OLR RESEARCH REPORT

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RUNNING BAMBOO

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You asked if running bamboo is considered an invasive species in Connecticut and if any states have banned or restricted the planting of such bamboo, specifically bisset bamboo (*Phyllostachys bissetti*) and yellow-groove bamboo (*Phyllostachys aureosulcata*). You also asked for the most effective way to prevent running bamboo from spreading to neighboring properties.

SUMMARY

Running bamboo (genus *Phyllostachys*) has a root system with rhizomes that run underground and can quickly spread from one property to another unless carefully maintained.

Running bamboo is not considered an invasive species under Connecticut law, according to the Connecticut Invasive Plants Council. However, the council has stated that it will be supportive of legislation that would (1) require sellers of running bamboo to educate customers about the plant, (2) require property owners who plant bamboo to install and maintain proper containment, and (3) assign liability in situations where property owners fail to prevent the spread of bamboo.

No state currently bans or restricts the planting of running bamboo. However, New York recently passed a law to prohibit the sale, possession, or transportation of invasive species beginning in January 2013 (2012 N.Y. Laws ch. 267). The state Department of Environmental

Conservation, in cooperation with the Department of Agriculture and Markets, must develop regulations to implement the law by September 1, 2013. The regulations must include the list of prohibited species. Media reports suggest that running bamboo may be among the species prohibited (for example, see http://shelterislandreporter.timesreview.com/2012/08/16615/bamboo-ban-gets-a-thumbs-down-locally-but-state-trumps-the-issue/).

There are several ways to maintain running bamboo, including using physical barriers, mowing frequently, digging trenches, and using herbicides. But, according to Logan Senack, Connecticut's Invasive Plant Coordinator, there is a lack of evidence to support one method over another. Thus, we cannot identify which method is the most effective way to prevent bamboo from spreading to neighboring properties.

RUNNING BAMBOO

Connecticut's Invasive Plants Council, created by law in 2003, has collected information on various species of running bamboo, particularly golden bamboo (*Phyllostachys aurea*) and yellow-groove bamboo (*Phyllostachys aureosulcata*), since 2010. At its September 18, 2012 meeting, the council decided by a vote (two for and six against) that running bamboo does not meet the state law criteria as an invasive or potentially invasive plant (see below). Specifically, some on the council questioned whether bamboo meets the requirement that "under average conditions, the plant has the biological potential for existing in high numbers outside of habitats that are intensely managed" (Invasive Plants Council Annual Report, December 2012, http://www.cipwg.uconn.edu/pdfs/2012Minutes/2012_IPC_AnnualReport.pdf).

At its October 9, 2012 meeting, the council unanimously approved a motion to recommend action to the legislature regarding running bamboo. The text of the motion follows here:

> The Connecticut Invasive Plants Council, while recognizing in a split vote on September 18, 2012, that yellow-groove bamboo (*Phyllostachys aureosulcata*) and other species of running bamboo in the genus *Phyllostachys* do not meet the criteria for invasive or potentially invasive plants as set forth in CGS § 22a-381b, does recognize that said species have demonstrated the potential to cause significant damage to residential properties when not properly installed and maintained. The Council therefore is supportive of legislation that (1) requires sellers and installers of bamboo in the genus *Phyllostachys* to provide to

the retail customer educational material on the growth habit of the plant and how to properly contain the plant, (2) requires property owners to install proper containment for any planting of bamboo in the genus *Phyllostachys* when such planting is within 100 feet of any abutting property or public right-of-way, and (3) addresses situations in which property owners fail to prevent the spread into neighboring properties.

CONNECTICUT INVASIVE PLANTS LAW

With limited exceptions, Connecticut law prohibits individuals from importing, moving, selling, purchasing, transplanting, cultivating, or distributing 80 listed invasive plant species. The law does not apply to moving the plants for eradication, research, or educational purposes. Violators can be fined up to $100 per plant (CGS § 22a-381d).

Until October 1, 2014, the law bars municipalities from enacting ordinances regarding the retail sale or purchase of invasive plants (CGS § 22a-381d(e)).

The law also requires the Invasive Plants Council, among other things, to publish and periodically update a list of plants considered invasive or potentially invasive and recommend ways to control them. The council may determine that certain plants are invasive or potentially invasive using criteria the law sets out and, by a two-thirds vote, recommend to the General Assembly's Environment Committee that it ban the plants (CGS §§ 22a-381a and 22a-381b).

For a list of invasive and potentially invasive plants, including those that are banned by state law, see http://www.cipwg.uconn.edu/pdfs/CTInvasive%20PlantList2012ScientificName.pdf (copy attached).

