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| NAME OF SPECIES: <i>Petasites hybridus</i> (L.) G. Gaertn., B. Mey. & Scherb. (1) | |
| Synonyms: <i>Petasites officinalis</i> Moench, <i>Petasites vulgaris</i> Hill. <i>Petasites ovatus</i> ; <i>Tussilago hybrida</i> L. | |
| Common Name: Butterfly dock, butterbur, bog rhubarb, devil's hat, winter heliotrope, purple butter-bur Pestilence wort, | Cultivars? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| A. CURRENT STATUS AND DISTRIBUTION | |
| I. In Wisconsin? | 1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| | 2. <u>Abundance:</u> |
| | 3. <u>Geographic Range:</u> Population in Marquette MI |
| | 4. <u>Habitat Invaded:</u> low-lying areas Disturbed Areas <input checked="" type="checkbox"/> Undisturbed Areas <input checked="" type="checkbox"/> |
| | 5. <u>Historical Status and Rate of Spread in Wisconsin:</u> No vouchered specimens in WI to date |
| | 6. <u>Proportion of potential range occupied:</u> low |
| II. Invasive in Similar Climate Zones | 1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| | <u>Where (include trends):</u> In MI, Eaton Co. (LP) and Marquette Co (in the UP not far from WI (5) |
| III. Invasive in Which Habitat Types | 1. Upland <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Dune <input type="checkbox"/> Prairie <input type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input checked="" type="checkbox"/> Grassland <input type="checkbox"/> Bog <input checked="" type="checkbox"/> Fen <input type="checkbox"/> Swamp <input type="checkbox"/> Marsh <input checked="" type="checkbox"/> Lake <input type="checkbox"/> Stream <input type="checkbox"/> Other: Wet meadows, shady edges, woodland dappled with shade, meadow, bog garden (6) |
| IV. Habitat Affected | 1. <u>Soil types favored or tolerated:</u> Soil pH requirements: 6.1 (mildly acidic) - 8.5 (alkaline) (4) |
| | 2. <u>Conservation significance of threatened habitats:</u> many wetland types have species of greatest conservation need that rely specifically on these communities. |
| V. Native Range and Habitat | 1. <u>List countries and native habitat types:</u> Europe, Asia (2) |
| VI. Legal Classification | 1. <u>Listed by government entities?</u> |
| | 2. <u>Illegal to sell?</u> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS | |
| I. Life History | 1. <u>Type of plant:</u> Annual <input type="checkbox"/> Biennial <input type="checkbox"/> Monocarpic Perennial <input type="checkbox"/> Herbaceous Perennial <input checked="" type="checkbox"/> Vine <input type="checkbox"/> Shrub <input type="checkbox"/> Tree <input type="checkbox"/> |
| | 2. <u>Time to Maturity:</u> |
| | 3. <u>Length of Seed Viability:</u> seeds are sterile (4) |
| | 4. <u>Methods of Reproduction:</u> Asexual <input checked="" type="checkbox"/> Sexual <input checked="" type="checkbox"/> <u>Notes:</u> Tuberos base and fleshy creeping roots (3) seeds are sterile (4). Plant is dioecious therefore leaving some to believe seeds are sterile if they have either male or female flowers. |
| | 5. <u>Hybridization potential:</u> |
| II. Climate | 1. <u>Climate restrictions:</u> Hardiness: 5a – 8b (4) |
| | 2. <u>Effects of potential climate change:</u> |
| III. Dispersal Potential | 1. <u>Pathways - Please check all that apply:</u> <u>Unintentional:</u> Bird <input type="checkbox"/> Animal <input type="checkbox"/> Vehicles/Human <input type="checkbox"/> Wind <input type="checkbox"/> Water <input type="checkbox"/> Other: <u>Intentional:</u> Ornamental <input checked="" type="checkbox"/> Forage/Erosion control <input type="checkbox"/> Medicine/Food: homeopathy Other: |
| | 2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control:</u> "The growth is so dense and vigorous, with large |

