

Triannual Report 2020

May 1, 2020 – August 31, 2020



Candidate Conservation Agreements:
Texas Hornshell Mussel (*Popenaias popeii*)



CEHMM

505 North Main Street, Carlsbad, NM 88220

575-885-3700 • www.cehmm.org



State Of New Mexico
Commissioner of Public Lands

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I. INTRODUCTION

This report describes the activities conducted in the first and second triannual report periods for 2020 under the Candidate Conservation Agreements for the Texas hornshell mussel (THM) and other covered species. Candidate Conservation Agreements are voluntary conservation agreements that facilitate a long-term landscape-based approach to eliminate or reduce threats to species that are on the federal threatened or endangered species candidate list. Participants who engage in these voluntary agreements receive a high degree of certainty and assurances that their lawful activities would be able to continue without additional land or water use restrictions that might otherwise apply should the species be listed under the Endangered Species Act (Act) (Figure 1).

The primary purposes of the Candidate Conservation Agreements are to:

- Guide and provide funding for Conservation Actions (e.g., revegetation with native species along rivers, land or water acquisition, etc.) or scientific research for the Covered Species in order to improve the status of these species within New Mexico and Texas;
- Develop, coordinate, and implement Conservation Measures to reduce or eliminate potential threats to the Covered Species in New Mexico and Texas;
- Maintain viable populations of the Covered Species in Occupied Habitat;
- Support ongoing efforts to re-establish populations of the Covered Species in currently unoccupied but historic, suitable habitats (i.e., Delaware River);
- Serve as landscape-scale programmatic documents for Conservation Measures implemented by the Center of Excellence (CEHMM), The New Mexico State Land Office (SLO), and Participants;
- Encourage development and protection of suitable habitat for the Covered Species by giving Participants incentives to implement specific Conservation Measures; and
- Allow industrial and agricultural development to continue while protecting and improving habitat conditions for the Covered Species.

CEHMM administers a Candidate Conservation Agreement (CCA) for federal land as well as a Candidate Conservation Agreement with Assurances (CCAA) for non-federal lands. The SLO also administers a CCAA agreement for lands enrolled on New Mexico state trust land. All three of the agreements are referred to collectively in this report as “CCA/As.”

Stakeholders enroll in the program with either a Certificate of Participation (CP) or Certificate of Inclusion (CI). CPs are signed agreements used by CEHMM to facilitate voluntary cooperation of stakeholders that hold federal leases, permits, or other authorizations. Likewise, CIs are signed agreements used by both the SLO and CEHMM to facilitate voluntary cooperation of stakeholders that hold state leases, permits, or other authorizations.



Figure 1. The Federally Endangered Texas Hornshell (*Popenaias popeii*).

The CCAAs can be found at the following URLs:

<https://www.cehmm.org/index.php/conservation/texas-hornshell-program/texas-hornshell-documentation>

https://www.fws.gov/southwest/es/documents/R2ES/TxHornshell_CCAA_NMCPL_v3_FR2980.pdf

II. ENROLLMENT

In 2020, the SLO administered 28 CIs and CEHMM administered 42 CIs and 33 CPs (Table 1). Currently, 127,373.93 acres are enrolled through the SLO CCAA (Table 1). CEHMM currently has 247,256.41 acres enrolled through its 42 signed CIs and 312,250.60 acres enrolled through its 33 CPs (Table 1). The total number of acres enrolled can include multi-use lands that are enrolled more than once by different Participants.

Table 1. 2020 CCA/A Enrollment.

	No. CIs	CCAA Acres Enrolled	No. CPs	CCA Acres Enrolled
CEHMM	42	247,256.41	33	312,250.60
SLO	28	127,373.93	N/A	-
Total	70	374,630.34	33	312,250.60

III. FUNDING

To date, the CCA/As have received \$452,048.65 in Participant enrollment and Habitat Conservation Fees. (Table 2).

Table 2. 2020 Program Funding.

2020 Texas Hornshell CCA/A Funding			
	1 st Triannual Period	2 nd Triannual Period	2020 Totals
Program Funding	\$357,888.15	\$265,850.50	\$623,738.79

IV. MITIGATION OF IMPACTS TO HABITAT

In 2020, CEHMM and the SLO received a total of 77 notices of new surface disturbances from industry (Table 3). CEHMM and the SLO documented 698.70 acres of new surface disturbances through the 77 notices. Of the 77 combined notices of new surface disturbances, one took place in Management Zone C and the remainder in Management Zone D. CEHMM and the SLO worked with the Participants to ensure all of the proper conservation measures were followed including Reasonable and Prudent Practices for Stabilization (RAPPS) and Spill Prevention Control and Countermeasures (SPCC). These practices included building water-bars, silt fences, culverts, erosion blankets, waddles, and reseeding.

