BACTERIA IMPLEMENTATION GROUP

Animal and Agriculture Work Group
Meeting Agenda
Thursday, April 26, 2018
10:00 AM to 12:00 PM
Houston Advanced Research Center
8801 Gosling Rd., The Woodlands, TX 77381

Call to Order/Welcome/Introductions

Review Summary from 4/18/2017 Meeting

Discussion: Preparing BIG 2018 Annual Report – I-Plan Strategies 7.0 Animal and Agriculture Sources
Work group will:

- review the 2017 Annual Report,
- review the timeline for preparing the 2018 report,
- report on implementation activities accomplished in the 2018 calendar year, and
- discuss focus and priorities for 2018 calendar year.

Discussion: Review I-Plan Language for Strategies 7.0 Animal and Agriculture
Work group will:

- review approved I-Plan wording and anticipate potential I-Plan revisions during 5th year of implementation (2018),
- agree on any updates, and
- develop recommendations, if necessary, that will be presented at the annual BIG meeting for approval.

Adjourn

Upcoming Meeting Schedule

6/5/2018	BIG Spring Meeting (1:00 PM)
5/2/2018	OSSF and Illicit Discharge Work Group
5/7/2018	Research and Monitoring Work Group

Instructions to call into BIG meetings:
To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the course of the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.

BACTERIA IMPLEMENTATION GROUP

Animals and Agriculture Workgroup
Draft Meeting Summary
Tuesday, April 18, 2017
10:00 AM to 12:00 PM
HARC: 8801 Gosling Rd., The Woodlands, 77381

Call to Order/Welcome/Introductions

Zafar Ahmed (COH), Camila Biaggi (Harris Co.), Linda Broach (TCEQ), Richard Chapin (COH), Mike Heimer (Montgomery Co. Extension), David Parkhill (SJRA)

Review Summary from 1/20/2016 Meeting

The work group reviewed the draft summary and did not propose any changes. The work group did note that Brett with SJRA would be the contract to follow up on nutrient reduction measures for Lake Conroe.

Discussion: Preparing BIG 2017 Annual Report – I-Plan Strategy 7.0 Animal and Agriculture Sources

Workgroup reviewed the 2016 Annual Report and timeline for preparing the 2017 report. The work group reported on implementation activities accomplished in the 2016 calendar year. Montgomery County Extension reported on several efforts to deal with feral hog populations. Landowner and subdivision groups in Magnolia are participating in trapping programs. Spring Creek ISD has noted damage due to feral hogs. The County noted that most of their effort and success has been focused on one-on-one meetings with interested groups or individuals. These individuals are more likely to make changes on their property to address feral hogs or improve water quality. The County updated the work group of efforts to legalized the use of poison to manage feral hog populations. The work group suggested contacting Hughes Simpson with Texas Forrest Service for their work on Timber Management.

Discussion: Review I-Plan Strategy 7.0 Animals and Agriculture Language

Workgroup reviewed approved I-Plan wording and discussed potential editorial changes. The group did not recommend any changes.

Adjourn

Upcoming Meeting Schedule

East and West Fork San Jacinto: 1:00 on 4/27/2017 at SJRA, Conroe, TX
BIG Annual Meeting: 1:00 PM on 5/23/2017

Animals and Agriculture

7

Summary

Animals and agricultural practices contribute to increased bacteria levels in sediment runoff to waterbodies. Cattle and poultry are the most common agriculture animals of concern in the BIG project area. However, clusters of other animals—such as horses, swine, sheep, and goats— also may contribute to water quality impairments throughout the area. Of interest to BIG stakeholders are feral hogs, considered a state and national problem, estimated to cause $52 million in crop loss in the state each year. Feral hogs damage property due to their rooting and wallowing. They also defecate, often directly into waterways, contributing large amounts of bacteria and nutrients into the environment.

Most agricultural management programs are either voluntary or apply only to confined animal feeding operations (CAFOs) designated by the EPA. These operations are not present in the BIG project area. On April 18, 2017, six members of the Animals and Agriculture Workgroup met and recommended continuing agriculture related outreach and education events, supporting use of individual water quality management plans and following up with the Natural Resource Conservation Service (NRCS) and San Jacinto River Authority on nutrient management programs.

2017 Focus

- H-GAC and BIG stakeholders aim to
  - Continue to encourage agriculture producer involvement in existing Texas State Soil and Water Conservation Board (TSSWCB), Texas AgriLife Extension, and Texas Water Resources Institute (TWRI) programs;
  - Continue to provide technical support and education opportunities;
  - Gather latest information on nutrient management programs; and
  - Continue to track results of Harris County's feral hog management project.

