

Balancing Agricultural Production and Environmental Protection in the Tri-County Agricultural Area: Results from Stakeholder Discussions¹

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Introduction

This publication summarizes key points from discussions with various stakeholders in the tri-county agricultural area (TCAA, Figure 1) during a session of the Florida Natural Resources Leadership Institute held in May of 2008. The discussions focused on the issues of balancing agricultural production and environmental protection in the region.

The goal of the Florida Natural Resources Leadership Institute (FNRLI) is to enhance the skills required to effectively manage conflicts that arise from natural resource issues. FNRLI offers seven sessions each year, and each session exposes FNRLI fellows to various opinions on one controversial natural resource issue. Each session includes presentations, a field trip, and a stakeholder panel discussion. The topic of the session on May 15–17, 2008, was *Sustaining Rural Communities: Balancing Agriculture, Development, and Environmental Protection*; the session included presentations by

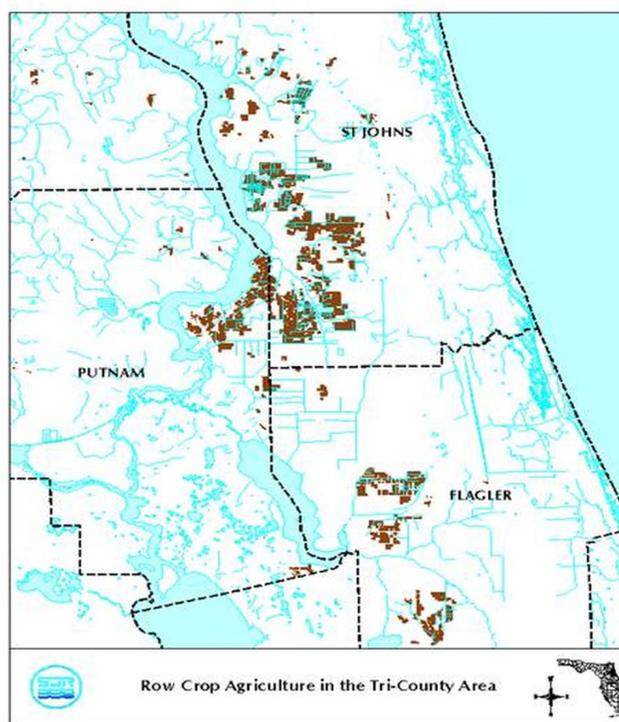


Figure 1. Tri-county agricultural area. Source: SJRWMD (2001).

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David Dinkins (St Johns County Extension Director), Mark Clark (Assistant Professor, Soil and Water Science Department, University of Florida), and Chad Hutchinson (former Associate Professor, Horticultural Science Department, University of Florida). FNRLI fellows also participated in a field trip to three farms in the TCAA, and they visited the Research and Demonstration Center at the Florida Partnership for Water, Agriculture, and Community Sustainability at Hastings. The stakeholder panel, held as part of the FNRLI session, included representatives from the following groups: agricultural producers, University of Florida scientists, the St Johns River Water Management District (SJRWMD), environmental organizations, and local county government. Finally, *lessons learned* from the session were discussed during the debriefing session by the 2008 FNRLI fellows.

The history, current state, and challenges faced by the agricultural industry in the TCAA are discussed in this factsheet. We also summarize water quality issues and policies in the area and strategies for balancing agricultural, development, and environmental interests identified by the FNRLI session participants. More information about the session can be found in the FNRLI report at <http://nrli.ifas.ufl.edu/reports/NRLIPalatka08.pdf> (FNRLI 2008).

Agriculture in the Tri-County Agricultural Area (TCAA)

Historically, agricultural production in the TCAA can be traced back to the 1890s when Thomas Hastings established the Prairie Garden Farm at what was to become Hastings, Florida. Using greenhouses, Hastings supplied vegetables for the hotels constructed by Henry Flagler, an American tycoon, real estate owner, and Rockefeller partner in Standard Oil, who was building hotels and developing a railroad system linking Florida with the northern United States at that time. At some point, Flagler extended his Florida East Coast Railroad to Prairie Garden and called the station Hastings Station. The extension of the railway permitted shipment of potatoes to northern markets and development of the potato industry in the Hastings area. By 1901, the Hastings area shipped 43,000 bushels of Irish

potatoes and 23,000 bushels of sweet potatoes, so that it became known as the *Potato Capital of Florida* (Town of Hastings, no date).