Table 3. New Surface Disturbances in 2020.

	1 st Triannual Period	2 nd Triannual Period	Total
Notifications of New Surface Disturbances	60	17	77
Acres Disturbed	514.41	184.29	698.7

V. COMPLIANCE MONITORING

The CCA/As require CEHMM and the SLO to submit an annual compliance verification to the U.S. Fish and Wildlife Service (FWS) for each enrolled Participant. CEHMM assists the SLO with compliance verification through a Memorandum of Agreement for joint implementation of the CCAAs. In 2020, CEHMM's CCA/A compliance monitoring included inspection for failure to submit new surface disturbances and inspection for SPCC or RAPPS compliance, if applicable. CEHMM utilized the New Mexico Oil Conservation Division (NMOCD) data, Bureau of Land Management (BLM) right-of-way data, and field surveying to conduct inspections. CEHMM spent 12 days performing industry compliance monitoring. CEHMM is currently collaborating with enrollees in order to achieve compliance.

VI. LANDSCAPE MONITORING

Black River Monitoring

CEHMM utilized U.S. Geological Survey (USGS) discharge gages in the Black River and Blue Springs to monitor the daily average flow of the Black River (Figure 3, Table 4). Monitoring the flow of the river is vital. The THMs require perennially wetted habitat and flowing water, as emersion (stranding) can cause death and dehydration. The CCA/A has set a minimum flow goal for the Black River at 9.3 cubic feet per second (cfs). CEHMM staff have alarms set on the flow gages, so when the river drops below 9.3 cfs, they are notified and can monitor the river more closely. In every month of 2020 except March, the minimum flow on the Black River fell below 9.3 cfs (Table 4).

Delaware River Monitoring

In 2019, the Delaware River stopped flowing for 138 days. This lack of flow prompted CEHMM to start monitoring the flows of the Delaware River on a weekly basis. Again, in April of 2020, CEHMM observed that the flows on the Delaware had stopped (Figures 2 and 4). To date, flows have not resumed on the Delaware River. Standing pools in the river are estimated to have lost two to three inches of water weekly (Figure 5). CEHMM has utilized a USGS gage (USGS

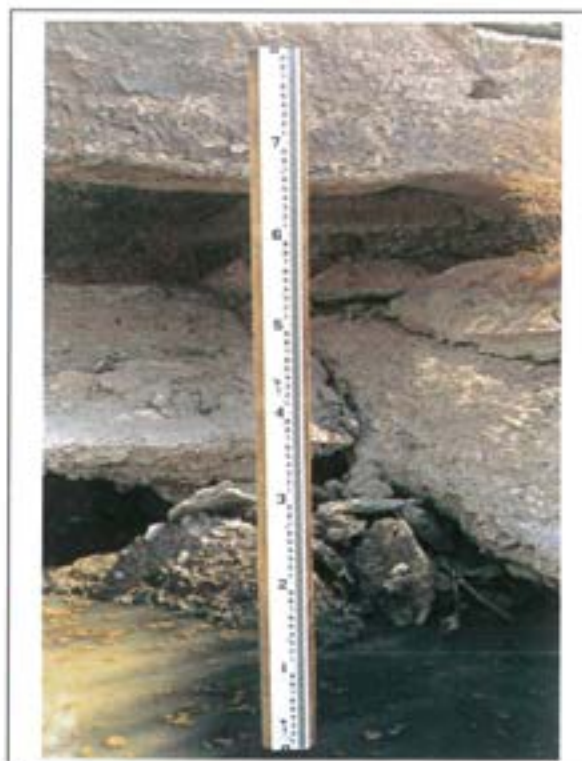


Figure 2. Staff Gage that CEHMM Installed on the Delaware River.

08408500) and visual inspections to monitor the conditions on the Delaware River. CEHMM also monitored the Delaware River water quality at active mussel beds. In the second triannual period, CEHMM spent 21 days in the field monitoring the flows and water quality on the river.

