

# Beaver dam analogs influence macroinvertebrate communities in headwater streams of western Montana

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MONTANA  
NSF EPSCoR



*Photo by Chase Dekker Wild-Life Images/Getty Images*

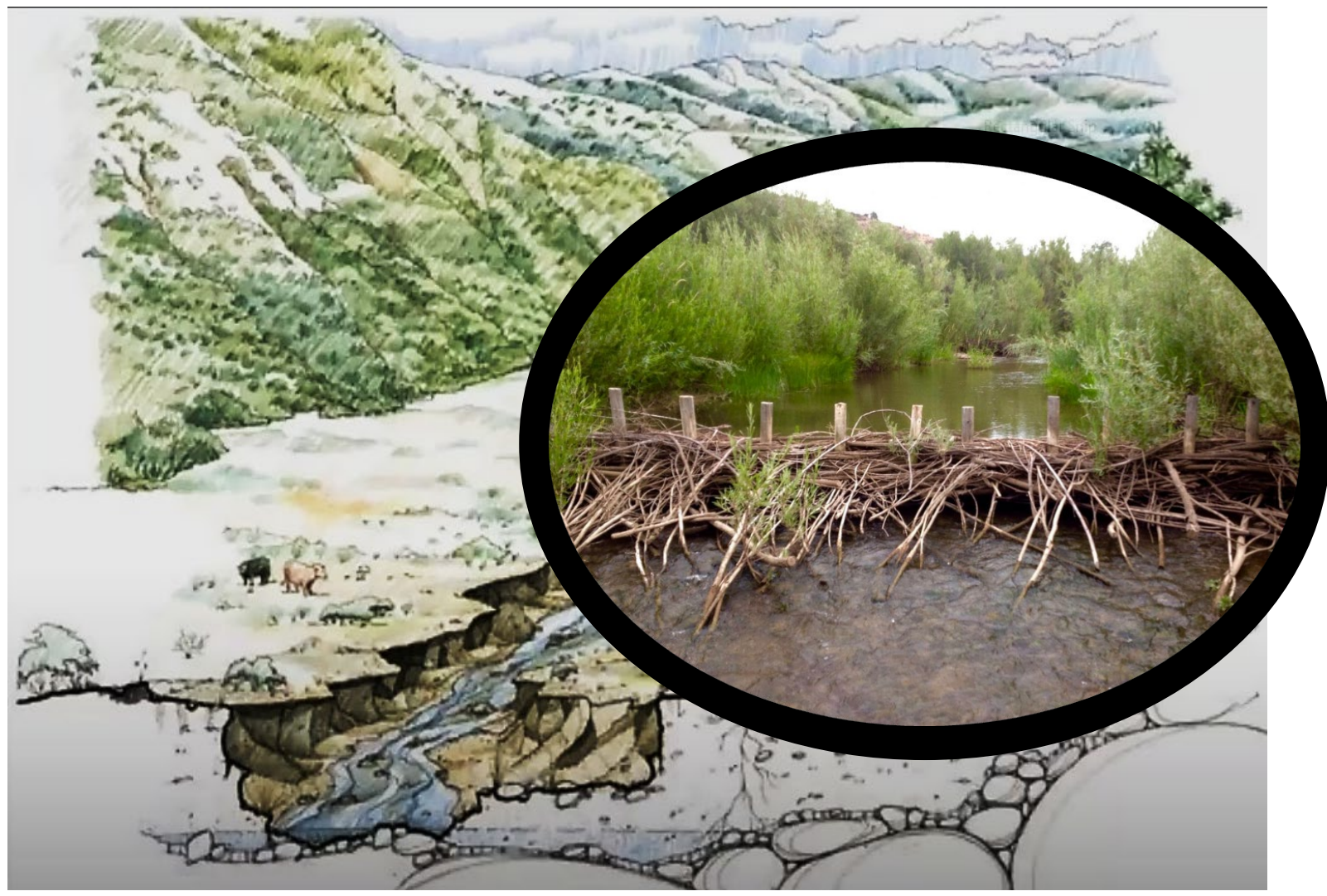
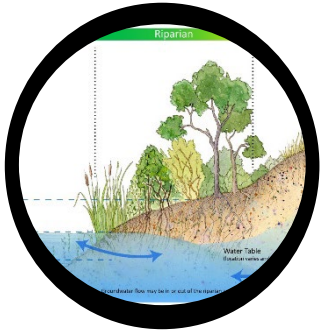


