

RIPARIAN ZONE PLANT SELECTION

by

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(Photograph Courtesy of NRCS)

TREES¹

FLOOD/SATURATION TOLERANCES²

Ash, Green	Four (4) weeks flooding, 8 weeks saturation. Poorly to moderately well drained clays and loams.
Ash, White	Rich, moist fertile and high-calcium soils.
Baldcypress	Moderately well drained. Very short flood tolerance. Many weeks flooding or saturation, very poorly drained clay soils; very poorly drained phases.
Blackgum	Native range is coastal plain soils. Well drained stream terraces.
Cottonwood	Very short flood and saturation tolerance. Moist, well drained, fine sandy or silt loams.
Dogwood, Flowering	One week flooding, two weeks saturation. Well drained soils.
Hawthorne, Washington	No flooding. Lighter textured soils.
Maple, Red	Moist, well drained. No flood tolerance. From long flooding and long saturation to droughty sites.
Oak, Cherrybark	Fourteen (14) days flooding, 60 days saturation, depending on subspecies. One week flooding, two weeks saturation.
Oak, Nuttall	Well drained loams. Eight weeks flooding or saturation. Heavy, poorly drained clays, clay loams.

TREES CONT'D.**FLOOD/SATURATION TOLERANCES**

Oak, Overcup	Eight weeks flooding or saturation. Heavy, poorly drained clays, clay loams.
Oak, Pin	Clays, clay loams. Short flood tolerance. Long duration saturation. Does well on level pan soils.
Oak, Sawtooth	Moist, well drained sandy to silt loams. Short flood tolerance.
Oak, Shumard	Two weeks flooding, four weeks saturation. Moderately well drained loams.
Oak, Swamp Chestnut	Moderately well drained silty clays and loams. Stream terraces. Very short flood tolerance.
Oak, Swamp White	Short flood tolerance, long saturation tolerance.
Oak, Water	Better drained silty clay or loam soils. Two months flooding. Short duration saturation. Moist upland soils okay.
Oak, Willow	Less than one (1) week flooding, 60 days saturation. Deep loams, silt loams without a pan. Stream ridges and flats of first bottoms.
Pecan	Well drained loams. Flood tolerance up to three weeks.
Persimmon	Two (2) weeks flooding, 60 days saturation. Poorly drained clays and loams to dry, sandy soils.
Pine, Loblolly	Short duration flooding, two weeks saturation.
Plum, American (Wild)	No flood tolerance. Moist well drained soils.
Poplar, Yellow	Moist, well drained soils. Very short flooding. No pan. Short duration saturation.
Sycamore	Loams, sandy soils. Two weeks flooding, 30 days saturation.
Walnut, Black	Moist well drained soils. Two weeks flooding. Sandy loam, loam, silt loam. Deep soils, no pans.

SHRUBS**FLOOD/SATURATION TOLERANCES**

Alder (<i>A. serrulata</i>)	Long duration flooding. Long duration saturation.
Buttonbush	Long duration flooding. Long duration saturation.
Crabapple, Southern	Well drained soils; terraces to uplands. Very little flood tolerance.
Dogwood, Silky	Short duration flooding. Two weeks saturation.
Elderberry	Two weeks flooding. Long duration saturation.
Indigobush	Fairly wet to dry conditions. Short flood tolerance. Long duration saturation.
Plum, Chickasaw	No flood tolerance. Moist well drained soils.
Spicebush	No flood tolerance. Two weeks saturation. Moderately well drained to moist upland.
Viburnum, Mapleleaf	Moist well drained soils. Uplands. No flood tolerance.

