Riparian Forest Benefits for Wildlife

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Rivers in South Dakota

- Before we discuss “wildlife benefits”, we need to frame the context.
- Can’t discuss “benefits” if they are ecological liability
- Quite a lot of literature that discusses the negative effects of woodlands on grassland birds.
- However, most literature does not discriminate between native and anthropogenic woodlands.

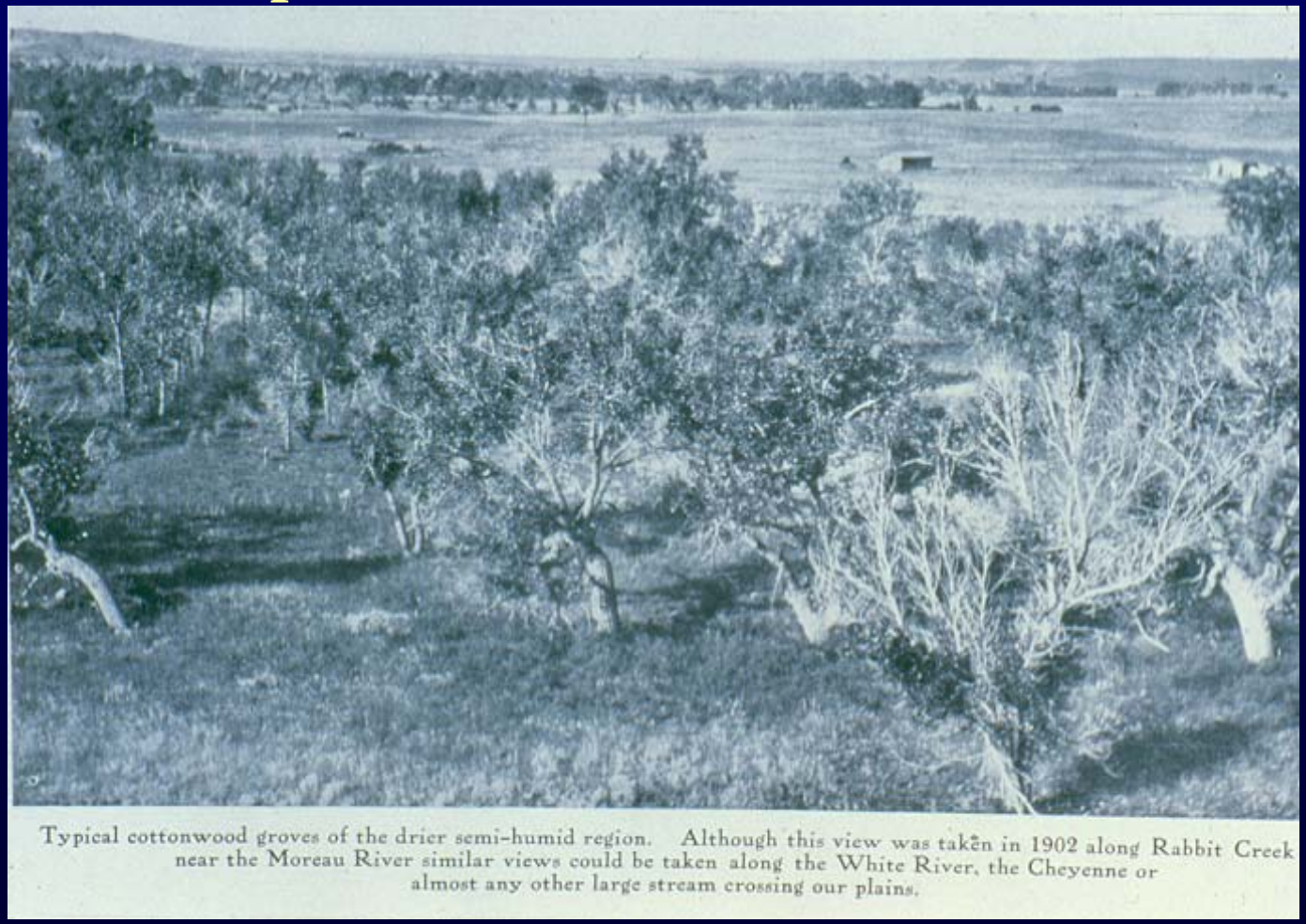
Riparian and prairie woodlands were part of the historic landscape of Northern Great Plains

- River terraces and channels in the northern Great Plains are more stable and better defined that those that occur for example along the Platte River in Nebraska.

- Most (83% to 84%) of birds along Missouri River and in Slim Buttes today also occurred in late 1800's.

