

Compound lobe leaved, green flowered arums found in dry sites

Green dragon (*Arisaema dracontium*)

Native to Ontario Summer
S3, SC/SC

Fall

Spring

Winter



May grow to 15 - 90 cm.

Plant completely dies back after first frost.

Corms

Corm with central shoot surrounded by 6 smaller shoots; 2 cm wide x 4 cm long x 4 cm high. Growth rings visible on corm = 1 growth ring per year

Leaf



Five to twentyone leaflets palmately divided into lobes around main stem in a U-shaped pattern

Flower



May contain all male (staminate), male and female (monoecious), or completely female (pistillate) flowers. Pistillate flowers are rare and may develop orange or red berries

Leaflet

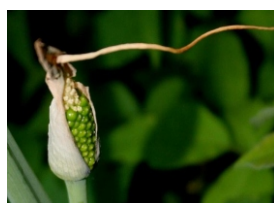


Each leaflet is elliptical to oval

5 Second rule check

Large compound leaf that is compound and palmately divided in a U-shaped pattern with a long spadix on flower.

Fruit



Confusing species

Other members of the *Arisaema* Genus; *A. atrorubens* and *A. triphyllum*, but these species have compound leaves

Large, fleshy green fruits develop after spadix withers and dies

Ecological Preferences

Grows to zone 4. Plant prefers partial sunlight to full shade in floodplains that experience periodic flooding. Moderately dry (0 - 1) moisture regimes in soils which are rapid (2) to well drained (3). Found in Willow mineral deciduous swamp types (SWDM4-1).

Habitat

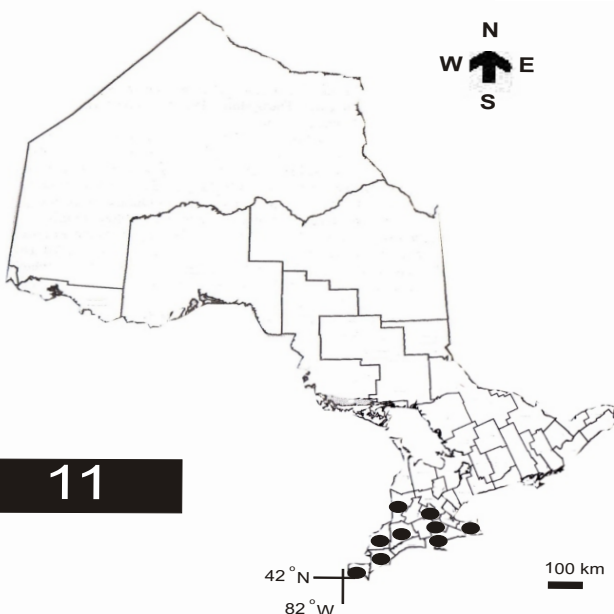
Found along rivers, creeks and clay floodplains in mesic (moist) to wet deciduous woods and thickets in eastern North America (Donley et al 2013).

Distribution

Carolinian forest region: Brant, Chatham-Kent, Essex, Middlesex, Niagara, Norfolk counties; Mixed deciduous: Huron, Lambton & Wellington counties

Population Size: It is believed that there are between 60 and 80 natural occurrences of Green Dragon in Ontario (Donley et al. 2013). Rothfels and Smith (2003) provide an estimate of approximately 11,000 plants, with 287 producing viable fruit. No recent population estimates have been made, but EARTHQUEST (Canada) for the Environment has recommended a monitoring program to Ruthven National Historic Site staff. Three records occur in the EARTHQUEST Plants of Ontario database.

Distribution of Green dragon in Ontario



Seasonal Flowering times of Green dragon in Ontario

ELC code	Apr	May	Jun	Jul	Aug
ARIDRAC		-----	-----		
		23	07		

Legend

- 1 - 10 times seen per month
- 10 - 15 times seen per month
- 15 - 20 times seen per month
- 20 - 25 times seen per month

ELC code = Ecological Land Classification code

Identification: Produces a single compound leaf which is palmately divided into 5 - 21 leaflets resembling a U-shaped pattern at the end of a long stalk. Center leaflets are shorter than adjacent. Two leaflets on either side of central leaflets are the longest with size of leaflets becoming progressively smaller as they progress toward the end (Donley et al 2013).

Biology and Ecology: The reproductive cycle seems to be habitat specific, dependent on quality and other variables such as disturbance and flood events. Plants can change sex in response to habitat needs; large, healthy plants possess male and female flowers (monoecious), while smaller, damaged plants may only have male staminate flowers, which may not produce fruits. Vegetative shoots from parent plants are also produced, likely in smaller damaged plants, which are physiologically dependent. Little is known about what kind of insect pollinators contribute to propagation, but thrips (*Heterothrips* spp.) and fungus gnats (*Mycetophylla* spp.) seem to be the main pollinators. The author has observed beetle larvae (i.e. Coleoptera Order) within the stems of mature flowering plants (Jolly pers. obs. 2014)

Biometrics: A relatively tall plant, compared to other members of the Arum family, with individuals ranging in size from 12 - 90 cm in height. A single leaf is borne at the end of a stem or stalk, resembling a palmately compound arrangement with 5 - 21 leaflets; larger, healthier plants contain more leaflets. Leaves are typically 10 - 23 cm wide by 23 - 36 cm long. Flowers arise within 10 cm of the bottom of the stem on long stalks which may be 10 cm long. Spathe may reach 15 cm with a long erect spike which turns yellow after flowers mature (Jolly pers. obs. 2014).

Plants Associates: Plant associates have been observed by the author (Jolly pers. obs. 2014) as *Trillium flexipes*, *Staphylea trifolia*, *Smilacina pubescens*, *Fraxinus pensylvanica* and *Viola pubescens*.

Environmental Protection: This species received some federal protection after being designated special concern in 1984 by COSEWIC as a Schedule 3 plant under the federal Species at Risk Act. Scheduled to be reassessed as a candidate Schedule 1 species. Provincially, Green dragon received protection by the Ontario Ministry of Natural Resources in 1988. It also receives protection under the 2007 provincial Endangered Species Act. One population in Middlesex county resides within the St. Clair Region Conservation Authority regulation limit adjacent to a golf course near the Strathroy Conservation Area. Most other populations are on public or private land.

Threats: The Green Dragon is facing habitat loss, degradation, fragmentation and isolation as the major culprits to population decline. Logging, changes to floodplain hydrology, invasive species, exotic earthworms, hyper-abundant herbivores and predators, unsustainable use and climate change are also contributing threats (Donley et al 2013).

Recovery Strategies & Management: Currently, no recovery strategies have been recommended outside the Ontario Management Plan compiled by staff of Carolinian Canada Coalition in 2013. Please refer to "Management Plan for the Green Dragon (*Arisaema dracontium*) in Ontario". Weblink: http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_mtpln_grndrgn_en.pdf. A national recovery team has been designated.