

**Water Quality Monitoring in the Geronimo Creek Watershed and Facilitation of the
Geronimo and Alligator Creeks Watershed Partnership**

Guadalupe-Blanco River Authority
FY2011 CWA Section 319(h)
Project No. 11-06

Quarterly Report Number 10

Covering work accomplished January through March, 2014

April 9, 2014

I. Abstract

Water quality monitoring was continued. Dry weather targeted monitoring for the spring quarter was conducted in March, with five stations being dry. The fourth newsletter, *The Geronimo Flow*, was distributed to stakeholders. Final edits to the 319(h) grant proposal for the Irma Lewis Seguin Outdoor Learning Center (ILSOLC) were made and submitted to TCEQ and a site visit was made to the learning center to facilitate those edits. Multiple planning meetings were held for the purpose of planning the Second Annual Geronimo and Alligator Creek Clean Up. Information about the project was distributed through several methods (newspaper, newsletter, email, phone, and radio). A Smart Growth Workshop was conducted. Planning for upcoming workshops was fully underway (two Homeowner Septic System Maintenance Workshops, Feral Hog Workshop, and a Lone Star Healthy Streams Workshop).

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: GBRA will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners and posted to the project website.

- GBRA prepared the progress report for October through December 2013 and submitted the report on January 15, 2014.

80% complete – On-going

Subtask 1.2: GBRA will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.

- GBRA submitted the invoice for October through December 2013 on January 31, 2014.

80% complete – On-going

Subtask 1.3: GBRA will host coordination meetings or conference calls, at least

quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. GBRA will develop lists of action items needed following each project coordination meeting and distribute to project personnel.

- Many calls and emails were shared between GBRA, Extension, TSSWCB, and Partnership members, to coordinate septic system workshops, planning for the 2014 Clean Up event to be held on April 5, review of newsletter and newspaper articles, submission of revised grant applications (TCEQ), and to coordinate the Smart Growth Workshop held on March 25.

75% complete – On-going

Subtask 1.4: GBRA will continue to host and maintain a website (<http://geronimocreek.org/>) to serve as a public clearinghouse for all project- and watershed-related information. All presentations, documents and results will be posted to this website. The website will serve as a means to disseminate information to stakeholders and the general public. Extension shall contribute content matter for the website as appropriate.

- The Geronimo Creek Partnership webpage was updated with the Partnership meeting notice and other project-related information (project maps) and to post the fourth newsletter.
- Extension and GBRA updated the project web page with meeting materials.
- Extension and GBRA created an online registration form in order for volunteers to register to work at the 2014 Clean Up event scheduled for Saturday, April 5th. Feedback from this online tool greatly facilitated planning for the event.
- Web hits are monitored monthly. Generally, hits average between 600 and 800 hits a month. However, since beginning the outreach campaign for the Second Annual Geronimo and Alligator Creeks Clean Up in February, the hits for February were just over 1,100. The hits for March were 2,168, roughly 3 times the average.
- Data tables updated through January 2014 were posted to the project website.

70% complete – On-going

TASK 2. Quality Assurance

Subtask 2.1: GBRA will develop a QAPP for activities in Task 4 consistent with the most recent versions of EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan.

Consistent with Title 30, Chapter 25 of the Texas Administrative Code, Environmental Testing Laboratory Accreditation and Certification, which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) Standards, shall be required.

All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the TCEQ Surface Water Quality Monitoring Procedures,

Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415) and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416).

- No work was performed under this task in this quarter.

100% completed – On-going

Subtask 2.2: GBRA will implement the approved QAPP. GBRA will submit revisions and necessary amendments to the QAPP as needed.

- No work was performed under this task in this quarter..

60% completed – On-going

TASK 3. Support and Facilitation of WPP Implementation

Subtask 3.1: Extension will continue to employ a Geronimo Creek Watershed Coordinator to engage and facilitate the Geronimo Creek Watershed Partnership. In coordination with GBRA, the Watershed Coordinator will be responsible for the general oversight and coordination of all project activities, be responsible for reporting requirements and directing educational activities, and serve as the primary conduit for interaction with landowners, citizens, and entities to facilitate the implementation of the WPP. The Watershed Coordinator shall successfully complete (or have already completed) the Texas Watershed Planning Short Course. The Watershed Coordinator shall participate in Texas Watershed Coordinator Roundtables and the TSSWCB Southeast and South Central Texas Regional Watershed Coordination Steering Committee meetings, as necessary.

- Major activities facilitated included the quarterly partnership meeting held January 14, 2014, assisting with coordination of the Smart Growth Workshop and the coordination of the Homeowner Septic System classes that will be offered in April.
- Additional tasks completed this quarter include the drafting and production of 3 newspaper articles for publication in two local newspapers. Articles covered soil testing in Ag settings, proper lawn fertilization, and advertisement of the Clean Up event. News articles included in QPR.
- The fourth quarterly newsletter was developed, reviewed, and distributed to stakeholders. Newsletter included in QPR.
- With the completion of the Homeowner Maintenance of Septic Systems classes over, planning and coordination began to bring the classes back in the spring of 2014. Spring classes will be the basic 2-hour class and the 6-hour class that focuses on aerobic systems.
- Extension and GBRA conducted the Smart Growth workshop held March 25, 2014. Numerous phone calls and emails were shared in preparing for this event. Thirty-four attendees heard about the impact of urban runoff in the Geronimo and Alligator Creeks Watershed, the need for green infrastructure, and information on

green structural storm water controls. The workshop ended with a rainfall simulator and site visit.

80% completed – On-going

Subtask 3.2: Extension will facilitate public participation and stakeholder involvement in the watershed planning process, specifically by facilitating meetings of the Partnership Steering Committee (at least quarterly) and Work Groups (as needed) to provide regular updates on the status of monitoring efforts, progress in identifying implementation funding, and movement towards water quality restoration and seek input and recommendations on needed activities. Extension will coordinate meetings, secure meeting locations, prepare and disseminate meeting notices and agendas. Meeting summaries will be prepared and posted to the project website. The WC will provide counties, cities and other partners with updates on progress of implementation of the WPP, if they are unable to regularly attend Partnership Steering Committee meetings.

- Extension produced the fourth newsletter, *The Geronimo Flow*, and distributed it to stakeholders. The newsletter was posted to the project website. Newsletter included in QPR.
- GBRA hosted the quarterly Partnership meeting on January 14, 2014. Extension facilitated the meeting. Extension prepared a press release to advertise the meeting, posted it to the project webpage, posted the meeting to the Seguin-Gazette and New Braunfels Herald-Zeitung community calendars, and emailed the notice and reminders to the Partnership. In an effort to reach more people about the project, Extension purchased 25 thirty-second public service announcements (PSAs) from the Seguin radio station announcing the meeting. As a result, meeting attendance was observed to increase by approximately 30% over the average attendance. Representatives from Texas Parks & Wildlife Department, GBRA, and United States Geological Survey (USGS) presented. It was announced that the first feral hog workshop in the watershed is scheduled for May 23, 2014. Agenda and copies of the presentations done by Extension and USGS are attached.
- Extension began purchasing space on a monthly basis in the Seguin and New Braunfels newspapers, for the purpose of publishing articles to raise awareness of the project, educate readers regarding BMPs that can have a direct impact on water quality, and to inform readers about project highlights. Three articles were published this quarter. Articles this quarter covered fertilizer application in both urban and Ag settings, and advertised the upcoming Clean Up event. Extension and GBRA worked with the new feral hog education specialist, Dan Gaskins, to schedule the first ever Feral Hog Workshop in the Geronimo Creek watershed for May 23.

70% completed – On-going

Subtask 3.3: Extension will assist governmental and non-governmental organizations (i.e., responsible parties in the Geronimo Creek WPP) in identification and acquisition of resources (financial and technical) to enable WPP implementation. Extension will actively seek and pursue funding opportunities and work with partners to develop grant proposals. The WC will work with state and federal agencies, as appropriate, to bring technical and financial resources to the watershed.

- Extension was contacted by GBRA to further assist in answering questions from TCEQ regarding the grant application for the ILSOLC. Extension traveled to the ILSOLC on January 22 for the purpose of a site visit and to meet with some of the board of directors for the ILSOLC. During the visit, measurements of the property were estimated and combined with knowledge gained from ILSOLC board members, the issues with TCEQ were resolved.

70% completed – On-going

Subtask 3.4: Extension will 1) evaluate and track progress toward achieving milestones established in the WPP; and, 2) work with GBRA to assess water quality data collected through the Clean Rivers Program, this project, and other data collection efforts in relation to achieving load reductions. Extension will develop, publish, print, and distribute to stakeholders, a biennial addendum to the Geronimo Creek WPP that describes modifications/updates to goals and milestones, explains new understandings of sources and cause of water quality issues, documents success in achieving goals and milestones, and success in achieving water quality improvement and load reductions. As the WPP will be published in fall 2012, this draft biennial addendum would most appropriately be published in fall 2014. This draft biennial addendum will function as the Final Report for this project.

- Extension continued development and updating the spreadsheets for the purpose of tracking implementation activities. All implementation activities listed in Tables 8.1 and 8.2 are carefully monitored and updated as implementation proceeds.
- Last quarter, Extension and GBRA discussed the need to present an update on the latest water quality data collected from the watershed and present this at the next stakeholder meeting. Extension coordinated with Lee Gudgell of GBRA to present at the January Partnership meeting. Mr. Gudgell summarized the information and presented it to the stakeholders at the January 2014 meeting.
- Updated data sets through January 2014 were posted to the project webpage.

70% completed– On-going

Subtask 3.5: Extension will coordinate education and outreach activities as identified in the Geronimo Creek WPP. GBRA will make presentations on the Geronimo Creek Partnership and WPP and general NPS pollution information to local schools and community organizations. Extension will support, promote, and participate in, as appropriate, any field days, demonstrations, site tours, or education events sponsored by AgriLife Extension, USDA-NRCS, and/or SWCDs for the Geronimo Creek watershed.

- Extension submitted meeting materials and other project-related announcements and information to GBRA for posting to the project web page.
- Extension prepared and distributed press releases for the quarterly partnership meeting.
- Extension created a radio PSA and purchased radio time to air the announcement for the January Partnership meeting.

- Extension partnered with GBRA and John Fisher, a Steering Committee member, to record a Saturday Morning Topic Show at the Seguin area radio station, KWED. Extension traveled to Seguin February 26th to record the show. The show allowed Extension, GBRA, and the Steering Committee member to “tell the story” of how the WPP was needed, developed, and is now being implemented, and how the upcoming Clean Up event is part of that.
- Extension produced the fourth newsletter, *The Geronimo Flow*, and distributed it to stakeholders. The newsletter was posted to the project website. Newsletter included in QPR.
- Extension began purchasing space on a monthly basis in the Seguin and New Braunfels newspapers, for the purpose of publishing articles to raise awareness of the project, educate readers regarding BMPs that can have a direct impact on water quality, and to inform readers about project highlights. Articles were published in January, February, and March. Topics covered fertilization in urban and Ag settings, and advertised for the Clean Up event. Copies of articles included in QPR.
- Planning began for the Second Annual Geronimo and Alligator Creeks Clean Up event scheduled for Saturday, April 5, 2014. Two planning meetings were held in February and three in March. February 14, 2014 - GBRA toured the watershed to assess sites for inclusion in the annual clean up event. Extension and GBRA coordinated extensively with stakeholders for the event. GBRA facilitated the meetings and provided minutes of the meetings to stakeholders. Extension, GBRA, and stakeholders developed an outreach program consisting of fliers that were distributed through email lists, the newsletter, newspaper articles, press releases, and recording for a Saturday morning radio topic show. Also, the project webpage was utilized by creation of an online registration form to track volunteer interest in the event. A copy of the flier and meeting agenda/notes from each meeting included in QPR..
- GBRA worked tirelessly to secure financial donations for the event. Donations this year are double what they were for last year’s event. Donations will be used to purchase event T-shirts, food, and advertising.
- GBRA met with the mayor of Seguin, Don Keil to brief him on the 2014 Clean Up and the other activities of the Geronimo Creek Partnership. John Fisher, the stakeholder on the committee representing Alamo Group, an industry in the watershed also attended the meeting.
- The list of project partners participating in this year’s Clean Up event has grown. The list of financial donors is over a dozen, while the number of volunteers signed up to participate is over 200—well over twice the number that participated in last year’s event. This factor will potentially allow for cleaning well over twice the area as was covered by the event last year.
- March 17, 2014 - Cinde Thomas-Jimenez gave a presentation on the Geronimo Creek to the newly forming Guadalupe County Master Naturalists.
- March 17, 2014 – Debbie Magin attended the Watershed Coordinator’s Round Table facilitated by TWRI and held in Temple, TX.
- March 19, 2014 – Debbie Magin listened to a webinar on pervious pavement in order to gain information on that Best Management Practice will be useful in discussing nonpoint pollution contributions by stormwater.

80% completed – On-going

Subtask 3.6: GBRA will include information about this project in GBRA newsletters (e.g., *River Run*) and Clean Rivers Program publications regarding progress to implement the Geronimo Creek WPP. GBRA will solicit content matter for these publications from Project Partners as appropriate.

- GBRA included a section in the 2014 Basin Highlights Report covering the status and activities of the Geronimo and Alligator Creeks Watershed Partnership. A copy of the article is included in QPR.

80% completed– On-going

Subtask 3.7: Extension will develop, publish, and distribute 4 semi-annual newsletters that are designed to keep landowners and entities informed of ongoing WPP implementation activities, including water quality data collection and progress toward achieving milestones in the WPP. The newsletter shall be distributed as most appropriate to individual landowners and entities in the watershed. Extension will solicit content matter for the newsletters from project partners as appropriate.

- Extension compiled the fourth newsletter, “*The Geronimo Flow*”. The newsletter was distributed via email to stakeholders and posted to a new tab created on the project webpage. Copy of newsletter included in QPR.

70% completed – On-going

Subtask 3.8: Extension will facilitate communication with stakeholders in order to engage the public and affected entities in WPP implementation. Extension will utilize all appropriate communication mechanisms including direct mail, e-mail, the project website, and mass media (print, radio, television). Extension will develop and disseminate general project informational materials, including, but not limited to, flyers, brochures, letters, factsheets, news releases, and other appropriate promotional publications. Extension will develop and utilize a listserv (e.g., <http://listserv.tamu.edu/>) to facilitate direct discussion between stakeholders. Extension will explore the appropriate use of social media (i.e., Facebook) as a stakeholder communication mechanism for this watershed. Extension will solicit content matter for educational materials from project partners as appropriate.

- Extension emailed the steering committee information about the upcoming Partnership meeting, the Smart Growth Workshop, and the upcoming Septic System classes. A press release was released, along with posting the meeting to the community calendars, and notifying local radio.
- The relationship with the Seguin newspaper has grown since Extension began purchasing newspaper space. The sales director ran (at no expense) two free ads for the Clean Up event. Traffic to the project webpage increased roughly 3 fold over average for the month of March.
- Extension partnered with GBRA and a Steering Committee member to record for a Saturday Morning Topic Show at the Seguin area radio station, KWED. Extension traveled to Seguin February 26th to record the show. The show allowed Extension, GBRA, and the Steering Committee member to “tell the story” of how

the WPP was needed, developed, and is now being implemented, and how the upcoming Clean Up event is part of that.

70% completed – On-going

Subtask 3.9: Extension will make deliberate efforts to increase awareness of the WPP and secure implementation support thereof from county and municipal governments throughout the watershed.

- GBRA worked expeditiously to develop and submit the application for funding for an education and outreach grant, “*Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watershed*,” to TCEQ. GBRA and Extension paid a site visit at the ILSOLC on January 22 to make revisions to the proposal. A copy of the proposal and the TCEQ notification letter are included in the QPR.
- Extension and GBRA have been in contact with Seguin and New Braunfels informing them of our assistance if needed to prepare any new grant proposals.

70% completed– On-going

Subtask 3.10: Extension will maintain a spreadsheet of watershed stakeholders and affected parties for use in engaging the public in the watershed planning process. The spreadsheet will be added to based upon previous efforts of Extension in TSSWCB project 08-06. The spreadsheet will represent a diverse cross section of Geronimo Creek landowners, citizens, local businesses, local and regional governmental entities and elected officials, state and federal agencies, and environmental and special interest groups.

- Extension updated the stakeholder email spreadsheet with participant emails obtained from the January Partnership meeting and from requests from the project page. Many of the participants in the Clean Up event have requested that they be added to the email list.
- Extension was contacted by the State Water Quality Specialist with the USDA-NRCS in Temple requesting he be added to the email list. He wants to be more involved.

70% completed – On-going

Subtask 3.11: Extension will attend and participate in other public meetings as appropriate in order to communicate project goals, activities and accomplishments to affected parties. Such meetings may include, but are not limited to, city councils, county commissioners’ courts, Clean Rivers Program Basin Steering Committee and Coordinated Monitoring, local soil and water conservation districts (SWCDs), groundwater conservation districts and other appropriate meetings of critical watershed stakeholder groups.

- Extension submitted materials to be included in the Clean Rivers Program Basin Highlights report, and further proofed versions leading to the final copy. Extension participated in the 2014 Coordinated Monitoring Meeting for the Guadalupe River and Lavaca Coastal Basins the morning of March 20, 2014. Extension presented a project update to the Basin Steering Committee at their

annual meeting that afternoon. A copy of the presentation made by Ward Ling is included in the QPR.

- Extension conference called in to a kickoff meeting with the new district technician on January 14. Extension has exchanged several calls with the technician since that time discussing watershed concerns.

70% completed – On-going

TASK 4. Water Quality Data Collection and Analysis

Subtask 4.1: GBRA will conduct routine ambient monitoring at seven sites once per month, collecting field, conventional, flow and bacteria parameter groups. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over 21 months. The number of samples planned for collection through this subtask is 147. Currently, routine ambient monitoring is conducted monthly at one station by GBRA (12576) through the Clean Rivers Program. Sampling through this subtask will complement existing routine ambient monitoring regimes such that routine water quality monitoring is conducted monthly at eight sites in the Geronimo Creek watershed. GBRA's Regional Laboratory will conduct sample analyses. Field parameters are pH, temperature, dissolved oxygen and conductance. Conventional parameters are total suspended solids, turbidity, sulfate, chloride, nitrate nitrogen, ammonia nitrogen, total kjeldahl nitrogen, chlorophyll-a, pheophytin, total hardness, and total phosphorus. Flow parameters are flow collected by gage, electric, mechanical or Doppler, including severity. Bacteria parameter is *E. coli* enumerated using USEPA Method 1603.

- January 14, 2014 -
 - Routine monitoring at seven sites - CRP monitoring at one site. One site was dry with pools (Alligator Creek at Huber Road (20743) and one was dry- Geronimo Creek at Huber Road (20742).
- February 3, 2014 -
 - Routine monitoring at seven sites - CRP monitoring at one site. One site was dry with pools (Alligator Creek at Huber Road (20743) and one was dry- Geronimo Creek at Huber Road (20742).
- March 17, 2014 -
 - Routine monitoring at seven sites - CRP monitoring at one site. One site was dry with pools (Alligator Creek at Huber Road (20743) and one was dry- Geronimo Creek at Huber Road (20742).
- Due to laboratory equipment failure, TKN was not reported in February. Corrective action report (CAR) has not been completed. The CAR will be submitted with next quarter progress report.
- Due to laboratory error, chlorophyll a and pheophytin was not reported in March. Corrective Action Report included in this progress report.

70% completed – On-going

Subtask 4.2: GBRA will conduct routine ambient monitoring at six sites once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 4.1. The QAPP developed in Task 2 will precisely

identify the sites. The sampling period extends over seven seasons. The number of samples planned for collection through this subtask is 42. Spatial and seasonal variation will be captured in these snapshots of watershed water quality. GBRA's Regional Laboratory will conduct sample analyses.

- March 17, 2014
 - Targeted monitoring at five sites. Five sites were dry. Routine sites (7) collected under dry conditions.

60% completed – On-going

Subtask 4.3: GBRA will conduct biased flow monitoring at fourteen sites once per season under wet conditions, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 4.1. These sites shall be the same as the sites for routine ambient monitoring described in subtasks 4.1-4.2. If a storm event was captured under routine monitoring in subtasks 4.1-4.2, a separate biased flow sample will not be collected under this subtask. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over seven seasons. The number of samples planned for collection through this subtask is 98. Spatial, seasonal and meteorological variation will be captured in these snapshots of watershed water quality. GBRA's Regional Laboratory will conduct sample analyses.

- No wet weather monitoring conducted this quarter.

65% completed – On-going

Subtask 4.4: GBRA will conduct routine groundwater monitoring at up to four sites (e.g., two spring and two wells) once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 4.1. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over seven quarters. The number of samples planned for collection through this subtask is 28. GBRA's Regional Laboratory will conduct sample analyses.

- Routine groundwater monitoring was conducted in this quarter. The Timmermann Springs and two wells were collected (Laubach well and Huber well).

70% completed – On-going

Subtask 4.5: GBRA will transfer monitoring data from activities in subtasks 4.1-4.4 to TSSWCB for inclusion in the TCEQ SWQMIS at least quarterly. Data will be transferred in the correct format using the TCEQ file structure along with a completed Data Summary, as described in the most recent version of the *TCEQ Surface Water Quality Monitoring Data Management Reference Guide*. GBRA will post data from monitoring activities collected in subtasks 4.1-4.4 to the project website in a timely manner. GBRA will submit Station Location Requests to TCEQ, as needed, to obtain TCEQ station numbers for new monitoring sites. Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported. All monitoring data files, data summary reports and data correction request forms will also be provided to

Extension. GBRA will input monitoring regime, as detailed in the QAPP, into the TCEQ CMS.

- Water quality data collected in December 2013 was submitted to the TCEQ SWQMIS on January 22, 2014.
- Water quality data collected in January 2014 was submitted to the TCEQ SWQMIS on March 19, 2014.
- Data tables were updated through January 2014 and posted to the Geronimo Creek webpage.

75% completed – On-going

Subtask 4.6: GBRA will develop a final Assessment Data Report summarizing water quality data collected through Task 4. The Report shall, at a minimum, provide an assessment of water quality with respect to effectiveness of BMPs implemented and a discussion of interim short-term progress in achieving the Geronimo Creek WPP water quality goals. GBRA will summarize the results from Task 4 in the GBRA's Clean Rivers Program Basin Highlights Report and Basin Summary Report. GBRA will provide updates on the results and activities of Task 4 to the Steering Committee.

- No work was performed under this task in this quarter.

0% completed– On-going

III. Related Issues/Current Problems and Favorable or Unusual Developments

- Laboratory error and equipment problems prevented data for chlorophyll a and TKN (respectively) from being submitted in one month of the quarter.
- Two septic system workshops are planned for the end of April.
- Dry weather monitoring was conducted in the quarter.
- The first Smart Growth Workshop was conducted.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

- a. The first Smart Growth Workshop was conducted Tuesday, March 25, 2014. The purpose was to educate municipal officials about nonpoint source pollution and how to integrate low impact development techniques into new and redevelopment projects. Feedback forms were sent out and evaluation of those forms will be completed and integrated into plans for next year's workshop.
- b. Extension, along with GBRA and a whole host of project partners and stakeholders, will conduct the second annual Geronimo and Alligator Creeks Clean Up scheduled for Saturday, April 5th.
- c. Two Homeowner Septic System Maintenance classes are scheduled for April 28th and 29th. One class will be the basic 2-hour class that gives a general overview of all system types, while the other will be a 6-hour class focused on aerobic systems.

- d. Extension will continue publishing monthly newspaper articles and production and distribution of the quarterly newsletter, *The Geronimo Flow*.
- e. Extension will continue to update the web page by coordinating with GBRA.
- f. Extension will continue to assist the Comal-Guadalupe SWCD and the new district technician provide assistance to watershed agricultural producers.
- g. Extension will work with the Lone Star Healthy Streams program to conduct a workshop in the watershed scheduled for June 5th and a rainwater harvesting program scheduled for August 12th.
- h. Extension will coordinate efforts with county extension agents and other extension partners to produce the first Feral Hog Workshop in the watershed, scheduled for May 23rd.

Let's work together to protect Geronimo and Alligator Creeks

using vegetated filter strips

According to the Texas Commission on Environmental Quality (TCEQ) water quality in almost half of the streams, rivers, and lakes in Texas is "impaired". An impaired waterbody has pollutant levels above established standards that limit important uses such as recreation and fishing, or that may be harmful to aquatic life. Unfortunately, two local waterbodies are impaired, Geronimo Creek and Alligator Creek. Both creeks have elevated concentrations of *E.coli* bacteria which create risks for any type of contact recreation that might result in ingestion of water, such as wading and swimming. Monitoring also has found elevated levels of nitrate-nitrogen which can contribute to algal blooms and ultimately, to fish kills.

Fortunately, in 2009 a group of local citizens formed the Geronimo and Alligator Creeks Watershed Partnership. And working together and with state and federal agency support, the Partnership developed the Geronimo and Alligator Creeks Watershed Protection Plan (WPP). The plan identifies potential sources of pollution and provides a basic strategy to restore and protect water quality in Geronimo and Alligator Creeks. The plan and information about on-going activities in the watershed can be found on the Partnership's website at <http://geronimocreek.org>.

To inform the public about practices they can adopt to improve and protect water quality, the Partnership is producing monthly news articles. This month we are focusing on filter strips for agricultural land.

