



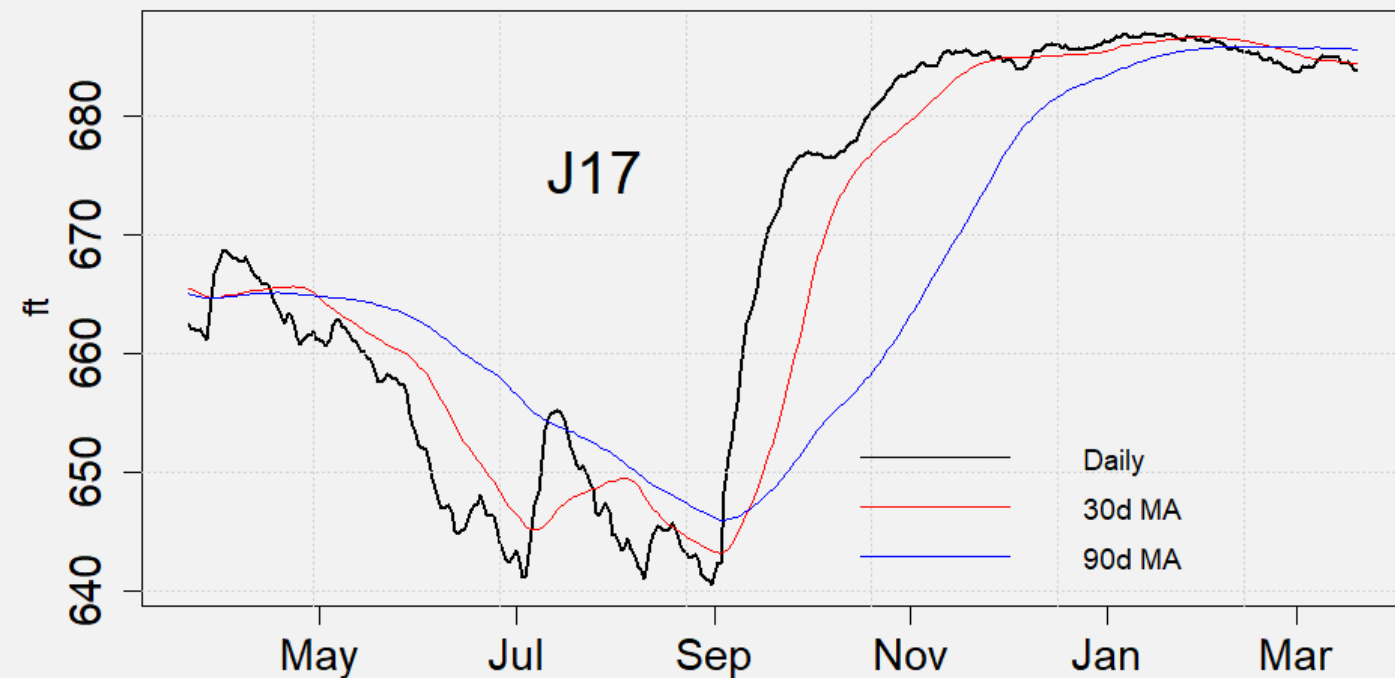
Edwards Aquifer Habitat Conservation Plan Implementing Committee Meeting

