Typha domingensis (Southern cattail) new to Wisconsin

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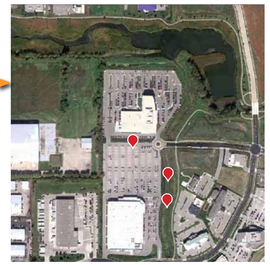
The genus *Typha*, in North America called cattails, with about 15–17 species, occurs in temperate and tropical regions worldwide. The center of diversity is in eastern Asia, especially China where 12 species are recognized. The only species that are definitely native to North America are *T. latifolia* (Broad-leaved cattail) and *T. domingensis* (in North America called Southern cattail). *Typha angustifolia* is probably introduced from Europe.

Esser Pond surrounded by degraded marsh-prairie complex showing location of *T. domingensis* colony next to parking lot

Air photo of area where *T. domingensis* was found



North of Hwy. 14 showing the location of 3 colonies next to parking lots in highly developed area

In August 2011 I found a small colony of *T. domingensis*, probably a single clone, near Esser Pond in Middleton, Wisconsin, and Mary Linton found many other colonies near the Costco store a short distance to the north along tributaries to Pheasant Branch Creek. The habitats are marshes near parking lots and streets and are greatly disturbed by humans. They are partly fed by storm water runoff but probably also by groundwater.

Storm-water outlet near T. domingensis colony near Esser Pond

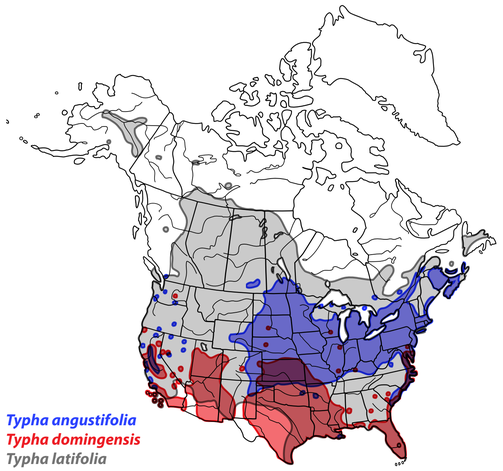
This is the first Wisconsin record of *T. domingensis* and is about 150 miles north of the nearest known locality at a power plant cooling pond about 50 miles ssw. of Chicago.

The *T. domingensis* plants were easily distinguished from the abundant *T. latifolia* and *T. angustifolia* plants nearby by their lighter green leaves and especially by their lighter, cinnamon-colored fruiting spikes that became paler in the autumn as most of the stigmas wore off. *Typha domingensis* is similar to *T. angustifolia*, from which it may best be distinguished in all seasons by the small brown mucilage-secreting glands on the inner surface of the leaf sheath and about 1–10 cm of the base of the leaf and are visible with the naked eye. To see the glands it is necessary to peel off about an inch of the leaf sheath next to the base of the blade. In *T. angustifolia* and *T. latifolia* the glands are restricted to the leaf sheath, but in *T. latifolia* they are very difficult to see without staining with an artificial dye.

Inner surface of leaf-sheath transition of *T. domingensis* from Esser Pond showing many small brown mucilage glands extending onto the leaf blade

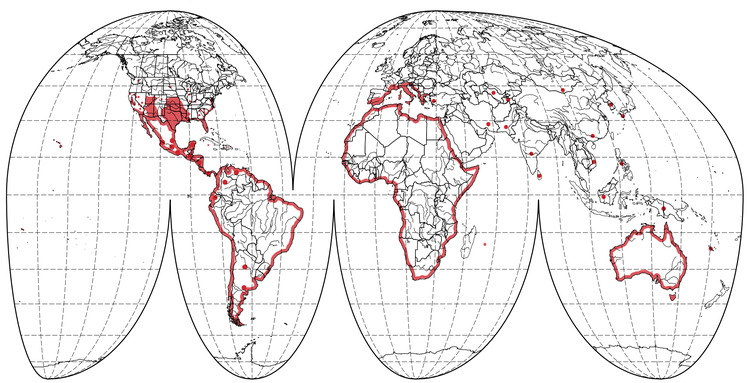
The *T. domingensis*, *T. angustifolia* and *T. latifolia* plants were obviously healthy and producing numerous apparently normal seeds.