CEHMM, the SLO, and the FWS would like to remind Participants of the dangerously low water conditions in the Delaware River. The current water conditions are threatening the THM population in the river. CEHMM and the FWS would like to ask Participants to temporarily halt all pumping of the Delaware River Watershed. If pumping cannot be stopped, we ask that the amount of pumped water be reduced to minimal amounts.

Rain Gauge Monitoring

In 2019, CEHMM installed six new rain gauges and monitor one existing SLO gauge to monitor rain events within the CCA/A boundary. In 2020, CEHMM monitored the rain gauges on a monthly basis (Table 5). Each rain gauge contained a layer of cooking oil to prevent any evaporation. Rain gauge data will assist in determining stream flow effects after storms.

Table 4. 2020 Black River Discharge Data (Cubic Feet per Second).

Location	Jan	Feb	March	April	May	June	July	Aug
Black River Average Flow	8.33	8.19	8.32	7.74	7.43	6.66	5.52	5.03
Black River Min. Flow	7.85	7.15	7.01	7.21	6.59	5.95	4.22	1.82
Black River Max. Flow	8.7	8.97	12.4	8.25	8.07	7.42	6.28	6.93
Blue Springs Average Flow	10.9	No Data	No Data	8.11	9.48	14.03	9.03	7.93
Blue Springs Min. Flow	8.56	No Data	No Data	6.00	7.63	10.10	7.74	4.59
Blue Springs Max. Flow	13.3	No Data	No Data	10.20	10.10	19.60	9.59	9.23

Table 5. 2020 Rain Gauge Totals.

2020 Rain Gauge Monitoring in Inches									
Location	January	February	March	April	May	June	July	August	Totals
Delaware River Dam	0.15	0.40	2.00	-	-	0	0.65	0.30	3.5
Delaware River State Line	0.10	0.43	1.87	-	0.20	-	-	0.31	2.91
Owl Draw	0.15	0.37	-	-	-	0	0.60	0.30	1.42
Red Bluff West	0.10	0.35	2.50	-	0.08	0.02	-	0.29	3.34
Red Bluff East	0.10	0.30	-	-	0.10	0.05	0.55	0.27	1.37
Black River Forehand Crossing	0.10	0.20	2.90	-	0.10	0.00	0.20	0.42	3.92
Black River Means Road Crossing	0.05	0.20	2.70	-	0.10	0.05	1.40	0.38	4.88

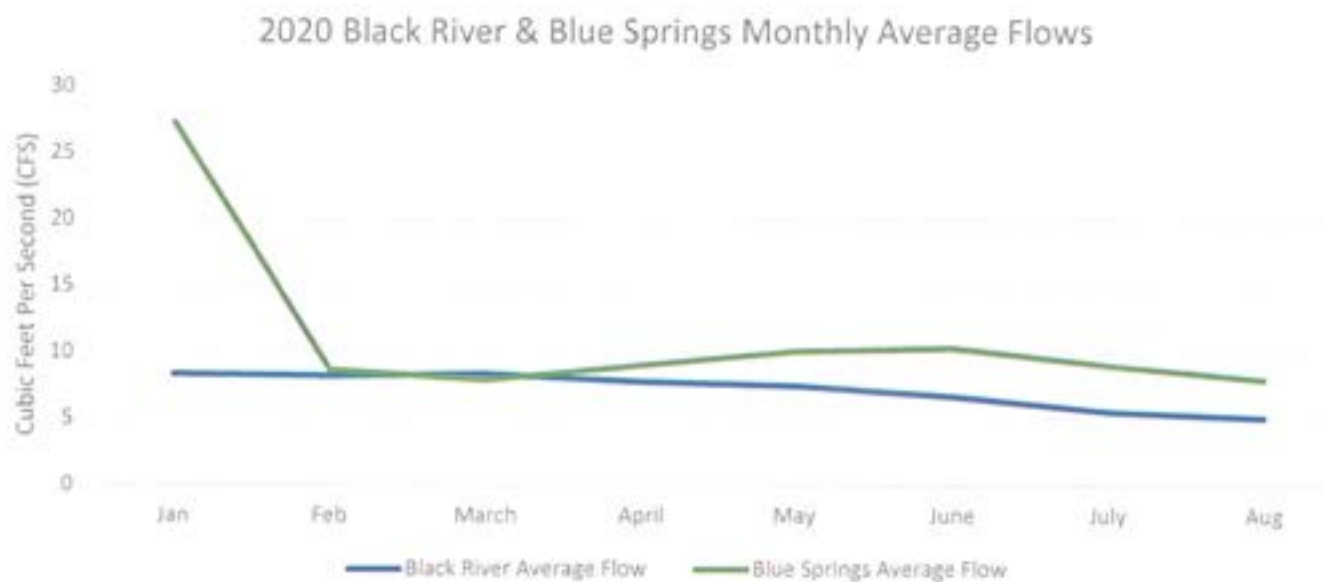


Figure 3. The 2020 Monthly Average Flows of the Black River above Malaga and Blue Springs.