EAHCP Staff ♦ March 21, 2019

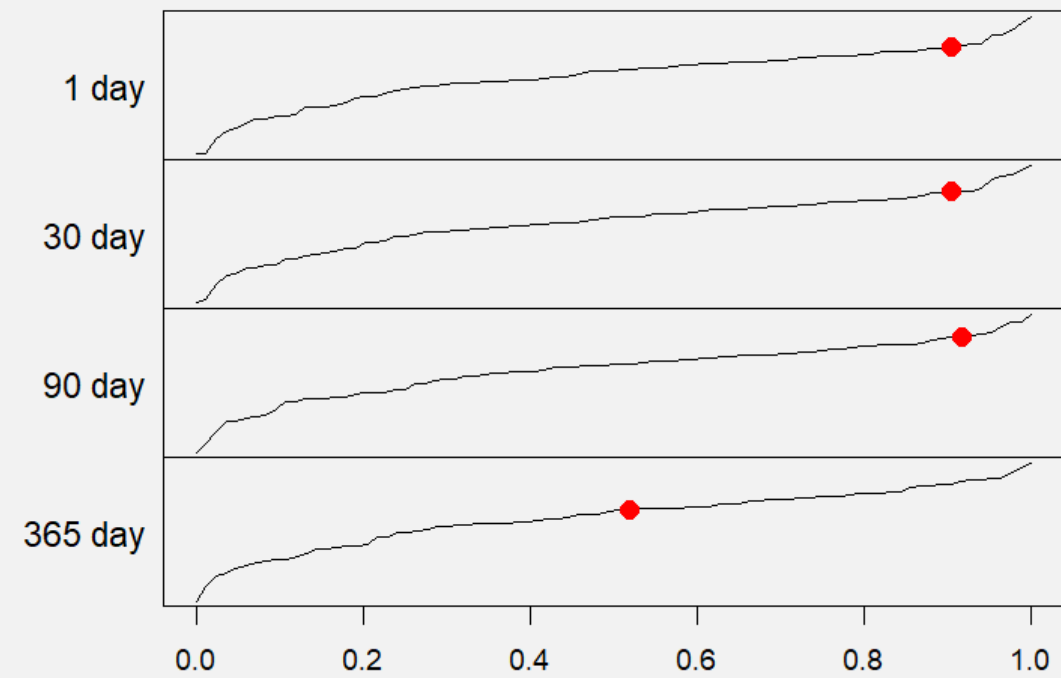


March 20, 2019

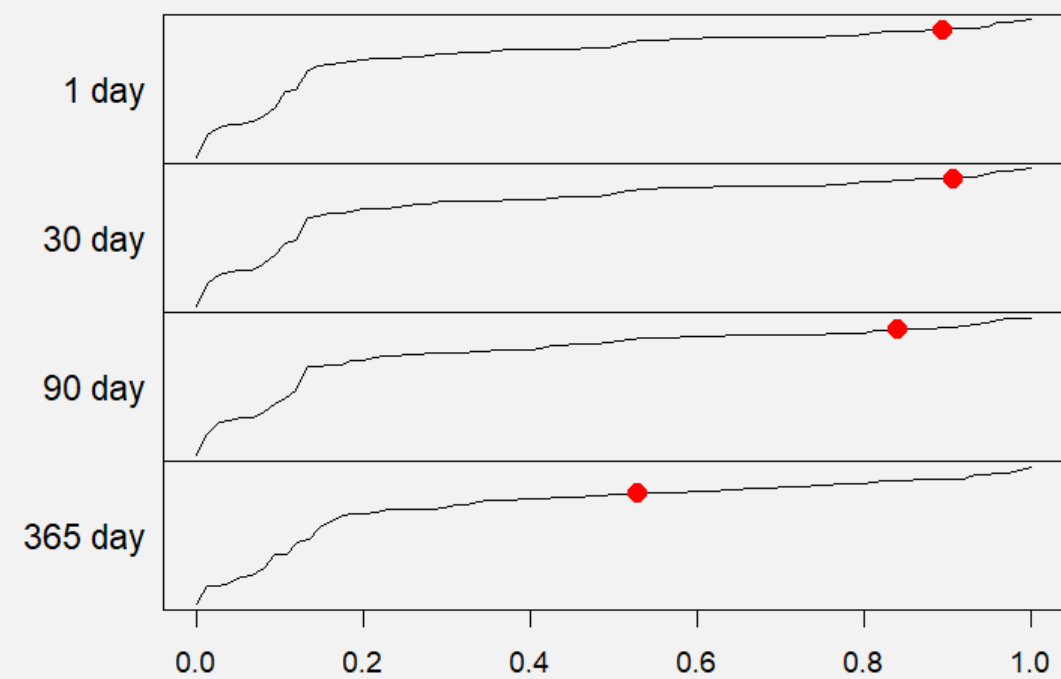
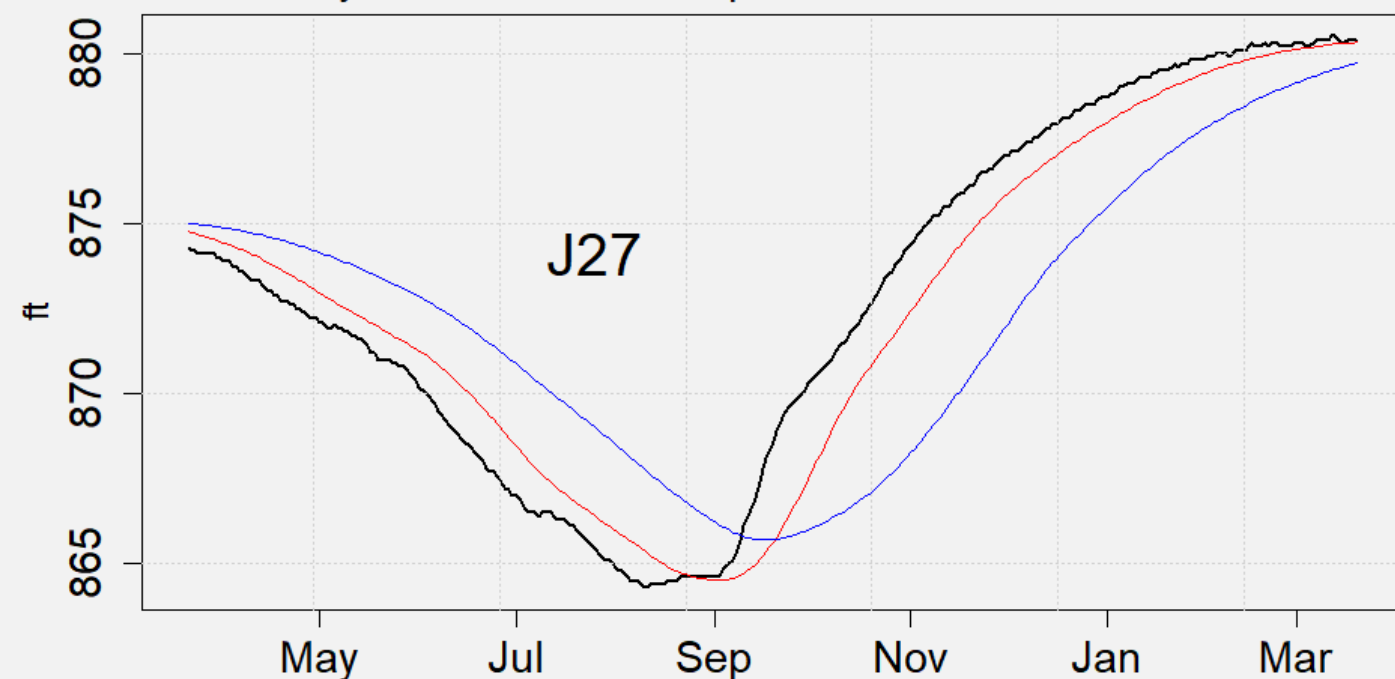
Historical Average 665



