August 3, 2005

Assessment of Japanese barberry (*Berberis thunbergii)* in Indiana's Natural Areas

May 25, 2007 assessment meeting – Don Miller, Kate Howe, Hilary Cox, Ellen Jacquart

Answers are underlined; *comments are in italics*

Contents of the Assessment:

Automatic Exemption From the Assessment

Is this species listed on any federal or on an Indiana state noxious, or prohibited plant lists?

If **YES** then do not proceed with assessment but indicate a conclusion of **Do not use this plant** on the front of the response form.

If **NO** then go to Section I.

Section I Invasion Status

1-a Current Invasion in Indiana

1. Does this species occur in any natural areas in Indiana?
   If **NO** then go to Section III-c (page 4).
   If **YES** then go to 1-a 2.
2. Does it ONLY occur in natural areas of Indiana because it has persisted from its previous cultivation (e.g., in abandoned farmland or homesteads)?
   If **YES** then go to Section III-c (page 4).
   If **NO** then go to Section 1-b (below).

1-b Invasion Status in Indiana

Evidence of invasion (forming self-sustaining and expanding populations within a plant community with which it had not previously been associated) must be provided. If not available in a published, quantitative form, this evidence must include written observations from at least three appropriate biologists.

1. Is species invasive ONLY when natural disturbance regime and scale have been altered? (e.g. where frequency, extent, or severity of fires have been reduced by human activity).
   If **YES** then go to questions 1-b 2.
   If **NO** – the species is invasive, go to Section II (below).

2. Has this species ever been known to persist, following colonization, when the natural regime is resumed

and the natural flora/communities recover? (e.g., is not an early successional species that only temporarily invades disturbed sites.)

If **YES** (or unknown) - the species is invasive, go to Section II (below).

If **NO** (known not to persist) the species is currently not invasive in Indiana. Go to Section III-c (page 4) to assess the species' potential for future invasion.

Section II Ecological Impacts of Invasion Impact Index

II-a Known Impacts at WORST SITE(S) (without, or before, any control effort)

Add up points for ALL impact statements (i through vi) that are true at the worst affected site(s) then go to question II-b. Evidence of impacts must be provided. If not available in published, quantitative form, this evidence must include written observations from at least *three* appropriate biologists, including specific locations of observations. Scientific names of impacted species (e.g., State-listed or native species with which hybridization occurs) must be included on the response form. If there is no evidence of an impact, then assign 0 points unless the impact is considered very likely (e.g., fixes N_2 in low nutrient soil that can change the flora) or the impact (except vi) has been demonstrated in similar habitats in states. In these cases assign 0.5 points.

	Points
i) Causes long-term, broad alterations in ecosystem processes changing the community as a whole (e.g. invasion of cattails changes hydrology, drying the site and allowing open aquatic systems to become forested).	15
ii) Has negatively impacted Indiana State-listed or Federal-listed plants or animals (choose one of the following): Displacement, death or hybridization has been documented AND occurs in at least 20% of known locations of the listed species, OR these effects occur in less than 20% of known locations of the listed species, but at least 4 different listed species are affected.	12
Displacement, death or hybridization occurs in less than 20% of locations of the listed species OR impacts are considered likely because the listed and invasive species closely co-habit (e.g., compete for light).	4
iii) Displaces or precludes native vegetation (affecting mortality and/or recruitment) by achieving infestations in the state that have at least 50% coverage of this species (as defined in the glossary) in the affected stratum that meet any of the following criteria: a) collectively add up to at least 10 acres; b) are 5 infestations of at least 0.25 acres; c) are 5 infestations that cover an entire localized community (e.g. sinkhole, seeps, fens, bogs, barrens, cliffs); d) are 5 infestations some of which are at least 0.25 acres and others of which cover entire localized communities.	12
iv) Changes community structure in ways other than vegetation displacement (e.g., alters wildlife abundance, adds a new stratum, or increases stem density within a stratum by more than 5-fold).	4
v) Hybridizes with native Indiana plants or commercially-available species.	4
vi) Covers over 15% of invaded stratum (but if 12 points were assigned for statement iii, do not assign points here) on > 10 acres in the state.	**3**
Total points (place in worksheet page 7):	3

