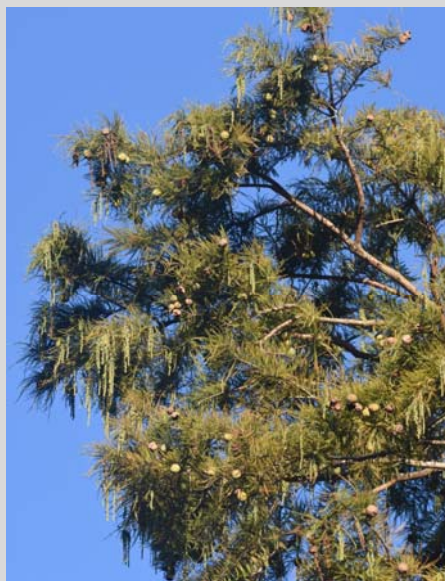


Swamp Forest Regeneration

- - -

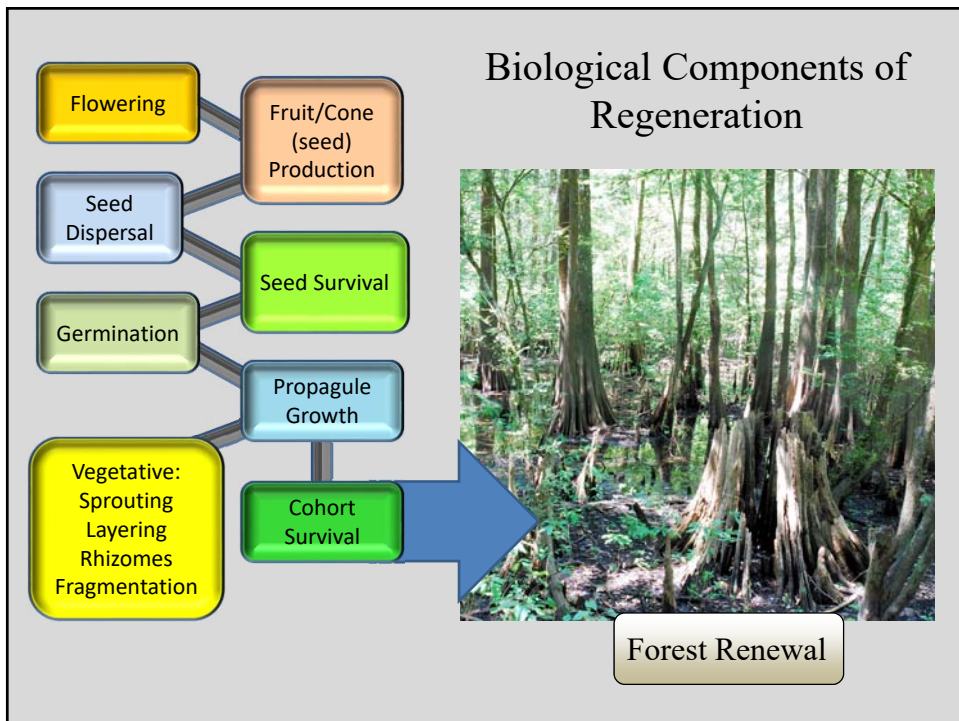
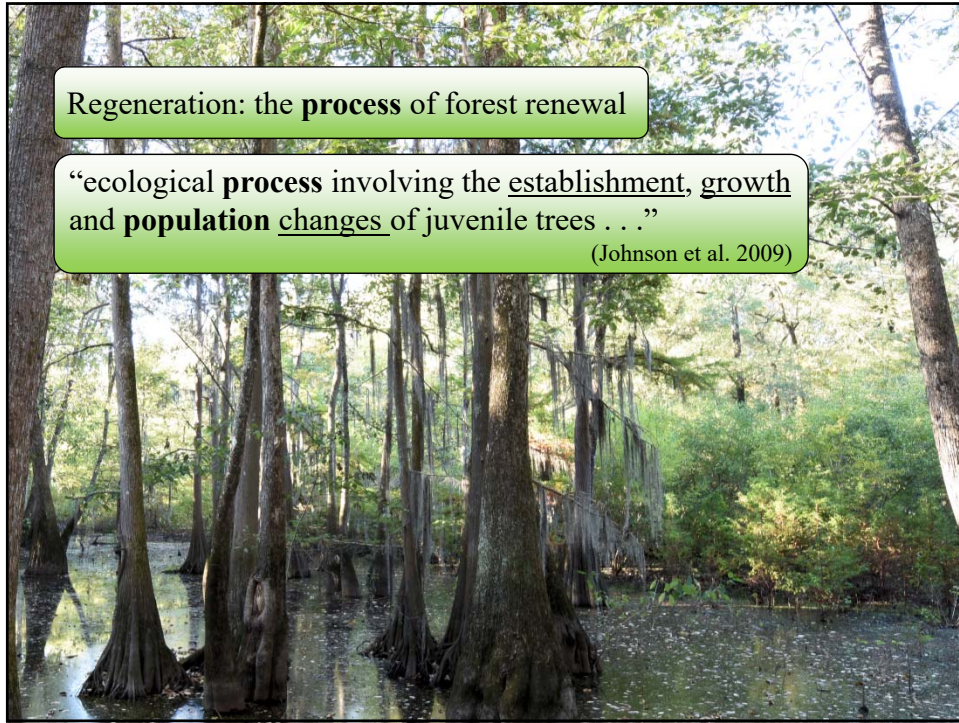
Biological Components and Environmental Factors



