



Oklahoma Blue Thumb Final Report: January 1, 2019 – December 31, 2019
FY 2019-2020 §319(h) EPA Grant #C9-996100-20 – Project 8

Oklahoma Conservation Commission Water Quality Division
2800 North Lincoln Boulevard, Suite 200, Oklahoma City, Oklahoma 73105



Blue Thumb Training in Oklahoma City at Guy James Creek, April 7, 2019



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This report is submitted by the Blue Thumb Program as evidence of work completed in the 2019 calendar year.

BLUE THUMB PROGRAM DESCRIPTION

Blue Thumb is the education arm of the Oklahoma Conservation Commission's Water Quality Division. Blue Thumb supports a network of citizen scientists who collect monthly water quality data at stream sites across Oklahoma. Blue Thumb also facilitates education and outreach events about nonpoint source pollution across the state. The mission of Blue Thumb is to recruit, train, inspire and empower Oklahomans to engage in behaviors that protect local streams. The 2019 Work Plan identifies the following subtasks for FY 2019:

- Subtask 4.1: General Program Maintenance and Promotion Activities
- Subtask 4.2: Priority Watershed Education Projects
- Subtask 4.3: Groundwater Education/Screening Program for Western Oklahoma
- Subtask 4.4: Blue Thumb Efforts to Support Conservation Districts
- Subtask 4.5: Review Active Stream Monitoring List and Determine Site Status

SUBTASK 4.1 GENERAL PROGRAM MAINTENANCE AND PROMOTION ACTIVITIES

In 2019, the Blue Thumb Program continued to support citizen scientists across the state as they collected data on local streams. Blue Thumb also reached over 19,000 people through education and outreach events in 42 counties. We offered four two-day trainings, two one-day trainings, five Mini-Academies for Monitoring, four Mini-Academies for Education and one joint Soil Health/Blue Thumb workshop. We have continued to strengthen our social media presences on Facebook, Twitter and Instagram. We also began publishing a monthly e-newsletter for volunteers in June.

Blue Thumb experienced several staff changes during 2017, 2018 and the beginning of 2019. In an effort to improve job satisfaction and relationships between staff, we have focused on open and regular communication, bimonthly staff meetings and group decision making.

