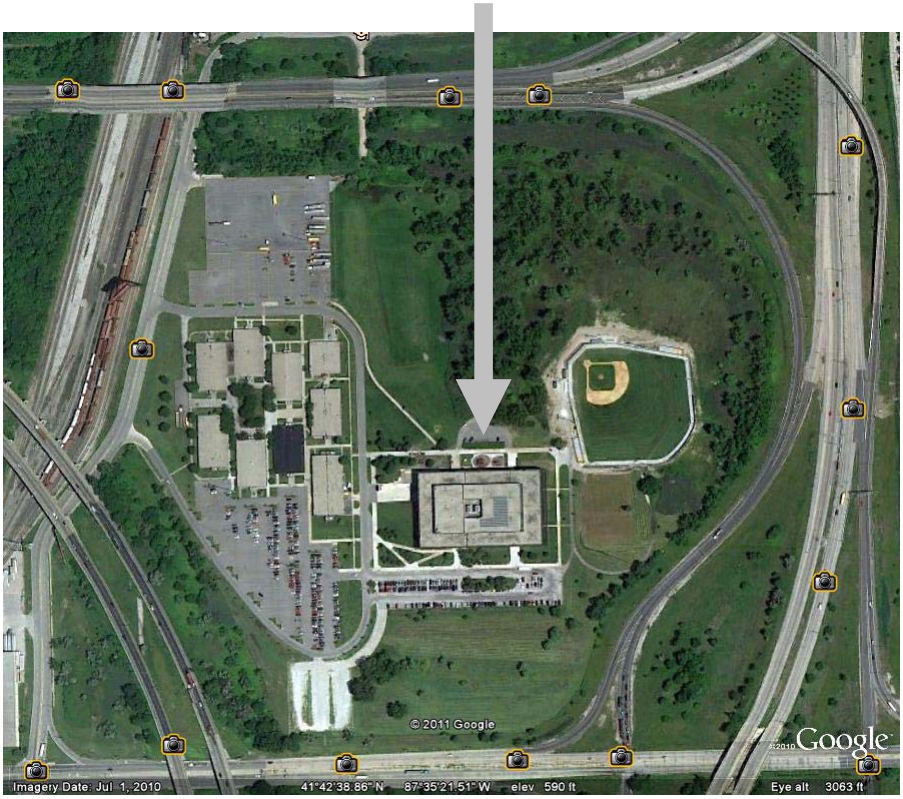
CCC WETLAND SERVICE LEARNING WORKDAY
CCC WETLAND WORKDAY SCHEDULE:
http://www.cccwetland.org/Restoration.html

We will meet in the admin parking lot in back of Olive-Harvey College at or before 8:50 am. The lot is at the north end of OHC, the opposite side from the main entrance.



PLEASE TAKE NOTE OF THE FOLLOWING:

1. Wear old clothes that you don't mind getting wet, dirty, or torn.

2. Please wear waterproof boots if you have them.

3. Please bring leather work gloves if you have them; if you don't we will have some.

4. Please be ready to work hard for 3 hours, from 9-noon. You will sign in and sign out. If you do not arrive on time or if you leave early you will get zero credit.

6. The OHC faculty leading the work will be Dr. Oliver Pergams. You can see videos about wetland workdays and Dr. Pergams at https://www.youtube.com/watch?v=op1mzqk3YmE&feature=plcp and http://www.youtube.com/watch?v=Hy4ULRCmIEo&feature=player_embedded.

7. The CCC Wetland has a webpage www.cccwetland.org and a facebook group https://www.facebook.com/groups/cccwetland/.

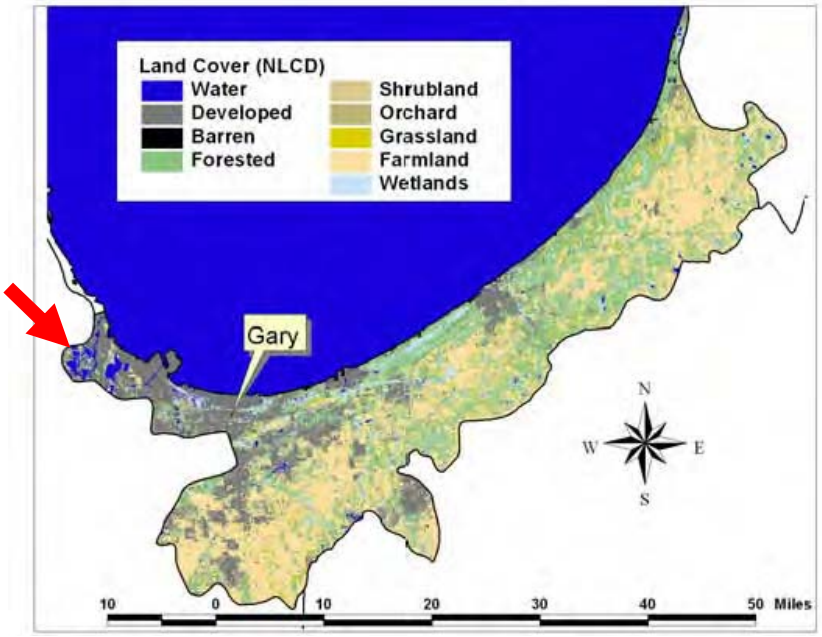
The following pages have some fun facts about the CCC Wetland, and the volunteer work and student research going on there:

WETLAND FUNCTIONS

Wetlands Clean Our Water

Wetlands have the amazing ability to remove harmful impurities from the water we drink and use every day—long before it reaches the pipes that carry it to our homes.

Wetlands exist as part of a watershed. A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place The CCC Wetland is at the extreme NW corner of the Galien-Little Calumet Watershed, which collects water from the south end of Lake Michigan.



One way that wetlands clean water is to clean out excess nutrients. Nutrients like phosphorus and nitrogen and sediments can enter the water system from agriculture and industrial development, and can seriously pollute water and harm the life that depends on it.

Another way that wetlands filter water is to trap and absorb harmful bacteria. Wetlands can filter up to 90 per cent of bacteria in the water.

These are some of the reasons that the federal US Clean Water Act exists, protecting wetlands! Preserving and restoring wetlands preserved means fewer water purification plants have to be built.

Ephemeral Wetlands Are Special Habitat For Frogs & Migratory Birds

The CCC Wetland is an Ephemeral Wetland. Ephemeral Wetlands are wetlands that temporarily hold water in the spring and early summer or after heavy rains. These wetlands dry up, often in mid- to late summer. They are isolated without a permanent inlet or outlet, but overflow in times of high water. Ephemeral Wetlands are free of fish because they dry up in summer, which allows for the successful breeding of frogs. If you were to come here in spring, the frog calls would be so loud we'd hardly be able to hear each other

Migratory birds also use our wetland, as well as birds living here year around. We surveyed 21 bird species here in May of this year, including a number or rarer species, like this Northern Water Thrush.

WILDFLOWERS

Canada Goldenrod (*Solidago canadensis*) - Because of its medicinal qualities it received the scientific name '*solidago*' from the Latin words 'solidus' and 'ago', meaning to "to restore or cure".

Native Americans used it to cure hay fever and other upper respiratory problems. The high tannin content gives goldenrod its astringent quality, making it effective in healing mucous membranes of the nasal passes. They also used boiled leaves as an external lotion for wounds and ulcers.

Native Americans used the seeds of Canada goldenrod for food, especially in emergencies because they contain vitamin C. It has a slight licorice flavor. The leaves and flowers are used as a yellow dye.

Smooth Aster (*Aster laevis*) - The genus name, *Aster*, comes from the Greek word for "star" and refers to the rays flowers radiating from the central disc. The species name *laevis* means "smooth."

Throughout history asters have been associated with the powers of good. They were placed before altars and at doorways to ward off evil spirits.

Great Plains Lady's Tresses (*Spiranthes magnicamporum*) – a beautiful, fairly rare wildflower. We are lucky that we have this tiny orchid here: it is listed as Endangered in many places (including neighboring Indiana). Threats include invasive species (like buckthorn, teasel, & *Phragmites*. Great Plains Lady's Tresses is a perennial, surviving from one year to the next as a large fleshy root. Leaves are present for much of the summer, but wither and disappear about two weeks before flowering in mid-September (as you can see here). Bumblebees are the main pollinator of Lady's Tresses, but other insects may also serve as pollinators.

Purple False Foxglove (*Agalinis pupurea*) - A thin annual plant that tends to sprawl out if no other plants are supporting it. From late summer into autumn, white-throated, lavender or purple flowers line its bending branches. Purple speckles and a pair of yellow blotches mark the blooms' interiors, guiding bumblebees to the flowers' nectar.

Both Purple False Foxglove & Nodding Lady's Tresses are very nice plants, which tend to indicate high-quality natural areas. We are trying to protect them from invasive species, like teasel.

