S. Diversion Channel		X			
RG Nature Center				X*	
Central Avenue	X	X			
Avenida Cesar Chavez	X				
Rio Bravo	X				X
I-25 Bridge					X
Isleta Diversion					X
Isleta S. Boundary	X				
Peralta Canal			X		
Los Lunas	X				X
Belen	X				X
Belen Hi Line Canal			X		
Jarales/Hwy 346	X				X
US 60/Bernardo	X				X
La Joya	X				
Escondida	X				X
San Acacia Diversion					X
Socorro/Browns Arroyo	X		X		X
Socorro Main Canal					
US 380	X*				X
BdANWR S. Boundary					X
Neil Cup Pump Station	X				
San Marcial RR Bridge	X				
Silver Canyon			X*		



Egg Monitoring and Collection



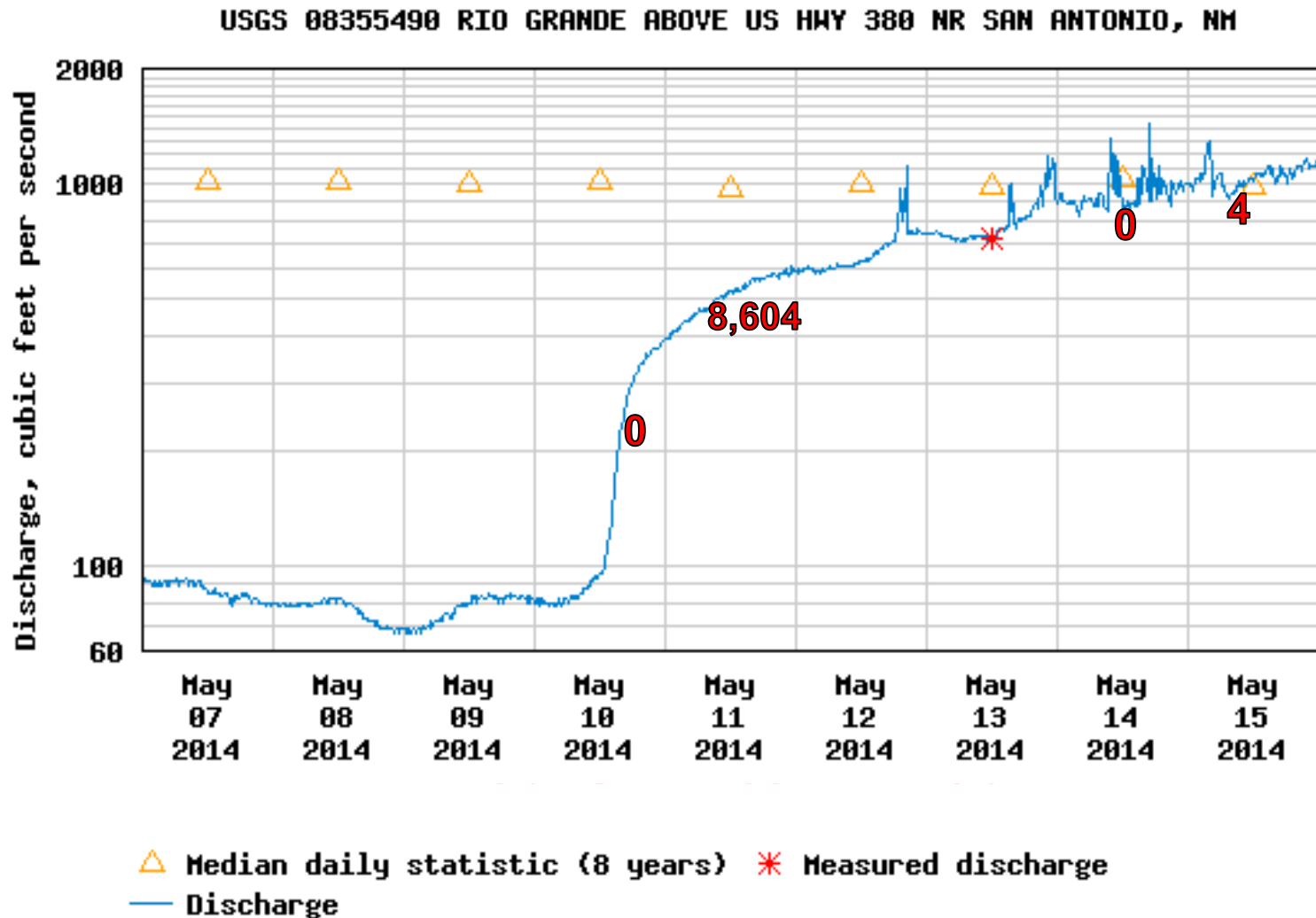
Biopark staff searches for silvery minnow eggs
at Silver Canyon – May 13, 2014

