BULRUSHES AND BULRUSHLIKE PLANTS OF EASTERN NORTH AMERICA
Aquatic Plants of Eastern North America

The importance of marsh and water plants to many kinds of wildlife—particularly waterfowl—makes ready identification of these plants of especial value to wildlife management workers. Descriptions and drawings of selected marsh and water plants are being issued in a series of pamphlets intended to help in identifying these plants, and in distinguishing between similar species. These notes are intended not only for the expert but also for the technician who has not specialized in plant taxonomy. The geographical range covered is approximately the eastern half of the North American continent north of Mexico.

Bulrushes and Bulrushlike Plants is the second pamphlet to be issued in this series; the first issued was Pondweeds and Pondweedlike Plants (May 1964).
BULRUSHES AND BULRUSHLIKE PLANTS OF EASTERN NORTH AMERICA

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BULRUSHES AND BULRUSHLIKE PLANTS
OF EASTERN NORTH AMERICA

This is the second of a series of publications on the field ident-
ification of the marsh and water plants of eastern North America. It
describes 19 bulrushes and 4 bulrushlike plants. Current manuals
describe several other kinds of bulrushes that I consider to be only
variations of those treated here. The manuals also include the follow-
ing kinds that grow mainly in wet meadows, bogs, or swampy woods or in
dry places: Scirpus cespitosus, clintonii, divaricatus, fontinalis,
hudsonianus, koilolepis (carinatus), lineatus, longii, peckii,
polyphyllus, rollandii, sylvaticus (includes expansus and rubrotinctus)
and verefundus (see pages 266 to 276 in the eighth edition of Gray's
Manual).

Bulrush seeds are important duck foods, and the rootstocks of some
kinds are important goose and muskrat foods. In the north, diving
ducks nest in stands of bulrushes that are broken by patches of water.
In both the north and the south, such stands furnish house material
and cover for muskrats and shelter for ducks.

Bulrushes are common in and along freshwater lakes, ponds, and
streams from Manitoba to Nova Scotia and south to Missouri and
Virginia, but are scarce farther north and south. Along the coast
they are common in and along fresh, brackish, and salt bays and
rivers from Nova Scotia to Texas.

Bulrushes vary from a few inches high to twice as tall as a man.
Most of them grow in wet soil or shallow water and have stiff stems.
Exceptions are Water Bulrush, with most of the stem and all of the
hairlike leaves under water, and Alga Bulrush, with all of the limp
stem under water. In some coastal waters, Softstem Bulrush, Southern
Bulrush, and Common Threesquare are half-submerged at high tide.
A few kinds of bulrush come up from seed each year, but most have long-
lived rootstocks that perennially send up colonies of close-standing
stems. The stems of most kinds die in winter, but in the south those
of Southern Bulrush and Olney Threesquare often stay green.

Most bulrushes start to head out by early summer. The heads
produce a tiny flower under each brown scale of their conelike
spikelets; and each flower ripens a single seed that varies from the
size of fine sand in Black Bulrush to 3/16 inch long in River Bulrush.
Spikerushes and cyperuses also ripen one seed under each scale. Rushes
(Juncus), however, produce small six-parted flowers, each of which
ripens a pod filled with many tiny seeds.
The pictures of seed heads are life-size and show plants of average size and shape. The small habit pictures are about 1/30 life-size.

To identify a plant with this guide, first read pages 1-3, 7, 11, and 14, and scan the pictures. If the plant fits one of the groups outlined on page 2 and described in detail on a later page, look at the pictures of the plants of that group. If the plant looks like one of these pictures and unlike any other, and if it agrees with the accompanying description, you have identified it correctly.