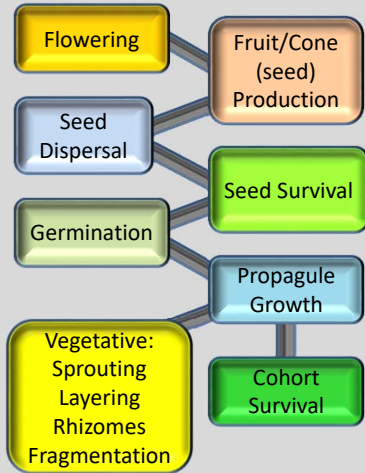
Emile Gardiner
US Forest Service
Stoneville, Mississippi
USA



Regeneration: the **process** of forest renewal

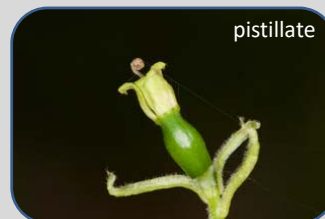


Biological Components of Regeneration







Flowering

- Baldcypress: monoecious, wind pollinated
- Water tupelo: dioecious, insect and wild pollinated



Credit: John Gwaltney

<p>Fruit/Cone (seed) Production</p>	<ul style="list-style-type: none">- In forest stands, mast crop production \approx age 30- Baldcypress: annual, with large crops every 3-5 yrs.- Water tupelo: large crops annually
	

<p>Seed Dispersal</p>	<ul style="list-style-type: none">- Both species begin seed drop in the fall- Baldcypress: hydrochory- Water tupelo: hydrochory, (perhaps zoochory)
	

Seed Survival

- Baldcypress: maintains viability up to 3+ years
- Water tupelo: maintains viability up to 2.5+ years
- Both species persist "short-term" in seed bank




Germination

- Both species exhibit seed dormancy
- Stratification, then 2 – 2.5 weeks of aerobic conditions
- Both species exhibit epigeal germination




Vegetative: Sprouting	- Baldcypress: latent and probably adventitious buds
	- Water tupelo: latent and adventitious buds
	- Neither species root sprouts
	- Sprouting potential decreases with age and stem size