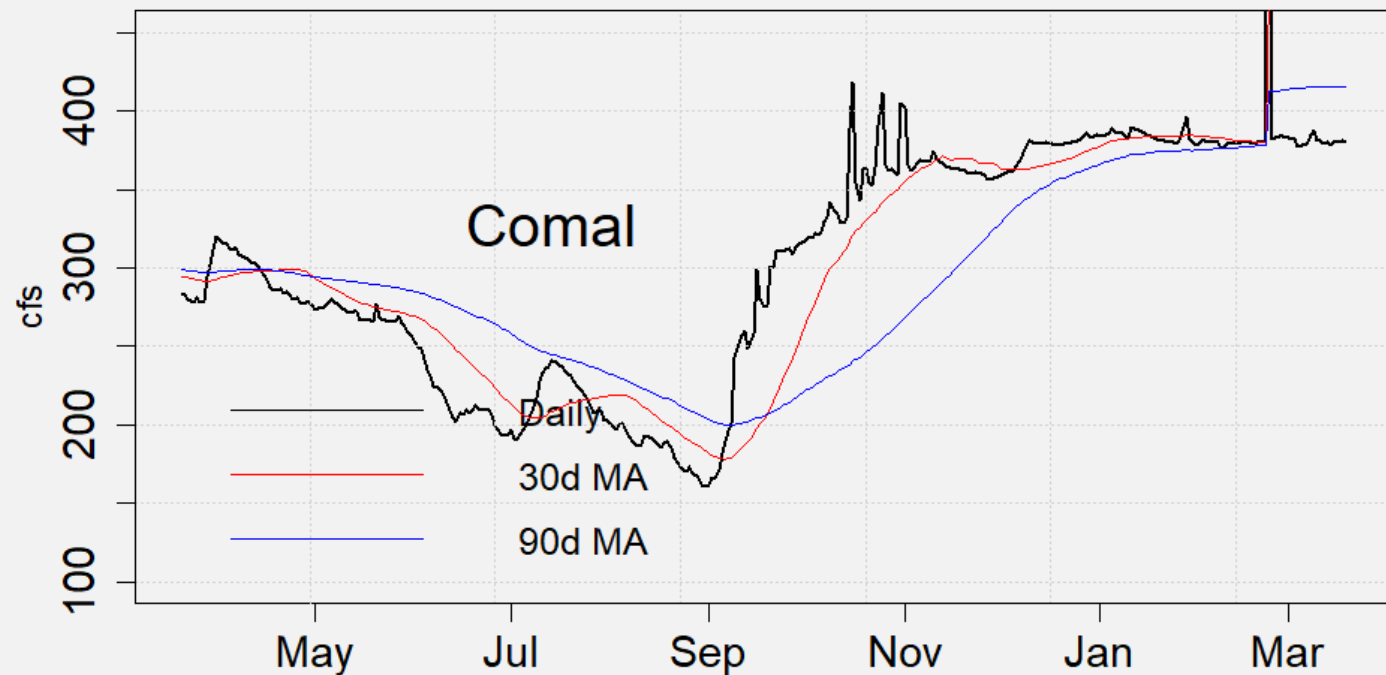
Historical Moving Averages for March 20



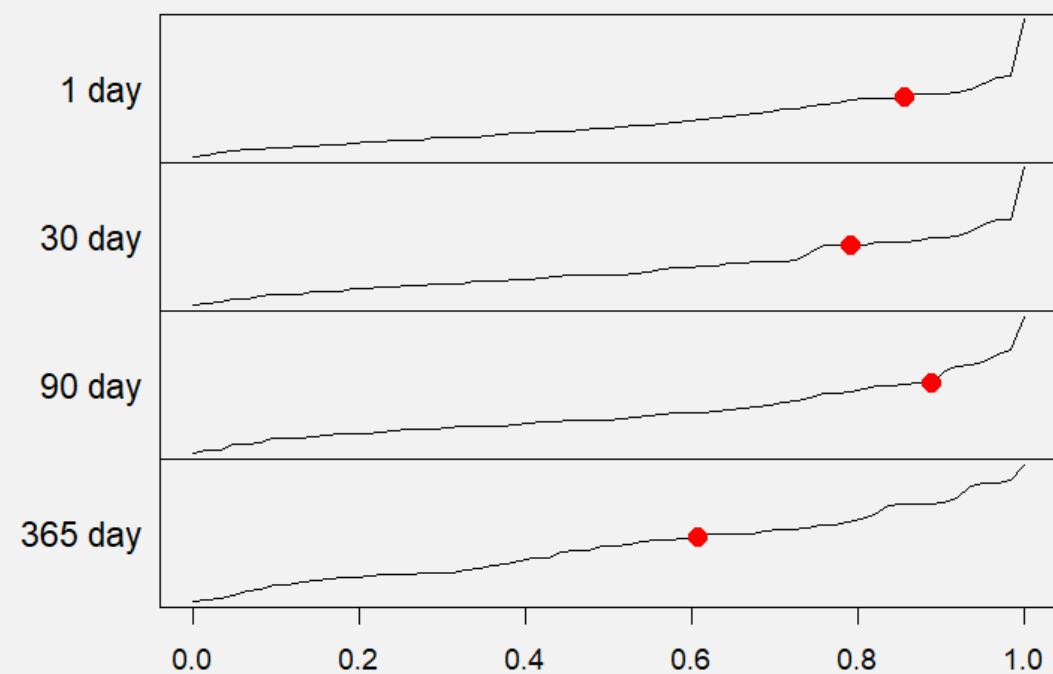
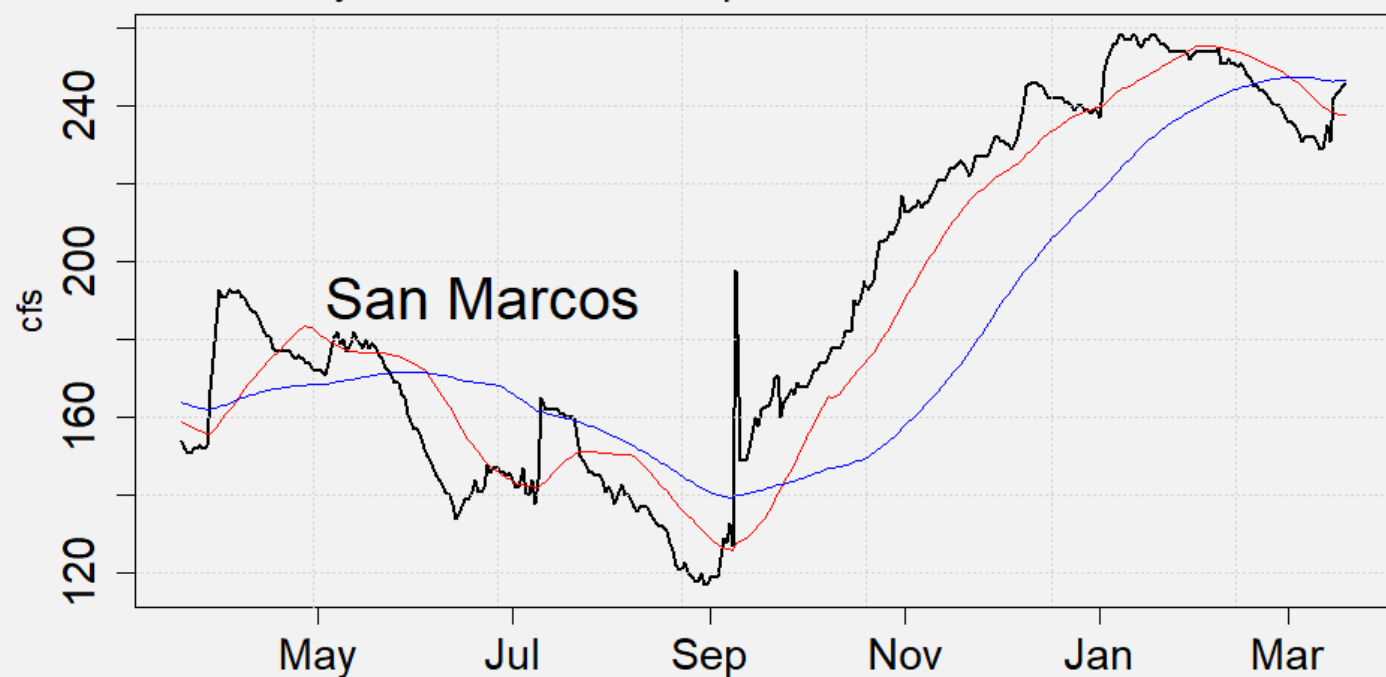
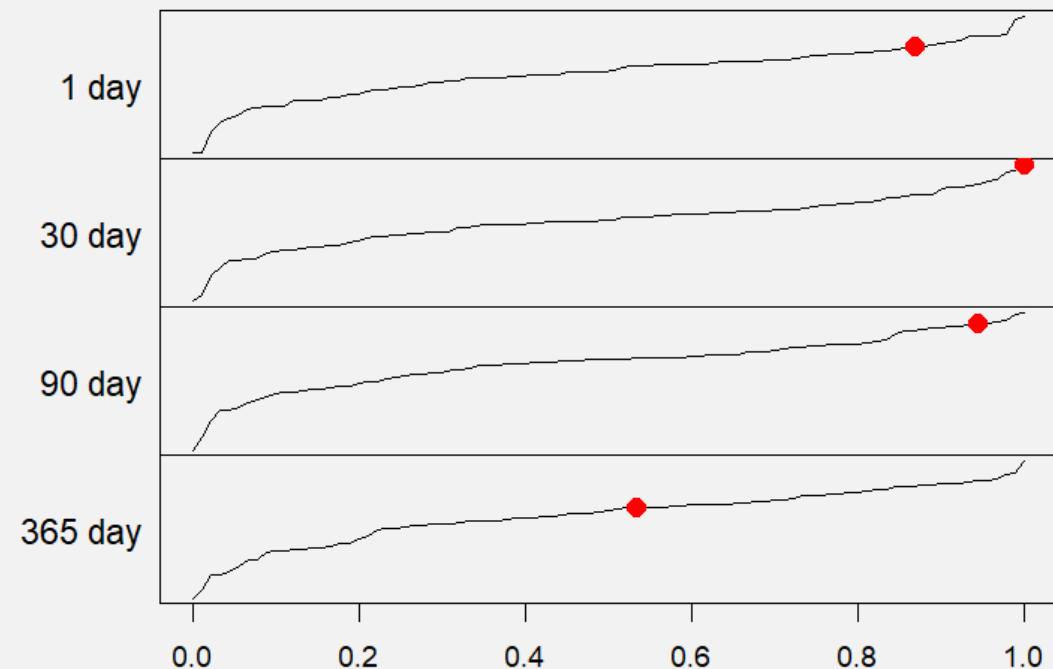
Historical Average 867