A filter strip is a vegetated buffer positioned between potential contamination sources and a body of water such as a creek, stream, or river (either flowing or typically dry), or a pond or lake. The purpose of a filter strip is to reduce concentrations of pollutants in rainfall runoff. They are effective in limiting the transport of suspended sediment, nutrients, bacteria, and pesticides to adjacent waterways. Filter strips can be installed down slope from field crops, pastureland, livestock pens, equipment and chemical storage areas, and other land areas from which pollutants might originate.

Filter strips reduce contamination of surface water through a variety of mechanisms. As runoff enters the filter strip, velocity decreases allowing suspended sediment to settle out. Some nutrients and pesticides bound to soil particles are removed in this manner. Since more water infiltrates into the soil, dissolved contaminants also are removed. Captured nutrients are utilized by the filter vegetation, while pesticides and other organics are degraded through natural processes.

Slope, soil texture, vegetation, and the flow distribution of runoff all should be considered when siting and designing a filter strip. Slope length and steepness directly affect runoff velocity, and thus infiltration rate. Gently sloping areas are ideal, however, sites with slopes greater than 5%, can be used effectively with proper design. Generally, as slope increases, the width of the filter strip should increase. While there is no minimum or maximum, filter strips often range in width from 25 to 50 feet for slopes between 1-10%.

Soil texture also influences infiltration rate, and soils with greater clay content typically require a wider filter strip to achieve the same amount of pollutant removal compared to sandy soils. Non-woody

species native to the region should be used, but also must be tolerant to any herbicides that may be present in the runoff. Plantings can be a single species or a mixture, but should provide a solid plant cover.

Contaminant removal efficiencies vary based on the characteristics of a given runoff event and the pollutants of concern. Filter strips should be constructed to maintain uniform flow across the width of the strip and limit channelized flow. Removal of pollutants that are dissolved in runoff typically requires a greater filter strip width to achieve desired reductions.

The United States Department of Agriculture Natural Resources Conservation Service (NRCS) and the Texas State Soil and Water Conservation Board (TSSWCB) both offer technical and financial incentives for installation of conservation practices, including filter strips. For information regarding NRCS programs visit www.nrcs.usda.gov. or contact your local USDA-NRCS representative, Bill Finch at 830-379-0930 or william.finch@tx.usda.gov For assistance through TSSWCB programs contact the Comal-Guadalupe SWCD at comalguadalupeswcd@tx.nacdnet.org.

For more information on assistance opportunities in your area, contact your Texas A&M AgriLife County Extension Agent in Guadalupe (830) 379-1972 or Comal Counties (830) 620-3440.

**Let's work together to protect Geronimo and Alligator Creeks...
through soil testing**

According to the Texas Commission on Environmental Quality (TCEQ) water quality in almost half of the streams, rivers, and lakes in Texas is "impaired". An impaired waterbody has pollutant levels above established standards that limit important uses such as recreation and fishing, or that may be harmful to aquatic life. Unfortunately, two local waterbodies are impaired, Geronimo Creek and Alligator Creek. Both creeks have elevated concentrations of *E. coli* bacteria which create risks for any type of contact recreation that might result in ingestion of water, such as wading and swimming.

Fortunately, in 2009 a group of local citizens formed the Geronimo and Alligator Creeks Watershed Partnership. Working together and with state and federal agency support, the Partnership developed the Geronimo and Alligator Creeks Watershed Protection Plan (WPP). The plan identifies potential sources of pollution and provides a basic strategy to restore and protect water quality in Geronimo and Alligator Creeks. The plan and information about ongoing activities in the watershed can be found on the Partnership's website at <http://geronimocreek.org>. All citizens are encouraged to join the Partnership and help improve water quality throughout the watershed.

In addition to elevated bacteria levels, nitrate-nitrogen concentrations in Geronimo and Alligator Creeks also are elevated. When nitrate-nitrogen levels get too high, they can contribute to excessive growth of aquatic plants, algal blooms, and ultimately, to fish kills.

Nitrogen can come from a variety of sources such as human waste (septic systems), animal waste (manures), and inorganic fertilizers. When water runoff occurs due to rainfall or over-irrigation, nutrients including nitrogen can move into the creeks from residential lawns, gardens, golf courses, athletic fields, and agricultural cropland.

Proper management of nutrients, like nitrogen, hinges upon routine soil testing. Areas to be fertilized should be tested annually to determine the proper rate of application. Applying too much fertilizer can actually harm plants and the environment, and also wastes money.

How much do you need?

Soil testing measures two pools of nutrients in the soil: the native supply and fertilizer carryover. Native nutrients in a soil are the result of soil mineralogy and organic matter recycling. Typically, heavier soils like loams and clays have a greater native nutrient supply because they formed from minerals more rich in nutrients like potassium, calcium, and magnesium. Decomposition of organic matter both at the surface and below ground also releases nutrients into the soil.

When fertilizer is applied and not taken up by the lawn or crop, carryover nutrients can remain in the soil in a plant available form until the next season. This is particularly true for nutrients like phosphorus and potassium which are relatively immobile in the soil. And while nitrogen can

leach or volatilize under certain conditions, if rainfall and crop growth are limited, nitrogen also can be stored in the soil for extended periods. Research has shown carryover nutrient levels, particularly following a drought or other type of event limiting plant growth can be substantial, and can supply part or all of plant needs when growing conditions improve. Given the fact many parts of the area recently faced or currently are facing significant drought conditions, the potential for carryover may be substantial where rainfall was insufficient to utilize applied fertilizer.

In many residential lawns and landscaped areas, grass clippings are not removed by bagging the grass. As a result, most of the nutrients used to grow the grass are returned to the soil and become available through organic matter decomposition. The same is true for agricultural grazing lands. Over 80% of the nutrients consumed by livestock in forages are recycled back to the soil in urine and feces. Over time, the nutrient status of the soil can increase due to fertilizer application and nutrient recycling so that much less fertilizer must be applied to produce the crop. In contrast, when hay is baled and removed, and likewise when lawn grass clippings are bagged and removed, more nutrients are removed and must be replaced by fertilization.

Test your soil

Now is the best time of year to test your soil. Detailed information about how to collect a sample can be found on the back of soil sample submission forms on the website:

<http://soiltesting.tamu.edu/webpages/forms.html>.

For homeowners, a soil sample should be submitted for each type of "management area". A management area is a zone with similar soil that is used to grow the same types of plants and has been treated similarly across the entire area—for example, a lawn or garden is a management area, and each should be tested separately. Soil cores should be collected from a minimum of 10-12 soil locations within the area to be tested and placed in a clean plastic bucket. Each core should be approximately 6 inches in length, from the surface downward, and about 1-2 inches wide and thick. Soil probes can be purchased to make sampling easy, but a shovel also works fine as long as each sample is uniform. Mix the 10-12 cores collected in a management zone thoroughly, remove any roots or plant material, and place about one pint of the mixture into a sturdy plastic or paper bag suitable for shipment to the laboratory.

For the farmer or rancher, submit one sample for every 10 to 40 acres. On these larger land areas, 12 to 15 individual cores should be taken for each field or management area. A separate sample should be taken for areas with different soil types, land use (grazing vs. hay), or cropping history. Avoid sampling gullies, field depressions, terraces, old roadways, feeding areas, or other unusual areas.

Soil samples can be sent to the Texas A&M Soil, Water and Forage Testing Lab in College Station, or the private laboratory of your choice. A routine analysis at the A&M Lab is \$10 per sample, and will provide you with valuable information about soil pH, soil salinity, and nutrient levels in your soil. Most importantly, the soil analysis provides specific recommendations on

which nutrients are needed, and based on that information, how much fertilizer should be applied. For many nutrients, little or no fertilizer may be needed. In fact, when excess nutrients are added they can be harmful to plant growth and hurt the environment. By having a soil test, you can select the best fertilizer to meet plant needs and avoid under- or over-application.

Testing Manures and Composts

While inorganic fertilizers have a label with the product's nutrient content, most organic soil amendments, such as compost and manures, do not. If organic materials are to be added routinely or in larger amounts, a nutrient analysis is needed to determine the appropriate rate. The A&M AgriLife Extension Laboratory also can test manures, composts, and other organic amendments to support sound nutrient management.

Soil testing is an important best management practice that can help homeowners produce a nice lawn, landscape, and garden, help agricultural producers maximize yields and profits in row crop and hay production, and at the same time help anyone applying fertilizer protect the environment.

Please join us for the Second Annual Geronimo and Alligator Creeks Clean Up scheduled for Saturday, April 5, 2014. For more information, contact Ward Ling at 979-845-6980 or wling@ag.tamu.edu or go to the project webpage www.geronimocreek.org.

The Geronimo and Alligator Creeks Project

By Ward Ling, Geronimo and Alligator Creeks Watershed Coordinator

According to the Texas Commission on Environmental Quality (TCEQ) water quality in almost half of the streams, rivers, and lakes in Texas is "impaired". An impaired waterbody has pollutant levels above established standards that limit important uses such as recreation and fishing, or that may be harmful to aquatic life. Unfortunately, two local waterbodies are impaired, Geronimo Creek and Alligator Creek. Both creeks have elevated concentrations of *E. coli* bacteria which create risks for any type of contact recreation that might result in ingestion of water, such as wading and swimming. Monitoring also has found elevated levels of nitrate-nitrogen which can contribute to algal blooms and ultimately, to fish kills.

Fortunately, in 2009 a group of local citizens formed the Geronimo and Alligator Creeks Watershed Partnership. And working together and with state and federal agency support, the Partnership developed the Geronimo and Alligator Creeks Watershed Protection Plan (WPP). The plan identifies potential sources of pollution and provides a basic strategy to restore and protect water quality in Geronimo and Alligator Creeks. The plan and information about ongoing activities in the watershed can be found on the Partnership's website at <http://geronimocreek.org>.

Plan Development

The Geronimo and Alligator Creeks WPP was developed by and for local citizens with extensive stakeholder input throughout the process. Two public information meetings were held in 2009 to form the Partnership and organize a 25 member Steering Committee. Over the next 29 months, the plan was developed through 12 Steering Committee meetings, 2 watershed tours, 9 work group meetings, and 2 public comment meetings. All meetings were advertised and the public was encouraged to participate. Texas A&M AgriLife Extension Service and the Guadalupe-Blanco River Authority helped the Partnership prepare the plan with funding from the Texas State Soil and Water Conservation Board.

The Geronimo and Alligator Creeks WPP was completed and approved by the Steering Committee in August 2012, and was officially "accepted" by the Environmental Protection Agency on September 13, 2012. EPA acceptance is critical because it allows the watershed to receive special federal funding to support plan implementation.

What Has Happened So Far

Since fall of 2012, implementation of the WPP has been actively underway. All implementation activities are voluntary, so individuals and businesses can identify actions that fit them best. In many cases, simple changes in habits or actions, when adopted by everyone involved, can make a big difference.

One great example of community action was the first Annual Geronimo Stream Cleanup on April 6, 2013. Over 100 local groups and citizens participated. Volunteers collected 2,960 pounds of refuse including 110 bags of trash, 26 tires, and large items such as stoves, air conditioners, and car batteries.

For some efforts, funding is essential. And already, the Partnership has obtained over \$748,000 in state and federal funding to help the watershed. These funds are targeting specific needs such as removing failed septic systems, helping farmers and ranchers implement water quality practices, and eliminating feral hogs. More information about these efforts will be in future articles.

Getting Involved

Public involvement is essential to improve and protect water quality in Geronimo and Alligator Creeks. The “public” includes every individual citizen, landowners, businesses, and city and county officials. And to get more people involved, we will be publishing monthly articles in the Seguin Gazette and New Braunfels Herald-Zeitung. The purpose is to provide information about the watershed, on-going activities, and recommendations on how to better manage potential sources of bacteria and nutrients. When you see these articles, pass them on to friends and neighbors.

One of the best ways for you to get involved is by becoming an active member of the watershed Partnership and participating in quarterly Partnership meetings. These meetings provide important updates on current activities and offer great opportunities to share ideas for improving water quality in the watershed. The next partnership meeting is scheduled for January 14, 2014 at the GBRA River Annex, 905 Nolan Street, in Seguin starting at 5:30 pm. In the meantime, you can contact Ward Ling (Project Manager) at 979-845-6980 or by e-mail at wling@ag.tamu.edu or Debbie Magin, Director of Water Quality Services/Regional Laboratory at 830-379-5822 or dmagin@gbra.org. And don't forget to visit the watershed's webpage at <http://www.geronimocreek.org/> to learn more.

Remember, your watershed is counting on you. Let's work together to protect Geronimo and Alligator Creeks and all your local water resources.

The Geronimo Flow

February 2014



Your Newsletter

The Geronimo and Alligator Creeks Watershed Partnership was formed in 2010 to restore and protect water quality in the Geronimo and Alligator Creeks Watershed due to elevated levels of bacteria and nitrate-nitrogen. The Partnership completed a Watershed Protection Plan in 2012 and is now working toward full

implementation. The purpose of this newsletter is to inform and engage local stakeholders in helping to improve and protect the quality of water in Geronimo and Alligator Creeks. For more information about the project visit our website: www.geronimocreek.org

Second Annual Clean Up Event

Planning is in full swing for the second annual Geronimo and Alligator Creeks Clean Up event. The event is scheduled for Saturday, April 5th from 9 am till noon, and volunteers can meet at either the Navarro High School parking lot, Parker Lumber Supply parking lot, or the New Braunfels Regional Airport for free breakfast tacos, event T shirts, supplies, and instructions to local clean up locations. An [online registration form](#) is available, and we ask that you register in advance in order for adequate supplies to be made available for the event.

Last year's event involved over 100 volunteers cleaning up 8 locations for a total of nearly 3,000 pounds of

trash and debris removed from the creek area. Materials collected last year ranged from typical roadside trash like food wrappers, cans, and bottles to large items such as a stove and air conditioner, tires, rolls of carpet, and ironically, a toilet. This year's event is looking to be even bigger and better.

Individual citizens are becoming involved as well as volunteer teams forming from Alamo Group, Continental, HEB's Seguin store, King Ranger Theater, Seguin High School, Spirit of Joy Lutheran Church, TLU, Parker Lumber, and others.

Sponsorships are available, which will go towards advertising, food, and supplies. All financial

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The Alamo Group employee team at the 2013 Clean Up.



Volunteers unloading trash removed from the creeks during the 2013 Creek Cleanup Event.

contributions will stay local. If you are interested in being a sponsor, [click here](#) to be taken to the information page. Sponsors will be noted in press releases, and depending on level of contribution, can have their name and logo printed on the special event T-shirts. Sponsoring does not have to be a financial donation, but can

take the form of a donation of needed supplies (gloves, bags, etc), breakfast food, bottled water, or other necessary items.

To register, [click here](#) and for more information visit the [project webpage](#), or contact Ward Ling at 979-845-6980 or wling@ag.tamu.edu

Welcome Joe McIntosh

Joe McIntosh is a newly hired District Technician for the Comal-Guadalupe Soil and Water Conservation District (SWCD). The SWCD was awarded a grant from the Texas State Soil and Water Conservation Board to hire a technician who can assist farmers and ranchers in developing Water Quality Management Plans (WQMP) for their individual operations. The grant also provides financial incentives to help producers implement approved practices.

Nutrient and bacteria loading from agricultural operations are identified in the Geronimo and Alligator Creeks WPP as potential sources of pollution in area creeks. A site specific WQMP is developed by working with a land owner to identify, design, and implement practices that will protect water resources. The plan includes

appropriate land treatment practices, production practices, management measures and technologies.

Examples of key practices include prescribed grazing, fencing, watering facilities, pipelines, wells, grassed waterways, pasture/hayland/rangeland planting, riparian buffers, filter strips, and others.

There is no cost to the landowner for development of the WQMP.

However, there may be costs for implementing certain practices, but financial assistance is available in most cases.

If you need assistance or are interested in learning more, you can contact Mr. McIntosh at (830) 379-0930 x107, or stop by the office at 3251 N. Hwy 123 Bypass in Seguin.

National Groundwater Awareness Week March 9 -15

Just as you check your furnace or smoke detector batteries seasonally, spring is a good season to have an annual water well checkup before the peak water use season begins, according to the National Ground Water Association (NGWA).

An annual checkup by a qualified water well contractor is the best way to ensure problem-free service and quality water, says the NGWA.

Also, preventative maintenance usually is less costly than emergency

A 1 hour training session for private water well owners is scheduled for April 9, 2014 in San Marcos. This is an opportunity for well owners to have their water samples screened for fecal coliform bacteria, nitrates, and high salinity. Go to <http://twon.tamu.edu/well-informed/> for more information.

maintenance, and good well maintenance — like good car maintenance — can prolong the life of your well and related equipment. NGWA further recommends you test water whenever there is a change in taste, odor, or appearance, or when the system is serviced.

Wells can provide high-quality drinking water, and about half the U.S. population receives its drinking water from wells. But with well ownership comes the responsibility of keeping the water well in good working order. A check of your well by a qualified water well contractor may include:

- A flow test to determine system output, along with a check of the water level before and during pumping (if possible), pump motor performance (check amp load, grounding, and line voltage), pressure tank and pressure switch contact, and general water quality (odor, cloudiness, etc.).
- An inspection of all well equipment to assure it is sanitary and meets local code.
- A test of your water for coliform bacteria and nitrates, and anything else of local concern. Other optional tests are those for iron, manganese, water hardness, sulfides, and other water constituents that cause problems with plumbing, staining, water appearance, and odor.

NGWA also recommends that well owners:

- Keep hazardous chemicals, such as paint, fertilizer, pesticides, and motor oil far

away from your well, and maintain a "clean" zone of at least 50 feet between your well and any kennels and livestock operations.

- Maintain proper separation between your well and buildings, waste systems, and chemical storage areas.
- Periodically check the well cover or well cap on top of the casing (well) to ensure it is in good repair and securely attached. Its seal should keep out insects and rodents.
- Keep your well records in a safe place. These include the construction report, and annual water well system maintenance and water testing results.

For more information, visit the NGWA website:

<http://www.ngwa.org/Pages/default.aspx>

or the Texas Well Owner Network website:

<http://twon.tamu.edu/>

If you want to have your water tested, it is recommended that you use a National Environmental Laboratory Accreditation Conference (NELAC) certified lab, such as the GBRA Regional Lab in Seguin. [Click here](#) for a listing of NELAC accredited labs in Texas. For pricing information for your private water well samples at the GBRA lab, go to <http://www.gbra.org/lab/drinkingwater.aspx>

Do you have something you would like to contribute to the newsletter? Or, would you like to see us provide information on a particular topic? Suggestions can be sent to Ward Ling at wling@ag.tamu.edu or call 979-845-6980.

Newspaper Articles

In our continuing effort to increase public awareness and involvement in implementing the Geronimo and Alligator Creeks WPP, we began publishing monthly educational articles in the Seguin Gazette and New Braunfels Herald-Zeitung last year. With funding from the Texas State Soil and Water Conservation Board, the plan is to provide local readers with information about the watershed and water quality concerns, and recommendations on how to better manage potential sources of pollution such as bacteria

and nutrients. So far, articles have touched all three potential pollution source categories: urban, agriculture, and wastewater nonpoint sources. If you have missed any of these articles, you can access them from the project webpage under the Newsletter tab. Through this process, we hope to reach and engage a broader audience across the watershed.

When you see these news articles, please be sure to pass them on to friends and neighbors!

Septic System Workshops

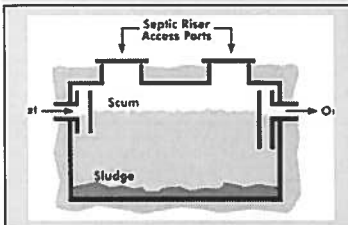
The second round of Homeowner Maintenance Septic System workshops is scheduled for April 28th and 29th. The first classes offered in November of last year were so successful that we are bringing them back with a variety of classes to best fit your needs.

The class on Monday, April 28th runs from 6 pm to 8 pm at the GBRA River Annex at 905 Nolan Street in Seguin and will cover basic operation and maintenance for conventional and aerobic systems, as well as explaining how activities in the home impact septic systems. This 2-hour course provides answers to the most frequently asked septic system questions, including when to pump out a tank and what can and cannot go down the drain.

The class on Tuesday, April 29th runs from 8:30 am to 3:30 pm at the NBU Service Center, 355 FM 306 in New Braunfels. This class will cover much of the same material as the 2 hour class, but will go into more depth on aerobic system operation and maintenance.

The classes are free, however seating is limited. Contact Ward Ling at (979) 845-6980 or wling@ag.tamu.edu to make your reservation.

For more information about septic systems, visit the project webpage [septic system tab](#) for helpful fact sheets and for a link to the online modules that cover proper operation of septic systems and factors that can contribute to system failure.



Pumping out a septic tank should be a regular part of your maintenance activities.

Smart Growth Workshop

A Smart Growth Workshop has been scheduled for Tuesday, March 25th from 8:30 am to 3:00 pm at the GBRA River Annex at 905 Nolan Street in Seguin. The goal of the workshop is to help decision makers minimize the impacts of nonpoint source pollution in their communities.

Topics addressed in the workshop will include:

- Linkages between land use types, water quality, and community character.
- Reducing storm water runoff volume and improving water quality through use of Low Impact Development (LID) techniques such as use of permeable pavements, rain gardens, vegetated swales, “curbless” streets, and others to enhance flood control.

The workshop will be a combination of in-class presentations and outdoor demonstrations.

Dr. Fouad Jaber, Texas A&M AgriLife Extension Specialist in Integrated Water Resources Management, will explain how different Smart Growth techniques can help mitigate the harmful effects of urbanization on stormwater volume and water quality. The workshop is hosted by GBRA and AgriLife Extension as part of implementation of the Geronimo and Alligator Creeks Watershed Protection Plan.

The workshop and catered lunch are free, however, capacity is limited and you are asked to register in order to reserve your seat. Also, please feel free to pass this invitation to others who might have an interest in attending. If you have any questions about the workshop or want to register, contact Ward Ling at 979-845-6980 or wling@ag.tamu.edu

Lawn Fertilization

Fertilizer Selection

To grow properly, all plants need essential nutrients. Those that are typically needed in the greatest amounts are nitrogen, phosphorus, and potassium. While many different types of fertilizers are sold, the best fertilizer for your lawn is the one that contains the ratio of these nutrients recommended by your soil test results. Remember that each different area (lawn, garden, flower beds) needs a separate soil test.

All fertilizer packages must have a

label indicating the nutrient levels the product contains. The numbers listed—known as the guaranteed analysis—represent the percentages (by weight) of primary nutrients (nitrogen, phosphorus, potassium), secondary nutrients (calcium, magnesium, sulfur) and micronutrients (boron, copper, iron, manganese, zinc) in the fertilizer. Some bags display the primary nutrients in large numbers separated by a dash, such as: 15-5-10. This indicates the product contains 15% nitrogen, 5% phosphorus, and 10%

This publication was developed with funding support from the U.S. Environmental Protection Agency through a Clean Water Act §319(h) Nonpoint Source grant administered by the Texas State Soil and Water Conservation Board



potassium. However, it is always important to carefully read the full written label to know and understand all the product contains. Label information will allow selection of the best product and enable calculation of the appropriate rate of application.

Depending on the soil type and fertilization history of an area, some soils already may have an adequate supply of some nutrients. Soils often have a natural supply of many nutrients due to the minerals they contain, such as calcium, magnesium, and potassium. Routinely fertilized lawns and gardens often accumulate phosphorus over time. Thus, fertilizers should be carefully selected to provide only those nutrients that are recommended by the soil test. Excess levels of some nutrients, particularly nitrogen and phosphorus, can create nutrient imbalances in the soil that are harmful to plants. In addition, excessive nutrient levels in the soil can move off lawn, landscape, and garden areas in runoff and pollute area creeks and rivers. Elevated levels of nitrogen are a concern in Geronimo and Alligator Creeks, and fertilizer is one of the potential sources.

Soil test results include a recommendation for the number of pounds of each needed nutrient to apply per 1,000 square feet. The number of pounds of fertilizer needed will depend on the product's guaranteed analysis and the recommended application rate. For example, if your soil test recommends applying 1.0 pound of nitrogen per 1,000 square feet and the fertilizer bag nitrogen analysis is 15%, then you would apply 6.6 pounds of fertilizer per 1,000 square

feet ($1.0 / 0.15 = 6.6$). Alternatively, if the nitrogen analysis on the fertilizer bag is 29%, 3.4 pounds of fertilizer would be needed per 1,000 square feet to achieve the 1 pound of nitrogen applied. As you can see, the nitrogen content of the fertilizer greatly influences the rate of application. For more information, and access to a rate calculator go to <http://aggie-turf.tamu.edu/answers4you/fertilization.html>.

Calculate the Total Amount of Fertilizer Needed

To determine the total amount of fertilizer needed for each management area (yard, beds, garden), the size of each area must be calculated. For example, if your lawn is square or rectangle in shape, simply multiply the length times the width to determine total area (e.g., 30 feet x 50 feet = 1500 square feet). Be sure to subtract out all non-vegetated areas (sidewalks, driveway). If your lawn is odd-shaped, you may need to divide it into sections, calculate the square footage of each, and add these together. Keep and use the calculations for each area to determine the amount of fertilizer that will be applied there.

Divide the total square feet for a management area by 1,000, then multiply that number times the pounds of fertilizer needed per 1,000 square feet. For example, for a 5,500 square foot lawn requiring 6.6 pounds of fertilizer per 1,000 square feet approximately 36 pounds of fertilizer will be needed for the entire lawn ($5,500 / 1,000 = 5.5$; then $5.5 \times 6.6 = 36.3$ pounds of fertilizer). If the front yard represents 2,500 square feet then $2.5 \times 6.6 = 16.5$ pounds of the fertilizer will be applied there. The remaining 19.8

Upcoming events

- **Smart Growth Workshop March 25 from 8:30 am till 3 pm at the GBRA River Annex.**
- **Second Annual Geronimo and Alligator Creeks Clean Up on Saturday, April 5 from 9 till noon.**
- **Homeowner Maintenance of Septic Systems Workshops April 28 and 29.**
- **First Feral Hog Workshop in the Alligator and Geronimo Creeks Watershed May 23 at the Big Red Barn in Seguin.**



pounds (36.3 – 16.5) will be applied in the other yard areas.