II-b Range of Habitats in Which Species is Invasive

Forest: 1)Dry upland, 2)Dry-mesic upland, 3)Mesic upland, 4)Mesic floodplain, **5)Wet-mesic floodplain, 6)Wet floodplain,** 7)Bluegrass till plain flatwoods*, 8)Boreal flatwoods*, 9)Central till plain flatwoods, 10)Dry flatwoods*, 11)Sand flatwoods*, 12)Southwestern lowland mesic flatwoods*

Savanna: 13)Mesic savanna*, 14)Dry sand savanna*, 15)Dry-mesic sand savanna*

Barrens: 16)Limestone bedrock*, 17)Sandstone bedrock*, 18)Siltstone bedrock*, 19)Chert*, 20)Gravel*, 21)Sand*, 22) Clay*

Prairie: 23)Dry-mesic prairie*, 24)Mesic prairie*, **25)Wet prairie*,** 26)Dry sand prairie*, 27)Dry-mesic sand prairie*, 28)Wet-mesic sand prairie*, **29)Wet sand prairie***

Wetland: **30)Marl beach***, **31)Acid bog*, 32)Circumneutral bog*, 33)Fen*, 34)Forested fen*, 35)Muck and Sand flats*, 36)Marsh, 37)Sedge meadow*, 38)Panne*, 39)Acid seep*, 40)Calcareous seep*, 41)Circumneutral seep*, 42)Forest swamp, 43)Shrub swamp**

Lake: **44)Lake, 45)Pond**

Stream: **46)Low-gradient creek, 47)Medium-gradient creek, 48)High-gradient creek, 49)Low-gradient river, 50)Medium-gradient river, 51)Major river**

Primary: **52)Aquatic cave***, 53)Terrestrial cave*, 54)Eroding cliff*, 55)Limestone cliff*, 56)Overhang cliff*, 57)Sandstone cliff*, 58)Lake dune*, 59)Gravel wash*

Is this species known to be invasive in at least four habitat-types *(*note – rare habitat-types are marked with a * and count as 2 when adding*)* OR does it occur in at least one habitat-type of each of the terrestrial and palustrine/aquatic lists (palustrine/aquatic habitats are shown in **bold**)

If YES then multiply total score from II-a by 1.5
then go to Section II-c (Below) 4 habitat types affected; 3 x 1.5 = 4.5
If NO then multiply total score from II-a by 1
then go to Section II-c (Below)
Place point total in worksheet, page 7.

II-c Proportion of Invaded Sites with Significant Impacts

Of the invaded sites, might any of the worst impacts [items i-v in section II-a] only occur under a few, identifiable, environmental conditions (i.e., edaphic or other biological conditions occurring in 1-10% of the sites)? Documentation of evidence must be provided for a **YES** answer.

If **NO** or **NO SCORE** on items i to v in section II-a
then go to Section III
If **YES** then go to Section A (page 7)

Section III Potential for Expansion. Potential Index

This section evaluates a species' actual and/or potential for expansion in Indiana.

III-a Potential for Becoming Invasive in Indiana

1. Is information available on the occurrence of new populations of this species in Indiana over the last 5 years?
   If **YES** then go to section III-b
   If **NO** go to Section III-c to estimate potential for expansion based on the biology of the species.

III-b. Known Rate of Invasion.

1. Was this species reported in more than two new discrete sites (e.g., lakes, parks, fragments of habitats at least 5 miles apart) in any 12 month period within the last 5 years?
   If **NO** then P = Low; then go to Section IV
   If **YES** then P = High; then go to Section IV

III-c. Estimated Rate of Invasion. This section is used to predict the risk of invasion for species that are 1) not currently invasive in the state, and 2) invasive in the state but for which no data on current rate of spread exists. These questions are based on Hiebert et al. 1995.

1. Does this species hybridize with any State-listed plants or commercially-important species? (E.g., exhibit pollen / genetic invasion.)
   If **YES** then go to Section B (page 7)
   If **NO** then go to question III-c 2.

