



Quarterly Report: 1 – 2023
Candidate Conservation Agreements:
Texas Hornshell (*Popenaiaspopeii*)



Creating Conservation Through Partnerships



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I. Introduction

This report describes the activities conducted in the first quarter of 2023 under the three sister Candidate Conservation Agreements for the Texas hornshell mussel (THM) (*Popenaias popeii*) and other covered species. The Center of Excellence (CEHMM) administers a Candidate Conservation Agreement (CCA) for federal land and a Candidate Conservation Agreement with Assurances (CCAA) for non-federal and non-state (i.e. private) lands. The New Mexico State Land Office (SLO) administers a CCAA for state trust lands. The three conservation agreements are referred to collectively herein as the “CCA/As.” To the extent practicable, CEHMM and SLO jointly implement the CCA/As in cooperation with the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (Service) through a common governance structure. Figure 1 shows the CCA/A boundary, CCA/A management zones, and land ownership. Additional details about the CCA/As are available in the 2018 annual report and in the agreements themselves, which can be accessed at:

- <http://cehmm.org/thmreports>
- https://www.fws.gov/southwest/es/documents/R2ES/TxHornshell_CCAA_NMCPL_v3_F R29_80.pdf

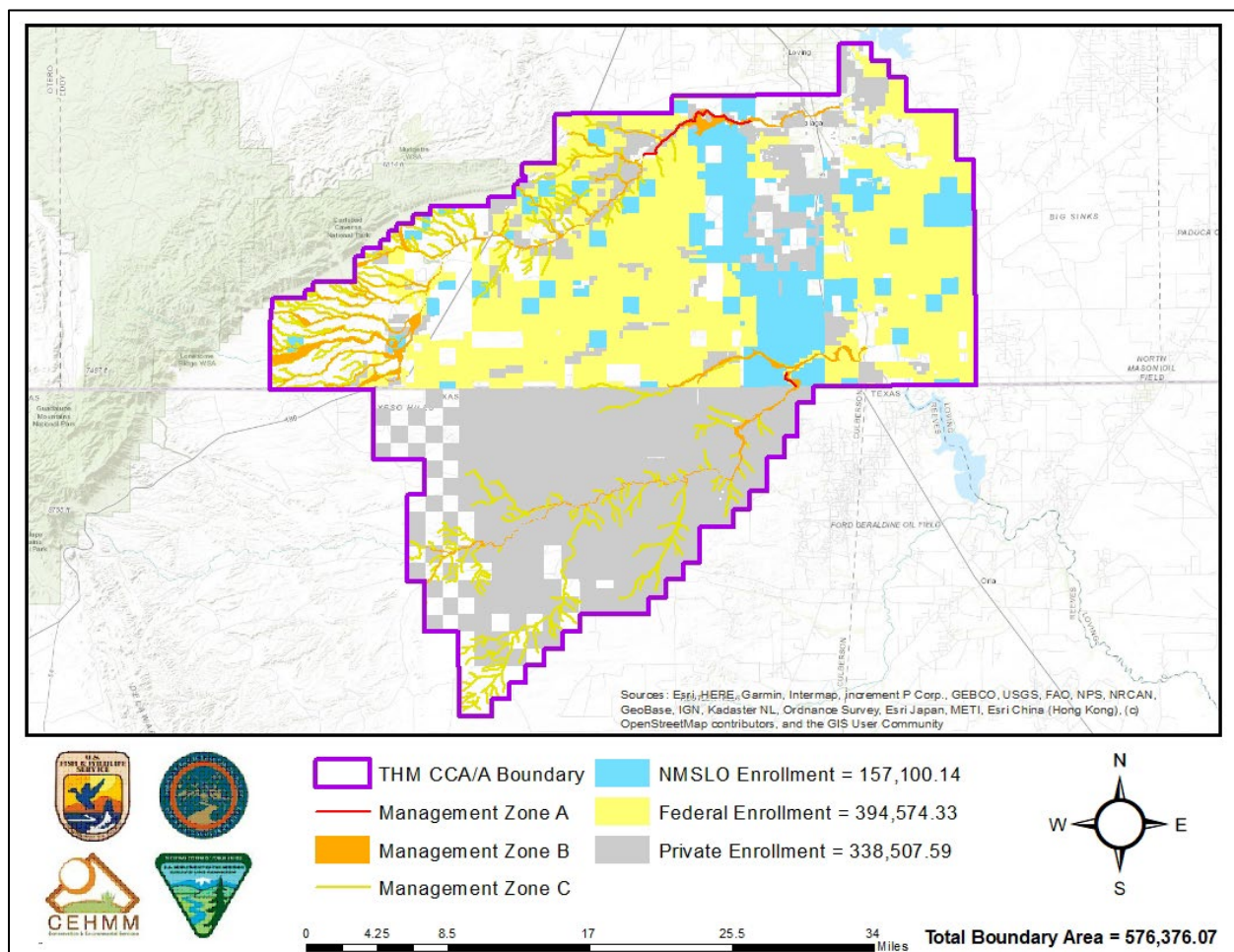


Figure 1. CCA/A Boundary, CCA/A Management Zones, and Land Ownership.

II. Enrollment & Funding

CEHMM administers 42 Certificates of Inclusion (CI) under the CCAA and 33 Certificates of Participation (CP) under the CCA. To date, CEHMM has enrolled 338,507.59 acres in the CCAA and 394,574.33 acres in the CCA. The SLO administers 28 CIs and has 157,100.14 acres enrolled in the CCAA.

Fifty Participants are enrolled in multiple CCA/As due to their combination of land ownership types. The total amount of land enrolled in the CCA/As in 2023 is 890,182.06 acres. Annual acreage can vary since the Participants who opted for “All Activities Enrollment” are able to add or remove enrolled acreage based on their current areas of activity. The same acres can also be enrolled more than once by different Participants who are using the land for different activities; the totals therefore reflect multiple enrollments of the same parcels. CCA/A Participant and parcel acreage enrollment data for 2023 are shown in Table 1.