RIPARIAN SOILS (COMMON-REPRESENTATIVE FOR TENNESSEE)



(Photograph Courtesy of NRCS)

Adler
Agee
Arkabutla
Arrington
Amagon-Oaklimeter
Atkins
Beason
Bibb
Bloomingtondale
Bowdre
Bruno
Byler
Calloway
Chenneby
Collins
Commerce
Convent
Crevasse
Dunning
Ealy
Egam

Ennis
Falaya
Godwin
Enville
Greendale
Hamblen
Humphreys
Huntington
Iuka
Keyespoint
Lee
Lindell
Lindsay
Lobelville
Mantachie
Melvin
Morganfield
Newark
Nolin
Norene
Ocana

Ochlockonee
Pettyjon
Riverby
Openlake
Robinsonville
Rosebloom
Routon
Sewanee
Sharkey
Skidmore
Staser
Steadman
Sullivan
Trace
Tunica
Tupelo
Urbo
Waverly
Whitesburg
Whitwell
Wolftever

SOIL DESCRIPTIONS FOR FLOODING AND SATURATION^{3 4}

Conditions listed are the most environmentally limiting listed for that soil series. A wide range of hydrologic conditions can actually occur within any one soil mapping series. However, if the planner plans for the wettest or worst conditions, the corresponding plant species listed for that hydrologic condition should consistently perform under drier site conditions, as long as soil moisture is adequate. An ecological principle is that wetness tolerant plant species will grow in upland settings, although upland plant species cannot grow under wet conditions. The planner has the latitude to adjust the species selection based on personal knowledge of any specific site condition.

Adler	Moderate flooding; >7 days. No saturation. Moderately well drained.
Agee	Rare flooding. Long duration saturation; >14 days saturation.
Amagon	Long duration flooding. Long duration saturation; >14 days flood and saturation.
Arkabutla	Long duration flooding and saturation. Somewhat poorly drained. >14 days flooding and saturation.
Arrington	Well drained. Short duration flooding. Not saturated; >6 feet to water table.
Atkins	Poorly drained silt loam. First bottom. Short duration flooding. Long duration saturation.
Beason	Terrace soil. Somewhat poorly drained. Short duration flooding. Saturated for moderate duration of <14 days.
Bibb	Poorly drained silt loam to fine sandy loam. Long duration flooding. Long duration saturation. >14 days flooding and saturation.
Bloomington	Short duration flooding. Long duration saturation. <7 days flooding, >14 days saturation.
Bowdre	Long duration flooding. Somewhat poorly drained. Long duration saturation; perched. >14 days flooding; <14 days saturation.

SOIL DESCRIPTIONS FOR FLOODING AND SATURATION (CONTINUED)

Bruno	Moderate duration flooding. No saturation. >7 days flooding.
Byler	Pan two-three feet deep. Moderately well drained. Low terrace soil. No flooding. Short duration saturation.
Calloway	Pan soil. Somewhat poorly drained silt loam. Rare flooding, short duration saturation.
Chenneby	Somewhat poorly drained silty clay loam. Long duration flooding. Short duration saturation. >14 days flooding <14 days saturation.
Collins	Moderately well drained. Short duration flooding. Water table two-five feet deep.
Commerce	Somewhat poorly drained. Moderate flooding and saturation. Water table 1.5 feet, >7 days flooding, <14 days saturation.
Convent	Somewhat poorly drained. Moderate flooding and saturation. Water table 1.5 feet, <7 days flooding, <14 days saturation.
Crevasse	Sandy. Moderate duration flooding. No saturation. >7 days flooding.
Dunning	Very poorly drained silt to silty clay loam. Rare flooding. Long duration saturation.
Ealy	Short duration flooding. No saturation.
Egam	Moderately well drained. Short duration flooding. No saturation.
Ennis	Well drained. Along small intermittent streams. Depth to water table two-three feet. Short duration flooding.
Enville	Somewhat poorly drained silt loam to fine sandy loam. Short duration flooding. Moderate duration saturation.

