Ecological site PX133A00X002
Blackwater Stream Floodplain

Accessed: 05/11/2025

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 133A–Southern Coastal Plain

This MLRA (shown in orange in the figure above) is in Alabama (26 percent), Mississippi (24 percent), Georgia (21 percent), Florida (8 percent), North Carolina (7 percent), Virginia (5 percent), South Carolina (4 percent), Tennessee (4 percent), and Louisiana (1 percent). It makes up about 106,485 square miles (275,930 square kilometers). It is the largest MLRA in the U.S. The city of Alexandria, Virginia, is at the northernmost tip of the area. The MLRA also includes Fredericksburg, Richmond, and Petersburg, Virginia; Rocky Mount, Goldsboro, Fayetteville, and Lumberton, North Carolina; Florence, Sumter, and Orangeburg, South Carolina; Albany and Tifton, Georgia; Tallahassee, Florida; Tuskegee, Eufaula, Selma, and Tuscaloosa, Alabama; Savannah, Tennessee; Corinth, Starkville, Grenada, Meridian, Hattiesburg, and McComb, Mississippi; and Bogalusa, Louisiana. Interstates 95, 64, 85, 40, 20, 20/59, 26, 16, 75, 10, 65, 59, and 55 cross this area from north to south. This area extends from Virginia to Louisiana and Mississippi, but it is almost entirely within three sections of the Coastal Plain Province of the Atlantic Plain. The northern part is in the Embayed Section, the middle part is in the Sea Island Section, and the southern part is in the East Gulf Coastal Plain Section. This MLRA is strongly dissected into nearly level and gently undulating valleys and gently sloping to steep uplands. Stream valleys generally are narrow in their upper reaches but become broad and have widely meandering stream channels as they approach the coast. Elevation ranges from 80 to 655 feet (25 to 200 meters), increasing gradually from the lower Coastal Plain northward. Local relief is mainly 10 to 20 feet (3 to 6 meters), but it is 80 to 165 feet (25 to 50 meters) in some of the more deeply dissected areas.

Classification relationships

ATTENTION: This ecological site meets the requirements for PROVISIONAL. A provisional ecological site is established after ecological site concepts are developed and an initial state-and-transition model is drafted. A provisional ecological site typically will include literature reviews, land use history information, legacy data, and must include some soils data, ocular estimates for canopy and/or species composition by weight, and some line-point intercept information. A provisional ecological site provides the conceptual framework of soil-site correlation for the development of the ESD. For more information about this ecological site, please contact your local NRCS office.

Ecological site concept

This system encompasses the floodplains of small to medium blackwater rivers, intermediate between the smaller streams and the largest rivers. Blackwater rivers originate in the sandy areas of the Coastal Plain and have less well-developed depositional alluvial landforms. Soils are sandy or mucky, acidic, and infertile. Vegetation is a mosaic of cypress and gum swamps and bottomland hardwoods of a limited set of oaks and other species. In general vegetation is low in species richness. These rivers have their headwaters in sandy portions of the Coastal Plain. The water is usually strongly stained by tannins but has little suspended clay and is not turbid. Depositional landforms such as natural levees and backswamps are usually not well-developed, but point bars, ridge-and-swale systems (scrollwork), and sloughs caused by river meandering may be prominent. Soils are generally sandy in drier portions of the floodplain, mucky in wetter portions, and are very acidic. Spring-fed rivers may have calcareous water
and non-acid soils. Flooding ranges from semipermanent in the wettest areas to intermittent and short on the higher

portions of the floodplain. The sandy soils may make some higher areas within the floodplain well-drained and dry when not flooded. The highest terraces may no longer flood at all and belong to a different system. Descriptions of Ecological Systems for
Modeling of LANDFIRE Biophysical Settings
Ecological Systems
06 October 2007
Descriptions provided to TNC and LANDFIRE by NatureServe

Table 1. Dominant plant species

Tree	(1) *Taxodium distichum* (2) *Nyssa biflora*
Shrub	Not specified
Herbaceous	Not specified

Legacy ID

F133AY002NC

Physiographic features

This area extends from Virginia to Louisiana and Mississippi, but it is almost entirely within three sections of the Coastal Plain Province of the Atlantic Plain. The northern part is in the Embayed Section, the middle part is in the Sea Island Section, and the southern part is in the East Gulf Coastal Plain Section. This MLRA is strongly dissected into nearly level and gently undulating valleys and gently sloping to steep uplands. Stream valleys generally are narrow in their upper reaches but become broad and have widely meandering stream channels as they approach the coast. Elevation ranges from 80 to 655 feet (25 to 200 meters), increasing gradually from the lower Coastal Plain northward. Local relief is mainly 10 to 20 feet (3 to 6 meters), but it is 80 to 165 feet (25 to 50 meters) in some of the more deeply dissected areas.