Spreader Adjustment

Poor fertilizer distribution due to an improperly adjusted spreader is a common problem, and can result in uneven color, poor plant growth, and water pollution. There are two options to ensure proper application rate. The simplest method is to reduce the spreader application rate to a low level that will require several passes (3-4) across the area. Make alternating passes perpendicular to each other to ensure uniform distribution. The second and most accurate option is calibrate the spreader using catchments to capture samples of test passes. Adjust the setting on your spreader to apply fertilizer at the recommended number of pounds per 1,000 square feet. This can be difficult to determine sometimes, depending on the spreader manufacturer. If you are having difficulty determining the rate, a detailed description of this method can be found at <http://aggie-turf.tamu.edu/aggieturf2/calibration/calibration.html>. Alternatively, some companies provide spreader

settings that match their products. Remember, different management areas may require different fertilizers and proper spreading rate must be considered for each one.

Application Timing

The best time to fertilize depends on the type of plants that will be grown. In most all cases, it is best to wait to fertilize until the plants are actively growing and able to use the fertilizer. For warm season lawn grasses, the first nitrogen application should be made after the grass has greened up and has required mowing at least two times. If you fertilize too soon, you'll just be feeding the weeds and wasting fertilizer.

A few final words of advice: don't fill the spreader while on the lawn—spills can burn the grass; always be moving when you open the spreader gate and close the spreader gate when making sharp turns to avoid over application; sweep up any over-spread that lands on sidewalks or driveways; and, don't apply right before a rain—heavy rainfall can wash the fertilizer off your landscape and into the storm drain and creek.

Next Partnership Meeting

The Geronimo and Alligator Creeks Watershed will not meet this quarter, but instead invites everyone to participate in the Second Annual Geronimo and Alligator Creeks Clean Up on Saturday, April 5th from 9 am till noon. Come out for a great time of community service, free breakfast tacos, supplies, and special event T-shirts. Your contribution of time and energy will result in cleaner creeks and a good feeling inside.

Be sure to use the [online registration](#) form in order for us to plan accordingly.

Come find out how you can get involved. We hope to see you there! For more information contact Ward Ling at 979-845-6980 or wling@ag.tamu.edu

Geronimo and Alligator Creeks Watershed

Partnership Meeting

6 pm Tuesday, January 14, 2014
GBRA River Annex

Welcome and Introductions

- Debbie Magin, GBRA

Texas Parks & Wildlife Department Mussel Watch Program

- Marsha May, Texas Parks & Wildlife Department

Latest Water Quality Data Summary of Geronimo Creek

- Lee Gudgell, GBRA

Isotope Study on Origin of Nitrates in Groundwater

- Rebecca Lambert, United States Geological Survey

Planning discussion for the 2014 Creek Cleanup Event

Implementation Updates and Announcements

- Feral Hog Workshop, May 23 at The Big Red Barn
- Nonpoint Education for Municipal Officials Workshop March 25th



The Geronimo and Alligator Creeks Watershed Protection Plan



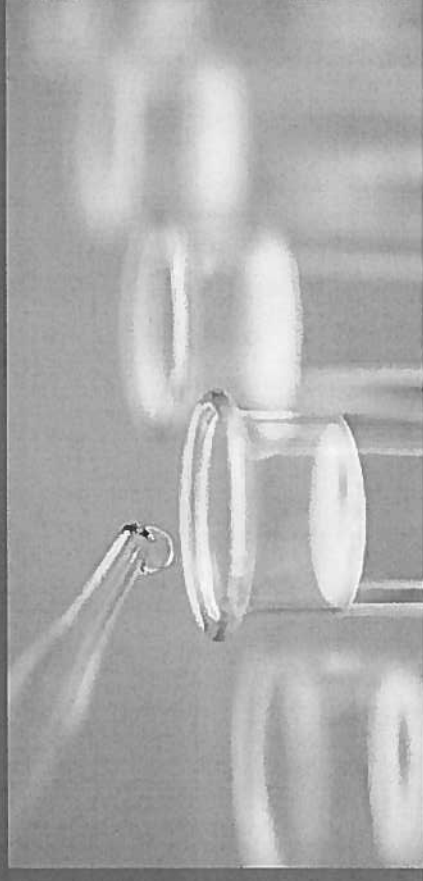
Ward Ling

Texas A&M AgriLife Extension



Water Quality

- Geronimo Creek was listed on the 2006 303(d) list for not supporting its contact recreation use due to elevated bacteria concentrations
- Geronimo Creek is also listed for nutrient enrichment



What is the Geronimo and Alligator Creeks Watershed Protection Plan?

- A community-driven management plan that uses the watershed approach to solve complex water quality problems
- The purpose is to restore and protect the creeks
- It was developed and managed through partnerships among federal, state, county and local groups and organizations
- **It relies heavily on stakeholder involvement at the local level**

New Field Technician

- Joe McIntosh is the new Field Technician hired by the Comal-Guadalupe SWCD to assist agricultural producers develop Water Quality Management Plans for their operations

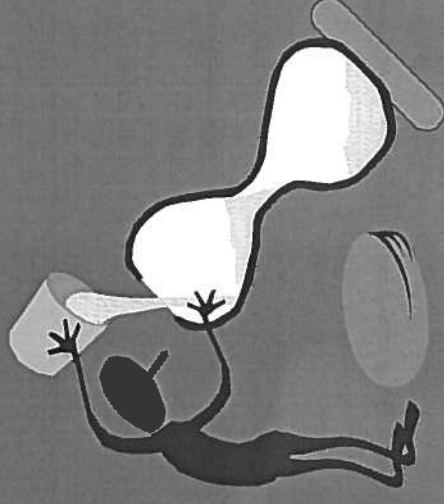
Feral Hog Workshop

- May 23, 2014 from 8:30am to 4pm
The Big Red Barn
390 Cordova Road
Seguin



Events for 2014

- Quarterly Partnership meetings
- Feral Hog Workshop May 25th
- Septic system homeowner workshops April 28th and 29th
- Quarterly newsletter
- Low Impact Development Workshop May 25th
- Second Annual Creek Clean Up April 5th



Second Annual Creek Clean Up

- Last year's event focused on 7 locations
- Geronimo Creek in the Oak Springs Subdivision
- TLU sampling location @ FM 20
- Geronimo Creek at Laubach Road
- Unnamed tributary at Laubach Road
- Geronimo Creek at Walnut Street
- The Irma Lewis Seguin Outdoor Learning Center
- Creekside detention pond
- Alligator Creek at FM 1102/Hunter Road/Conrads Road

Support

- The event involved approximately 100 volunteers
- Collected almost 3,000 pounds of trash
- The Partnership received support from:
 - Cities of New Braunfels and Seguin, Continental Corporation, Alamo Group, Guadalupe County Commissioner Seidenberger, Thrivent Financial for Lutherans, Geronimo Creek Resort, and many citizens



First Annual Creek Clean Up

- Clean Up occurred on April 6th
- Volunteers met at Navarro HS in Geronimo and at the New Braunfels Airport
 - Crews received instructions, safety talk, supplies, breakfast tacos
 - Crews were sent out to collect trash
 - Left trash and reusable supplies at cleanup sites
 - Trailer crews collected trash and hauled it to the NB Airport where large dumpsters were located, courtesy of NB Solid Waste Services

Clean Up Locations

- Geronimo Creek at the Seguin Outdoor Learning Center
- Geronimo Creek at Walnut Street
- Geronimo Creek along the Oak Springs Subdivision
- Geronimo Creek at FM 20
- Unnamed tributary at Laubach Road
- Geronimo Creek at Laubach
- Stormwater detention pond behind Creekside
- Alligator Creek at FM 1102/Hunter Rd/Conrads Rd

Sponsorships

- Carolyn Bading
- City of New Braunfels (donation and disposal services)
- City of Seguin
- Debbie Magin
- Geronimo Creek Retreat
- Guadalupe County Commissioner Greg Seidenberger
- Thrivent Financial for Lutherans



Volunteers

- Alamo Group
- Continental Corporation
- TLU students
- Navarro HS students
- Seguin HS students
- City of New Braunfels
- City of Seguin
- Seguin Outdoor Learning Center
- Watershed Citizens

Continental Crew





Before



After



Alamo Crew





Seguin Outdoor Learning Center



Texas Lutheran University Crew



Navarro High School Crew



Unloading Trailers



Trash Totals

- 2,960 pounds of trash (110 bags)
- 26 tires
- Large items like a stove, air conditioner, brush, and lumber
- Car battery
- Toilet
- Disposal/recycling of collected materials was provided free of charge by the City of New Braunfels

How can you help with the clean up day?

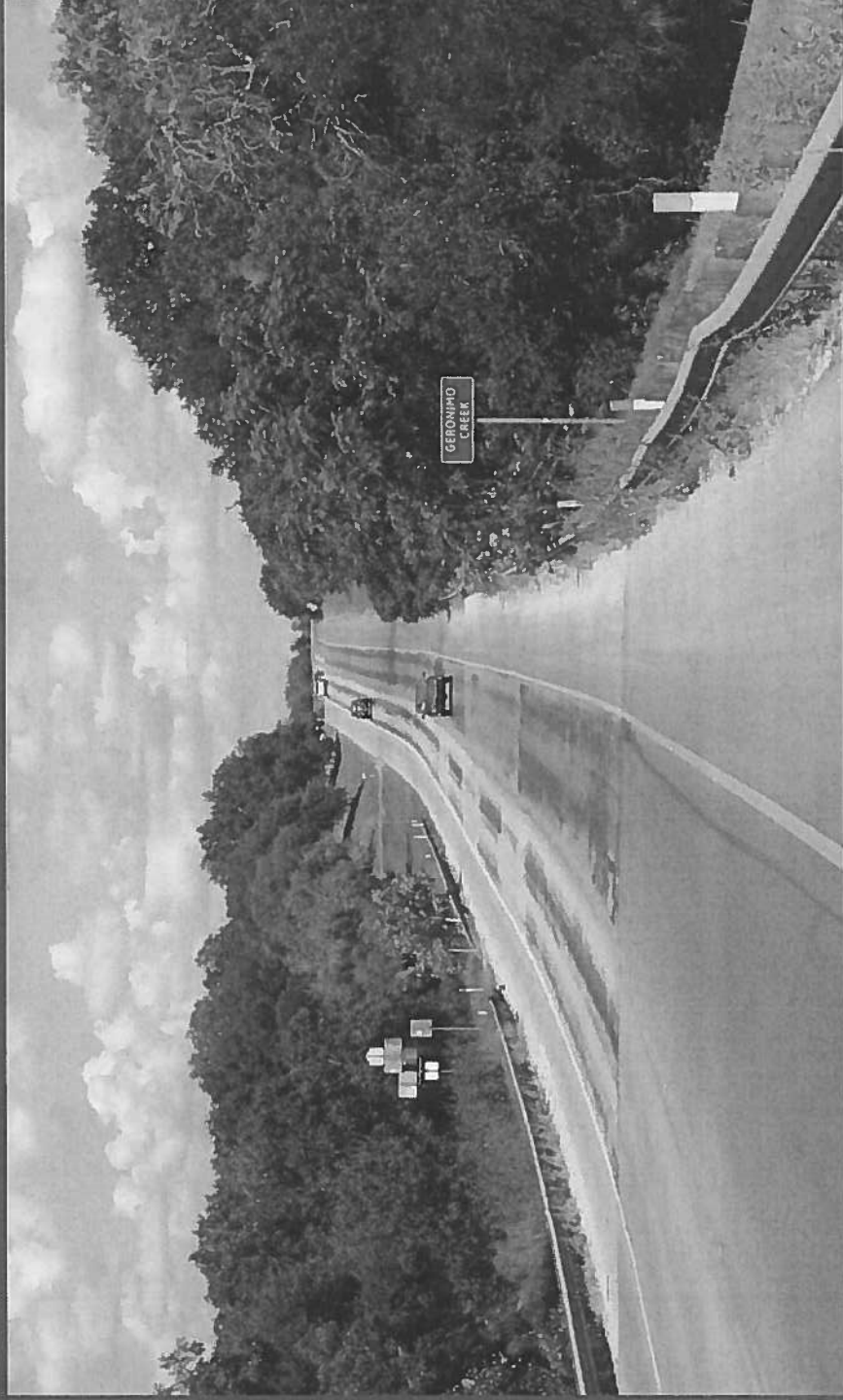
- Sign up to be on the organizing committee
- Sign up to be on a clean up crew
- Help us spread the word and advertise
 - Forward the announcement in the next issue of *The Geronimo Flow* to friends and neighbors
 - Post information about the event
- Show up!!!

How do you get involved in the project?

- Go to www.geronimocreek.org to sign up for our email list
- Receive the quarterly newsletter, news on current events, trainings, meetings, annual creek cleanup event, etc
- Attend trainings, meetings, cleanup events—and let your voice be heard
- Tell your friends and neighbors!

Thank You!

Questions and comments



Contact Information

Ward Ling

Extension Program Specialist

College Station, TX

Phone: 979-845-6980

wling@ag.tamu.edu



TEXAS A&M
AGRILIFE
EXTENSION





Sources of Nitrate in the Plum Creek and Geronimo Creek Watersheds, South-central Texas

By Rebecca B. Lambert

Prepared in cooperation with the
Guadalupe-Blanco River Authority
Texas State Soil and Water Conservation Board

**U.S. Department of the Interior
U.S. Geological Survey**

January 14, 2014

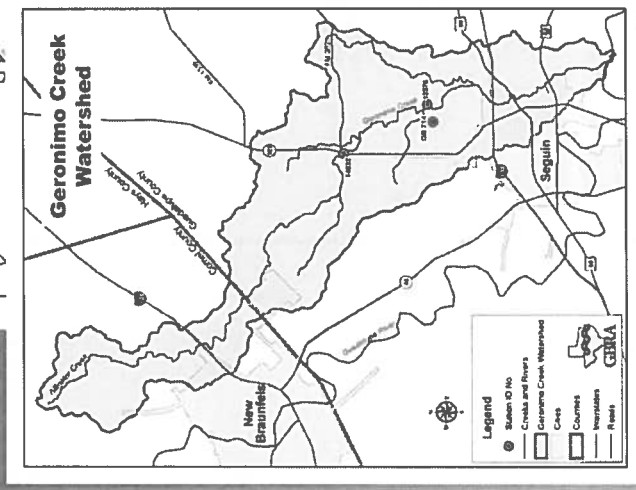
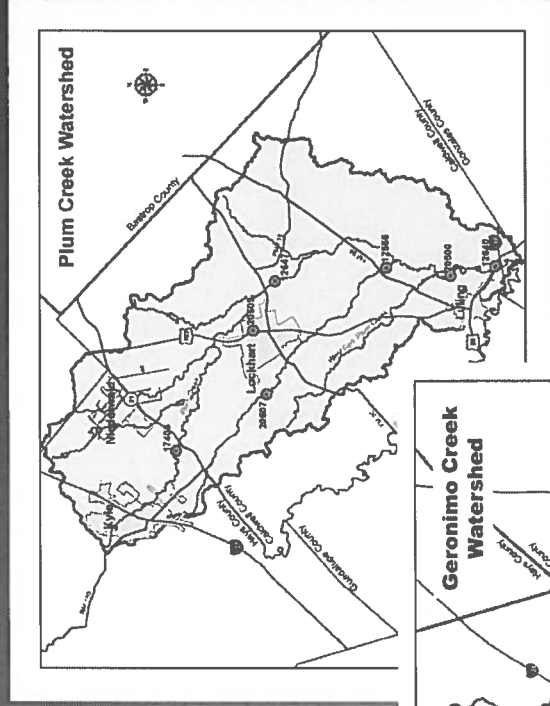
Background

- Plum Creek listed as impaired for bacteria and nutrients (2008 Texas Water Quality Inventory & 303(d) List of Impaired Waterbodies)
- Geronimo Creek first listed in 2000 for concern for nutrient enrichment because of nitrate-nitrogen
- Geronimo Creek listed on the 2008 and 2010 303(d) lists for not supporting contact recreation use because of *E. coli* bacteria.



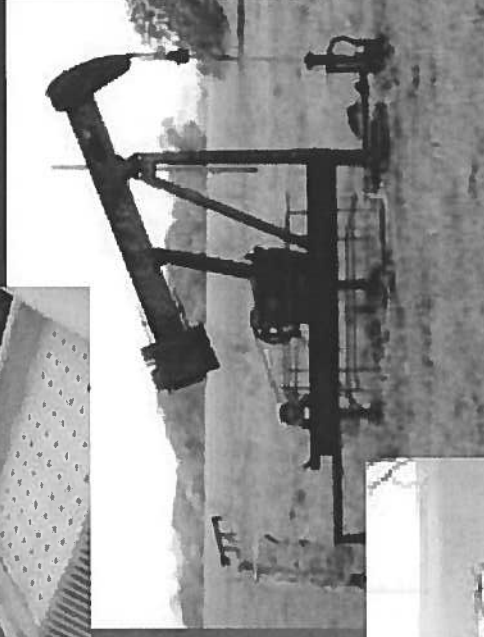
Objectives/Scope

- 3-year project to determine possible sources of elevated nitrates
- Scope includes the Plum Creek (PC) and Geronimo Creek (GC) Watersheds
- 7 SW sites (PC-5, GC-2)
- 2 Springs (PC-1, GC-1)
- 2 GW sites (PC-1, GC-1)
- 1-2 rainfall sites



Sources of Nitrates?

- Possible point and nonpoint pollution throughout watershed
- Mixed land cover with increasing urban development, oil & gas production, and agricultural activities that may contribute nitrate to watershed
- Naturally occurring in groundwater
- Atmospheric deposition



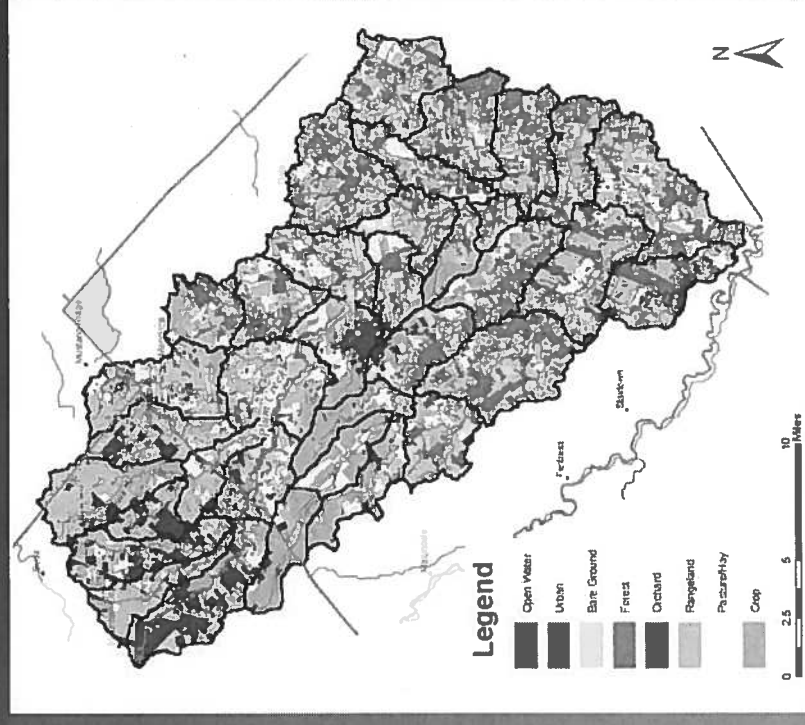
Background

Potential Sources of Bacteria, Nutrients, and other¹ contaminants

Potential Sources	Bacteria	Nutrients	Other
Urban Runoff	X	X	X
Pets	X	X	
<u>Wastewater</u>			
Septic Systems	X	X	X
Wastewater Treatment Facilities	X	X	X
<u>Agriculture</u>			
Sheep and Goats	X	X	
Horses	X	X	
Cattle	X	X	
Cropland		X	X
<u>Wildlife</u>			
Deer	X	X	
Feral Hogs	X	X	
Oil and Gas Production			X

¹Other contaminants may include, but are not limited to, dissolved solids, pesticides, herbicides, and emerging contaminants (D. Magin, GBRA, written commun., Jan. 2014)

Plum Creek Land Cover



(Berg and others, 2008, p. 30)

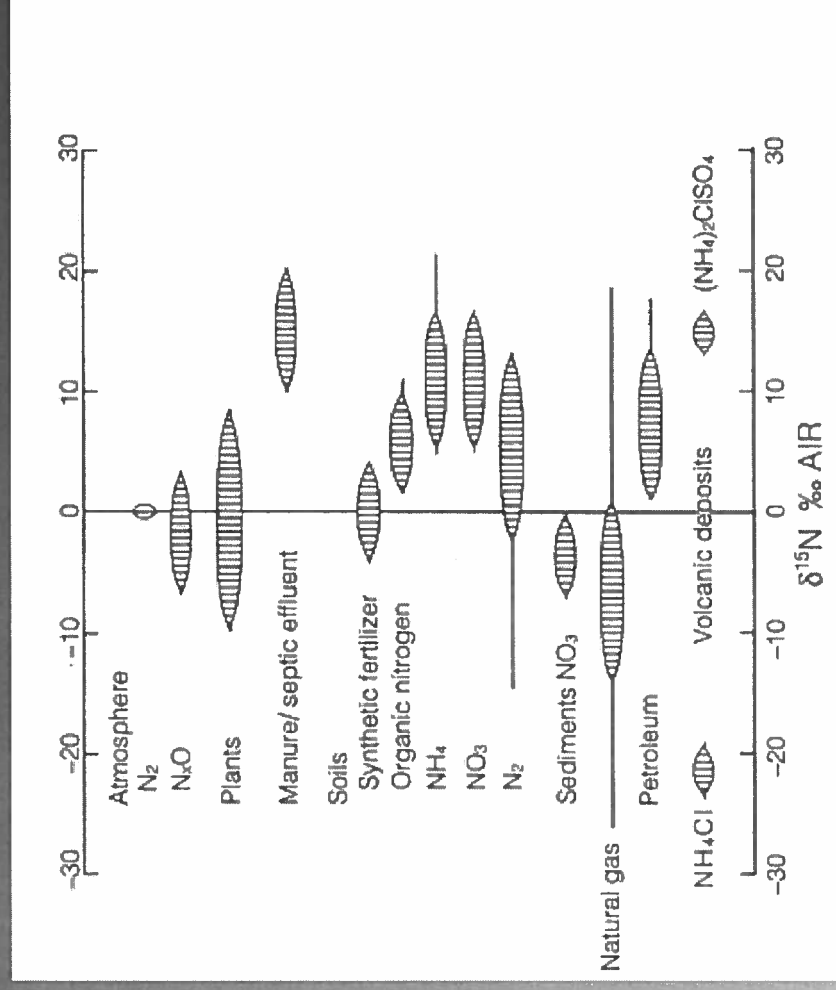
Approach

- Four (4) synoptic sampling events—approximately quarterly
- 48 environmental samples total (SW, Spring, GW, Rainfall)
- Samples analyzed for major ions, nutrients, and $\delta^{15}\text{N}$, $\delta^{18}\text{O}$, and δD isotopes
- 6 QA samples (1 SW field blank, 1 GW field blank, 4 replicates – 1 each synoptic)



Why Nitrogen Isotopes?

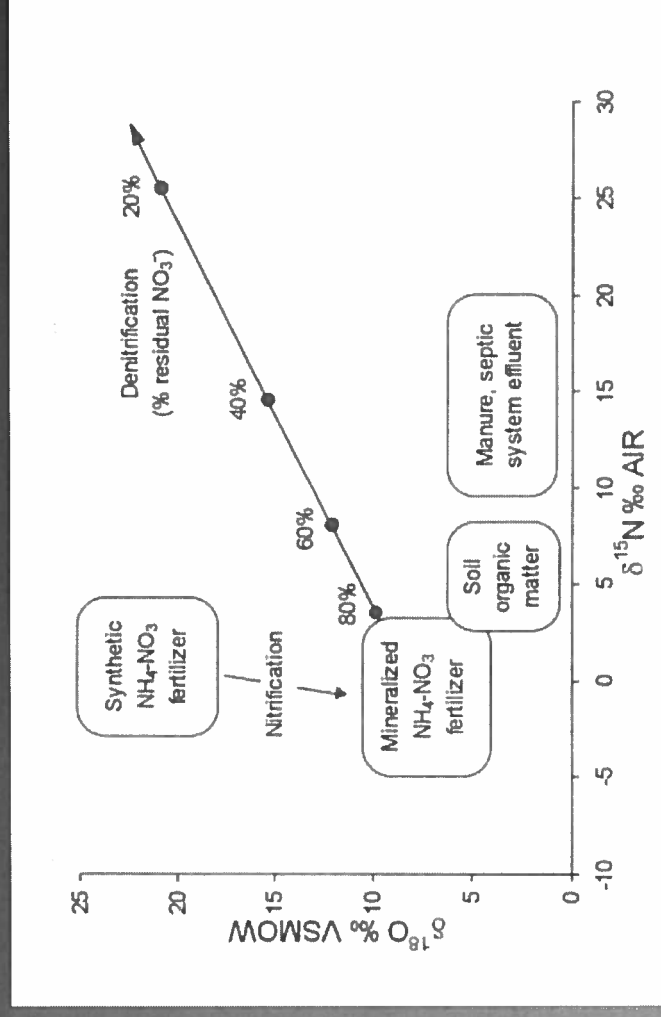
- Environmental isotopes are naturally occurring in the environment.
- Based on the number of protons and neutrons that make up the atomic mass of an element.
- We look at ratios of abundance of each isotope of an element
- Value of $\delta^{15}\text{N}$ are isotopically distinct and can be used to distinguish possible sources of nitrate.



