

Kings Bay and Crystal River Basin Management Action Plan

Meeting Summary

Thursday, August 14, 2014

10:00 AM – 12:00 PM

Crystal River City Hall – City of Crystal River Conference Room

123 North West Highway 19, Crystal River, FL 34428

Attendees

Jimmy Brooks, Citizen Tiffany Busby, Wildwood Consulting Eric DeHaven, SWFWMD Holly Edmond, FDACS Randall Etheridge, SWFWMD Jack Flynn, Citizen David Hamstra, Pegasus Engineering Terry Hansen, FDEP Jamie Letendre, St. Martins Marsh Aquatic Preserve Ray Oates, Citizen	Marcy Policastro, Wildwood Consulting Ray Pribble, Janicki Environmental Erin Rasnake, FDEP Patricia Robertshaw, SWFWMD Bill Stevens, Citrus County Mary Szafraniec, AMEC William Tucker, AMEC John Walkinshaw, Greenman-Pedersen Quincy Wylupek, Citrus County
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Presentations

Meeting presentations are located at:

http://publicfiles.dep.state.fl.us/DEAR/BMAP/Springs%20Coast/BMAPs/CR_KB_BMAP/ in the appropriate month folder.

Introduction

Tiffany Busby welcomed everyone to the Crystal River and Kings Bay Basin Management Action Plan (BMAP) meeting. The participants introduced themselves and the entity they represent.

Florida Department of Agriculture and Consumer Services (FDACS) Agricultural Best Management Practices (BMPs)

Holly Edmond stated that the local FDACS representative is Jessica Stempien, and she is based out of the Southwest Florida Water Management District (SWFWMD) office in Tampa. She was unable to attend this meeting but her contact information is included at the end of the presentation, which will be posted to the BMAP website.

Holly stated that, by statute, agricultural BMPs have to be economically and technically feasible. FDACS has cost share programs to assist producers implement BMPs that are more expensive. BMPs help to reduce the amount of nutrients, pollutants, and pesticides that leave a farm to protect water quality and quantity. The Florida Water Resources Act authorizes FDACS to develop BMPs, and the Florida Department of Environmental Protection to verify BMPs as effective. Implementation of BMPs gives the producers a presumption of compliance with state water quality standards for the parameters that the BMPs address, such as nutrients. Agricultural producers in a BMAP area either have to implement appropriate BMPs or monitor water quality at their own expense following a Department or water management district designed program. Failure to do either of these can result in enforcement by the Department or water management district. In the Lower St. Johns River Basin, where the BMAP has been in place for five years, FDACS sent letters to producers who had not enrolled in BMPs, and these letters helped to increase enrollment. For those producers that refuse to implement BMPs, the

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compliance process will continue, and the Department is working on this process. There are many BMAPs adopted or in progress around the state, as well as other restoration plans that require BMP implementation. FDACS has BMP programs for citrus, vegetable and row crops, nurseries (recently expanded to include in-ground nurseries), sod, cow/calf (largest in the state), conservation plan rule, specialty fruit/nut, equine, forestry (through the Florida Forestry Service), and aquaculture (certification program through the Division of Aquaculture).

Holly stated that there are benefits to implementing BMPs, beyond the presumption of compliance. These benefits include demonstrating environmental stewardship, potentially increasing crop yield and decreasing costs, protection through the Florida Right to Farm Act from duplicative regulation by local governments (such as fertilizer ordinances), eligibility for state-funded cost share, and potentially satisfying some water management district requirements. Statewide BMP enrollment includes 4.16 million acres in non-forestry lands and 5.3 million acres in forestry lands, as of June 30, 2014. Holly noted that a lot of the enrollment is around Lake Okeechobee and the Suwannee River area, which are the areas where FDACS has had consistent staff and contractors to enroll growers. FDACS is working on increasing their field presence, and they have money this year to contract with technicians. One of the new technicians will be placed in the Springs Coast area.

In the Crystal River and Kings Bay area, there are 17,117.4 acres of agriculture, using the 2009 SWFWMD land use coverage. Holly noted that some of these areas may not be eligible for enrollment, including some of the acreage in the “open lands” category. FDACS will evaluate aerial images to determine which areas are eligible to enroll in BMPs. FDACS programs focus on commercial agriculture, so certain farms cannot be enrolled, such as individual vegetable gardens or someone who owns a pet cow. It is difficult to tell which parcels should be enrolled from the land use coverage alone. There has been no BMP enrollment in this basin yet, but the new technician in this area will help with enrollment. FDACS has enrolled agricultural lands just outside the basin.