*Photo by Stacy Passmore, Landscape with Beavers, Rock Creek, Utah*

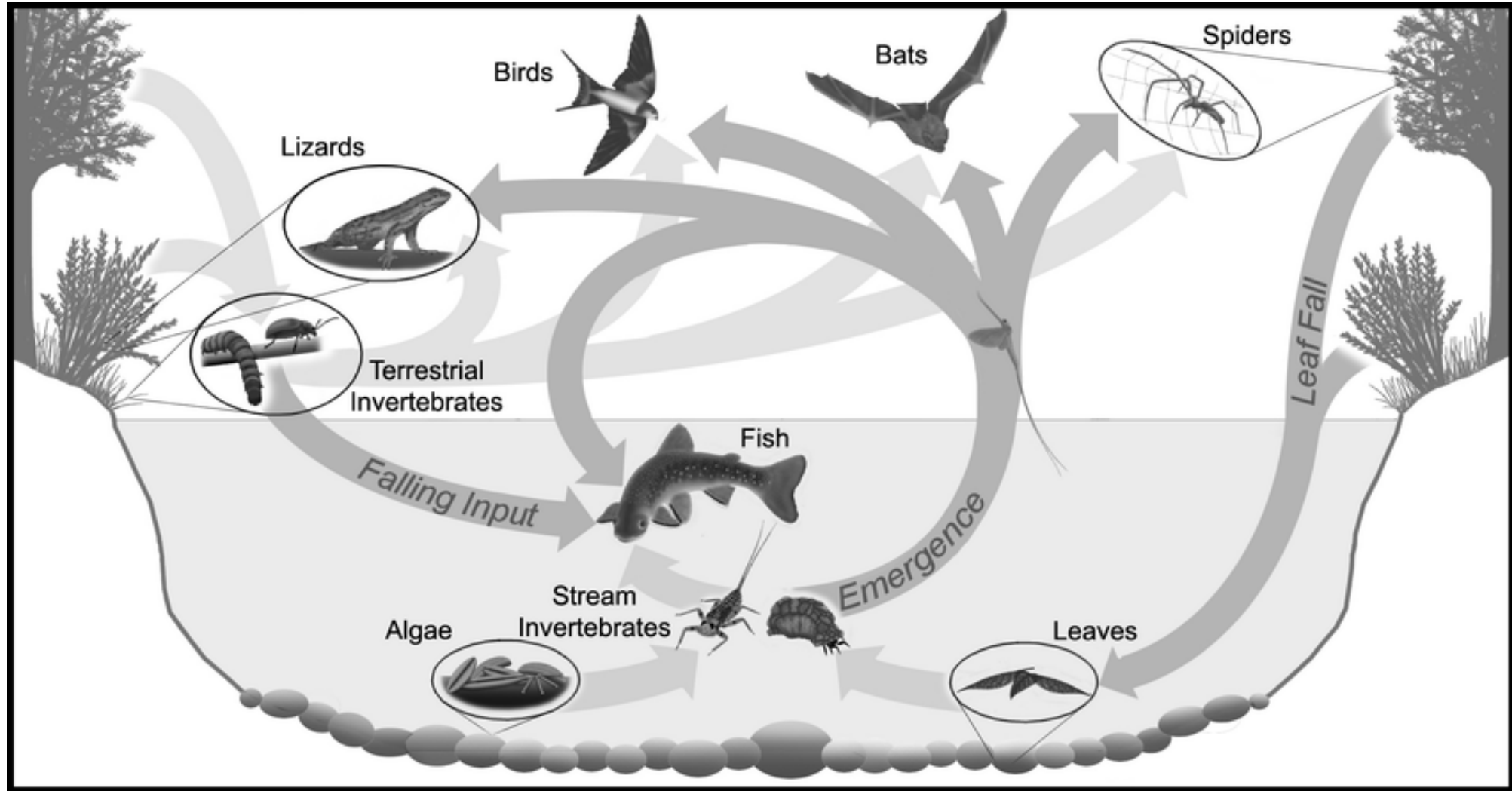


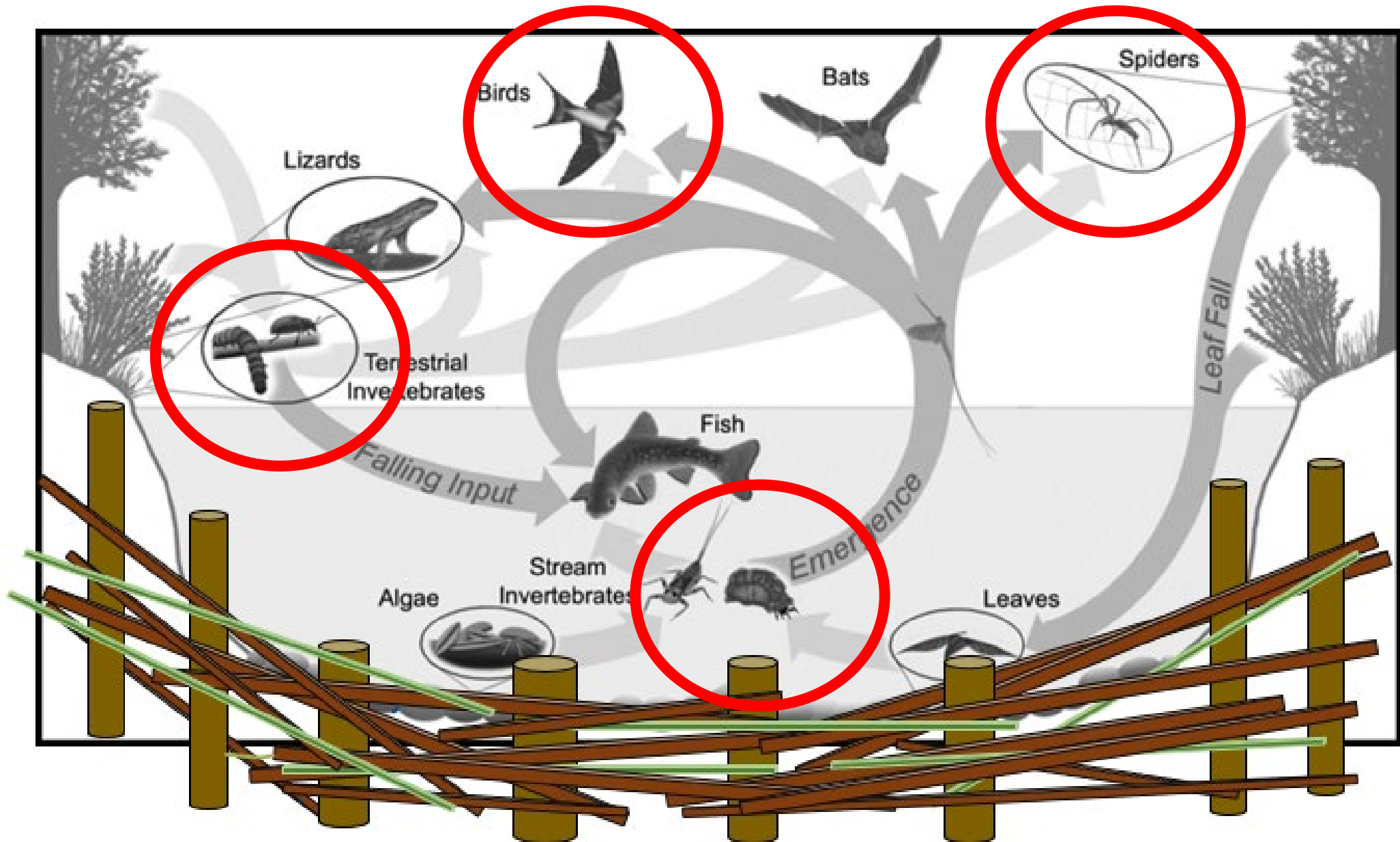


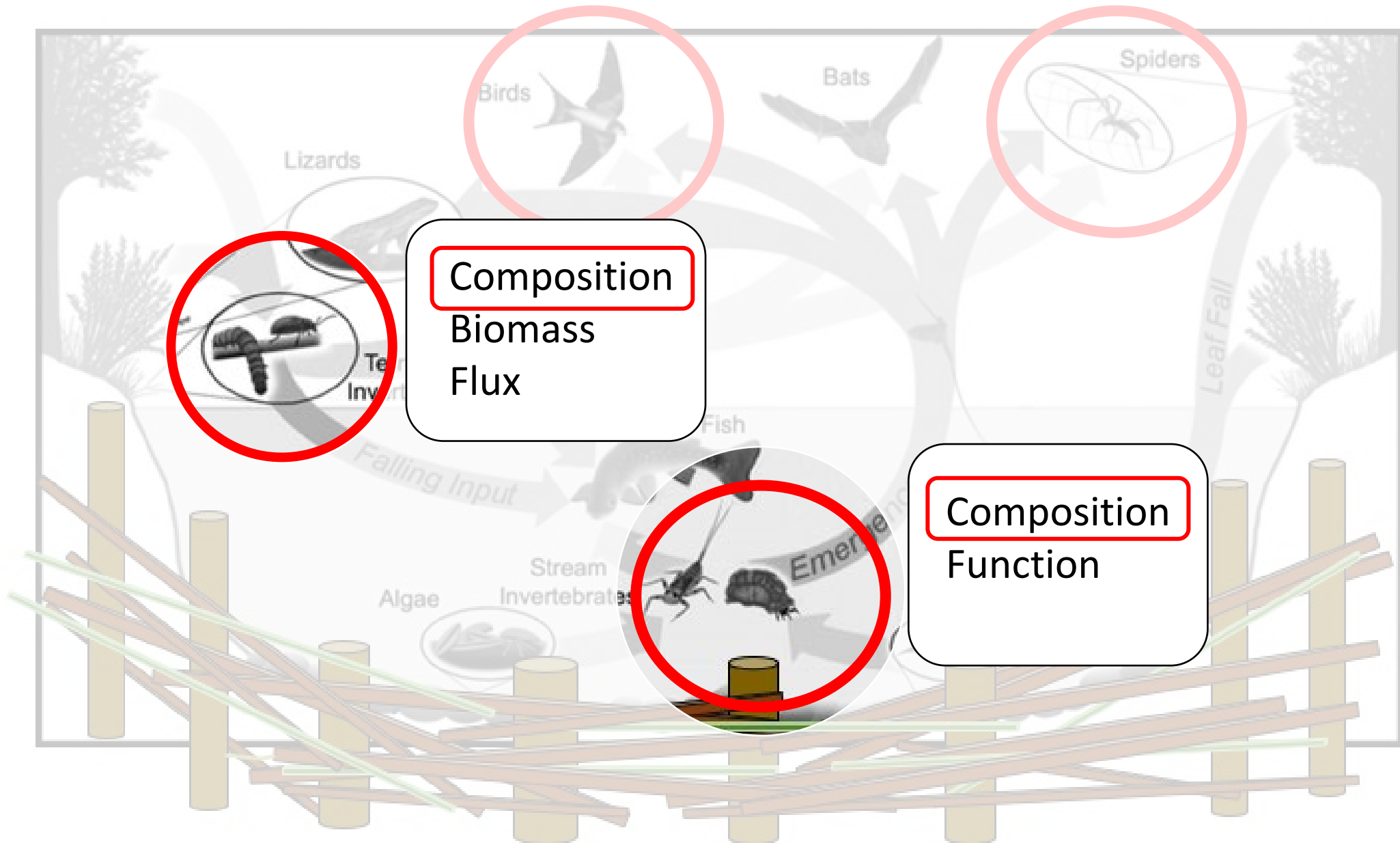
*Photo by Canadian Museum of History*



*Restoration Design Group for American Rivers*







Composition  
Biomass  
Flux

Composition  
Function

# Research Questions

**Q1:** How do BDAs affect the composition of benthic macroinvertebrate communities?

- ❖ BDA-restored segments will have a higher proportion of tolerant taxa

**Q2:** How do BDAs affect the composition of emerging insects and macroinvertebrate infall?

- ❖ BDA-restored segments will have greater proportions of tolerant taxa in emergence and infall



**Legend**

- Montana Major Rivers
- BDA Project streams

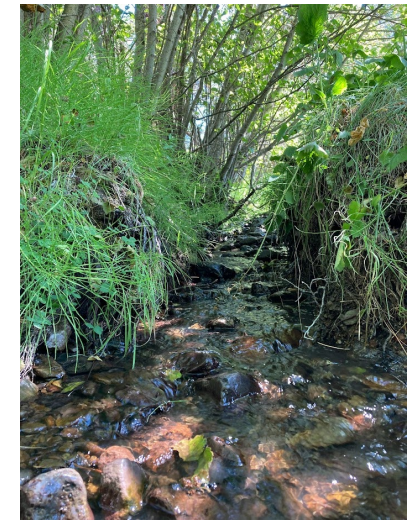
**Study Area Map: BDA Stream Locations**



