

IFAS's IPM, BMPs, FYN and More: An Alphabet Soup of Good Environmental Programs for Florida¹

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The University of Florida Institute of Food and Agricultural Sciences (IFAS) has three related programs that often are confused within the IFAS community and by our clientele: Integrated Pest Management (IPM), Best Management Practices (BMPs), and Florida Yards and Neighborhoods (FYN).

The concept of IPM arose out of the need to protect against pests and diseases in an economically advantageous manner and with the least possible risk to the environment and human health. Thus, IPM was originally defined as "applied pest control which combines and integrates biological and chemical control. Chemical control is used as necessary and in a manner which is least disruptive to biological control. Integrated control may make use of naturally occurring biological control as well as biological control effected by manipulated or induced biotic agents" (Stern et al. 1959). The concept of BMPs, which came later, addressed the need to preserve the purity of water while still allowing land users to obtain the most benefit from it. An early use of the term was in the Clean Water Act of 1977, in which BMPs came to be defined as "practices or structures

designed to reduce the quantities of pollutants -- such as sediment, nitrogen, phosphorus, and animal wastes -- that are washed by rain and snow melt from farms into surface or ground waters." FYN is a very popular IFAS program that contains elements of both IPM and BMPs as they affect the urban landscape. FYN was initiated in 1994 to "help residents reduce pollution and enhance their environment by improving home and landscape management" (<http://hort.ufl.edu/fyn/>). All three of these programs are important for protecting Florida's fragile environments but differ in scope and structure for accomplishing their independent missions (Table 1).

The terms "IPM" and "BMPs" are frequently used interchangeably; however, the associated programs were developed to serve different purposes and do not share the same range of activities. IPM deals with the management of pests and diseases with minimal risk to human health or the environment, whereas BMPs focus on conserving water quality and preventing environmental pollution. IPM is a component of BMPs and FYN, and therefore narrower in scope. IPM is characterized by its tactics, including pest and disease prevention and

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management using a combination of cultural, biological, chemical and mechanical controls. BMPs and FYN focus on irrigation, fertilization, growing practices, and pest management. IPM and BMPs apply to agriculture, communities and natural areas, while FYN is designed to address landscape and yard maintenance in residential communities. The statewide IFAS extension community provides considerable educational support to clientele groups of all three (Table 2).

Allied UF/IFAS Agriculture, Community, and Natural Resources Programs

Several other UF/IFAS programs have environmental protection as a focus. Because these programs are housed in various departments, they seldom are listed together in publications and may be difficult to identify as a group. Moreover, they have overlapping goals and complimentary activities. The following are UF/IFAS agriculture, community, and natural resources programs allied with IPM, FYN and BMPs are compiled as a reference (Table 3).

and developers. Thus, although somewhat of an alphabet soup, the three distinct activities are **pest management (IPM)**, **pollution reduction in water (BMPs)**, and **environmental landscape management (FYN)**. Each of them, and others in IFAS, contribute to the judicious use and protection of Florida's precious environments.

References Cited

Stern, V. M., R. F. Smith, R. van den Bosch, and K. S. Hagen. 1959. The integrated control concept. *Hilgardia*, 29: 81-101.

U.S. Clean Water Act, 1977, Sec. 319: National Monitoring Program: Glossary. EPA Terminology Reference System, www.epa.gov/trs.

Table 1. Comparison Summary of IPM Related Programs in IFAS.

IPM Florida	Best Management Practices	Florida Yards & Neighborhoods
IPM Florida provides statewide, interdisciplinary and inter-unit coordination and assistance in integrated pest management to protect agriculture, communities and the environment.	The IFAS BMP program serves as a liaison between UF and state agencies and grower organizations, oversees development of BMPs, and coordinates research and demonstration projects around the state to enhance water quality and natural resources.	FYN provides special educational and outreach activities directed at the community to help residents reduce pollution and enhance their environment by improving home and landscape management.