DRAGONFLIES & MOSQUITOES

Dragonflies have large multifaceted eyes, two pairs of strong transparent wings, and an elongated body. Dragonflies are similar to damselflies, but the adults can be differentiated by the fact that the wings of most dragonflies are held away from, and perpendicular to, the body when at rest. Dragonflies possess six legs (like any other insect), but most of them cannot walk well. Dragonflies do NOT bite or sting.

Ruby Meadowhawk Dragonfly here at the CCC Wetland

Dragonflies are some of the fastest insects in the world: they have been recorded at flying nearly 60 miles per hour. Because they are such strong fliers; a few kinds of dragonflies even migrate. Although mostly found near ponds and streams, they are very skilled fliers and can fly miles from a water source.

One of the benefits of having dragonflies live nearby is that they eat many times their weight in mosquitoes every day. Dragonflies eat the larvae of other insects that live in the water - including mosquito larvae. Dragonflies also eat other kinds of flies and the occasional honeybee. Using a basket-like arrangement of their legs, adult dragonflies can actually catch and eat other bugs while they are flying.

Dragonflies come in many sizes. The average size of a dragonfly is from 1 to 4 inches in length. At the shortest, a dragonfly's life-cycle from egg to death of adult is about 6 months. Some of the larger dragonflies take 6 or 7 years! Most of this time is spent in the larval form, beneath the water surface, catching other invertebrates.

INVASIVE SPECIES - BUCKTHORN

European Buckthorn (*Rhamnus cathartica*) is one of the three main invasive species we are removing. Invasive species are species that evolved in other countries. European Buckthorn evolved in Europe, as you can tell from the name. In Europe it has other plants that competed with it, animals that ate it, and diseases that made it sick. Unfortunately, because it did not evolve here it doesn't have any of those things that kill it here. To add insult to injury, birds love

eating its berries, and so its seeds get spread all over.

Dr. Pergams experimented and wrote a scientific paper on the best way to kill Buckthorn. We first cut it down to a stump, then paint the stump with the herbicide Rodeo (glyphosate for wetlands). If we don't use the herbicide it doesn't die. Instead new sprouts come out between the top of the stump and the ground.

INVASIVE SPECIES - TEASEL

Cut-Leaved Teasel (*Dipsacus laciniatus*) - Teasel comes from Europe. It was introduced to North America as early as the 1700's. Another species, *Dipsacus fullonum,* was introduced on purpose. As you can imagine, the heads were used to "tease" apart cotton and cloth. This species, cut-leaved teasel, was probably introduced by accident along with the other species. Teasel has spread rapidly in the last 20-30 years. This rapid expansion probably was aided by construction of the interstate highway system. Teasel has colonized many areas along interstates. Teasel is also used in flower arrangements, which has probably helped it to invade. We will eliminate both Teasel and *Phragmites* using herbicide and controlled burning.

INVASIVE SPECIES - PHRAGMITES
Student Researcher – MR. ARMANDO GAETA

Phragmites australis (common reed), is a wetland plant species found in every U.S. state. It can grow up to 10 ft. high in dense stands and is long-lived. *Phragmites* is capable of reproduction by seeds, but primarily does so asexually by means of rhizomes (ground-level crawlers). Recent research has now shown that native and invasive genotypes of this species currently exist in North America. The invasive type is particularly bad in the eastern states

along the Atlantic Coast, across much of the Midwest, and in parts of the Pacific Northwest.

It is likely that the introduction of type M material has occurred sometimes in the early part of the 19th century, probably at several Atlantic coast ports. In the 19th but particularly in the late 20th century, *P. australis* began invading fresh and brackish wetlands in North America greatly expanding its range and abundance. Modern populations show a striking range expansion of the invasive haplotype. Type M has entirely replaced native types in New England, expanded to the southeast where no historic *P. australis* populations were known, and is becoming prevalent in the West and Midwest.

We are currently confirming that the *Phragmites* type here at the CCC Wetland is the invasive type M. If this is the case, we will remove all type M through prescribed burning and herbicide. In the unlikely event it is a native type, we will reduce (but not eliminate) the population in order to increase the biodiversity of the wetland.

Dr. Pergams is an Illinois licensed Pesticide Operator for public areas (Rights-Of-Way), and is Steward of an Illinois Nature Preserve. He is highly qualified to lead restoration of natural areas.

In general, prescribed burns kill invasive vegetation (which has not evolved with fire) but not native vegetation (which has evolved with fire). Prescribed burning will be done in a safe and highly controlled manner with the help of Nature Conservancy professionals.