Photos courtesy of Kathy Lang, Albuquerque BioPark

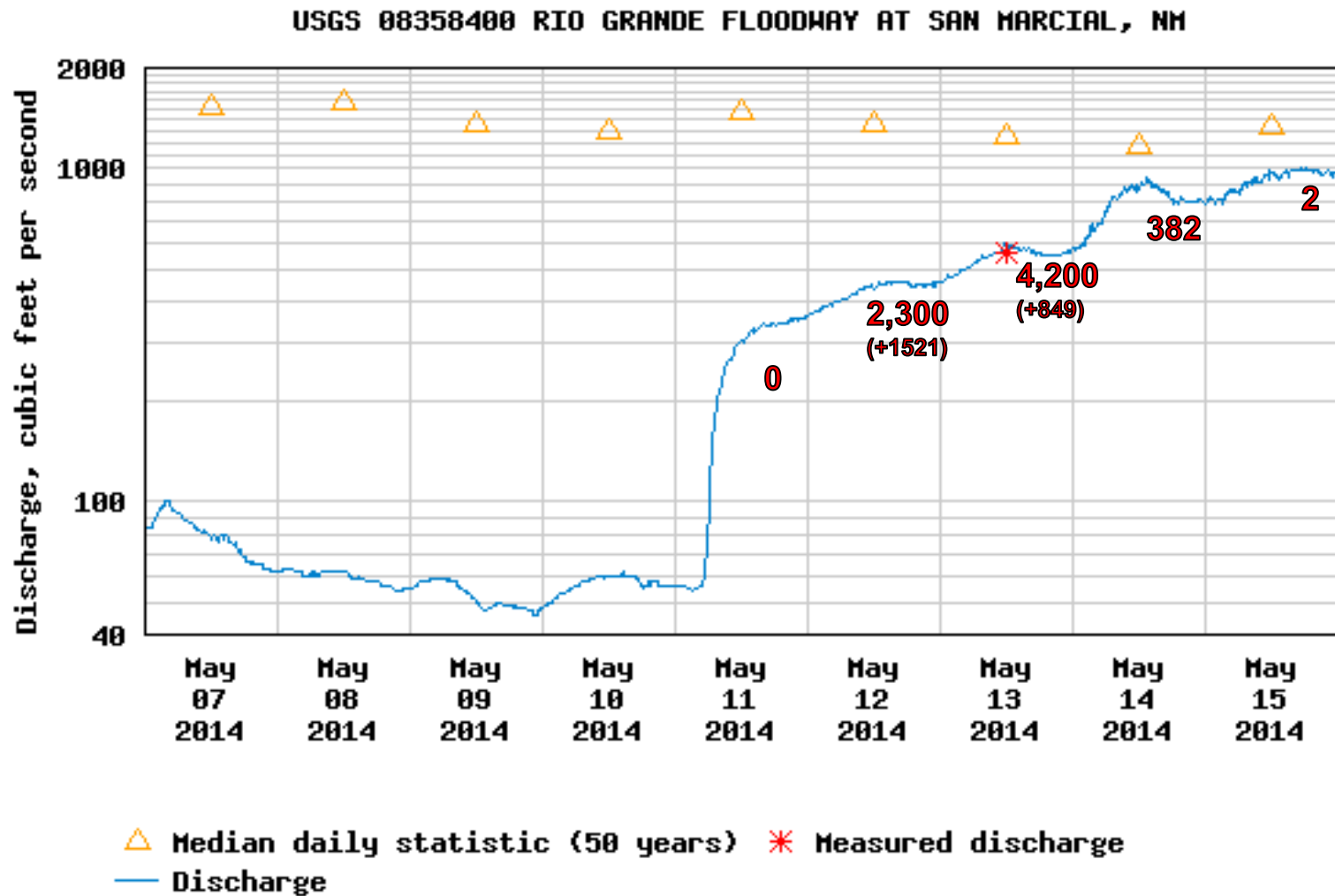


Silvery minnow eggs on Moore Egg Collector screen— May 13, 2014
Photo courtesy of Kathy Lang, Albuquerque BioPark

Egg Collections by Biopark at US 380 during Spawning Pulse



Egg Collections by ASIR at RM 58.8 during Spawning Pulse



Egg Collection

Eggs Collected and Transported to ABQ BioPark as of June 1, 2014

Monitoring Location	Number of Eggs	Site Description
Rio Rancho	300	Habitat restoration backwater
RG Nature Center	8,000	Habitat restoration side channel
US 380	8,684	BioPark egg monitoring site
San Marcial RR Bridge	1,095	BioPark egg monitoring site
Silver Canyon	10,188 (7,818*)	ASIR spawning monitoring site
Total	28,267	

