

Ohio Invasive Plant Assessment Protocol

Botanical Name: *Hemerocallis fulva*
 Common Name: Ditch Lily, Day lily, Orange Day-Lily, T Step I Outcome: **Continue**
 Family Name: Liliaceae Step II Score: **37**
 Posted Date: 7/20/16 Step II Outcome: **Pending Further Review**
 Initial assessment conducted by: Ilana and Yulia Vinnik

	Score	Notes	References
<ul style="list-style-type: none"> - plant has been reported to be a widespread problem in 1-2 adjoining states (3 pts.) - plant has been reported to be a widespread problem in 3 or more adjoining states (5 pts.) - plant has been reported to be a widespread problem in similar habitat outside the US (1 pt.) - Information unknown (U) 	3	Considered Invasive in Illinois and West Virginia. On watch list in PA.	5,12
Step II: Biological Characters			
4. Vegetative Reproduction <ul style="list-style-type: none"> - no vegetative reproduction (0 pts.) - reproduces readily within the original site (1 pt.) - has runners or spreading rhizomes that root easily (3 pts.) - fragments easily and fragments can be easily dispersed (4 pts.) - has runners or spreading rhizomes that root easily AND fragments easily and fragments can be easily dispersed (5 pts.) - Information unknown (U) 	3	Primarily by rhizomes (horizontal underground stems) and tuber-like roots	9,10,13,17
5. Sexual Reproduction <ul style="list-style-type: none"> - no sexual reproduction (0 pts.) - infrequent sexual reproduction (1 pt.) - frequent sexual reproduction, but high variation among years in seed production (3 pts.) - frequent sexual reproduction (one or more events per year) (5 pts.) - Information unknown (U) 	1	8=> Species can hybridize with <i>H. citrina</i> and produce viable F1 progeny. 9=>Reproduces rarely by seeds. 10=>infertile triploid daylily which does not set seed. 14=>Daylily culture techniques described indicates that seeds should be planted immediately after harvested into flats or beds prepared outdoors.	7,8,9,10,13,14,15
6. Number of Viable Seeds or Propagules per Plant <ul style="list-style-type: none"> - few (0-10) (1 pt.) - moderate (11-1,000) (3 pts.) - prolific (>1,000) (5 pts.) - Information unknown (U) 	1	Species is a hybrid and reproduces by seed but that is not considered its primary mode of reproduction.16=>The seed capsules, if any are produced, are 3-celled and contain rows of black seeds.	16,8,13
7. Flowering Period <ul style="list-style-type: none"> - one month or less per year (0 pts.) - two months (1 pt.) - three to five months (2 pts.) - longer than five months (3 pts.) - Information unknown (U) 	2	9=> blooms from June through July. 8=>Flowers from July to late August 7=>The longevity of flowers is only half a day, varying from 11 to 15 h.	7,8,9
8. Dispersal Ability <ul style="list-style-type: none"> - low potential for long-distance seed/propagule dispersal (>1km) (0 pts.) - medium potential for long-distance seed/propagule dispersal (3 pts.) - high potential for long-distance seed/propagule dispersal (5 pts.) 		"Spreads entirely by growth and movement of the tubers as no seeds are formed. Tubers can be	

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Notes

References

Step II

- Information unknown (U)

0

seeds are formed. Tubers can be dispersed by water along rivers and streams, especially during flood events when tubers may be dislodged from stream bank colonies and carried downstream. It is also spread along roadsides and by grading equipment and snowplows and by gardeners discarding rootstocks from their gardens."

15

9. Generation Time

- long juvenile period (>5 or more years for trees, 3 or more years for other growth forms) (0 pts.)
- short juvenile period (<5 years for trees, <3 years for other forms) (3 pts.)
- Information unknown (U)

3

14

10. Establishment

- unable to invade natural areas (0 pts.)
- can only colonize certain habitat stages (e.g. early successional habitats) (1 pt.)
- aggressively colonizes and establishes in edge habitats (3 pts.)
- aggressively colonizes and establishes in intact and healthy natural areas (6 pts.)
- Information unknown (U)

3

9=>"Can be found growing weedy along roadsides and banks, and in neglected meadows and other waste areas. Plants grow best in rich, damp, gravelly soil, and can tolerate full sun to partial shade."17=> cemeteries and cemetery prairies, thickets and woodland borders, areas along railroads and roadsides, sites of abandoned homesteads, and old flower gardens. Also invades natural areas and become in time a nuisance. "

9,15,16

Step II: Ecological Importance

11. Impact on Ecosystem Processes

- no known effect on ecosystem-level processes (0 pts.)
- moderate effects on ecosystem-level processes (e.g., changes in nutrient cycling)(3 pts.)
- causes long-term, substantial alterations in the ecosystem (e.g., changing fire regime of an area, changing hydrology of wetlands) (6 pts.)