Table 1. CCA/A Enrollment in 2023.

	No. CIs	No. CPs	Acres Enrolled in CCA	Acres Enrolled in CCAA
CEHMM	42	33	394,574.33	338,507.59
SLO	28	N/A	N/A	157,100.14
TOTAL:	70	33	394,574.33	495,607.73

During the first quarter of 2023, the Hornshell Program at CEHMM earned \$183,473.71 in Habitat Conservation Fees paid under the CEHMM CCA and CCAA. Also, during the first quarter of 2023, SLO CCAA earned \$72,492.84 in Participant Habitat Conservation Fees.

III. Mitigation of Impacts to Habitat

During the first quarter, CEHMM received a total of 69 notices of new surface disturbances from industry, with 267.81 acres of new surface disturbances documented. All of these disturbances took place in Management Zone D. The SLO received 23 notices of new surface disturbances from industry, with 74.09 acres of new surface disturbances documented during the first quarter of 2023. CEHMM worked with the Participants to ensure all the proper conservation measures were followed including Reasonable and Prudent Practices for Stabilization (RAPPS) and Spill Prevention Control and Countermeasure (SPCC). These practices included water bars, silt fences, culverts, erosion blankets, waddles, and reseeded. These details are shown in Table 2 below.

Table 2. New Surface Disturbances in the First Quarter of 2023.

	Well Pads	ROWs	Infrastructure	Total
CEHMM				
Notifications of New Surface Disturbances	18	43	8	69
Acres Disturbed	119.00	108.59	40.21	267.81
SLO				
Notifications of New Surface Disturbances	5	17	1	23
Acres Disturbed	23.65	44.71	5.74	74.09
COMBINED				
Notifications of New Surface Disturbances	23	60	9	92
Acres Disturbed	142.65	153.3	45.95	341.90

IV. Habitat Monitoring

Black River Discharge Monitoring

The CCA/A set a temporary minimum flow goal of 9.3 cubic feet per second (cfs) at the Malaga gage on the Black River. This is pending the development of a revised flow requirement for the THM by August 2023. Since the CCA/A took effect in 2017, CEHMM has monitored the daily average flow at existing United States Geological Survey (USGS) flow gages in the Black River at Malaga (USGS 08405500) and Blue Springs (USGS 08405450) (Appendix B).