2. Add up all points from statements that are true for this species. Points

i. Ability to complete reproductive cycle in area of concern
   a. not observed to complete reproductive cycle 0
   b. observed to complete reproductive cycle 5

ii. Mode of reproduction
   a. reproduces almost entirely by vegetative means 1
   b. reproduces only by seeds 3
   c. reproduces vegetatively and by seed 5

iii. Vegetative reproduction
   a. no vegetative reproduction 0
   b. vegetative reproduction rate maintains population 1
   c. vegetative reproduction rate results in moderate increase in population size 3
   d. vegetative reproduction rate results in rapid increase in population size 5

iv. Frequency of sexual reproduction for mature plant
   a. almost never reproduces sexually in area 0
   b. once every five or more years 1
   c. every other year 3
   d. one or more times a year 5

v. Number of seeds per plant
   a. few (0-10) 1
   b. moderate (11-l,000) 3
   c. many-seeded (> l,000) 5
   Some cultivars produce >1000 seeds/plant (Lehrer et al., American Nurseryman Oct. 15, 2006, pp. 30-36)

vi. Dispersal ability
   a. little potential for long-distance dispersal 0
   b. great potential for long-distance dispersal 5
   Fruits are bird dispersed

vii. Germination requirements
   a. requires open soil and disturbance to germinate 0
   b. can germinate in vegetated areas but in a narrow range or in special conditions 3

c. can germinate in existing vegetation in a wide range of conditions 5

Reports and literature note that it has established itself in full shade without any soil disturbance.

viii. Competitive ability

a. poor competitor for limiting factors 0

b. moderately competitive for limiting factors 3

c. highly competitive for limiting factors 5

In some places where it has invaded it is growing in head-high, dense clumps in forest understories, taking full advantage of limited available light and displacing other species..

Total points for questions i – viii (place in worksheet page 7): **38**

Section IV Difficulty of Management Management Index

IV Factors That Increase the Difficulty of Management

Add up all points from statements that are true for this species then go to Section V (page 5). Assign 0.5 point for each statement for which a true/false response is not known.

Points

i) Control techniques that would eliminate the worst-case effects (as listed in Section II) have been investigated but none has been found. 15

ii) This species is difficult to control without significant damage to native species because: it is widely dispersed throughout the sites (i.e., does not occur within discrete clumps nor monocultures); it is attached to native species (e.g., vine, epiphytes or parasite); or there is a native plant which is easily mistaken for this invader in: (choose one)

≥ 50% of discrete sites in which this species grows; 10

25% to 50% of discrete sites in which this species grows. 7

Based on Don Miller's experience, the scattered nature of the majority of the plants means that foliar spraying or dormant stem spraying inevitably results in significant non-target damage.

iii) Total contractual costs of known control method per acre in first year, including access, personnel, equipment, and materials (any needed re-vegetation is not included) > $2,000/acre (estimated control costs are for acres with a 50% infestation) 5

The thorn-covered, many stemmed plants are similar to multiflora rose from a control standpoint. Based on Don Miller's experience, a stem oil-based herbicide treatment during dormant season works best, but requires both a lot of herbicide (all stems must be wetted) and for the large dense stands, tangling with the thorns increased the difficulty of the treatment. This results in it a higher than average control cost.

iv) Further site restoration is *usually* necessary following plant control to reverse ecosystem impacts and to restore the original habitat-type or to prevent immediate re-colonization of the invader. 5

Due to the scattered nature of most infestations, plenty of seed sources exist nearby to recolonize treated areas.

v) The total area over which management would have to be conducted is: (choose one)

≥ 100 acres; 5

< 100 but > 50 acres. 2

≤ 50 but > 10 acres. 1

≤10 acres 1/2

Based on survey reports.

vi) Following the first year of control of this species, it would be expected that individual sites would require re-survey or re-treatment, due to recruitment from persistent seeds, spores, or vegetative structures, or by dispersal from outside the site: (choose one)

at least once a year for the next 5 years; 10

one to 4 times over the next 5 years; 6
regrowth not known 2

vii) Occurs in more than 20 discrete sites (e.g., water-basins, parks, fragments of habitats at least 5 miles apart). 3

Overlease et al. 2002 notes that this species is reproducing outside of cultivation in more than 20 counties around the state.

viii) The number of viable, independent propagules per mature plant (e.g., seeds, spores, fragments, tubers, etc. detached from parent) is > 200 per year AND one or more of the following:

A. the propagules can survive for more than 1 year;
B. the propagules have structures (fleshy coverings, barbs, plumes, or bladders) that indicate they may spread widely by birds, mammals, wind or water;
C. the infestations at 3 or more sites exhibit signs of long distance dispersal. Some possible indicators of long distance dispersal include: the infestation has outlier individuals distant [>50 yards] from the core population; the infestation apparently lacks sources of propagules within ¼ mile. 3

ix) Age at first reproduction is within first 10% of likely life-span and/or less than 3 months. 2

It is likely that individuals can live at least 20-50 years, though we don't have documentation on that. They start producing fruits around 5 years of age.