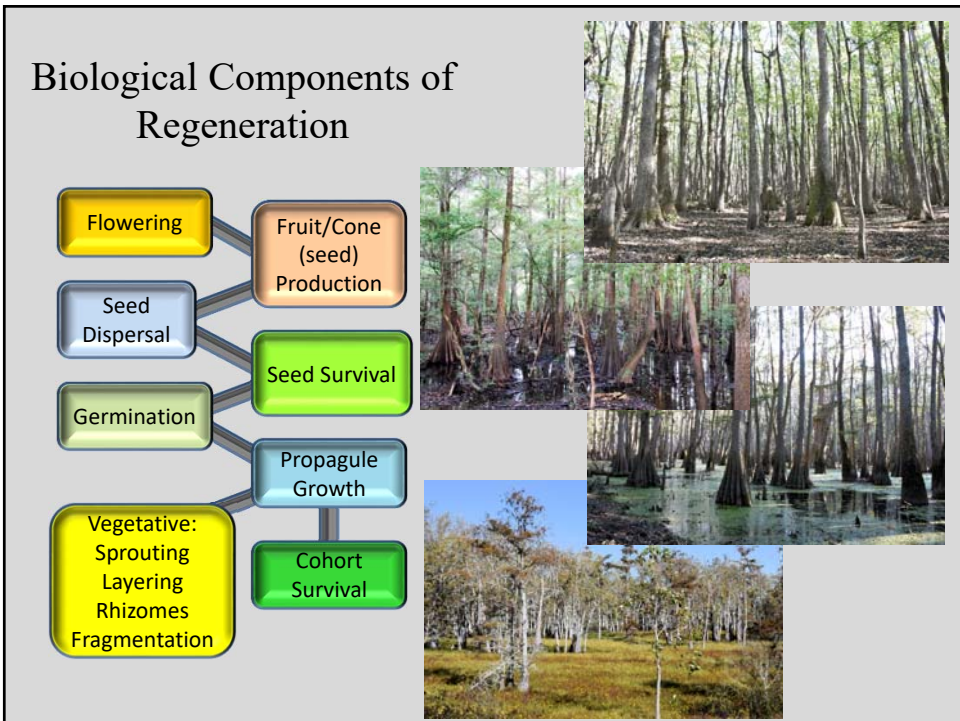
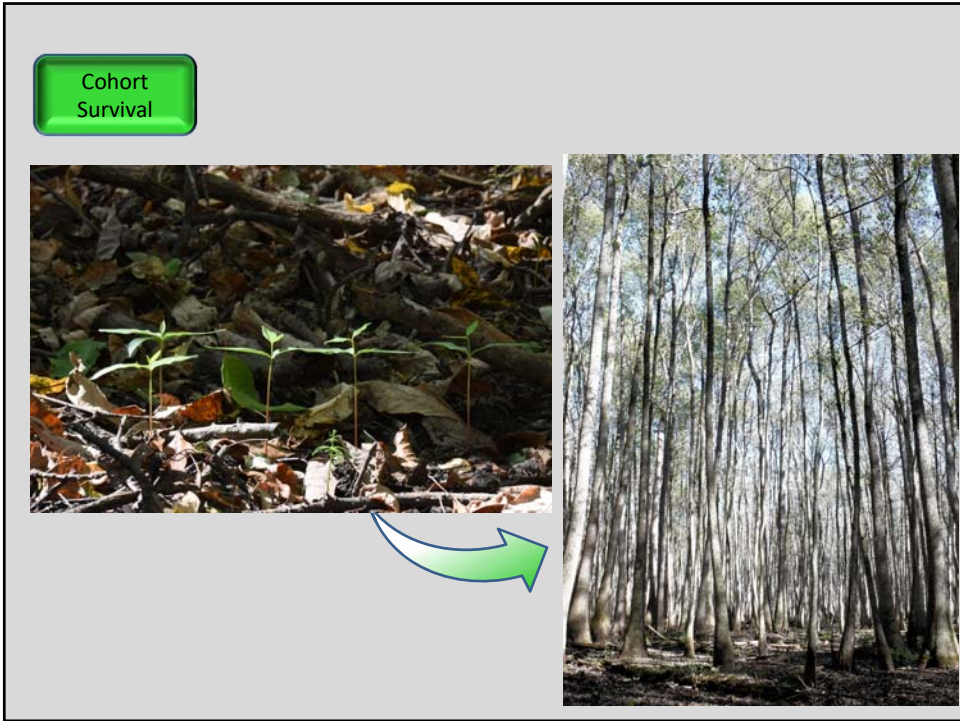


The image contains two side-by-side photographs. The left photograph shows a tree trunk with several green, feathery sprouts emerging from its base. The right photograph shows a similar scene with a tree trunk and more numerous, dense green sprouts at its base.

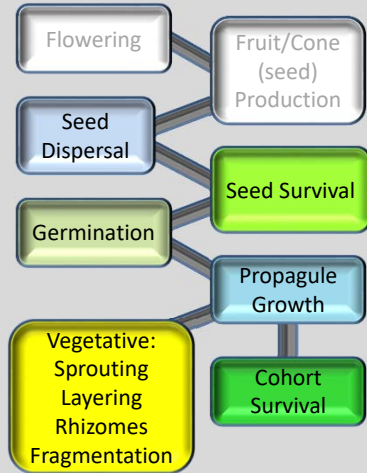
Propagule Growth	- Baldcypress: 1 st yr seedling growth potential \approx 40 in.
	- Baldcypress: 1 st yr sprout growth potential \approx 3 \approx ft.
	- Water tupelo: 1 st yr seedling growth potential \approx 30 in.
	- Water tupelo: 1 st yr sprout growth potential \approx 6 \approx ft.



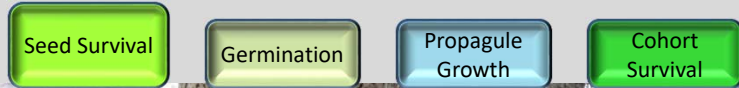
The image shows a young green seedling with several feathery leaves growing out of dark soil. A yellow arrow points vertically upwards from the base of the seedling, indicating its growth potential.



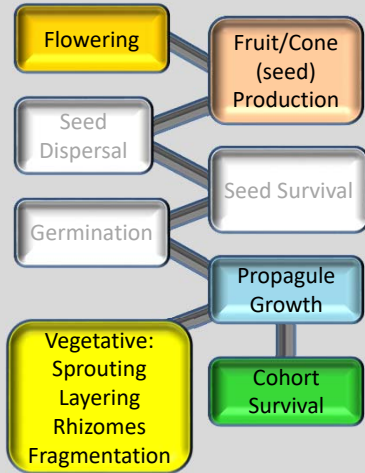
Biological Components of Regeneration



Environmental Factor: Water



Biological Components of Regeneration



Environmental Factor: Light

Propagule Growth

Cohort Survival