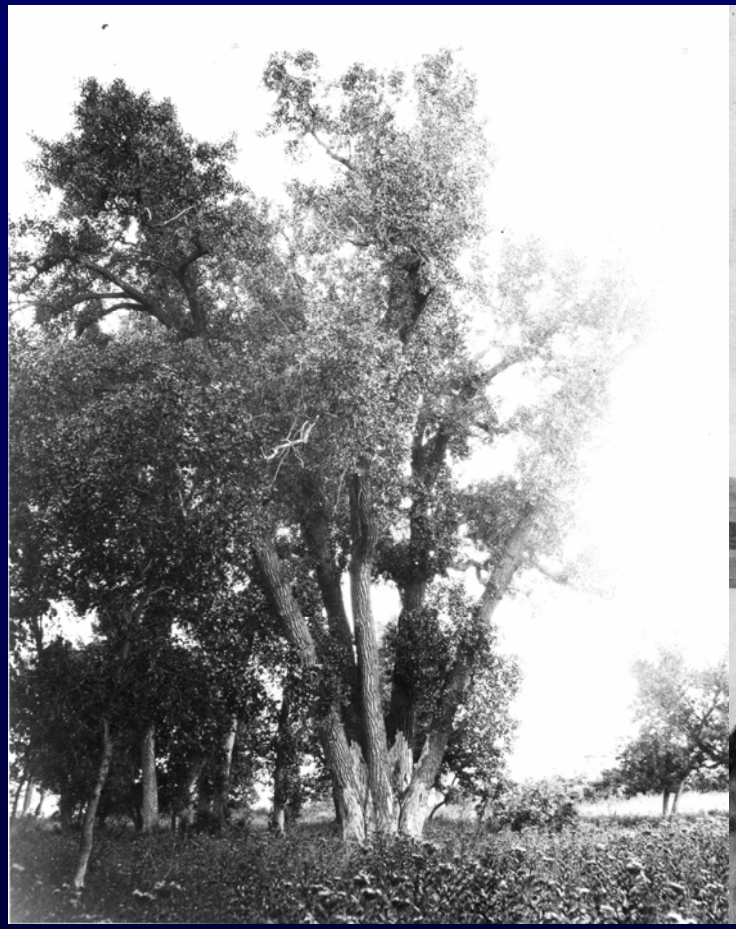
- Native prairie woodlands occupy 1-4% of the landscape. Therefore the don't constitute a significant potential to disrupt ecology of indigenous grassland birds

Prairie woodlands were part of the historic landscape in the northern Great Plains!



Typical cottonwood groves of the drier semi-humid region. Although this view was taken in 1902 along Rabbit Creek near the Moreau River similar views could be taken along the White River, the Cheyenne or almost any other large stream crossing our plains.

Ample evidence in photographic record and literature of "old" woodlands at the turn of the century.



Cottonwood forests were well represented along the Missouri River
Here, trees well in excess of 80 years old by early 1900s

Well developed and mature woodland vegetation in 1903 in south-central South Dakota

Native prairie woodlands

- Given area extent and historical context of native prairie woodlands, it is difficult to make a case that they constitute a biological integrity issue to grasslands of the northern Great Plains.

Woodland Types in Riparian and Riparian like systems

- Cottonwood
- Green ash – drainages and riparian forest areas (may replace cottonwood in some areas)
- Bur oak – Grows in similar conditions to (and sometimes with) green ash.