Clark and Fritz (1997)

Sources and Sinks

- Used in association with $\delta^{18}\text{O}$, $\delta^{15}\text{N}$ also can provide information on the kinetic and thermodynamic processes of the nitrogen cycle



Clark and Fritz (1997)

Relevance/Benefits

- Identification of possible sources of elevated nitrates and other nutrients allows Federal, State, and Local agencies to develop targeted mitigation plans while minimizing costs.
- Provides information on the presence and source(s) of nitrates in an area with mixed land cover.
- Provides water managers with valuable water availability and water supply information.



Planned Publications

- A USGS Scientific Investigations Report (SIR) is planned at the completion of the project.



References Cited

- Berg, M., McFarland, M., and Dictson, N., 2008, Plum Creek Watershed Protection Plan: Accessed online on January 13, 2014 at http://plumcreek.tamu.edu/Assets/PCSPPDraft8_7_08.pdf
- Clark, I.D., and Fritz, Peter, 1997, Environmental isotopes in hydrogeology: CRC Press LLC (Lewis Publishers), Boca Raton, Florida, 328 p.
- Ling, W., McFarland, M., Magin, D., Warrick, L., and Wendt, A., 2012, Geronimo and Alligator Creeks Watershed Protection Plan: Accessed online on January 13, 2014 at <http://www.geronimocreek.org/Plan.aspx>



Join us for the Second Annual Geronimo and Alligator Creeks Clean Up Day!

**When: Saturday, April 5, 2014
from 9:00 a.m. to Noon**

What: You can be part of this local voluntary effort by giving your time and energy as a worker, removing trash and debris from designated Seguin and surrounding area locations that drain to the creeks.

Where: 1) Parker Lumber Parking Lot, 1555 E. Court St., Seguin
2) Navarro High School Parking Lot, 6350 N. State Hwy 123, Seguin
3) New Braunfels Regional Airport, corner of Airport Rd. and Entrance Dr.

Register: Register online to help as an individual or as a team at www.Geronimocreek.org. All ages are welcome. Sites will be assigned based on age appropriateness.

On Saturday April 5: Show up at 9:00am at any of the above three locations to receive free breakfast tacos, supplies, instructions, and maps to clean up locations!

Come out for a fun time and help clean up your creeks!

For more Information: go to www.Geronimocreek.org or contact Debbie Magin at 830-379-5822 or dmagin@gbra.org



Help Support the Second Annual Geronimo and Alligator Creeks Clean Up Day!

**When: Saturday, April 5, 2014,
9:00 a.m. to Noon**

How: The second annual Geronimo and Alligator Creeks Clean Up is scheduled for Saturday, April 5th, 2014. You have the opportunity to be part of this local voluntary effort by giving your time and energy as a worker, removing trash and debris from designated Seguin and surrounding area locations that drain to the creeks.

Or: You may make a financial donation which will be used to provide advertising, food, and special event T shirts. *All funding stays local.*

If you would like to help financially, the following sponsorships are available:

Gold Level: \$150 and over → Name & logo on T-shirt, gift bag, and certificate of appreciation

Silver Level: \$50 to \$149 → Name on T-shirt and certificate of appreciation

Bronze Level: \$49 and under → Certificate of appreciation

Sponsors will also be recognized in event press releases. Deadline to get your name/logo on the T-shirt is March 21st. If you are interested in being a sponsor or want more information, please contact Debbie Magin with the Guadalupe-Blanco River Authority at (830) 379-5822 dmagin@gbra.org or Ward Ling with Texas A&M AgriLife at (979) 845-6980.

**Geronimo Creek Stream Clean-Up
Planning Meeting Agenda**

February 4, 2014

Introductions

Proposed Clean-up Date – April 5, 2014; 9 a.m. – noon

Discussion Items:

- 1) Need volunteers to work registration tables at two locations - John Fisher suggested having three registration areas, adding a site at Parker Lumber, in order to facilitate volunteers working in the subdivisions along the Geronimo Creek in the City of Seguin; those present agreed.
- 2) Team leaders assigned to specific clean up locations
 - a. Safety briefing and instructions (poison ivy, snakes) – Debbie Magin described the process used last year – each team leader had a box with supplies, clipboard for list of volunteers at site, instructions, safety instructions
- 3) Food – Sponsorships paid for breakfast tacos last year – will hope to do the same this year
- 4) Early distribution of supplies to volunteer groups

Potential Work Assignments

- 1) Areas for assignment
 - a. Oak Springs Subdivision and 10 Acres across creek from subdivisions
Team Leader: Bill Evans, Navarro High School, Friedens Men's Group
 - b. TLU sampling location on FM 20
Team Leader: Dr. Mark Gustafson
 - c. Geronimo Creek at Laubach Road
Team Leader: Byron Riedel (Bill Evans will contact to confirm participation)
 - d. Unnamed tributary at Laubach Road
Team Leader: Bill Evans, Navarro High School, Friedens Men's Group, TLU
 - e. Geronimo Creek at Walnut Street
Team Leader: John Fisher (Alamo Group)
 - f. Irma Lewis Seguin Outdoor Learning Center
Team Leader: Cinde Thomas-Jiminez (Seguin/Navarro HS, Spirit of Joy Lutheran Church)

Debbie Magin, Cinde Thomas Jimenez, Ward Ling and Mike Peters will recon the creek and land upstream of the ILSOLC to see if there are areas accessible to these

groups. Cinde will ask Pat (ILSOLC) what areas would be accessible to volunteer groups.

- g. Town Center at Creekside Detention Pond
Team Leader: Rebecca Ehrig (Continental), Canyon HS (Cinde Thomas Jimenez will contact Canyon HS to see if they have a group or club that would be willing to help at Creekside); Rebecca pointed out that there will be a different crew from Continental this year because of a shift change.
- h. Road Crossing at FM 1102/Hunter Road/Conrads Road
Team Leader: Dr. Fowler, DVM? Still waiting to hear back.
- i. Other location TBD
Team Leader: HEB
- j. Other location TBD
Team Leader: King Ranger Theater

Three additional contacts have been made by John Fisher – Tractor Supply, Randolph Brooks Credit Union and Parker Lumber; all seem very interested in participating in the form of supplying groups of employees or families for assignment of clean up areas.

Liz Sedlacek and John Fisher pointed out the potential of the four subdivisions that are located along the creek south of Parker Lumber (Eastgate, Elmwood, The Willows and Oak Creek). John requested that the fliers be customized for each area so that they can be distributed door to door. Liz volunteered to walk the neighborhoods distributing fliers. John also suggested putting up yard signs announcing the event.

It was recommended that an online registration form be developed by GBRA (Leigh Crettenden) to allow easy registration. The form should include t-shirt size, no. of t-shirts if registering for a group and suggested attire and footwear. The flier and the online information should include a local phone number. Also, the online registration should include a place to request a specific location, age of group members and physical challenges.

- 2) Trucks with trailers for picking up trash bags –
 - a. Sammy Knippa – Debbie Magin will call to confirm Sammy’s participation this year. Roger Bading will assist Sammy again this year.
 - b. Byron Riedel – Bill Evans will contact Byron to confirm his participation this year.
 - c. Others needed? – Liz Sedlacek has a truck and trailer that she will drive. John Fisher will see if Alamo Group has a truck and trailer that they can provide.
- 3) Roll-off Containers
 - d. Location: New Braunfels Airport
 - e. Provider: City of New Braunfels Solid Waste Department (Mike Mundell)

- f. John Fisher suggested contacting the City of Seguin about an additional roll-off that could be stationed near the east side of Seguin. Ward will contact the city.

Sponsors

- a. Donations structure—discussion of format of last year’s sponsorship
- b. Recognition— Ward described the three levels of sponsorships identified in the letter that went out soliciting sponsorships:
 - a. Bronze - < \$49 (certificate of appreciation)
 - b. Silver - \$50-\$149 (certificate, name and logo on back of t-shirt)
 - c. Gold - >\$150 (certificate, name and logo on t-shirt and thank you bag)

It was suggested that we modify the sponsorship recognition: Silver Sponsors would get their names listed on the back of the t-shirt and Gold would have both their names and logos on back of t-shirt. Sponsorship money is used to buy t-shirts and breakfast tacos and could include the cost of additional publicity items such as yard signs and banners.

T-shirts

- a. Design and color – it was suggested by Mike Peters that the t-shirt color for the 2014 cleanup be camo with bright orange print. The group agreed.
- b. Ordering –
 - a. Number
 - b. color of t-shirt
 - c. sizes

Supplies

- a. GBRA inventory – list
- b. Agrilife inventory
1,100 trash bags, 10 pickup tools, 28pr of cotton gloves, 5 large bottles hand sanitizer, 100 individually packaged hand sanitizers, 3 safety kit bags,
- c. Still needed – John Fisher recommended adding dust masks to the supply boxes. Lee Gudgell recommended adding cloth gloves with rubber coating for use in the wet areas. Rebecca Ehrig suggested that more “grabbers” be available and also supplying rakes or tools for use in hard to reach areas.

Publicity

- a. Newspaper press releases – Ward Ling will be drafting the press releases and monthly articles
- b. Newspaper monthly article publication - Ward Ling will be drafting
- c. Radio -John Fisher suggested that we contact KWED for a sponsorship. Last year we worked with KWED on Public Service Announcements; Roger Bading and Conner Shore agreed to record a PSA; Debbie Magin will contact Kim Mueller to see if she will record a PSA. Roger Bading suggested asking KWED if we could do a segment on the Saturday morning topic show; Debbie Magin will contact Darren Dunn with KWED to see if they have availability.

- d. Flier development and distribution – suggested that we customize the flier for groups and areas; produce posters for businesses
- e. 2 banners – it was suggested that two additional banners be made, similar to last year's banners posted at Navarro and the NB Airport. Also it was suggested that Ward get a price on how much a large street banner would cost and if there is availability at the Silver Center's location on the city's schedule. If the sponsorships come in well we should consider the purchase of one of those banners.

EMS – contact them for notice and availability

Possible volunteer groups to contact

Oak Springs Homeowners – Bill Evans
TLU students – Dr. Mark Gustafson
Navarro students – Rissa Springs
Seguin HS students – Jack Lee, Cinde Thomas Jimenez
Boy Scouts – Conner Shore will talk to his father (Scout Master) to see if his troop or other scout troops would like to participate this year
Girl Scouts – Denise Crettenden
Geronimo Lions Club - Debbie Vogel will contact the Lions Club to see if they could participate in some way this year
City of New Braunfels
City of Seguin – Ward will contact City of Seguin – Bill Couch
Comal County
Guadalupe County
GC Watershed Partnership
4-H
Seguin Outdoor Learning Center – Pat Bowen, Spirit of Joy Lutheran Church, Cinde Thomas Jimenez
Wal-Mart Distribution
Continental – Rebecca Ehrig
Alamo Group – John Fisher
Elmwood Homeowners
HEB – Dannielle Cupples
King Ranger Theatres – Rick Ulhorn
Tractor Supply – Jason
Walgreen's – Mr. Ford

Proposed future planning meetings:

Tuesday, February 18, 2014 – 5:30 p.m.
Tuesday, March 4, 2014 – 5:30 p.m.
Tuesday, March 18, 2014 – 5:30 p.m.
Tuesday, March 25, 2014 – 5:30 p.m.
Tuesday, April 1, 2014 – 5:30 p.m.

**Geronimo Creek Stream Clean-Up
Planning Meeting Minutes**

February 18, 2014

Introductions

Proposed Clean-up Date – April 5, 2014; 9 a.m. – noon

Discussion Items:

- 1) Need volunteers to work registration tables at three locations
 - a. Navarro HS – Ward called NISD; permission to have registration on their parking lot has been granted, along with banner
 - b. New Braunfels Airport
 - c. Parker Lumber – Ward submitted written request to corporate office and has received permission to have registration table at their site; assistant manager Cheryl Heinemeyer is very excited and is willing to hand out fliers
- 2) Team leaders assigned to specific clean up locations
 - a. Safety briefing and instructions (poison ivy, snakes) – Cinde Thomas Jimenez asked if the Master Naturalists group that is forming in Guadalupe County could play a role in the introductions and safety briefing at each registration site and possibly at the locations where the larger teams are gathering. She received support from the committee for that proposal. She will take it to the next Master Naturalist meeting (Feb 18) to see how many members will be willing to work the registrations.
- 3) Food – breakfast tacos
- 4) Early distribution of supplies to volunteer groups

Potential Work Assignments

- 1) Areas for assignment
 - a. Oak Springs Subdivision and 20 Acres across creek from subdivisions
Team Leader: Bill Evans, Navarro High School, Friedens Men's Group

Bill reported that the owner of the property across the creek from Oak Springs is willing to let volunteers on the property to clean up debris left from floods as far back as 1998. Byron Reidel's property is immediately adjacent to this property and he is willing to move his truck and trailer to the neighbor's property fence line, making removal of the trash bags and large items much easier.

- b. TLU sampling location on FM 20
Team Leader: Dr. Mark Gustafson

No report.
 - c. Geronimo Creek at Laubach Road
Team Leader: Byron Riedel (confirmed)

Byron is going to participate and is going to provide a truck and trailer.

- d. Unnamed tributary at Laubach Road
Team Leader: Bill Evans, ~~Navarro High School~~, Friedens Men's Group, TLU

Bill reported that the landowner is willing to let volunteers on the property but is concerned about the safety of the volunteers (snakes, poison ivy). Debbie is going to check with GBRA's legal counsel about a consent form. Navarro HS will be used at SOLC and Oak Springs so they won't be needed at this location. TLU will be used here again this year.

- e. Geronimo Creek at Walnut Street
Team Leader: John Fisher (Alamo Group)

Alamo Group is all set.

- f. Irma Lewis Seguin Outdoor Learning Center
Team Leader: Cinde Thomas-Jimenez (Seguin/Navarro HS, Spirit of Joy Lutheran Church)

Debbie Magin, Cinde Thomas Jimenez, and Mike Peters re-conned the creek and land upstream of the ILSOLC to see if there are areas accessible to these groups. Cinde is going to see about Navarro HS groups that could join the SHS groups at the ILSOLC. Heidi Franzen attended the meeting for the Spirit of Joy Lutheran Church. She reported that they know the landowner directly across Hwy 90 from the ILSOLC and along the creek. They are going to ask him for permission to let volunteers on to his property for the cleanup. The drainage area along Hwy 90 on both sides of the road will be cleaned by the Spirit of Joy volunteers as well.

- g. Town Center at Creekside Detention Pond
Team Leader: Rebecca Ehrig (Continental),
Canyon HS

Cinde Thomas Jimenez contacted Canyon HS to see if they have a National Honor Society or Student Council that would be willing to help at Creekside but she has not heard back. She is going call Larry Anderson, a science teacher at the high school to see if he might have a group of students interested in participating.

- h. Road Crossing at FM 1102/Hunter Road/Conrads Road
Team Leader: ~~Dr. Fowler, DVM~~

Dr. Fowler and family will not be able to participate this year.

- i. Field and parking lot along Walnut Street.
Team Leader: HEB

Danielle Couples has turned the project over to another employee.

- j. Drainage along Walnut Street to SH123 Bypass
Team Leader: King Ranger Theater
- k. Other sites suggested by committee:
 - 1) Eastgate
 - 2) Elmwood
 - 3) The Willows and Oak Creek
 - 4) Keller Heights, along creek

John Fisher and Liz Sedlacek will take fliers around to the neighborhoods. Debbie Magin will contact a family along the creek in Keller Heights to see if they would be willing to get a team together for that subdivision. John also suggested that the vacant lots in the Oak Creek subdivision be cleaned. Debbie Magin is going to try and locate the developer and ask.

Heidi Franzen volunteered to ask the county about the availability of probationers for labor during the cleanup.

- 2) Fliers:
 - a. Ward's draft – Discussion was had on the draft flier. It was recommended that:
 - i. The flier be two-sided: one side for information on the event and the other side be about how to be a sponsor or offer financial support.
 - ii. Due dates be added to the sponsorship information on the flier so that we know how much we have to spend by the date that the t-shirt order is due.
 - iii. Checks be made payable to "GBRA-Geronimo Creek Cleanup". Debbie will confirm that it is okay to have checks made out that way. It was suggested that we set up a bank account but there was some concern about the tax implications since the Partnership is not an established organization or have non-profit status.
 - b. Online registration – GBRA will be getting the online registration set up this week. The fliers will be finished as soon as the online registration is up and ready to go.
- 3) Trucks with trailers for picking up trash bags –
 - a. Sammy Knippa – confirmed
 - b. Byron Riedel – confirmed
 - c. Liz Sedlacek – confirmed
 - d. Alamo Group – confirmed
- 4) Roll-off Containers
 - e. Location: New Braunfels Airport
 - f. Provider: City of New Braunfels Solid Waste Department (Mike Mundell)
 - g. City of Seguin –Ward has made contact with the city's Director of Projects and inquired about a roll-off for the east side of Seguin. John Fisher suggested that if the city can provide a roll-off container that it be located within the Parker Lumber fenced-in yard.

By putting the roll-off in a more secure area we can prevent others from disposing of their trash. Another possible location would be the former city recycling facility.

Sponsors

- a. Donations structure – due date established for donations – March 14

Donations received thus far:

The City of Seguin - \$150

Individuals - \$100

Robin Walker and husband - \$100

Thriday Financial for Lutherans - \$400

GBRA - \$500

John Fisher offered to contact Wal-Mart for a donation.

- b. Recognition—

- a. Bronze - < \$49 (certificate of appreciation)

- b. Silver - \$50-\$149 (certificate, name on back of t-shirt)

- c. Gold - >\$150 (certificate, name and logo on t-shirt and thank you bag)

T-shirts

- a. Design and color – pricing and sizes

Kim Helmke reported that the price for camo shirts is cost prohibitive. (\$11 for each man's shirt and \$9 for each woman's shirt -- last year price \$5.50). Committee decided to go with a solid color (\$6-all shirts). It was requested that Kim contact the t-shirt vendor and request a color chart. The committee asked that GBRA staff and Ward decide on the color of the t-shirt.

- b. Ordering – order will be placed on March 14 based on registrations and teams

Supplies

- a. GBRA inventory – list

- b. Agrilife inventory

1,100 trash bags, 10 pickup tools, 28pr of cotton gloves, 5 large bottles hand sanitizer, 100 individually packaged hand sanitizers, 3 safety kit bags,

- c. Still needed –

- a. dust masks – Heidi offered to check with CMC to see if they would be willing to donate the dust masks

- b. cloth gloves with rubber coating – Debbie checked on prices (\$3.50-5.50 per pair)

- c. grabbers

Publicity

- a. Newspaper press releases – Ward Ling

- b. Newspaper monthly article publication - Ward Ling

- c. Radio - KWED Saturday topic – KWED is going to have the Geronimo Creek Partnership and Clean up on as part of the Saturday Morning Topic show on March

1, 2014. Taping will be done on Wednesday, February 26 at 2:30. Ward Ling, John Fisher and Debbie Magin will be interviewed.

John Fisher suggested a face-to-face meeting with the Mayors of Seguin and New Braunfels to brief them on the cleanup plans. Debbie Magin will call the Mayor of Seguin and get a meeting set up for this week if possible.

- d. Flier development and distribution – customized flier should be sent out as soon as online registration is up and running
- e. Banners – Ward is going to order a third banner for the Parker Lumber registration location.
- f. Posters – some 11x17 size posters will be printed by GBRA in addition to the 8.5x11 size fliers

EMS – contact them for notice and availability

Maps – it was suggested that poster size maps be produced that will show the areas that will be covered as well as show the areas that we have not targeted. Ward will get those made up.

Possible volunteer groups to contact

Oak Springs Homeowners – Bill Evans

TLU students – Dr. Mark Gustafson

Navarro students – Rissa Springs

Seguin HS students – Jack Lee, Cinde Thomas Jimenez

Boy Scouts – Conner Shore will talk to his father (Scout Master) to see if his troop or other scout troops would like to participate this year

Girl Scouts – Denise Crettenden

Geronimo Lions Club - Debbie Vogel will contact the Lions Club to see if they could participate in some way this year

City of New Braunfels

City of Seguin – Ward - City of Seguin – Bill Couch

Comal County

Guadalupe County

GC Watershed Partnership

4-H

Seguin Outdoor Learning Center – Pat Bowen, Spirit of Joy Lutheran Church, Cinde Thomas Jimenez

Wal-Mart Distribution

Continental – Rebecca Ehrig

Alamo Group – John Fisher

Elmwood Homeowners – John Fisher

HEB – Dannielle Cupples

King Ranger Theatres – Rick Ulhorn

Tractor Supply – Jason

Walgreen's – Mr. Ford

Proposed future planning meetings:

Tuesday, March 4, 2014 – 5:30 p.m.
Tuesday, March 18, 2014 – 5:30 p.m.
Tuesday, March 25, 2014 – 5:30 p.m.
Tuesday, April 1, 2014 – 5:30 p.m.

**Geronimo Creek Stream Clean-Up
Planning Meeting Minutes**

March 4, 2014

Meeting notes and minutes in red text.

Introductions

Proposed Clean-up Date – April 5, 2014; 9 a.m. – noon

Discussion Items:

- 1) Need volunteers to work registration tables at three locations
 - a. Navarro HS – Kathy Elbel and Kim Helmke
 - b. New Braunfels Airport – Ward Ling
 - c. Parker Lumber - Debbie Magin
- 2) Team leaders assigned to specific clean up locations
 - a. Safety briefing and instructions (poison ivy, snakes) – Master Naturalists will do briefings; how many other locations are needed?
- 3) Food – breakfast tacos – Debbie Vogel recommended working with the vendor she uses for big meetings at Alamo Group; Debbie will get name and phone number to Kimberly
- 4) Early distribution of supplies to volunteer groups

Potential Work Assignments

- 1) Areas for assignment
 - a. Oak Springs Subdivision and 10 Acres across creek from subdivisions
Team Leader: Bill Evans, Navarro High School, Friedens Men's Group
 - b. TLU sampling location on FM 20
Team Leader: Dr. Mark Gustafson

Has put the word out to students – will have students participating
 - c. Geronimo Creek at Laubach Road
Team Leader: Byron Riedel (confirmed)
 - d. Unnamed tributary at Laubach Road
Team Leader: Bill Evans, Friedens Men's Group, TLU
 - e. Geronimo Creek at Walnut Street
Team Leader: John Fisher (Alamo Group)
 - f. Irma Lewis Seguin Outdoor Learning Center
Team Leader: Cinde Thomas-Jimenez (Seguin/Navarro HS, Spirit of Joy Lutheran Church)

- g. Town Center at Creekside Detention Pond
Team Leader: Rebecca Ehrig (Continental),
Canyon HS (Cinde Thomas Jimenez left message for Larry Anderson);
- h. Road Crossing at FM 1102/Hunter Road/Conrads Road
Team Leader: Ward Ling, Jim Ward and Marion HS NHS
- i. Field and parking lot along Walnut Street.
Team Leader: HEB – 15 employees registered; on need 4 t-shirts; will provide a pallet of bottled water and may have a financial contribution
- j. Drainage along Walnut Street to SH123 Bypass
Team Leader: King Ranger Theater
- k. Elmwood + and Oak Creek Subdivisions
Team Leader: John Fisher
- l. Baer Creek drainage and Willows and Eastgate
Team Leader: Liz Sedlacek – will get with John Fisher to take fliers

Adult probationers will work this area. Will have their own gear; they will be supervised; will come all together in vans; no felons, no sex offenders, all non-violent; will come to Parker Lumber site.

Three additional sites/Teams:

- Tractor Supply –store manager out of town for several weeks, no response yet
- Keller Heights – Debbie made call to resident – Susan Brannon is coordinating homeowners along creek
- John Fisher and Ward Ling visited Walmart, Tractor Supply, HEB and Parker Lumber to solicit donations, get teams. Wal-Mart declined; dropped off fliers at Parker Lumber

2) Fliers:

- a. Ward's draft
- b. Online registration – up and running, got 15 (HEB) day of meeting, the registration sends Ward an email when new registration, keeps track of number and where

3) Trucks with trailers for picking up trash bags –

- a. Sammy Knippa – confirmed
- b. Byron Riedel – confirmed
- c. Liz Sedlacek – confirmed
- d. Alamo Group – confirmed
- e. Darren Peters - confirmed

- 4) Roll-off Containers
 - a. Location: New Braunfels Airport + end of Driftwood St. in Seguin
 - b. Provider: City of New Braunfels Solid Waste Department (Mike Mundell) – NB Airport
City of Seguin – City of Seguin donating one rolloff, Progressive donating
Other (2 rollofs total); will put on city's easement at end of
Driftwood, behind Parker Lumber - will be there at 8 am and
picked up by 2 pm

Mike Peters still wanted to make sure we were providing white bags for recyclables and black bags for non-recyclables. There will be someone at each roll-off site to weigh and count bags.