The plants are described in five groups, according to whether they have

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PLANTS WITH APPARENTLY LEAFLESS, ROUNDED STEMS, AND OPEN HEADS
grow from knee-high to twice as tall as a man, and usually stand close
together in colonies on wet ground or as much as waist-deep in fresh,
brackish and alkali water. The stems of the bulrushes are several
times as thick at the bottom as at the top. When mature, these stems
are topped with an open head of few to many, oval or oblong spikelets
that are 1/4 to 3/4 inch long. The ripe seeds are deep-gray and
about 1/16 inch long. Needlerush and Soft Rush stems are only a
little thicker at the bottom than at the top. When mature, their
stems have a many-flowered head far below the top. The brownish or
greenish flowers are less than 1/4 inch long, and their ripe pods are
filled with brown seeds the size of fine sand.
HARDSTEM BULRUSH (Scirpus acutus)

Fresh and alkali marshes inland from British Columbia to Newfoundland, California, Texas and North Carolina; and fresh and brackish marshes along the Pacific coast and along the Atlantic south to Virginia. Stems as tall as a man to much taller, usually dark-green and firm. Resembles Softstem, Southern and Slender Bulrushes but the branches of the heads are stiff, not droopy.

SOFTSTEM BULRUSH
(Scirpus validus; includes steinmetzii)

Fresh marshes inland from Alaska to Newfoundland, California, Texas and Florida; and fresh and brackish marshes along each coast.

Stems waist-high to as tall as a man, usually grayish-green and very easily crushed between fingers.

Resembles Hardstem Bulrush but the heads are droopy and have smaller spikelets. Resembles Southern Bulrush but most of the spikelets or clusters of spikelets have long stalks, and the stem is rounded. Resembles Slender Bulrush but many of the spikelets are in clusters.
SOUTHERN BULRUSH  
(Scirpus californicus)

Fresh and alkali marshes inland from California to Arkansas, and in Florida; and fresh and brackish marshes along the California coast and along the southeast coast from Texas to South Carolina.

Stems as tall as a man to twice as tall, bluntly three-edged, usually dark-green and firm.

Resembles Softstem Bulrush but most of the spikelets have very short stalks and the stem is bluntly three-edged. Resembles Hardstem Bulrush but the heads are droopy and the stem is bluntly three-edged.

SLENDER BULRUSH  
(Scirpus heterochaetus)

Fresh marshes in Washington, Idaho and Oregon; and from Montana to Quebec, Oklahoma, Illinois and New York.

Stems as tall as a man, usually dark-green and firm.

Resembles Hardstem and Softstem Bulrushes but the spikelets are by themselves on usually long stalks.
NEEDLERUSH
(Juncus roemerianus)

Non-tidal and slightly tidal brackish and salt marshes from Texas to Maryland.
Dense, dark-green or dark-gray colonies of knee-high to shoulder-high stems and stem-like leaves look about the same the year around.
Stems and leaves resemble stems of Hardstem and Southern Bulrushes but are nearly as thin at the bottom as at the top and are needle-tipped.

SOFT RUSH
(Juncus effusus)

Landward edges of fresh marshes from Alaska to Arizona; and Minnesota to Newfoundland, Texas and Florida.
Upright or spreading, close-growing or scattered clumps are knee-high to as tall as a man.
Stems resemble those of Softstem Bulrush but are nearly as thin at the bottom as at the top and usually are shorter and more clumped.
PLANTS WITH ALMOST LEAFLESS, THREE-CORNERED OR ROUNDED STEMS, AND TIGHT HEADS include the threesquares which come up each year from long-lived rootstocks and the clumped bulrushes which come up each year from seed. The threesquares usually stand close together--but not in clumps--in colonies that are knee-high to taller than a man, on wet ground or as much as knee-deep in fresh, brackish and alkali water. When mature, the stems have a tight head of a few oval or oblong spikelets on one side a little below the top. The spikelets are 1/4 to 3/4 inch long; the ripe seeds are brownish and from 1/16 to more than 1/8 inch long. Bluntscale Bulrush and Sharpscale Bulrush have seed heads similar to those of the threesquares, but their rounded stems grow in clumps that are usually less than knee-high, on wet ground or in no more than a few inches of fresh, brackish and alkali water. The spikelets are 1/8 to 3/4 inch long; the ripe seeds are blackish and about 1/16 inch long. Blunt Spikerush clumps are similar; but its mature stems have a single, oval or oblong seed head at the very top. Several other kinds of spikerush, looking only a little different, can be told apart by their seeds (see pages 252 to 259 in the eighth edition of Gray's Manual).
COMMON THREESQUARE  
(Scirpus americanus)