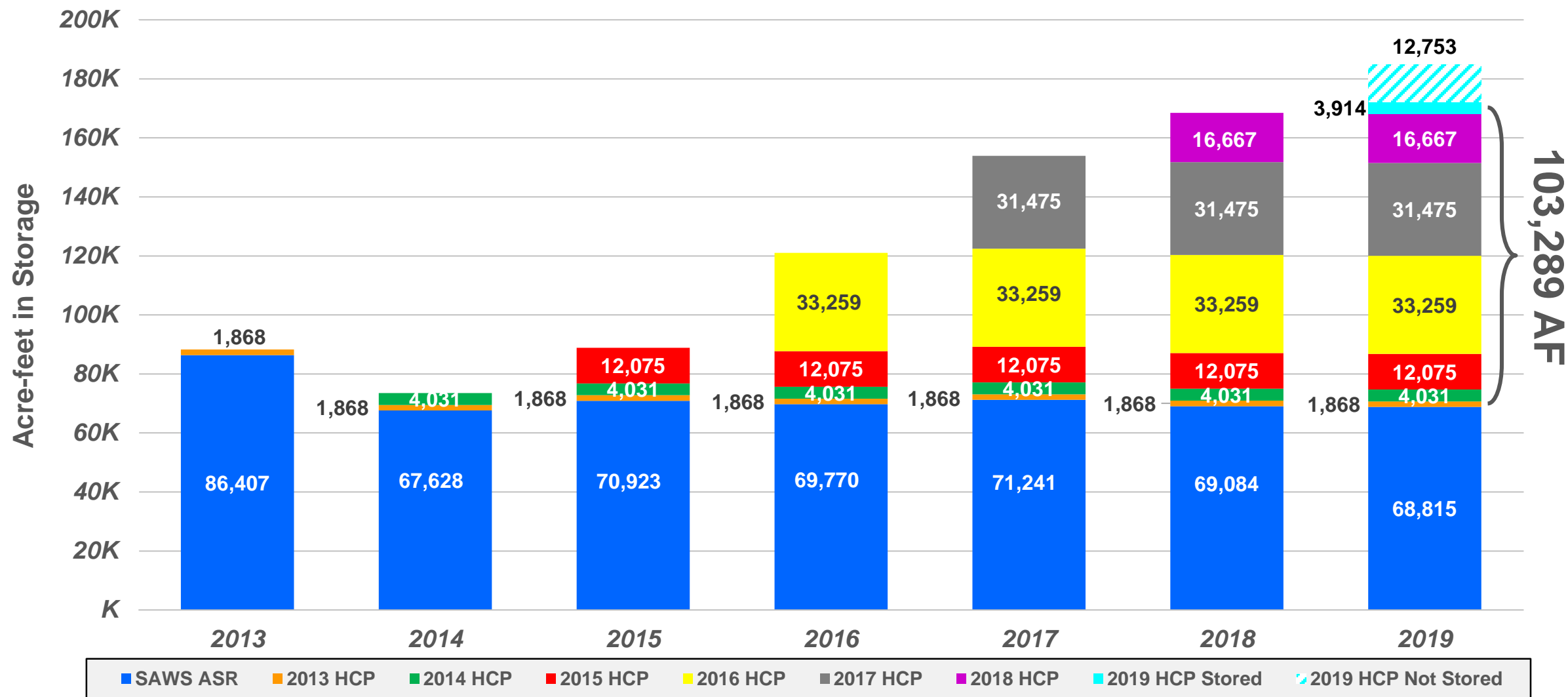
March 19, 2019



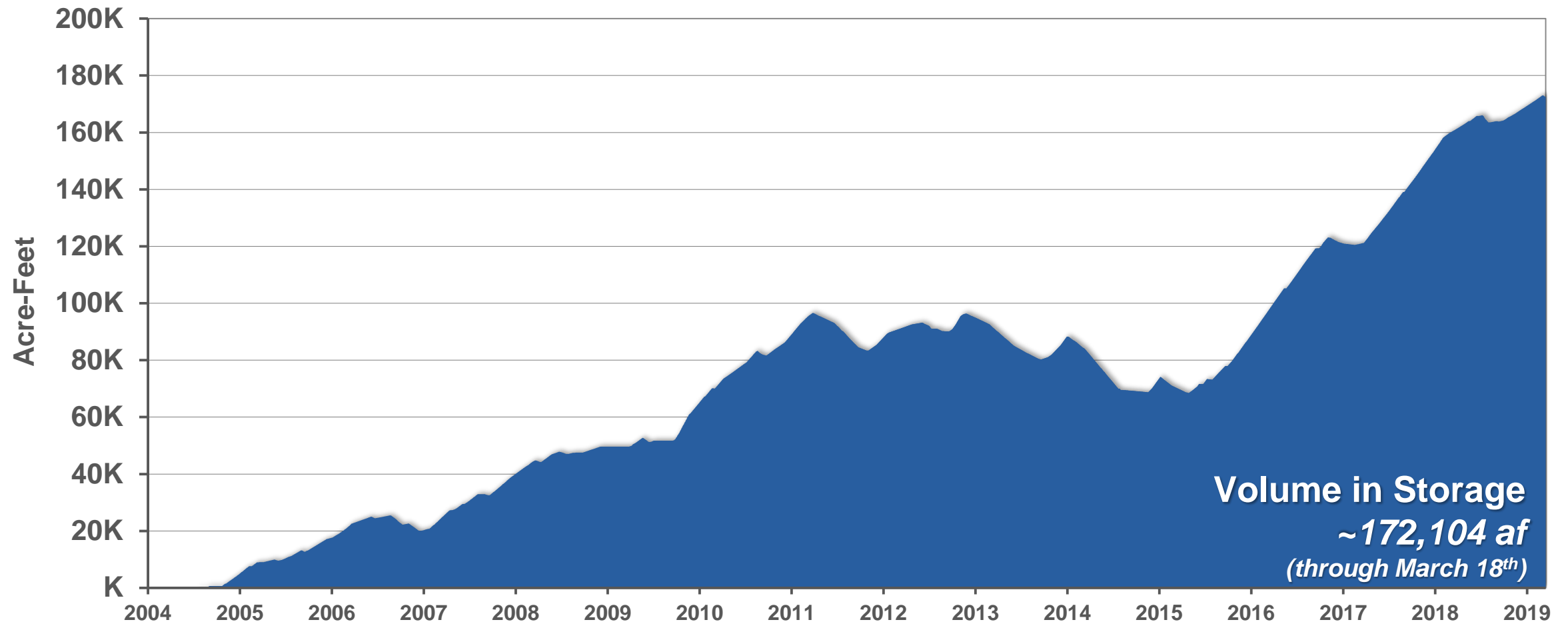
Historical Moving Averages for March 19



EAHCP Recharge

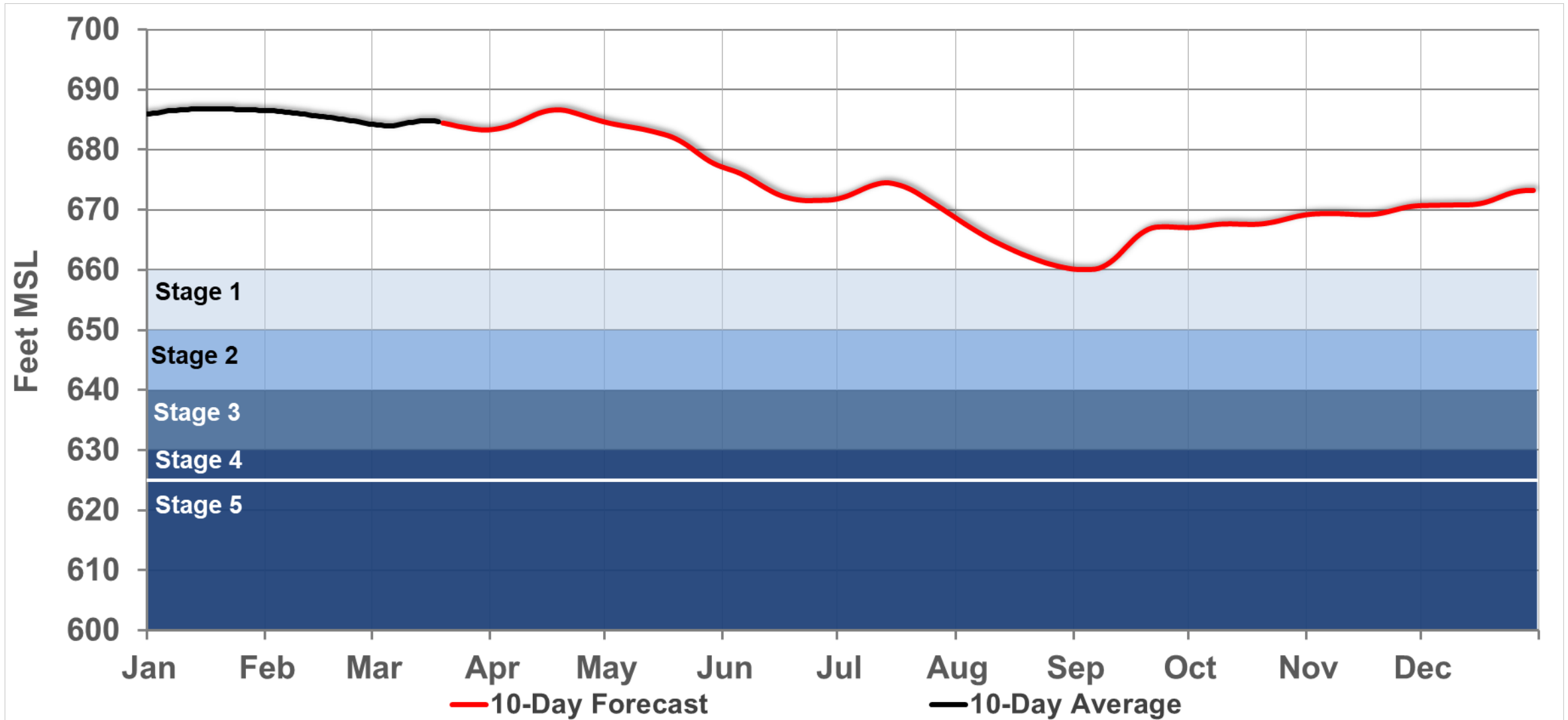


Total ASR Storage



Source: San Antonio Water System

J-17 (2019 - 10-Day Average and Forecast)



EAHCP STEWARD

News from the Edwards Aquifer Habitat Conservation Plan



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March 2019

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Keep it Clean

Meet the New EAHCP Habitat Conservation Manager Jamie Childers



Many people spend their first years in college listed as an "undecided major." Not Jamie Childers. She knew from an early age that she somehow wanted to be involved in protecting the water resources so critical to communities all over the world. She credits her grandmother for that particular inspiration.

At a young age, Childers, the Edwards Aquifer Habitat Conservation Plans' (EAHCP) new habitat conservation manager, heard many stories about waterways in Belgium where her grandmother grew up which were polluted and caused sickness in towns nearby. As a young adult, her first stop in addressing that passion for clean water was Colorado State University where she earned a bachelor of science degree in Watershed Science. After graduation, she began her professional work in environmental science. Currently, she is pursuing a master of science degree in Natural Resource Policy and Administration from the University of Florida.

"Although I've been involved in water resources planning and environmental protection efforts over the past 18 years, I am truly excited to join the EAHCP team," Childers said. "This opportunity, I believe, will bring me back to my original goals of working in water quality protection. I've been learning a great deal about the Edwards Aquifer, the endangered species and habitats in my first month with the EAHCP. I have already gained a deep appreciation for the amazing work that has been done to protect this unique aquifer. It offers exciting professional challenges that I'm anxious to dig deeper into."

Before coming to San Antonio a year ago, Childers worked with Tetra Tech, a global environmental engineering company, and was involved in an environmental project regarding the Florida Everglades Agricultural Area. She was a member of a large project management and technical team charged with studying the impacts of a potential 240,000 acre-foot storage reservoir that collects water from Lake Okechobee.