Summary

IPM, BMPs, and FYN each have a related environmental orientation but differ in missions, objectives and delivery structures within IFAS's extension program. IPM Florida is a federally mandated IFAS program that addresses pest management in all of the state's environments. The IFAS BMP program provides research and extension coordination for agricultural production and management practices which vary by commodity and environment. FYN is an educational program that encourages resource conservation by homeowners

Table 2. The role of IPM, BMPs and FYN.

IPM Florida	
Emphasis:	Effective and sustainable management of pests through use of all available tools: prevention techniques, cultural, biological, chemical, and physical controls.
Structure:	An IFAS program, consisting of the IPM Coordinator, Assistant Coordinator and full and part-time staff, which also functions as the Florida component of the Southern Region IPM Center and the National IPM Network.
Primary Clientele:	County extension faculty throughout Florida with agricultural, community, and natural resource clientele.
Funding:	Federal IPM monies (Smith-Lever [section 3(d)]) with additional support from IFAS and competitive grants.
Benefits:	Provides effective and economical pest management with use of fewer and lower risk pesticides to protect human health and the environment.
Contact Information:	<p>Norman C. Leppla, Ph.D. Professor and Director, IPM Florida PO Box 110620 Bldg. 970, Natural Area Drive Gainesville, FL 32611 Ph: 352-392-1901 x120 Fax: 352-392-0190 E: ncleppla@ufl.edu http://ipm.ifas.ufl.edu</p> <p>Jennifer L. Gillett, Ph.D. Assistant Director IPM Florida PO Box 110620 Bldg. 970, Natural Area Drive Gainesville, FL 32611 Ph: 352-392-1901 x122 Fax: 352-392-0190 E: gillett@ufl.edu http://ipm.ifas.ufl.edu</p>
IFAS BMPs Program	
Emphasis:	Protection of surface and ground water resources through careful management of potential sources of pollution, including, irrigation, fertilization, animal wastes, pesticides, etc.
Structure:	An IFAS program which coordinates research, demonstrations and educational programs conducted throughout the state. The goals of these programs are to increase environmental awareness, assist landowners in selecting and implementing appropriate BMPs, monitor BMP effectiveness, reduce non-point pollutant discharges, and enhance water quality.
Primary Clientele:	County extension faculty throughout Florida with clientele in various agricultural and horticultural industries.
Funding:	Varies by commodity and region.
Benefits:	Conservation and reduced pollution of ground and surface water.

Table 2. The role of IPM, BMPs and FYN.

Contact Information:	Brian J. Boman, Ph.D. Associate Professor and Program Director, BMPs 2199 S Rock Rd. Ft. Pierce, FL 34945 Ph: 772-468-3922 x122 Fax: 772-460-3648 E: bjbo@ufl.edu http://hort.ifas.ufl.edu/bmp/
Florida Yards and Neighborhoods (FYN)	
Emphasis:	Special educational and outreach activities in landscape design and management to reduce stormwater runoff, decrease non-point source pollution, conserve water, enhance wildlife habitat, and create beautiful landscapes.
Structure:	An IFAS program implemented by county extension faculty coordinated in partnership with the Florida Department of Environmental Protection (DEP) and other agencies in the public and private sector.
Primary Clientele:	Homeowners and communities throughout Florida
Funding:	Support from IFAS and competitive grants from Florida DEP and other partner agencies.
Benefits:	Protection and conservation of water resources; use of fewer and lower risk materials maintenance materials and practices in urban landscapes.
Contact Information:	Barbara C. Larson, Ph.D. Statewide Coordinator Florida Yards & Neighborhoods Environmental Horticulture Department PO Box 110675 Gainesville, FL 32611 Ph: 352-392-1831 x330 Fax: 352-392-1413 E: bclarson@ifas.ufl.edu http://hort.ifas.ufl.edu/fyn/

Table 3. Allied UF/IFAS Agriculture, Community, and Natural Resources Programs

Joan A. Dusky, Ph.D. Associate Dean for Extension - Agricultural Programs 1038 McCarty Hall PO Box 110210 Gainesville, FL 32611 Ph: 352-392-1761x229 Fax: 352-846-0458 E: jadu@ufl.edu http://solutionsforyourlife.ufl.edu	Michael S. Spranger, Ph.D. Associate Dean Environment & Natural Resources - Aquatic, Coastal and Aquaculture Programs and Natural Resources Bldg. 803 PO Box 110405 Gainesville, FL 32611 Ph: 352-392-1837 x226 Fax: 352-392-5113 E: spranger@ufl.edu
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Table 3. Allied UF/IFAS Agriculture, Community, and Natural Resources Programs