Sponsors

- a. Donations structure—due March 14
- b. Recognition—
 - a. Bronze - < \$49 (certificate of appreciation)
 - b. Silver - \$50-\$149 (certificate, name on back of t-shirt)
 - c. Gold - >\$150 (certificate, name and logo on t-shirt and thank you bag)
- c. Donations received thus far:
 - The City of Seguin - \$150
 - Individuals - \$100
 - Robin Walker and husband - \$100
 - Thrident Financial for Lutherans - \$400
 - GBRA - \$500
 - Geronimo Lions Club - \$150
 - City of New Braunfels - \$150
 - HEB – pallet of water
 - Spirit of Joy - \$150

T-shirts

- a. Design and color – pricing and sizes – Kim reported that she got three quotes. It was recommended that she look into Paramount and get a quote from them. The committee authorized Kim to negotiate for the best quality t-shirt.
- b. Ordering –
 - a. number
 - b. color of t-shirt – going with neon green with dark print
 - c. sizes

Supplies

- a. GBRA inventory
- b. Agrilife inventory
 - 1,100 trash bags, 10 pickup tools, 28 pr of cotton gloves, 5 large bottles hand sanitizer, 100 individually packaged hand sanitizers, 3 safety kit bags,
- c. Still needed –
 - a. dust masks – not provided by CMC. Debbie will get them from Home Depot.
 - b. cloth gloves with rubber coating – Will get from Home Depot or Wal-Mart.
 - c. grabbers

Publicity

- a. Newspaper press releases – Ward Ling – will issue two weeks out
- b. Newspaper monthly article publication - Ward Ling – Gazette is working up ad, Ward will review next day
- c. Radio - KWED Saturday topic – ran show on Saturday, March 1. Show covered all aspects of Geronimo Creek WPP and included info on clean up and registration.
- d. Flier development and distribution – Debbie Magin recommended not making a customized flier because of the confusion and potential problems with distribution. Have fliers have all information on one.
- e. Posters – no requests for posters yet. Can make them if necessary.

EMS – Kim made a call to Sheriff's office and NB and Seguin Fire Departments to let them know of the event.

Possible volunteer groups to contact

Oak Springs Homeowners – Bill Evans

Debbie Vogel talked to Jim Ward, a resident of Oak Springs. He is going to tell his neighbors about the cleanup. Debbie Magin will tell Bill Evans so that he can get with Jim as well. Jim Ward's daughter attends Marion HS and her National Honor Society is looking for service projects. She will see if she can get a group of students signed up.

TLU students – Dr. Mark Gustafson

Navarro students – Rissa Springs

Seguin HS students – Jack Lee, Cinde Thomas Jimenez

Boy Scouts – Conner Shore will talk to his father (Scout Master) to see if his troop or other scout troops would like to participate this year

Girl Scouts – Denise Crettenden

Geronimo Lions Club - Debbie Vogel – donation of \$150 and some help at event

City of New Braunfels – rolloff, monetary donation

City of Seguin – Bill Couch – rolloff, monetary donation

Comal County

Guadalupe County

GC Watershed Partnership – Roger Bading

4-H

Seguin Outdoor Learning Center – Pat Bowen

Spirit of Joy Lutheran Church,

Cinde Thomas Jimenez

Wal-Mart Distribution

Continental – Rebecca Ehrig

Alamo Group – John Fisher

Elmwood Homeowners

HEB – Dannielle Cupples

King Ranger Theatres – Rick Ulhorn

Tractor Supply – Jason

Walgreen's – Mr. Ford

Keller Heights – Susan Brannon
Marion HS National Honor Society – Jim Ward

Proposed future planning meetings:

Tuesday, March 18, 2014 – 5:30 p.m.

Tuesday, March 25, 2014 – 5:30 p.m.

Tuesday, April 1, 2014 – 5:30 p.m.

Geronimo Creek Stream Clean-Up

Planning Meeting Minutes

March 18, 2014

Introductions

Proposed Clean-up Date – April 5, 2014; 9 a.m. – noon – Cinde Thomas Jimenez reported that there is a state-wide event occurring the same day as our event called “Don’t Mess with Texas Trash-Off”. Cinde will try and get on the Trash Off webpage and see if we can register our event with this effort. [Ward registered our cleanup event with the “Texas Trashoff”.]

Discussion Items:

- 1) Need volunteers to work registration tables at three locations
 - a. Navarro HS – Kathy Elbel, Kim Helmke, Roger Bading, Master Naturalists
 - b. New Braunfels Airport – Ward Ling, Master Naturalists
 - c. Parker Lumber - Debbie Magin, Cinde T-Jimenez, Master Naturalists
- 2) Team leaders assigned to specific clean up locations
 - a. Safety briefing and instructions (poison ivy, snakes) – Master Naturalists will do briefings; how many other locations are needed?
- 3) Food – breakfast tacos – found vendor that will provide tacos at \$1.00/each, recommended by Debbie Vogel.
- 4) Early distribution of supplies to volunteer groups
Ward reported that he has 74 registered to date. Still need Continental, and the high schools.

Potential Work Assignments

- 1) Areas for assignment
 - a. Oak Springs Subdivision and 10 Acres across creek from subdivisions
Team Leader: Bill Evans, Navarro High School, Friedens Men’s Group
 - b. Geronimo Creek at Laubach Road
Team Leader: Byron Riedel – 6 volunteers
 - c. Unnamed tributary at Laubach Road to FM 20
Team Leader: Dr. Mark Gustafson - Will have 5 students participating; Bill Evans will meet TLU crew at his house at 9 and will take them to the location; Bill will get their shirts and supplies when he checks in at the Navarro registration site
 - d. Geronimo Creek at Walnut Street
Team Leader: John Fisher (Alamo Group)
 - e. Irma Lewis Seguin Outdoor Learning Center

Team Leader: Cinde Thomas-Jimenez (Seguin/Navarro HS, Spirit of Joy Lutheran Church) – will include drainage areas along Hwy 90 down to the creek; 12 adults and 15 students

- f. Town Center at Creekside Detention Pond
Team Leader: Rebecca Ehrig (Continental),
On Wednesday, GBRA got a call from sponsor at Canyon Lake HS asking if his students could participate. This group will be sent to help behind Creekside.
- g. Road Crossing at FM 1102/Hunter Road/Conrads Road
Team Leader: Ward Ling, Jim Ward and Marion HS NHS
Cinde will contact Marion HS NHS about their students needing service hours.
- h. Field and parking lot along Walnut Street.
Team Leader: HEB – 15 employees; will provide a pallet of bottled water and may have a financial contribution
- i. Drainage along Walnut Street to SH123 Bypass
Team Leader: King Ranger Theater

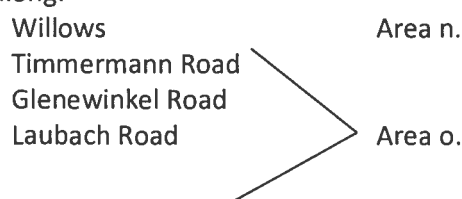
Ward will call again to confirm.
- j. Elmwood + and Oak Creek Subdivisions
Team Leader: John Fisher
- k. Baer Creek drainage and Willows and Eastgate
Team Leader: Liz Sedlacek

Adult probationers will work this area. Will have their own gear; they will be supervised; will come all together in vans; no felons, no sex offenders, all non-violent; will come to Parker Lumber site.

Ward will check to see if they want t-shirts.

- l. Keller Heights –Susan Brannon is coordinating homeowners along creek
Cinde will request that Master Naturalists go to the three lots that have been identified in Keller Heights. Debbie will contact Susan Brannon and request that she show the MNs where to begin and end on the creek.
- m. Need additional sites for morning of registrations:

Area identified as additional sites include the low-lying and drainage areas in or along:



Barbarosa Road
FM 758
Hwy 90A drainage to creek Area p.

- 2) Fliers:
 - a. Ward's draft
 - b. Online registration – up and running; the registration sends Ward an email when new registration, keeps track of number and where
Up and running. Automatically sends Ward info as people register. [Ward has requested that an adult XXL option be added to the form.]

- 3) Trucks with trailers for picking up trash bags (routes listed in Areas for Assignment) –

Determined best route for each truck/trailer:

- a. Sammy Knippa – route - Areas f, g, and o
- b. Byron Riedel – route - Areas a, b and c
- c. Liz Sedlacek – route - Areas k, d, h, and i
- d. John Fisher – route - Areas j, n and p
- e. Darren Peters – route - Areas e and m

- 4) Roll-off Containers

- a. Location: New Braunfels Airport + end of Driftwood St. in Seguin
- b. Provider: City of New Braunfels Solid Waste Department (Mike Mundell) – NB Airport
City of Seguin – City of Seguin donating one rolloff, Progressive donating other (2 rolloffs total); will put on city's easement at end of Driftwood, behind Parker Lumber - will be there at 8 am and picked up by 2 pm
- c. White bags for recyclables and black bags for non-recyclables.
- d. Debbie Magin will be the Driftwood roll-off site to weigh and count bags.
- e. Ward Ling will be at NB airport roll off site to weigh and count bags.

Ward is trying to contact the City of Seguin and Progressive to see how they would handle recyclables. Regardless, all tires will be brought to the New Braunfels Airport, along with batteries. Large recyclable metals can be taken to Horowitz Salvage or Platinum Recovery & Recycling in Seguin.

Sponsors

- a. Donations structure—due March 14; online registration due March 21
- b. Recognition—
 - a. Bronze - < \$49 (certificate of appreciation)
 - b. Silver - \$50-\$149 (certificate, name on back of t-shirt)
 - c. Gold - >\$150 (certificate, name and logo on t-shirt and thank you bag)
- c. Donations received thus far:
The City of Seguin - \$150
Individuals - \$100
Robin Walker and husband - \$100
Thrivent Financial for Lutherans - \$400

GBRA - \$500
Geronimo Lions Club - \$150
City of New Braunfels - \$150
HEB – pallet of water
Spirit of Joy Lutheran Church - \$150
Geronimo Retreat - \$150
Continental - \$150

T-shirts

- a. Design and color – bright green with Kelly green print
- b. Pricing and sizes – will have all sizes including 2X available
- c. Ordering –
 - a. Number – based partially on number registered; plan on morning of registrations
 - b. color of t-shirt – neon green with dark print
 - c. sizes – need to add 2X to online registration choices

Supplies

- a. GBRA inventory
- b. Agrilife inventory
1,100 trash bags, 10 pickup tools, 28 pr of cotton gloves, 5 large bottles hand sanitizer,
100 individually packaged hand sanitizers, 3 safety kit bags,
- c. Still needed –
 - a. dust masks – CMC providing some; will purchase more from Home Depot or Wal-Mart
 - b. cloth gloves with rubber coating – Debbie will purchase from Home Depot or Wal-Mart
 - c. grabbers – Ward will purchase additional

So far, boxes with supplies will be prepared for the following areas:

Alamo Group
Adult Probationers – Baer Creek
TLU
Bill Evan/Byron Riedel/Navarro HS
Ward – Hunter Road
HEB
King Ranger
Continental
ILSOLC - Spirit of Joy Lutheran, Seguin HS

Publicity

- a. Newspaper press releases – Ward Ling – will issue two weeks out, end of this week, New Braunfels newspaper ran a great article perfectly advertising the event on 3/19/14, and will do a press release naming all sponsors next week
- b. Newspaper monthly article publication - Ward Ling – two ads will run in coming weeks

- c. Radio - KWED Saturday topic – ran again on Saturday, March 15
- d. Flier development and distribution – available
- e. Posters
- f. Banners – Ward had third banner made. Will bring them to Seguin on March 25.
Will display one at Navarro HS, one at or near NB Airport and one at or near Parker Lumber, put out week of March 24

EMS – Kim made a call to Sheriff's office and NB and Seguin Fire Departments to let them know of the event.

Possible volunteer groups to contact

Oak Springs Homeowners – Bill Evans, Jim Ward
 TLU students – Dr. Mark Gustafson
 Navarro students – Rissa Springs
 Seguin HS students – Jack Lee, Cinde Thomas Jimenez
 Boy Scouts – Conner Shore – Cinde will try and reach him this weekend (March 22)
 Girl Scouts – Denise Crettenden
 Geronimo Lions Club - Debbie Vogel – donation of \$150 and some help at event
 City of New Braunfels – rolloff, monetary donation
 City of Seguin – Bill Couch – rolloff, monetary donation
 Comal County
 Guadalupe County
 GC Watershed Partnership – Roger Bading
 4-H
 Seguin Outdoor Learning Center – Pat Bowen
 Spirit of Joy Lutheran Church – Mike Peters, Heidi Franzen
 Cinde Thomas Jimenez
 Wal-Mart Distribution
 Continental – Rebecca Ehrig
 Alamo Group – John Fisher
 Elmwood Homeowners
 HEB – Dannielle Cupples
 King Ranger Theatres – Rick Ulhorn
 Tractor Supply – Jason
 Walgreen's – Mr. Ford
 Keller Heights – Susan Brannon
 Marion HS National Honor Society – Jim Ward
 Canyon Lake HS – Jim Robinson

Proposed future planning meetings:

Tuesday, March 25, 2014 – 5:30 p.m.
 Tuesday, April 1, 2014 – 5:30 p.m.

Geronimo Creek Stream Clean-Up

Planning Meeting Minutes

March 25, 2014

Introductions

Proposed Clean-up Date – April 5, 2014; 9 a.m. – noon –

Ward registered our cleanup event with the "Texas Trashoff".
Supplies from Keep Texas Beautiful (KTB) – Ward Ling

KTB will provide 100 grabbers, 100 pairs of gloves, trash bags, sunscreen, bug spray, potato sacks all free. Also there is an automatic partnership with HEB when your event is registered with KTB. Now that our event is registered we will be in the loop next year for supplies as well. There is a competition within organizations registered with KTB. Ward will look into it as well as see if we can get patches for Scout's participation. HEB is providing 225 bottles of water and will set up an event tent at the registration site at Parker Lumber on the day of the cleanup. She also offered other supplies we might need.

Master Naturalists will be assigned to a registration site and also to groups. They will give short presentations on the Geronimo Creek Partnership, general environmental information and will go over safety instructions while the volunteers are enjoying their tacos, prior to starting the cleanup. These presentations may be given at the registration site or be held at the respective cleanup locations.

Discussion Items:

- 1) Need volunteers to work registration tables at three locations
 - a. Navarro HS – Kathy Elbel, Kim Helmke, Roger Bading, Master Naturalists
 - b. New Braunfels Airport – Ward Ling, Master Naturalists
 - c. Parker Lumber - Debbie Magin, Cinde T-Jimenez, Master Naturalists
- 2) Team leaders assigned to specific clean up locations
 - a. Safety briefing and instructions (poison ivy, snakes) – Master Naturalists will do briefings;
- 3) Food – breakfast tacos – \$1.00/each
 - a. How many do we need – we will order 225 tacos from Jackie's Tacos on N. Austin St.
 - b. How many at each location – will divide up based on registrations
 - c. When to order – Kim will order on Monday, March 31
 - d. Who picks up – Debbie Vogel will take three ice chests to Jackie's Tacos on Friday at noon. Each ice chest will be labelled with the site and the number of tacos that should be put in that chest. Debbie will pick up the tacos at 7:30 a.m. on Saturday, April 5 and deliver the Parker site chest and then drive out to Navarro HS to deliver the other two chests. Ward will come by Navarro HS and pick up the tacos for the NB airport registration site.
- 4) Early distribution of supplies to volunteer groups - no early distribution, all supplies, t-shirts and tacos will be picked up the morning of the event
- 5) Maps – Ward

- a. Large maps at registration - Ward has produced three sets of maps that are large, laminated and can be drawn on with a sharpie. Each map that relates to the area associated with the registration site will be available the morning of the event. The maps can be taped down to a table. The volunteers can see exactly where they are being sent to cleanup.
 - b. Individual maps to hand out – Ward will produce small maps for each box, similar to the large laminated maps
- 6) Instruction Sheets – Ward is updating last year instruction sheet to clarify the wording.

Potential Work Assignments

1) Areas for assignment

- a. Oak Springs Subdivision and 10 Acres across creek from subdivisions
Team Leader: Bill Evans, Navarro High School, Friedens Men’s Group
- b. Geronimo Creek at Laubach Road
Team Leader: Byron Riedel – 6 volunteers
- c. Unnamed tributary from FM 20 to Laubach Road
Team Leader: Dr. Mark Gustafson - Will have 9 students participating; Bill Evans will meet TLU crew at his house at 9 and will take them to the location; Bill will get their shirts and supplies when he checks in at the Navarro registration site
- d. Geronimo Creek at Walnut Street
Team Leader: John Fisher and Debbie Vogel (Alamo Group)
- e. Irma Lewis Seguin Outdoor Learning Center
Team Leader: Cinde Thomas-Jimenez (Seguin HS, Spirit of Joy Lutheran Church) – will include drainage areas along Hwy 90 down to the creek; 12 adults and 15 students
- f. Town Center at Creekside Detention Pond
Team Leader: Rebecca Ehrig (Continental), Canyon Lake HS, Boy Scouts (43 volunt.)
- g. Road Crossing at FM 1102/Hunter Road/Conrads Road
Team Leader: Ward Ling, Jim Ward and Marion HS NHS
Marion HS? Marion HS has signed up 8 students and one adult volunteer. There may be additional students from the Creekside.
- h. Field and parking lot along Walnut Street.
Team Leader: HEB – 15 employees; will provide a pallet of bottled water and may have a financial contribution
Water – who will pick up
When can we pick it up?
Lee Gudgell will pick up water in GBRA car on Thursday. Debbie Magin and Kimberley Helmke will bring ice chests on Friday. The water will be iced down on Friday.

- i. Drainage along Walnut Street to SH123 Bypass
Team Leader: King Ranger Theater
Confirmed? – Ward will call this week.
- j. Elmwood + and Oak Creek Subdivisions
Team Leader: John Fisher
- k. Baer Creek drainage and Willows and Eastgate
Team Leader: Liz Sedlacek

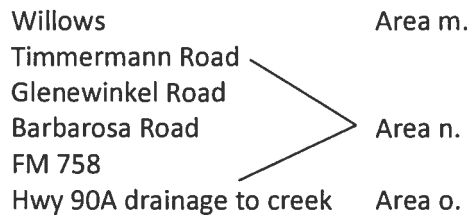
Adult probationers will work this area. Will have their own gear; they will be supervised; will come all together in vans; no felons, no sex offenders, all non-violent; will come to Parker Lumber site.
T-shirts? - Ward

- l. Keller Heights –Susan Brannon is coordinating homeowners along creek
Master Naturalists? Cinde will assign two MN to this location.

2) Registration

- a. Online registration –
Ward - an adult XXL option added to the form.
- b. Day of registration – alternate locations

Area identified as additional sites include the low-lying and drainage areas in or along:



3) Trucks with trailers for picking up trash bags (routes listed in Areas for Assignment) –

Determined best route for each truck/trailer:

- a. Sammy Knippa – route - Areas f, g, and n
- b. Byron Riedel – route - Areas b, c and balance of Laubach Rd.
- c. Liz Sedlacek – route - Areas k, d, h, and i
- d. John Fisher – route - Areas j, m and o
- e. Darren Peters – route - Areas e, and l
- f. Bill Evans – route- Area a + FM 20

4) Roll-off Containers

- a. Location: New Braunfels Airport + end of Driftwood St. in Seguin
- b. Provider: City of New Braunfels Solid Waste Department (Mike Mundell) – NB Airport
City of Seguin – City of Seguin donating one rolloff, Progressive donating

other (2 rollofs total); will put on city's easement at end of Driftwood, behind Parker Lumber - will be there at 8 am and picked up by 2 pm

- c. White bags for recyclables and black bags for non-recyclables.
- d. Debbie Magin will be the Driftwood roll-off site to weigh and count bags.
- e. Ward Ling will be at NB airport roll off site to weigh and count bags.
 - Recyclables? - All recyclables (tires, batteries, etc.) will go to the NB Airport site.
 - Any recyclables dropped off at the Driftwood rollofs will be held for transport to the NB airport at the end of the event.

Sponsors

- a. Donations structure—due March 14; online registration due March 21
- b. Recognition—
 - a. Bronze - < \$49 (certificate of appreciation)
 - b. Silver - \$50-\$149 (certificate, name on back of t-shirt)
 - c. Gold - >\$150 (certificate, name and logo on t-shirt and thank you bag)
- c. Donations received thus far:
 - The City of Seguin - \$150
 - Individuals - \$100
 - Robin Walker and husband - \$100
 - Thrivent Financial for Lutherans - \$400
 - GBRA - \$500
 - Geronimo Lions Club - \$150
 - City of New Braunfels - \$150
 - HEB – pallet of water
 - Spirit of Joy Lutheran Church - \$150
 - Geronimo Retreat - \$150
 - Continental - \$300
 - Alamo Group - \$250
 - Greg Seidenberger - \$50

All donations will be spent. The donations will be used for t-shirts, tacos and supplies. If there is money remaining after the cleanup supplies for next year's cleanup will be purchased and stored at GBRA.

T-shirts

- a. Design and color – bright green with Kelly green print
- b. Pricing and sizes – will have all sizes including 2X available
- c. Logos on back - Kim
- d. Ordering –
 - a. Number – based partially on number registered; plan on morning of registrations –Ordering 250 t-shirts, will use last year's t-shirt to confirm size of logo on front
 - b. color of t-shirt – bright green with dark print
 - c. sizes –added 2X to online registration choicesKim will confirm that 2X t-shirts have been ordered.

Supplies

- a. GBRA inventory
- b. Agrilife inventory
1,100 trash bags, 10 pickup tools, 28 pr of cotton gloves, 5 large bottles hand sanitizer, 100 individually packaged hand sanitizers, 3 safety kit bags,
- c. Supplies from KTB
- d. Still needed –
 - a. dust masks – CMC provided some; if more are needed Debbie Magin will purchase from Home Depot or Wal-Mart
 - b. cloth gloves with rubber coating – Debbie will purchase from Home Depot or Wal-Mart to supplement what we have and will receive from KTB
 - c. grabbers – Ward will purchase additional
 - d. rakes – Debbie will purchase 1-2 rakes for each site

So far, boxes with supplies will be prepared for the following areas:

Alamo Group
Adult Probationers – Baer Creek
TLU
Bill Evan/Byron Riedel/Navarro HS (2)
Ward /Marion HS– Hunter Road
HEB
King Ranger
Continental (2)
ILSOLC - Spirit of Joy Lutheran, Seguin HS
Master Naturalists (1)
Extra boxes for each registration site (2)

Publicity

- a. Newspaper press releases – Ward Ling – next release to go out at the end of this week
- b. Newspaper monthly article publication - Ward Ling – NB Zeitung ran article themselves on page 2 of the paper
- c. Radio - KWED Saturday topic – ran again on Saturday, March 22
- d. Flier development and distribution – John Fisher and Liz Sedlacek
- e. Banners – Ward had third banner made. Ward and Kim have put up the banner at Navarro HS. Ward will hang the banner at the NB Airport on Wednesday. Kim and Debbie will hang the banner at Parker Lumber this week.

EMS – Kim made a call to Sheriff's office and NB and Seguin Fire Departments to let them know of the event.

Possible volunteer groups to contact

Oak Springs Homeowners – Bill Evans, Jim Ward
TLU students – Dr. Mark Gustafson
Navarro students – Rissa Springs
Seguin HS students – Jack Lee, Cinde Thomas Jimenez

Boy Scouts – Conner Shore – Continental
Girl Scouts – Denise Crettenden
Geronimo Lions Club - Debbie Vogel – donation of \$150 and some help at event
City of New Braunfels – rolloff, monetary donation
City of Seguin – Bill Couch – rolloff, monetary donation
Comal County
Guadalupe County
GC Watershed Partnership – Roger Bading
4-H
Seguin Outdoor Learning Center – Pat Bowen
Spirit of Joy Lutheran Church – Mike Peters, Heidi Franzen
Cinde Thomas Jimenez
Wal-Mart Distribution
Continental – Rebecca Ehrig
Alamo Group – John Fisher
Elmwood Homeowners
HEB – Dannielle Cupples
King Ranger Theatres – Rick Ulhorn
Tractor Supply – Jason
Walgreen’s – Mr. Ford
Keller Heights – Susan Brannon
Marion HS National Honor Society – Jim Ward
Canyon Lake HS – Jim Robinson

Some volunteers are looking for volunteer hours required for their organization (i.e. National Honor Society members, Master Naturalists, etc.). The event should result in 3 hours credit. No actual minutes will be clocked.

Proposed future planning meetings:

Tuesday, April 1, 2014 – 5:30 p.m. (tentative – the decision to hold this meeting will be made next week and planning team members will be notified on Monday if there is a need to hold the meeting)

DEPARTMENT OF SOIL AND CROP SCIENCES



Bill Couch
City of Seguin

Dear Sir,

The second annual Geronimo and Alligator Creeks Clean Up is scheduled for Saturday, April 5th, 2014. You have the opportunity to be part of this local voluntary effort in several ways. One, you may participate by volunteering your time and energy as a worker, removing trash and debris from designated locations that drain to the creeks. Or, you may make a financial donation which will be used to provide advertising, food, and special event T shirts.

If you would like to help financially, the following sponsorships are available:

Gold Level: \$150 and over Name and logo on T shirt, gift bag, and certificate of appreciation

Silver Level: \$50 to \$149 Name on T shirt and certificate of appreciation

Bronze Level: \$49 and under Certificate of appreciation

If you are interested in being a sponsor or want more information, please contact Ward Ling with Texas A&M AgriLife at (979) 845-6980 or Debbie Magin with the Guadalupe-Blanco River Authority at (830) 379-5822.