Synecology of cottonwood

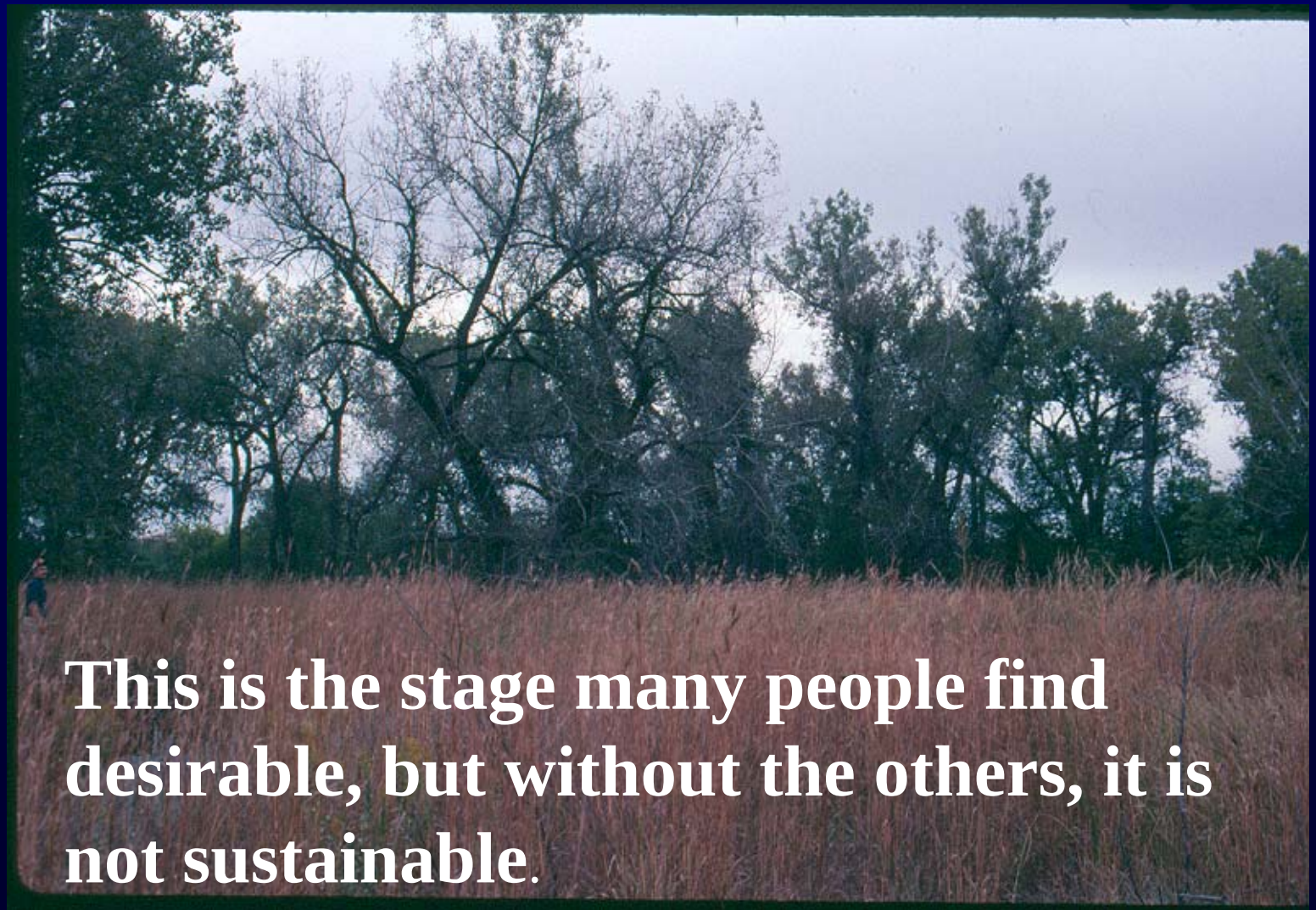
- Many seedlings

Gives way to a few saplings

Early-intermediate stage

Late-intermediate stage

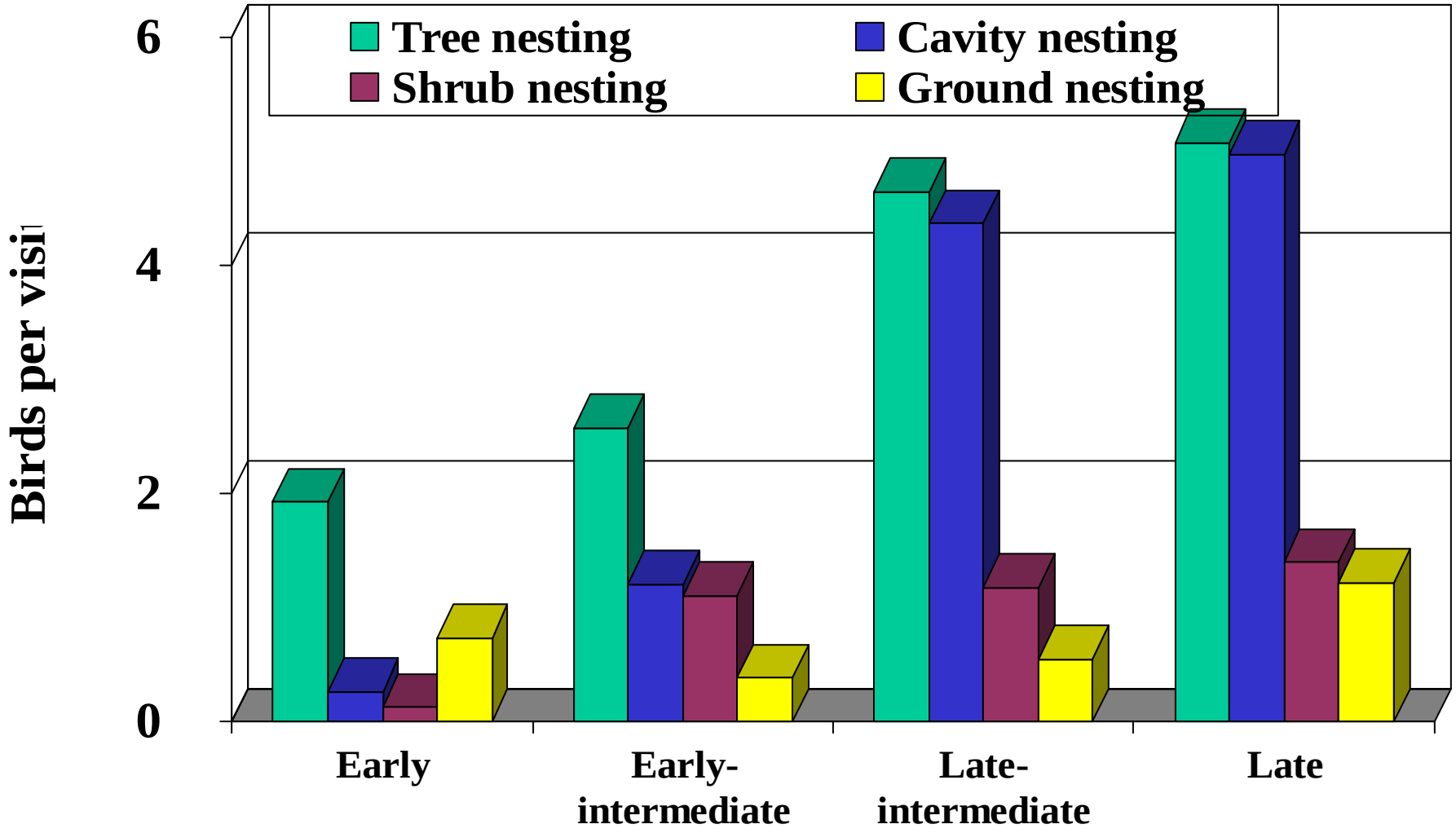
Late seral cottonwood of a few big old trees