There are two types of BMPs: (1) management, which change the way a farm is managed; or (2) structural, in which infrastructure is constructed. FDACS focuses cost share funding on structural BMPs. There are four categories of BMPs: (1) nutrient management to ensure crops get the nutrients they need but not in excess, (2) irrigation management to ensure crops get the water they need but not in excess, (3) sedimentation and erosion control, and (4) water resources protection to add buffers to protect waterbodies. Nutrient management BMPs include soil testing to obtain information about nutrients and pH in the soil. There are also tissue test meters because nitrogen is not easily tested in the soils. Another option for nutrient management is precision application of fertilizer, such as tractor mounted Global Positioning System (GPS) equipment, which helps to reduce overlap of fertilizer application. Irrigation management BMPs include weather stations, soil moisture probes, observation wells, and Mobile Irrigation Labs (MILs). MIL technicians are located throughout the state in every water management district. The technicians go to farms to determine the efficiency of the irrigation system, and this consultation is free to the farmers. Irrigation system retrofits are another BMP, and the retrofits drop the nozzle heads down to reduce the amount of water lost to evaporation. In addition, tailwater recovery ponds are an irrigation BMP that can be used for stormwater reuse. Sedimentation and erosion control BMPs include conservation tillage to leave some of the crop to reduce erosion, cover crops, and grassed waterways/filter strips. Water resources protection BMPs include replacing water control structures, critical area fencing to keep livestock out of critical waterbodies, and installing watering troughs.

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Holly stated that when producers enroll in BMPs, FDACS works with each producer to address their concerns and to ensure they have the technical assistance needed to implement BMPs on their farm. Producers have the option to self-enroll in BMPs, but FDACS will follow up with a site visit. During the visit, FDACS will assess the site, identify BMPs the producer is already implementing, identify other BMPs that would be beneficial, and fill out the BMP checklist and notice of intent (NOI), which is needed for the presumption of compliance. The producer must keep the necessary records, and implement and maintain the BMPs. FDACS also gives out enrollment certificates to interested producers.

FDACS determines which parcels to enroll based on the tax parcel information. Holly noted that the map in the presentation shows the entire parcel owned by the producer, not just the farm boundaries, because the farm boundaries can change. FDACS recommends that the producer read the appropriate BMP manual(s) before the site visit so they know what questions to ask. Someone who is familiar with the operation will go around the farm with the FDACS field person on the day of the assessment. Field staff review the resource concerns, identify BMPs, and review the BMP manual checklist with the producer. After a producer is enrolled in a BMP program, they must keep the necessary records, and the records should be clear and accurate. FDACS will discuss potential cost-share options with the producer. In addition, within about 90 days, FDACS will follow up with the producer to ensure there are no further questions and that implementation is going as planned.

FDACS has the BMP Implementation Assurance Program. As part of this program, FDACS has been conducting surveys on a rolling basis by commodity. FDACS is getting ready to send the survey for the fruit/nut manual. Everyone enrolled in that BMP program will receive a survey, and FDACS has had great response rates. The surveys ask detailed questions so that FDACS can obtain good information about what the producers are doing at their operations. FDACS also makes a certain number of onsite visits as part of the survey process. The visits focus on the larger producers and a random sample of the smaller producers. The field staff use a form for these visits to talk with the producer about where they are doing great with implementation and where they need to make improvement. The County Alliance for Responsible Environmental Stewardship (CARES) Program through the Farm Bureau is used to recognize producers that are doing a great job in implementing BMPs.

FDACS also has cost share funding available to assist producers with BMP implementation. Within SWFWMD, FDACS has \$205,000, which is administered through the Hillsborough Soil and Water Conservation District. The funding is available for all commodities and for operations of all sizes, as long as the operation is commercial. There is also statewide funding available for weather stations through the Highlands Soil and Water Conservation District. FDACS worked with the University of Florida (UF) to develop www.myfloridaweather.com, which shows the results from the weather stations to provide more information to the producers. The SWFWMD Facilitating Agricultural Resource Management Systems (FARMS) Program also provides assistance to commodities, but the program focuses on larger operations.

Mary Szafraniec asked if there is a big difference in agriculture between the Crystal River and Kings Bay Basin and the Weeki Wachee Spring Basin. Holly showed a map of the agriculture in the Weeki Wachee Spring Basin. Holly noted that there is some agricultural lands shown in the state park, which are likely not agriculture. There are also agricultural areas shown in the managed lands areas, and

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FDACS will determine if these lands are leased to producers or if the land use is incorrect. There are about 40,000 acres of agricultural lands in the Weeki Wachee Spring Basin compared to the 17,000 acres in the Crystal River and Kings Bay Basin. There is some BMP enrollment in the Weeki Wachee area.