Table 2. Representative physiographic features

Landforms	(1) Stream terrace (2) Flat
Flooding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Flooding frequency	None to frequent
Ponding frequency	None
Elevation	165–660 ft
Slope	0–6%
Water table depth	6–24 in
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation in this area ranges from 41 to 53 inches (1,041 to 1,346 millimeters). Maxiumum precipitation occurs in midsummer, and the minimum occurs in autumn. High-intensity, convective thunderstorms account for summer rainfall. If snow occurs at all, it is in small amounts.

The average annual temperature ranges from 59 to 65 degrees F (15 to 18 degrees C).

Climate data is based on Normal PRISM data for the period 1981-2010.

Table 3. Representative climatic features

Frost-free period (average)	205 days
Freeze-free period (average)	232 days
Precipitation total (average)	50 in

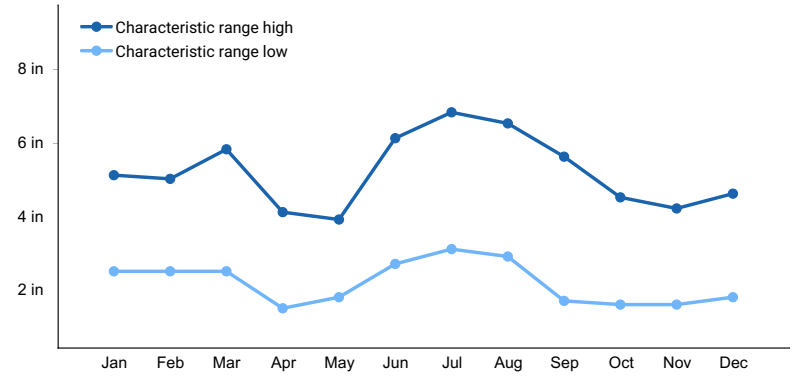

Figure 1. Monthly precipitation range

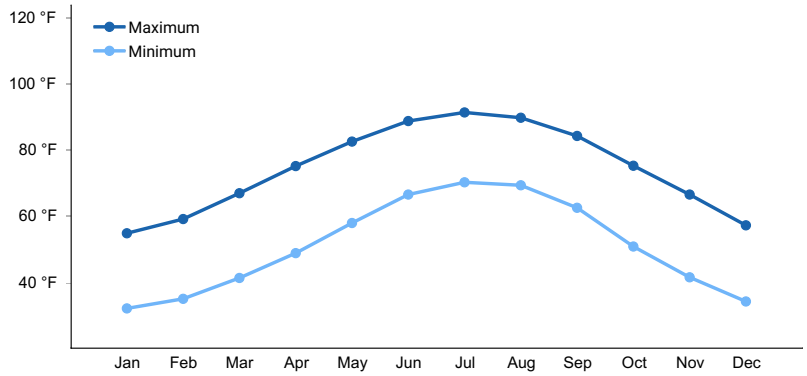

Figure 2. Monthly average minimum and maximum temperature

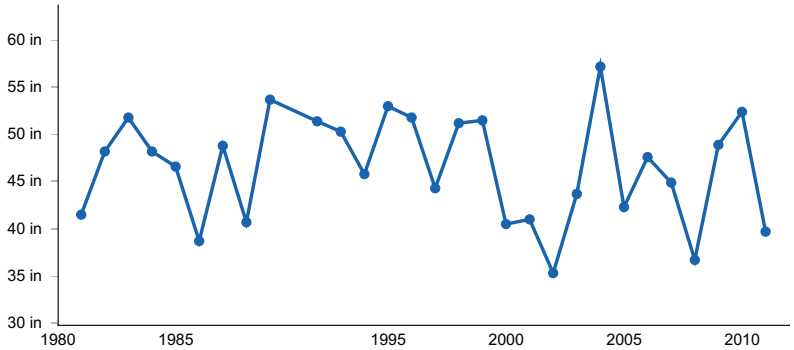

Figure 3. Annual precipitation pattern

Climate stations used

- (1) PELION 4 NW [USC00386775], Pelion, SC
- (2) POPE AFB [USW00013714], Fort Bragg, NC
- (3) AIKEN 5SE [USC00380074], Aiken, SC
- (4) CAMDEN 3 W [USC00381310], Camden, SC
- (5) CHERAW [USC00381588], Cheraw, SC
- (6) SANDHILL RSCH ELGIN [USC00387666], Elgin, SC
- (7) HAMLET [USC00313784], Hamlet, NC
- (8) JACKSON SPRINGS 5 WNW [USC00314464], Jackson Springs, NC
- (9) MACON MIDDLE GA RGNL AP [USW00003813], Macon, GA
- (10) BYRON EXP STN [USC00091448], Byron, GA
- (11) AUGUSTA BUSH FLD AP [USW00003820], Augusta, GA

- (12) COLUMBIA [USW00013883], West Columbia, SC

Influencing water features

This site occurs on stream terraces that can experience periods of flooding of brief or very brief duration.

Soil features

Bibb soils are on flood plains of streams in the Coastal Plain. Slopes are generally less than 2 percent. They formed in loamy and sandy alluvium. They flood frequently unless protected, and are subject to scouring and uneven deposition of overwash. The climate is humid subtropical. The average annual air temperature ranges from 59 to 72 degrees F., and the average annual precipitation ranges from 40 to 60 inches.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Iuka, Johnston, Kinston, Mantachie, Myatt, Ochlockonee and Osier soils. The moderately well drained Iuka soils are on higher positions near stream channels. Johnston soils . The somewhat poorly drained Mantachie soils are on slightly higher adjacent positions and have fine-loamy control sections. Myatt soils have fine-loamy argillic horizons. The well drained Ochlockonee soils are on higher natural levee positions along stream channels. Osier soils are sandy throughout.

