

Triannual Report 2020

September 1, 2020 – December 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*

This page intentionally left
blank.

Contents

I. Introduction	4
II. Enrollment	4
III. Funding.....	4
IV. Mitigation of Impacts to Habitat	5
V. Compliance Monitoring.....	5
VI. Landscape Monitoring.....	6
Black River Monitoring.....	6
Delaware River Monitoring.....	6
Rain Gauge Monitoring.....	6
VII. Species Monitoring	10
VIII. Outreach & Education	10
IX. Funded Projects Awaiting completion	11
Black River Wetland Action Plan (WAP).....	11
Rio Grande River Cooter.....	11
Texas Hornshell, <i>Popenaias popeii</i> , in the Black River: Field and Laboratory Studies of Sublethal Thermal and Hypoxia Stress.....	11
Black River Riparian Restoration Projects 2020	11
Black River Erosion Control Projects-.....	12
X. Completed Projects.....	12
XI. Future Projects.....	12
XII. Habitat Conservation Plan	12
Signature.....	13

I. INTRODUCTION

This report describes the activities conducted in the third triannual report period for 2020 under the Candidate Conservation Agreements for the Texas hornshell mussel (THM) and other covered species. The Center of Excellence (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 New Mexico State Land Office (SLO) administers the CCAAs for state trust lands. Additional details about the CCA/As are available in the 2018 annual report and in the agreements themselves.

The CCA/As and past reports can be found at the following URLs:

- <http://cehmm.org/index.php/documents/tx-hornshell/>
- https://www.fws.gov/southwest/es/documents/R2ES/TxHornshell_CCAA_NMCPL_v3_FR2980.pdf



Figure 1. The Black River, near Malaga, New Mexico.

II. ENROLLMENT

In 2020, the SLO administered 28 Certificates of Inclusion (CIs) and CEHMM administered 42 CIs and 33 Certificates of Participation (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 enrolled acreage 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 \$1,023,303.58 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	3 rd Triannual Period	2020 Totals
Program Funding	\$357,888.15	\$265,850.50	\$399,564.93	\$1,023,303.58

IV. MITIGATION OF IMPACTS TO HABITAT

In 2020, CEHMM and the SLO received a total of 174 notices of new surface disturbances from industry (Table 3). CEHMM and the SLO documented 1,564.91 acres of new surface disturbances through the 174 notices. Of the 174 combined notices of new surface disturbances, one took place in both Management Zone B and 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 reseeded.

Table 3. New Surface Disturbances in 2020.

	1 st Triannual Period	2 nd Triannual Period	3 rd Triannual Period	Total
Notifications of New Surface Disturbances	58	19	97	174
Acres Disturbed	523.54	186.74	854.63	1,564.91

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. In 2020 CEHMM spent 31 days performing industry compliance monitoring. Through those 31 days of monitoring, 16 enrolled Participants were found to be out of compliance with their CIs and/or CPs. CEHMM is currently collaborating with enrollees in order to achieve compliance, and only one enrolled Participant remains out of compliance.

VI. LANDSCAPE MONITORING

Black River Monitoring

CEHMM utilized four 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, 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). In the third triannual period, CEHMM spent 15 days in the field monitoring the flows, water quality, and active mussel beds on the river. Standing pools in the river are estimated to have lost two to three inches of water weekly (Figure 5). During a field visit on December 29th, CEHMM staff discovered that flows had returned to some reaches of the Delaware River. In the upcoming weeks, CEHMM will continue to monitor the status of the Delaware River utilized the USGS gage (USGS 08408500) and visual water height gage (Figure 2).

Rain Gauge Monitoring

In 2019, CEHMM installed six new rain gauges and monitored one existing SLO gauge to track 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.



Figure 2. Photo of the Delaware River taken 12/7/2020.

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

2020 Black River Discharge Data (Cubic Feet per Second)												
Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Black River Average Flow	8.33	8.19	8.32	7.74	7.43	6.66	5.52	5.03	3.64	3.87	3.70	6.52
Black River Min. Flow	7.85	7.15	7.01	7.21	6.59	5.95	4.22	1.82	1.13	0.05	0	5.61
Black River Max. Flow	8.7	8.97	12.4	8.25	8.07	7.42	6.28	6.93	4.61	5.63	5.67	7.3
Blue Springs Average Flow	10.9	No Data	No Data	8.11	9.48	14.03	9.03	7.93	7.23	7.87	6.93	11.13
Blue Springs Min. Flow	8.56	No Data	No Data	6.00	7.63	10.10	7.74	4.59	5.51	4.41	4.05	9.69
Blue Springs Max. Flow	13.3	No Data	No Data	10.20	10.10	19.60	9.59	9.23	7.79	9.39	9.78	12.9

Table 5. 2020 Rain Gauge Totals.