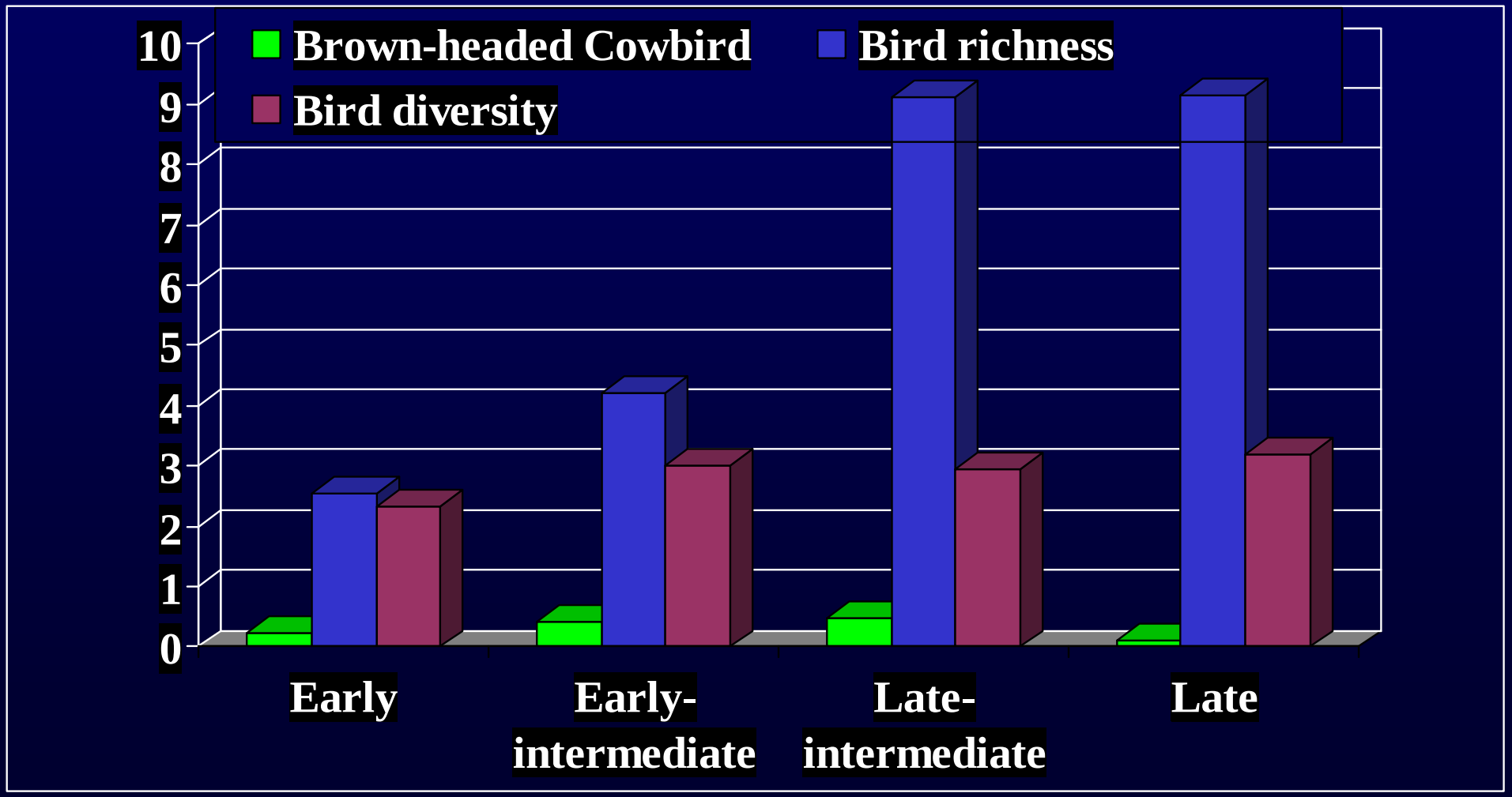
This is the stage many people find desirable, but without the others, it is not sustainable.

Wildlife Associations with Seral Stages of Cottonwood

Bird Guild Relations to Seral Stages of Cottonwood



Seral relations to metrics of diversity



Old seral stages often extend considerable distance across the former flood plain bench. In riparian systems with control structures, early and early-intermediate stages are restricted to narrow bands along the river. If there is not good representation of each of these stages, there is strong evidence that the system is out of balance and is not regenerating.