Typha domingensis was probably brought to Middleton as seeds by wind, birds or humans, perhaps on construction equipment, and established in 2003–2008 when that region was developed. The building of streets, parking lots and storm-water runoff culverts and ponds in the edges of existing wetlands probably created the bare mud which the tiny cattail seeds need to germinate and the delicate seedlings need for growing until they are well-established.



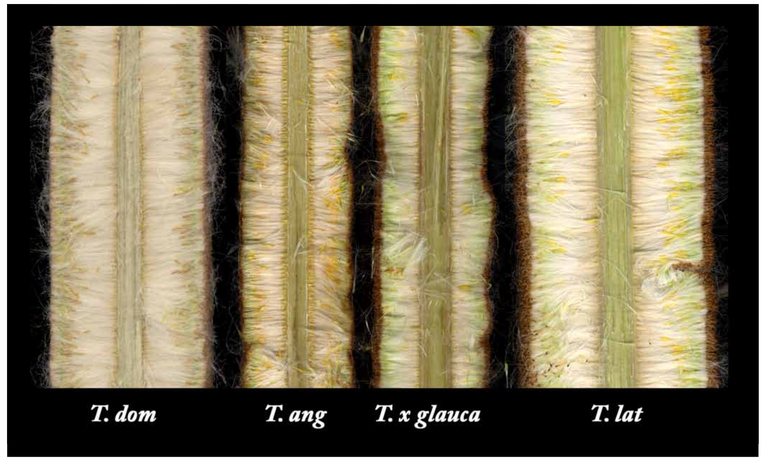
Known north American distribution of *T. latifolia*, *T. angustifolia* and *T. domingensis* showing overlapping ranges where hybridization is possible

Typha domingensis is the most widely-distributed cattail species. It ranges throughout tropical and warm temperate regions of the world commonly to about 40 degrees latitude. In North America it is locally common along the Atlantic Coast from Florida to Maryland and Delaware and in the Gulf Coast states; rare in southern Illinois, Kentucky and Tennessee; and locally common in Arkansas, southwestern Missouri and Kansas west to the Pacific Coast, from Mexico to Nebraska and northern California. The Wisconsin locality is at about 43 degrees N. In 2003 I collected a similar specimen in South Dakota at about the same latitude. The northernmost known North American locality is in central Washington state on the shore of a reservoir at about 47 degrees N, the voucher collection made in 2001.



Known world distribution of *T. domingensis*

Typha domingensis is variable worldwide in the size of the plants and inflorescences, presence of auricles at the leaf sheath summits, and details of the flowers and fruits. Its taxonomy is poorly known, and it is possible that it should be divided into several species. The Wisconsin plants have pistillate bractlet tips that are unusually narrow, only about as wide as the stigmas.



Longitudinal sections of nearly mature pistillate spikes of *T. domingensis* from Esser Pond and *T. latifolia*, *T. angustifolia* and *T. angustifolia X latifolia* hybrid (*T. Xglauca*) from the Madison area showing many young seeds (yellow) except for *T. Xglauca* with few seeds

Typha domingensis colony showing the cinnamon-brown pistillate spikes

Typha domingensis sometimes forms mostly fertile *T. angustifolia x domingensis* hybrids and highly sterile *T. domingensis x T. latifolia* hybrids which are very similar to *T. angustifolia x latifolia* hybrids (=*T. Xglauca*).

It seems possible that presence of healthy, seed-bearing colonies of *T. domingensis* in Wisconsin is an indicator of climate warming.

Part of the field trip attendees to Esser Pond in August 2011; Alice Thompson on left, Galen Smith in middle, Mary Linton on right