DRAINAGE AND PERMEABILITY: Poorly drained; very slow runoff; moderate permeability. The water table is within 8 inches of the surface from 6 to 11 months each year.

USE AND VEGETATION: Most areas of Bibb soils are used for wildlife habitat and watershed protection. The dominant over story vegetation consists of sweetgum, scattered loblolly pine, red maple, water oak, willow oak, green ash, baldcypress, swamp tupelo, and black willow. A few areas have been cleared, drained and used for pasture.

DISTRIBUTION AND EXTENT: Coastal Plain of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, New Jersey, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. The series is of large extent. Bibb, Chastain, Johnston, Kinston, Osier, pamlico, Tawcaw

Table 4. Representative soil features

Surface texture	(1) Sandy loam (2) Loamy sand (3) Loam
Drainage class	Poorly drained to moderately well drained
Permeability class	Slow to moderate
Soil depth	72 in
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	6–13 in
Calcium carbonate equivalent (0-40in)	0%
Electrical conductivity (0-40in)	0 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	3.5–6.5
Subsurface fragment volume <=3" (Depth not specified)	0–25%

Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Flooding is the most important ecological factor in this system. Frequency and duration of flooding determine the occurrences of different associations and separate the system from other kinds of wetlands. Flooding brings nutrients and excludes
non-flood-tolerant species. When flooded, the system may have a substantial aquatic faunal component, with high densities of
invertebrates, and may play an important role in the life cycle of fish in the associated river. Unusually long or deep floods may stress
vegetation or act as a disturbance for some species. Larger floods cause local disturbance by scouring and depositing sediment along
channels, and occasionally causing channel shifts. However, the low gradient and binding of sediment by vegetation generally makes
these processes much slower and less frequent than in river systems of most other regions. Except for primary successional
communities such as bars, most forests exist naturally as multi-aged old-growth forests driven by gap-phase regeneration. Wind throw
is probably the most important cause of gaps. Fire is not believed to be important, due to low flammability of much of the vegetation,
wetness, and abundance of natural firebreaks. However, some areas of bottomlands apparently were once canebrakes, which presumably were maintained by periodic fire. Descriptions of Ecological Systems for Modeling of LANDFIRE Biophysical Settings
Ecological Systems of
location MRLC Map Zones 45, 46, 47, 48, 53, 54, 55, 56, 57, 58,
59, 60 OR 61; Including Aggregates
06 October 2007
Descriptions provided to TNC and LANDFIRE by NatureServe