Thank you,

Ward Ling

Ward Ling
Extension Program Specialist
Texas A&M AgriLife Extension Service
354C Heep Center, 2474 TAMU
College Station, TX 77843-2474
Office: 979-845-6980, Cell: 979-255-1819
Email: wling@ag.tamu.edu
<http://www.geronimocreek.org/>

Department of Soil and Crop Sciences
Texas A&M AgriLife Extension Service
2474 TAMU | 370 Olsen Blvd. | College Station, Texas 77843-2474

Tel. 979.845.6980 | Fax. 979.845.0604 | <http://soilcrop.tamu.edu>

Educational programs of the Texas AgriLife Extension Service are open to all people without regard to race, color, sex, disability, religion, age, or national origin.
The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating

2014
Clean Rivers Program
Basin Highlights Report

Guadalupe River and
Lavaca-Guadalupe Coastal Basins



Watershed Protection Activities (cont.)

Bacteria Reduction Plan for the Upper Guadalupe River

The Upper Guadalupe River in Kerr County remains listed as impaired due to bacteria in a small section in Kerrville. In 2011, UGRA in partnership with City of Kerrville, Kerr County, and the Texas Department of Transportation (TXDOT) to implement the Bacteria Reduction Plan for the Upper Guadalupe River through a Clean Water Act section 319(h) grant from TCEQ. The ultimate goal of this project is to reduce bacteria concentrations in the Upper Guadalupe River to levels that meet the contact recreation criteria defined in the Texas Surface Water Quality Standards. The Bacteria Reduction Plan includes strategies to address the primary sources of bacteria pollution that have been identified in this section of the Guadalupe River including birds nesting on bridges, large flocks of domestic waterfowl congregating in the lakes, septic systems, and pollution from general urban runoff.

During the past year, much progress was made to implement the

management measures outlined in the Bacteria Reduction Plan. Netting was installed on the SH 16 Bridge in Kerrville to prevent birds from roosting directly over the Guadalupe River and routine street sweeping was carried out throughout the watershed by the City of Kerrville. In 2013, a total of 26,025 pounds of litter was removed from the watershed through UGRA's river crossing clean up and annual river cleanup programs. In addition to regular radio commercials and newspaper articles promoting understanding of water quality issues, an interactive kiosk supporting education programs about storm water runoff was introduced to the community.

Strategies to reduce bacteria pollution from pet waste were one of the first implementation measures established in the Upper Guadalupe River watershed

through the installation of twelve pet waste stations. Seven of the stations are installed at Flat Rock Park in Kerrville, including four stations in the associated off-leash dog park. The pet waste stations continue to be used frequently at Flat Rock Park and the quantity of waste collected in the pet waste station trash cans is weighed by UGRA staff on a weekly basis. In 2013, a total of 1,334 pounds of pet waste was documented at the seven stations. An additional ten pet waste stations were recently purchased for use by the City of Kerrville in Louise Hays Park and along the planned river trail.



Geronimo and Alligator Creeks Watershed Protection Plan

In 2007, the Texas State Soil and Water Conservation Board (TSSWCB) Regional Watershed Coordination Steering Committee, using established criteria, ranked Geronimo Creek in the top three watersheds for selection of WPP development. Geronimo Creek and its tributary Alligator Creek are located in Comal and Guadalupe counties. The approximately 70-square-mile watershed begins on the west side of IH35 near New Braunfels, flows southeasterly through the rapidly developing area between Austin and San Antonio and confluences with the Guadalupe River near the city of Seguin. As development and population growth

continue, the conversion of rural land to urban land uses will increasingly impact the hydrology and water quality in the watershed (Extension, 2012).

Historical data identified a bacteria impairment and a concern for nitrate-nitrogen in Geronimo Creek. The TSSWCB project titled, *Development of a Watershed Protection Plan for Geronimo Creek*, was begun in June 2008. The project included water quality monitoring, water quality modeling and WPP development. The development of the WPP for Geronimo and Alligator Creeks has been a stakeholder driven process, in partnership with the EPA, TSSWCB, Texas A&M AgriLife

Extension and GBRA. The Geronimo and Alligator Creeks Watershed Partnership (the Partnership) Steering Committee includes local officials, landowners, business owners and citizens, and is supported by state and federal agency partners. With technical assistance from project staff, the Partnership identified issues that are of particular importance to the surrounding communities, and contributed information on land uses and activities that was helpful in identifying the sources of nutrient and bacterial impairments, and in guiding the development of the WPP. Potential sources of *E. coli* and nutrients

Watershed Protection Activities (cont.)

identified through the development of the WPP include: urban runoff, dog waste, wastewater collection systems, failing on-site sewage facilities (OSSFs), livestock, deer, and feral hogs. The Geronimo and Alligator Creek Watershed Protection Plan (GACWPP) was approved by the EPA on September 13, 2012.

The completion of a WPP does not end the process. In many respects, it is just the beginning. The watershed planning process in Geronimo and Alligator creeks has moved into the implementation phase. During this phase, entities are using the watershed protection plan to help secure grant funding that will implement the Best Management Practices (BMPs) identified in the plan. The timeline for full implementation of all the management measures in the GACWPP is 10 years. The Partnership continues to meet quarterly, hearing presentations on local and statewide initiatives, and getting/receiving updates about projects that are underway in the watershed.

GBRA continues to build on the data collected by the Clean Rivers Program, monitoring eight sites monthly under routine conditions and 14 sites under dry and wet weather targeted conditions. Drought conditions over the past several years have created

very low flows in the upper end of the watershed, with several sites that do not have measureable flow.

As part of implementation, Texas A&M AgriLife Extension and GBRA continue to facilitate the Partnership. Additionally, the partners facilitate and coordinate education and outreach activities in the watershed to promote public participation and implementation of the WPP. Their efforts include active use of local media outlets to communicate project planning efforts and activities, contributions to the project website, development and dissemination of fact sheets and other educational resources and coordination of local meetings and educational events. The educational events that have been held or will be held in the coming months include workshops on the operation and maintenance of on-site septic systems, workshops on the control of feral hogs, and workshops on low impact development practices directed toward municipal and county officials. Extension has conducted a Texas watershed stewards workshop, the first Texas well owner network workshop, and agricultural nutrient management seminars, and has partnered with GBRA to provide informational booths at environmental events. Information on upcoming workshops can be found on the project website: www.geronimocreek.org.

To educate and increase awareness of water quality issues in the watershed, GBRA assisted the Seguin High School's project-based summer class in the summers of 2012 and 2013. Students conducted studies on Geronimo Creek, such as benthic macroinvertebrate sampling and identification, water quality monitoring, and stream cleanup activities.

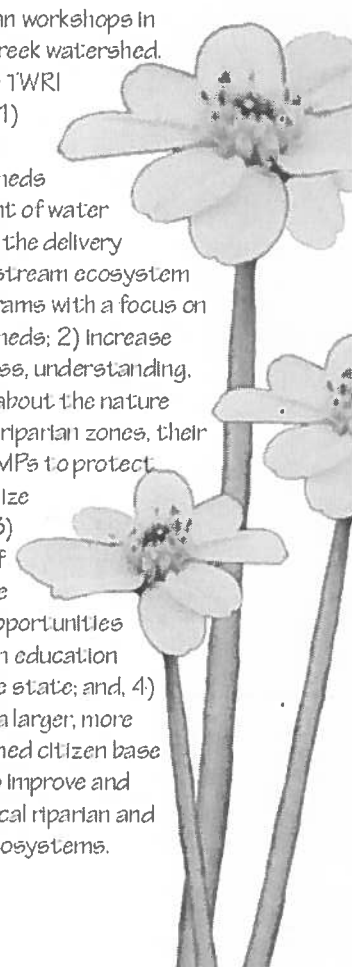
The Texas Water Resources Institute (TWRI), under the Texas State Soil and Water Conservation Board's Clean Water Act (CWA) section 319(h) Nonpoint Source Grant Program Project No. 12-07, Statewide Delivery of Riparian and Stream Ecosystem Education Program, conducted one of its 25 riparian workshops in the Geronimo Creek watershed.

The goals of the TWRI project include 1) promotion of healthy watersheds and improvement of water quality through the delivery of riparian and stream ecosystem education programs with a focus on priority watersheds; 2) increase citizen awareness, understanding, and knowledge about the nature and function of riparian zones, their benefits, and BMPs to protect them and minimize NPS pollution; 3) enhancement of

interactive learning opportunities for riparian education across the state; and, 4) establish a larger, more well-informed citizen base working to improve and protect local riparian and stream ecosystems.



Riparian Workshop - Photo by Nick Dornak



Watershed Protection Activities (cont.)

Comal-Guadalupe Soil and Water Conservation District

Nonpoint agricultural sources of pollutant loading may be addressed by implementing BMPs on agricultural operations. Agricultural producers, along with soil and water conservation districts (SWCDs), TSSWCB, Natural Resource Conservation Service (NRCS) and EPA, have been collaborating to protect the natural resources in Texas for decades. Through the TSSWCB's Water Quality Management Plan (WQMP) program, farmers and ranchers routinely implement BMPs on their land utilizing financial and technical assistance programs of SWCDs who receive state and federal funds from TSSWCB, EPA, and NRCS. Expanding participation of agricultural producers in implementation of the GACWPP is essential to achieve water

quality improvement. As an established and well-known local entity, the Comal-Guadalupe SWCD is uniquely situated to engage and support agricultural producers in watershed restoration and protection efforts, including implementation of appropriate BMPs to address nonpoint source pollution.

A WQMP is a site-specific plan developed through, and approved by, SWCDs which includes appropriate land treatment practices, production practices, management measures, and technologies that prevent and abate agricultural and silvicultural nonpoint source pollution. SWCDs provide technical assistance to producers seeking to develop a WQMP. TSSWCB and NRCS have various

financial assistance programs that help producers implement a WQMP. TSSWCB administers federal CWA §319(h) funds through the Comal-Guadalupe SWCD #306 for support of one district technician who will provide technical assistance to agricultural producers in developing and implementing WQMPs and prescribed grazing plans in the Geronimo and Alligator creeks watersheds. Upon certification of the WQMP, the district technician will work with the landowners to implement the BMPs prescribed in the WQMP. The district technician will also assist landowners in applying for and obtaining financial assistance to aid in implementation of BMPs prescribed in WQMPs.

Cities of Seguin and New Braunfels

Upstream in the Alligator Creek watershed, New Braunfels has begun implementing components of its Phase II storm water permit, which will reduce bacteria and nutrient loading in storm water. The City of Seguin has begun a CWA section 319(h) grant, *Best Management Practice Implementation Project to Reduce Bacteria and Nitrate-nitrogen Loading in the Geronimo Creek Watershed*. The project will provide funding for the decommissioning of failing on-site sewage facilities (OSSFs) in the Oak Village North Subdivision. The OSSFs in the project area can be a source of *E. coli* due to the high ground water

table, high failure rate, and the OSSFs proximity to Geronimo Creek. The city is extending sewage collection lines to the subdivision, but homeowners are only required to tie into the system based

on the age of their OSSF. Funding for decommissioning will provide an incentive to all homeowners in the area to connect to the city's collection system sooner rather than later.



Seguin High School project-based summer class- Photo by Janet Thorne

Watershed Protection Activities (cont.)

Irma Lewis Seguin Outdoor Learning Center

The GACWPP states "An aggressive outreach and education program will be vital to successful engagement of watershed stakeholders." The proposed project, "Taking Charge of Water Quality in the Geronimo and Alligator creeks watersheds through Outreach and Education," is a collaborative effort between GBRA, Texas A&M AgriLife Extension and the Irma Lewis Seguin Outdoor Learning Center (ILSOLC) to provide such outreach. The ILSOLC is an environmental and recreational learning center located in the heart of the Geronimo and Alligator creeks watersheds. Beginning with an initial donation of 23 acres from local resident Carla Blumberg in 1995, the ILSOLC has grown to more than 115 acres. With incredible support from the community, the school district,

local businesses, public and private foundations, and a legion of volunteers, the ILSOLC has provided the citizens of south central Texas with a multitude of recreational and educational opportunities. ILSOLC offers many exciting, hands-on science and nature activities for explorers and naturalists of all ages.

Geronimo Creek flows through the facility and is used as part of an outdoor "classroom" for learning about nature and the environment. School children of all ages from the Seguin, San Marcos, New Braunfels and Comal independent school districts visit the facility annually. Classes rotate between stations to learn about fishing, kayaking, orienteering, outdoor recreation and creek ecology. This project will expand that rotation

by adding additional stations that focuses on the environmental health of the creek and its riparian habitat.

The project combines technology with on-the-ground demonstrations and outdoor education to implement behavioral change in stakeholders living and working in the Geronimo and Alligator creeks watersheds. Several of the project's deliverables will highlight the Geronimo and Alligator creeks watersheds but will also be appropriate for use throughout the Guadalupe River Basin as well as across the state. The proposed project is the first step taken by the ILSOLC as part of implementing the GACWPP.



Geronimo Creek Clean up - Photo by Bill Evans

Collecting bugs from Geronimo Creek at the Irma Lewis Seguin Outdoor Learning Center
Photo by Tammy Beutnagel

Watershed Protection Activities (cont.)

Geronimo and Alligator Creeks Annual Clean Up



TLU Students participating in the Geronimo Creek Clean up
Photo by Ward Ling

Isotope Study

Beginning in the fall of 2013, GBRA and the USGS began a project in both the Geronimo Creek and Plum Creek watersheds. Since monitoring of Plum Creek and Geronimo Creek began in the late 1990s, these creeks have shown elevated concentrations of nitrate-nitrogen. Because the state stream water quality standards are not numeric for nutrients, exceedences of a screening concentration of 1.95 mg/L nitrate-nitrogen have been used to designate a stream as having a concern for nitrate-nitrogen. The possible sources of nitrate are numerous. Plum Creek is effluent-dominated and is also fed by springs that come from the Leona Aquifer, known to have elevated concentrations of nitrate-nitrogen, while Geronimo Creek is also fed by springs from that same aquifer. Stakeholders in both watersheds have long suspected fertilizer use as a source of the nitrates in the Leona, but oddly enough, elevated concentrations of nitrates had been seen in well testing long before commercial inorganic fertilizers came into use. Septic systems, animal wastes, organic fertilizers, nitrifying

plants and atmospheric deposition, round out the list of possible sources.

The TCEQ has begun to develop numeric water quality standards for nitrate-nitrogen. At the end of that process, the standards established by TCEQ and the EPA could move Plum Creek and Geronimo Creek from a designation of "concern for nutrients" to the 303(d) List of impaired waterbodies due to elevated nutrients. The Plum Creek and Geronimo Creek Watershed Partnerships have not waited for "impaired waterbody" status to start working on best management practices that could reduce sources of nitrates. In order to help direct efforts and funding toward the most likely or most influential source(s) of nitrate, this project will look to isotopic signatures of nitrogen and oxygen in the nitrates. The ratios of the isotopes of nitrogen and oxygen in nitrate often are useful for determining sources of nitrates in groundwater and surface water. Isotopic ratios are expressed as the ratio of the heavier isotope to the lighter isotope relative to a standard in parts per thousand (USGS, 2011).

into the creeks. Large items such as tires, appliances, and batteries were removed and recycled. The City of New Braunfels provided roll-off containers for collection and recycling of materials collected free of charge. Teams formed from area high schools, churches, Texas Lutheran University, Continental, Alamo Group, and others, cleaned areas identified by the planning committee. Planning for the 2014 cleanup is underway.



Measuring flows in the Geronimo Creek
Photo by Janet Thome

Sites in the Plum Creek and the Geronimo Creek watersheds will be sampled for major ions, and for selected nutrient species, including nitrate-nitrogen and oxygen isotopes. GBRA and USGS will conduct targeted surface water quality monitoring over a range in hydrologic conditions (wet and dry conditions) as well as monitoring of rainwater, groundwater and springs in both watersheds. The USGS will produce a final report at the end of the three year project.

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 12, 2014

Ms. Debbie Magin
Director of Water Quality Services
Guadalupe Blanco River Authority
933 E. Court St.
Seguin, TX 78155

VIA EMAIL dmagin@gbra.org

**Re: Request for Grant Application (RFGA) for FY 2014 Clean Water Act (CWA)
Section 319(h) Grant**

Dear Ms. Magin:

This letter is sent as a notification that your proposal, "**Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watershed Through Outreach and Education**" project has been submitted to Environmental Protection Agency (EPA) for review and consideration under the FY2014 CWA Section 319(h) grant.

The TCEQ Nonpoint Source (NPS) Program will compile comments on the project proposal, send them to you, and work with you to address them. If the proposal gets selected after negotiation, the formal grant application and workplan will be sent to EPA for official approval.

Anju Chalise of the TCEQ NPS Team will also be contacting you to assist with preparation of the contract scope of work, schedule of deliverables, and contract budget by fiscal year. To be assured that the project will begin on September 1, TCEQ needs this paperwork by **April 11**.

We look forward to a productive working relationship in the months ahead. Congratulations, and thank you again for your work in managing nonpoint source pollution. Please contact Ms. Anju Chalise at 512/239-1529 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle Girten".

Kyle Girten
Team Leader
Office of Water

**Texas Commission on Environmental Quality
Clean Water Act (CWA) Section 319(h) Nonpoint Source (NPS) Grant Program**

**FY 2014 CWA § 319(h) Grant Application
Scope of Work**

Part I. Project Summary

1. Title	Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watersheds through Outreach and Education	
2. Goals	<p>Assist the Geronimo and Alligator Creeks Watershed Partnership's efforts to address the bacteria impairment and nutrient concerns in the watershed through education and outreach.</p> <ul style="list-style-type: none"> • Design and implement the educational component of the WPP that will be used to enhance public understanding of the health of a riparian and creek ecosystem. 	
3. Tasks	<ol style="list-style-type: none"> 1) Project Administration 2) Riparian Education 3) Nonpoint Source Pollution (NPS) Education 4) Demonstration of Green Infrastructure 5) Marketing 6) Final Report 	
4. Measures of Success	<ul style="list-style-type: none"> • Education evaluations show an increase in stakeholder knowledge about the Geronimo Creek watershed and how to reduce NPS pollution as a result of the project. 	
5. Water Body Type	<p>Check all applicable categories of activity under this project.</p> <p><input checked="" type="checkbox"/> Surface Water</p> <p><input checked="" type="checkbox"/> Groundwater</p> <p><input checked="" type="checkbox"/> Surface Water/Groundwater Interactions</p>	
6. Geographic Scope	The Geronimo and Alligator Creeks Watershed, Guadalupe and Comal County, Texas	
7. Segment ID Number	Segment 1804A	

8. Segment Water Quality Status on the 2010 Texas Integrated Report	<i>Parameter(s) of Impairment: E. coli</i> <i>Category: 5c</i> <i>Parameters(s) of Concern: Nitrate-nitrogen</i>	
9. Activities	<i>Check all that apply from the lists under 9a, 9b, 9c, and 9d. If you select "Other" for any item, provide a concise explanation.</i>	
a. Data Collection & Analysis	<input type="checkbox"/> Routine Monitoring <input type="checkbox"/> Storm Event Monitoring <input type="checkbox"/> Specialized Monitoring <input type="checkbox"/> Modeling <input type="checkbox"/> Data Analysis <input type="checkbox"/> Geospatial Analysis/Map Development <input type="checkbox"/> BMP Effectiveness Monitoring <input type="checkbox"/> Load Calculations <input type="checkbox"/> Other: Concisely describe the activity.	
b. Planning	<input checked="" type="checkbox"/> Stakeholder Process <input type="checkbox"/> Watershed Characterization <input type="checkbox"/> Watershed Protection Plan (WPP) Development <input type="checkbox"/> Other: Concisely describe the activity.	
c. Implementation	<input checked="" type="checkbox"/> Implement Best Management Practices (BMPs) of a WPP <input type="checkbox"/> Implement BMPs of a Total Maximum Daily Load (TMDL) Implementation Plan (I-Plan) <input type="checkbox"/> Implement Low Impact Development (LID) BMPs <input type="checkbox"/> Implement demonstration BMPs <input type="checkbox"/> Other: Concisely describe the activity.	
d. Education	<input type="checkbox"/> Social Marketing <input checked="" type="checkbox"/> Technology Transfer <input type="checkbox"/> Other: Concisely describe the activity.	
10. Project Period:	Upon signature approval of both parties – <i>The project, if selected, will start once the contract is signed during the state fiscal year 2015. The state fiscal year begins September 1st and ends August 31st of the following calendar year. The maximum project period is three fiscal years, including 2015, 2016, and 2017.</i>	

11. Cost Summary	<p><i>Do not fill these cells in; they are linked to Part X, #41, Line M. After you have completed Part X, return to this table, select the cells in the right column, and click F9 (or right-click and select "Update Fields"). The cells should then be populated with the information from Part X, #41, Line M. The federal portion (a. Federal (TCEQ) Reimbursable Costs) should equal 60% (sixty percent) of the total project cost. The applicant portion (b. Non-Federal Matching) should equal 40% of the total project cost.</i></p>
a. Federal Reimbursable Costs	\$184,000
b. Non-Federal Matching	\$122,667
c. Total Project Costs	\$306,667

Part II. Applicant Information

12. Organization	Guadalupe Blanco River Authority
13. Project Leader	Debbie Magin
14. Title	Director of Water Quality Services
15. Federal ID No.	74-6001779
16. E-mail Address	dmagin@gbra.org
17. Mailing Address	933 E. Court St.
18. City	Seguin
19. County	Guadalupe
20. State	Texas
21. Zip Code	78155
22. Telephone No.	830-379-5822
23. Fax No.	NA

24. Applicant Qualifications:

Grants secured and managed by the Guadalupe Blanco River Authority staff ongoing or recently completed:

- 1) TCEQ Clean Rivers Program FY12-13 \$286,682
- 2) TCEQ Clean Rivers Program FY14-15 \$270,756
- 3) TCEQ Nutrient Method Development Study \$40,000
- 4) TSSWCB Coordinating Implementation of the Plum Creek Watershed Protection Plan \$360,000
- 5) TSSWCB Surface Water Quality Monitoring and Additional Data Collection Activities to Support the Implementation of the Plum Creek Watershed Protection Plan \$742,710
- 6) TSSWCB Water Quality Monitoring in the Geronimo Creek Watershed and Facilitation of the Geronimo and Alligator Creeks Watershed Partnership \$483,856
- 7) TSSWCB Investigation into Contributions of Nitrate-Nitrogen to Plum Creek, Geronimo Creek and the Underlying Leona Aquifer \$215,750
- 8)TPWD SB2 Baseline Study \$24,069
- 9)TPWD Vegetation Control Lower Basin \$8,000
- 10)TWDB Water Quality Modeling for SB2 \$35,000
- 11)TWDB Stakeholder Process Assistance in the Lower Guadalupe River Sub-Basin \$10,000

Grants secured and managed by Irma Lewis Seguin Outdoor Learning Center (ILSOLC) staff:

- 1) 2012 - Texas Parks and Wildlife Department, Community Outdoor Outreach Program – Project SERÁ: Service, Experience and Recreational Activity – Design and implementation of an educational program that focused on outdoor activity and recreation, was multidisciplinary and included interactive learning. \$14,430
- 2) 2005 – REI, REI Gives - Introduce the activity of mountain biking to beginners through the purchase of mountain bikes. \$3,100

- 3) 2005 - Texas Parks and Wildlife Department, Community Outdoor Outreach Program – Project GETGO: Girls Exploring Texas’ Great Outdoors – Development of innovative and creative programs focused on providing girls who are low-income, minority and/or with special needs an opportunity to better understand our natural world. \$32,870
- 4) 2000 – Environmental Protection Agency , Water Quality Pilot Program - Educational program for students and teachers for the purpose of teaching water quality analysis. \$4,694
- 5) 1999 – Meadows Foundation – Construction grant for building approximately 1,000 square foot cinder block SOLC Environmental Science Center. \$178,940
- 6) 1999 – Guadalupe Blanco River Authority (GBRA) – Reimbursement grant for the purpose of outfitting the SOLC Environmental Science Center with labs, equipment, teaching materials and safety devices. \$19,646
- 7) 1999 – National Wild Turkey Federation – Reimbursement grant for the purpose of purchasing equipment for outdoor shooting and archery ranges. \$5,000
- 8) 1998 – MG and Lillie Johnson Foundation – Construction grant for building and furnishing approximately 800 square foot frame Natural History Center.
- 9) 1996 - Texas Parks and Wildlife Department – Construction grant for building approximately 1,600 square foot frame TPWD Teaching Center. \$37,800

PRESENTATIONS AND PUBLICATIONS

The following is a list of publications, reports, interactive videos and education resources developed by GBRA:

Clean Rivers Program Basin Highlights Report and Basin Summary Report- the Basin Highlights Report is generated annually and includes an overview of water quality monitoring efforts in the Guadalupe River Basin, a description of the water quality conditions of the basin, a summary of the findings of any special studies or monitoring efforts, and includes maps of the sampling sites. The Basin Summary Report is generated every five years in place of the Basin Highlights Report and is a comprehensive analysis of water quality data for the basin.

GBRA’s Waters to the Sea – Waters to the Sea is a series of internationally acclaimed, interactive, multimedia, learning programs on North America’s waterways for grades four through eight. GBRA funded and helped produce with the educational multimedia production arm of the Center for Global Environmental Education at Hamline University a regional version for the Guadalupe River. Program can be viewed at <http://cgee.hamline.edu/WTTS-Guadalupe/> .

Aqua Phil's Conservation Basin- Water conservation in the Guadalupe River Basin.

GBRA River Run- This seasonal magazine features insightful articles, company news, and practical information about water issues and other forces shaping our company.