Total points (place in worksheet page 8): 32

Section V — Commercial Value — Value Index

V-a Commercial Value

Does this species have any commercial value?

If response is **NO** then V = 0 and Go to Conversion of Index Scores to Index Categories

If response is **YES** then go to Section V-b

V-b Factors that Indicate a Significant Commercial Value

Add up all points from statements that are true for this species. Assign 0.5 point for each statement for which a true/false response is not known.

Points

i) This species is sold in national or regional retail stores (e.g., WalMart, Home Depot, Publix). 10

ii) State-wide there are more than 20 commercial growers of this species. 7

iii) More than five growers in Indiana rely on this species as more than 10% of their production. 3

iv) This species has provided a crop, turf, or feed source (e.g., forage, nectar) that has been, or resulted in, a significant source of income for at least five farmers for over 20 years. 3

v) This species is utilized statewide 3

vi) There are more than 100 retail seed outlets statewide 3

Total points (place in worksheet page 8): 13

Section A (from Section II-c)

A1 Can the habitats in which the worst-case ecological impacts occur (items i to v in Section II-a) be clearly defined as different from invaded sites where there are no such impacts (e.g., defined by edaphic or biological factors)? (If ecological impacts include negative effects on a State-listed species, then the specific habitats in which that State-listed species occurs must be clearly distinguishable from habitats in which it does not occur.)

If **NO** then return to Section III (page 4)

If **YES** then Go to question A2 and prepare such a site definition

A2 Can an estimate be made of the maximum distance that propagules (or pollen if hybridization is a concern) might reasonably be expected to disperse?

If **NO** then return to Section III (page 4)

If **YES** then prepare instructions for Specified and Limited Use based on maximum dispersal distance (e.g., may be acceptable for use in specific areas but not near habitats where impacts are high.) Reassess if the incidence of worst-case impacts increases above 10% or within 10 years, whichever is earlier. THEN resume the assessment at Section III to provide scores for the other indices.

Section B (from Section III-c or if Value = High and Impact = Medium)

B1 Are there specific circumstances in which this species could be used that would not be expected to result in escape and invasion? (E.g., foliage plants that are only used indoors and which can be reasonably prevented, by conspicuous labeling, from use or disposal in the landscape.)

If **NO**, then retain the previously derived Conclusion.

If **YES**, then Acceptable for Specified and Limited Use where regulations and educational programs for penalties and enforcement of misuse exist. Reassess this species every 2 years.

Worksheet for Assessment

Section I:

Follow directions to different sections.

Section II:

Impacts Point Total: ___3___ X (1 or 1.5) = ____4.5_____ **Impacts**

Section III:

Potential = High Medium or Low ____38_____ **Potential for Expansion**

Section IV:

Difficulty of Management Point Total: _____32____ **Difficulty of Management**

Section V:

Commercial Value Point Total: _____13____ **Value**

Conversion of Index Scores to Index Categories

Using the following table, determine the appropriate category (Low to High or Very High) for each index.

Category	Impact	Potential for Expansion	Management Difficulty	Value
Low (L)	**< 12**	<20	<15	≤ 6

Medium (M)	12 – 25	20 – 30	15 – 25	
High (H)	26-41	**>30**	**>25**	**>6**
Very High (VH)	>41			

Discussion-
Barberry is currently invading many sites in Indiana at a very low level, so the current Ecological Impact ranks as low. However, survey reports suggest it is expanding rapidly in some areas in Indiana, and reports from east coast locations indicate barberry has the potential to form dense stands that are head high and exclude all other species from forest understories.

Dirr (Manual of Woody Landscape Plants1998) estimates there are 450 cultivars of this species worldwide. Many are based on var. atropurpureus, all of which are purple-leaved. Lehrer, Brand and Lubell (J. Envir. Hort. 2006) note that these purple-leaved cultivars often produce green progeny. There is a mix of green and purple invaders in the Spring Pond site and Central Avenue Beach site.