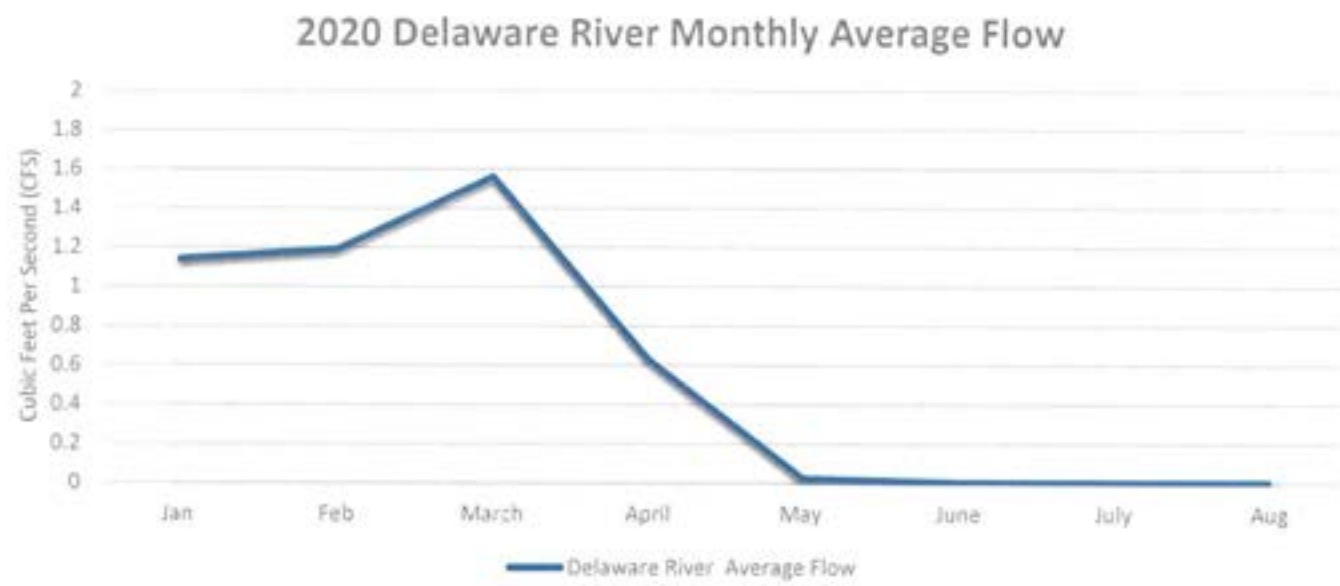
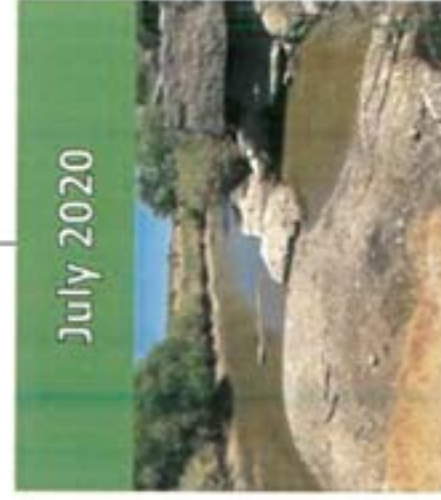
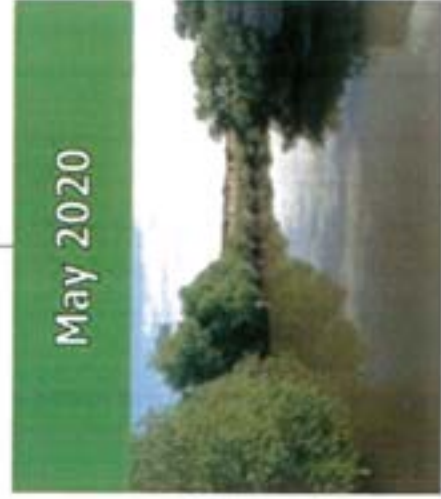
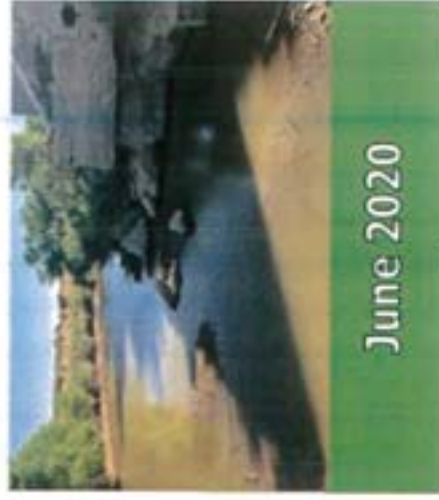