"Most people know something about the special nature of Florida's Everglades," Childers noted. "Our team was brought in to ensure the project work was done consistently with US Army Corps of Engineers' policies and guidelines. The twist on this project, though, was the timeline. A typical project like this would take three years to finish. We were asked to get it done in six months. Consequently, we had a huge team



EAHCP 2020 Work Plan Timeline

March 1 & 4	EAHCP Staff met with Spring Communities to discuss 2020 Work Plans
March 27	Science Components of the 2020 Work Plan Presented to the EAHCP Science Committee
April 12	2020 Work Plans Due to EAHCP Program Manager
April 15-26	2020 Work Plans distributed to Implementing, Stakeholder and Science Committees for review
May 23	2020 Work Plans presented to Implementing Committee for approval (FMA § 4.6)
June 11	EAA Board Reviews 2020 EAHCP Work Plans

Spring
Communities
Update:

City of New
Braunfels

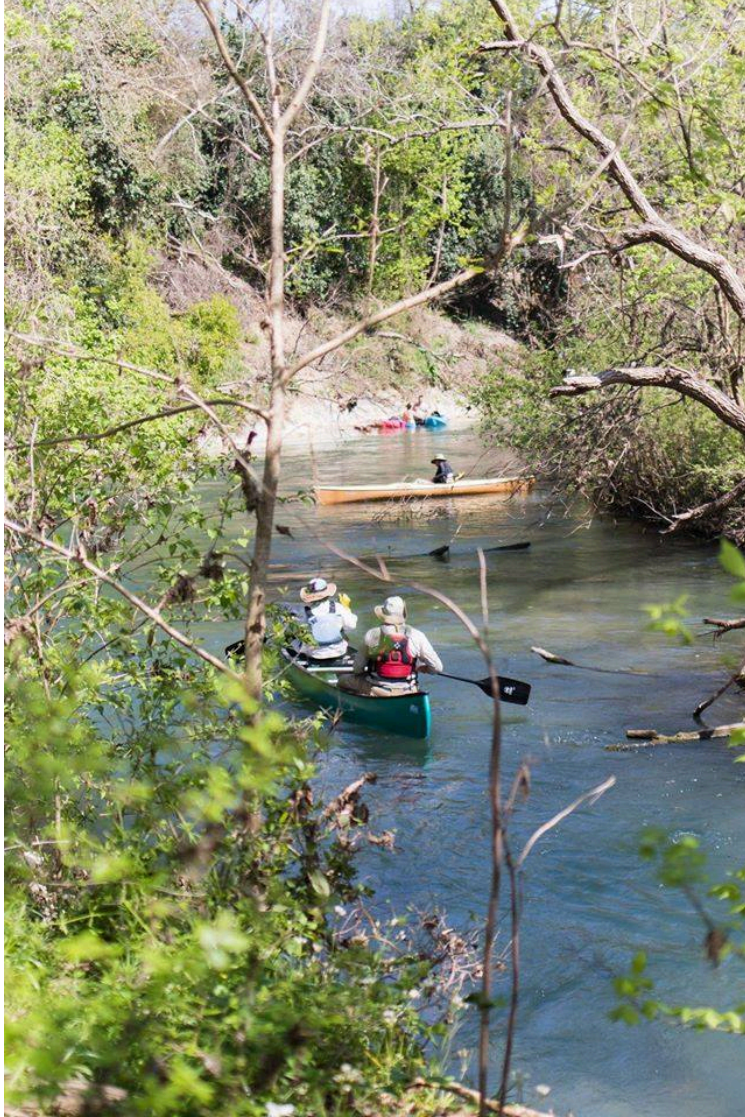


Spring
Communities
Update:

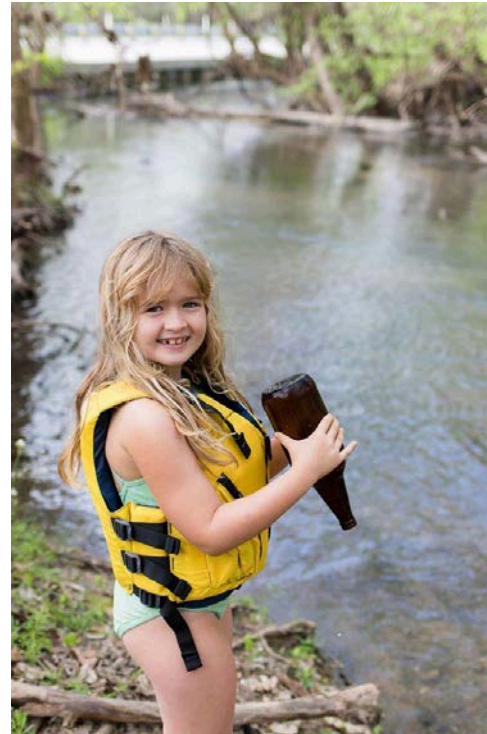
City of San
Marcos



Annual Great Texas River Cleanup



Ninety Miles of River & 800 volunteers!





It all goes to the drainageways

- 11,000 pounds of landfill trash
- 4030 pounds of recyclable trash



Sessom Creek Work Days

- ❖ Monthly volunteer workday
- ❖ Local business sponsorship
- ❖ Logged 424 volunteer hours since October 2016



- ❖ Nonnative invasive plant removal
 - ❖ Contour terracing
 - ❖ Native seeding
 - ❖ Litter removal
-
- ❖ Goal: reduce invasive seedbank, restore ecosystem functions, improve water quality and reduce unnatural sediment deposition in San Marcos River









Mountain Laurel

Sideoats Grama



Spring Native Plant Sale & Sustainability Fair

April 6th 9 am - 4 pm



•Milkweed •Trees

•Herbs •Veggies

•Shrubs •Flowers



•Local Farmers & Vendors

•Environmental Groups

•Mini Workshops:

- composting
- vegetable gardening
- reduce carbon footprint

Discovery Center

430 Riverside Drive
(512) 393-8327



Carson Properties



Sanmarcostx.gov/DiscoveryCenter



Sustainability Fair Mini-workshop Schedule:



11:00am- 11:15am – “Protecting the Recharge Zone through Land Conservation”

By San Marcos River Foundation

11:20am-11:35am- “The State of Sustainability at Texas State”

By Texas State Sustainability Dept.

11:40am-11:55am- “Rainscaping the Next Generation of Water Wise Landscaping”



By Ecosystem Restoration Artisans

12:00pm-12:15pm- “How to Stop-and Reverse- Global Warming”

By Citizens Climate Lobby-San Marcos Chapter

12:20pm-12:35pm- "Growing Mushrooms for Ecological Restoration"

By Central TX Mycological Society

12:40pm-12:55pm- “Bike Safety”



By Sustainable San Marcos

1:00pm-1:15pm- “Regenerative Agricultural Practices”



By: Central Texas Farmers Co-op

1:20pm-1:35pm- “Garden Tool Maintenance”

By Eric Weeks

1:40pm-1:55pm- “Composting 101”

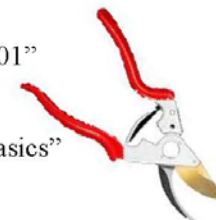
By Conrad Chappell

2:00pm-2:15pm- “Green Roof Basics”

By Alex Von Rosenberg

2:20pm-2:35pm- “Monarch Conservation and the MiGreat Challenge”

By Victor Ma



EDWARDS AQUIFER HABITAT CONSERVATION PLAN

2018 Annual Report

Submitted to
THE U.S. FISH & WILDLIFE SERVICE

MARCH 26, 2019

On behalf of
THE EDWARDS AQUIFER HABITAT
CONSERVATION PLAN PERMITTEES



Prepared by

Blanton & Associates, Inc.