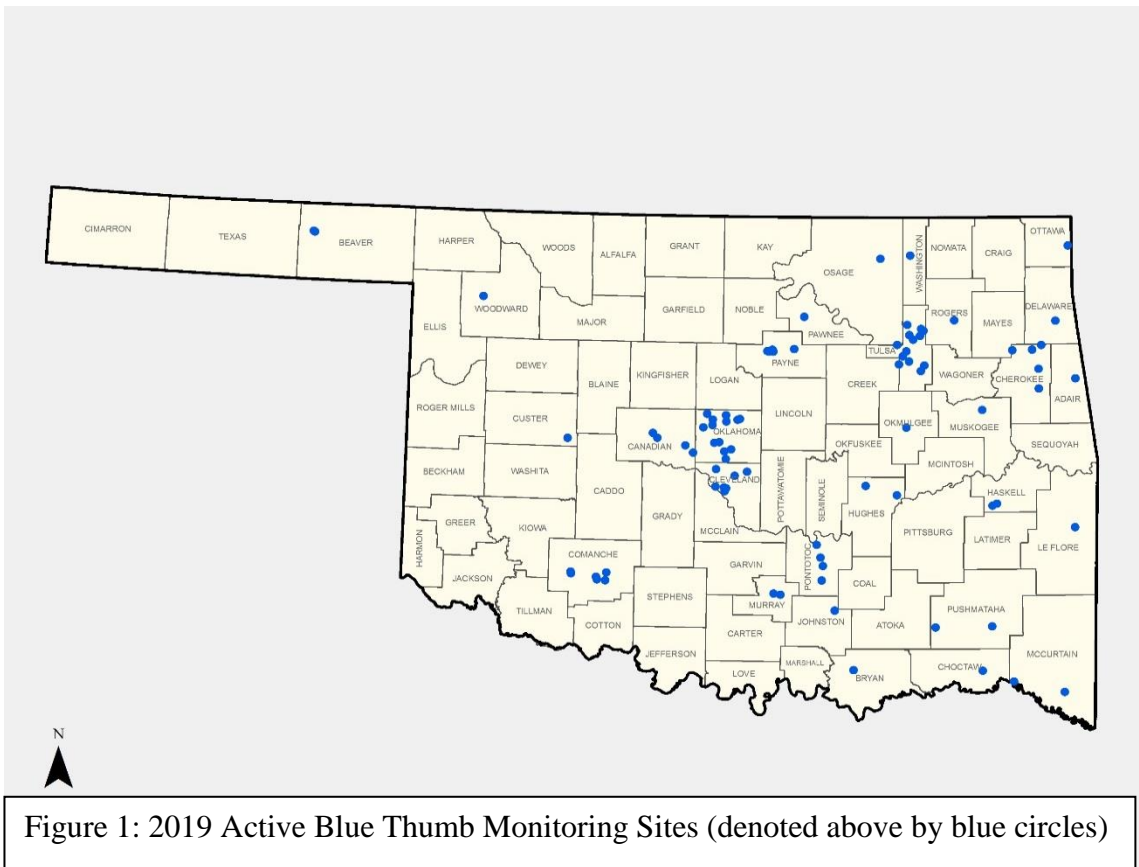


*Blue Thumb Staff (from left to right):
Candice Miller, Cheryl Cheadle,
Becky Zawalski, Rebecca Bond and
Kim Shaw.*



SUPPORTING CITIZEN SCIENTISTS

Blue Thumb volunteers complete monthly chemical monitoring, quarterly quality assurance (QA) sessions, biannual macroinvertebrate collections, and fish collections and habitat assessments once every four or five years. Monthly monitoring and sample analyses are completed independently. During a monthly sampling run, volunteers record streamside observations, collect and “fix” two dissolved oxygen samples and collect a water sample which the volunteer later tests for orthophosphate as phosphorus, nitrate, nitrite, ammonia, chloride and pH. Typically, volunteers take their water samples indoors to complete analyses. Analyses are completed with Hach test kits. During the recreation season (May 1-September 30) volunteers have the option of collecting and analyzing *E. coli* samples. Biological collections and habitat assessments are completed in cooperation with Blue Thumb staff. In 2019, 280 active volunteers completed monitoring at 84 sites in 30 counties. Please see Figure 1 for a map of active monitoring locations. Volunteers completed 145 macroinvertebrate collections and 17 fish collections under the supervision of Blue Thumb staff. Macroinvertebrate samples were processed during approximately 55 macroinvertebrate subsampling sessions.





The Blue Thumb Program recruited approximately 28 new volunteers. New volunteers attended one of the following two-day trainings:

- Oklahoma City Training, April 6-7
- Tulsa Training, August 10-11
- Alva Training, October 4-5
- Locust Grove Training, November 2-3

We have several volunteers who teach in public schools, vocational schools or on college campuses. These teachers conduct stream monitoring with groups of students. We offer Mini-Academies for Monitoring to bring new groups of students up to speed with regard to sample analyses. We offered the following Mini-Academies for Monitoring in 2019:

- Mini-Academy for Monitoring at Southwestern Oklahoma State University (SWOSU), Weatherford, January 8
- Mini-Academy for Monitoring at BlueSTEM AgriLearning Center, Fort Reno, March 8
- Mini-Academy for Monitoring at Oklahoma State University, Stillwater, April 16
- Mini-Academy for Monitoring at SWOSU, Weatherford, August 21
- Mini-Academy for Monitoring at the Oklahoma School of Innovation and Experiential Learning, Bixby, August 23

The Blue Thumb Program also supports citizen scientists by encouraging volunteers to write interpretations of their data upon receipt of a data package. A data package includes chemical data, biological data and habitat data. Data packages are assembled by the QA Officer, Kim Shaw, upon receipt of fish data from the taxonomist. Kim offered two data interpretation workshops to volunteers during which she covered the basics of data analysis and interpretation. One was held in Oklahoma City on October 10 and the other was held in Tahlequah on October 14. Six volunteers completed data interpretations in 2019.