Implementation Strategies

7.1 Promote Increased Participation in Existing Programs for Erosion, Control Nutrient Reduction and Livestock Management

Interim Measure: Each year, participation by farmers and ranchers in financial and technical assistance programs should increase by 5%.

Project Status

Not Started	Behind Schedule	– *This activity is On Schedule to meet the annual target.*
Initiated	**On Schedule**	
In Progress	Ahead of Schedule	
Completed		

Implementation Effort

- **Implementation.**
  - AgriLife Extension Agents reported that there most effective program outreach is one-on-one efforts with land owners.
  - TSSWCB reported there were no new water quality management programs in the BIG project area.
  - NRCS and TSSWCB continued to report owners have placed 8,816 acres under federal funding and technical assistance agriculture programs (Conservation Technical Assistance, Environmental Quality Incentives Program, and Wildlife Habitat Incentive Program) to implement agricultural BMPs.

- **Education and Resources.**
  - The Texas Water Resources Institute (TWRI), as part of its Lone Star Healthy Streams (LSHS) Program, hosts a website to educate Texas farmers, ranchers, and landowners about proper grazing, feral hog management, and riparian area protection to reduce the levels of bacterial contamination in streams and rivers.
  - Best Management Practices: http://lshs.tamu.edu/bmps/
    - Publications and Presentations: http://lshs.tamu.edu/publications/

7.2 Promote the Management of Feral Hog Populations

Interim Measure: During the next five years, AgriLife Extension will host two feral hog management workshops per year for landowners, local governments, and other interested people.

Project Status

Not Started	Behind Schedule	– *This activity is Ahead of Schedule to meet the five-year target.*
Initiated	On Schedule	
In Progress	**Ahead of Schedule**	
Completed		

Implementation Effort

- **Implementation**
  - In 2016, Harris County Precinct 3 continued feral hog trapping activities in Addicks and Barker reservoirs as part of a $630,000 Coastal Impact Assistance Program grant received in 2013. Baseline water quality monitoring began in September 2014 and was completed in April 2015. Since trapping operations under the grant began in June 2014, 373 feral hogs were removed from the reservoirs. More than 21,276 pounds of hog meat have been donated to the Houston Food Bank for distribution. The grant period ended on December 31, 2016. (Source: Harris County)
- **Education and Resources.**
  - AgriLife Extension Agents reported that there most effective program outreach is one-on-one efforts with land owners.
  - AgriLife Extension Online: (Biology, Damages, Management and Control, Videos and Webinars) http://articles. extension.org/feral_hogs

Figure 8. Vegetative buffer strip agriculture BMP.

Implementation Strategy 7.0: Agriculture and Animal Sources

Bacteria loads from agricultural practices and animals are identified in the TMDLs as nonpoint sources of concern. Areas of concern include the potential for bacteria to attach to sediment in runoff, the potential effect that nutrients will have on bacteria growth rates in water bodies, and livestock's direct deposition of fecal waste in waterways. Existing management programs are traditionally voluntary, unless large populations of animals are involved. The expansion of existing programs could help lower bacteria levels in waterways, particularly in subwatersheds where substantial areas of land are devoted to crop, pasture, and range. (See Figure 6.) According to the technical documents for each of the TMDLs, there are no Concentrated Animal Feeding Operations (CAFOs) in the areas covered by this I-Plan. However, livestock populations have been estimated for the area for the Clear Creek and the Lake Houston TMDLs. Cattle and poultry are most abundant livestock in the region. Estimated populations are described in Table 7.