* indicates ASIR collections delivered to BioPark



Egg Collection at RGNC



Egg collection at RG Nature Center HR site – May 14, 2014

Photo courtesy of Michael Porter, USACE



Monitoring Habitat Restoration Rio Grande Nature Center



**Silvery minnow eggs in
kicknet at RGNC**

Photo courtesy of Michael Porter, USACE

**Kicknet demonstration at
Rio Grande Nature Center – May 13, 2014**

Photo courtesy of Rich Fischer, USACE

Rio Rancho Habitat Restoration



Willow Creek high flow channel of Rio Rancho HR

Photo courtesy of Eric Gonzalez, SWCA

05/17/2014

Rio Rancho Habitat Restoration



Atrisco Habitat Project



Fyke net sets at Atrisco Habitat Project on May 28, 2014

Photo courtesy of Eric Gonzalez, SWCA



Water Temperature Monitoring

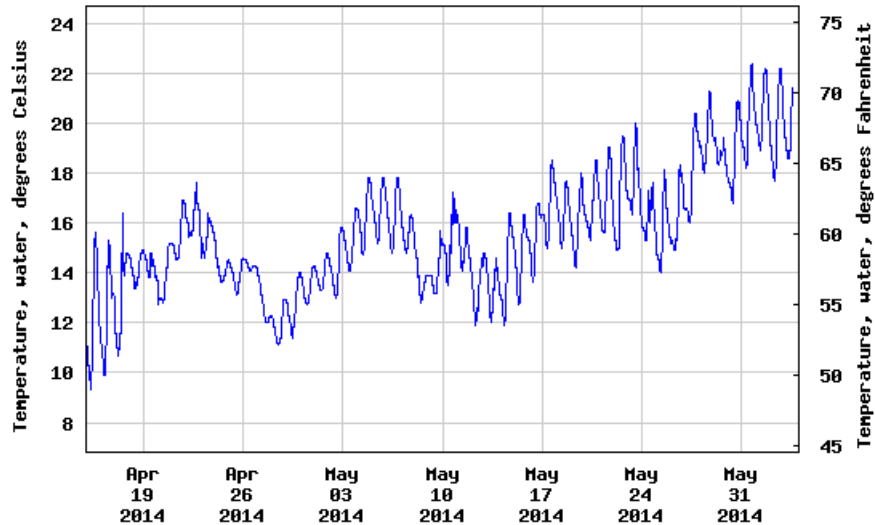
- Captured temporal and spatial variation in the thermal regime of the MRG during the spawning pulse
 - Water temperatures recorded at 15-minute increments
 - 15 stations between Cochiti and the South Boundary of BdANWR
- Water temperature, along with discharge and silvery minnow egg monitoring will be used to assess the environmental conditions and spawn during the 2014 snowmelt pulses



Water Temperature Monitoring



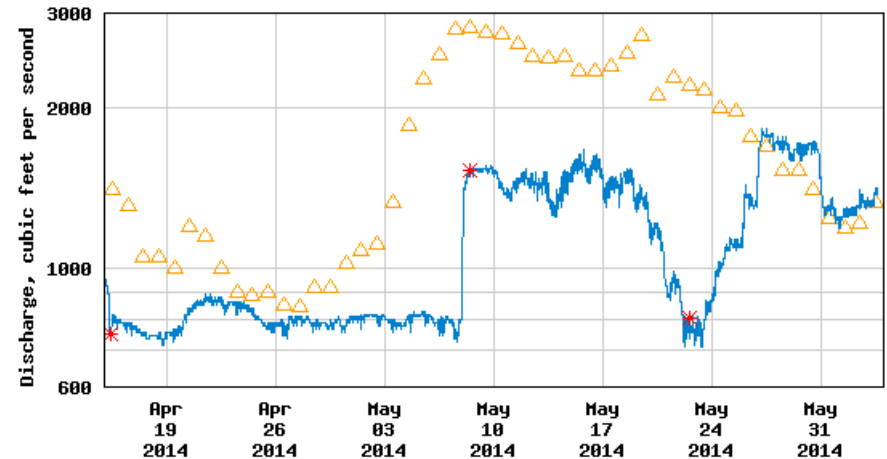
USGS 08329918 RIO GRANDE AT ALAMEDA BRIDGE AT ALAMEDA, NM



----- Provisional Data Subject to Revision -----



USGS 08329918 RIO GRANDE AT ALAMEDA BRIDGE AT ALAMEDA, NM



----- Provisional Data Subject to Revision -----

△ Median daily statistic (9 years) * Measured discharge
— Discharge



MRG Inundation Observations

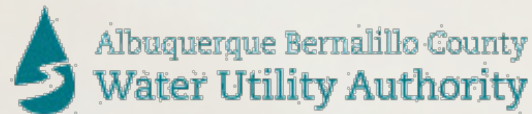


San Acacia Reach— May 13, 2014

Photo courtesy of Jennifer Bachus, Reclamation



Acknowledgements



**US Army Corps
of Engineers®**



*American Southwest
Ichthyological Researchers, LLC*



Sound Science.
Creative Solutions.®



A Very Special Thanks to Stacey Stanford USFWS!!