**Lost Prairie Creek**



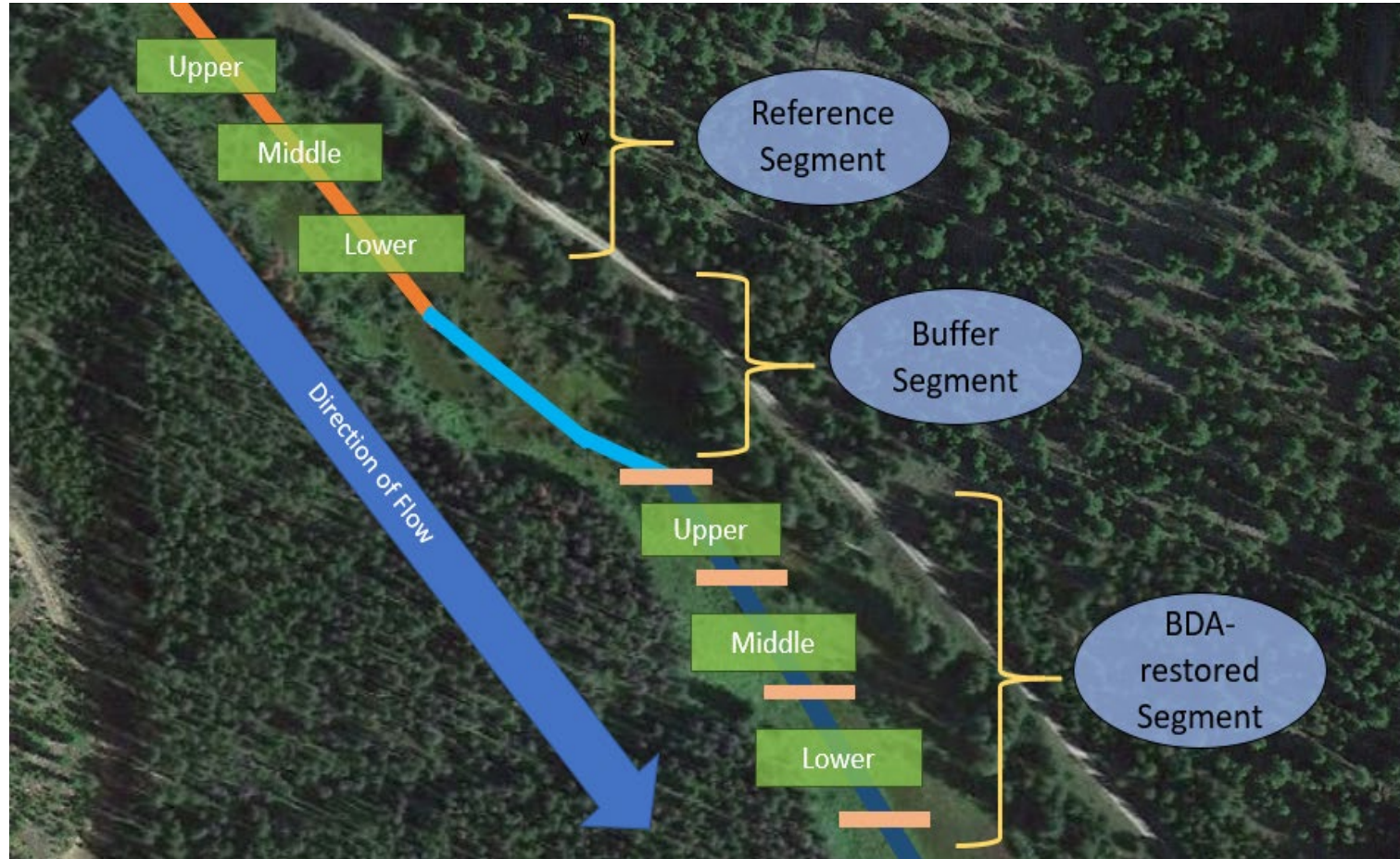
**Fish Creek**



**Tepee Creek**

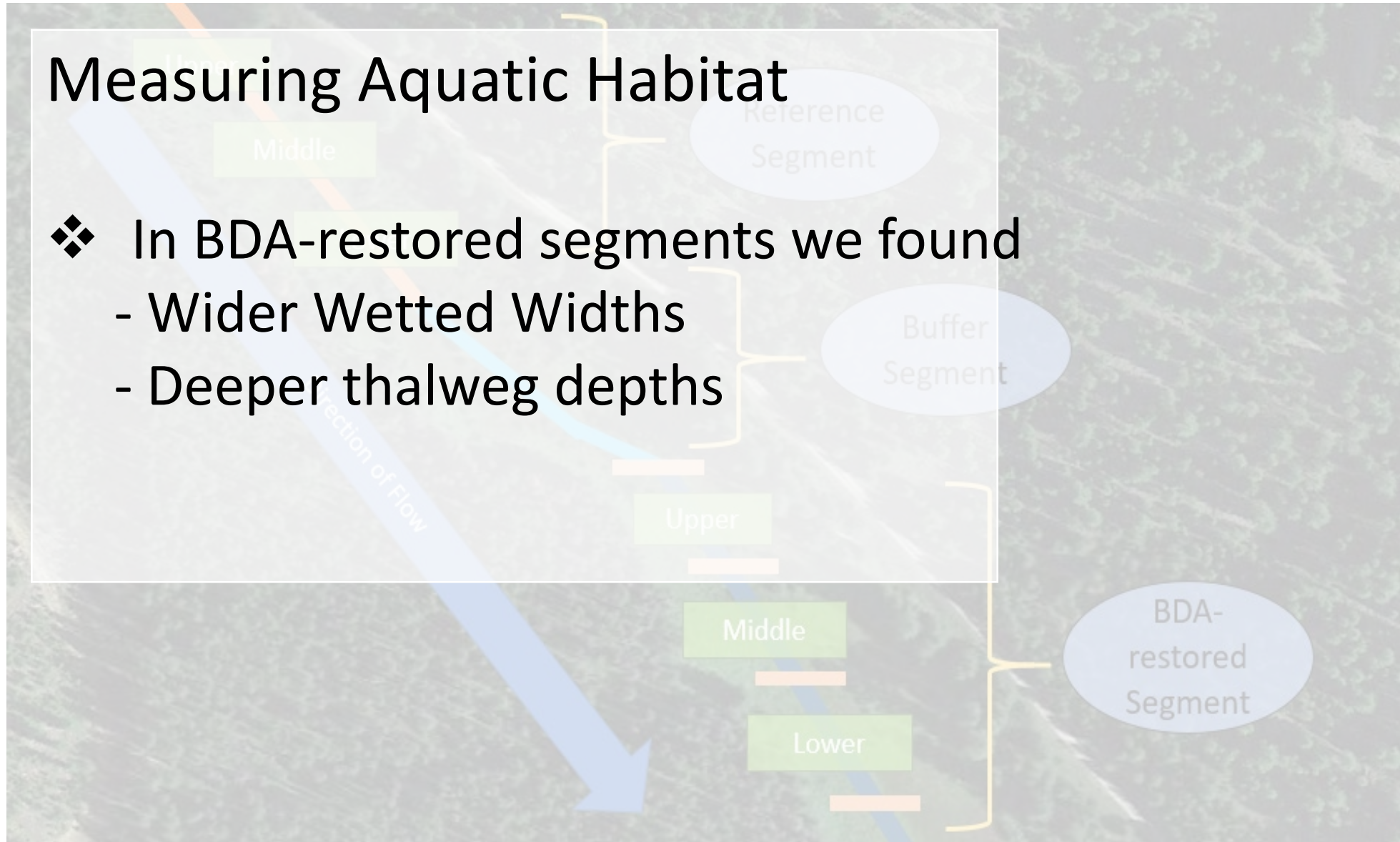


# Study Design



# Measuring Aquatic Habitat

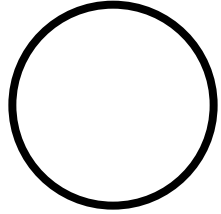
- ❖ In BDA-restored segments we found
  - Wider Wetted Widths
  - Deeper thalweg depths



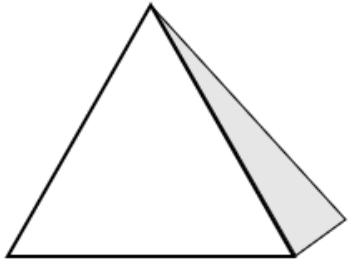
# Sampling

## Macros

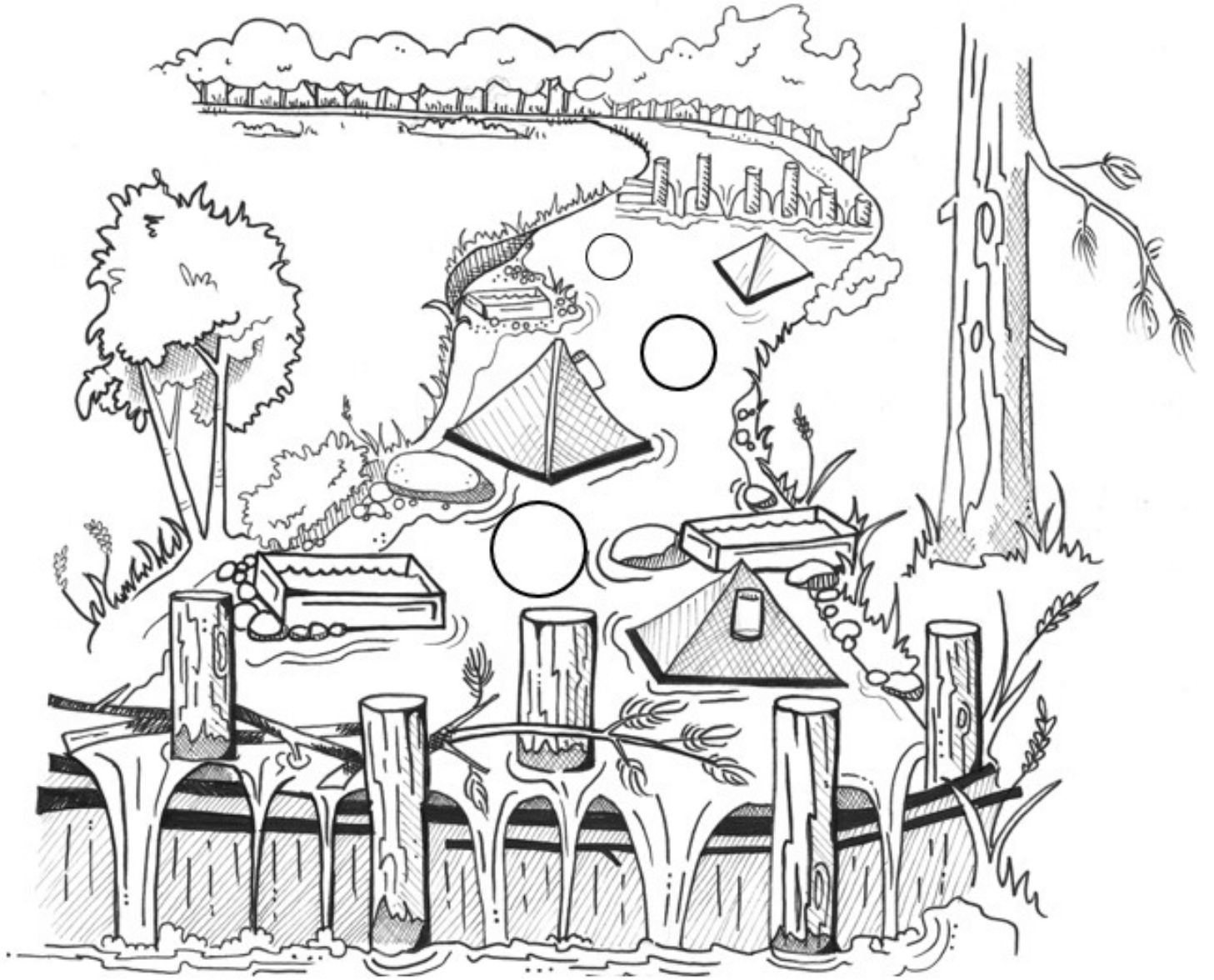
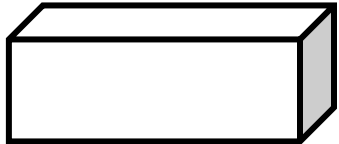
Benthic