Per the CCA/A, CEHMM staff set alarms on the Black River Above Malaga gage; when river flows are below 9.3 cfs, they are notified and can monitor the river more closely. In 2019, two additional gages were installed in the Black River with one new gage Black River at Harkey Crossing (USGS 08405400) and the second gage Black River Below Blue Springs (USGS 08405350) (Appendix B).

Along with gage data monitoring, CEHMM physically monitored the Black River every week in quarter one. According to the USGS gage at Above Malaga, the monthly average discharge for quarter one in the Black River was 7.53 cfs in January, 6.37 cfs in February, and 6.90 cfs in March. The daily average discharge was below the 9.3 cfs threshold 95.56 percent of the days in the first quarter of 2023. See Figure 2 and Table 3 for first quarter flow rates.

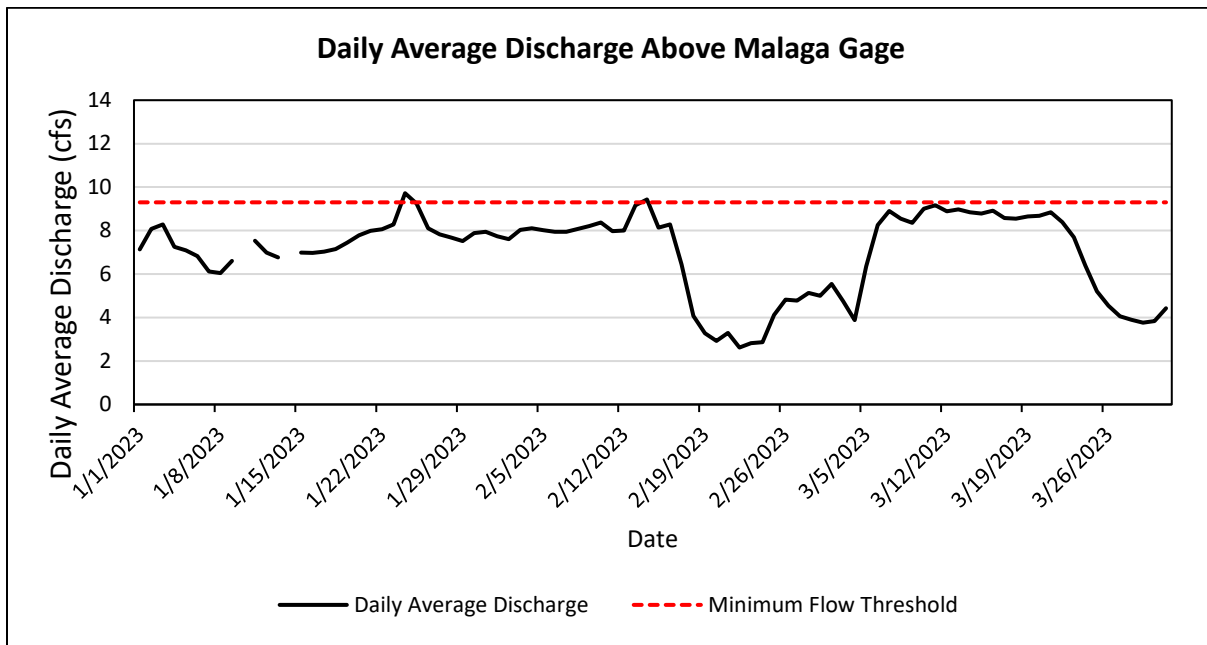


Figure 2. The Daily Average Discharge of the Black River at the USGS Black River Above Malaga Gage During the First Quarter of 2023

Table 3. Monthly Average, Minimum Daily Average, and Maximum Stream Flow in cfs Calculated by CEHMM using USGS Instantaneous Provisional Stream Gage Readings.

