ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDAPI22030

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sium suave*
COMMON NAME: Water Parsnip
SYNONYMS: *Sium floridanum, S. cicutifolium, S. s.* var. *floridanum*.
FAMILY: Apiaceae

AUTHOR, PLACE OF PUBLICATION: Walter, Thomas. Flora Caroliniana, secundum Systema Vegetabilium… 115. 1788.

TYPE LOCALITY: Florida: Swamp of the Chipola [?illegible].

TYPE SPECIMEN: NY 406277 (Holotype of *Sium floridanum*). A.W. Chapman (SN). No date.

TAXONOMIC UNIQUENESS: There are two species of *Sium* in the US: *S. carsonii* (found only in the northeast), and *S. suave*, which is found throughout the US and Canada.

DESCRIPTION: **Plant**: Plant 6-12 dm, Perennial, glabrous, stout; roots clustered, fibrous or ± tuberous; stem erect or ascending, branched **Leaves**: petiole 1-8 dm, segmented; blade 6-25 cm, 7-18 cm wide, oblong to ovate, 1-pinnate; leaflets 1-4 cm, linear or lanceolate, serrate or irregularly cut **Inflorescence**: compound umbels; peduncle 4-10 cm; bracts 6-10, 3-15 mm, linear or lanceolate, acute, entire or irregularly cut, reflexed; bractlets 4-8, 1-3 mm, linear-lanceolate; rays 10-20, 1.5-3 cm, slender, subequal; pedicels 3-5 mm **Flowers**: small, many, sometimes ± bilateral; calyx lobes 0 or minute; petals wide, free, white, narrowed at tips, outer slightly > others; stamens 5; pistil 1, ovary inferior, 2-chambered, generally with a ± conic, persistent projection or platform on top subtending 2 free styles **Fruit**: 2 dry, 1-seeded halves that separate from each other but generally remain attached for some time to a central axis, ovate to round, 2-3 mm wide, slightly compressed side-to-side; ribs prominent, subequal, corky; oil tubes per rib-interval 1-3; fruit axis entire or divided to base, adhering to fruit halves or not; **Seed**: face flat .

AIDS TO IDENTIFICATION: The following plants all have white flowers in large compound umbels, and can be confused with each other: the water parsnip, (swamp parsnip, *Sium suave*) and the western water hemlock, (*Cicuta douglasii*, poison hemlock) or the spotted water hemlock (*Cicuta maculata*, spotted water hemlock, spotted parsley, spotted cowbane). Water parsnip and water hemlock both have cluster of small white flowers shaped like umbrellas, and both have the same habitat near the shore line of lakes, and rivers. Water parsnip has leaves only once compound, and water hemlock has leaves which are three times compound.

Water hemlock has a large swelling at the stem base. All water hemlock is highly poisonous. Water parsnip is not poisonous. The water hemlock has bracts at the base of each small flower cluster, not at the base of the main flower head. The Water parsnip has small bracts at the base of flowers and main flower head as well. The Yarrow, (Common Yarrow, Gordaldo, Nosebleed plant, Old Man's Pepper, Sanguinary, Milfoil, Soldier's Woundwort, Thousand-leaf (as its binomial name affirms), Thousand-seal or *Achillea millefolium*) also has many small white flowers in a cluster. However, the yarrow has feathery looking leaves which are pinnately separated into small narrow segments. The cow parsnip (*Heracleum lanatum*, *Heracleum maxinium* Indian Celery or Pushki, and *Heracleum sphondylium*, hogweed) is also confused in this group with similar flower groupings. However, the cow parsnip has large, broad leaves, and an unpleasant odour. Hemlock's distinguishing characteristics are that it requires a more consistent supply of water than *Lomatium* or Osha, and *Lomatium* species tend to prefer dry rocky soils devoid of organic material. *Lomatium* roots have a delicate rice-like odor, unlike the musty odor of Hemlock, with finely divided, hairlike leaves in most *Lomatium* species. *Lomatium* species tend to produce yellow flowers, but some species are white flowered and closely resemble Poison Hemlock. If the plant is growing on a hillside in dry, mineral soil far away from a source of water and has umbells of yellow flowers, it's likely a *Lomatium*. If the plant is growing in an area near water in consistently moist soil, is tall (0.75-2 m), has purple splotches on the main stem, and is heavily branched with small umbels of white flowers, it is probably Hemlock and should be avoided.

Osha does not do well in overly moist soils since it is a species dependent on mycorrhizal fungi to survive, but there are areas where Osha and Poison Hemlock can be found only a few feet from each other. Poison Hemlock lacks the "spicy celery" odor of Osha, and is easily distinguished from it due to the absence of hairlike dead leaf material present on the root crown of Osha roots.

In the Mountain West of North America, poison hemlock has become well established and invasive, and can be found in remote mountain areas anywhere water is present or soils are persistently moist. It is often found growing in the same habitat and side by side with Osha and *Lomatium* species, useful medicinal relatives in the Parsley family which Hemlock closely resembles, and can be very difficult to distinguish from *Lomatium* (an important historical food plant of Native Americans known as *Biscuit Root*).

