

# CONSERVATION GENETICS LABORATORY: CURRENT PROJECTS

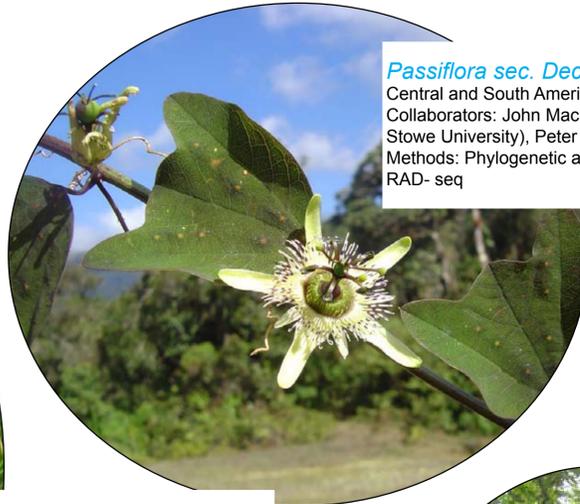
CC CENTER FOR  
SD CONSERVATION  
AND SUSTAINABLE  
DEVELOPMENT

MISSOURI BOTANICAL GARDEN



*Delphinium exaltatum*

Vulnerable, NatureServe, Ozark and Appalachian Mountain regions  
Collaborators: George Yatskievich (U of TX)  
Funding: US Park Service  
Methods: Microsatellite analysis of genetic structure



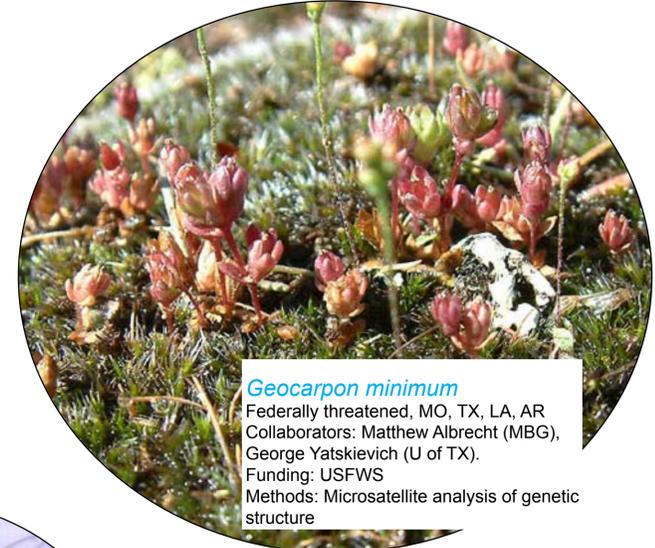
*Passiflora sec. Decaloba*

Central and South America  
Collaborators: John MacDougal (Harris Stowe University), Peter Jorgensen  
Methods: Phylogenetic analysis using RAD-seq



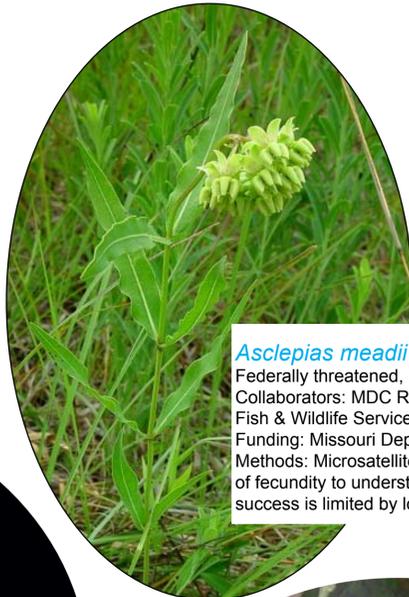
*Polygala lewtonii*

Federally endangered, FL  
Collaborators: Archbold Biological Station  
Funding: FDACS  
Methods: Microsatellite analysis of mating system