Two volunteers prepare to take a water sample



A volunteer collects a macroinvertebrate sample



Fish collection at Little Deep Creek



Habitat assessment at Chisholm Creek



Macroinvertebrate subsampling at Metro Tech



QA session at Okmulgee Creek



Mini-Academy for Monitoring at SWOSU



Blue Thumb Training at Locust Grove



SUPPORTING VOLUNTEER EDUCATORS

In 2019 we continued to focus on developing volunteer educators who are willing and able to represent Blue Thumb at educational events. We support volunteer educators through special training opportunities including Project WET Workshops and Mini-Academies for Education, as well as through regular communication and support from our Volunteer Coordinator, Cheryl Cheadle. In 2019, we offered two one-day trainings and four Mini-Academies for Education:

- Mini-Academy for Education in Norman, June 27
- Day 1 Training in Ada, April 12
- Project WET Workshop in Shawnee, April 17
- Mini-Academy for Education in Ada, August 26
- Mini-Academy for Education in Wyandotte, September 11
- Mini-Academy for Education in Tahlequah, November 12



Day 1 Training in Ada



Project WET Training in Shawnee



Mini-Academy for Education in Ada



VOLUNTEER APPRECIATION LUNCHEON

On December 7 we hosted a volunteer appreciation luncheon in Kellyville. Fourteen volunteers and guests attended. The volunteers received a free lunch for themselves and a guest, a goody bag, recognition for outstanding work in monitoring and education, and the opportunity to win several raffle items. Dan Dvoretz, the Technical Programs Director, gave a presentation about how Blue Thumb data are analyzed and used in the Clean Water Act 303(d) process.



Volunteers with their raffle prizes



Attendees at the 2019 Volunteer Appreciation Luncheon

EDUCATION AND OUTREACH

Blue Thumb offers education and outreach about nonpoint source pollution and water quality statewide and year-round. We use a variety of experiences including natural resource days, outdoor classrooms, workshops, camps, creek walks and presentations to teach Oklahomans about nonpoint source pollution and what they can do to help. Audiences and venues vary widely and include conservation districts, public schools, community groups, tribes and many others. In 2019 we offered approximately 165 educational events that reached over 19,000 people in 42 counties. The number of educational events and the number of people reached include traditional education and outreach events, training events, presentations at conferences and groundwater screenings. Trainings are discussed in more detail under ***SUPPORTING CITIZEN SCIENTISTS*** and ***SUPPORTING VOLUNTEER EDUCATORS***; presentations at conferences and groundwater screenings are discussed in more detail below.

The demand for educational events is often more than can be met by Blue Thumb staff. In order to help meet the demand, we train volunteer educators who can engage in education and outreach on behalf of



the Blue Thumb Program. We currently have many volunteers who are willing and able to represent Blue Thumb at education events. Of the 165 educational events mentioned above, 35 were staffed by Blue Thumb education volunteers. These efforts are reflected in our volunteer hours. In 2018, volunteers logged 7,464 hours of donated time (monitoring and education hours). In 2019, volunteers logged 8,125 hours.

Some of the highlights of our 2019 educational efforts are listed below:

- *H2Oklahoma*, an educational water festival for students in fourth and fifth grades
- *Riverology 101*, a three-day stream ecology camp for teachers
- *A Grand Adventure*, a day camp to introduce children to the ecology of Grand Lake
- *Full Circle Citizenship*, a new workshop focusing on the interface between soil health and water quality
- Publication of the 2020 Blue Thumb Calendar



Stream trailer demonstration at H2Oklahoma



2019 Riverology 101 float trip



Kids explore the properties of water during A Grand Adventure Day Camp



Students brave the cold and the rain to experience life in a creek during the Full Circle Citizenship Training

PRESENTATIONS AT CONFERENCES

In 2019, Blue Thumb staff offered seven presentations at six professional conferences. In addition, three Blue Thumb volunteers and six high school students gave three presentations about Blue Thumb at the Oklahoma Clean Lakes and Watersheds (OCLWA) Conference, and seven additional Blue Thumb volunteers presented on other topics related to water resources. Blue Thumb staff presented at the following conferences:

- Oklahoma Natural Resources Conference, Tulsa, February 20-22
- 2019 National Training Workshop for CWA 303(d) Listing & TMDL Staff, Shepherdstown, WV, May 28-31
- Oklahoma Floodplain Managers Association Stormwater Quality Technical Workshop, Norman, July 17
- Inter-Tribal Environmental Council Conference, Tulsa, July 24 (2 presentations)
- Nonpoint Source Tribal Workshop, Miami, August 22
- International Water Conference, Norman, September 16