	Jan	Feb	Mar
Black River (USGS 08405500 BR Above Malaga)			
Average Flow	7.53	6.37	6.90
Minimum Daily Average	6.04	2.61	3.77
Maximum Daily Average	9.72	9.43	9.17
Black River (USGS 08405400 Black River at Harkey Crossing)			
Average Flow	9.99	8.39	7.80
Minimum Daily Average	10.3	4.45	5.44
Maximum Daily Average	12.2	12.1	12.30
Black River (USGS 08405350 Black River Below Blue Springs)			
Average Flow	7.81	7.61	5.6
Minimum Daily Average	6.13	6.05	5.12
Maximum Daily Average	9.61	8.49	8.68
Delaware River (USGS 08408500 DR NR Red Bluff)			
Average Flow	N/A	N/A	N/A
Minimum Daily Average	N/A	N/A	N/A
Maximum Daily Average	N/A	N/A	N/A

Delaware River Discharge Monitoring

On October 10, 2022 the Delaware River near Red Bluff USGS gage was removed due to bridge construction that was occurring in the area. CEHMM physically monitored flows in the Delaware River every two weeks during the first quarter and will continue to do so throughout the year (Figure 3).



Figure 3. The Flows on the Delaware River on March 20, 2023.

V. Grants

CEHMM/SLO Instream Flow Program Initiative for the Texas Hornshell Mussel

In 2020, CEHMM and SLO partnered on a proposal to the National Fish and Wildlife Foundation (NFWF) for a grant to fund the development of an instream flow program to protect the endangered Texas hornshell mussel and other at-risk species in the Black and Delaware rivers. The NFWF awarded the grant in 2021. This funding requires an in-kind matching contribution from the CCA/A program, so the Executive Committee set aside \$250,000.00 for the matching contribution. Some or all of the match can be provided through in-kind contributions from SLO and CEHMM, but the set-aside amount ensures the matching fund requirement is met. The overall objective of the initiative is to provide instream flow for the THM in the Black and Delaware rivers through the purchase or lease of water rights, or through alternative mechanisms such as forbearance agreements or strategies that make water available for instream flow during otherwise dry periods or when high flows are needed for life history requirements. The first expected outcome of the grant would be the execution of one or more short-term (3-5 year) agreements that, at a minimum, will provide sufficient flow in the Black River to prevent the existing THM population from being extirpated by lack of water while long-term solutions to instream flow are developed. The second expected outcome of the project will be the development of a framework for a long-term plan and budget for maintaining stream flows in the Black and Delaware rivers, including multiple options such as outright purchase of water rights, long-term forbearance agreements, or other mechanisms to reduce diversion from the rivers.

Progress: AMP Insights submitted the Instream Flow Initiative and Design for the Black River. AMP, CEHMM, and SLO held a virtual meeting to review the document and provide feedback and comments before being finalized. Amp Insights will be presenting their results to the Instream Flow Working Group in quarter two of 2023.

Sensor Array Study

In 2021, CEHMM submitted a grant proposal to the NFWF to fund a Sensor Array Study to better understand in situ conditions experienced by the endangered THM in the Black River. The NFWF awarded the grant in June 2022. The Sensor Array grant was approved by the Implementation and Executive committees. This funding requires an in-kind matching contribution of \$24,784.30 from the CCA/A program. CEHMM proposed a project to establish a

sensor array within the occupied reach of the Black River in southeastern New Mexico. The water quality data loggers will allow CEHMM to monitor and better understand the water quality conditions endured by the endangered THM. Through the establishment of the sensor arrays, CEHMM will be able to further monitor and gain data to determine if, when, and for what period of time the THM are enduring intolerable environmental conditions. The results of this data collection are expected to provide key insights to environmental gradients among microhabitats, especially as we prepare for further climate-driven variation.

Progress: CEHMM staff extracted data from the deployed loggers that are within three pools of the Black River. The sensor caps on each logger were replaced and the loggers were recalibrated and redeployed. In the second quarter of 2023, CEHMM will analyze the extracted data to see if there is any distinction between the occupied and unoccupied areas. CEHMM will also analyze and compare occupied and unoccupied sites to the USGS streamflow gage data to identify correlations between micro and macro-habitat conditions.