Fresh, brackish and alkali marshes—usually in sandy soil—
inland and along each coast from Alaska to Newfoundland, California, 
Texas and Florida.  
Stems knee-high to as tall as a man.  
Resembles Olney Threesquare but the stems have a long, sharp point and only slightly concave sides, and the spikelets are sharp-pointed. Resembles Torrey Threesquare but the stems have a sharp point and the spikelets are reddish-brown to dark-purplish-brown.

OLNEY THREESQUARE  
(Scirpus olneyi)

Brackish marshes—usually in peaty soil—along the California and Atlantic coasts; alkali marshes from Washington to Wyoming, California and Texas; and in a few places in Michigan, Ohio and Missouri.  
Stems knee-high to taller than a man.  
Resembles Common Threesquare but the stems have a short, blunt point and deeply concave sides.
TORREY THREESQUARE
(Scirpus torreyi)

Fresh marshes from Manitoba to New Brunswick, South Dakota, Missouri and New Jersey.
Stems knee-high to waist-high.
Resembles Common Threesquare but the stems have a blunt point and the spikelets are light-brown.

BLUNT SPIKERUSH
(Eleocharis obtusa)

On wet shores of lakes, ponds and streams from British Columbia to California; and from Minnesota to Nova Scotia, New Mexico and Florida.
Stems sprawling to upright, ankle-high to knee-high.
BLUNTScale BULRush  
(Scirpus smithii; includes debilis and purshianus)

On wet shores of lakes, ponds and streams from Minnesota to Quebec, Alabama and Georgia; maturing from mid-summer to fall.

Stems sprawling to upright, ankle-high to knee-high.

Resembles Sharpscale Bulrush but has blunt scales which are not ridged on the back, and shiny seeds.

SHARpSCALE BULRush  
(Scirpus supinus; includes hallii and saximontanus)

On wet shores of lakes, ponds and streams from South Dakota to Ohio, Texas and Florida; maturing from mid-summer to fall.

Stems sprawling to upright, ankle-high to shin-high.

Resembles Bluntscale Bulrush but has sharp-pointed scales which are ridged on the back, and dull seeds.
PLANTS WITH LEAFY, THREE-CORNERED STEMS, AND HEADS WITH A FEW BIG SPIKELETS grow from knee-high to as tall as a man, usually standing close together in colonies on wet ground or as much as knee-deep in fresh, brackish and alkali water. The sharply three-cornered stems have several long, flattish leaves that are a little wider than the stems. Mature stems are topped with an open or tight head of oval or oblong spikelets that are 1/2 inch to 1 1/2 inches long. The ripe seeds are brown and from 1/8 to 3/16 inch long. Stems and foliage of leafy, small-spikeleted bulrushes and a few kinds of carex are similar, but their heads are very different.
SALTMARSH BULRUSH (Scirpus robustus)

Brackish and salt coastal marshes--rare in Washington and California; common from New Brunswick to Texas.
Stems knee-high to shoulder-high.
Resembles Alkali Bulrush but has deep-brown spikelets with hook-tipped scales, and seeds which in end view are flat on one side and rounded on the other.