SOIL DESCRIPTIONS FOR FLOODING AND SATURATION (CONTINUED)

Falaya	Long duration flooding. Water table depth 0-1.5 feet. >14 days flooding, <7 days saturation.
Godwin	Short duration flooding. Moderate saturation. <14 days saturation.
Greendale	Cherty well drained. Short duration flooding. Short duration saturation.
Hamblen	First bottom. Short duration flooding. Somewhat poorly drained. Moderate saturation; <14 days saturation.
Humphreys	Gravelly. Well drained. Rare to no flooding. No saturation.
Huntington	First bottom. Well drained. Two-three feet to a water table. Cherty. Short duration flooding.
Iuka	Moderately well drained fine sandy loam. Short flood duration. Short duration saturation.
Keyespoint	Moderate duration flooding and saturation. Somewhat poorly drained. <7 days flooding; <14 days saturation.
Lee	Rare flooding. Poorly drained. Long duration saturation; >14 days saturation.
Lindell	Short duration flooding. Water table two-three feet deep. Moderately well drained.
Lindside	First bottom. Moderately well to somewhat poorly drained. Short duration flooding. High water table <1 week.
Lobelville	First bottom. Moderate duration saturation. Short duration flooding. <14 days saturation.
Mantachie	Short duration flooding. Moderate duration saturation; <14 days saturation.

SOIL DESCRIPTIONS FOR FLOODING AND SATURATION (CONTINUED)

Melvin	First bottom. Poorly drained silt loam to silty clay loam. Moderate duration flooding. Flooding >7 days, saturation >14 days.
Morganfield	Short duration flooding. No saturation. Well drained.
Newark	Somewhat poorly drained. Moderate duration flooding and saturation. Seven days flooding and saturation.
Nolin	Short duration flooding. Well drained. No saturation.
Norene	Poorly drained. Rare flooding. Long duration saturation; >14 days saturation.
Ocana	Well drained. Rare flooding. No saturation.
Ochlockonee	Well drained. Rare flooding. No saturation.
Openlake	Poorly drained. Moderate duration flooding and saturation. Water table 0-1 foot <7 days flooding; <14 days saturation.
Pettyjon	Short duration flooding. No saturation.
Riverby	Short duration flooding. Gravelly. No water table.
Robinsonville	Long duration flooding. No water table. Well drained fine sandy loam. >14 days flooding.
Rosebloom	Long duration flooding. Long duration saturation. >14 days flooding and saturation.
Routon	Stream terrace. Poorly drained. Rare flooding. Long duration saturation. <7 days flooding; >14 days saturation.
Sewanee	Moderately well drained. Short duration flooding. Short duration saturation, <7 days.

SOIL DESCRIPTIONS FOR FLOODING AND SATURATION (CONTINUED)

Sharkey	Long duration flooding. Long duration saturation. Poorly drained clay.
Skidmore	Short duration flooding. Gravelly. No water table.
Staser	Well drained. Short duration flooding. No saturation.
Steadman	Short duration flooding. Moderate saturation with water table 1.5-3 feet deep. < 7 days saturation.
Sullivan	Well drained. Short duration flooding. No saturation.
Trace	Low terrace. Short flood duration. No saturation.
Tunica	Poorly drained clay. Long duration flooding. Long duration saturation. >14 days flooding and saturation.
Tupelo	Somewhat poorly drained, clayey. Low terrace. Moderate saturation. No flooding. <14 days saturation.
Urbo	Long duration flooding. Moderate duration saturation. Somewhat poorly drained. <14 days saturation.
Waverly	Long duration flooding. Long duration saturation within 0.5 foot.
Whitesburg	No flooding. No saturation.
Whitwell	Short duration flooding. Water table depth two-three feet.
Wolftever	Short duration flooding. Short duration saturation with water table >2.5 feet.

**SOIL AND PLANT GROUPINGS BASED ON
FLOODING, SATURATION, AND PLANT TOLERANCES**



**GROUP 1 - LONG DURATION SATURATION (>14 DAYS)
SHORT DURATION FLOODING (<7 DAYS)
STREAM TERRACES
SOMETIMES PAN SOILS**



**GROUP 2 - SHORT DURATION SATURATION (<7 DAYS)
LONG DURATION FLOODING (>14 DAYS)
HIGH ORDER STREAMS
LOW VELOCITY WIDE FLOODPLAINS**