ENVIRONMENTAL CONSULTING • PLANNING • PROJECT MANAGEMENT

2018 EAHCP Annual Report

- ▶ January 14-25: Draft 1 comment period
- ▶ February 11-22: Draft 2 comment period
- ▶ March 11: Draft final Annual Report due
- ▶ March 26: EAHCP submits Annual Report to USFWS

2019 WORK PLAN AMENDMENTS

City of San Marcos/Texas State University

5.7.6 IMPERVIOUS COVER/WATER QUALITY PROTECTION



Use CM 5.7.6 funding to complete the Downtown Pond retrofit as required by CM 5.7.4 (Minimizing Impacts of Contaminated Runoff)

5.7.6 IMPERVIOUS COVER/WATER QUALITY PROTECTION

- Schedule refinements:
 - Sessom – Project 1 construction start date change from Spring to Fall
 - Design of all Sessom project reaches will be completed in 2019
 - Adjustment in linear feet of Projects 1 & 2



5.3.2/5.4.2 MANAGEMENT OF RECREATION IN KEY AREAS

Conservation Crew will:

- educate boat owners about zebra mussels
- monitor kayaks and canoes for the presence of zebra mussels from Memorial Day to Labor Day

EAA FY2019 WORK PLAN AMENDMENT

- FY2019 Work Plan will be amended to utilize unspent money from FY2018 to complete the construction of the EAHCP Refugia and Quarantine buildings at the USFWS Uvalde National Fish Hatchery (EAHCP § 5.1.1).
- Construction delays and federal government shutdown affected the completion of work as well as the subsequent invoicing process.
- Approximately **\$1,241,906** of unspent funds will be reallocated from FY2018 to FY2019, increasing the total 2019 Refugia budget to **\$2,398,190**.



EAA FY2019 WORK PLAN AMENDMENT

Task	2018 Work Plan	2018 Actuals	2018 unspent	2019 Requested Work Plan	2017-18 Actuals + 2019 Requested Workplan	2017-2019 contract amount*
TASK 1 - Refugia Operations	\$4,405,316	\$ 3,277,874.70	\$ 1,127,442.06	\$ 1,743,898.91	\$6,663,083.62	\$ 6,724,292.00
TASK 2 - Research	\$495,790	\$ 393,524.70	\$ 102,265.14	\$ 548,165.01	\$1,077,861.40	\$ 1,351,330.00
TASK 3 - Species Propagation and Husbandry	\$0	\$ -	\$ -	\$ -	\$22,891.00	
TASK 4 - Species Reintroduction	\$0	\$ -	\$ -	\$ -	\$1,008.38	
TASK 5 - Reporting	\$115,257	\$ 101,595.50	\$ 13,661.49	\$ 91,815.48	\$274,577.17	\$ 241,329.00
TASK 6 - Meetings and Presentations	\$26,898	\$ 22,827.57	\$ 4,070.73	\$ 14,310.00	\$37,267.15	\$ 39,410.00
Totals	\$5,043,261.89	\$3,795,822.47	\$ 1,245,651.15	\$2,398,189.40	\$8,076,688.72	\$ 8,356,361.00

EAA FY2019 WORK PLAN AMENDMENT


- The EAA intends to complete a small project aimed at capturing floating aquatic vegetation in Spring Lake.
- The project would include setting up two aquatic plant booms that would be serviced by normal Spring Lake vegetation harvester operations.



EAA FY2019 FUNDING APPLICATION AMENDMENT

EAHCP Mitigation Measure	Description	2019 Budget Request	Managing Party
5.1.1	Refugia	\$1,156,284 <u>\$2,398,190¹</u>	U.S. Fish & Wildlife Service
5.1.2	Voluntary Irrigation Suspension Program Option	\$2,522,500	EAA Staff
5.1.3	Regional Water Conservation	\$4,507,750	EAA Staff
5.5.1	ASR - Leasing	\$5,920,581	EAA Staff, SAWS
5.5.1	ASR – O & M	\$683,347	EAA Staff, SAWS
6.3.1	Biological Monitoring - Monitoring	\$755,774	Bio-West
5.7.2	Water Quality Monitoring	\$219,436	SWCA, EAA Staff
6.3.3	Ecological Modeling	\$0	Bio-West
6.3.4.2	Applied Research	\$190,000	Various Contractors
	EAA Administrative Costs	\$1,018,044	EAA Staff
Total Funding Request		\$16,973,716 <u>\$18,215,622</u>	





Resolution No. 05-19-001 NAS Report 3 and FMA § 7.13.7

Scott Storment, EAHCP Program Manager


March 21, 2019



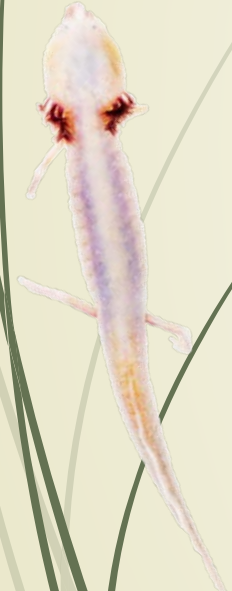
Purpose of Resolution No. 05-19-001


- ▶ Resolution accomplishes three priorities for the EAHCP program:
 1. Formalizes the EAHCP program's actions for Phase II based on NAS *Report 3* findings.
 2. Validates the EAHCP program's actions for Phase II pursuant to FMA § 7.13.7.
 3. Explains the purpose and rationale for Phase II activities.






Considering the conclusions of the NAS *Report 3* and FMA § 7.13.7, the following was determined:

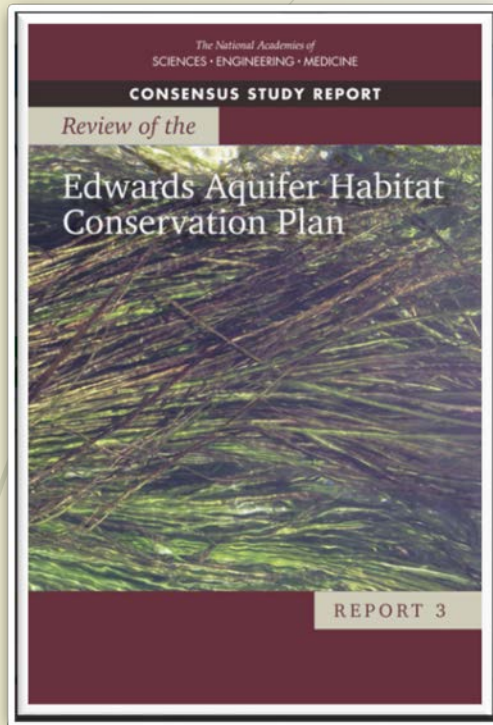
- 
- ▶ The NAS *Report 3* did not find any:
 - ▶ Biological Objectives not necessary to meet any of the Biological Goals for the indicator species (FMA § 7.13.7.a).
 - ▶ Biological Objectives not adequate to meet any of the Biological Goals for the indicator species (FMA § 7.13.7.b).
 - ▶ Existing Phase I Conservation Measures that were not needed to achieve any of the existing Biological Objectives (FMA § 7.13.7.c).
 - ▶ Existing Phase I Conservation Measures that were not achieving any of the existing Biological Objectives (FMA § 7.13.7.e).