*Geocarpon minimum*

Federally threatened, MO, TX, LA, AR  
Collaborators: Matthew Albrecht (MBG), George Yatskievich (U of TX).  
Funding: USFWS  
Methods: Microsatellite analysis of genetic structure



*Asclepias meadii*

Federally threatened, MO, KS (also occurs IL, IA.)  
Collaborators: MDC Resource Science Division, U.S. Fish & Wildlife Service (USFWS)  
Funding: Missouri Department of Conservation  
Methods: Microsatellite analysis and measurements of fecundity to understand whether reproductive success is limited by low mate availability



*Leptonycteris yerbabuena*

Southwestern US and Northwestern Mexico  
Collaborators: Environmental Laboratory, U.S. Army Engineer Research and Development Center, Vicksburg, MS  
Funding: ESTCP  
Methods: DNA Metabarcoding of diet and parasite diversity



*Cinchona pubescens, C. officinalis*

Galapagos Islands and South America  
Collaborators/Funding: Charles Darwin Foundation  
Methods: Microsatellite analysis of genetic structure



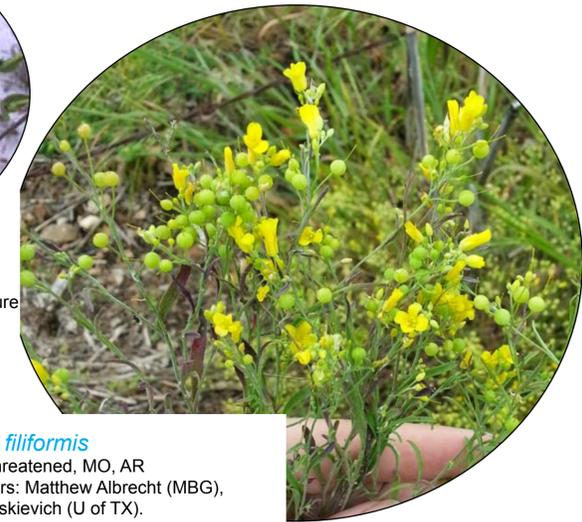
*Diospyros*

Many species are endangered - IUCN  
Mauritius, Madagascar  
Collaborators: George Schatz, Pete Lowry (MBG)  
Funding: NGS and Franklina Foundation  
Methods: Phylogenetic analysis using Sanger sequencing, Population analysis using RAD-seq



*Euphorbia rosescens*

Federally endangered, FL  
Collaborators: Archbold Biological Station  
Funding: FDACS  
Methods: Microsatellite analysis of genetic structure



*Physaria filiformis*

Federally threatened, MO, AR  
Collaborators: Matthew Albrecht (MBG), George Yatskievich (U of TX).  
Funding: USFWS  
Methods: Microsatellite analysis of genetic structure



*Dracaena umbraculifera*

Critically endangered, IUCN  
Mauritius, Madagascar  
Collaborators/Funding: Dr. Peter Wyse Jackson, Jim Miller (MBG), MBG-Horticulture  
Methods: Microsatellite analysis and DNA sequencing



*Lilaeopsis schaffneriana*

Federally endangered  
Arizona, Mexico, Ecuador  
Collaborators: US Army Engineers Research and Development Center  
Funding: DoD Legacy  
Methods: RAD-seq to determine species boundaries



*Leavenworthia*

Federally threatened, KY, TN  
Collaborators/Funding: USFWS  
Methods: Microsatellite analysis of genetic structure, comparative epigenetics with varying range size



*Ziziphus celata*

Federally endangered, FL  
Collaborators: Archbold Biological Station.  
Funding: Florida Forest Service  
Methods: Microsatellite and epigenetics analysis of *ex situ* reintroductions

## Abbreviations:

DoD Legacy - Department of Defense Legacy Resource Management Program

ESTCP - Environmental Security Technology Certification Program

FDACS - Florida Department of Agriculture and Consumer Services

IUCN - International Union for Conservation of Nature

MBG - Missouri Botanical Garden

RAD-seq - Restriction Enzyme Associated DNA sequencing

USFWS - U.S. Fish and Wildlife Service