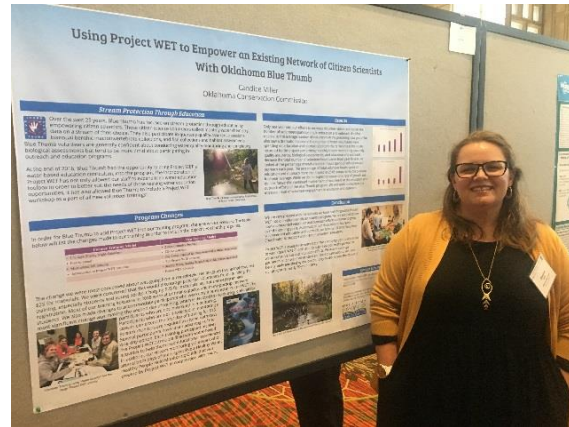
In a further effort to engage natural resource professionals, Cheryl Cheadle published an article entitled “The Oklahoma Conservation Commission’s Road to High Quality Data” in *American Currents*, a publication of the North American Native Fishes Association. The article chronicled activities that take place during Fish School, the quality assurance training that all lead collectors at the Oklahoma Conservation Commission must pass to lead fish collections and habitat assessments. Finally, both



Cheryl Cheadle and Candice Miller offered posters at the National Water Quality Monitoring Conference in Denver, March 25-29 and at the OCLWA Conference in Stillwater, April 3-4.



Cheryl discusses her poster with a conference attendee at the OCLWA Conference



Candice with her poster at the National Water Quality Monitoring Conference

SUBTASK 4.2 PRIORITY WATERSHED EDUCATION PROJECTS

The Blue Thumb Program recognizes two types of priority watersheds. The first type is watersheds identified in the *2014 State of Oklahoma Unified Watershed Assessment (UWA)* (OCC, 2014). The UWA is available at <https://www.ok.gov/conservation/documents/Unified%20Watershed%20Assessment%202014%20%28Report%29.pdf>. In the UWA, waterbodies are ranked according to three sets of variables: severity of threat or impairment, impact of threat or impairment on human health, and restoration potential. The document identifies 50 high priority watersheds in the eastern half of the state and 50 in the western half. These watersheds are known as Category I watersheds. During 2019, Blue Thumb did work in the Little Beaver watershed, part of the larger Waurika Lake-Beaver Creek watershed. The Waurika Lake-Beaver Creek watershed is the highest ranking Category I watershed in the western half of the state. Cheryl Cheadle, the Volunteer Coordinator, participated in the first meeting of the Little Beaver Creek Watershed Advisory Group on June 18. Cheryl will act as an advisor to guide the group's educational outreach efforts in the watershed.

Blue Thumb also considers watersheds in which the local community is mobilized to act as "priority watersheds" even if these watersheds are not identified as Category I watersheds in the UWA. Crow Creek watershed, in Tulsa County is such a watershed. In 2019, we participated in the following meetings and events pertaining to the Crow Creek watershed:



- Crow Creek Meadow Work Day, January 18
- Crow Creek Meadow signage meeting, February 8
- Crow Creek Meadow signage meeting, February 22
- Crow Creek Meadow Work Day, April 5
- Crow Creek Meadow sign dedication, May 10
- Crow Creek Community meeting, June 6
- Crow Creek Meadow Work Day, June 20
- Crow Creek Community exhibit at Brookside Market in Tulsa, July 10
- Crow Creek Community exhibit at Cherry Street Market in Tulsa, July 20
- Crow Creek Community meeting in Tulsa, September 9
- Crow Creek Meadow Work Day, September 13
- Crow Creek Meadow Halloween event, October 31
- Crow Creek Cleanup at Zink Park in Tulsa, November 9

At the request of the Crow Creek Community, we began a major revision of the 2015 Crow Creek Watershed Based Plan (WBP) this year. The revised plan will be submitted for EPA approval in 2020. We have met, and continue to meet regularly with the Crow Creek Community to work on the WBP:

- Crow Creek Watershed Based Plan meeting in Tulsa, July 10
- Crow Creek Watershed Based Plan meeting in Tulsa, October 23
- Crow Creek Watershed Based Plan meeting in Tulsa, November 20