Emergence

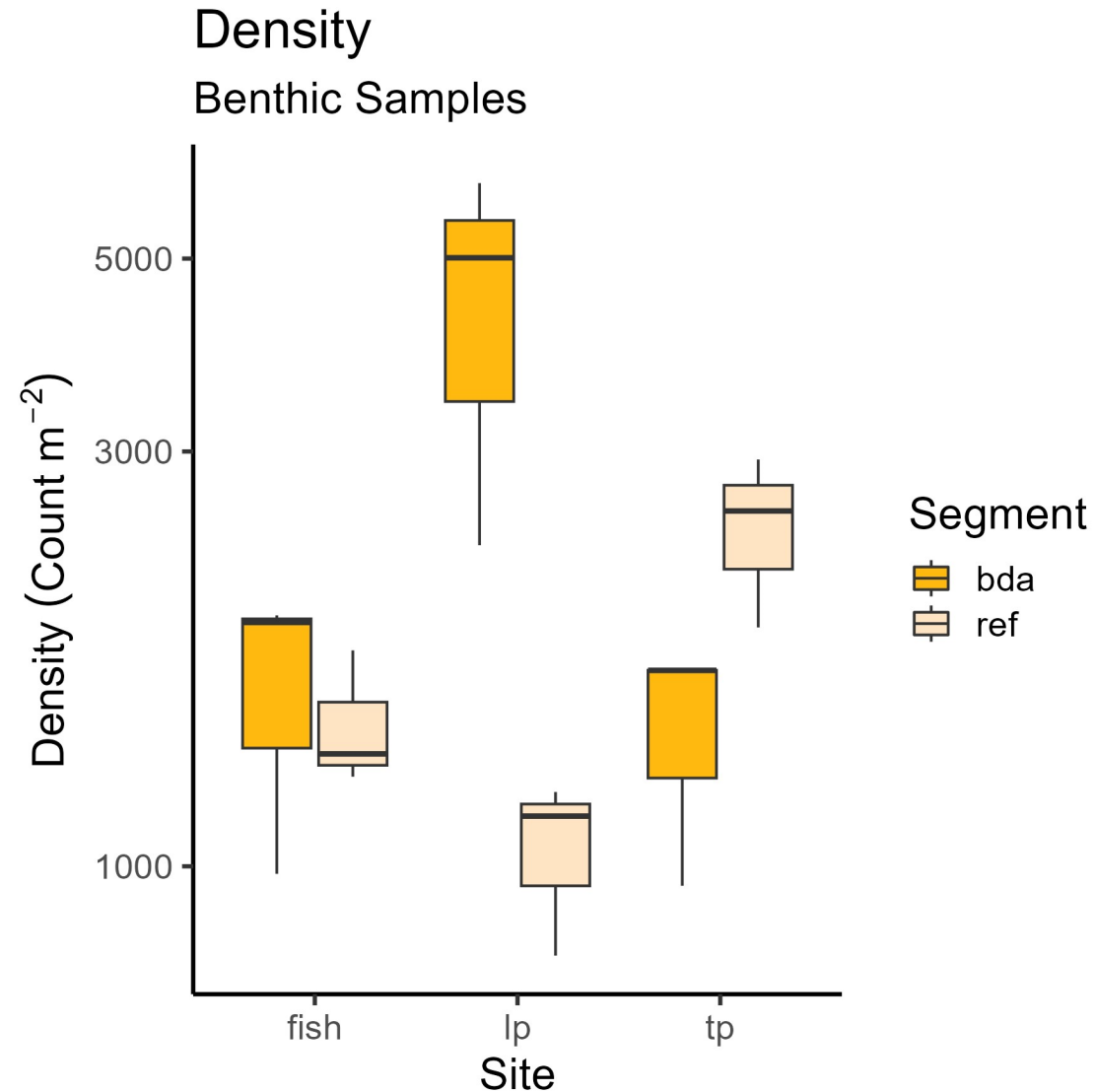


Pan

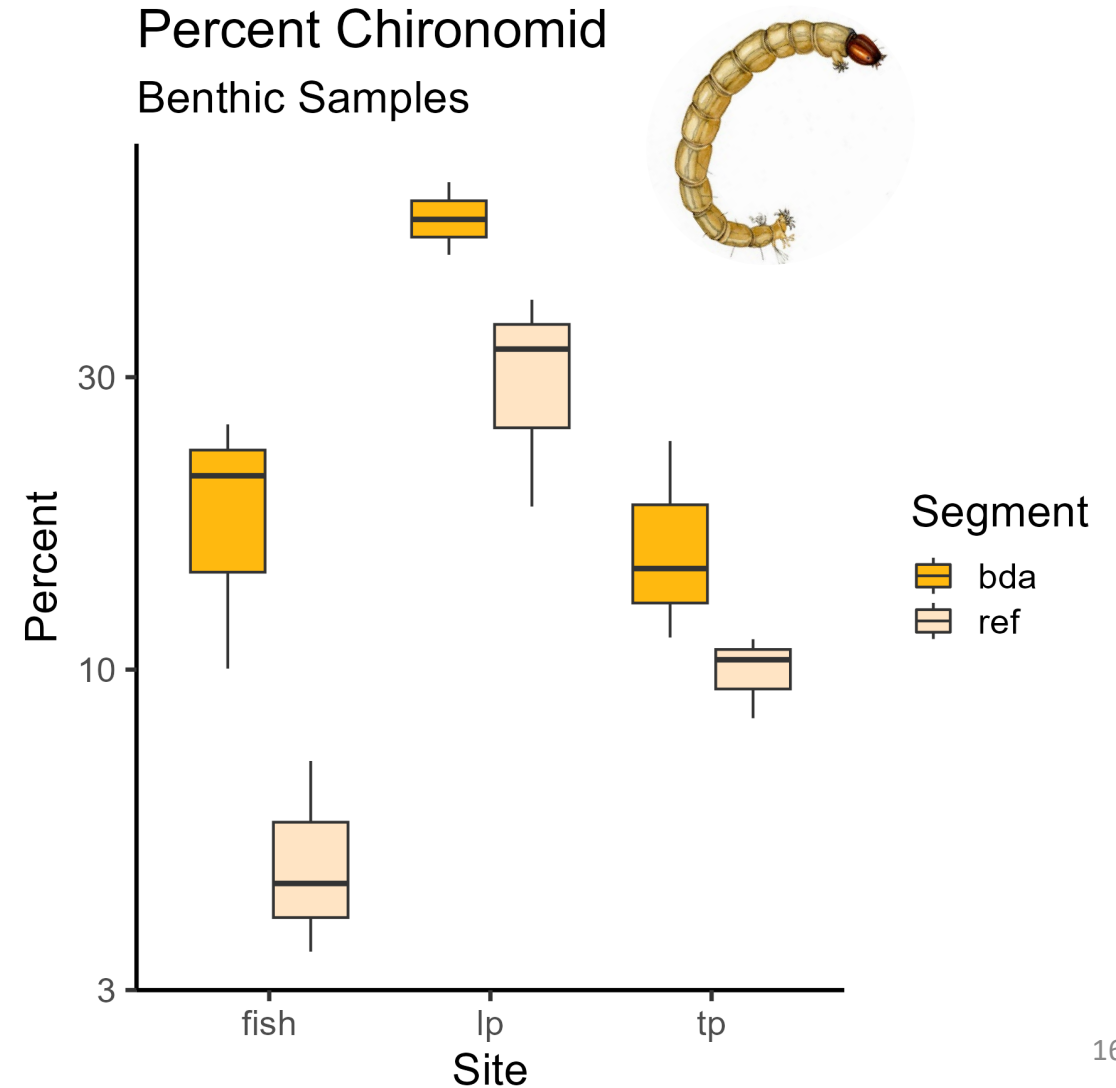
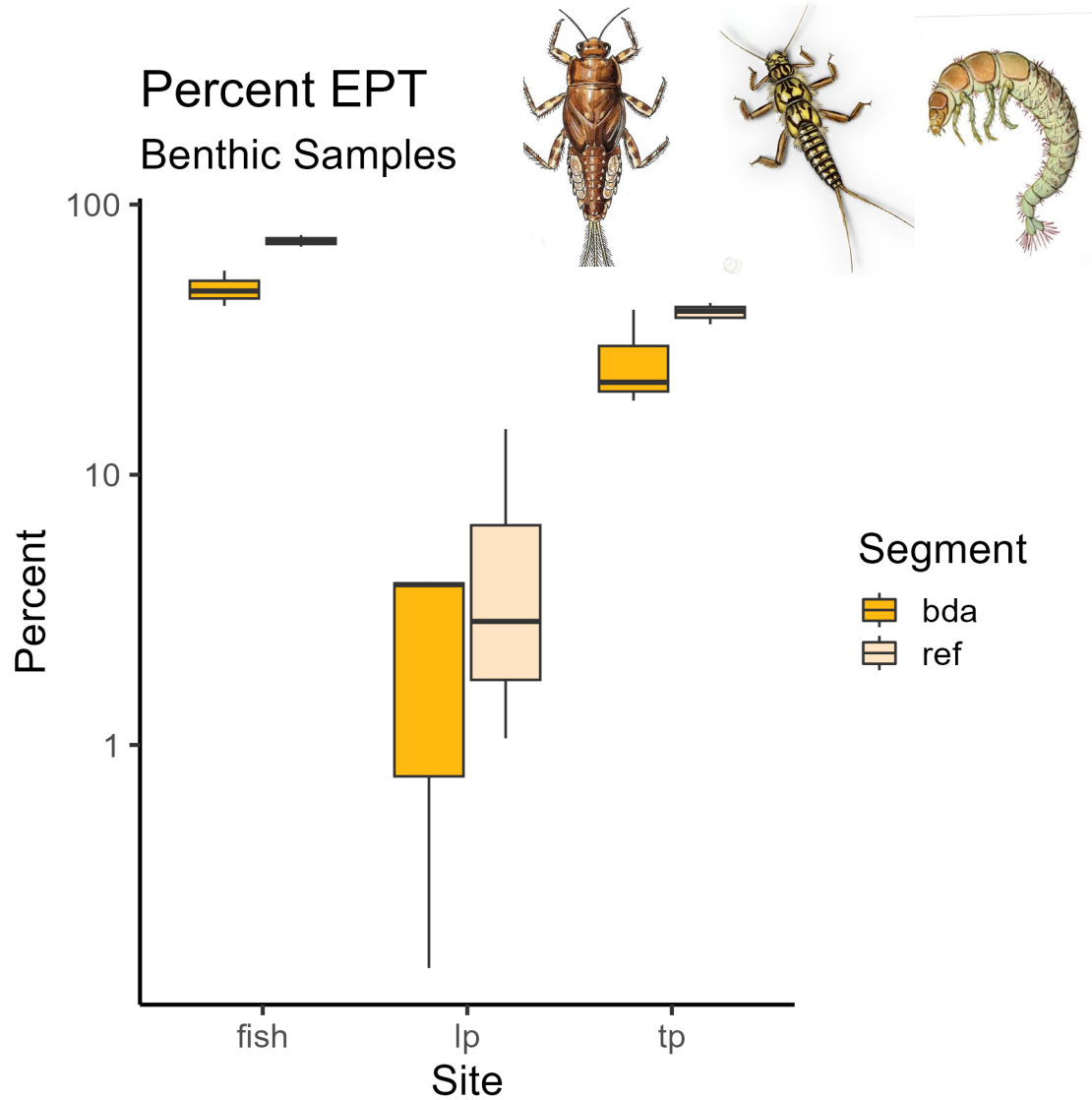