<p>Center for Aquatic and Invasive Plants Randall K. Stocker, Ph.D., Director 7922 N.W. 71st Street PO Box 110610 Gainesville, FL 32653 Ph: 352-392-6841 Fax: 352-392-3462 E: aqplants@ufl.edu http://plants.ifas.ufl.edu/</p> <p>The mission of the Center for Aquatic and Invasive Plants is to provide a coordinated, statewide aquatic and invasive plant research and extension program examining plant production, distribution, ecology, and biology, while emphasizing management techniques and strategies.</p>	<p>Florida Master Gardener Program Tom A. Wichman, Coordinator 107 Mehrhof Hall PO Box 110675 Gainesville, FL 32611 Ph: 352-392-1831 x331 E: twichman@ufl.edu http://hort.ufl.edu/mg/</p> <p>Florida Master Gardeners are volunteer teachers trained by county extension faculty. Master Gardeners educate and provide research-based information to Floridians about gardening, America's most popular pastime. Their information about planning and maintaining urban, suburban, and rural landscapes always emphasizes environmental stewardship.</p>
<p>Center for Organic Agriculture Rose L. Koenig, Ph.D., Co-director Mickie Swisher, Ph.D., Co-director 3031 McCarty Hall P.O. Box 110310 Gainesville, FL 32611 Ph: 352-392-2202 x256 E: mesw@ufl.edu</p> <p>The goals of the Center are to: (1) facilitate multi-disciplinary, multi-institutional research programs that will provide the scientific basis for organic food and fiber production; (2) collate and disseminate science-based information about organic farming principles and practices from UF/IFAS, other land grant institutions, the USDA and other research institutions; and (3) incorporate an appropriate focus on organic production practices and processes in current and new courses offered by the University of Florida.</p>	<p>Florida Master Naturalist Program Martin B. Main, Ph.D., Program Leader 2686 SR 29 N Immokalee, FL 34142 Ph: 239-658-3400 Fax: 239-658-3469 E: mgma@ufl.edu http://www.masternaturalist.ifas.ufl.edu/</p> <p>The FMNP is an adult education extension program developed by UF and provided by participating organizations. FMNP training will benefit persons interested in learning more about Florida's environment, seeking educational contact hours, or wishing to increase their knowledge for use in education programs as volunteers, employees and ecotourism guides.</p>

Table 3. Allied UF/IFAS Agriculture, Community, and Natural Resources Programs

<p>Center for Tropical Agriculture Waldemar Klassen, Ph.D., Director 18905 SW 280th Street Homestead, FL 33031 Ph: 305-246-7001 x257 Fax: 305-246-7003 E: klassen@ufl.edu http://cta.ufl.edu/</p> <p>The mission of the Center is to conduct research, education and extension programs intended to raise levels of nutrition and standards of living of people in tropical and subtropical regions, sustainably improve agricultural productivity and natural resources management, protect and restore fragile natural ecosystems potentially affected by agriculture, and prevent loss of biodiversity.</p>	<p>Pesticide Information Office Fred Fishel, Ph.D., Director Building 164 PO Box 110710 University of Florida Gainesville, FL 32611 Ph: 352-392-4721 Fax: 352-846-0206 E: weeddr@ufl.edu http://pested.ifas.ufl.edu/</p> <p>The PIO is charged with a variety of responsibilities, but its overall function can be best described as assembling, maintaining and disseminating current pesticide information. A significant component is the IFAS Pesticide Safety Education Program (PSEP), which provides training and information to applicators on safe, environmentally sound pesticide application practices, personal safety and regulations. PSEP also assists applicators in meeting state and federal certification and licensing requirements to use pesticides in Florida.</p>
<p>Doctor of Plant Medicine Degree Program Robert J. McGovern, Ph.D., Director 1453 Fifield Hall P.O. Box 110680 Gainesville, FL 32611 Ph: 352-392-3631 x213 Fax: 352-392-6532 E: rjm@ufl.edu http://dpm.ifas.ufl.edu/</p> <p>The DPM degree is a unique professional, doctoral degree analogous to the Doctor of Human Medicine (MD) and Doctor of Veterinary Medicine (DVM) degrees. The multidisciplinary program consists of courses and practical training in all relevant departments (Agronomy, Entomology/Nematology, Horticultural Sciences, Plant Pathology, Soil and Water Science, etc.).</p>	<p>School of Natural Resources and Environment Randall K. Stocker, Ph.D. Director of Research and Outreach 1053 McCarty Hall D PO Box 110230 Gainesville, FL 32611 Ph: 352-392-7622 Fax: 352-846-2856 E: snre-mail@ufl.edu http://snre.ufl.edu/</p> <p>The SNRE supports the University of Florida's commitment to academic, research, outreach and extension programs in ecology and environmental sciences. Bringing together faculty from eleven different UF programs, SNRE offers campus-wide, interdisciplinary degree programs at both the undergraduate and graduate levels. SNRE also sponsors public outreach and extension programs, and supports critical environmental research in a variety of fields.</p>

