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SPECIES: *Cephalanthus occidentalis*

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Introductory

SPECIES: *Cephalanthus occidentalis*

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ABBREVIATION :

CEPOCC

SYNONYMS :

NO-ENTRY

SCS PLANT CODE :

CECC2

COMMON NAMES :

buttonbush
common buttonbush
button willow
riverbush

buttonball

TAXONOMY :

The currently accepted scientific name for buttonbush is *Cephalanthus occidentalis* L. (Rubiaceae) [8]. Recognized varieties are as follows [8,21,28]:

- C. occidentalis var. pubescens (Raf.)
- C. occidentalis var. californicus (Benth.)
- C. occidentalis var. angustifolius (Dippel)

LIFE FORM :

Tree, Shrub

FEDERAL LEGAL STATUS :

No special status

OTHER STATUS :

NO-ENTRY

DISTRIBUTION AND OCCURRENCE

SPECIES: *Cephalanthus occidentalis*

GENERAL DISTRIBUTION :

Buttonbush extends from southern Nova Scotia, New Brunswick, Quebec, and Ontario south through southern Florida and west through the eastern half of the Great Plains States [8,16]. Scattered populations exist in New Mexico, Arizona, and the central valley of California [28]. The variety *californicus* is found in California; the variety *pubescens* is found from southeast Virginia to Georgia and Texas, southern Ontario, Indiana, Illinois, and Oklahoma [8]. Distribution of the variety *angustifolius* was not listed.

ECOSYSTEMS :

- FRES15 Oak - hickory
- FRES16 Oak - gum - cypress
- FRES17 Elm - ash - cottonwood
- FRES18 Maple - beech - birch

FRES32 Texas savanna
FRES41 Wet grasslands
FRES42 Annual grasslands

STATES :

AL AZ AR CA CT DE FL GA IL IN
IA KS KY LA ME MA MI MN MS MO
NE NH NJ NM NC OH OK PA RI SC
TN TX VT VA WV WI NB NS ON PQ
MEXICO

BLM PHYSIOGRAPHIC REGIONS :

3 Southern Pacific Border
7 Lower Basin and Range
12 Colorado Plateau
13 Rocky Mountain Piedmont
14 Great Plains

KUCHLER PLANT ASSOCIATIONS :

K030 California oakwoods
K049 Tule marshes
K080 Marl - Everglades
K091 Cypress savanna
K092 Everglades
K098 Northern floodplain forest
K099 Maple - basswood forest
K100 Oak - hickory forest
K101 Elm - ash forest
K102 Beech - maple forest
K103 Mixed mesophytic forest
K104 Appalachian oak forest
K105 Mangrove
K106 Northern hardwoods
K110 Northeastern oak - pine forest
K112 Southern mixed forest
K113 Southern floodplain forest
K114 Pocosin

SAF COVER TYPES :

14 Northern pin oak
16 Aspen
19 Grey birch - red maple
26 Sugar maple - basswood
27 Sugar maple
28 Black cherry - maple
39 Black ash - American elm - red maple

- 43 Bear oak
- 63 Cottonwood
- 64 Sassafras - persimmon
- 65 Pin oak - sweet gum
- 74 Cabbage palmetto
- 87 Sweet gum - yellow-poplar
- 88 Willow oak - water oak - diamondleaf oak
- 89 Live oak
- 91 Swamp chestnut oak - cherrybark oak
- 92 Sweetgum - willow oak
- 93 Sugarberry - American elm - green ash
- 94 Sycamore - sweetgum - American elm
- 95 Black willow
- 96 Overcup oak - water hickory
- 100 Pondcypress
- 101 Baldcypress
- 102 Baldcypress - tupelo
- 103 Water tupelo - swamp tupelo
- 104 Sweetbay - swamp tupelo - redbay
- 105 Tropical hardwoods
- 106 Mangrove
- 108 Red maple
- 235 Cottonwood - willow

SRM (RANGELAND) COVER TYPES :

NO-ENTRY

HABITAT TYPES AND PLANT COMMUNITIES :

Buttonbush is a wetland shrub common to most swamps and floodplains of eastern and southern North America [8,28]. It is listed as a component of the following community types:

| Area | Classification | Authority |
|-----------------------|----------------|------------------------|
| CA: Sacramento Valley | riparian cts | Conard & others 1977 |
| United States | wetland cts | Cowardin & others 1979 |

MANAGEMENT CONSIDERATIONS**SPECIES: *Cephalanthus occidentalis***

IMPORTANCE TO LIVESTOCK AND WILDLIFE :

Many species of waterfowl and shorebirds eat buttonbush seeds [[18](#),[28](#)]. White-tailed deer use of buttonbush browse varies from light in Pennsylvania [[32](#)] to heavy in Nova Scotia [[23](#)]. Bees use buttonbush to produce honey [[31](#)].

PALATABILITY :

NO-ENTRY

NUTRITIONAL VALUE :

NO-ENTRY

COVER VALUE :

Buttonbush is important to wood ducks for brood rearing and hiding [[19](#)].

VALUE FOR REHABILITATION OF DISTURBED SITES :

NO-ENTRY

OTHER USES AND VALUES :

The bark of buttonbush was traditionally used for making laxatives, and for curing skin, bronchial, and venereal diseases [[28](#)]. Caution must be used, however, because the bark contains cephalathin, a poison that can induce vomiting, paralysis, and convulsions.