Invasive Plants

When publishing and updating the list of invasive plants, the council must determine that a plant meets all of the following criteria:

1. the plant is nonindigenous to Connecticut;

2. the plant is naturalized or has the potential to become naturalized or occurring without the aid and benefit of cultivation in an area where the plant is nonindigenous;

3. under average conditions, the plant has the biological potential for rapid and widespread dispersion and establishment in the state or a region within the state;

4. under average conditions, the plant has the biological potential for excessive dispersion over habitats of varying sizes that are similar or dissimilar to the site of the plant's introduction into the state;

5. under average conditions, the plant has the biological potential for existing in high numbers outside of habitats that are intensely managed;

6. the plant occurs widely in a particular state habitat or region;

7. the plant has numerous individuals within many populations;

8. the plant is able to out-compete other species in the same natural plant community; and

9. the plant has the potential for rapid growth, high seed production, and dissemination and establishment in natural plant communities (CGS § 22a-381b(a)).

Potentially Invasive Plants

When publishing and updating the list of potentially invasive plants, the council must determine that a plant possesses each of the characteristics of invasive plants set forth in (1) to (5) above and at least one of the characteristics of invasive plants set forth in (6) to (9) above (CGS § 22a-381b(b)).

MAINTAINING RUNNING BAMBOO

We asked Logan Senack, Connecticut's Invasive Plant Coordinator, for ways to maintain running bamboo. Senack noted that maintaining bamboo to prevent it from spreading to other properties requires diligence. He also noted that there is a lack of evidence to support one maintenance method over another. Thus, we cannot identify the most effective way to prevent bamboo from spreading to neighboring properties.

The Invasive Plant Council invited a Connecticut retailer to share his experience and best practices for maintaining bamboo. At the council's September 2012 meeting, Mike Johnson of Summer Hill Nursery in Madison, Connecticut, recommended a 36-inch plastic 60-mil (0.060

inch) barrier be planted 34 inches into the ground around the bamboo with two inches protruding above the soil surface. According to Senack, the barrier should be angled outward, leaning away from the stand of bamboo, to direct the rhizomes and new shoots to grow up and out of the soil and over the barrier. A person can then find and remove the new bamboo growth before it spreads.

Other methods of maintaining running bamboo include mowing the surrounding area frequently during the spring season when new shoots appear, digging trenches around the bamboo stand and keeping them clear of new growth, and using herbicides. Because bamboo is an aggressive plant, Senack notes that annual maintenance is required, regardless of the maintenance method employed, to keep it from spreading.

JKL:ro

Attachment

CONNECTICUT INVASIVE PLANT LIST October 2012

Connecticut Invasive Plants Council **Ordered by Scientific Name**

Statement to accompany list -- January 2004: This is a list of species that have been determined by floristic analysis to be invasive or potentially invasive in the state of Connecticut, in accordance with PA 03-136. The Invasive Plants Council will generate a second list recommending restrictions on some of these plants. In developing the second list and particular restrictions, the Council will recognize the need to balance the detrimental effects of invasive plants with the agricultural and horticultural value of some of these plants, while still protecting the state's minimally managed habitats.

In May 2004, Public Act 04-203 banned a subset of the January 2004 list making it illegal to move, sell, purchase, transplant, cultivate or distribute banned plants. Effective July 1, 2009, Public Act 09-52 removed the ban on *Pistia stratiotes.*

@ column indicates growth form or habitat: A = Aquatic & Wetland; G = Grass & Grass-like; H = Herbaceous; S = Shrub; T = Tree; V = Woody Vine

Explanation of symbols after Common Name:

(P) indicates Potentially Invasive (all other plants listed are considered Invasive in Connecticut)

***** denotes that the species, although shown by scientific evaluation to be invasive, has cultivars that have not been evaluated for invasive characteristics. Further research may determine whether or not individual cultivars are potentially invasive. Cultivars are commercially available selections of a plant species that have been bred or selected for predictable, desirable attributes of horticultural value such as form (dwarf or weeping forms), foliage (variegated or colorful leaves), or flowering attributes (enhanced flower color or size).

BAN column indicates prohibited status: Y= banned under CT Gen. Stat. 22a-381d N/A= not banned

^ indicates species that are not currently known to be naturalized in Connecticut but would likely become invasive here if they are found to persist in the state without cultivation

The taxonomic names used by the Connecticut Invasive Plants Council on the Invasive Plant List are consistent with the names used by the United States Department of Agriculture PLANTS database, accessible online at www.plants.usda.gov. The Council also maintains a list of scientific name synonyms for reference purposes.