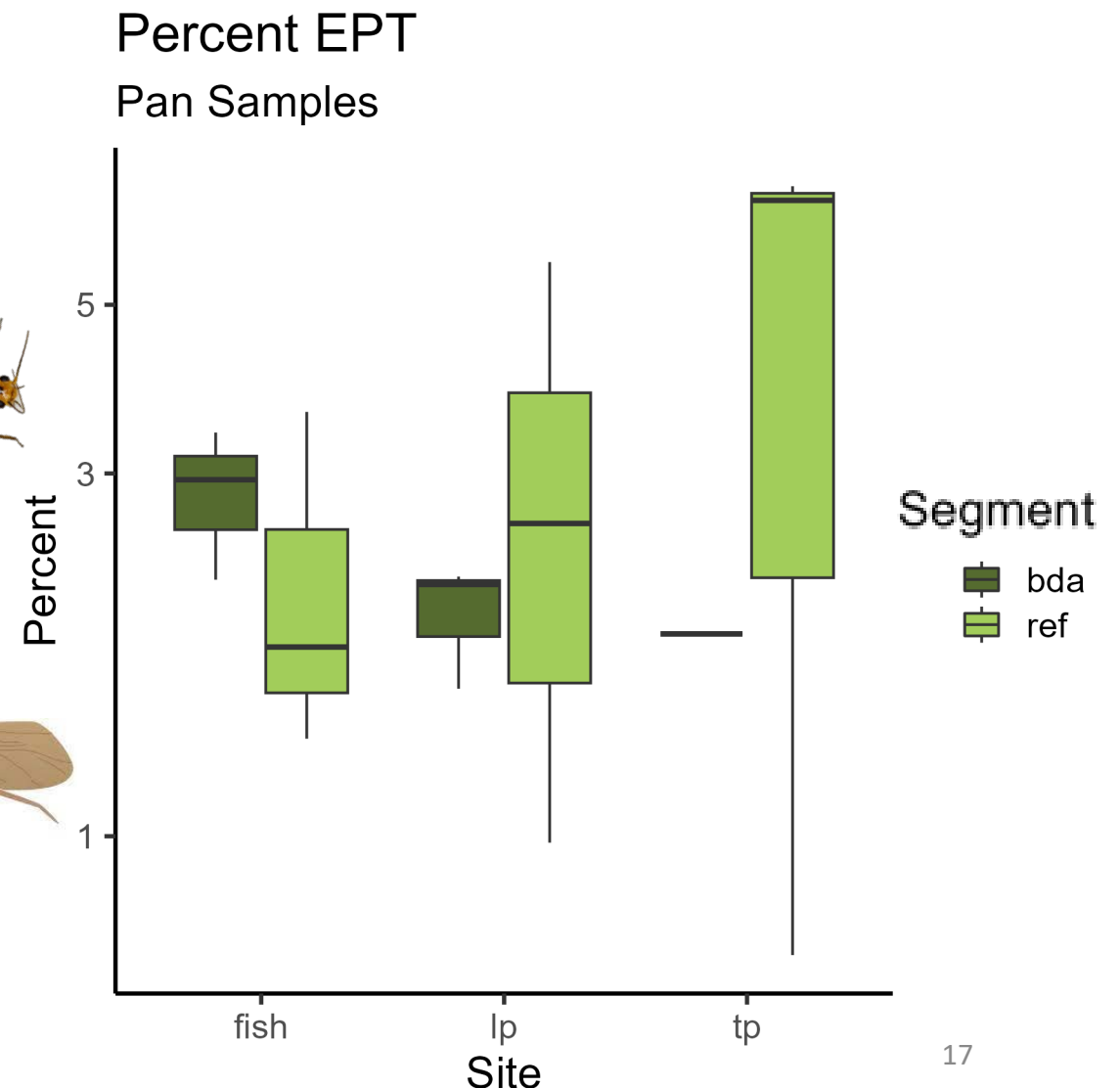
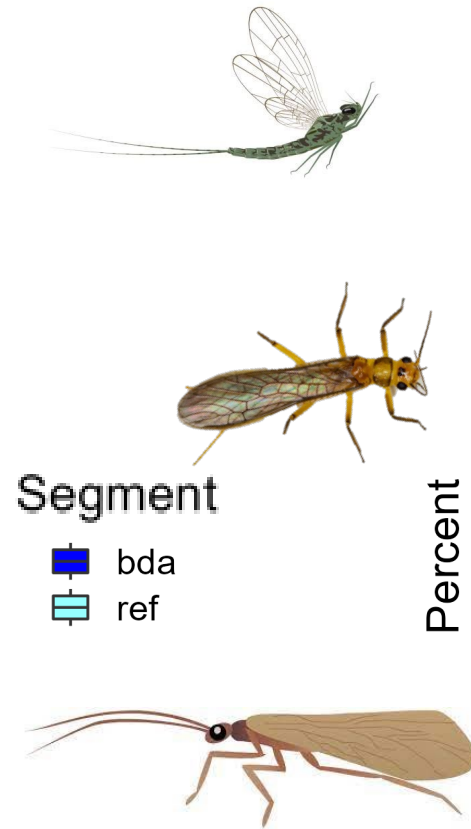
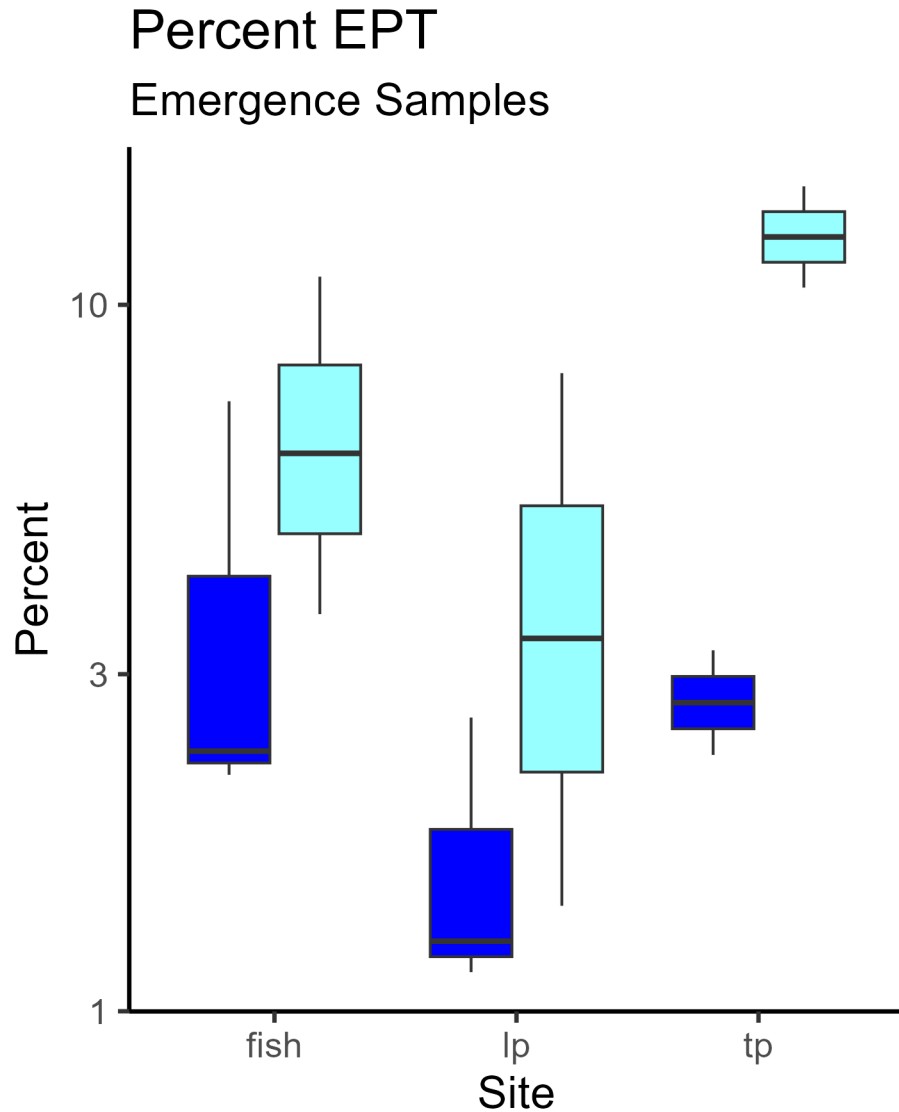
# Q1: How do BDAs affect composition of benthic macroinvertebrate communities?