Currently, the primary crops produced in the TCAA include potato, cabbage, squash, cucumbers, and sod. Though still significant, vegetable production has declined in recent years, and there are only about 30 producers remaining in the area. During the FNRLI session, various stakeholders suggested that urban growth in the area (which increases the price of land) and international competition (which decreases the price for produce) are among the main reasons for the decline in the TCAA agricultural production. Restrictive environmental regulation and water (consumptive) use permit requirements, as well as strict enforcement of immigration regulation, were also mentioned among the reasons for the decline in agricultural production.

Many stakeholders felt very passionate about the importance of keeping agricultural production in the area. Their arguments are that along with other nature-based industries, agriculture brings significant income to the state and local budgets. Also, a reduction in domestic agricultural production usually increases the dependence of the United States on imported food, which can jeopardize national security. The stakeholders referred to the study conducted by American Farmland Trust (2002), which showed that when the costs of community service are taken into account, agriculture brings more revenues to local budgets than does residential sector development.

Environmental Issues in the Tri-County Agricultural Area (TCAA)

Almost all of the TCAA is located within the Lower St Johns River Basin. Public attention to the pollution problem in the St Johns River increased in 2005, when toxic blue-green algae (*Microcystis aeruginosa*) covered much of the river. The algae blooms appeared to be attributed to a combination of meteorological (temperature and precipitation) and ecological (preceding bloom of a nitrogen-fixing algae, *Cylindrospermopsis*) conditions. However, excessive nutrient loading from urban and

agricultural sources also contributed to the problem (Monson 2005).

The Lower St Johns River was classified as impaired according to Florida's numeric dissolved oxygen and narrative nutrient criteria (associated with the River's designated uses for recreation and for propagation and the maintenance of a healthy, well-balanced population of fish and wildlife). The narrative nutrient criterion requires that "in no case shall nutrient concentrations of body of water be altered so as to cause an imbalance in natural populations of flora or fauna" (Florida Administrative Code, Chapter 62-302.530). More details about the current nutrient criterion, and the progress toward developing numeric nutrient criteria, can be found online from the Florida Department of Environmental Protection at <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>. In the Lower St. Johns River, violations of both dissolved oxygen and nutrient criteria were linked to excessive nutrient (nitrogen and phosphorus) pollution.

To address the problem, a Total Maximum Daily Load (TMDL) and Basin Management Action Plan (BMAP) were developed by a group of stakeholders under the direction of the Florida Department of Environmental Protection (FDEP 2008). According to the definition, "a Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards" (U.S. EPA 2009). This maximum pollution amount is allocated among pollution source categories. That is, as part of the TMDL, limits are determined for the amount of pollution that each pollution source (or source category, such as agriculture) can discharge into a water body. In turn, BMAP summarizes pollution reduction strategies (such as permit limits on wastewater facilities, and urban and agricultural best management practices) for restoring impaired waters and meeting the allowable loadings established in a TMDL (FDEP 2009).

TMDL and BMAP development for the Lower St Johns River was designed as a multi-year process involving collaboration between state and regional agencies (Florida Department of Environmental

Protection [FDEP], Florida Department of Agriculture and Consumer Services [FDACS], and St Johns Water Management District [SJRWMD]) and local stakeholders. The stakeholders who met during the NRLI session stated that the process alienated representatives of agricultural and environmental/nongovernmental stakeholder groups due to the time and human resources required to participate in the process and the perceived unequal representation of various stakeholders' interests in the TMDL/BMAP development process. As a result, representatives of environmental/nongovernmental stakeholder groups chose to legally challenge the TMDL document adopted in 2003, and ceased participation in the TMDL/BMAP development process.

The TMDL and BMAP for the Lower St Johns River were adopted in June and October 2008, respectively (FDEP 2008; Lower St Johns River Executive Committee 2008). Both documents call for significant reduction of nutrient loading from agricultural operations (along with reductions from other sources), most of which is expected to be achieved through the implementation of best management practices (BMP) on agricultural lands. Agricultural BMPs are defined as "practical, cost-effective actions that agricultural producers can take to reduce the amount of pesticides, fertilizers, animal waste, and other pollutants entering our water resources" (FDACS 2004). However, to be successful, BMP implementation programs should have the support of agricultural producers.

Strategies to Balance Agriculture and Environmental Protection in the Region

The stakeholders who met during the FNRLI session offered the following suggestions to balance agricultural production and environmental protection in the region.

Diversification of agricultural production and the ability to capture new markets were discussed to increase the profitability of agricultural enterprises. Production of value-added products was proposed as an example. Production of value-added products can imply that farmers bypass some of the supply chain organizations by processing their own products or directly marketing their products to consumers.