0

Not indicated

12. Impact on Rare Organisms

- no known negative impact on Ohio State-listed or federal-listed plants or animals (0 pts.)
- negatively impacts listed species, such as through displacement or interbreeding (3 pts.)

0

Not indicated

13. Impact on Native Animals

- no known negative impact on animals (0 pts.)

11 - 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

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	Score	Notes	References
<ul style="list-style-type: none"> - documented direct or indirect negative effects on animal taxa (3 pts.) 	0	<p>11=> Rhizomes and foliage are poisonous to livestock and pets. Contains a neurotoxin and cattle and sheep can be paralyzed if they eat the rhizomes, whereas leaves can cause kidney failure in cats. 9=>some reports warn that consumption of large quantities of young shoots can be hallucinogenic and should be avoided.</p>	11,9
<p>14. Impact on Native Plants</p> <ul style="list-style-type: none"> - no known negative effects on native plants (0 pts.) - negatively impacts some native plants (increasing their mortality and/or recruitment of certain taxa) (3 pts.) - impacts native plants to such an extent that community structure is greatly altered (6 pts.) 	3	<p>5=>"Established in natural areas pose a threat to native plants in field, meadows, floodplains, moist woods and forest edges. Plant multiplies and spreads to form dense patches that displace native plants."</p>	5,10,4,15,16
<p>15. Hybridization</p> <ul style="list-style-type: none"> - no known instances of hybridization with other plant species (0 pts.) - can hybridize with native Ohio plants or commercially-available species, but seeds are inviable (1 pt.) - can hybridize with native Ohio plants or commercially-available species, producing viable seed (3 pts.) 	3	<p>6=> Can hybridize with <i>H. citrina</i> hybrids are self-incompatible. 7=>hybrids of these two species remain highly fertile. 8=>"Artificial pollination showed that hybrids are fertile even in later generations and are easily back crossed."</p>	6,7,8
<p>16. Population Density</p> <ul style="list-style-type: none"> - occurs only as small, sporadic populations or individuals (1 pt.) - typically forms small, monospecific patches (3 pts.) - is a dominant plant in area where population occurs (absolute cover 15-50%) (4 pts.) - forms an extensive, monospecific stand (absolute cover >50%) (5 pts.) 	3	<p>Species forms dense, monospecific patches, but no information was found regarding the size of infestations in natural areas, so the 3 point answer was chosen.</p>	13
<p>17. Role in Succession in Natural Areas</p> <ul style="list-style-type: none"> - successional information is unknown (0 pts.) - is an early successional species that temporarily invades a disturbed site but does not persist as the site matures (0 pts.) - readily invades disturbed sites and persists, but does not interfere with succession (1 pt.) - readily invades disturbed sites, persists and interferes with succession of native plants (4 pts.) 	0	<p>Not indicated</p>	
<p>18. Number of Habitats Invaded</p>			

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Score Notes References

Forestlands: Floodplain forest, hemlock-hardwood forest, mixed mesophytic forest, beech-maple forest, oak-maple forest, oak-hickory forest.

Grasslands: Alvar*, beach-dune community*, bur oak savanna*, slough-grass-bluejoint prairie*, sand barren*, big bluestem prairie, little bluestem prairie (xeric limestone prairie*+), post oak opening*+

Wetlands: Bog*, fen*, twigrush-wiregrass wet prairie*, marsh, buttonbush swamp, mixed shrub swamp, hemlock-hardwood swamp*, maple-ash-oak swamp, white pine-red maple swamp*

* Considered a rare plant community in Ohio by ODW's Biodiversity Database Program.

+ = xeric limestone prairies or cedar glades and post oak openings are unique to the Interior Low Plateau Region of Adams, Highland and Pike counties, and are not included in Schneider and Cochrane (1997).

- not found in any natural habitats in Ohio (**0 pts.**)
- only found in 1 broad category (**1 pt.**)
- found in 2 broad categories or 2 rare habitat types (**3 pts.**)
- found in 3 broad categories or 3 rare habitat types (**4 pts.**)
- found in 4 or more rare habitat types (**5 pts.**)

4	11=>Forests, thickets, grasslands and stream-sides. 9=>"can be found growing weedy along roadsides and banks, and in neglected meadows and other waste areas." 13=> "meadows, floodplains, moist woods and forest edges"	11,9,13
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Total Score: 37
Number of Unknowns: 0
Outcome: Pending Further Review

Total Points	Assessment Decision
4 or more U	Insufficient Data
0-34	Not Known to be Invasive
35-44	Pending Further Review
45-80	Invasive