**GROUP 3 - LONG DURATION SATURATION (>14 DAYS)
LONG DURATION FLOODING (>14 DAYS)
BACKWATER SLOUGHS
SOMETIMES DEPRESSIONAL**



**GROUP 4 - SHORT DURATION SATURATION (<7 DAYS)
SHORT DURATION FLOODING (<7 DAYS)
FIRST AND SECOND ORDER STREAMS
UPPER REACHES OF WATERSHEDS**



**GROUP 5 - 7-14 DAYS SATURATION TOLERANCE
7-14 DAYS FLOODING TOLERANCE
HIGHER ORDER STREAMS
LOWER REACH FLOODPLAIN BERMS**

(Photographs Courtesy of NRCS)

<u>GROUP</u>	<u>PLANTS (WILDLIFE VALUE L=LOW, M=MEDIUM, H=HIGH)</u>	<u>SOILS</u>	
GROUP 1	Alder (L) Ash, green (M) Baldecypress (M) Buttonbush (M) Dogwood, silky (H) Elderberry (H) Indigobush (H) Maple, red (L) Oak, nuttall (H)	Oak, overcup(H) Oak, pin (H) Oak, shumard (H) Oak, swamp white (H) Oak, willow (H) Persimmon (M) Spicebush (H) Sycamore (L)	Agee Atkins Bloomingdale Lee Norene Routon
GROUP 2	Ash, green (M) Cottonwood (L) Pecan (H) Persimmon (M) Oak, water (H) Sycamore (L)		Bruno Chenneby Crevasse Robinsonville
GROUP 3	Alder (L) Ash, green (M) Baldecypress (M) Buttonbush (M) Maple, red (L) Oak, nuttall (H) Oak, overcup (H) Persimmon (M) Sycamore (L)		Amagon Arkabutla Bibb Bowdre Falaya Melvin Rosebloom Sharkey Tunica Waverly
GROUP 4	Ash, green (M) Ash, white (M) Blackgum (M) Cottonwood (L) Crabapple, southern (H) Dogwood, flowering (H) Dogwood, silky (H) Hawthorne, Washington (H) Indigobush (H) Maple, red (L) Oak, cherrybark (H) Oak, pin (H)		Arrington Byler Collins Ealy Egam Ennis Greendale Hamblen Humphreys Huntington Iuka Lindell

<u>GROUP</u>	<u>PLANTS (WILDLIFE VALUE L=LOW, M=MEDIUM, H=HIGH)</u>	<u>SOILS</u>
	Oak, sawtooth (H)	Lindside
	Oak, shumard (H)	Lobelville
	Oak, swamp chestnut (H)	Mantachie
	Oak, water (H)	Morganfield
	Oak, willow (H)	Nolin
	Pecan (H)	Ocana
	Persimmon (M)	Ochlockonee
	Pine, loblolly (L)	Pettyjon
	Plum, American (wild) (H)	Riverby
	Plum, Chickasaw (H)	Sewanee
	Poplar, yellow (L)	Skidmore
	Spicebush (H)	Staser
	Sycamore (L)	Steadman
	Viburnum, mapleleaf (H)	Sullivan
	Walnut, black (L)	Trace
		Whitesburg
		Whitwell
		Wolftever
GROUP 5	Alder (L)	Adler
	Ash, green (M)	Beason
	Baldcypress (M)	Commerce
	Buttonbush (M)	Convent
	Cottonwood (L)	Godwin
	Elderberry (H)	Keyspoint
	Maple, red (L)	Newark
	Oak, cherrybark (H)	Openlake
	Oak, nuttall (H)	Tupelo
	Oak, overcup (H)	Urbo
	Oak, shumard (H)	
	Oak, willow (H)	
	Persimmon (M)	
	Sycamore (L)	

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¹ These plants are currently on the CRP and Wildlife Habitat Incentives Program (WHIP) lists for riparian zone species.

² Maximum flood-saturation tolerances are based on literature review and generally, individual event records.

³ Soil textures listed are considered most adaptive.

⁴ All reference to hydrology pertains to growing season periods.