Figure 4. The 2020 Monthly Average Flows of the Delaware River.

figure 5. A Photographic Timeline of the Delaware River in 2020.

Delaware River, NM

January 2020 – September 2020



VII. SPECIES MONITORING

In August, CEHMM staff assisted the New Mexico Department of Game and Fish (NMDGF) in the data collection of THM population studies on the Black River (Figure 6). THMs were surveyed using tactile methods and snorkeling gear. Mussels in the Black River were counted, measured, and tagged for population data collection.

CEHMM staff also assisted NMDGF and Miami University in the collection of Pecos Spring snails, another CCA/A Covered Species, in August.

VIII. OUTREACH & EDUCATION

In January, THM staff at CEHMM traveled to Grand Junction, Colorado to attend the Rivers Edge West Riparian Respiration Conference. The conference was a national gathering of scientists, land managers, government agencies, non-government organizations and private land owners to network and discuss current riparian restoration research and methods. CEHMM staff is utilizing the information gathered at this conference to make more informed decisions on research, monitoring, and habitat improvement projects of the riparian lands within the THM CCA/A boundary.

In February, CEHMM set up a CCA/A educational booth at the New Mexico and Arizona American Fisheries Society and The Wildlife Society's Joint Annual Meeting (Figure 7). At this event, CEHMM staff used presentation boards and other items to educate the public about the CCA/A program. As an outreach to industry, CEHMM also attended a quarterly New Mexico Oil and Gas Association meeting in 2020.



Figure 6. CEHMM Staff Aiding the NMDGF with a THM Survey.



Figure 7. CEHMM Staff Presenting a Poster Board at the Joint Annual Meeting .

CEHMM held a virtual Participant meeting for the THM CCA/A program on July 31, 2020. Several guest speakers presented at the meeting including: Daniel Trujillo with NMDGF, Dr. Ivana Mali with Eastern New Mexico University, and Sarah Yates with the FWS. Topics discussed at the meeting included the biology and monitoring of the CCA/A Covered Species, landscape management, and CCA/A projects.

IX. FUNDED PROJECTS AWAITING COMPLETION

During 2019, CEHMM and the SLO funded the following projects through the THM CCA/A Program.

Black River Wetland Action Plan (WAP)- In the fall of 2019, CEHMM submitted a proposal to New Mexico Environmental department for the Black River WAP, and the contract was awarded in the spring of 2020. The WAP was approved and funded for \$4,669.81 by the THM CCA/A. The New Mexico Wetlands Program facilitates the development of comprehensive wetlands restoration and protection in watersheds throughout New Mexico. The WAP will be a planning document designed to address wetlands and riparian resources within the boundaries of the Black River Watershed. A WAP describes the current status of wetlands/riparian types, distribution, and conditions within the watershed. It is recognized as a working document representing the best and most up-to-date information available. This plan also documents and provides details for improving wetland conditions, identifies sites that can be protected and/or restored, and determines where additional monitoring and inventory are needed.

Rio Grande River Cooter- This study was approved and funded in December of 2019 for \$75,000. The Rio Grande river cooter (*Pseudemys gorzugi*) is a covered species in the THM CCA/A. Little is known about Rio Grande river cooter ecology, especially pertaining to reproduction and nesting behaviors. Since no systematic searches for the nesting females or nests have been conducted on the Black River since the early 1990s, Dr. Mali with Eastern New Mexico University (ENMU) proposed several survey methods with a goal of assessing Rio Grande river cooter nesting biology. The project goals are to: (1) identify nesting grounds at various stretches of the Black River, (2) confirm the peak of the nesting season, (3) understand the daily nesting activity (i.e., diurnal vs. nocturnal nesting behavior), (4) characterize nesting substrate, (5) identify nest distance from the water's edge, and (6) quantify nest success and nest predation. The work will span two years, starting in January 2020.