OTHER MANAGEMENT CONSIDERATIONS :

Much of buttonbush's natural habitat in California is being destroyed by agriculture and water development projects; buttonbush is not a good colonizer of manmade waterways [[13](#)]. Buttonbush is moderately susceptible to herbicides; if shrubs become too thick, they can be reduced by cutting in the fall during low water [[4](#),[18](#)].

BOTANICAL AND ECOLOGICAL CHARACTERISTICS

SPECIES: Cephalanthus occidentalis

GENERAL BOTANICAL CHARACTERISTICS :

Buttonbush is a deciduous, warm-season, tall shrub or small tree that can reach up to 18 feet (6 m) in height [28]. Its base is often swollen. Branches are usually green when young but turn brown at maturity. Buttonbush has opposite, lanceolate-oblong leaves about 7 inches (18 cm) long and 3 inches (7.5 cm) wide [24]. Tiny, white flowers occur in dense, spherical clusters at the ends of the branches. Fruits are a round cluster of brown, cone-shaped nutlets. The variety *angustifolius* usually has leaves in whorls of threes [28]. The variety *pubescens* has hairs on the lower leaf surfaces [8]. The variety *californicus* has more lanceolate leaves than the other two varieties [21].

RAUNKIAER LIFE FORM :

Phanerophyte

REGENERATION PROCESSES :

Buttonbush regenerates by seed. Seed is best collected when the nutlets have turned reddish-brown, and averages about 134,000 per pound (60,702/kg) [31]. Pretreatment of seeds is unnecessary [3]. Seeds have a low germination rate [28]. Buttonbush can also be propagated by planting cuttings in moist, sandy soil.

SITE CHARACTERISTICS :

Buttonbush grows along swamps, marshes, bogs, ditches, and other riparian areas that are inundated for at least part of the year [8,24]. It grows in alluvial plains that experience intermittent flooding, but can be damaged by spring flooding [12,20,23]. Faber-Langendoen and Maycock [7] reported that buttonbush was very tolerant of flooding and that its abundance increased with increasing water depth. These authors also reported an increase in buttonbush with an increase in light level. Elevational and geographical distribution of buttonbush may be limited by mean July temperatures of 68 degrees Fahrenheit (20 deg C) [13]. Elevations have been reported at 635 feet (193 m) in Illinois [1] and between 60 and 160 feet (22-50 m) in Quebec [27]. Buttonbush was found growing in sandy, loamy sandy, or alluvial soil with a sandy or silty surface in Quebec [27].

Common associates of buttonbush include American beech (*Fagus grandifolia*), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), ash

(Fraxinus spp.), black oak (Quercus velutina), pin oak (Q. palustris), tupelo and gum (Nyssa spp.), baldcypress (Taxodium distichum), southern bayberry (Myrica cerifera), redbay (Persea palustris), holly (Ilex spp.), dogberry (Ribes cynosbati), grape (Vitis spp.), viburnum (Viburnum spp.), poison-ivy (Toxicodendron radicans), indiagrass (Sorghastrum nutans), big bluestem (Andropogon gerardii), switchgrass (Panicum virgatum), and sedge (Carex spp.) [5,7,11].

SUCCESSIONAL STATUS :

Buttonbush is a pioneer species in frequently flooded baldcypress/water tupelo (Nyssa aquatica) swamps, establishing on rotting logs and stumps [35]. In the Sacramento Valley, buttonbush/dogwood (Corunus spp.) communities are succeeded by white alder (Alnus rhombifolia)/willow (Salix spp.)/Oregon ash (Fraxinus latifolia) and eventually cottonwood (Populus spp.) forests [36]. Buttonbush also colonizes lowland marsh communities dominated by hardstem bulrush (Scirpus acutus).

SEASONAL DEVELOPMENT :

Buttonbush flowers between June and September and produces fruit between September and October [8,24,28].

FIRE ECOLOGY

SPECIES: Cephalanthus occidentalis

FIRE ECOLOGY OR ADAPTATIONS :

Because the base of buttonbush shrubs are partially submerged during most of the year, fire may not be a threat.

POSTFIRE REGENERATION STRATEGY :

off-site colonizer; seed carried by animals or water; postfire yr 1&2

FIRE EFFECTS

SPECIES: *Cephalanthus occidentalis*

IMMEDIATE FIRE EFFECT ON PLANT :

NO-ENTRY

DISCUSSION AND QUALIFICATION OF FIRE EFFECT :

NO-ENTRY

PLANT RESPONSE TO FIRE :

Buttonbush resprouts following fire [[9](#),[11](#)].

DISCUSSION AND QUALIFICATION OF PLANT RESPONSE :

Buttonbush can become the dominant shrub in grassy, wetland areas of the South excluded from fire [[14](#)]. However, when these areas are burned buttonbush has been observed sprouting within a few months following fire [[9](#),[11](#),[29](#)]. Frequent fires in hardwood swamps of the South often promote willow sprouting and, occasionally, buttonbush sprouting [[30](#)].

Following 2 years of drought, a severe fire in an area of the Okefenokee Swamp that supported buttonbush killed most of the trees and consumed a 1-inch (2.45 cm) layer of peat [[34](#)]. Buttonbush resprouted 7 years later.

FIRE MANAGEMENT CONSIDERATIONS :

In Southern marshlands, where grasses are thick and impenetrable, fire can reduce grass densities and release nutrients, which enhances establishment of shrubs such as buttonbush [[29](#)].

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