COMMON NAME	@	SCIENTIFIC NAME	SYNONYMS	BAN
Amur maple (P)	T	*Acer ginnala* L.		N/A
Norway maple*	T	*Acer platanoides* L.		N/A
Sycamore maple (P)	T	*Acer pseudoplatanus* L.		Y
Goutweed	H	*Aegopodium podagraria* L.		Y
Tree of heaven	T	*Ailanthus altissima* (Mill.) Swingle		Y
Garlic mustard	H	*Alliaria petiolata* (M. Bieb.) Cavara & Grande		Y
False indigo (P)	S	*Amorpha fruticosa* L.		Y
Porcelainberry*	V	*Ampelopsis brevipedunculata* (Maxim.) Trautv.		N/A
Mugwort (P)	H	*Artemisia vulgaris*	Common wormwood	N/A
Hairy jointgrass (P)	G	*Arthraxon hispidus* (Thunb.) Makino	Small carpgrass	Y
Common kochia (P)	H	*Bassia scoparia* (L.) A.J. Scott	*Kochia scoparia*; Fireweed; Summer cypress	Y
Japanese barberry*	S	*Berberis thunbergii* DC.		N/A
Common barberry	S	*Berberis vulgaris* L.		Y
Drooping brome-grass (P)	G	*Bromus tectorum* L.	Cheatgrass	Y
Flowering rush (P)	A	*Butomus umbellatus* L.		Y
Fanwort	A	*Cabomba caroliniana* A. Gray		Y
Pond water-starwort (P)	A	*Callitriche stagnalis* Scop.		Y
Narrowleaf bittercress	H	*Cardamine impatiens* L.		Y
Japanese sedge^ (P)	G	*Carex kobomugi* Owhi		Y
Oriental bittersweet	V	*Celastrus orbiculatus* Thunb.	Asiatic bittersweet	Y
Spotted knapweed	H	*Centaurea stoebe* (L.)	*Centaurea biebersteinii; Centaurea maculosa*	Y
Canada thistle (P)	H	*Cirsium arvense* (L.) Scop.		Y
Black swallow-wort	H	*Cynanchum louiseae* Kartesz & Ghandi	*Cynanchum nigrum*; *Vincetoxicum nigrum*	Y
Pale swallow-wort	H	*Cynanchum rossicum* (Kleo.) Borhidi	*Vincetoxicum rossicum*	Y
Jimsonweed (P)	H	*Datura stramonium* L.		Y
Brazilian water-weed (P)	A	*Egeria densa* Planchon	Anacharis; Egeria	Y
Common water-hyacinth^ (P)	A	*Eichhornia crassipes* (Mart.) Solms		N/A
Russian olive (P)	S	*Elaeagnus angustifolia* L.		Y
Autumn olive	S	*Elaeagnus umbellata* Thunb.		Y
Crested late-summer mint (P)	H	*Elsholtzia ciliata* (Thunb.) Hylander	Elsholtzia	Y
Winged euonymus*	S	*Euonymus alatus* (Thunb.) Sieb.	Burning bush	N/A
Cypress spurge (P)	H	*Euphorbia cyparissias* L.		Y
Leafy spurge	H	*Euphorbia esula* L.		Y
Glossy buckthorn	S	*Frangula alnus* Mill.	*Rhamnus frangula*; European buckthorn	N/A
Slender snake cotton	H	*Froelichia gracilis* (Hook.) Moq.	Cottonweed	Y
Ground ivy (P)	H	*Glechoma hederacea* L.	Gill-over-the-ground; Run-away robin	Y
Reed mannagrass^ (P)	G	*Glyceria maxima* (Hartm.) Holmb.	Tall mannagrass	Y
Giant hogweed (P)	H	*Heracleum mantegazzianum* (Sommier & Lavier)		Y
Dame's rocket	H	*Hesperis matronalis* L.		Y
Japanese hops (P)	H	*Humulus japonicus* Sieb. & Zucc.		Y

Attachment (continued)