Seed production varies widely between cultivars, per Lehrer, Brand, and Lubell in American Nurseryman, Oct. 15, 2006. Initial findings from their study shows almost all cvs. have the ability to produce seeds; to date only Crimson Ruby and Golden Devine have not produced any seed. Four other cvs produced less than 10 seeds/plant. Plants in this study were three year old plants, which is relatively young for fruit production, and the results are based on just one year's observations. Per this article "The findings presented here are preliminary and need to be replicated for at least two more years before firm conclusions can be drawn". Based on only one year's data, with relatively young plants, we do not believe it is possible to authoritatively state that particular barberry cultivars are less invasive. Once more data is collected, and if it provides stronger evidence, our recommendation should be changed to reflect the new information.

Recommendation – do not buy, sell, or plant Japanese barberry in Indiana.

Glossary

***Anthropogenic disturbance*.** Human-induced disturbance (e.g., mowing) or human-induced changes in natural disturbance regime (e.g., changing the frequency, extent, or severity of fires).

Coverage. Visual or quantitative estimate of the relative amount of area in a stratum where the canopy of the non-native species intercepts the light that would otherwise be available for other species in or below that stratum. Estimated cover may be dispersed or continuous in a site. Cover is usually measured when foliage is fully expanded. In the case of species that form a dense, continuous mat of rhizomes or stolons, the percent of the soil surface or upper level occupied by that root mat can be estimated as soil, rather than canopy, cover.

***Disturbance*.** Mechanisms that limit biomass by causing its partial or total destruction.

Discrete sites. Disjunct habitat-types or fragments of habitats at least 1 mile apart that support invasive plant populations that likely arose by separate long-distance dispersal mechanisms.

Documentation of evidence. One publication including relevant, original research will suffice if data are specific to the taxon and zone(s) under evaluation. If such documentation is not available or needs to be up-dated, at least three individuals who have the expertise on the particular species and zone in question must be identified.

Federal- or Indiana -listed. Species that are listed by Federal laws or Indiana statutes or rules as threatened or endangered within the State of Indiana. This list with notes is available at http://www.state.in.us/dnr/naturepr/endanger/plant.htm

Formal Risk Benefit Analysis. Detailed economic studies of impact and management costs and commercial value for present and future infestations.

Invasive. A species that forms self-sustaining and expanding populations within a natural plant community with which it had not previously been associated (Vitousek *et al*. 1995).

Long-term alterations in ecosystem processes. Examples of ecosystem processes that could be altered: erosion and sedimentation rates; land elevation; water channels; water-holding capacity; water-table depth; surface flow patterns; rates of nutrient mineralization or immobilization; soil or water chemistry; and type, frequency, intensity, or duration of disturbance. For further explanation see Gordon (1998).

Native. Species within its natural range or natural zone of dispersal (i.e., within the range it could have, or would have, occupied without direct or indirect introduction and/or care by humans. Excludes species descended from domesticated ancestors) (Vitousek *et al*. 1995).

Natural areas. Natural areas: Areas with native plant communities supporting native plant and animal species, with long undisturbed soil systems, and hydrological regimes relatively intact or under restoration. Edges of historically or currently disturbed areas (roadsides, trails, adjacent to historically disturbed locations, etc.) should not be included in the assessment of invasion into natural areas. That invasion may have been facilitated by the edges, but has to have extended into the native communities for inclusion in this category.

Pollen or genetic invasion. When a native species is displaced by a non-native species through hybridization.

Stratum. A distinct layer in the architecture of vegetation (e.g., tree canopy or understory shrubs).

Japanese barberry (*Berberis thunbergii*) Survey Reports Summary

- There were numerous reports of sites with barberry scattered throughout woods (Steuben, Jackson, Jennings, LaPorte, Parke, Marion, Brown, Harrison, Floyd, Martin, and Fayette) but in most cases survey reports were not filled out for them (see summary of comments that follows this section).
- 7 Survey Reports from natural areas in four counties (Porter, LaGrange, Allen and Marion Counties)
- 1 site reported within each survey report for a total of 7 sites
- The table shows a summary of the number of sites of each size with each impact (1-7):