ALKALI BULRUSH

(Scirpus maritimus; includes paludosus)

Brackish and salt coastal marshes from British Columbia to California and from Quebec to New Jersey; brackish marshes in central New York; and alkali marshes in the western half of the continent, east as far as Northwest Territories, Minnesota and Texas.
Stems knee-high to shoulder-high.
Resembles Saltmarsh Bulrush but has straw-colored to medium-brown spikelets with bristle-tipped scales, and seeds which in end view have almost parallel sides.
RIVER BULRUSH (Scirpus fluviatilis)

Fresh marshes, both inland and coastal--rare from Washington to Saskatchewan, California and New Mexico; common from Manitoba to New Brunswick, Kansas and Virginia.

Stems waist-high to as tall as a man. In dried-out marshes often has no seed heads.
PLANTS WITH LEAFY, THREE-CORNERED STEMS, AND HEADS WITH MANY SMALL SPIKELETS grow from knee-high to as tall as a man, standing singly or in clumps, close together or scattered, on wet ground or in a few inches of fresh water. The bluntly or sharply three-cornered stems have several long, flattish leaves that are a little wider than the stems. Mature stems are topped with a usually open head of 100 to 1000 oval or oblong spikelets that are 1/8 to 1/4 inch long. The ripe seeds are yellowish and 1/16 inch long, or shorter. Stems and foliage of leafy, big-spikeleated bulrushes and a few kinds of carex are similar, but their heads are very different.

BLACK BULRUSH
(Scirpus atrovirens; includes georgianus and pallidus)

Landward edges of fresh marshes from Washington to Newfoundland, Arizona, Texas and Georgia.

Mature seed heads are not droopy or woolly, and are dull-brown to greenish-black.
WOOLGRASS (Scirpus cyperinus; includes atrocinctus, eriophorum, pedicellatus, and rubricosus)

Landward edges of fresh marshes from British Columbia to Newfoundland, Washington, South Dakota, Texas and Florida; maturing mostly from mid-summer to fall.
Mature seed heads are droopy and woolly, and usually light-brown.
PLANTS UNLIKE THOSE OF THE PRECEDING GROUPS AND UNLIKE EACH OTHER

SWAMP BULRUSH
(Scirpus etuberculatus)

Fresh marshes from Delaware to Louisiana; and in Missouri.
Three-edged stems with two or three long leaves near the bottom are waist-high to as tall as a man, and usually grow scattered.

SEASIDE BULRUSH
(Scirpus rufus)

Brackish and salt marshes inland in Saskatchewan and Manitoba, and along the coast from Hudson Bay to New Brunswick.
Roundish stems are ankle-high to knee-high, and usually grow in patches. Heads are shiny purplish-brown and flattish.
WATER BULRUSH
(Scirpus subterminalis)

In as much as 5 feet of fresh water in lakes, ponds and slow streams from British Columbia to Oregon and Wyoming; and Minnesota to Newfoundland, Mississippi and Georgia.

Usually with many hairlike leaves trailing just under the surface of the water and the tops of a few roundish stems standing above it.

ALGA BULRUSH
(Scirpus confervoides; formerly Websteria submersa)

In shallow fresh water from Virginia to Florida.

Hairlike, branched stems up to 3 feet long grow in a tangle just under water. Usually is flowerless, but the top branches sometimes end in a narrow, spikerush-like seed head.
TROPICAL BULRUSH
(Scirpus cubensis)

Fresh marshes, both inland and coastal, from Texas to Florida.
Sharply three-edged stems with several long leaves near the bottom are knee-high to thigh-high.
Reddish-green heads resemble those of some kinds of cyperus but the scales stick out in all directions.

SHORE CYPERUS
(Cyperus aristatus; formerly inflexus)

On wet shores of lakes ponds and streams from British Columbia to New Brunswick, California, Texas and Florida; maturing from mid-summer to fall.
Stems are ankle-high or a little higher and usually grow in clumps. Scales are in one plane in two rows on each final branch of a head.
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The Department of the Interior, created in 1849, is a Department of Conservation, concerned with management, conservation, and development of the Nation's water, wildlife, fish, mineral, forest, and park and recreational resources. It has major responsibilities also for Indian and Territorial affairs.

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