David Hamstra asked once a BMAP is developed, if that is when FDACS goes to producers and encourages them to enroll, or if this occurs irrespective of where there is a BMAP. Holly responded that the FDACS outreach is based on where they have staff. The BMAP program has been busy and FDACS has not been able to keep up with the outreach in all BMAP areas. FDACS is developing outreach brochures and presentations to help educate producers about the BMP programs at meetings, such as the Farm Bureau and commodity-specific associations. Terry added that Florida Statute states that when a BMAP is adopted, producers are obligated to immediately implement BMPs or monitor water quality. FDACS tries to facilitate this process; however, they are not required to meet with all the growers. Holly noted that there is no master list of all the agriculture in Florida, which makes it difficult for FDACS to identify the producers. FDACS is able to obtain some information from agricultural commodity organizations, and there is a good list of nurseries because they need a license. FDACS relies on the land use map to identify parcels, and word of mouth to spread information about the BMP programs. David asked if FDACS works with the UF – Institute of Food and Agricultural Sciences (IFAS). Holly responded that they work with IFAS extensively. IFAS has basin action teams in different counties, and they assist FDACS in obtaining contact information, and easing the way with the growers. FDACS also works with IFAS on BMPs research; both effectiveness and new technologies.

Overview of the BMAP Document

Jack Flynn asked if this meeting will discuss how the BMAP process will affect Kings Bay. Terry responded that Kings Bay and the surrounding springs are impaired for nutrients, and there is a total maximum daily load (TMDL) goal to restore the waterbodies. The BMAP is the restoration plan to reduce the nutrient footprint in the basin to eventually see improvements in the bay and springs. The presentation today will discuss the items in the draft BMAP document that is being prepared so that the stakeholders will be up to date the process. Jack noted that it is fine to prepare documents but he wants to know what will be done to improve the bay. Terry responded that the BMAP will include activities to reduce nutrients, and the document provides the roadmap for moving forward with restoration. The BMAP will discuss the activities that will be implemented. The document is adopted by the Department's Secretary, so the BMAP is enforceable, which means the activities included must occur or must be replaced with a project that achieves the same amount of nutrient reductions. The BMAP process encompasses a wide variety of stakeholders and interests who want to see Kings Bay and the springs restored, and who want to contribute to helping by reducing their nutrient footprints. Erin Rasnake added that everyone in the meeting is there to meet the goal of restoring the Crystal River and Kings Bay Basin, and each stakeholder has a different piece to reach this ultimate goal.

Terry stated that Kings Bay and the surrounding springs were identified as not meeting their intended uses because of algal mats from excessive nutrients. The Department developed a TMDL that sets the amount of pollutant that the waterbodies can assimilate and still meet their intended uses. The BMAP is now being developed to implement activities that reduce nutrients to meet the TMDL. This process will take many years, because it is a ground water flow system where the travel time is about 10 – 15 years. There is a large legacy load that has to work its way through the system, so the focus of the BMAP is on reducing the current nutrient loads to help with water quality in the future. The Department has BMAPs

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underway for Kings Bay and Weeki Wachee Spring, and TMDLs under development for Homosassa and Chassahowitzka that will be adopted soon. The other major springs on the Springs Coast will be adopted next year. Terry stated that it is important to remember that the focus should be on the larger Springs Coast area, and that an entity can be in multiple BMAPs.

The TMDL includes both the bay and main springs; therefore, there are ground water and surface water components in this area. The spring system in this area is a joint and fracture system, as opposed to a conduit system, so it is difficult to determine how water moves. The land use in the basin is 45% urban, 8% agriculture, 23% forest, and 17% wetlands and marshes. The nitrogen sources that the BMAP addresses are concentrated in 53% of the land use (urban and agriculture). The Department prepared a nutrient source inventory (NSI) to evaluate the likely sources of nitrogen that are applied to the land surface. The nitrogen surface loading numbers are then attenuated to estimate how much nitrogen makes it to the ground water. The BMAP will document nutrient source reductions from activities to determine initial success because it will take a while before the reductions are seen in the bay and springs.

