

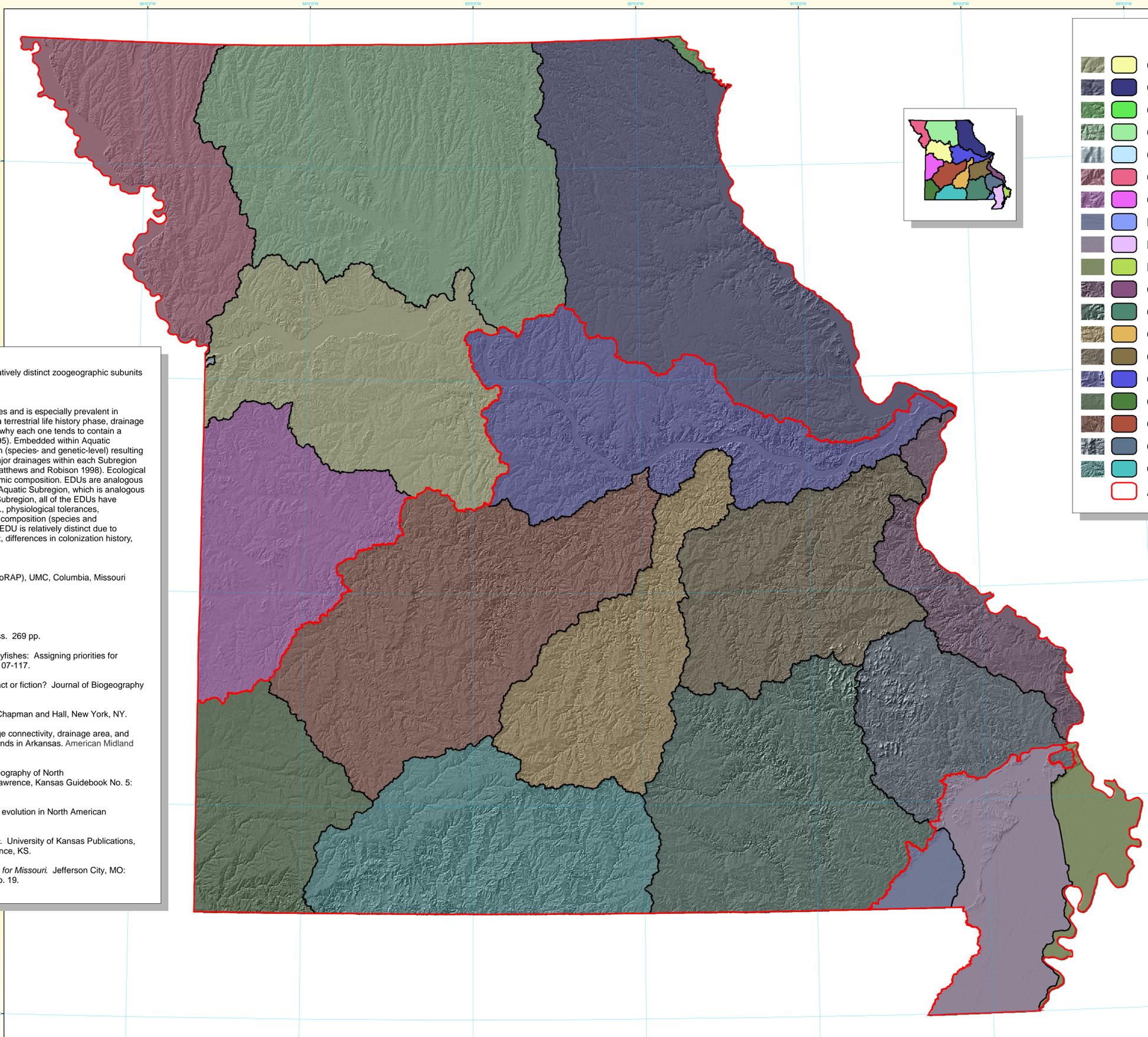
Ecological Drainage Units of Missouri



The Grand River within the Central Plains/ Grand/ Chariton Ecological Drainage Unit.



The Gasconade River within the Ozark/ Gasconade Ecological Drainage Unit.



Legend

- Central Plains/Blackwater/Lamine
- Central Plains/Cuivre/Salt
- Central Plains/Des Moines
- Central Plains/Grand/Chariton
- Central Plains/Kansas
- Central Plains/Nishnabotna/Platte
- Central Plains/Osage/South Grand
- MS Alluvial Basin/Black/Cache
- MS Alluvial Basin/St. Francis/Little
- MS Alluvial Basin/St. Johns Bayou
- Ozark/Apple/Joachim
- Ozark/Black/Current
- Ozark/Gasconade
- Ozark/Meramec
- Ozark/Moreau/Loutre
- Ozark/Neosho
- Ozark/Osage
- Ozark/Upper St. Francis/Castor
- Ozark/White
- Aquatic Subregion Boundary

Objective
Stratify each of the Aquatic Subregions within Missouri into relatively distinct zoogeographic subunits that also fit the definition of an ecosystem.

General Description
Isolation is a key component of divergent evolutionary processes and is especially prevalent in freshwater ecosystems (Matthews 1998). For animals lacking a terrestrial life history phase, drainage boundaries serve as important isolating mechanisms, which is why each one tends to contain a relatively distinct fauna (Gilbert 1980; Pflieger 1989; Brown 1995). Embedded within Aquatic Subregions are geographic variations in taxonomic composition (species- and genetic-level) resulting from the geographically distinct evolutionary histories of the major drainages within each Subregion (Pflieger 1971; Mayden 1987; Mayden 1988; Crandall 1998; Matthews and Robison 1998). Ecological Drainage Units (EDUs) account for these differences in taxonomic composition. EDUs are analogous to "islands" when viewed within the context of the surrounding Aquatic Subregion, which is analogous to the "sea" in which the EDUs reside. Within a given Aquatic Subregion, all of the EDUs have assemblages with relatively similar ecological composition (e.g., physiological tolerances, reproductive and foraging strategies). However, the taxonomic composition (species and phylogenetic composition) of the assemblage within any given EDU is relatively distinct due to evolutionary processes such as adaptive radiation, genetic drift, differences in colonization history, random genetic mutation, etc.

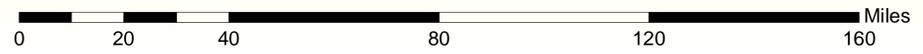
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Large ditches are typical within the Mississippi Alluvial Basin/ St. Francis/ Little Ecological Drainage Unit.



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Cartographer: Gust M. Annis