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| | leaves that can be 75 cm or more across, that virtually no other plant is able to grow amongst this species[4]" (6) |
| IV. Ability to go Undetected | 1. HIGH <input type="checkbox"/> MEDIUM <input checked="" type="checkbox"/> LOW <input type="checkbox"/> |
| C. DAMAGE POTENTIAL | |
| I. Competitive Ability | 1. <u>Presence of Natural Enemies:</u> |
| | 2. <u>Competition with native species:</u> "The growth is so dense and vigorous, with large leaves that can be 75 cm or more across, that virtually no other plant is able to grow amongst this species[4]" (6) |
| | 2. <u>Rate of Spread:</u> -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) <input type="checkbox"/> MEDIUM (4-6 yrs) <input checked="" type="checkbox"/> LOW (7-10 yrs) <input type="checkbox"/> Notes: |
| II. Environmental Effects | 1. <u>Alteration of ecosystem/community composition?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: With such large leaves and vegetative spread, shading out other vegetation, there are changes in composition. |
| | 2. <u>Alteration of ecosystem/community structure?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> |
| | 3. <u>Alteration of ecosystem/community functions and processes?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Native wetland communities could be impacted due to the size and aggressiveness of butterbur, changing the community. |
| | 4. <u>Allelopathic properties?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> |
| D. SOCIO-ECONOMIC EFFECTS | |
| I. Positive aspects of the species to the economy/society: | Notes: Used medicinally – see below. Based on the 2011 WNA Economic Impact Survey, the following information was reported for this plant. Out of the 204 nurseries responding, 0 reported selling this plant (7). |
| II. Potential Socio-Economic Effects of Requiring Controls: | Positive: Negative: |
| III. Direct and indirect Socio-Economic Effects of Plant : | Notes: |
| IV. Increased Costs to Sectors Caused by the Plant:: | Notes: |
| V. Effects on human health: | Notes: "Butterbur is widely considered to be an effective cough remedy and recent experiments have shown it to have remarkable antispasmodic and pain-relieving properties[244]. It acts specifically on the bile ducts, stomach and duodenum[254]. The plant contains pyrrolizidine alkaloids, in isolation these are toxic to the liver[254]. The root and the leaves are analgesic, antispasmodic, cardiogenic, diaphoretic and diuretic[4, 9]. A decoction is taken as a remedy for various respiratory problems such as asthma, colds, bronchitis and whooping cough and also other complaints such as fevers and urinary complaints[4, 254]. It is also very effective in the treatment of gastrointestinal complaints and biliary dyskinesia[244, 254]. Externally it can be used as a poultice to speed the healing of wounds and skin eruptions[254]. The leaves are harvested in early summer, the root in late summer to autumn. Both can be dried for later use[9]. Because the plant contains potentially toxic alkaloids its internal use cannot be recommended[254]. A homeopathic |

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| | remedy is made from the roots[4]. It is used in the treatment of severe and obstinate neuralgia[4]." (6) |
| VI. Potential socio-economic effects of restricting use: | Positive: Negative: |
| E. CONTROL AND PREVENTION | |
| I. Costs of Prevention: | Notes: |
| II. Responsiveness to prevention: | Notes: |
| III. Effective Control tactics: (provide only basic info) | Mechanical <input type="checkbox"/> Biological <input type="checkbox"/> Chemical <input checked="" type="checkbox"/> Times and uses: Throttle XP (2, 4-D) at 12.5 oz/acre controls Petasites hybridus when applied at early stages of growth |
| IV. Costs of Control: | Notes: Permits for herbicide applications, aquatic approved herbicide, contractor cost, labor cost (control and/or monitoring). |
| V. Cost of prevention vs. Cost of allowing invasion to occur: | Notes: Since not well established in WI, it is worth protecting wetlands from yet another invasive plant. |
| VI. Non-Target Control Effects: | Notes: |
| VII. Efficacy of monitoring: | Notes: Large leaves and unique flowers early in season make monitoring for this plant a little easier. |
| VIII. Legal and landowner issues: | Notes: |
| F. HYBRIDS AND CULTIVARS AND VARIETIES | |
| I. Known hybrids? | Name of hybrid: |
| II. YES <input type="checkbox"/> NO <input type="checkbox"/> | Names of hybrid cultivars: |
| II. Species cultivars and varieties | Names of cultivars, varieties and any information about the invasive behaviors of each: |
| | Notes: |

G. REFERENCES USED:

- UW Herbarium (Madison or Stevens Point)
- WI DNR
- Bugwood (Element Stewardship Abstracts)
- Native Plant Conservation Alliance
- IPANE
- USDA Plants

| Number | Reference |
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| 1 | USDA Plants http://plants.usda.gov/java/profile?symbol=PEHY |
| 2 | USDA, ARS, National Genetic Resources Program. <i>Germplasm Resources Information Network - (GRIN)</i> [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?413414 (25 October 2011) |
| 3 | UMass Extension – Weed Herbarium. http://www.umassgreeninfo.org/fact_sheets/weed_herbarium/pages/pedhy.html |
| 4 | Dave's Garden. Guides and Information. < http://davesgarden.com/guides/pf/go/64165/ > |
| 5 | <i>MICHIGAN FLORA ONLINE</i> . A. A. Reznicek, E. G. Voss, & B. S. Walters. February 2011. University of Michigan. Web. October 25, 2011. http://michiganflora.net/species.aspx?id=421 . |
| 6 | Plants for a Future. < http://www.pfaf.org/user/Plant.aspx?LatinName=Petasites+hybridus > |
| 7 | Wiegrefe, Susan. 2011. Wisconsin Nursery Association Survey of the Economic impact of potentially invasive species in Wisconsin |

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Reviewer(s) and date reviewed: Kelly Kearns, 12/19/2011

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