Size of Invasion Site (in acres)	Impact 1	Impact 2	Impact 3	Impact 4	Impact 5	Impact 6	Impact 7
≤ 0.25	1						
> 0.25 < 1							
> 1 < 5							
> 5 < 10							
> 10 < 20	2						
> 20	3	2					

Number Impact

1 Present in high quality community but ≤10% of invaded stratum
2 Covering ≥10% but ≤50% of invaded stratum
3 Displacing or precluding other vegetation by covering ≥50% of a stratum (groundlayer, shrub layer, canopy layer).
4 Growing with or in close proximity to Indiana State or Federal-listed plants or animals (**note which species is being impacted in Comments column**).
5 Changing community structure in ways other than vegetation displacement (e.g. alters wildlife abundance or adds a new stratum; **note specific change in Comments column**).
6 Hybridizing with native Indiana plants or commercially-available species (**note species with which it is hybridizing in Comments column**).
7 Causing long-term, broad alterations in ecosystem processes changing the community as a whole (e.g. invasion of cattails changes hydrology, drying the site and allowing open aquatic systems to become forested; **note specific alterations in Comments column**).

II-b Range of Habitats in Which Species is Invasive

Communities underlined were reported as invaded:

Forest: 1)Dry upland, 2)Dry-mesic upland, 3)Mesic upland, 4)Mesic floodplain, **5)Wet-mesic**

floodplain, 6)Wet floodplain, 7)Bluegrass till plain flatwoods*, 8)Boreal flatwoods*, 9)Central till plain flatwoods, 10)Dry flatwoods*, 11)Sand flatwoods*, 12)Southwestern lowland mesic flatwoods*

Savanna: 13)Mesic savanna*, 14)Dry sand savanna*, 15)Dry-mesic sand savanna*

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Wetland: **30)Marl beach***, **31)Acid bog*, 32)Circumneutral bog*, 33)Fen*, 34)Forested fen*, 35)Muck and Sand flats*, 36)Marsh, 37)Sedge meadow*, 38)Panne*, 39)Acid seep*, 40)Calcareous seep*, 41)Circumneutral seep*, 42)Forest swamp, 43)Shrub swamp**

Lake: **44)Lake, 45)Pond**

Stream: **46)Low-gradient creek, 47)Medium-gradient creek, 48)High-gradient creek, 49)Low-gradient river, 50)Medium-gradient river, 51)Major river**

Primary: **52)Aquatic cave***, 53)Terrestrial cave*, 54)Eroding cliff*, 55)Limestone cliff*, 56)Overhang cliff*, 57)Sandstone cliff*, 58)Lake dune*, 59)Gravel wash*

Summary of Comments on Japanese Barberry from Invasive Reporters

Quotes from Rich Dunbar memo:

"A number of years ago I was at a workshop with several field biologists from New Jersey. They described barberry as being a serious pest in their forests with tall dense thickets covering large areas of forest making them difficult to walk through. I described it as being a small, scattered plant in our woodlands. They said – yeah, ours used to be like that.

Neither I, nor the crew I work with in northeast Indiana, can think of a woods that is entirely free of barberry, although there are probably some. I am submitting assessments for Olin Lake because we have many years of watching it expand there, and for Lindenwood because it has the largest clumps I have seen.

At Olin Lake barberry is present throughout the preserve. It is still a very minor component of the understory, but our crews have watched it expand in this high quality, mature woods over many years. It grows equally well in mesic uplands and in peaty woods along the lake border.

I do not have the same perspective of observing barberry of a period of time at Lindenwood. The plants I observed here recently are starting to approach the size and vigor described by the biologists from New Jersey. I saw one clump fifteen feet across and chest high in the center. Other clumps were nearly as large. Barberry only covers a minor portion of this otherwise diverse woodland. The vigor of the barberry demonstrates that it can grow vigorously in densely shaded woods. The area with the largest barberry population was about 20 acres, but it was found scattered elsewhere through the 86 acre preserve."

August 3, 2005

Hi Ellen.

Japanese Barberry is present and we are concerned about it in Pokagon State Park woodlands. It survived the "deer years" because of their thorns, the deer did not eat it. It is scattered in our woods. Not as abundant as bush honeysuckle and privet, but present and annoyingly so, nonetheless.