Crow Creek as it flows through Zink Park



Volunteers gather for a picture after a Crow Creek Clean-Up Event at Zink Park



A Crow Creek Community resident displays her new yard sign on loan



Crow Creek supporters at "Meadow of Mayhem," the Halloween outreach event

SUBTASK 4.3 GROUNDWATER EDUCATION/SCREENING PROGRAM FOR WESTERN OKLAHOMA

During a groundwater screening event, our Quality Assurance Officer, Kim Shaw, supervises volunteers as they analyze groundwater samples for alkalinity, sulfate, chloride, nitrate and pH with Hach test kits. Following a groundwater screening, well owners receive their results and are encouraged to contact the Oklahoma Department of Environmental Quality (ODEQ) if their results suggest the need for additional testing. We held the following groundwater screening events in 2019:

- Blaine County Conservation District (CD), April 16
- Harper County CD in Buffalo, September 4
- Creek County CD in Bristow, September 24
- Deer Creek CD in Weatherford, October 15
- Caney Valley CD in Bartlesville, October 24

Results from the groundwater screenings are available upon request.

At the request of the Creek County CD, Blue Thumb facilitated bacteriological testing during their groundwater screening event. Cheryl picked up bacteriological sample bottles and instructions for sample collection from the Tulsa County Health Department prior to the event and delivered the materials to the conservation district. The conservation district distributed the materials to private well owners prior to the groundwater screening event. The day of the event, Rebecca picked up

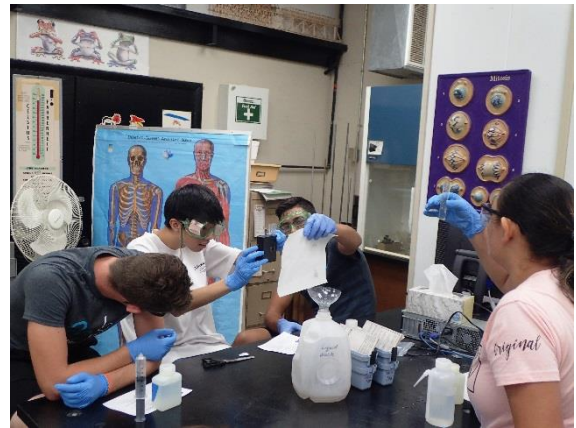


bacteriological samples and transported them on ice to the Tulsa County Health Department for analysis.

In addition, we facilitated two outreach efforts at the Muskogee County CD (June 18) and Nowata County CD (June 20) in cooperation with the Grand River Dam Authority and the ODEQ. The purpose of the outreach events was to provide an easy and free avenue for private well owners affected by flooding to have their drinking water tested for bacteria.



*Blaine County Conservation District
Groundwater Screening Event*



*Students process samples during Harper
County Groundwater Screening Event*



*Volunteers process samples at the Caney
Valley Conservation District Groundwater
Screening Event*



*Rebecca with two GRDA representatives in
front of GRDA's mobile laboratory during
the Nowata groundwater outreach event*



SUBTASK 4.4 BLUE THUMB EFFORTS TO SUPPORT CONSERVATION DISTRICTS

The Blue Thumb program strives to be responsive to the needs of conservation districts (CDs). We partner with CDs to facilitate Natural Resource Days and Outdoor Classrooms and we loan educational equipment to CDs for other outreach events. We facilitate groundwater screenings, provide water quality data on request, and offer Blue Thumb Trainings and Full Circle Citizenship Workshops. We attend CD board meetings to give board members the opportunity to ask questions and seek assistance. We provide Blue Thumb Calendars to CDs to use in their education and outreach efforts. In 2019 we supported CDs in the following efforts:

- Attended Tulsa County CD Board Meeting, January 10
- Attended Creek County CD Board Meeting, January 17
- Attended Oklahoma Association of Conservation Districts State Meeting, February 24-26
- Attended strategic planning meeting at Beaver County CD, March 11
- Groundwater Screening at Blaine County CD, April 16
- Dewey County CD Natural Resource Day, April 24
- Kingfisher County CD Natural Resource Day, April 24-25
- Okmulgee County CD Natural Resource Day, April 25
- Stephens County CD Natural Resource Day, April 25
- Hughes County CD Natural Resource Day, April 26
- North Caddo CD Natural Resource Day, May 1
- Noble County CD Natural Resource Day, May 2
- Pittsburg County CD Fishing Clinic, May 2 (volunteer-led event)
- Murray County CD Natural Resource Day, May 6
- Harper County CD Outdoor Classroom, May 6
- Haskell County CD Natural Resource Day, May 7
- Cotton County CD Outdoor Classroom, May 8
- Pawnee County CD Natural Resource Day, May 8
- Stephens County CD Natural Resource Day, May 9 (volunteer-led event)
- Oklahoma County CD Natural Resource Day, May 13 (volunteer-led event)
- Meeting with Grant County CD to discuss rehabilitation of outdoor classroom, May 14
- Beaver County CD Youth Conservation Day, June 7
- Outreach event for private well owners affected by flooding, Muskogee County CD, June 18
- Outreach event for private well owners affected by flooding, Nowata County CD, June 20
- Facilitated field experiences during the North American Association of Conservation Districts South Central Meeting, July 22
- Harper County CD Groundwater Screening Event, September 4



- Nowata County CD Natural Resource Day, September 18-19 (volunteer-led event on September 19)
- Creek County CD Groundwater Screening Event, September 24
- Pontotoc County CD Outdoor Classroom, October 8
- Craig County CD Environmental Day, October 8
- Oklahoma County CD Natural Resource Day, October 8
- Deer Creek CD Groundwater Screening Event, October 15
- Oklahoma County CD Natural Resource Day, September 23
- Caney Valley CD Groundwater Screening Event, October 24
- Full Circle Citizenship Workshop in partnership with Ottawa County CD, October 24
- Oklahoma County CD Natural Resource Day, October 28
- Garvin County CD Natural Resource Day, October 29-30 (volunteer-led event)
- Gave presentation and provided data interpretation exhibit at OACD Area II Meeting, November 5
- Attended Noble County CD Board Meeting, November 6
- Gave presentation and provided data interpretation exhibit at OACD Area IV Meeting, November 7
- Attended Atoka County CD Board Meeting, November 12
- Gave presentation and provided data interpretation exhibit OACD Area I Meeting, November 13
- Gave presentation and provided data interpretation exhibit OACD Area V Meeting, November 18
- Gave presentation and provided data interpretation exhibit OACD Area III Meeting, November 21
- Attended Okfuskee County CD Board Meeting, December 10



Two students enjoy An Incredible Journey during the Okmulgee County CD Natural Resource Day



Cheryl and Blue Thumb volunteer, Carol Stayr, enjoy a brief breather between presentations of the Storm Sewer in a Suitcase at Stephens County CD Natural Resource Day



Becky demonstrates the stream trailer at the Beaver County CD Youth Conservation Day



Students proudly display their fish print art at an Oklahoma County CD Natural Resource Day



Students explore live aquatic macroinvertebrates during the Dewey County CD Natural Resource Day



Rebecca and Cheryl meet with the Grant County CD secretary and three board members to discuss the rehabilitation of an outdoor classroom



Becky demonstrates the EnviroScape® at an Oklahoma County CD Natural Resource Day

SUBTASK 4.5 REVIEW ACTIVE STREAM MONITORING LIST AND DETERMINE SITE STATUS

Prior to the Volunteer Appreciation Luncheon on December 7, Kim Shaw, the QA Officer, reviewed and updated the 2018 active site list. A site is considered “active” if the volunteer has submitted chemical and observational data at least once in the past 12 months. The concept of “active” sites is useful, but does not perfectly capture volunteer participation. Our method of determining active sites underestimates volunteer effort because we have some volunteers that collect data but fail to turn it in, and some who neglect monthly monitoring, but consistently show up for macroinvertebrate collections, bug picking sessions and fish collections. In 2019 we had 84 sites that met our definition of “active.” Please see Appendix A for a list of active sites, and the months for which we received monitoring data for each monitoring location. Before sites are moved from “active” to “inactive” status, the field representative makes contact with the volunteer and attempts to negotiate any barriers that may make monitoring difficult. We make every effort to encourage and support volunteers to continue or resume submitting data.