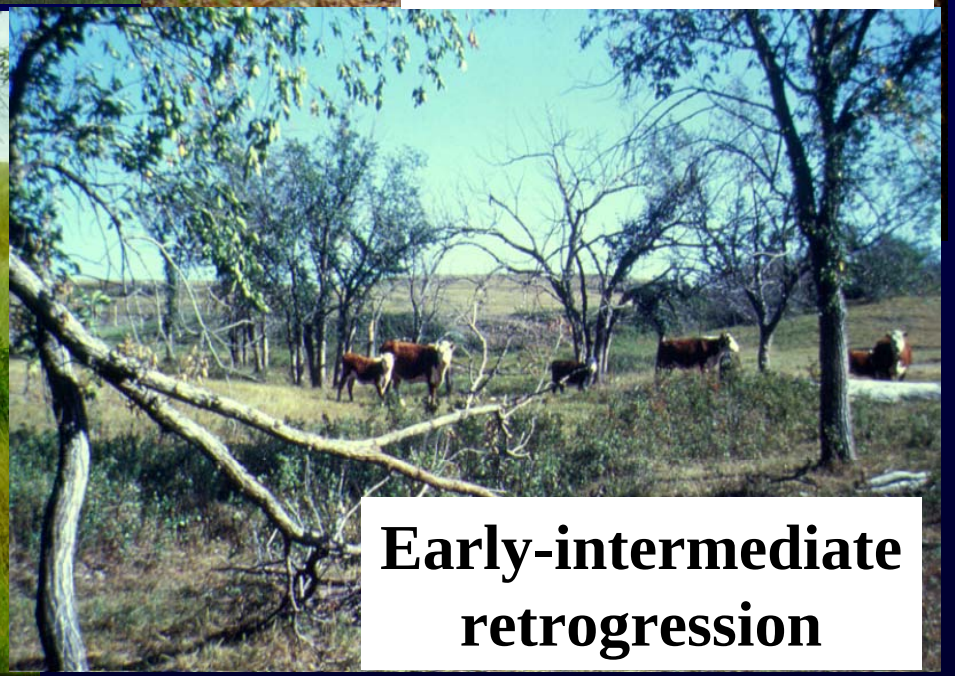
Synecology of Green Ash

Green ash exists in drainages and places of moisture compensation on the northern Great Plains and occupies about 1% of the landscape.