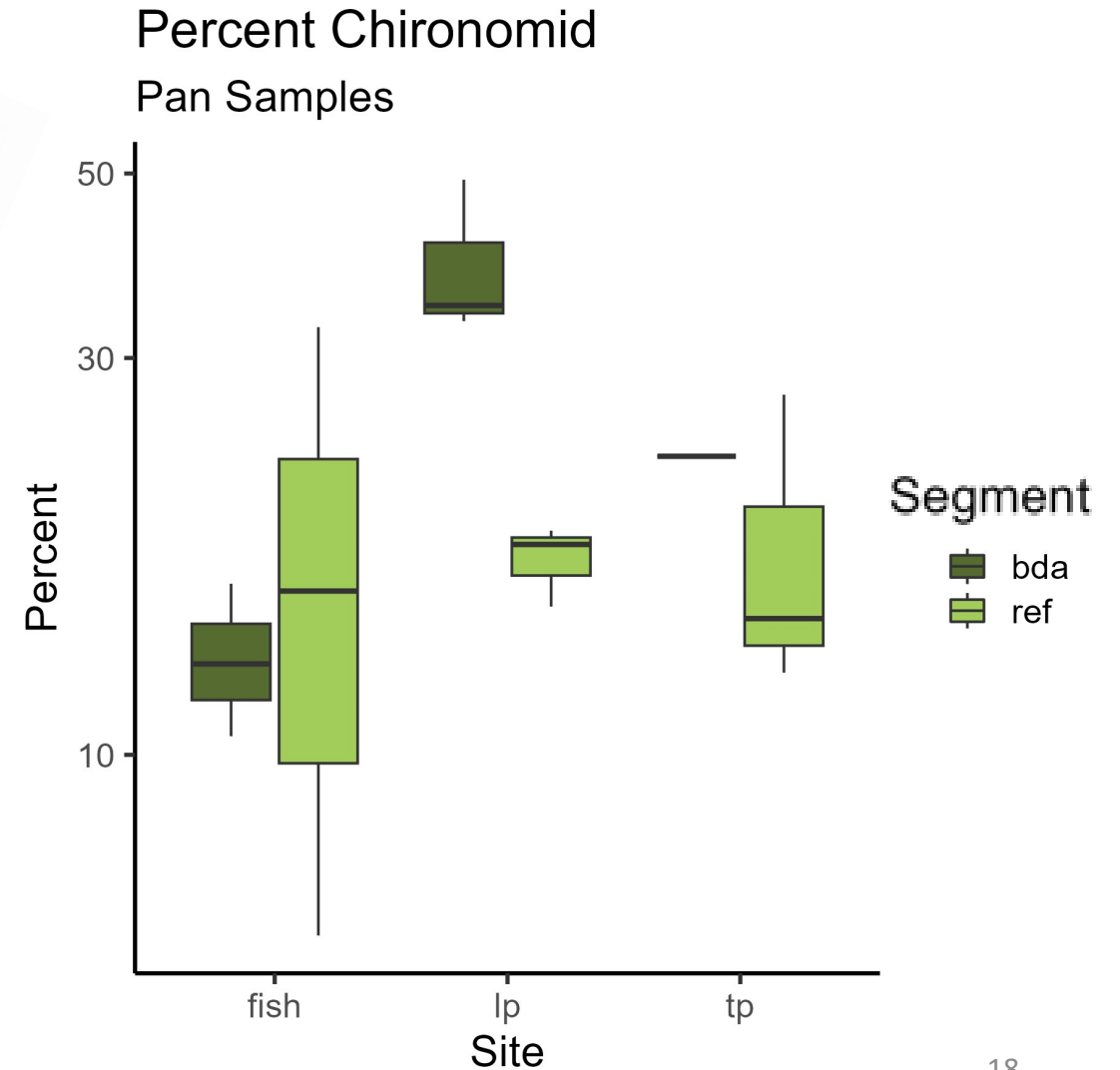
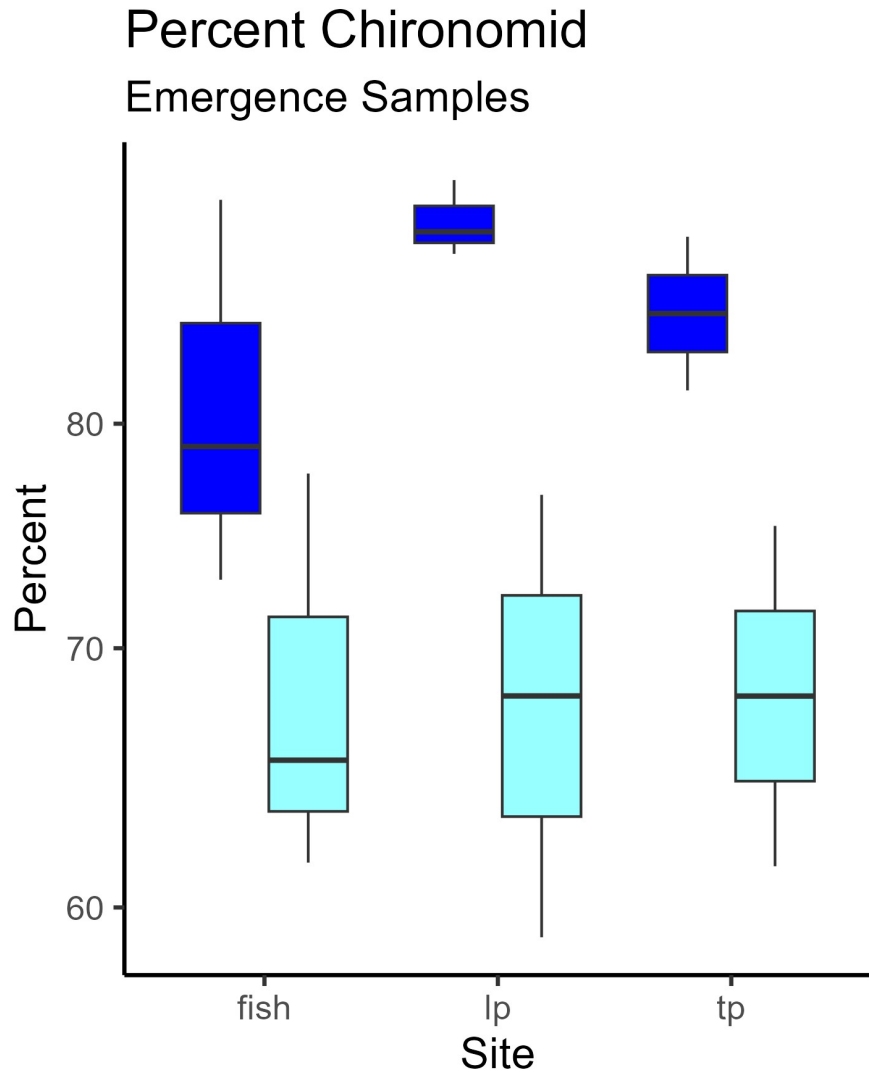
# Q1: How do BDAs affect composition of benthic macroinvertebrate communities?



