**Biodiversity Learning Objectives**

**Students will:**

Understand that evolution is the source of biodiversity

Be able to explain the evolutionary mechanisms of natural selection and genetic drift

Understand the levels at which evolution and natural selection act.

Be able to predict evolutionary outcomes (in small versus large environment, in selective environment)

Understand some of the consequences of a small population size.

Be able to explain the biological species concept.

Be able to identify different ways populations can grow (exponentially, logistically)

Understand the differences between r- and k-selected species

Understand and be able to identify various ways in which species interact and the effect on each species’ fitness.

Understand how species fit on trophic levels and that energy transfers between these trophic levels are inefficient.

Understand the effect of a keystone species on community diversity

Understand top-down versus bottom-up control of community structure.

Understand that climate (specifically temperature and rainfall) influence the biome at a particular location.

Be able to place the current trends of extinction in context with historical extinction events

Appreciate the effect of invasive species on biodiversity

Have awareness of some of the invasive species problems in Minnesota.

Understand how economic value is placed on biodiversity

Understand the pros and cons of placing economic value on biodiversity.

Understand how the field of conservation biology relates to the field of environmental science.

Understand how various species are used by conservation biology to work toward conservation.

Be able to identify key pieces of legislation about biodiversity and their effects.