Benjamin P. Duke Memorial Grant

In April 2022, CEHMM submitted a proposal to the Carlsbad Community Foundation for the Benjamin P. Duke Memorial Grant to fund the creation of environmental education exhibits. The Carlsbad Community Foundation awarded the grant in June of 2022. This funding requires an in-kind contribution from the CCA/A program for up to \$5,000. The environmental exhibits will address aquatic species of concern in the lower Pecos River Drainage, educating the public to foster knowledge and appreciation of the species, ultimately promoting the wellbeing of wildlife and their habitats.

Progress: CEHMM wrote and developed the language for each educational exhibit and sent them to Vacker Sign for proofs to be developed.

Outdoor Recreation Trails Grant

In December 2022, CEHMM partnered with the BLM to submit a proposal to Outdoor Recreation Trails (ORT) for an improvement project at Six-Mile Recreation Area. CEHMM and the BLM seek to enhance public outdoor recreation and foster greater appreciation for nature within the Carlsbad community through the Six-Mile Improvement Project. The project will include the improvement of a 1.5-mile stretch of road and the development of eight picnic sites along the Pecos River. This project will not only enhance the accessibility of this area, but it will also improve natural habitat through strategic road closures, allowing for native landscape restoration. Additionally, severe ground erosion issues will be addressed through the construction of erosion-control structures. In March 2023, CEHMM's application for the ORT grant was selected for funding for the full grant amount requested. The total proposed project cost is \$221,513.19. This amount reflects \$99,363.44 in award from the ORT grant and \$122,149.75 in matching contributions from the BLM and industry partners, satisfying the required 2:1 match. Work is expected to commence in quarter two of 2023.

VI. Project Updates

River Flow Regime Requirements Study

This study was approved and funded in October of 2020 for \$358,005.00. This project is ongoing and currently in year three out of four. The expected completion date of the project is August 2023. A collaborative team of researchers from Miami, Texas A&M, and Auburn universities are conducting 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 Texas hornshell. Relationships between flow, temperature, and dissolved oxygen in the Black River are also being studied. Results will be used to identify flow regimes most likely to induce mortality and/or thermal stress in the Texas hornshell. Combined with historical datasets, results will be used by both CEHMM and the Service. CEHMM will determine whether frequency of stressful periods has been increasing over time, and the Service will make specific flow recommendations for Texas hornshell populations in the Black River.

Progress: Auburn University completed the valveometry, acute thermal stress, and ETS research on the THM. Miami University analyzed water quality data from dissolved oxygen (DO) loggers located in the Black River. Texas A&M conducted laboratory testing of upper thermal limits for juveniles and glochidia of THM to guide development of flow requirements for THM in the Black River of New Mexico.

Project Proposals

CEHMM and SLO are now accepting project proposals to fund projects related to research and monitoring, or habitat restoration for the THM and the Other Covered Species (Figure 4). Proposals are ranked and funded on a quarterly basis.