Table 7: Estimated Livestock Populations

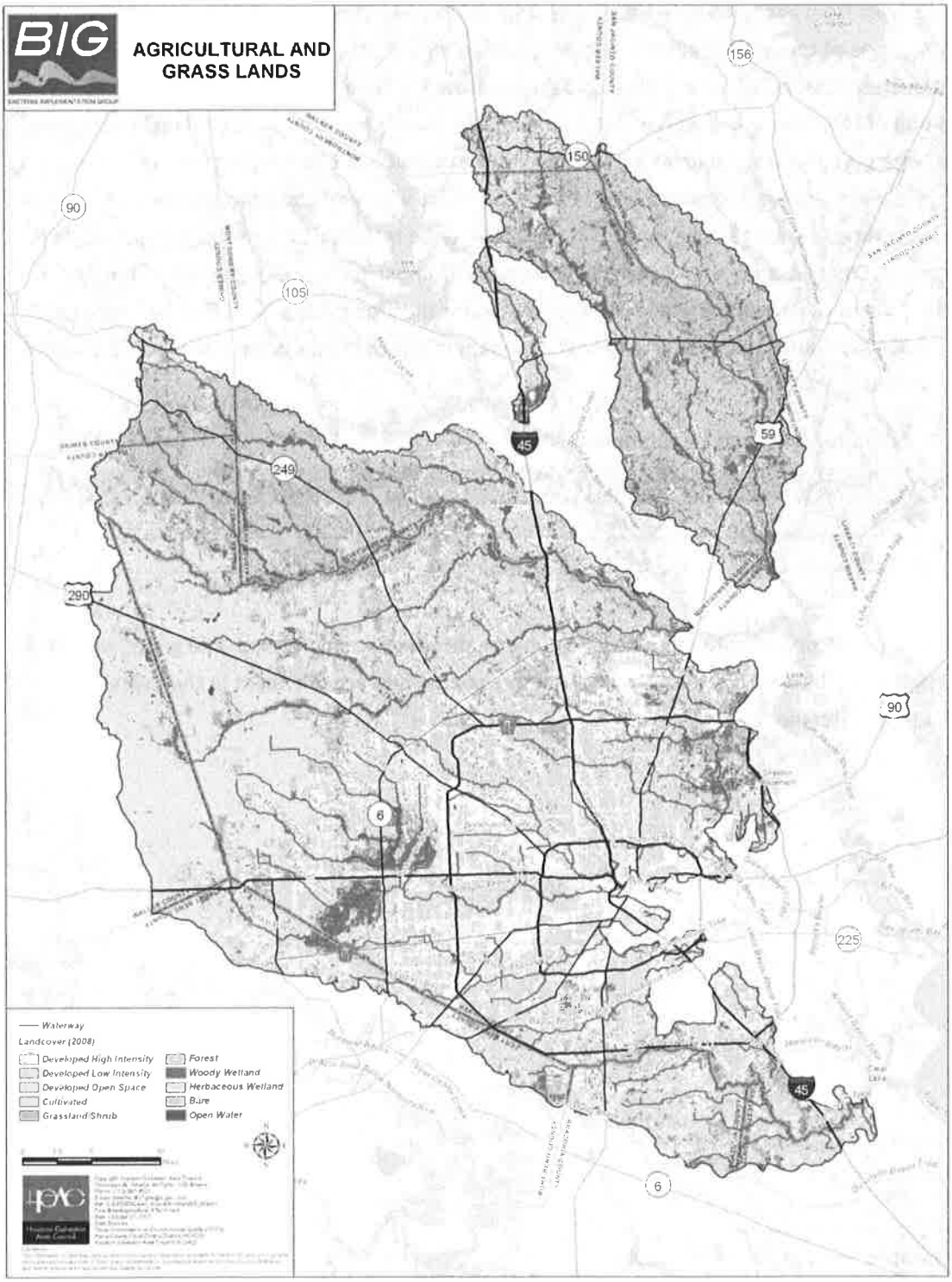
TMDL	Cattle	Poultry
Clear Creek[93]	2,696	2,093
Lake Houston[94]	52,510	50,293

Other animals of concern throughout the region include horses, swine, sheep, and goats, with their densities varying by watershed. For example, horse populations are prevalent in the Cypress Creek and Spring Creek watersheds.

[93] (University of Houston & Parsons 2009b)

[94] (James Miertschin & Associates, Inc. 2009)

Figure 6: Map of Agricultural and Grass Lands



A prominent concern raised by stakeholders pertains to feral hogs. In addition to being a nuisance to landowners because of their rooting and wallowing and occasional predation of small livestock, feral hogs discharge large amounts of bacteria and nutrients into the environment through fecal waste. No precise estimate of the number of feral hogs is available for the BIG project area, yet anecdotal evidence suggest a large hog population in the region. Hogs are known to reproduce quickly, have no natural predators, and spend the majority of their time either in or around water.[95] Hogs are likely a significant source of bacteria for some of the impaired waterways encompassed by this I-Plan.

The four governmental agencies in the following list will be responsible for implementing management measures aimed at reducing nonpoint source loadings from agricultural operations. Their duties and activities related to this I-Plan are described in greater detail in Appendix H.

- **Texas State Soil and Water Conservation Board (TSSWCB)** – The TSSWCB is the lead agency in Texas responsible for planning, implementing, and managing programs and practices for preventing and abating agricultural and silvicultural (forestry) nonpoint source pollution.[96]
- **Natural Resources Conservation Service (NRCS)** – The NRCS provides conservation planning and technical assistance to landowners, groups, and units of government to develop and implement conservation plans that protect, conserve, and enhance their natural resources.
- **Soil and Water Conservation Districts (SWCDs)** – Through decades-old agreements, SWCDs offer agricultural landowners and operators technical assistance through partnerships with the NRCS and the TSSWCB.
- **Texas AgriLife Extension Service** – AgriLife Extension, an agency of the Texas A&M University System, provides quality, relevant outreach and continuing education programs and services to Texans.