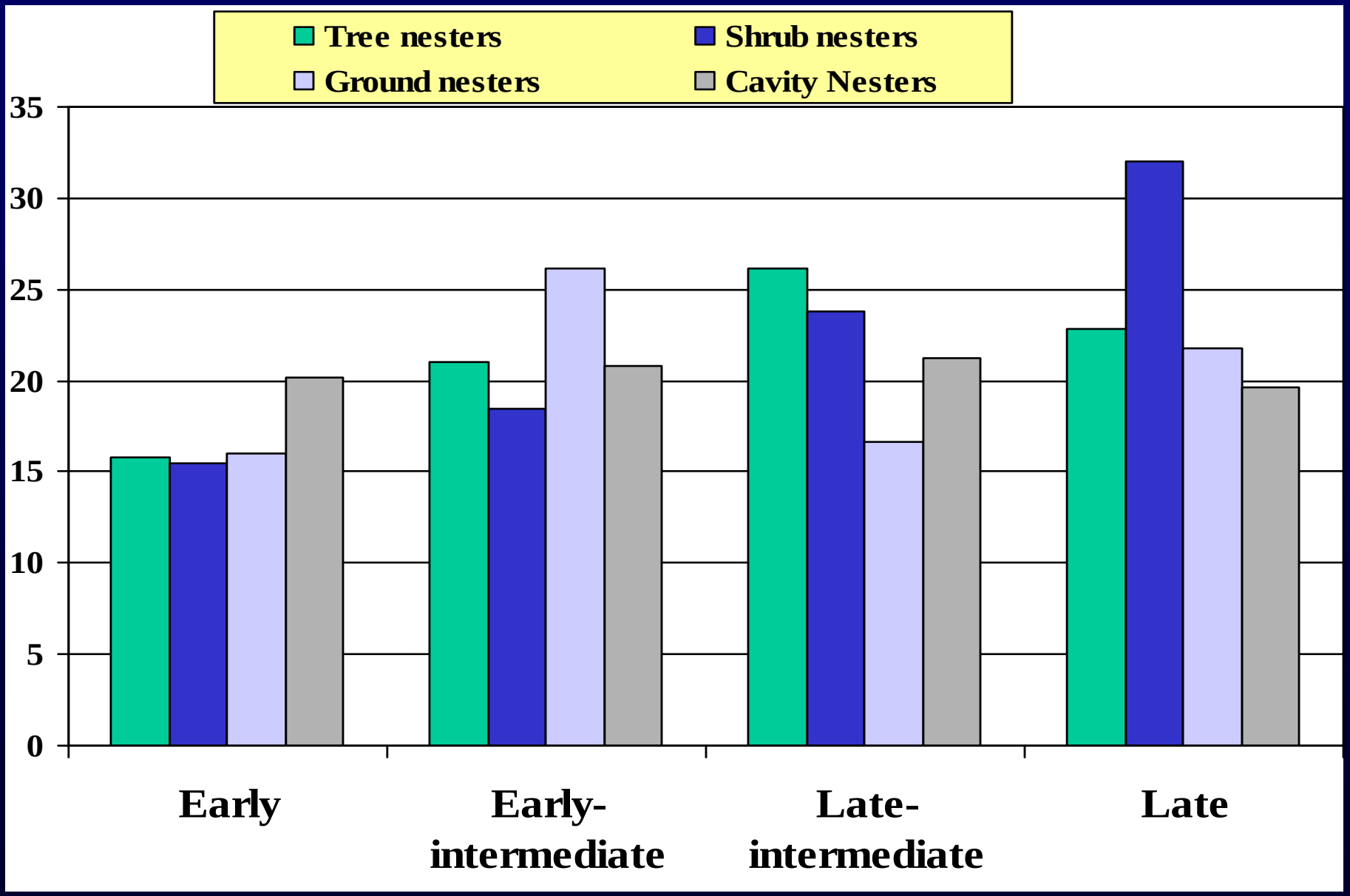

LATE


Late-intermediate

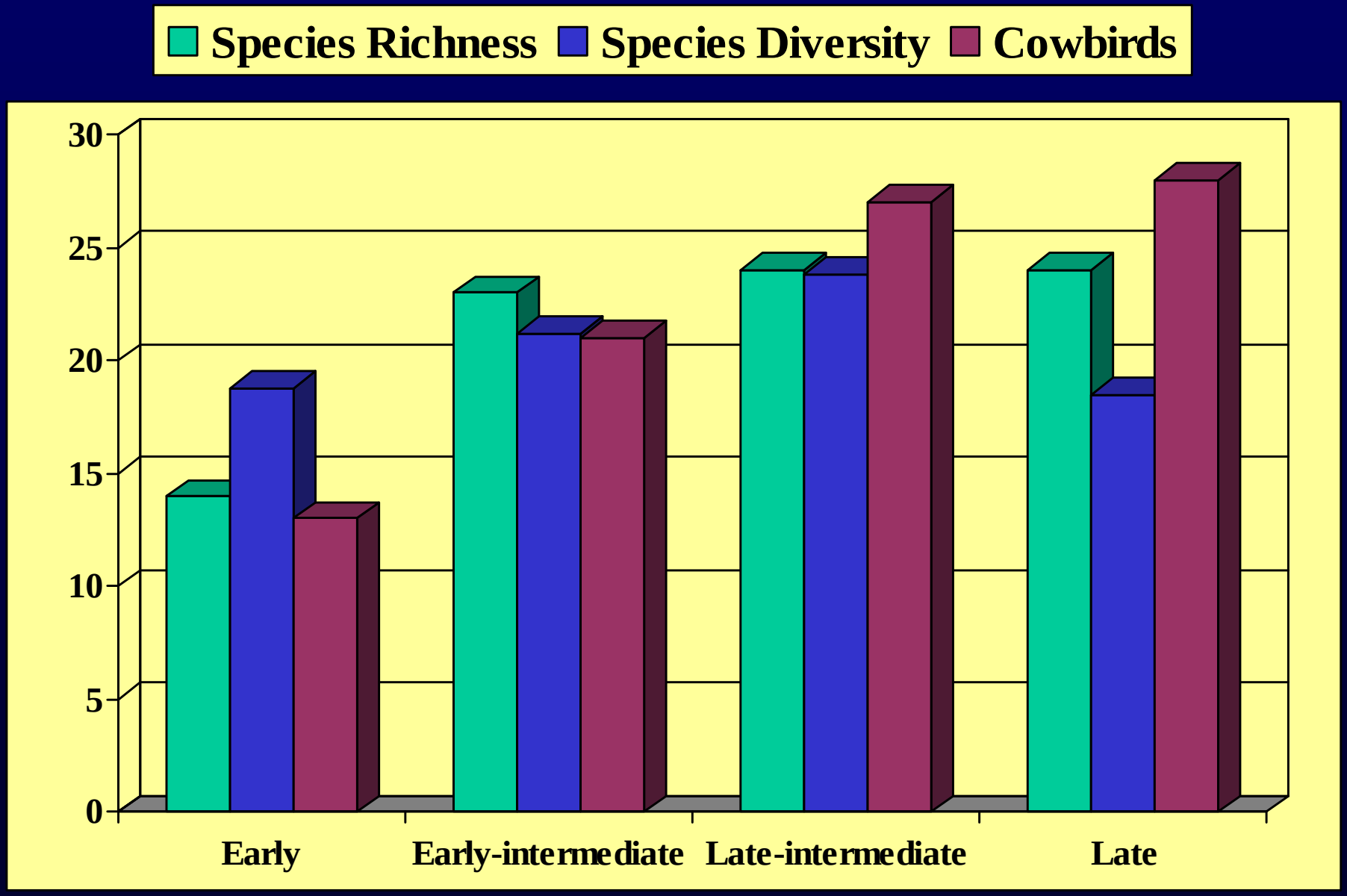

Early-intermediate succession


Early-intermediate retrogression

Green Ash Bird Guilds



Green Ash Bird Diversity



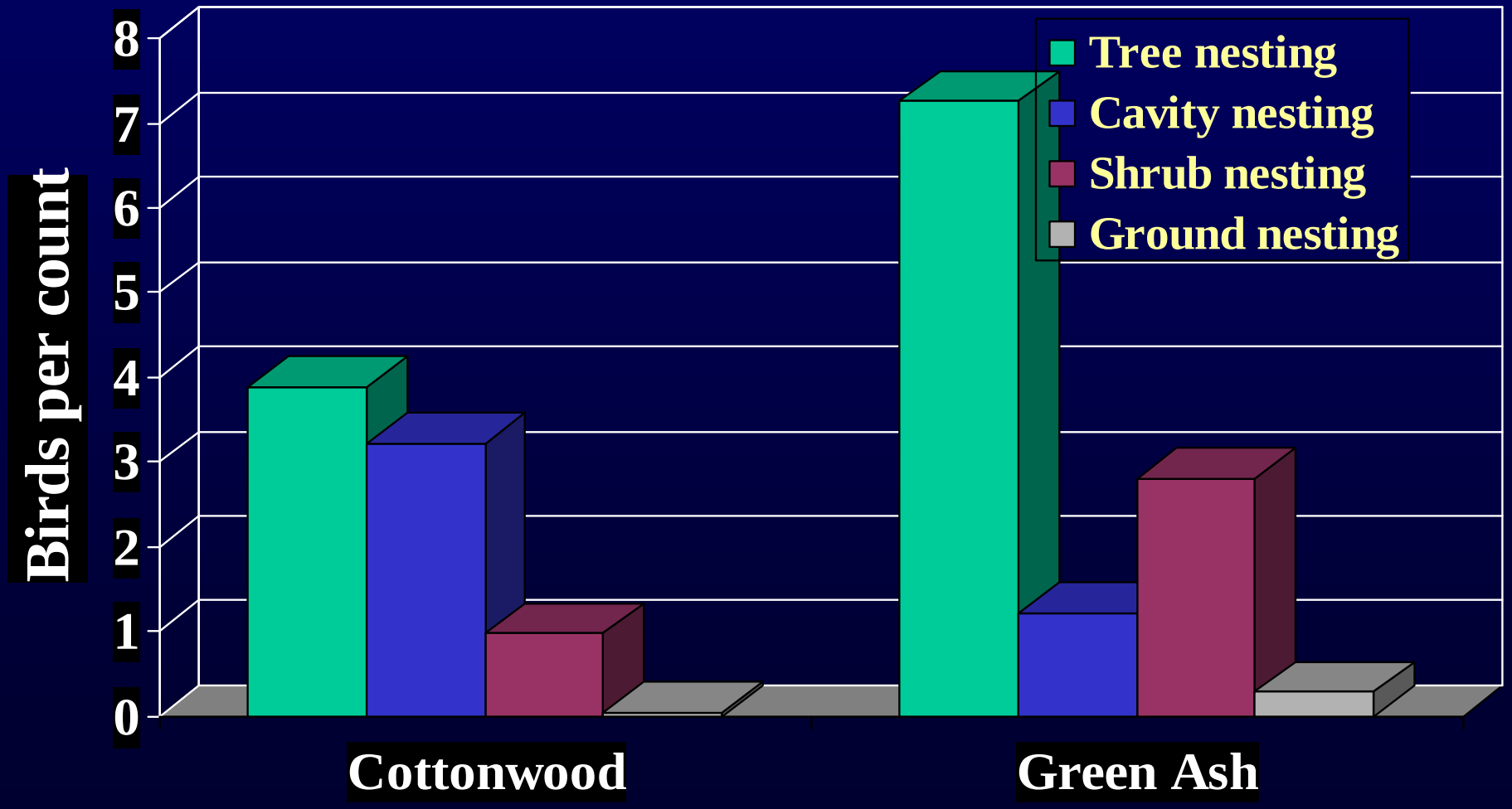