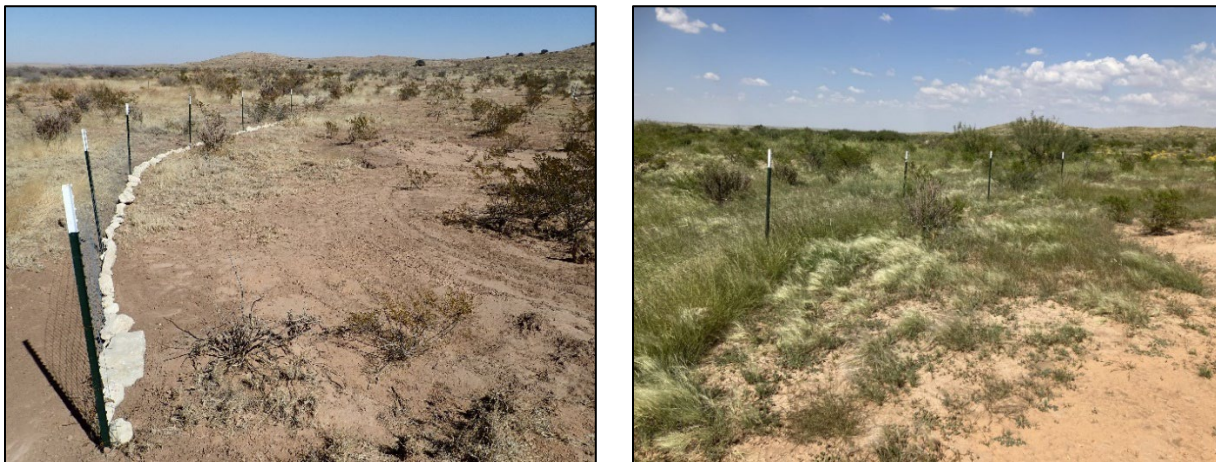


Figure 4. Before and After of Erosion Control Structures Used to Slow the Flow of Water and Catch Sediment.

VII. Meetings

Joint Executive Committee

The Joint Executive Committee met one time during the first quarter of 2023. The Executive Committee members in 2023 are as follows:

- CEHMM CCAA: Chuck Hayes (Service) and Emily Wirth (CEHMM)
- CEHMM CCA: Chuck Hayes, Emily Wirth, Ty Allen (BLM)
- SLO CCAA: Chuck Hayes, Lisa Henne (SLO)

The Executive Committee met and discussed the following topics:

- Current Projects and Funding
- Request for Projects' Priorities
- Desert Fish Habitat Partnership Grant

The Executive Committee activities included the following:

1. Provided progress updates to Executive Committee on the minimum flow regime research, eDNA research, Instream Flow grant, Sensor Array grant, HCP Development grant, and landowner projects. The Executive Committee discussed completing projects that we currently have funded prior to moving forward with any new projects.
2. The Executive Committee decided to finish on-going work while simultaneously developing the Request for Projects (RFP). The Executive Committee will reevaluate whether to issue the RFP at the end of the year.
3. Updated the Executive Committee that CEHMM and the NMDGF partnered on the Desert Fish Habitat Partnership Grant to complete a habitat assessment for the blue sucker and gray redbone in the Black, Delaware, and Pecos rivers. A funding decision for that grant will be released in January of 2024.

Implementation Committee

The Implementation Committee met one time during the first quarter of 2023. The Implementation Committee members in 2023 are as follows:

- Service: Sarah Yates, Tim Ludwick
- BLM: Cassie Brooks
- CEHMM: Matt Ramey
- SLO: Elaine Heltman (alternates Camilla Romero and Kyle Rose)
- NMDGF: Daniel Trujillo

The Implementation Committee met and discussed the following topics:

- CCA/A Update
- HCP Update
- Current Projects and Funding
- Black and Delaware river flows
- Desert Fish Habitat Partnership Grant
- Request for Projects Update

The Implementation Committee activities included the following:

1. Updated the Implementation Committee regarding activities taking place on the landscape such as projects, flows, upcoming events, and other projects that CEHMM is working on.
2. Provided progress updates on the status of the Habitat Conservation Plan development and design. CEHMM applied for the National Fish and Wildlife Foundation grant for funding the development and implementation of the HCP and CEHMM's proposal was selected for funding.
3. Provided progress updates on the minimum flow regime research, eDNA research, Instream Flow grant, Sensor Array grant, HCP Development grant, and landowner projects. Also updated the Implementation Committee on the Executive Committee's 2023 funding allocation decisions.
4. Provided a quarterly update on the flows for both the Black and Delaware rivers. Updates incorporated hydrographs of all USGS gages, flows in relation the 9.3cfs set by the CCA/As, and bi-weekly monitoring photos of monitoring sites on both rivers.
5. Updated the Implementation Committee that CEHMM and the NMDGF partnered on the Desert Fish Habitat Partnership Grant to complete a habitat assessment for the blue sucker and gray redbhorse in the Black, Delaware, and Pecos rivers. A funding decision for that grant will be released in January of 2024.
6. The Implementation Committee reviewed the final RFP priority list for 2023. The RFP will be worked on throughout the year and reassessed at the end of 2023.

