Energy crops, also referred to as biomass crops, are plants that are grown specifically for their fuel value to make biofuels or to burn directly for energy generation. Energy crops include those grown for production of biodiesel and ethanol fuels or as fuel-stocks for energy production through direct combustion, pyrolysis, and gasification. The Energy Policy Act of 2005 and The Energy Independence & Security Act of 2007 set goals for use of alternatives to petroleum-based energy products in the United States. The Food, Conservation and Energy Act of 2008 directs the U.S. Department of Agriculture to provide subsidies for growers to encourage adoption of dedicated energy crops. These programs have led to increased interest in planting energy crops across the United States.

Florida Law requires a permit for each planting (other than for purposes of agriculture) of two contiguous acres or more of any nonnative plant (unless exempt by rule) used for any purpose including fuel production. These requirements help protect Florida from potential adverse environmental effects, such as the escape and aggressive spread of a nonnative plant. This fact sheet 1) discusses why plantings of nonnative plants are regulated, 2) describes how plantings are regulated in Florida, 3) shows how IFAS determines if nonnative plants are invasive in Florida, and 4) provides Internet links for additional information.

Why Plantings of Nonnative Plants Are Regulated

**Invasive species** are defined by U.S. Executive Order 13112 as “Alien (non-native) species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” U.S. Executive Order 13112 states:

> “Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law ... not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.”

Impacts caused by invasive plant species have in recent years become an increasing concern. Annual losses and the cost of control for invasive plants in U.S. agricultural crops, pastures, turf and gardens, and aquatic habitats were estimated in 2006 to be $34 billion per year. Economic impacts to natural areas are more difficult to define but in Florida alone over $37 million was spent on terrestrial, wetland, and aquatic invasive plants in natural areas during FY 2005–2006. Environmental impacts such as displacement of native plant communities in natural areas are
difficult to quantify but are recognized by ecologists to be an international concern.

Concerns have been expressed about the potential invasiveness of energy crops. The National Invasive Species Council has recommended that the U.S. Government take steps to minimize the risk of biofuel crops becoming invasive. These recommendations are 1) Review/strengthen existing authorities; 2) Reduce escape risks; 3) Determine the most appropriate areas for cultivation; 4) Identify plant traits that contribute to or avoid invasiveness; 5) Prevent dispersal; 6) Establish eradication protocols for rotational systems or abandoned populations; 7) Develop and implement early detection and rapid response plans and rapid response funding; 8) Minimize harvest disturbance; 9) Engage stakeholders.

How Plantings of Nonnative Plants Are Regulated in Florida

Florida statutes (hereafter abbreviated F.S.) do not allow cultivation of a nonnative plant, including a genetically engineered plant or a plant that has been introduced for the purpose of fuel production in plantings greater than two contiguous acres except under special permit issued by the Florida Department of Agriculture and Consumer Services’ Division of Plant Industry (DPI) (581.083 (4), F.S.). A permit is not required for plantings that are used for agricultural purposes, as defined in Florida Statutes 570.02 (1) F.S. or if DPI determines, in conjunction with the Institute of Food and Agricultural Sciences at the University of Florida, that the plant is not invasive under Florida environmental conditions and subsequently exempts the plant by rule 5B-57.011 of the Florida Administrative Code (hereafter F.A.C.). Other plants exempted directly by rule include plants produced for purposes of food consumption, any plant that is commonly grown for commercial feed, feedstuff, or forage for livestock, or for pine trees (Pinus spp). These exemptions are currently interpreted on a case-by-case basis by DPI.

Applications for permit (Biomass Planting Permit Application, DACS-08381, revised 06/08) can be obtained from, and should be returned to, Bureau of Methods Development and Biological Control, Division of Plant Industry, P.O. Box 147100, Gainesville, FL 32614-7100, or from the DPI Web site. Separate applications are required for each noncontiguous growing location and a new application is required if a planting (contiguous or noncontiguous) will exceed 5% of the original planting. Permits are not issued for plants on the Florida Noxious Weed List (5B-57-007 F.A.C.) or the Federal Noxious Weed List (7 CFR 360.200).