Additional agencies may be able to facilitate voluntary actions pertaining to wildlife and property management activities. Agencies include Texas Parks and Wildlife Department, the U.S. Fish and Wildlife Service, wildlife management associations and co-ops, and other entities.[97]

Implementation Activity 7.1: Promote Increased Participation in Existing Programs for Erosion Control, Nutrient Reduction, and Livestock Management

A variety of programs provide farmers and ranchers with the technical and financial assistance necessary to combine agricultural production with environmental control actions. These actions may address

[95] (Taylor n.d.)

[96] See Tex. Agric. Code § 201.026

[97] The Private Landowner Network maintains a comprehensive list of resources available to private landowners at http://www.privatelandownernetwork.org/grantprograms/.

water quality, reduction of soil erosion and sedimentation, livestock waste management, and other issues that are likely to reduce bacteria in regional waterways.

Funding mechanisms identified by stakeholders include:

- Environmental Quality Incentives Program (EQIP), administered by the NRCS;
- Water Quality Management Plan Program (WQMP), a part of the Texas Non-Point Source Management Program administered by the TSSWCB through the SWCDs;
- Conservation Innovation Grants, administered by the NRCS;
- Conservation Security Program (CSP), administered by the NRCS;
- Farm and Ranch Lands Protection Program, administered by the NRCS;
- Grassland Reserve Program, administered by the NRCS;
- Wetlands Reserve Program, administered by the NRCS; and
- Wildlife Habitat Incentives Program, administered by the NRCS.

The funding mechanisms in the preceding list should not be considered an exhaustive list. Additional programs may be added as this I-Plan is updated.

These voluntary programs provide technical and financial assistance. Program participation levels should be increased by increasing familiarity with the program through marketing. Primary methods for disseminating information and increasing participation include:

- Texas AgriLife Extension Service agents' contact with the public;
- Public outreach from local SWCDs;
- Information distribution through local 4-H clubs, rodeos, the Texas Farm Bureau, the Texas and Southwestern Cattle Raisers Association, the Independent Cattleman's Association of Texas, Future Farmers of America, and at Agricultural Field Days; and
- Word of mouth.

Implementation of erosion control, nutrient reduction, and livestock management programs likely will not result in immediate cost savings to the landowner. However, implementation does have other benefits that should be promoted, including increased plant health, increased infiltration, reduced erosion, and increased filtration and trapping of nutrients. Additionally, participation should help landowners avoid violating water quality regulations and the associated fines. If a participating landowner violates water quality regulations while following an approved plan, the regulating agency may give the landowner an opportunity to implement BMPs to come into compliance. Also, when new mandatory implementation practices come into effect, participating landowners are often not forced to update their operations, as they are already in compliance with water quality regulations. Success stories should be highlighted.

The Montgomery County and Harris County SWCDs have informational materials for small landowners regarding environmental best practices for agriculture. These could be updated and made available to landowners in all watersheds. Providing landowners with clear and practical information may increase the likelihood of them implementing agricultural management measures, whether independently or through an existing program.

Targeted program promotion will increase through word-of-mouth campaigns and Extension Agent involvement. Additional promotion methods include emails; notices in newsletters and local newspapers; participation in local festivals, rodeos, and fairs; and development of school programs. Promotion efforts will be conducted by TSSWCB, local SWCDs, NRCS, AgriLife Extension, H-GAC, and other agencies as appropriate with a goal of increasing participation in the programs each year. The BIG will provide this I-Plan to the implementing agencies along with a formal request for their assistance in encouraging program participation in accordance with this Implementation Activity.

Implementation Activity 7.2: Promote the Management of Feral Hog Populations

With continuous effort, feral hogs can be managed. The Texas Wildlife Damage Management Service, a division of the Texas AgriLife Extension Service, is a valuable resource for training, technical assistance, and direct control in wildlife damage management including feral hog populations.[98] Control methods include snaring, live trapping, shooting, hunting with dogs, aerial hunting, exclusion, and habitat management.[99]

The BIG region will take advantage of the services provided by the Texas Wildlife Damage Management Service by arranging two feral hog management workshops for landowners, local governments, and other interested individuals annually for five years. H-GAC will request that workshops be held in strategic locations throughout the BIG region. Workshops will be heavily promoted in the Extension Service newsletter, local newspapers, and radio stations. Management activities, as described, can also be implemented by local governments as appropriate. If interest in workshops remains strong after five years, H-GAC will continue to arrange workshops throughout the area covered by this I-Plan.

[98] (Coping with Feral Hogs 2010)

[99] (Muir and McEwen 2007)