Hydrilla	A	*Hydrilla verticillata* (L.f.) Royle		Y
Ornamental jewelweed (P)	H	*Impatiens glandulifera* Royle	Tall impatiens	Y
Yellow iris	A	*Iris pseudacorus* L.	Yellow flag iris	Y
Perennial pepperweed	H	*Lepidium latifolium* L.	Tall pepperwort	Y
Border privet (P)	S	*Ligustrum obtusifolium* Sieb. & Zucc.		Y
California privet (P)	S	*Ligustrum ovalifolium* Hassk.		N/A
European privet (P)	S	*Ligustrum vulgare* L.		N/A
Japanese honeysuckle*	V	*Lonicera japonica* Thunb.		Y
Amur honeysuckle	S	*Lonicera maackii* (Rupr.) Herder		Y
Morrow's honeysuckle	S	*Lonicera morrowii* A. Gray		Y
Tatarian honeysuckle (P)	S	*Lonicera tatarica* L.		Y
Belle honeysuckle	S	*Lonicera x bella* Zabel	Bell's honeysuckle (*misapplied*)	Y
Dwarf honeysuckle^ (P)	S	*Lonicera xylosteum* L.	European fly-honeysuckle	Y
Ragged robin (P)	H	*Lychnis flos-cuculi* L.		Y
Moneywort* (P)	H	*Lysimachia nummularia* L.	Creeping jenny	N/A
Garden loosestrife* (P)	H	*Lysimachia vulgaris* L.		Y
Purple loosestrife	A	*Lythrum salicaria* L.		Y
European waterclover (P)	A	*Marsilea quadrifolia* L.	Water shamrock	Y
Japanese stilt grass	G	*Microstegium vimineum* (Trin.) A. Camus		Y
Eulalia* (P)	G	*Miscanthus sinensis* Andersson	Chinese or Japanese silvergrass	N/A
Forget-me-not	A	*Myosotis scorpioides* L.	True forget-me-not; Water scorpion-grass	Y
Parrotfeather (P)	A	*Myriophyllum aquaticum* (Vell.) Verdc.		Y
Variable-leaf watermilfoil	A	*Myriophyllum heterophyllum* Michx.		Y
Eurasian watermilfoil	A	*Myriophyllum spicatum* L.		Y
Brittle water-nymph (P)	A	*Najas minor* All.	Eutrophic water-nymph	Y
Onerow yellowcress (P)	A	*Nasturtium microphyllum* (Boenn. ex. Rchb.)	*Rorippa microphylla*	Y
Watercress (P)	A	*Nasturtium officinale* W.T. Aiton	*Rorippa nasturtium-aquaticum*	Y
American water lotus (P)	A	*Nelumbo lutea* (Willd.) Pers.	American water lotus	Y
Yellow floating heart (P)	A	*Nymphoides peltata* (S.G. Gmel.) Kuntze		Y
Scotch thistle (P)	H	*Onopordum acanthium* L.		Y
Star-of-Bethelehem (P)	H	*Ornithogalum umbellatum* L.		N/A
Princess tree (P)	T	*Paulownia tomentosa* (Thunb.) Siebold & Zucc. ex Steud.	Empress-tree	Y
Reed canary grass	G	*Phalaris arundinacea* L.		N/A
Common reed	G	*Phragmites australis* (Cav.) Trin. ex Steud.	Phragmites	Y
Water lettuce^ (P)	A	*Pistia stratiotes* L.		N/A
Canada bluegrass (P)	G	*Poa compressa* L.		Y
Bristled knotweed	H	*Polygonum caespitosum* Blume	*Persicaria longiseta;* Oriental lady's thumb	Y
Japanese knotweed	H	*Polygonum cuspidatum* Siebold & Zucc.	*Fallopia japonica*	Y
Mile-a-minute vine	H	*Polygonum perfoliatum* L.	*Persicaria perfoliata*	Y
Giant knotweed (P)	H	*Polygonum sachalinense* F. Schmidt ex. Maxim.	*Fallopia sachalinense*	Y
White poplar (P)	T	*Populus alba* L.		Y
Crispy-leaved pondweed	A	*Potamogeton crispus* L.	Curly pondweed or Curly-leaved pondweed	Y
Kudzu (P)	V	*Pueraria montana* (Lour.) Merr.	*Pueraria lobata*	Y
Fig buttercup	H	*Ranunculus ficaria* L.	Lesser celandine; *Ficaria verna*	Y
Common buckthorn	S	*Rhamnus cathartica* L.		Y
Black locust*	T	*Robinia pseudo-acacia* L.		N/A
Multiflora rose	S	*Rosa multiflora* Thunb.		Y
Rugosa rose* (P)	S	*Rosa rugosa* Thunb.*	Beach, Salt spray, Japanese, or Ramanas Rose	N/A
		**Note: This plant is especially aggressive in coastal areas*		
Wineberry	S	*Rubus phoenicolasius* Maxim.		Y
Sheep sorrel (P)	H	*Rumex acetosella* L.		Y
Giant salvinia^ (P)	A	*Salvinia molesta* Mitchell		Y
Tansy ragwort^ (P)	H	*Senecio jacobaea* L.	Stinking Willie	Y
Cup plant (P)	H	*Silphium perfoliatum* L.		Y
Bittersweet nightshade (P)	H	*Solanum dulcamara* L.	Climbing nightshade	Y
Water chestnut	A	*Trapa natans* L.		Y
Coltsfoot	H	*Tussilago farfara* L.		Y
Garden heliotrope (P)	H	*Valeriana officinalis* L.	Valerian	Y