VIII. Outreach

In March 2023, CEHMM visited middle school students at Lovington Public Schools to present and to educate them about food webs and population dynamics (Figure 5). The presentation included an overview of food webs, as well as the relationships between species, and how the covered species under CEHMM's CCA/A programs relate to these topics.

IX. Compliance Monitoring

The CCA/As require CEHMM and SLO to submit an annual compliance verification to the Service for each enrolled Participant. CEHMM assists SLO with compliance verification through a Memorandum of Agreement for joint implementation of the CCAAs. In the first quarter of 2023, CEHMM's CCA/A compliance monitoring included inspection for failure to submit new surface disturbances and inspection for Spill Prevention, Control, and Countermeasures (SPCC) or Reasonable and Prudent Practices for Stabilization (RAPPS) compliance, if applicable. CEHMM utilized the New Mexico Oil Conservation Division (NMOCD) data, BLM right-of-way data, and field surveying to conduct inspections.



Figure 5. CEHMM Staff Presenting to Middle School Students at Lovington Public Schools.

X. Signature

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

Signed: Emily K. Wirth

Emily K. Wirth
Executive Director

Date: 4/18/2023

Appendix A – Habitat Conservation Fees for The Calendar Year 2023

CCA Appendix E Fee Structure – Revised 2/1/2023 for Inflation

The Participant may be responsible for paying an Enrollment Fee for the first three years this CCA and CP are in effect. If the Participant opts out of the CCA, the Participant is still responsible for these fees. The Participant shall pay the \$30,000 Enrollment Fee for enrollment of facilities existing within the Covered Area if enrolling by the All Activities method of enrollment. The Participant may choose to enroll via the Parcel-by-Parcel method. In this case, the Participant shall pay a minimum Enrollment Fee of \$3,000 for up to 1,000 acres. For all acreage above 1,000 acres, the Participant shall pay \$3/acre. For either method of enrollment, the Participant shall make the first payment of Enrollment Fees at the time of enrollment. The Participant shall pay the second and third on the first and second anniversaries of the CCA effective date. If the Participant so chooses, the Participant may pay all three Enrollment Fees at the time of enrollment. Enrollment Fees will not be required after the initial three-year period.

The Habitat Conservation Fee for New Surface Disturbance associated with oil and gas development activities will be calculated using the following scales. The scales also apply to third parties doing work for the Participant either on or off the Participant’s Enrolled Lands, regardless of who constructs or operates the associated facilities. The Participant may prepay Habitat Conservation Fees at any time at their discretion. The Participant must notify CEHMM prior to conducting any surface disturbing activities associated with this CP on or off the Enrolled Lands either by the Participant or third-party subcontractors. Management zone of the New Surface Disturbance is determined by the location of the activity being developed, not actual habitat found on site.

All Habitat Conservation Fees will be adjusted once yearly by CEHMM to account for inflation or deflation. The term “Base Habitat Conservation Fee” shall refer to the values of the Habitat Conservation Fees set forth in this Exhibit. For purposes of this section, the term “CPI-U” shall refer to the Consumer Price Index for All Urban Consumers, U.S. City Average, all items less food and energy (base 1982-84=100), not seasonally adjusted, as published by the U.S. Department of Labor, Bureau of Labor Statistics. The Maximum Annual Inflation Increase shall be based on the percent increase between the annual average CPI-U for the calendar year that precedes the date of the adjustment (“Current CPI-U”) and the annual average CPI-U for calendar year 2016 (“Base CPI-U”). The Maximum Annual Inflation Increase shall be calculated as follows:

Maximum Annual Inflation Increase =
Base Habitat Conservation Fee x ((Current CPI-U – Base CPI-U) / Base CPI-U))

Increases, if any, shall occur on the January release date of the CPI-U. The Maximum Annual Inflation Increase will reflect the most recent revision to the annual average Current CPI-U, if any. CEHMM will send Participants a notification, both electronically and by mail, each year at the time the fees are adjusted.