Bird Associations to Seral Stages of Green Ash

Eastern Kingbird
Black-headed Grosbeak
Orchard Oriole
American Goldfinch
Brown Thrasher
Bell's Vireo
Yellow Warbler
Rufous-sided Towhee

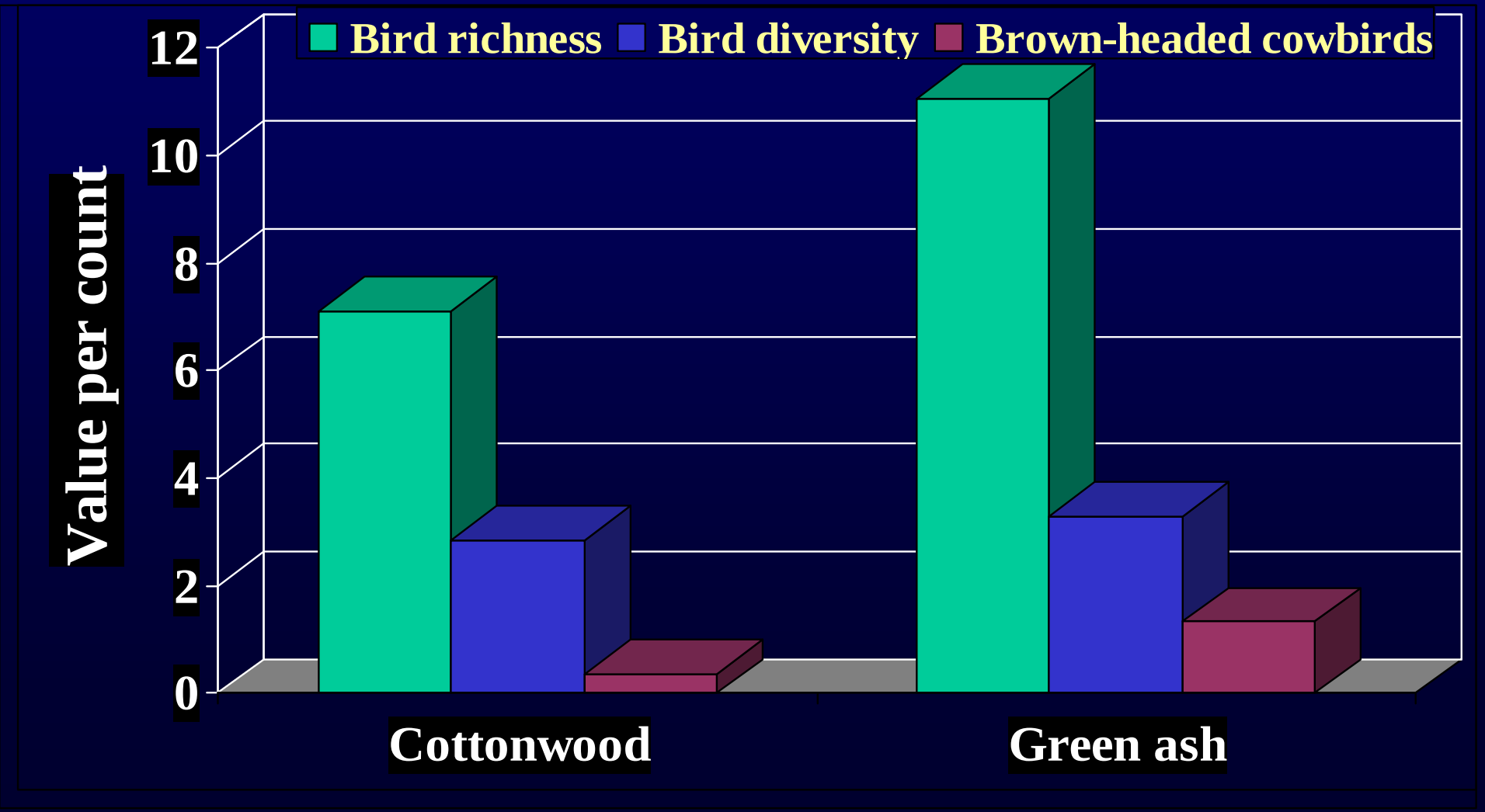
Field sparrow
Woodpeckers?
Black-capped chickadee?