BLUE THUMB MEASURES OF SUCCESS

1. Continue at least 75% of existing programs (monitoring and education).

In 2018, Blue Thumb had 89 active monitoring sites in 26 counties. In 2019, Blue Thumb had 84 active monitoring sites in 30 counties. In 2018, Blue Thumb reached at least 11,719 people through 94 events in more than 22 counties. In 2019, Blue Thumb reached over 19,000 people



through approximately 165 events in 42 counties. The method of tracking numbers for education and outreach in the 2018 Annual Report was a little different from the way they were tracked for this report, but regardless of the differences in tracking, more than 75% of existing programs (monitoring and education) were continued. Please see Table 1: Completion of Subtasks for details regarding scheduled versus completed tasks.

2. Continue monitoring active Blue Thumb stream sites and draft data reports on approximately five sites.

Blue Thumb volunteers monitored 84 stream sites in 2019. Volunteers completed six data interpretations which will be made available on the OCC website and the Blue Thumb website after they have passed a quality assurance review.

3. Blue Thumb volunteers will staff exhibits or offer presentations to at least two professional organizations.

Volunteers Beth Landon and Karen Chapman staffed a Blue Thumb exhibit at an “Indoor Outing” of the Oklahoma Native Plant Society on January 9.

Three volunteers (Kurtis Koll, John Harrington and Ted Daniels) presented on aspects of the Blue Thumb Program at the Oklahoma Clean Lakes and Watershed Conference in Stillwater, April 3-4. One of the volunteers, Ted Daniels, brought six of his students who are involved in stream monitoring. The students gave part of the presentation. Seven other Blue Thumb volunteers presented on other topics related to water resources in Oklahoma.

Blue Thumb volunteer Kim Watson gave a presentation at the Tulsa Regional STEM Alliance’s Back-to-School STEM Event on September 19. 1,500 students and teachers attended her presentation.

4. The Blue Thumb Program will provide leadership and support volunteers to use data reports to support at least two watershed events.

Beth Landon, a Blue Thumb volunteer, used data interpretations to develop three academic posters to support the traveling Water/Ways exhibit sponsored by the Oklahoma Humanities Council and the Smithsonian. The Bishop Creek poster was displayed at the Norman Public Library in July and August; the Sandy Creek poster was displayed at the Ada Public Library in September and October; and a poster exploring Ozark streams in northeastern Oklahoma was displayed at the Locust Grove VFW Center in November and December. The subject matter of each poster was pertinent to a watershed near the exhibit location.



5. All subtasks and outputs will be met by projected dates.

All subtasks and outputs were met by projected dates.

TABLE 1: COMPLETION OF SUBTASKS

Subtask #	Outputs Identified in Work Plan	Completed Outputs
4.1.a	Hold at least four new volunteer training sessions across the State to both cultivate new groups and maintain/support existing groups	Four two-day trainings; one Day 1 Training; one Project WET training; one Full Circle Citizenship training; five Mini-Academies for Monitoring, and four Mini-Academies for Education
4.1.b	Work with volunteers to complete data reports/interpretations for the streams on which fish collections have most recently been completed and data has been received	Held two data interpretation workshops; six volunteers submitted data reports
4.1.c	Semi-Annual Reports	Submitted in June 2019 and January 2020
4.1.d	Update and/or recertify Blue Thumb QAPP	Submitted June 2019
4.1.e	Staff and/or volunteers will attend and present at a minimum of two conferences	Volunteers offered three presentations at OCLWA; staff offered seven presentations at six conferences
4.1.f	Blue Thumb Final Report summarizing program activities for CY 2018	Submitted April 2019
4.2.a	Staff or volunteers will participate in or hold an average of at least five education events per month during the project period	Held or participated in approximately 165 educational events
4.2.b	Continue efforts in priority watershed education projects and seek opportunities to expand.	Supported 16 activities in the Crow Creek watershed and one in the Little Beaver watershed
4.3	Target at least two areas or Conservation Districts to conduct groundwater education and screening programs	Facilitated groundwater screenings in five CDs, and flood-related outreach in two additional CDs