2020 Rain Gauge Totals (Inches)													
Location	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Totals
Delaware River Dam	0.15	0.40	2.00	-	-	0.00	0.65	0.30	0.50	-	-	0.00	4.00
Delaware River State Line	0.10	0.43	1.87	-	0.20	-	-	0.31	2.00	0.00	0.00	0.00	3.11
Owl Draw	0.15	0.37	-	-	-	0.00	0.60	0.30	3.50	-	0.00	0.00	1.77
Red Bluff West	0.10	0.35	2.50	-	0.08	0.02	-	0.29	2.00	0.00	0.00	0.00	3.54
Red Bluff East	0.10	0.30	-	-	0.10	0.05	0.55	0.27	3.00	0.00	0.00	0.00	1.67
Black River Forehand Crossing	0.10	0.20	2.90	-	0.10	0.00	0.20	0.42	-	-	0.00	0.00	3.92
Black River Means Road Crossing	0.05	0.20	2.70	-	0.10	0.05	1.40	0.38	-	-	0.00	0.00	4.88

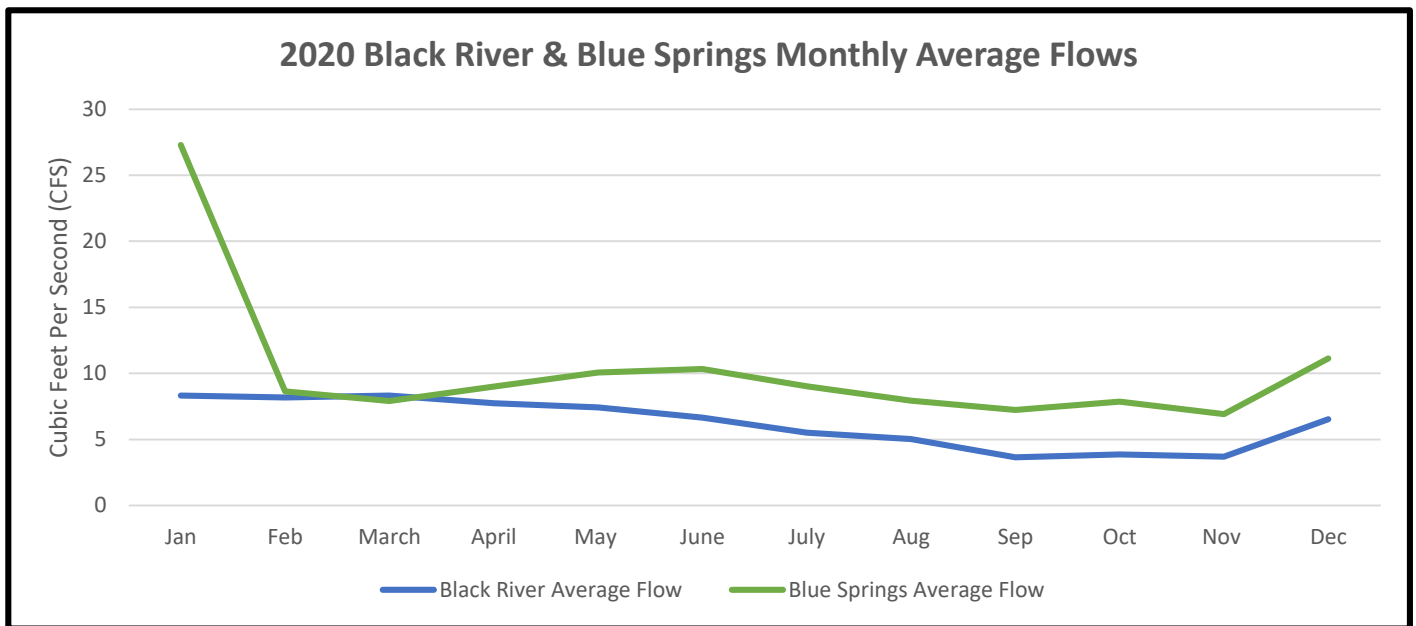


Figure 3. The 2020 Monthly Average Flows of the Black River above Malaga and Blue Springs.

