UF IFAS Extension UNIVERSITY of FLORIDA

SS-AGR-329

Permit Requirements for Planting Non-native Energy/ Biomass Crops in Florida[1]

Ken Langeland, Stephen F. Enloe, Deah Lieurance, and S. Luke Flory[2]

Energy crops, also widely 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 directed the US Department of Agriculture to provide subsidies for growers to encourage adoption of dedicated energy crops. These programs have led to greater interest in planting energy crops across the United States.

Florida law requires a permit for each planting (for purposes other than agriculture) of two or more contiguous acres of any non-native plant (unless the species is exempt by rule) used for any purpose, including fuel production. This requirement helps protect Florida from potential adverse environmental effects of non-native species, such as escape and spread into surrounding natural or agricultural areas.

This fact sheet 1) discusses why plantings of non-native plants are regulated, 2) describes how plantings are regulated in Florida, 3) shows how the *UF/IFAS Assessment of Non-native Plants in Florida's Natural Areas* evaluates the invasion risk of non-native plant species, and 4) provides sources of additional information.

Why Plantings of Non-native Plants Are Regulated

Invasive species are defined by US 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."

Economic and ecological impacts of invasive plant species have become a greater concern in recent years. Annual losses and the cost of control for invasive plants in US agricultural crops, pastures, turf and gardens, and aquatic habitats were estimated in 2006 to be $34 billion per year.

1. This document is SS-AGR-329, one of a series of the Agronomy Department, UF/IFAS Extension. Original publication date March 2010. Revised August 2016. Visit the EDIS website at http://edis.ifas.ufl.edu.

2. Ken Langeland, retired professor; Stephen F. Enloe, associate professor; Deah Lieurance, former coordinator of the *UF/IFAS Assessment of Non-native Plants in Florida's Natural Areas*; Center for Aquatic and Invasive Plants; and Luke Flory, associate professor, Agronomy Department; UF/IFAS Extension, Gainesville, FL 32611.

Economic impacts on natural areas are more difficult to quantify but in Florida alone over $37 million was spent on terrestrial, wetland, and aquatic invasive plant management during FY 2005–2006. Environmental impacts such as reduced native plant diversity, reduced tree regeneration, altered fire and hydrologic regimes, and altered carbon and nitrogen cycling have been quantified for many invasive plants and are considered by many 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 US Government take steps to minimize the invasion risk of biofuel crops. 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 Non-native Plants Are Regulated in Florida

Florida statutes (hereafter abbreviated F.S.) do not allow cultivation of a non-native 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 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 does not present a significant invasion risk under Florida environmental conditions and subsequently exempts the plant by rule 5B-57.011 of the Florida Administrative Code (hereafter F.A.C.). Other plant species 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 website. 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. Eric Rohrig, Bureau Chief, Methods

Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Eric.Rohrig@freshfromflorida.com; 352/395-4744.

The UF/IFAS Assessment of Non-Native Plants in Florida's Natural Areas

In 1995, IFAS convened a task force (later known as the Invasive Plants Working Group, or IPWG), to address issues surrounding invasive plants. Specifically, the IPWG wanted to identify non-native plants threatening Florida's natural areas, address concerns with commercial invasive plants that have escaped cultivation, and recommend research and educational strategies to mitigate potential problems caused by invasive plants. A subcommittee of the IPWG developed the *UF/IFAS Assessment of Nonnative Plants in Florida's Natural Areas* (hereafter the *UF/IFAS Assessment*) in 1999 to evaluate the invasion risk of non-native plants in natural areas. UF/IFAS faculty members rely on the recommendations of the *UF/IFAS Assessment* when discussing the use of non-native plants and all UF/IFAS Extension publications referring to specific non-native plant species (e.g., invasion risk, ecology, distribution, management, use, and value) are required to include the recommendations of the *UF/IFAS Assessment*.

The *UF/IFAS Assessment* is composed of three components:

1. ***Status Assessment***—Used to determine the current invasiveness of non-native plants in Florida's natural areas.

2. ***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.

3. ***Predictive Tool***—Used to predict the invasion risk for species that 1) 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; 2) a new proposed use resulting in higher propagule pressure (e.g., cultivation of more than 2 contiguous acres of a species for biomass planting, corresponding to the DPI Biomass Rule); or 3) are proposed for additional commercial cultivation where acreage would be greatly increased. For example, an increase from 1–10 acres to 10 times that acreage (10–100 acres), 10–100 acres to 5 times that acreage (50– 500 acres), or more than 100 acres to 2.5 times that acreage. The Predictive Tool is a weed risk assessment (WRA) protocol modified from the Australian WRA to match the geography and climate of Florida.

Plants evaluated with the *UF/IFAS 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 listed as "Not a problem species" based on evaluation with the Status Assessment but that is subsequently reviewed through the Predictive Tool and found to be "potentially invasive" is assigned a conclusion of "Invasive: Not recommended" but "may be eligible for specific uses if approved by IPWG." Specific uses would be recommended only under specific management practices that have been approved by the IPWG.

In conclusion, this FDACS regulatory approach, coupled with the use of the *UF/IFAS Assessment*, is designed to prevent future invasive plant disasters such as kudzu, Chinese tallowtree, and saltcedar in Florida. It is based upon the best science available and will continue to evolve as current methods of risk assessment are refined or new methods are developed. For more information on the *UF/IFAS Assessment*, please refer to *The* UF/IFAS Assessment of Nonnative Plants in Florida's Natural Areas*: History, Purpose, and Use* (Lieurance et al. 2013; http://edis.ifas.ufl.edu/ag376).

Additional Information

U. S. Executive Order 13112: http://www.invasivespeciesinfo.gov/laws/execorder.shtml

National Invasive Species Council: https://www.doi.gov/invasivespecies

National Invasive Species Council's white paper on biofuels including their nine recommendations to minimize risk: https://www.doi.gov/sites/doi.gov/files/uploads/isac_biofuels_white_paper_final.pdf

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

Rule 5B-57.011 F.A.C.: https://www.flrules.org/gateway/RuleNo.asp?ID=5B-57.011

Biomass Planting Permit Application on the DPI website: http://www.flrules.org/Gateway/reference.asp?No=Ref-02821

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

Federal Noxious Weed List: http://www.aphis.usda.gov/plant_health/permits/organism/federal_noxious_weeds.shtml

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

Australian Weed Risk Assessment: http://www.agriculture.gov.au/biosecurity/risk-analysis/weeds/system/weed_risk_assessment