GBRA Annual Report- This annual publication provides comprehensive, user-friendly information on company trends and includes tables and graphs that help readers assess the growth of GBRA.

Wastewater Treatment Facility Training-An informational wastewater treatment module that shows the procedures of wastewater treatment and explains why it is important to properly manage wastewater at all steps in the process, from your home all the way to the stream where the treatment facility discharges.

The following flash modules below were developed by GBRA as part of the Taking Charge of Water Quality in Plum Creek project funded through Section 106 of the Clean Water Act. These modules are available for viewing at <http://www.gbra.org/flash/education.aspx> .

Septic System Training -An online training program to illustrate proper septic system function and maintenance to ensure efficiency and to extend the life of the system.

Fats, Oils, and Grease Training - An online training program to address management practices for handling fats, oils, grease, and household chemical use and disposal. The training is geared toward both businesses and homeowners.

Storm Water Management Training- An online training tool for municipal operations employees to encourage proper storm water management. This module addresses storm water control practices and includes information for entities that must satisfy municipal storm water regulations.

The GBRA Education Department works with customers, teachers, students and the general public to increase their awareness and appreciation of the water and natural resources in the Guadalupe River Basin, and GBRA's stewardship, protection, conservation and reclamation of these resources. A wide variety of materials and formats are used to communicate this information, including free education programs that meet all state-mandated requirements, including TEKS and STARR elements, special focus publications, tours and guest speakers. The following is a list of educational resources developed by the GBRA Education Department available for viewing at <http://www.gbra.org/education/elementary.aspx> and <http://www.gbra.org/education/secondary.aspx>.

Journey Through the Guadalupe River Basin - Two cartoon characters, "Edward A. Armadillo" and "Lupe" the turtle guide teachers and students on a trip down the Guadalupe River, introducing them to their watershed, the history and geography of the river basin, aquifers and the importance of springflow to the Guadalupe River, dams and hydroelectric generation, how water is used and by whom, and the importance of water regulation and conservation.

Water Quality Monitoring - Supplement for grades 4-6 dealing with Water Monitoring and Non-Point Source Pollution. Teachers interested in addressing watersheds and water quality in the Guadalupe River Basin, are encouraged to lead their students in an investigation of a local creek or river. The monitoring activities are used in coordination with a water monitoring kit, which can be donated to schools in the Guadalupe River Basin.

Watershed Puzzle - Everyone lives in a watershed - an area of land that drains water into a particular creek, river or lake. This puzzle will help you learn about the watersheds of the Guadalupe River Basin.

River of Life - GBRA's curriculum for middle school students and is designed to promote their understanding and appreciation of water. The curriculum includes lessons on the physical properties of water, the hydrologic cycle, watersheds of the Guadalupe River, the Edwards and other aquifers in the region, the health of a body of water, pollution sources, drinking water, and wastewater treatment. A teacher's guide, interactive CD for students, and other key materials are included in the kit.

Don't Be Clueless About Water Quality Curriculum Supplement (grades 5-8) - tackles Non-Point Source Pollution. Teachers interested in addressing watersheds and water quality in the Guadalupe River Basin, are encouraged to explore the topic, using the 5-E Model of Science Instruction. TEKS correlated. PowerPoint programs (access above) included in the program are Watershed Jeopardy and Why Watersheds. Also included is use of the Guadalupe River Basin puzzle.

Part III. Project Partners

25. Project Partners and Roles

a. <i>Project Partners (Organizations)</i> [*]	b. <i>Roles & Responsibilities</i>
Texas Commission On Environmental Quality (TCEQ)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TSSWCB
Guadalupe Blanco River Authority	Provide oversight and management of project activities at the grantee level; ensure coordination of activities with project partners; develop outreach and education resources
Irma Lewis Seguin Outdoor Learning Center (ILSOLC) (formerly known as Seguin Outdoor Learning Center)	Assist in the development of outreach and education resources; provide land for construction of demonstration best management practices; provide facilities for workshops and training; provide outreach and education to students, teachers, civic leaders, riparian landowners and general public; provide maintenance and upkeep of best management practices demonstrations
Texas AgriLife Extension Service (Extension)	Facilitation of the Geronimo and Alligator Creeks Watershed Partnership; assist in the development of outreach and education resources; provide instructors for classes focused on educating municipal officials on green infrastructure techniques; design of green infrastructure demonstrations and rainwater harvesting system
Texas Water Resources Institute (TAMU)	Assist in the development of interactive flash module that supports the Texas Riparian Workshops

Part IV. Planning Coordination

<p>26. Implements a WPP or a TMDL I-Plan</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, complete the additional items below.</p> <p>Document Title: The Geronimo and Alligator Creeks Watershed Protection Plan</p> <p>Developing Organization: Texas AgriLife Extension (www.geronimocreek.org)</p> <p>Document Location: (http://www.geronimocreek.org/documents/wpp/FinalDraftGACWPP.pdf)</p> <p>State Agency Overseeing Plan: TSSWCB</p> <p>Year Finalized: 2012</p> <p>Measures to Implement: Table 8.2 on page 91 identify the Seguin Outdoor Learning Center Nonpoint Source Pollution Educational Programs as described on page 76 in the WPP.</p>
<p>27. Implements the Texas Coastal Nonpoint Source Pollution Control Program</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If yes, complete the item below.</p> <p>Measures to Implement: Identify concisely the locations in the document (such as the section, page number, and BMP) that reference measures proposed to be implemented.</p>
<p>28. Implements the Texas NPS Management Program (draft 2012 update)</p>	<p>Check all that apply:</p> <p>Component 1(Ch. 2): Long Term Objectives: 1<input checked="" type="checkbox"/> 2<input type="checkbox"/> 3<input checked="" type="checkbox"/> 4<input type="checkbox"/> 5<input type="checkbox"/> 6<input checked="" type="checkbox"/> 7<input checked="" type="checkbox"/> 8<input checked="" type="checkbox"/> Short Term Objectives: Data Collection and Assessment: A<input type="checkbox"/> B<input type="checkbox"/> C<input type="checkbox"/> D<input type="checkbox"/> E<input type="checkbox"/> Implementation: A<input type="checkbox"/> B<input checked="" type="checkbox"/> C<input type="checkbox"/> D<input checked="" type="checkbox"/> Education: A<input type="checkbox"/> B<input type="checkbox"/> C<input type="checkbox"/> D<input checked="" type="checkbox"/> E<input type="checkbox"/> F<input type="checkbox"/> G<input type="checkbox"/> X</p> <p>Components(Ch. 1): 2<input checked="" type="checkbox"/> 3<input checked="" type="checkbox"/> 4<input checked="" type="checkbox"/> 5<input checked="" type="checkbox"/> 6<input checked="" type="checkbox"/> 7<input type="checkbox"/> 8<input type="checkbox"/> 9<input type="checkbox"/></p> <p>Milestones: Priority Watershed Milestones (Ch. 2): A<input type="checkbox"/> B<input type="checkbox"/> C<input type="checkbox"/> D<input type="checkbox"/> E<input checked="" type="checkbox"/> NPS Program Milestones (Appendix E): <input checked="" type="checkbox"/> Milestone/Measurement: Milestone is to Implement WPPs (ST2/D) and the Milestone Measurement is WPP Implementation Projects.</p> <p><i>The Components listed above are described in the instructions accompanying this form. The Components are also described in Chapter 1 of the draft 2012 Texas Nonpoint Source Management Program. The Long- and Short-Term Objectives are in Chapter 2. The Milestones are found in Chapter 2 and Appendix E.</i></p>

29. Project is in an area covered under an MS4 Permit:

Yes No

If yes, complete the additional items below.

MS4 Permit Holder: NA

The grantee has reviewed the MS4 Permit:

Yes No

The grantee has reviewed the Storm Water Management Program (SWMP):

Yes No

Does the proposed project fund activities required under an MS4 Permit or the associated SWMP:

Yes No

Activities required under an MS4 Permit or the associated SWMP are not eligible for CWA Section 319 funds.

Part V. Water Body Information

30. Water Body Information

Water bodies may include 1) stream, lake, or estuary segments and 2) major or minor aquifers.

<i>a. Watershed or Aquifer Name</i>	<i>b. Segment ID</i>	<i>c. Hydrologic Unit Code (10 or 12 Digit)</i>	<i>d. Size</i>
Geronimo Creek Watershed	1804A	121002020111	70 square miles

Part VI. Project Narrative

31. Problem/Need Statement:

In 2007, the TSSWCB Regional Watershed Coordination Steering Committee, using established criteria, ranked Geronimo Creek in the top three watersheds for selection of WPP development. The TSSWCB project entitled, *Development of a Watershed Protection Plan for Geronimo Creek*, was begun in June 2008. The project included water quality monitoring, water quality modeling and WPP development. The development of the WPP for Geronimo and Alligator Creeks has been a stakeholder driven process through a partnership between Extension and the GBRA. The Geronimo and Alligator Creeks Watershed Partnership (the Partnership) Steering Committee includes local officials, land and business owners and citizens and is supported by state and federal agency partners. With technical assistance from project staff, the Steering Committee has identified issues that are of particular importance to the surrounding communities, and has contributed information on land uses and activities that has been helpful in identifying the sources of nutrient and bacterial impairments, and in guiding the development of the WPP.

Historical data identified the bacteria impairment and a concern for nitrate-nitrogen. Potential sources of bacteria and nutrients were identified through the development of the WPP. Sources include: urban runoff, dog waste, wastewater collection systems, failing on-site sewage facilities (OSSFs), livestock (cattle, goats, and horses), deer, and feral hogs.

The Geronimo and Alligator Creek Watershed Protection Plan (GACWPP) was accepted by EPA on September 13, 2012.

The proposed project is the first step taken by the Irma Lewis Seguin Outdoor Learning Center as part of implementing the GACWPP. Implementation of the GACWPP has begun in other areas of the watershed. For example, to educate and increase awareness of water quality issues in the watershed, the GBRA began working with the Seguin High School by conducting a project-based summer class in the summers of 2012 and 2013. Students in the summer program conducted studies on Geronimo Creek, such as benthic macroinvertebrate sampling and identification, water quality monitoring, and stream cleanup activities. Also, located in the middle of the watershed in Geronimo, Navarro High School was the recipient of a 2011 Healthy Habitats grant focusing on the Geronimo Creek watershed. In partnership with the GBRA, students researched the Geronimo Creek watershed from its headwaters to the confluence with the Guadalupe River and then selected a location to restore natural grasses, forbs, and trees along the banks of the creek to help filter water flow during rain events to help prevent pollution. Healthy Habitat grants are designed to support students doing service-learning projects to benefit wildlife and the environment.

Farther upstream in the Alligator Creek watershed, New Braunfels has begun implementing components of their Phase II storm water permit, which will reduce bacteria and nutrient loading in storm water. Extension has conducted a Texas Watershed Stewards Workshop, Agricultural Nutrient Management Seminars, and has partnered with GBRA to provide informational booths at various environmental events. The City of Seguin has begun a CWA Section 319 grant, *Best Management Practice Implementation Project to Reduce Bacteria and Nitrate-nitrogen Loading in the Geronimo Creek Watershed*. Funding from this project will provide for decommissioning of failing on-site sewage systems (OSSFs), while the city will disconnect homes from on-site sewage systems (OSSFs) in an area with documented high failure rates and connect them to a sanitary sewer system, and decommission the old OSSFs.

This project will assist the Geronimo and Alligator Creeks Watershed Partnership's efforts to address the bacteria impairment and nutrient concerns in the watershed through education and outreach.

32. Project Goals: Design and implement educational components of the WPP that will serve as tools that can be utilized with elementary school students through high school, with teachers, with civic leaders, with riparian landowners and with the general public in order to enhance understanding of the health of a riparian and creek ecosystem in the Geronimo and Alligator Creeks watershed.

33. General Project Description:

“Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watershed through Outreach and Education” is a collaborative effort between the Guadalupe Blanco River Authority (GBRA) and the Irma Lewis Seguin Outdoor Learning Center (ILSOLC). The Irma Lewis Seguin Outdoor Learning Center is an environmental and recreational learning center located in the heart of the Geronimo and Alligator Creeks watersheds. Beginning with an initial donation of 23 acres from local resident Carla Blumberg in 1995, the Irma Lewis Seguin Outdoor Learning Center has grown to over 115 acres. With incredible support from the community, the school district, local businesses, public and private foundations, and a legion of volunteers, the ILSOLC has provided the citizens of south central Texas with a multitude of recreational and educational opportunities. ILSOLC offers many exciting, hands-on science and nature activities for explorers and naturalists of all ages. This proposed project will expand these activities to include opportunities to learn about nonpoint source pollution.

Geronimo Creek flows through the facility and is used as part of an outdoor “classroom” for learning about nature and the environment. School children of all ages from the Seguin, New Braunfels and Comal ISDs visit the facility annually. Classes rotate between stations to learn about fishing, kayaking, orienteering, and outdoor recreation. This project will expand that rotation by adding a station that focuses on the environmental health of the creek and its riparian habitat.

The project combines technology with on-the-ground demonstrations and outdoor education covering nonpoint pollution best management practices and associated load reductions, to implement behavioral change in stakeholders living and working in the Geronimo and Alligator Creeks Watersheds. The watershed protection plan states “An aggressive outreach and education program will be vital to successful engagement of watershed stakeholders.” Several of the project’s deliverables will highlight the Geronimo and Alligator Creeks watershed but will also be appropriate for use throughout the Guadalupe River Basin as well as across the state.

In year one of the project, GBRA will develop video and audio public service announcements focusing on two key nonpoint pollution sources identified in the watershed protection plan, dog waste and storm water quality. In years two and three, those public service announcements will be played on local media and on rolling ad monitors in businesses within the watershed.

The Texas Water Resources Institute (TWRI), under the Texas State Soil and Water Conservation Board’s Clean Water Act §319(h) Nonpoint Source Grant Program Project No. 12-07, *Statewide Delivery of Riparian and Stream Ecosystem Education Program*, is conducting 25 riparian workshops across the state. The goals of the TWRI project include 1) promotion of healthy watersheds and improvement of water quality through the delivery of riparian and stream ecosystem education programs with a focus on priority watersheds; 2) increase citizen awareness, understanding, and knowledge about the nature and function of riparian zones, their benefits, and BMPs to protect them and minimize NPS pollution; and, 3) enhance interactive learning opportunities for riparian education across the state and establish a larger, more well-informed citizen base working to improve and protect local riparian and stream ecosystems. GBRA and ILSOLC, in consultation with TWRI, will develop educational resources that support the TWRI riparian workshops.

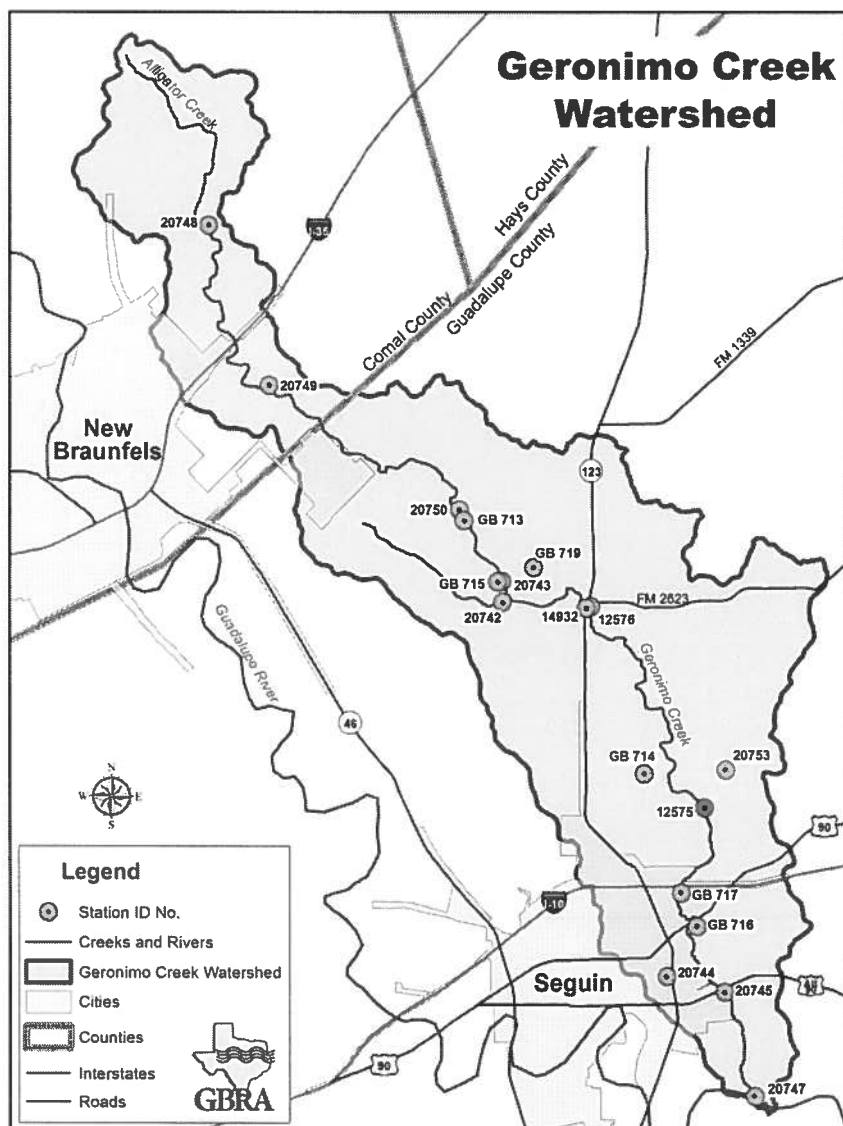
Those resources include an interactive, flash computer module appropriate for all ages. The interactive computer module will provide information about the riparian processes and features taught in the TWRI workshop, at “the touch of a finger” to a computer screen. The module will be installed onto the educational kiosk that was developed and made available to students in the Geronimo Creek watershed through the TCEQ CWA Section 319 grant, *Guadalupe River Basin Monitoring Network – Continuous Monitoring on Threatened or Impaired Water Bodies*, completed in 2012. Additionally, the module will be available on computers in the ILSOLC environmental science building for use during their environmental classes. GBRA and ILSOLC will develop a “riparian walk” along the Geronimo Creek on the ILSOLC property that takes what was introduced in the workshops and flash module, outdoors. The nature walk will include an interpretive kiosk and signage appropriate for all ages. Also, GBRA will develop a geocaching “treasure hunt” that takes high school students on a search for riparian plants and features, located along the creek.

In year one, Green Infrastructure demonstration structures will be designed by Texas AgriLife Extension. In years one and two, the demonstration projects will be constructed on the ILSOLC property. The demonstration projects include a vegetated swale, rain garden, and pervious pavement. A rainwater harvesting system and a garden that exhibits native plants and grasses will be constructed on the ILSOLC

site. The ILSOLC will support those demonstration projects by hosting two nonpoint source education workshops in years two and three. Texas A&M AgriLife Extension will assist with these workshops, and will provide professional educators with experience in Green Infrastructure (GI) techniques. The workshops will be opened to municipal officials, municipal staff, developers, and landowners and will focus on components of Green Infrastructure. The demonstration projects will also be available and open to other adult educational opportunities offered at the ILSOLC, such as classes for Master Naturalists and Master Gardeners.

The project will fund the necessary technology upgrades for the ILSOLC, including a router, lap top computers, microscope, projector and screen. The project covers the costs of a 0.5 FTE, who will be responsible for the development of the educational modules and materials and assist with outreach and classes.

34. Project Map: Map of the Geronimo and Alligator Creeks Watershed



Part VII. Project Tasks

35. Tasks

Task 1:	Project Administration
Objective:	To effectively administer, coordinate, and monitor all work performed under this project including technical and financial supervision and preparation of status reports.
Subtask 1.1:	Project Oversight – GBRA will provide technical and fiscal oversight of the staff and subgrantee(s)/ subcontractor(s) to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget. With the TCEQ Project Manager authorization, GBRA may secure the services of subgrantee(s)/ subcontractor(s). Project oversight status will be provided to the TCEQ with the Quarterly Progress Reports.
Subtask 1.2:	Quarterly Progress Reports (QPRs) – GBRA will submit QPRs to the TCEQ Project Manager by the 15th of the month following each state fiscal quarter for incorporation by the TCEQ into the Grant Reporting and Tracking System (GRTS). The Reports are to include the following: <ul style="list-style-type: none"> • Status of deliverables for each task • Brief narrative description in Progress Report format
Subtask 1.3:	Reimbursement Forms – GBRA will submit reimbursement forms to the TCEQ Contract Manager by the last day of the month following each state fiscal quarter. For the final quarter of the contract period, Reimbursement Forms are required on a monthly basis.
Subtask 1.4:	Contract Communication – GBRA will participate in a post-award orientation meeting with TCEQ within 30 days of contract execution. GBRA will maintain regular telephone and/or email communication with the TCEQ Project Manager regarding the status and progress of the project in regard to any matters that require attention between QPRs. Matters that must be communicated to the TCEQ Project Manager include, but are not limited to: <ul style="list-style-type: none"> • Notification a minimum of 14 days before that GBRA has scheduled public meetings or events, initiation of construction, or other major task activities. • Notification within 48 hours regarding events or circumstances that may require changes to the budget, scope of work, or schedule of deliverables.
Subtask 1.5:	Coordination Meeting with EPA – GBRA will attend a project update and coordination meeting with EPA in Dallas to share progress on goals, measures of success, challenges, programmatic issues and opportunities mid-way through the project.
Subtask 1.6:	Annual Report Article – GBRA will provide an article for the <i>Nonpoint Source Annual Report</i> upon request by the TCEQ. The article will include a brief summary of the project and describe the activities of the past fiscal year.
Deliverables:	<ul style="list-style-type: none"> • QPRs • Reimbursement Forms • Contract Communication Meeting Minutes • Annual Report Article

Task 2:	Riparian Education
Objective:	To illustrate how the riparian system works and its importance to the health of the ecosystem
Subtask 2.1:	Develop interactive flash module to support outreach and education in the watershed and the TWRI's riparian educational workshops statewide and install flash module on computer kiosk and laptop computers located at the ILSOLC
Subtask 2.2:	Purchase and install computer technology for the ILSOLC to support the use of the interactive module as part of workshops held at the ILSOLC, including riparian education, elementary school tours, landowners and Master Naturalists workshops
Subtask 2.3:	Develop geocaching exercise for high school students that visit the ILSOLC, taking students on a tour of the riparian network on the ILSOLC property to identify riparian vegetation and functions. Pre- and post-surveys will be administered to assess the level of increase in student knowledge of a riparian network.
Subtask 2.4:	Develop "riparian walk" on the ILSOLC site, along Geronimo Creek, including an informative kiosk and signage that includes QR codes for smart devices
Deliverables:	<ul style="list-style-type: none"> • Flash interactive module • Installation of module on computer kiosk and computers (10) at ILSOLC • Geocaching exercise, including pre- and post-surveys • "Riparian Walk" kiosk (up to 3 total kiosks) and signage • Purchase and installation of computers (11), projector (1), screen (1), router (1), microscope (1) (Task 2.2)

Task 3:	Nonpoint Source Pollution (NPS) Education
Objective:	Develop NPS resources to educate individuals about their watershed, the impacts of individual actions, and how they can reduce their impacts
Subtask 3.1:	Develop a 30-second video on the importance of picking up after your pets; post the video as a public service announcement on local media and on rolling ad monitors in businesses in the Geronimo Creek Watershed; develop an audio version for use as public service announcements on local radio stations
Subtask 3.2:	Develop a 1-minute video on the fate and transport of pollutants in storm water; post the video as a public service announcement on local media and on rolling ad monitors in businesses in the Geronimo Creek Watershed; develop an audio version for use as public service announcements on radio stations in the watershed
Subtask 3.3:	Organize and conduct two workshops on Green Infrastructure, including storm water controls, aimed at municipal officials and employees, landowners, and developers. Pre- and post-surveys will be administered to assess the education elevation of stakeholder knowledge of Green Infrastructure..
Deliverables:	<ul style="list-style-type: none"> • 2 NPS videos and associated audio versions to local radio stations • Two workshops (years two and three) on Green Infrastructure, including pre- and post-surveys

Task : 4	Demonstration of Green Infrastructure
Objective:	To demonstrate function, size and applicability of Green Infrastructure for urban nonpoint source pollution load reductions

Subtask: 4.1	Design and construction of a rainwater harvesting system that would collect rainwater off of the pavilion (3,344 sq. ft.) located at the ILSOLC; the system would provide storage for up to 12,300 gallons of rainwater for use in landscape watering and maintenance of the Green Infrastructure on the site; supported by signage and printed literature describing the rainwater harvesting system for use at workshops and other outreach events held at the ILSOLC
Subtask: 4.2	Design and construction of Green Infrastructure demonstration structures: pervious pavement (up to 6 parking slots), vegetated swale(s) (up to 600 linear feet), a rain garden (up to 800 square feet); supported by signage and printed literature for use at workshops and outreach events held at the ILSOLC
Subtask: 4.3	Design and construction of demonstration plot containing urban landscaping with native plants and grasses, promoting water conservation, proper fertilizer use and drought tolerance (up to 1,000 square feet); demonstration will be supported by signage and printed literature for use at workshops and other outreach events held at the ILSOLC
Deliverables:	<ul style="list-style-type: none"> • Installation of rainwater harvesting system • Installation of pervious pavement (up to 6 parking slots) • Installation of vegetated swale (up to 600 linear feet) • Installation of rain garden (up to 800 square feet) • Installation of demonstration plot of native grasses and plants (up to 1,000 square feet) • Printed information and signage

Task 5:	Marketing
Objective:	To develop outreach strategies and materials that advertise and promote riparian education, the use of Green Infrastructure and nonpoint source education as described in Tasks 2-4
Subtask 5.1:	Deliverables and accomplishments associated with Task 2 will be advertised/ marketed to stakeholders in the watershed through a press release, Partnership meeting presentations, posting to Geronimo Creek Watershed Partnership project web page http://www.geronimocreek.org/ , and Geronimo Creek Watershed Partnership newsletter
Subtask 5.2:	Deliverables and accomplishments associated with Task 3 will be advertised/ marketed to stakeholders in the watershed through a press release, Partnership meeting presentations, posting to Geronimo Creek Watershed Partnership project web page http://www.geronimocreek.org/ , and Geronimo Creek Watershed Partnership newsletter
Subtask 5.3:	Deliverables and accomplishments associated with Task 4 will be advertised/ marketed to stakeholders in the watershed through a press release, Partnership meeting presentations, posting to Geronimo Creek Watershed Partnership project web page http://www.geronimocreek.org/ , and Geronimo Creek Watershed Partnership newsletter
Deliverables:	<ul style="list-style-type: none"> • Deliverables and accomplishments advertised and/or marketed per subtask 5.1 • Deliverables and accomplishments advertised and/or marketed per subtask 5.2 • Deliverables and accomplishments advertised and/or marketed per subtask 5.3

Task 6:	Final Report
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Objective:	GBRA will produce a Final Report that summarizes all activities completed and conclusions reached during the project. The report will describe project activities, and identify and discuss the extent to which project goals and purposes have been achieved, and the amount of funds actually spent on the project. The report will emphasize successes, failures, lessons learned, and will include specific water quality data demonstrating water quality improvements if applicable. The Final Report will summarize all the Task Reports in either the text or as appendixes.
Subtask 6.1:	<p>Draft Final Report – GBRA will provide a draft report summarizing all project activities, findings, and the contents of all previous deliverables, referencing and/or attaching them as web links or appendixes. This comprehensive, technical report will provide analysis of all activities and deliverables under this scope of work. The report should be structured per the following outline:</p> <ul style="list-style-type: none"> • Title • Table of Contents • Executive Summary • Introduction • Project Significance and Background • Methods • Results and Observations • Discussion • Summary • References • Appendixes
Subtask 6.2:	Final Report – GBRA will revise the draft report to address comments provided by the TCEQ Project Manager and the EPA. GBRA will submit the final report to the TCEQ Project Manager, who will subsequently submit it to EPA.
Deliverables	<ul style="list-style-type: none"> • Draft Final Report • Address TCEQ/EPA comments pursuant to TCEQ/EPA approval • Final Report

Part VIII. Measures of Success

36. Measures of Success:

Education evaluations show an increase in stakeholder knowledge about the Geronimo Creek watershed and how to reduce NPS pollution as a result of the project.