Considering the conclusions of the NAS *Report 3* and FMA § 7.13.7, the following was determined:

- 
- ▶ The NAS *Report 3* **did find**:
 - ▶ That the existing Phase I Conservation Measures are achieving the Biological Objectives (FMA § 7.13.7.d).
 - ▶ That the Scientific Record was inconclusive about whether the Phase I Conservation Measure – Native Riparian Habitat Restoration (EAHCP § 5.2.8) – was achieving the Biological Objectives relative to the Comal Springs riffle beetle (FMA § 7.13.7.f).

NAS Report 3 – Comal Springs riffle beetle



- NAS Report 3 was “unable to make a determination” or **inconclusive** regarding the Phase I Conservation Measure for riparian management.
 - Native Riparian Habitat Restoration (EAHCP § 5.2.8)- activities regarding the Comal Springs riffle beetle (CSRB).
- CSRB issues to be considered by CSRB Work Group:
 - Sampling methodology
 - Field activities
 - Long-term Biological Goals
- Final recommendations to be shared in late 2019.

MODFLOW – Flow Protection Measures

- ▶ NAS *Report 3* – Flow protection measures are “effective” in achieving flow-related Biological Objectives relative to the Covered Species.
- ▶ HOWEVER, concerns about flow protection measures achieving 30 cfs at Comal Springs needs to be addressed:
 - ▶ Final MODFLOW simulations to determine solution.
 - ▶ Nonroutine Adaptive Management Process decision (FMA § 7.12).



Nonroutine Adaptive Management Proposal

- ▶ Nonroutine AMP proposed to modify VISPO forbearance to achieve 30 cfs.
- ▶ MODFLOW results yield additional forbearance of 1,795 acre-feet for VISPO.
 - ▶ Proposed forbearance at 41,795 acre-feet
 - ▶ Model simulations achieve 30 cfs in Comal Springs system



Resolution No. 05-19-001

RESOLUTION NO. 05-19-001

OF THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM RELATIVE TO ACTION ON THE SCIENCE REVIEW PANEL'S DETERMINATIONS PURSUANT TO SUBSECTION 7.13.7 OF THE FUNDING AND MANAGEMENT AGREEMENT.

WHEREAS, on March 18, 2013, the U.S. Fish and Wildlife Service ("Service") issued Incidental Take Permit No. TE-63663A-1 ("ITP"), as amended, for a fifteen (15) year term, to the Edwards Aquifer Authority, the City of New Braunfels, the City of San Marcos, the City of San Antonio, acting by and through its San Antonio Water System, and Texas State University ("Permittees"), under Section 10(a) (16 U.S.C. § 1539(a)) of the federal Endangered Species Act of 1973; and

WHEREAS, Paragraph E of the ITP provides that the ITP is "subject to full and complete compliance with, and implementation of, the EAHCP ..."; and

WHEREAS, the EAHCP document as approved by the Service is entitled *Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan* (Nov. 2012) (prepared by RECON Environmental, Inc., Hicks & Company, Zara Environmental LLC, and BIO-WEST) ("EAHCP"); and

WHEREAS, as described in Section 1.1.1 of the EAHCP, the EAHCP takes a 2-phase approach during the 15-year term of the ITP described as follows:

"The approach taken in this HCP incorporates a two-phased implementation strategy. Phase I of the strategy will involve implementation of a package of minimization and mitigation measures that will be implemented very quickly upon issuance of the permit. These measures (described in Chapter 5) provide protection for the species covered by the ITP and their associated ecosystems. An Adaptive Management Process (AMP) (described in Chapter 6) will use information from monitoring data collected during Phase I, along with evaluation of technical and engineering alternatives and improved groundwater, biological and ecological models, to make appropriate modifications, if any are needed, to the Phase I program. Specified additional measures, if necessary to achieve the biological goals, will be implemented during Phase II"; and

WHEREAS, pursuant to Section 1.3.2 of the EAHCP and Recital E of the FMA, the period of Phase I is from March 18, 2013 through March 17, 2020, and the period of Phase II is from March 18, 2020 through March 31, 2028; and

WHEREAS, Section 9.1.1 of the EAHCP also provides for the development of a "funding and management agreement" between the Permittees with the purpose of such document being to "establish in greater detail the procedures and mutual commitments among the permittees for funding and management of the HCP and adaptive management process"; and

- Final Approval of Resolution No. 05-19-001 will be determined at the **May 23, 2019** Implementing Committee Meeting.
- Comment Review Period:
 - March 21 – April 12






Questions?



Comprehensive Phase II Work Plan Timeline

- 
- ▶ **November 29:** Phase II Work Group (*Part 1*)
 - ▶ **December 5:** Phase II Work Group (*Part 2*)
 - ▶ **December 7:** Final comments from the Work Group submitted to EAHCP Program Manager.
 - ▶ **January 24:** Draft Phase II Work Plan presented to the Implementing Committee. Public comment period begins.
 - ▶ **February 15:** Public comment period ends.
 - ▶ **March 21:** Implementing Committee reviews final draft of the Phase II Work Plan.
 - ▶ **May 23:** EAHCP to seek approval of the final Comprehensive Phase II Work Plan.

Final Draft – Comprehensive Phase II Work Plan

COMPREHENSIVE PHASE II WORK PLAN

Section 4.3 of the Funding and Management Agreement (“FMA”) requires the Implementing Committee to develop a Comprehensive Phase II Work Plan (the “Comprehensive Plan”). The Comprehensive Plan must include descriptions, schedules, and cost estimates for ongoing Phase I Conservation Measures, Phase II Conservation Measures, and all Edwards Aquifer Habitat Conservation Plan (“EAHCP”) Program activities conducted or managed by the Parties and Program Manager that are to be funded from the EAHCP Program (“Program”) Account for the Phase II period from January 1, 2020 until the expiration of the Incidental Take Permit #TE63663A-1 (“Permit” or “ITP”). This document is intended to satisfy that requirement. The description, schedules, and cost estimates contained herein are taken largely from Chapters 5, 6, and 7 of the EAHCP and are a continuation of Phase I Conservation Measures. Conservation Measures that were completed during Phase I or determined not pertinent to Phase II implementation, were not included in this Comprehensive Plan. The 2018 Phase II Work Plan Work Group Report details the development of this Comprehensive Plan and provides a description of the updates that were applied to this document. The description of the measures is not intended to reiterate all details in the EAHCP. To the extent this Comprehensive Plan conflicts with the EAHCP, the EAHCP controls.

I. Conservation Measures

A. Edwards Aquifer Authority

1. San Marcos Aquatic Resources Center and Uvalde National Fish Hatchery – Refugia (§ 5.1.1)

Edwards Aquifer Authority (EAA) will continue to support and coordinate the work of the U.S Fish and Wildlife Service (USFWS) operation and maintenance of a series of off-site refugia at the San Marcos Aquatic Resources Center and the Uvalde National Fish Hatchery. As constructed in contract 16-822-HCP

- Final Approval of the Comprehensive Phase II Work Plan will be determined at the **May 23, 2019** Implementing Committee Meeting (FMA § 4.3).



Questions?