The NSI includes several sources. Atmospheric deposition was estimated using data from the monitoring stations in Chassahowitzka and Sumtra. Atmospheric deposition loading is from sources that are outside of this basin, which cannot be controlled; therefore, this source is considered part of the background load. The number of wastewater treatment facilities (WWTFs) in the basin, and their flows and loads were evaluated. Other sources are urban fertilizer and golf courses. Terry noted that there are a lot of golf courses in this area, and this is a commodity that the Department has not had to address in other BMAPs. There is a golf course BMP document, but golf course BMPs are voluntary. The Department is working to gather more information about this BMP program. This basin also has a lot of septic tanks, and the best way to address this source will need to be determined. The NSI evaluated how loading gets to the ground water based on the level of recharge in an area. Most of the septic tanks are located in the high recharge area, and the rest are located in the medium recharge zone. This means that the flows are going from the drainfield to the ground water without a lot of denitrification. Livestock waste is another source of nitrogen loading, and the Department received input from the Citrus County Agricultural Alliance on how to refine the numbers from the U.S. Department of Agriculture's Census. Farm fertilizer is also a source of nutrient loading.

Terry stated that the NSI started with the surface loading from these sources. Stormwater is not accounted for in the NSI because it is only a source during large rain events. However, stormwater management actions to retain and treat the runoff will help. The NSI helps to focus resources on those sources that have the most loading to the ground water.

To address urban fertilizer, county and municipal ordinances are helpful, mainly because of the education about the amount and timing of fertilizer application. Bill Stevens noted that the Citrus County Board of County Commissioners cancelled their August meeting, but the county's proposed fertilizer ordinance will be presented at the September meeting. It is still on track to be approved. Terry asked if the ordinance applies to the incorporated areas. Bill responded that he was not sure but would find out.

Terry stated the Department is proposing potential WWTF permit modifications to address this source. The Department also is planning an initiative to address septic tanks. The Department is limited on what

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they can require for septic tanks. The purpose of the initiative will be to get the information ready for when the legislature says that this source must be addressed once the Florida Department of Health's (FDOH's) septic tank study is completed. Agriculture (fertilizer and livestock waste) will be addressed through BMP implementation. Golf courses have a BMP manual and a process for certifying the superintendents. The Department is researching this certification to determine what opportunities may exist to reduce loading from golf courses. Stormwater sources will be addressed by nutrient reduction projects, some of which are already in place in the county.

Terry stated that the Department developed a WWTF initiative for the Wakulla Springs area, and is using this approach for other springs BMAPs. For facilities with discharges greater than or equal to 100,000 gallons per day (gpd), the facilities have to meet a total nitrogen (TN) effluent of 3 milligrams per liter (mg/L). For facilities between 100,000 gpd and 20,000 gpd, the TN effluent of 6 mg/L must be met. Facilities less than 20,000 gpd must have a TN effluent of 10 mg/L. Terry stated that he would like to meet with the county about where package plants are located, and where they could be taken offline. Eric DeHaven asked what the timeline is for these standards. He stated that he is concerned that having these requirements would limit cost share funding to upgrade the facilities because SWFWMD usually does not fund projects to meet permit requirements. Terry responded that the new requirements would go into place when the facility's permit comes up for renewal. Tiffany added that it was not the Department's intention to limit cost share funding options, but this will need to be discussed further. Eric suggested that the Department call Veronica Craw (SWFWMD) to discuss this.

Jack asked if the Department knows the discharge rates for the WWTFs in the county. Terry responded that they have information on the permit limits and are working with the Department permittees to gather the current flows and nutrient concentrations. Bill noted that the county was recently approved for a Department grant to remove two package plants and put them on central sewer. Mary stated that it would help to revise the rule that requires land application of effluent to a rapid infiltration basin (RIB) or sprayfield. It would be better if treatment wetlands could be the final disposal method. Jack noted that WWTFs are only 1% of the load, and asked why the new requirements are needed. Terry responded that the TMDL requires a large load reduction, so even the smaller sources need to be addressed. Location is also important, so addressing the WWTFs closer to the springs could result in a faster water quality response in the springs and bay.

Terry stated that the Department has also developed a septic tank initiative, which is being used in several springs BMAPs. This initiative will identify options to address septic tanks, and determine how to best position the city or county so they can implement a project once money is available. The locations of existing sewer lines and WWTF capacity will be identified to determine where septic tank phase out is practical. The more rural areas in the western part of the basin can likely stay on septic, whereas the denser septic tank areas near the springs should be considered for connection. Jack noted that not much will be accomplished if septic tank connection to sewer is voluntary. Many people will not pay to connect. Terry responded that this is something that will have to be discussed during the initiative. The Department is aware of the financial obligation, both for connection and the sewer bill.

