

**CONARD ENVIRONMENTAL RESEARCH AREA (CERA)
of GRINNELL COLLEGE**

The Conard Environmental Research Area (CERA), named to honor the inspiring Grinnell College faculty member, botanist Henry S. Conard, is a diverse area used for teaching and research by students and faculty. It preserves and, through restoration, recreates a part of Iowa's vanishing natural heritage, providing a resource for the entire college, local schools, environmental groups, clubs, and the general public.

In 1968, the college acquired these 365 acres. Shortly thereafter, a system of all-weather roads, a laboratory for 24 students, an apartment for the manager, and the 14-acre pond were constructed, and forty-five acres of cropland were planted with prairie grasses.

In 1987, an additional 80 acres of cropland were planted with prairie grasses. Between 1990 and 1996, over 30 of these acres along the entrance road and south of the lab were supplemented with forbs. Over 70 species are now present. At the same time, annual burning and clearing were in progress to restore 50 acres of degraded oak savanna and woodland. Seeding, burning, clearing, and exotic species control are continually used to maintain and increase the diversity of habitats and native species throughout CERA.

In 1997, experimental plots were established in both prairie and oak forest to study the effects of fire on these habitats.

Regulations

- Motorized vehicles are allowed only on the roads shown on this map. Please park in the designated areas.
- Bicycles may be used on roads and mowed firebreaks, but not on the woodland trails. Horses are prohibited.
- Dogs on leash may accompany hikers.
- We encourage you to hike the marked trails or mowed firebreaks. You may leave the trails, but please do not enter the experimental plots. Do not disturb any equipment, flags, stakes, or markers; they may be part of an ongoing study.
- **Removal of anything is prohibited.** Please do not pick flowers or disturb plants, fungi, or animals. Fishing and hunting are prohibited.

**For additional information, contact:
CERA Director,** Department of Biology
(641) 269-3172, or
Larissa Mottl, Bio. Field Stn. Manager
(641) 269-4717, mottll@grinnell.edu
www.grinnell.edu/academic/biology/cera/

A: This prairie is burned every fall to demonstrate the effect of bare soil during the winter and the rapid warming of the soil and growth of certain plants in the spring.

B: Deaneer Prairie has been seeded with over 80 species. It is the most diverse prairie at CERA with legumes and composites well represented. Deaneer Prairie is burned every 2-3 years.

C: Perley Prairie has been seeded with over 50 species. Its variable topography supports species that like well-drained soil as well as others that thrive in moist soil. Thimbleweed, compass plant, pale purple coneflower, and false boneset are abundant.

D: This prairie has not been burned since 1992. All organic material accumulates and decays naturally. The grasses are much less vigorous in this prairie, making forbs more visible throughout the summer.

E: A series of experimental prairie plots, half burned each spring and the other half left unburned since 1997, allow students to document the effects of fire on growth, flowering, and seed production of forbs and grasses and on other prairie life. Another series used for research and demonstration includes plots that are burned in different seasons: spring, summer, and fall.

F: These experimental burned and unburned plots are used by students in biology classes to study the effects of fire on plant, animal, and microbial life of the forest.

Lab Prairie: The Lab Prairie has been seeded with over 50 species. Like Perley Prairie, this prairie's variable topography supports a wide range of species. Little bluestem, side-oats grama, and leadplant thrive in the infertile clay soil along the western edge, while tall grasses, sunflowers, and blazing stars are abundant along moist seeps.

Oak Savanna: In Iowa it once formed the boundary between prairie and forest, but is now the rarest community. This savanna is still being restored from unplowed pasture. It supports abundant prairie violet, bead grass, and short panicum grasses as well as purple oxalis, New Jersey tea, cream gentian, and forbs that thrive in partial sunlight.

Oak Woodland: These burned woodlands develop more diverse groundcover when fire-intolerant trees are removed and sunlight penetrates the canopy. Bottlebrush, Virginia wild rye, brome, and bent grasses, Pennsylvania and other sedges, and numerous forbs carpet the ground.

Oak/Hickory Forest: This area was probably forested for 1000 years until a railroad company logged it in the 1860's. Over the last 140 years, an upland forest canopy of white oak, shagbark hickory, red oak, basswood, and ironwood naturally re-established itself. This area now harbors a rich understory of spring ephemerals, as well as other forest grasses and forbs and an abundance of wildlife.

Riparian Forest: Riparian forest on alluvial soil consists of green ash, walnut, silver maple, cottonwood, and box elder. Ephemeral ponds where the Skunk River once meandered are breeding grounds for amphibians.

Walnut Plantation: The black walnut plantation was planted in 1970 with white pines interplanted to encourage straight growth. Plants typical of riparian forests may be found beneath and adjacent to the tree canopy provided by the plantation.

Hillcrest, Big Basin, NW Lab, Dam, Wilson and Southeast Prairies: These prairie reconstructions have not been enriched with forbs, but some of the more aggressive species have colonized naturally. Future studies in prairie restoration will use these areas.

Perry Pond: Perry Pond was constructed in 1972 to provide a site for study of aquatic habitat. The 14-acre pond averages only about six feet deep, but supports largemouth bass, bluegill, golden shiner, amphibians and invertebrates. It is fed by three intermittent streams.

Graham Lab: This well-equipped lab provides easy access to both field and lab equipment for aquatic studies. A greenhouse was constructed next to the lab in 2000 to provide space for propagating native plants.

Environmental Education Center: Established in 2005, this 7000 sq.ft. facility was designed and constructed using many environmentally-friendly systems and materials, including geothermal heating/cooling, gray water recycling, and renewable and recyclable local building materials. It contains two classrooms, a restoration lab, office, kitchen, and potting room for an attached greenhouse. The EEC is open 9 a.m. – 5 p.m. on weekdays. Restrooms and drinking fountains are available for visitors.

Wind Turbine: Installed in January 2007, the 50 KWh turbine can produce over 90% of the energy needs for the EEC and reduce carbon dioxide emissions from fossil fuel use by 200,000 lbs per year.