A useful trick to determine whether a plant is poison hemlock rather than fennel, which it resembles, is to crush some leaves and smell the result. Fennel smells like anise or licorice, whereas the smell of poison hemlock is often described as mouse-like or musty. Considering the high toxicity of poison hemlock, if the plant cannot be identified it must be discarded. Coniine can be absorbed through the skin, and it is well advised to wash your hands immediately after handling this plant and avoid touching your eyes or mouth if you have recently handled or come into contact with Poison Hemlock, or if you have crushed the leaves of this plant in your hand to perform a "smell test". (From EOL 2014.)

ILLUSTRATIONS:

Photos, line drawings and herbarium mounts: http://eol.org/pages/581932/media.

TOTAL RANGE: Northern North America to N Asia including China, Japan, Korea and Russia.

RANGE WITHIN ARIZONA: The four known collections in Arizona are widely dispersed. They range from the Colorado Plateau near Tuba City in Coconino County, south-east to the White Mountains near Baldy Peak in Apache County, then south southwest to the Canelo Hills west of the Huachuca Mountains in Santa Cruz County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: A tall, stout perennial herb.

PHENOLOGY: The literature states the species flowers in July and August, and produces fruit in September and October. This corresponds well with Arizona collections which reported flowers on July 10 and August 29, and flowers and fruit on September 6 and 27.

BIOLOGY: The flowers are hermaphrodite (have both male and female organs) and are pollinated by insects. The plant is self-fertile. Depending on its level of exposure to standing water, *Sium suave* may produce terrestrial, semi-aquatic, or fully aquatic leaves during the early stages of its development.

HABITAT: Wet soils of swamps, marshes, wet meadows and stream banks.

ELEVATION: Range-wide the elevation is reported variously as less than 6560 or 9840 feet (<2000 or 3000m). Arizona collections range from 5080 – 9500 feet (1550-2900m).

EXPOSURE: Cannot grow in shade.

SUBSTRATE: Sandy and loamy soils, moist or wet. Also damp, deep clay.

PLANT COMMUNITY: Riparian, wet meadow or other wetland communities. In addition to association with *Populus fremontii* in a stream side setting, and under a spruce-fir canopy in another, an high elevation occurrence in a natural meadow adjacent to a river noted the following associated plant species: *Carex* sp., *Sidalcea neomexicana, Senecio bigelovii, Rumex crispus, Helianthus annuus, Mentha arvensis, Conioselinum scopulorum, Stachys palustris, Elymus* sp., *Urtica dioica, Salix* sp., *Geum* sp., *Potentilla anserine, Alnus tenuifolia, Agrostis gigantean, Polygonum pennsylvanicum, Phleum pretense, Glyceria grandis.*

POPULATION HISTORY AND TRENDS: Although not ranked in all states and provinces, in general *S. suave* is secure in Canada and several of the NE states, and critically imperiled in other states at the southern extent of its range (e.g., AZ, TX and LA). While there is no good population and trend information available for Arizona, records note that the species has been collected from 1922 to 2010. At one site visited in both 1935 and 1995, the plant was considered locally common and the site was assigned a good to fair viability rank. At two other sites it was noted as infrequent or not very abundant. What is notable about *Sium suave* in Arizona is its extremely diverse, albeit limited distribution. Essentially, any riparian or wetland setting about 5000 feet is potential habitat, and given its distribution in northern, eastern and southern Arizona, it is reasonable to assume there are additional yet-to-be found populations.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.
STATE STATUS: None.
OTHER STATUS: None.

MANAGEMENT FACTORS: None specified, but maintaining riparian and other wetland setting would seem beneficial.

PROTECTIVE MEASURES TAKEN: None.

SUGGESTED PROJECTS: Conduct surveys in appropriate habitat settings (riparian and wetlands above 5000 feet) to better determine the distribution of *Sium suave* in the State.

LAND MANAGEMENT/OWNERSHIP: The four known occurrences in Arizona are on private land, the Navajo Nation, Apache-Sitgreaves National Forest and Coronado National Forest.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Encyclopedia of Life, accessed 6/20/2014, http://eol.org/pages/581932/details#Habitat.
JSTOR| Global Plants, accessed 6/26/2014, http://plants.jstor.org/specimen/ny00406277?s=t.
NatureServe Explorer, an Encyclopedia of Life, accessed 06/23/2014, http://explorer.natureserve.org/servlet/NatureServe?searchSciOrCommonName=Sium&x=10&y=14.
Plants for a Future: *Sium suave*, accessed 6/20/2014, http://www.pfaf.org/user/Plant.aspx?LatinName=Sium+suave.
Tropicos, accessed 6/20/2014, http://www.tropicos.org/Name/1700243.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: The flowers can attract a wide variety of insects, including Halictid bees, plasterer bees (*Colletes* spp.), masked bees (*Hylaeus* spp.), Sphecid wasps, spider wasps, cuckoo wasps (Chrysididae), Chalcid wasps, Eucoilid wasps, Ichneumon wasps, Braconid wasps, Vespid wasps, flower flies (Syrphidae), bee flies (Bombyliidae), Tachinid flies, flesh flies (Sarcophagidae), Muscid flies, Callophorid flies, frit flies (Chloropidae), leaf beetles (Chrysomelidae), ladybird beetles, and tumbling flowering beetles (Mordellidae). These insects primarily obtain nectar from the flowers. Both adults and larvae of a leaf beetle, *Prasocuris phellandrii*, feed on the foliage of S. *suave.* Unlike some wetland species in the Carrot family with white flowers, the foliage of Water Parsnip is not regarded as toxic to mammalian herbivores. The roots have been eaten by humans (EOL 2014).

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