Table 3. Allied UF/IFAS Agriculture, Community, and Natural Resources Programs

<p>Florida 4-H Youth Development Program Marilyn N. Norman, Ph.D. Assistant Dean for 4-H Youth Development 3108 McCarty Hall P.O. Box 110225 Gainesville, FL 32611 Ph: 352-846-0996 x225 Fax: 352-846-0999 E: mnnorman@ufl.edu http://4h.ifas.ufl.edu/</p> <p>4-H is a non-formal educational program and an organization for youth. Nationally, it is managed by the Families, 4-H and Nutrition unit of the USDA CSREES. At the state level, 4-H is managed by UF/IFAS extension through the extension faculty of participating counties.</p>	<p>Southern Plant Diagnostic Network Robert J. McGovern, Ph.D. Director 1453 Fifield Hall PO Box 110680 University of Florida Gainesville, FL 32611 Ph: 352-392-3631 x213 Fax: 352-392-6532 E: rjm@ufl.edu http://spdn.ifas.ufl.edu/</p> <p>The NPDN was recently established by the USDA CSREES to develop a network linking plant pest and disease diagnostic facilities across the country. The SPDN, located at UF/IFAS, is the Regional Center for the Southern states and is charged with (1) establishing a secure, regional network for the detection and diagnosis of plant health problems, (2) extending and supporting sound public policies, (3) implementing rapid and accurate diagnoses and response strategies, and providing leadership and training.</p>
<p>Florida Energy Extension Service Pierce H. Jones, Ph.D., Director 2610 SW 23 Terrace, Bldg. 242 PO Box 110940 Gainesville, FL 32611 Ph: 352-392-8074 Fax: 352-392-9033 E: ez@energy.ufl.edu http://www.energy.ufl.edu/</p> <p>The FES works with professional audiences to promote efficient use of energy and natural resources. FEES programs include Florida Building Code Core Training, Build Green & Profit for building contractors, Sell Green & Profit for real estate agents, and Hurricane Preparedness for Hotels and Motels, and Hurricane Preparedness for Condominiums. In addition to these, local University of Florida Cooperative Extension Service offices conduct a wide variety of related educational programs.</p>	<p>Wetland Biogeochemistry Laboratory Mark W. Clark, Ph.D. Wetland Extension Specialist 106 Newell Hall P.O. Box 110510 Gainesville, FL 32611 Ph: 352-392-1803 x319 Fax: 352-392-3399 E: clarkmw@ufl.edu http://wetlandextension.ifas.ufl.edu/ http://wetlands.ifas.ufl.edu/</p> <p>The WBL is a unit within the Soil and Water Science Department at the University of Florida that promotes excellence in teaching, research and extension/outreach activities on biogeochemical cycles in wetlands and aquatic ecosystems. The primary goal of WBL is to transfer basic research for solving practical problems, and to integrate process level information into policy development and regulation.</p>