For agriculture, FDACS and FARMS staff are working on implementing BMPs with the growers. The FARMS Program assists the producers, and SWFWMD is working to expand this program into the Springs Coast area as a pilot program to test new BMPs. The Department prepared a questionnaire to gather more information about the golf course practices in the basin to help refine the information in the

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NSI. There are also other projects in the basin, such as those that SWFWMD presented during the last meeting, that could help to reduce nutrient loads.

The sources and unknowns in the basin have been identified. Terry noted that not all of the unknowns may be addressed in the first BMAP phase, but the BMAP can start documenting reductions and what needs to be addressed in future BMAP iterations. The Department will continue to collect project information from the stakeholders, and will look at all the projects received to determine the level of sufficiency for this iteration since allocations are not being assigned. After the BMAP is adopted, meetings will be held to start identifying areas of opportunities to address septic tanks in the future. The draft BMAP will be provided to the stakeholders for review and comment. Terry noted that the next meeting would be held in October to discuss answers to some of the questions raised today, and to possibly present a draft BMAP. Terry asked how Citrus County was doing with their project collection. Bill responded that they have started to pull information together. Terry stated that Marcy Policastro would contact the county and city about project collection. SWFWMD will also be contacted to gather more specifics about their projects.

Terry asked for projects by September 12th. At the October meeting, there will be discussion about whether there are enough projects for this iteration or if more activities are needed. After the stakeholders review the BMAP, the BMAP will go through the internal Department process to adopt the BMAP. The BMAP will likely not be adopted by the end of the year.

Questions

Jack asked if the entire county is in the Crystal River and Kings Bay Basin. Terry responded only part of the county is in this basin and the rest is in the Homosassa Basin. Tiffany added that the Homosassa TMDL is under development, and the BMAP will likely start next year. Bill Tucker asked if the BMAP will use the loads to the surface or the attenuated loads to the ground water to measure reductions. Terry responded that the loads on the land will be the starting point, but the BMAP will also evaluate loading with the attenuation. Jimmy Brooks stated that he thinks it is misleading to present the numbers without attenuation, especially when some attenuation factors are 80%-90%. Terry responded that he understands this concern. The Department will ultimately look at attenuation to determine how much load would get to the springs.

Jimmy asked if there was a way to put more emphasis on addressing individual septic tanks instead of adding central sewer. A lot of the county is rural, so a central sewer system is not feasible in many locations. He asked if there are potential options for individual systems. Terry responded that the initiative will be used to discuss the issues and the best way to address the septic tank load, including what enhancements could be done to septic tanks where septic is the only option. Jimmy noted that it is important to not create a false pretense of setting up something like an inspection program, which will not change the amount of nutrients discharged to ground water. Terry responded that a future meeting could be focused on septic tanks and what options could be used. Mary stated that a monitoring program that includes wastewater tracers will be important here because there have been past hits that indicate organic wastewater is a source. Terry responded that these items could be documented to be discussed after the BMAP is adopted, as part of implementation. Tiffany added that FDOH is conducting a long-term study to identify septic systems that are more effective and are passive, which will help in the initiative.

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Bill Stevens asked if there is anything an individual can add to their septic tanks to help settle out nutrients. Mary responded that SWFWMD was looking into a new product that is added in the toilet to help the septic tank. John Walkinshaw noted that some of the additives can harm the system because they kill off good bacteria that make the system function. Education is important because some people do not realize they have a septic tank.

Terry stated that he would post the project collection spreadsheet and an example spreadsheet from Rainbow Springs to the BMAP website.

Adjourn

The meeting was adjourned at 12:11 PM.

Action Items

- Terry Hansen will post the meeting presentations to the BMAP website and will double-check the pie chart that was not displaying correctly.
- Terry will continue to work on the BMAP approach to use with the golf courses in the springshed.
- Bill Stevens will determine if the Citrus County fertilizer ordinance will apply to incorporated areas once it is adopted. – *Completed. The ordinance will not apply to the cities.*
- Terry will meet with Citrus County about where package plants are located, and where they could be taken offline. The county has already started to phase out some package plants.
- Marcy Policastro will contact Veronica Craw about SWFWMD's cost share process if the WWTFs need to upgrade to meet BMAP requirements.
- The next meeting will be held in October, and Terry will send a notice to the distribution list once the date is set.
- Marcy will contact Citrus County and the City of Crystal River about project collection.
- The Department will follow up with SWFWMD for details on their projects.
- Stakeholders should submit projects by September 12th.
- A future BMAP meeting include a discussion of septic tanks and potential options to address the loading.
- Terry will post the project collection spreadsheet and an example spreadsheet from Rainbow Springs to the BMAP website.