? – using dead and dying trees

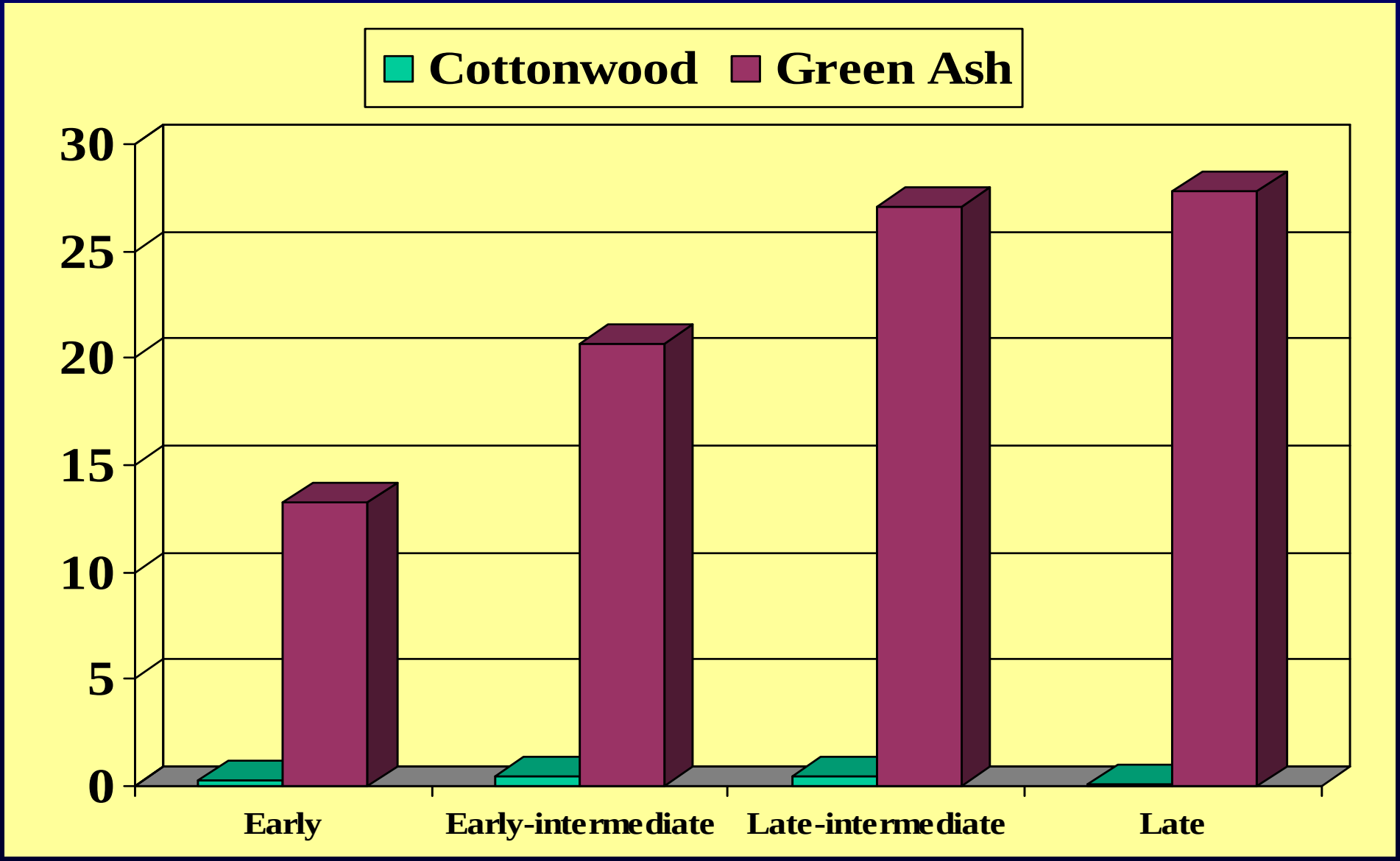
Bird habitat in cottonwood versus green ash



Indices of bird diversity in cottonwood vs. green ash



Cowbirds in seral stages of cottonwood and green ash



Mitigation rates for green ash if cottonwood is lost

- Red-headed woodpeckers 3.5
- House wrens 3.6
- Downy woodpeckers 13.0


Woodlands provide areas of forage and shade for livestock,
but this use can prevent or destroy the regeneration.

Some cottonwood stands will succeed to green ash.

All woodlands not created equal.

- Cannot mitigate the loss of cottonwood acre for acre with green ash.
- This is evident for abundance of cavity nesting birds and cowbirds.
- It may take some fairly drastic measures and management to ensure that cottonwood maintains a place on the landscape.