Value-added products can also involve offering products or services that have never been offered in the supply chain, such as new crop varieties or agrotourism programs (wherein visitors pay to enjoy scenic agricultural areas). For more information about value-added agricultural productions, see EDIS document [FE639](#) (Evans 2006). *Local food* marketing, community supported agriculture (CSA), and organic production were proposed to make agriculture more sustainable while ensuring sufficient revenues to agricultural producers.

In turn, the problem of increasing farming production costs (often linked by farmers to more stringent environmental regulation) can be addressed through developing new production methods and increasing the effectiveness of agricultural operations.

Some stakeholders argued for more collaboration between agricultural producers and environmental/nongovernmental organizations. Despite differences in opinions on many subjects, environmental/nongovernmental organizations and agricultural producers in the TCAA region have more interests and priorities in common with each other than with urban stakeholders. Urban development in the region is perceived to impact the interests of both agricultural and environmental groups (by driving the land prices up and by negatively affecting the environment). Similarity of interests of agricultural and environmental/nongovernmental stakeholder groups should be emphasized.

Collaborative relationships between University of Florida researchers and the farming community can be improved through BMP production experiments on farms to give farmers ownership of the final result of the research experiment.

Stakeholders suggested conducting a *visioning exercise* with diverse stakeholder groups in the TCAA. During a visioning exercise, stakeholders would envision their ideal community, city, or region in the future (ten to fifty years). Such an exercise can help find consensus about the future of agriculture in the region and about the value of environmental protection. For more information about conducting visioning exercises, see EDIS document [CD027](#) (Swisher, Rezoal, and Sterns 2003) or visit the World

Resources Institute (WRI 2000) online at <http://www.gdrc.org/ngo/vision-dev.html>.

About one year after the FNRLI session, in May of 2009, a visioning exercise for northeast Florida entitled *Reality Check First Coast* was conducted. The exercise centered on alternative growth scenarios for the region, and did not directly address the future of agriculture or environmental programs in the region. Four regional growth scenarios were developed: Corridor Pattern, Multiple Growth Center, Dispersed Pattern, and Urban Compact Pattern. All four scenarios envisioned a reduction in land area converted to urban uses in comparison to the currently projected trend. Two of the four vision scenarios, Multiple Growth Center and Dispersed Pattern, explicitly stated their potential negative effect on the rural character of the region. Another scenario, Urban Compact Pattern, focused on preserving the rural character of the region (Reality Check First Coast 2009).

Florida Partnership for Water, Agriculture, and Community Sustainability in Hastings

Stakeholders stressed that research and education strategies are needed to support agricultural production in the area while addressing environmental issues. The Florida Partnership for Water, Agriculture, and Community Sustainability in Hastings (partnership) was created in 2004 by a coalition of local farmers; business leaders; county commissioners; University of Florida scientists; SJRWMD, FDEP, and FDACS representatives; and city and county governments in Flagler, Putnam, and St Johns Counties. The objective of the partnership is to address the challenges posed by urban growth in northeast Florida by increasing profitability of agricultural and other natural resources industries, and by promoting environmental stewardship. The partnership uses experimental facilities (*living displays*) to show visitors low-impact development practices, Florida-friendly landscapes, and alternative agricultural crop production (Graddy 2007).

Current programming efforts at the partnership include:

1. Variety development (more than 1,500 potato selections per year are analyzed at the partnership; the focus is on developing new varieties that appeal to consumers).
2. Nutrient management (focus is on reducing environmental impacts of agricultural production).
3. Alternative fumigation.

The partnership consists of two offices in the area. The Hastings downtown facility includes an onsite demonstration area, with 29 hydrologically independent cells to conduct production experiments. FNRLI fellows explored the demonstration area, most of which contained drought-tolerant turf alternatives to sod, ground covers, and bushes. More information about the partnership and its programs can be found online at <http://hastings.ifas.ufl.edu/>.

Conclusions

This document summarizes the key points from stakeholder discussions during the May 2008 FNRLI session entitled *Sustaining Rural Communities: Balancing Agriculture, Development, and Environmental Protection*. In addition to significant challenges, the stakeholders discussed opportunities for maintaining viable agricultural industry in the area while addressing environmental (water quality) issues.

It is important to note that the stakeholders were selected for participation in the FNRLI session based on their familiarity with the TCAA and their willingness to contribute to the session. Opinions expressed by these stakeholders may not be representative of the values and ideas of the whole population in the region.

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