State and transition model

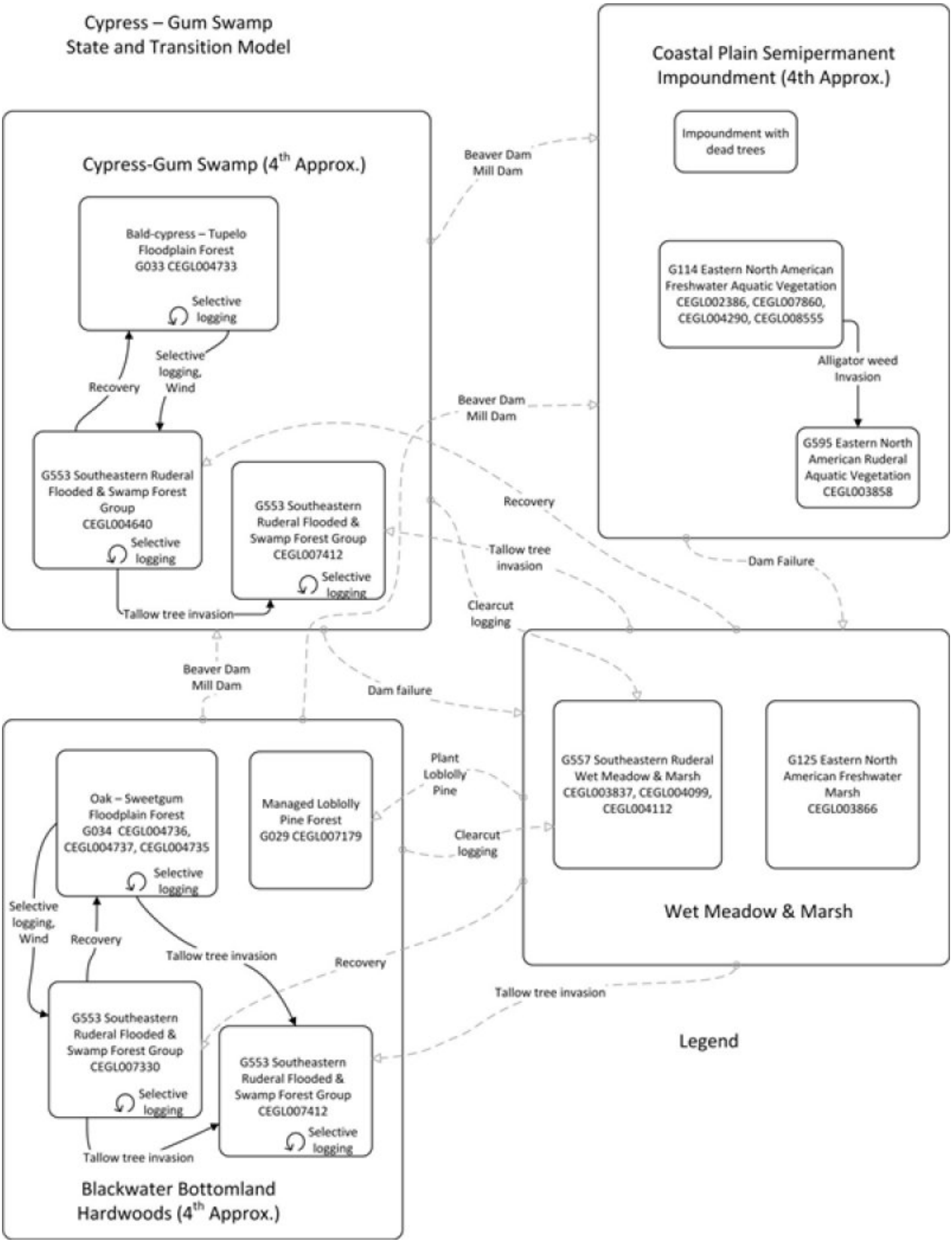

Figure 5. image

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem

condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**