If the annual average CPI-U is unavailable for a calendar year, no increases will be made. If the CPI-U is discontinued entirely or unavailable for a period longer than two calendar years, CEHMM will consult with the Participant to select an appropriate alternative index.

1) New Well Location Fees¹

<u>Management Zone</u>	<u>Conservation Fee</u>
Zone A	Not applicable
Zone B	\$23,759.73/location
Zone C	\$11,879.86/location
Zone D	\$2,969.96/location

¹ Includes a single well pad no larger than 3 acres, multi-well pad no larger than 5 acres, and associated access road not to exceed 1 acre. Anything larger will be considered New Surface Development Fees described below. If any portion of the project falls into a higher management zone, the charge incurred will be that of the higher management zone.

2) New Surface Development Fees

For other New Surface Disturbances associated with Enrolled Lands, but not directly attributable to a new well pad² and associated road, including but not limited to pipelines, frac ponds, electric lines, pits, etc. the Habitat Conservation Fee will be based on the following scale:

<u>Management Zone</u>	<u>Conservation Fee³</u>
Zone A	Not applicable
Zone B	\$8,909.90/acre
Zone C	\$2,969.96/acre
Zone D	\$1,187.99/acre

² Co-located wells that require an increase in the size of the existing pad will be assessed by new acres disturbed.

³ These Conservation Fees are based on the following figures. No additional amounts are owed beyond the amount of the Conservation Fees:

- Lease of Water Rights.....10-acre feet = \$5,000-\$10,000
- Purchase of Water Rights.....1-acre foot = \$5,500-\$10,000
- Habitat Restoration (i.e., salt cedar treatment)4 acres = \$10,000
- Caliche Removal.....2-3 acres = \$10,000
- Reseeding.....1 acre = \$1,000
- Rebuilding Water Crossings.....Undeterminable at this time

Note: All acreage calculations will be rounded up to the next whole acre, if over 0.5 acres.

New operations on previously disturbed land (e.g., co-located new well on an existing pad or new pipeline in an existing corridor, etc.) will incur no additional Habitat Conservation Fee, unless the area to be re-disturbed has been reseeded and/or reclaimed as part of reclamation. Fees will also be assessed for any new acreage disturbed.

CEHMM will calculate areas of New Surface Disturbances based on information received and/or on-the-ground observations. Should the Participant disagree with CEHMM’s calculation of the area of New Surface Disturbance, the Participant has the right to challenge the estimate, provide supporting data, and meet with CEHMM and/or the FWS, if necessary. CEHMM and the FWS, if participating, will have the responsibility for the final determination of the area of New Surface Disturbance.

The Habitat Conservation Fee for above-ground powerlines will be calculated using the above scale for New Surface Development. The acreage of New Surface Disturbance will be based on information found in the OCD and SLO New Surface Disturbance activities approval document provided by the Participant to CEHMM.

If New Surface Disturbance falls within two or more management zones, the amount of the Habitat Conservation Fee will reflect the amount of the New Surface Disturbance within each management zone.

3) Fees Associated with New Seismic Data Acquisition

<u>Management Zone</u>	<u>3D Survey Conservation Fee</u>	<u>2D Survey Conservation Fee</u>
Zone A	<u>\$11.89/acre</u>	<u>\$237.59/linear mile*</u>
Zone B	<u>\$8.91/acre</u>	<u>\$178.20/linear mile*</u>
Zone C	<u>\$5.94/acre</u>	<u>\$118.80/linear mile*</u>
Zone D	<u>\$1.79/acre</u>	<u>\$29.71/linear mile*</u>

*or any fraction thereof

The acquisition of seismic data on enrolled parcels may also disturb the surface of other land not enrolled in this CP. The Habitat Conservation Fee calculated for seismic activity includes disturbances occurring on both enrolled and non-enrolled land.

Routine Production Operations

Routine production operations are not considered New Surface Disturbance and will not create the obligations to pay a Habitat Conservation Fee. Routine production operations are those which do not require an agency permit or approval, and those operations that require an agency approval but do not disturb the surface.

Appendix B – USGS Discharge Gages in the CCA/A Boundary