Appendix A: 2019 Active Monitoring Sites

Site Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baron Fork: Welling Rd.	X	X	X	X	X		X	X	X	X	X	X
Beaver Ck: N4370 Rd.		X	X					X				
Bird Ck: Rustic Lounge	X			X								
Bishop Ck: Constitution	X	X	X	X	X	X	X		X	X	X	
Bishop Ck: Eastwoods Park											X	X
Bishop Trib	X			X				X				
Black Bear Ck	X	X	X	X		X	X	X	X		X	X
Boomer Ck: 3rd Ave.	X	X	X	X				X	X	X	X	
Boomer Ck: S. Perkins	X	X	X	X		X						
Brookhaven Ck	X					X	X	X				
Cedar Hollow: Nickel Preserve	X	X	X	X	X		X	X	X	X		
Chisholm: NW186th						X		X	X			
Chisholm Ck: Western	X	X	X						X	X		
Chuckwa Creek									X			
Clear Creek	X	X	X	X				X	X	X	X	X
Clear Boggy Creek: Hwy377	X	X	X	X	X	X	X	X	X	X		X
Cloud Ck: Hall's		X										
Cloudy Ck: Glass	X	X	X	X	X	X	X	X	X	X	X	
Coal Creek: Hwy 11			X		X				X	X	X	
Coffee Creek: Hwy 66							X	X	X	X	X	
Coffee Creek: N Sooner Rd.	X	X	X	X	X	X	X	X	X	X	X	
Cow Creek: Hwy 51	X	X				X			X	X		
Crow Ck: Zink Park											X	X
Crutcho Ck: FBC		X	X	X	X	X	X	X	X	X	X	
Crutcho Ck: I40	X	X	X		X	X	X	X	X	X	X	
Deer Ck: Coffee Creek Rd.				X								
Delaware: Camp Simpson			X									
Dog Creek	X		X	X		X	X					
Duck Ck: Myers Park	X								X	X		
East Cache Ck: Big Green		X	X			X					X	
East Cache Ck: Rodgers Lane		X	X			X					X	
Elm Ck: 66th N	X	X	X	X			X		X			X
Elm Ck: Indian Hills Rd.	X	X	?	X				X	X	X	X	
Feather Ck			X	X		X						
Flatrock Creek: Hwy 75	X	X	X	X	X							
Fourmile Creek: Adams Park	X	X	X	X	X	X	X	X	X			



Site Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fred Ck: Evanston		X		X								
Guy James: NW Eubanks	X	X	X			X						
Guy Sandy Creek			X						X	X	X	
Haikey Creek: 121st		X		X		X		X	X			
Haikey Creek Trib: Wolf Ck Park	X	X	X	X	X							
Harlow Ck: Edison	X		X	X	X		X	X	X		X	
Hog Creek	X	X	X	X	X	X	X	X	X			
Lake Ck: Wintersmith Park		X							X			
Little Deep Ck: Weatherford	X	X	X	X	X	X	X	X	X	X	X	X
Little River: Little River Park											X	X
Little Sandy: Hwy99		X	X	X					X	X	X	
Little Wewoka		X	X									
Middle Creek: Buzzard		X			X		X		X	X		
Mill Ck: E1660Rd				X				X	X			
Mingo Creek: 46th		X		X		X		X			X	X
Mooser Creek: Pepsi		X								X	X	
Morris Creek	X	X		X					X			
Mud Creek		X								X	X	
Mustang Creek: Morgan Rd.		X	X						X		X	
Nickel Ck: 91st St.		X		X		X		X			X	X
Northeast Creek		X								X	X	
Okmulgee Ck: 13th	X	X	X	X		X	X	X	X		X	X
Owasso Creek						X	X		X	X	X	X
Rock Ck: Oklahoma St.	X	X	X	X		X		X				
Rock Ck: Rock Creek Rd.	X	X	X	X	X	X	X					
Salt Fork Arkansas											X	
Sanborn-Hazen Ck: Strickland	X	X	X	X			X		X	X		X
Sand Ck: Osage Hills SP	X		X						X		X	
Sans Bois Ck		X	X					X				
Sharps Ck: Grove		X			X			X			X	
Sharps Ck: Silo		X			X			X			X	
Shell Branch	X	X	X	X	X	X						
Soldier Ck: Hwy 66	X	X	X	X	X	X						
Soldier Ck: Reno Ave.											X	
Spring Creek: Fram	X	X	X	X	X	X	X	X	X	X	X	X
Spring Ck: I35	X	X	X	X		X		X	X		X	X
Spring Ck: Martin Park	X	X	X		X							
Spring Ck: ThreeSpring Farm	X	X		X	X		X	X		X		X