37. Estimated Load Reductions and Method(s) (if applicable):

Not applicable.

Part IX. Project Timeline

38. Estimate timeline for project activities

Task/ Sub- task	Description	FY 15 Q1	FY 15 Q2	FY 15 Q3	FY 15 Q4	FY 16 Q1	FY 16 Q2	FY 16 Q3	FY 16 Q4	FY 17 Q1	FY 17 Q2	FY 17 Q3	FY 17 Q4
1	Project Administration	x	x	x	x	x	x	x	x	x	x	x	x
2	Riparian Education												
2.1	Interactive Flash Module	x	x	x	x	x	x	x	x	x	x	x	x
2.2	Install module on kiosk					x							
2.3	Purchase and install technology		x	x									
2.4	Geocaching exercise		x	x		x	x	x	x	x	x	x	x
2.5	Riparian walk		x	x	x	x	x	x	x	x	x	x	x
3	Nonpoint Source Education												
3.1	Pet waste video and audio	x	x	x	x	x	x	x	x	x	x	x	x
3.2	Storm water video and audio	x	x	x	x	x	x	x	x	x	x	x	x
3.3	NPS workshops							x				x	
4	Demonstration of Green Infrastructure												
4.1	Design and installation of rainwater harvesting system and supporting educational materials	x	x	x	x	x	x	x	x	x	x	x	x
4.2	Design and construction of storm water control demonstration projects and supporting educational materials	x	x	x	x	x	x	x	x	x	x	x	x
4.3	Design and construction of urban landscaping demonstration	x	x	x	x	x	x	x	x	x	x	x	x
5	Marketing												
5.1	Marketing of Task 2 (Riparian Education)			x				x				x	

Task/ Sub- task	Description	FY 15 Q1	FY 15 Q2	FY 15 Q3	FY 15 Q4	FY 16 Q1	FY 16 Q2	FY 16 Q3	FY 16 Q4	FY 17 Q1	FY 17 Q2	FY 17 Q3	FY 17 Q4
5.2	Marketing of Task 3 (NPS Education)			x				x				x	
5.3	Marketing of Task 4 (Demonstration of Green Infrastructure)			x				x				x	
6	Final Report												
6.1	Draft Final Report									x	x	x	
6.2	Final Report										x	x	
6.3	TCEQ/EPA Approval												x

Part X. Financial Information

**39. TCEQ Reimbursable Project Costs
(Federal portion that must equal 60% of overall project costs)**

Category	Total Amount	Justification (itemized expenses)
Personnel	\$ 40,800	Development of the educational modules and materials and conduct outreach and classes 0.33 FTE – Environmental Education Specialist (\$20/hr; 680 hrs per yr for 3 yrs)
Fringe Benefits	\$16,320	Health Insurance, Retirement and Payroll Taxes (40% of labor)
Travel	\$380	Mileage to EPA meeting
Supplies	\$16,800	Supplies for educational materials and community meetings (\$1,800); laptop computers (10) (\$7,500); router for wi-fi (\$1,000), projector (\$2,000), screen (\$500), teacher workstation computer (\$1,000); microscope (\$3,000)
Equipment	\$0	
Contractual	\$25,800	Design of flash module graphics (\$5,000); preparation of videos and audio clips (\$20,800)
Construction	\$59,700	Installation of LID structures (\$27,000: rain garden - \$6,000; pervious parking - \$14,000; vegetated swale(s) - \$7,000), riparian walkway (\$4,000), signage (\$1,700), kiosks (up to 3 - \$3,000), rainwater harvesting (\$20,000: \$10,500 – 12,300 gallon storage tank, piping, pump, and supplies; \$9,500 – installation, concrete pad (up to 20 ft X 20 ft), gutters and solar panel) and landscape demonstration using native grasses and plants (\$4,000)
Other	\$14,000	Video ad time (\$6,000), workshops (\$4,000), printing of supporting materials (\$4,000)
Indirect	\$10,200	25% of Labor
Total	\$184,000	

40. Matching Project Costs Provided by the Grantee

(Non-Federal portion that must equal 40% of overall project costs)

Category	Total Amount	Justification (itemized expenses)
Personnel	\$52,862	Project Administration, development of all educational resources, construction management (GBRA) 0.02 FTE – Director of Water Quality Services (\$47.42/hr; 47 hrs per yr for 3 yrs) 0.15 FTE – Environmental Education Coordinator (\$32/hr; 312 hrs per yr for 3 yrs) 0.1 FTE – Graphics Designer (\$26/hr; 208 hrs per yr for 3 yrs)
Fringe Benefits	\$ 21,340	Health Insurance, Retirement and Payroll Taxes (40.4% of labor)
Travel	\$ 0	
Supplies	\$ 0	
Equipment	\$ 0	
Contractual	\$ 0	
Construction	\$ 0	
Other	\$ 30,910	Construction management, coordination of workshops and school tours, development of educational resources (ILSOLC) 0.1 FTE Administrator (\$22/hr; 208.3 hrs per yr for 3 yrs Volunteer hours to conduct tours; assistance in installation of demonstration projects (780 hours X \$22=\$17,160 per https://www.independentsector.org/volunteer_time);
Indirect	\$ 13,388	25.33% of GBRA labor
In-kind	\$ 4,167	Use of land for demonstration projects (3 acres at \$1,389 per acre; lease rate of \$463 per acre per year)
Total	\$122,667	

41. Budget by Task

Task #	Title	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
1	Project Administration	\$ 380	\$ 18,693	\$ 19,073
2	Riparian Education	\$ 43,330	\$ 26,904	\$ 70,234
3	Nonpoint Source Pollution Education	\$ 44,130	\$ 32,920	\$ 77,050
4	Green Infrastructure	\$ 79,330	\$ 29,316	\$ 108,646
5	Final Report	\$ 16,830	\$ 14,834	\$ 31,664
	Total	\$ 184,000	\$ 122,667	\$ 306,667

42. Budget Summary

Category	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
a. Personnel	\$ 40,800	\$52,862	\$ 93,662
b. Fringe Benefits	\$16,320	\$ 21,340	\$37,660
c. Travel	\$380	\$ 0	\$380
d. Supplies	\$16,800	\$ 0	\$16,800
e. Equipment	\$0	\$ 0	\$0
f. Contractual	\$25,800	\$ 0	\$25,800
g. Construction	\$59,700	\$ 0	\$59,700
h. Other	\$14,000	\$ 30,910	\$44,910
i. Subtotal: Total Direct Costs (sum a-h)	173,800	\$ 105,112	\$ 278,912
j. Indirect Costs	\$10,200	\$ 13,388	\$ 23,588
k. Other In-kind / Third Party		\$4,167	\$4,167
l. Total Project Costs (sum k & l)	\$184,000	\$122,667	\$306,667

Part XI. Applicant Authorization

43. Applicant Signature

Debbie Magin	Title Director of Water Quality Services	Date 1/23/2014

The Geronimo and Alligator Creeks Watershed Protection Plan



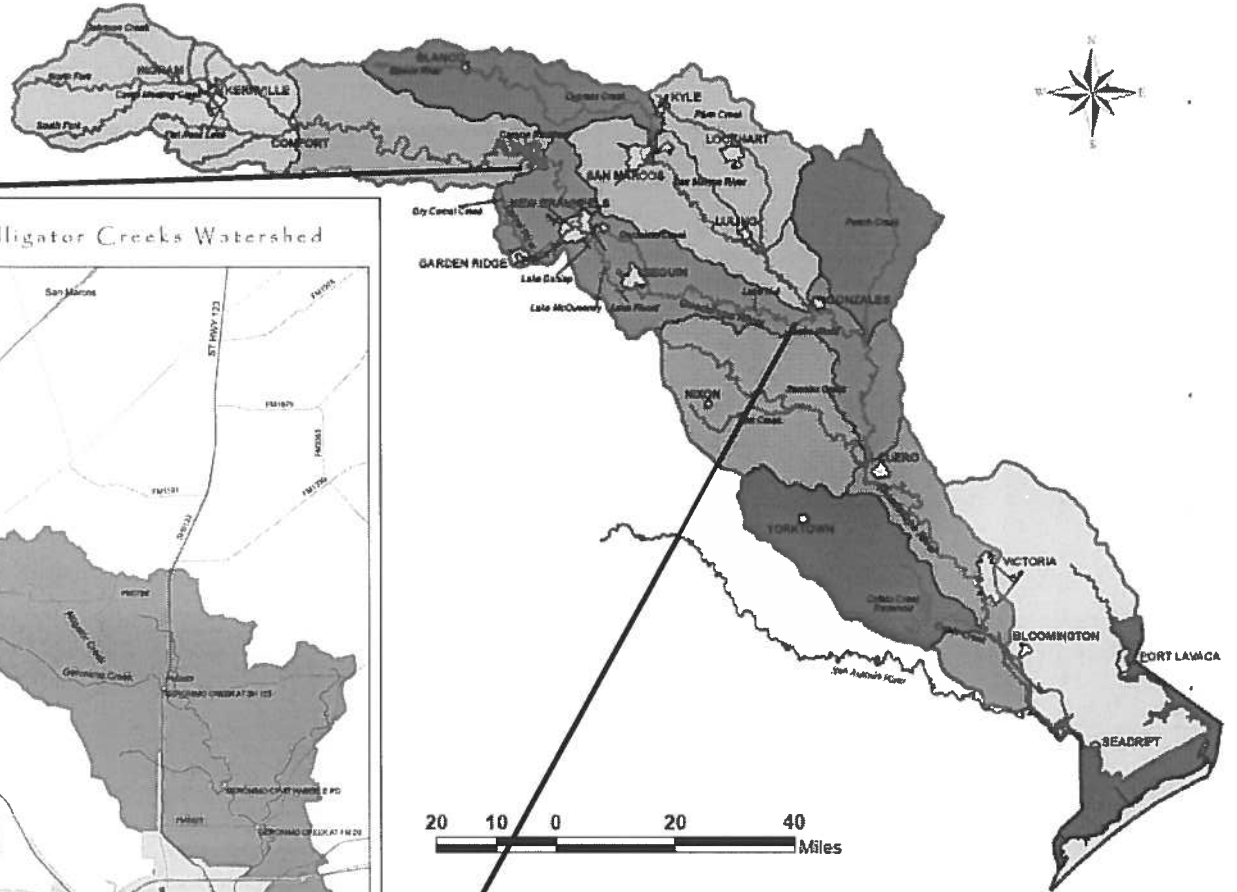
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Texas A&M AgriLife Extension

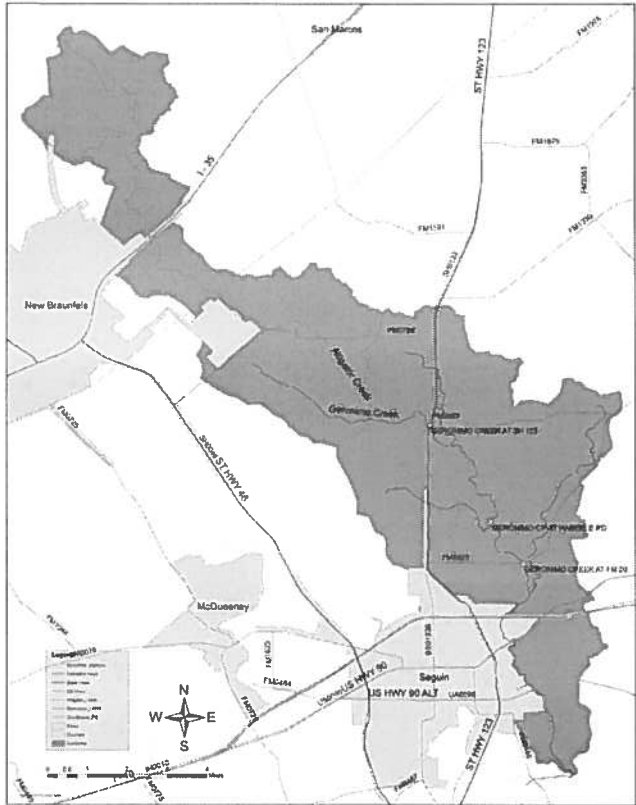


*CRP Basin Steering Committee
March 20, 2014*

GUADALUPE RIVER BASIN WATERSHEDS



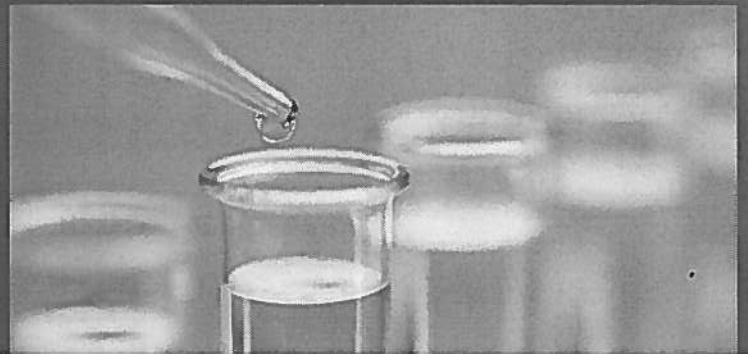
Gerónimo and Alligator Creeks Watershed



Water Quality

- Geronimo Creek was listed on the 2006 303(d) list for not supporting its contact recreation use
 - 2008 assessment, *E. coli* geomean of 162 cfu/100mL

- Geronimo Creek was first listed in 2000 for concern for nutrient enrichment
 - 2008 assessment, all 60 samples exceeded 1.95 mg/L nitrate-nitrogen



Funding

- GBRA received grant funding from the Texas State Soil and Water Conservation Board
- GBRA subcontracted to AgriLife Extension to assist with project components



What is the Geronimo and Alligator Creeks Watershed Protection Plan?

- A community-driven management plan that uses the watershed approach to solve complex water quality problems
- The purpose is to restore and protect the creeks
- It was developed and managed through partnerships among federal, state, county and local groups and organizations
- It relies heavily on stakeholder involvement at the local level

“Steak holder”

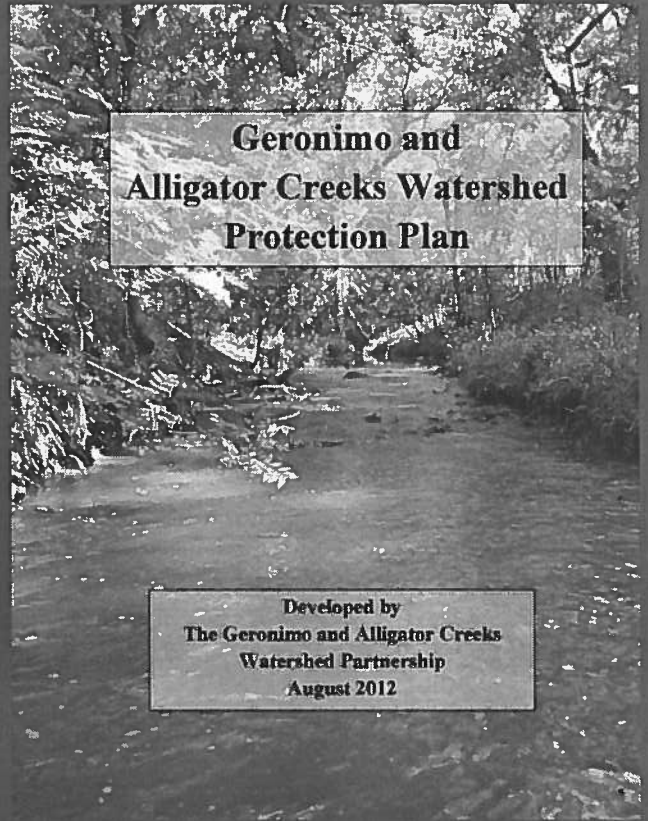


Implementation Partners



Good News!

- EPA accepted the Geronimo and Alligator Creeks WPP on September 13, 2012
- WPP development began in late 2009
- 27 meetings and workshops
- 37,629 website hits



**Geronimo and
Alligator Creeks Watershed
Protection Plan**

**Developed by
The Geronimo and Alligator Creeks
Watershed Partnership
August 2012**

EPA Acceptance

- Satisfies EPA that a stakeholder group is addressing the local watershed issues, and that implementation should result in standards attainment in a reasonable length of time
- Allows for federal funding to flow into the watershed to support management measures identified in the plan
- Of the 12 WPPs completed in Texas, only 5 have been accepted by EPA
 - Plum Creek, Lake Granbury, Geronimo and Alligator Creeks, Upper Cibolo Creek, and Lampasas River

Where is it coming from?

- The impairment is the result of loading from nonpoint sources:
 - Urban: dogs, urban runoff
 - Agricultural: livestock, feral hogs, wildlife
 - Wastewater: septic systems



Urban Nonpoint Sources

- Urban Stormwater Runoff
- Dog Waste



Agricultural Nonpoint Sources

- Livestock (cattle, horses, goats)
- Feral Hogs



Wastewater Work Group

- Failing Septic Systems
- Wastewater Collection Systems



Management Measures

- Urban nonpoint sources
- Agricultural nonpoint sources
- Wastewater sources



Urban Goals

- Implement Phase II Stormwater permit activities
 - Initiate a public education and outreach program
 - Create opportunities for public involvement in the stormwater program
 - Establish an illicit discharge detection and elimination program
 - Manage construction site stormwater runoff
 - Manage post-construction runoff
 - Establish pollution prevention and good housekeeping practices for municipal operations

More Urban Goals

- ❑ Implement/expand spay/neuter programs for pets
- ❑ Install additional pet waste stations
- ❑ Provide nutrient management training to ISDs, city and county maintenance and parks departments and others
- ❑ Provide trainings for decision makers on nonpoint source pollution



Agricultural Goals

- Develop Water Quality Management Plans for livestock and cropland operations in the watershed
- WQMPs are voluntary, site-specific management plans for individual operations

County	Subwatershed	Animal Units	Number of Farms	Recommended # of WQMPs
Comal	1	54	2	1
Guadalupe	2	126	4	1
	3	128	4	1
	4	249	8	2
	5	149	5	1

Agricultural Goals

- Created a new position in the watershed for the Comal-Guadalupe SWCD to assist agricultural producers with development and implementation of Water Quality Management Plans



Feral Hog Control

- ❑ The new Feral Hog Education Program Assistant, Dan Gaskins, is focusing on feral hog management in the Geronimo and Alligator Creeks watershed
- ❑ He is working directly with landowners to manage hog populations in the watershed
- ❑ Feral Hog Workshops



Wastewater Goals

- Incorporated NBU's and the City of Seguin's Sanitary Sewer Overflow Initiatives agreement with TCEQ into the WPP
 - Routine, frequent sewer line inspections
 - Replacement/repair of failing sewer lines
 - Upgrade the lift station to the Geronimo Creek WWTF



Wastewater Goals

- Provide educational programs for homeowners with septic systems
- Seek funding sources to provide for repair/replacement/upgrade of failing septic systems
- Explore ways to expand sewer systems to areas served by septic systems
- Continue with current inspection and enforcement programs for septic systems
- Seek funding for annual household hazardous waste cleanups in the watershed

Decommissioning Project

- ❑ Fund decommissioning costs that the homeowners would be responsible for
- ❑ Estimated average cost of \$1,500 to decommission a septic system
 - Pump contents of septic tank
 - Remove the tank cover
 - Fill tank with sand/gravel
- ❑ Decommissioning is a state requirement



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Irma Lewis Seguin Outdoor Learning Center

- “An aggressive outreach and education program will be vital to successful engagement of watershed stakeholders”
- Collaboration between GBRA, Texas A&M AgriLife, and the Irma Lewis Seguin Outdoor Learning Center
- Combines technology with on-the-ground demonstrations and outdoor education

Creeks Clean Up Event

- ❑ Established the first event in 2013 on the first weekend in April
- ❑ Over 100 volunteers removed almost 3,000 pounds
- ❑ This year's event will be bigger and better



Isotope Study

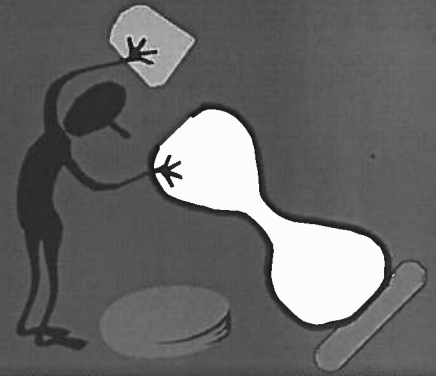
- GBRA and USGS will conduct targeted surface water quality monitoring to better identify the source of nitrates in the groundwater and surface water in the Geronimo and Alligator Creeks Watershed and Plum Creek Watershed

Educational Opportunities

- Texas Watershed Steward Workshop
- Texas Well Owner Network Workshop
- Lone Star Healthy Streams Program
- Sports and Athletic Field Education workshops
- Riparian Workshop
- Bacteria, nutrient, and pesticide management programs
- Soil and water testing campaigns
- Educational Workshops for decision makers
- Master Gardener and Naturalist training

Events for 2014

- Smart Growth Workshop March 25th
- Second Annual Creek Clean Up April 5th
- Septic system homeowner workshops April 28th and 29th
- Feral Hog Workshop May 25th
- Lone Star Healthy Streams Workshop June 5th
- Rainwater Harvesting August 12th
- Quarterly newsletter
- Quarterly Partnership meetings



Thank You!
Questions and comments



Contact Information

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Deficiency/Nonconformance/Corrective Action Report for CRP

Report #: 032014-CHLA CS	Date: ex. 03/20/14
Parameter affected: 427 & 430	prepared by: CASEY SALINAS
List sample #'s and sample sites affected	239586, 239587, 239588, 239589, 239590, 239591, 239592, 239594, 239595, 239596, 239597, 239647, 239648, 239649, 239650, 239651, 239652, 239653, 239654, 239655, 239656, 239752, 239753, 239754, 239755, 239756, 239757, 239758, 239905, 239906, 239907, 239908, 239909, 239910, 239911, 239912, 239913, 239914, 239915
Description of Deficiency	90% Acetone magnesium carbonate was not made properly.
Is Deficiency a NONCONFORMANCE?	Yes
Y or N If yes, complete report, if no	
indicate the date of closure	
Cause of Nonconformance	The wrong bottle was grabbed during preparation of 90% acetone magnesium carbonate. Magnesium salt was used to prepare the reagent and NOT magnesium carbonate.
Impact of Nonconformance /TRACS	Will cause a non reportable issue with CRP-GBRA.
Is Data reportable?	No.
Corrective Action to Nonconformance	The magnesium salt has been labeled with "for Hardness Use" using a bright orange tape. The magnesium carbonate was labeled with "for Chla use" with bright green tape.
Date of proposed action	3/25/2014
Person (s) responsible for action	Casey Salinas

Initial and Date completed	CS 03/26/14
Initial and Date closed	signed by QAO/Designee
(GBRA use only) Zero Charges-Yes/No	Yes