Fred Wooley
Park Interpreter
Pokagon State Park

Ellen,
I've seen Japanese Barberry scattered through various forested areas of the Refuge, both in Jackson and Jennings counties. Looking for Barberry has never been my focus while in the field, but I've noticed enough of it to make me think that I need to map it and see about taking care of it. From my casual observations I would say that upland forests are being affected; the plants are quite scattered; and at least 20 acres have been impacted.
Theresa

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Ellen,

None of these species has shown up in the natural habitats that I see in east central Indiana.

In my travels around the state:
I have seen very small amounts of Berberis thunbergii in woodland settings, e.g., at the Little Calumet Headwaters NP in LaPorte County. I am unaware of problem amounts invading quality sites.

Paul Rothrock

Ellen,

Japanese barberry (*Berberis thunbergii*) is scattered throughout most of the forested areas of Turkey Run State Park. Often they are just lone outliers but occasionally there are small colonies. Most populations occur in woods with some history of disturbance but not always.

It doesn't appear to me to be a big problem – when you compare them to bush honeysuckle and others - but some folks here expressed concern.

I can send you more details on their locations and abundance in the park if you need it.

Richard Scott

Ellen, Japanese barberry is a good one to assess in my opinion. Following the INPAWS meeting, Jayne and i saw it (infrequently) in McCormicks Creek woods

during our walks and also in the "second growth" area at Spring Mill State Park the day after.

At Indy Parks, it is found infrequently in two nature preserve second-growth areas----but, in the Spring Pond Nature Preserve second-growth (flat-poorly drained) it is common and scattered throughout the preserve. We haven't gotten to it with volunteers yet.

The barberry is in-mass in some of the disturbed, sharply drained ravines at Eagle Creek in disturbed woods in the Crest area.

Our horticulturalist is pulling the barberry out of most of the sign plantings and just because she doesn't like it the species anyway.

I would be able to map the preserve infestation at Spring Pond.

Hope this helps.

Don Miller

Ellen,

Of the plants you mention, I have only only seen Japanese Barberry in natural areas. In the few places I have seen it, it has been pretty low key, with only a few scattered individuals present. I'll pull it if I see it, but it hasn't required management by any means to this point.

Hope all is well with you! Gotten any burns in yet with all of this wet weather?

Jason Larson
IDNR Regional Ecologist
(812) 358-2160

Ellen,

Of the four listed below, I've seen more Berberis. I see it quite commonly in woods throughout the state, but not usually in high numbers. I think the largest concentration that I've seen it is in a small floodplain at Ogle Hollow Nature Preserve in Brown County State Park. It certainly looks to have the potential to become a serious competitor with native species.

Mike Homoya

Ellen:

I have come across some scattered plants of barberry. I probably haven't paid as much attention as I should looking for Norway Maple. It is all over the canal area here on the BU campus. I haven't seen the other 2, either. -- Becky

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Rebecca W. Dolan, PhD
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August 3, 2005

Ellen,

One of the properties I worked for Allen Pursell this year for the forest bank program has *Berberis thunbergii* invading a limestone glade that was recently cleared of Red Cedar. Only a dozen or so in a roughly ten acre area at about UTM 16 5**87**950E 42**29**700N. Not a real problem, but discouraging as always.

Regards,
Bill Adams

Hi, Ellen, there's a woods across the road from T.C.Steele buildings; that woods is part of the state T.C. Steele property. Last time I was there, which was a few years ago, that woods was full of Japanese Barberry, especially the lowland parts.

Art Hopkins

Hi Ellen,

Please see note below. Trent indicated that he has seen barberry within the woods here at Crane. If there are different species of barberry, I could not be sure that what he saw was Japanese barberry. The county is Martin and the infestations (if they are Japanese) are very small and scattered.

Regards, Steve Andrews

From: Osmon, Trent D CIV NSA Crane, N45
Sent: Wednesday, November 15, 2006 11:48
To: Andrews, Steven CIV NSA Crane; Hobson, Terry R CIV NSA Crane, N45; Miller, Brady J CIV NSA Crane, N45
Subject: RE: Comments needed on four species

I have seen the Japanese barberry in a few places. It has never seemed as though it is taking over or anything major.

Ellen:

I can't make the meeting but want to report that this month I saw scattered barberries in nice woods at Mary Gray Bird Sanctuary in Fayette County. They have it in their landscaped area as well. -- Becky

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