Permits, at a minimum, require the following:

(a) A system of traps or filters shall be required to prevent plants or plant parts from spreading through ditches, natural waterways, or other drainage. A fallow area in excess of 25 feet may be considered as a trap.
(b) Measures will be required to prevent spread by seed.
(c) A fallow area wide enough to prevent plant spread into adjacent areas shall be required. The fallow area may be used singularly or in combination with a berm surrounding the biomass planting.
(d) Any equipment used on the site must be cleaned of all plant debris before being moved from the property.
(e) Wildfire protection measures will be required to mitigate fire risk and damages to surrounding areas.
(f) A compliance agreement (Compliance Agreement, Biomass, DACS-08383, revised 04/08) containing any additional requirements needed to prevent plant spread shall be signed and will be an addendum to the permit for this purpose and is incorporated herein by reference. Copies of Compliance Agreement, Biomass, DACS-08383, revised 04/08, may be obtained from the Division of Plant Industry, Bureau of Plant and Apiary Inspection, P.O. Box 147100, Gainesville, FL 32614-7100, or from the DPI Website. Failure to abide by the permit stipulations or the compliance agreement is considered to be a violation of these rules.

Permit holders must maintain for each separate growing location a bond or a certificate of deposit in an amount of not less than 1.5-fold the estimated cost of removing and destroying the plants. Bond or CD requirements are detailed in the Biomass rule 5B-57.011 F.A.C. and statute 581.083 F.S. The permit holder or property owner must, if a biomass planting is abandoned, completely destroy the planting. Execution of the bond or CD will be used, if deemed necessary by DACS, to destroy the crop.

Questions regarding the DPI Biomass permit should be directed to: Dr. Trevor Smith, Chief of Bureau of Methods Development and Biological Control, smtiht2@doacs.state.fl.us; 352/372-3505 ext. 445
The IFAS Assessment of Non-Native Plants in Florida’s Natural Areas

IFAS convened a task force in 1995, which later became the IFAS Invasive Plants Working Group (IPWG), to address issues surrounding invasive plants, particularly the potential concerns with commercial invasive plants that have escaped cultivation, to identify which plants are of concern, and to recommend research and educational strategies to mitigate potential problems caused by invasive plants. A committee of the IPWG developed a process by which the invasiveness of nonnative plants could be evaluated. This process developed into what is now the IFAS Assessment of Non-Native Plants in Florida’s Natural Areas (Assessment). IFAS uses the Assessment to determine if nonnative plant species are invasive or potentially invasive in Florida, and uses this information internally for making recommendations for uses of nonnative plants. The Assessment is composed of three components:

Status Assessment – determines the current invasiveness of nonnative plants in Florida’s natural areas.

Infraspecific Taxon Tool – used to determine whether recommendations about a particular infraspecific taxon (e.g., cultivar, variety, sub-species) should be the same or different from the resident or parent species.

Predictive Tool – used (as directed by Status Assessment) 1) for species that have not escaped into Florida’s natural areas but are either recent arrivals to the state or are known to cause problems in areas with similar habitats and climate to Florida, or 2) if there is a proposed or new use for a species that would result in higher propagule pressure in Florida (e.g., cultivation of more than 2 contiguous acres of a species for bioenergy, corresponding to the DPI Biomass Rule), or 3) commercial cultivation of a species present in Florida for a new use, or increase in acreage cultivated from 1–10 acres to 10 times that acreage (1–100 acres), 10–100 acres to 5 times that acreage (50–500 acres), or more than 100 acres to 2.5 times that acreage. The Australian Weed Risk Assessment has been adapted for use in Florida to complete the assessment of such species.

Plants assessed with the Assessment are given one of three major conclusions: “Invasive: Not recommended,” “Caution: May be recommended but manage to prevent escape,” and “Not a problem species.” A species that is initially given the conclusion “Not a problem species” based on assessment with the Status Assessment but that is subsequently assessed through the Predictive Tool and found to be “potentially invasive” is assigned an Assessment conclusion of “Invasive: Not recommended” but “may be eligible for specific uses if approved by IPWG.” Approved uses would be recommended only under specific management practices that have been approved by the IPWG.

Internet links for Additional Information


National Invasive Species Council: http://www.invasivespecies.gov/


Florida statutes: http://www.leg.state.fl.us/STATUTES/


Biomass Planting Permit Application on the DPI Web site: http://www.doacs.state.fl.us/pi/methods/biomass_permits.html

Florida Noxious Weed List: https://www.flrules.org/gateway/RuleNo.asp?ID=5B-57.007


IFAS Assessment of Non-Native Plants in Florida’s Natural Areas: http://plants.ifas.ufl.edu/assessment/