# Q2. How do BDAs affect the composition of emergence and infall?



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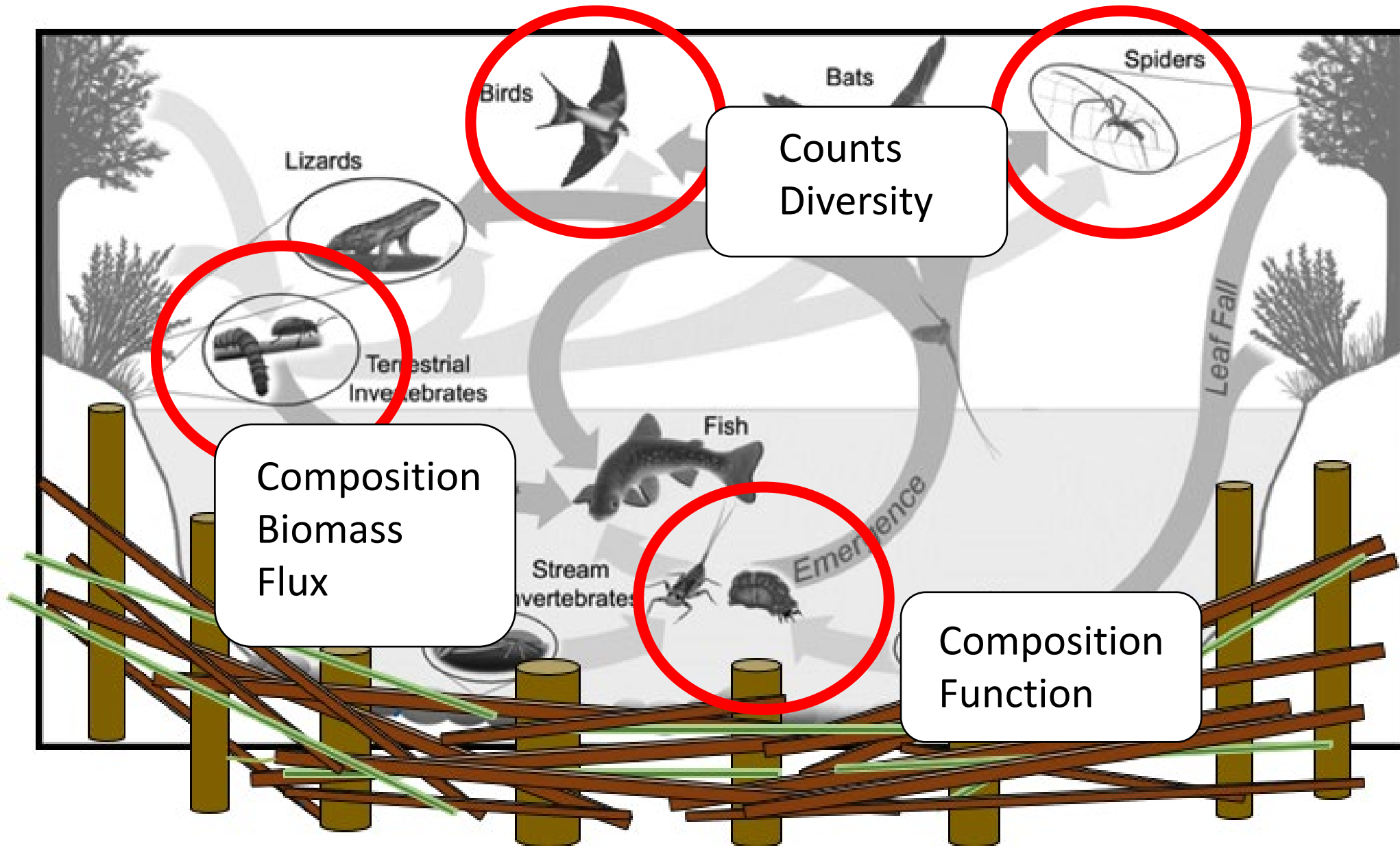
## Summary

### Q1: How do BDAs affect the composition of benthic macroinvertebrate communities?

- Higher density of benthic macroinvertebrates in BDA-restored segments
- Higher percent of tolerant taxa in BDA-restored segments

### Q2: How do BDAs affect the composition of emerging insects and macroinvertebrate infall?

- Higher percent of tolerant taxa emerging and falling back into BDA-restored segments



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