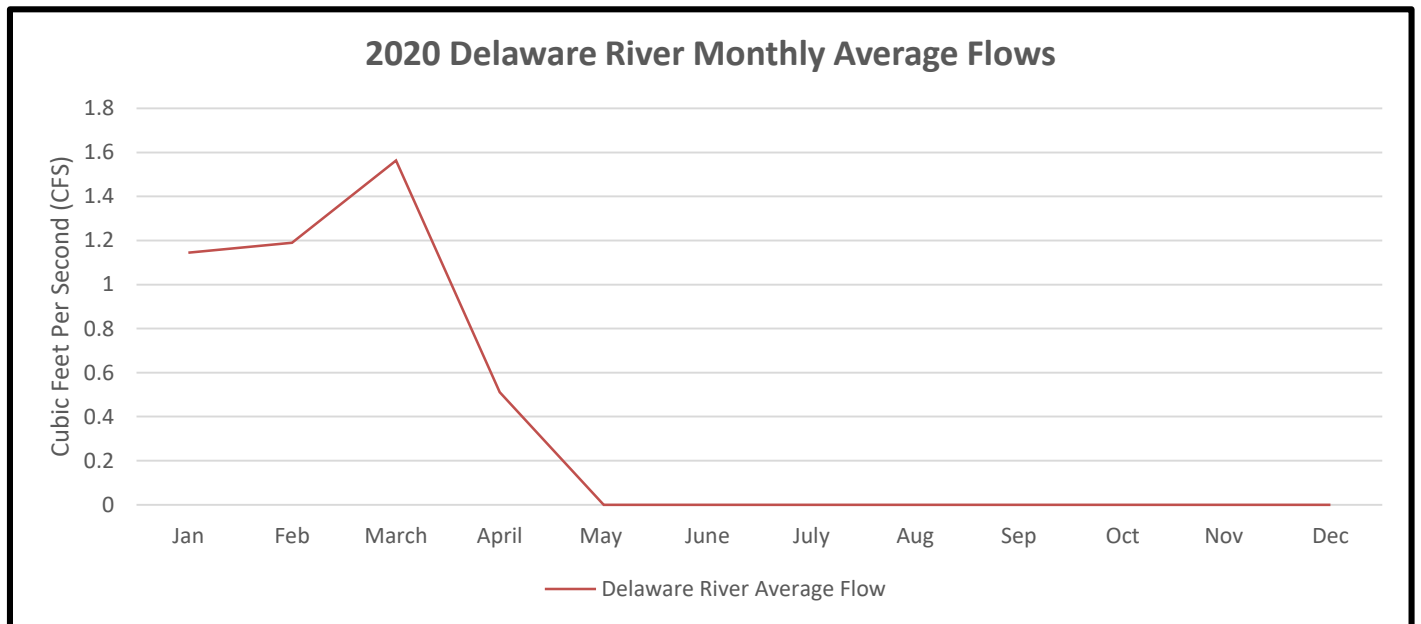


Figure 4. The 2020 Monthly Average Flows of the Delaware River.

Delaware River, NM

January 2020 – December 2020



January 2020



June 2020



September 2020



May 2020



August 2020



December 2020

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

VII. SPECIES MONITORING

In October, CEHMM received reports of an exposed mussel bed in the Black River, due to low flows. CEHMM staff joined FWS staff in observing the status of the reported exposed mussel bed. Upon investigation, no dead or distressed THMs were found. The exposed mussel bed that was reported appeared to be primarily composed of the invasive Asian Clam (*Corbicula fluminea*) (Figure 6).

Also in October, while monitoring the receding pools of the Delaware River, CEHMM and FWS staff discovered an exposed mussel bed in one of the river's undercut banks. Unfortunately, all eight mussels in the bed were deceased due to the receding water lines. The deceased mussels were recorded and the shells were removed to be used for educational and outreach purposes.

VIII. OUTREACH & EDUCATION

In September, CEHMM staff conducted educational presentations for students in the biology classes at Alamogordo High School. The talks covered the THM CCA/A Program, its covered species, ongoing projects, and monitoring efforts. The presentations were given to multiple classes through virtual formats and included an audience of approximately 60 students.

In October, CEHMM staff participated in Riverblitz, an annual river cleanup event in the city of Carlsbad and Eddy County (Figure 7). CEHMM encouraged enrollees along the Black River to join as well. Within a half-day, CEHMM staff and enrollees removed over one ton of litter from the Black River's floodplain.

CEHMM was invited to present its work at the New Mexico Environment Department's Southern Wetlands Round Table. In December, CEHMM staff delivered a virtual presentation on the THM CCA/A program. The talk primarily focused on the current and future projects of the program. The audience included approximately 120 researchers, scientists, project managers, and wetlands stakeholders throughout the state of New Mexico.



Figure 6. CEHMM Staff with Asian Clam Shells Found in the Black River.



Figure 7. RiverBlitz 2020

IX. FUNDED PROJECTS AWAITING COMPLETION

During the third triannual period in 2020, CEHMM and the SLO did not fund any new projects.

Black River Wetland Action Plan (WAP)- In the fall of 2019, CEHMM submitted a proposal to the New Mexico Environment 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. Work commenced in January 2020.

Texas Hornshell, *Popenaias popeii*, 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.

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. Projects are scheduled to start in March of 2021.

X. COMPLETED PROJECTS

No projects were completed during the third triannual period of 2020.

XI. FUTURE PROJECTS

CEHMM and the SLO are now accepting proposals to fund projects related to research and monitoring, or habitat restoration for the THM and the Other Covered Species. Proposals are ranked and funded on a quarterly basis.

The deadline to submit project proposals for each quarter are as follows:

- Q1: January 1st, 2021
- Q2: April 1st, 2021
- Q3: July 1st, 2021
- Q4: October 1st, 2021

Proposal forms are available for download:

<https://www.cehmm.org/index.php/info/news/51-texas-hornshell-cca-a-project-proposals-now-being-accepted>

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 CI 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 Wirth
Executive Director

Date: _____