Texas Hornshell, *Popenaias poppeii*, in the Black River: Field and Laboratory Studies of Sublethal Thermal and Hypoxia Stress - This study was approved and funded in October of 2019 for \$168,772. A collaborative team of researchers from Miami, Texas A&M, and Auburn Universities will conduct a series of laboratory experiments and field monitoring studies to examine lethal and sublethal effects of thermal and hypoxia stress on various life history stages of the THM. Relationships between flow, temperature, and dissolved oxygen in the Black River will also be studied. Results will be used to identify flow regimes most likely to induce mortality and/or thermal stress in the THM. Combined with historical datasets, results will be used by both CEHMM and the FWS. CEHMM will determine whether the frequency of stressful periods has been increasing over time, and the FWS will make specific flow recommendations for THM populations in the Black River.

Black River Riparian Restoration Projects 2020- Two riparian restoration projects were approved and funded in April 2020 for \$10,435.91. CEHMM will plant native trees and shrubs to help support bank stabilization and restore riparian function back to the habitat. The project area will encompass approximately 23 acres along the banks of the Black River.

X. COMPLETED PROJECTS

Black River USGS Gages – The Black River USGS Gage project was approved and funded in August of 2020 for \$77,005. The objective of this project was to provide CEHMM, the SLO, the BLM, the FWS, and the public with stream discharge and water quality data on the Black River in southeastern New Mexico. The specific aim of the project was to continue to report low flow streamflow data (less than 30 ft³/s) at 1) USGS gage number 08405350, Black River below Blue Springs near Whites City, NM and 2) USGS gage number 08405400, Black River at Harkey Crossing near Malaga, NM. Continuous water quality data consisting of water temperature, specific conductance, salinity and dissolved oxygen will continue to be collected at USGS gage 08405400.

XI. FUTURE PROJECTS

Black River Erosion Control Projects- Two erosion control projects were approved in April of 2020 for \$8,204.12. CEHMM will install erosion control structures that will span areas that have the highest erosion due to bare soils, small indentations where water flow can accelerate, and areas with erosion already occurring. V-fence will be cut to a width of 36 inches and bent into an L with the bottom 18 inches being buried. Natural woody substrate will be lined on the bottom of the fence to create a porous dam. The projects are pending the completion of signed contracts.

Environmental DNA (eDNA) Assay Development for Texas Hornshell and Host Fishes- The eDNA project was approved in April 2020 for \$22,480. eDNA refers to DNA that can be extracted from environmental samples, such as water. The goal of this project is to develop an eDNA assay for the Texas hornshell (*Popenaias popeii*), gray redhorse (*Moxostoma congestum*), and blue sucker (*Cycoreptus elongatus*). This project will provide an additional tool for determining the presence, absence, and distribution of the target species. Using eDNA techniques to evaluate distribution of these Covered Species would be more efficient than traditional survey methods. The project is pending completion of the signed contracts.

XII. HABITAT CONSERVATION PLAN

Due to the THM federal listing in 2018, the CCAAs are closed to new Participant enrollment. To provide stakeholders with another option to participate in a conservation agreement, CEHMM, the FWS, the SLO, and the NMDGF have been working together since 2019 to develop a Habitat Conservation Plan (HCP) for the THM and other CCA/A covered species. An HCP is similar to the CCA/A since it is a mechanism for Participants to engage in its Covered Activities, while promoting conservation of the THM and other Covered Species. A working draft of the HCP was distributed to potential participants for feedback in August 2020.

The HCP will be very similar to the CCA/A in many ways. Like the CCA/A, participation in the HCP will be voluntary. The HCP will cover the same species as the CCA/A. Both the CCA/A and HCP will have the same boundary area. Also, enrollment into the HCP will be very similar to that of the CCA/A, in that each participant will enroll through a Certificate of Inclusion unique to their enrollment. However, one important topic to note is that federal lands cannot be enrolled into the HCP.

SIGNATURE

If you have any questions, please call Matt Ramey or Robert Kasuboski at (575)-885-3700.

Signed: Emily K. Smith

Date: 10/18/2020