



Frequently Asked Questions

What is the Hitchcock Oak Inventory Project?

The Hitchcock Oak Inventory Project seeks to document the health and condition of the oaks at Hitchcock Nature Center through a volunteer-led, multi-year digital data collection effort. The data that volunteers collect will be compiled and analyzed by land managers and researchers throughout the region that are actively trying to understand what's happening to upland bur oaks in the Midwest. In addition, volunteers will also have the chance to protect oak populations at Hitchcock Nature Center by learning how to prepare existing oaks for annual prescribed fire, and by learning how to select, properly plant, and grow acorns into viable majestic oaks in the park for future generations to enjoy.

Why is the project important?

Oak trees, and bur oak trees in particular, are considered one of the keystone species in Midwestern woodland communities providing a host of environmental and ecological benefits to humans and wildlife alike. In addition, healthy oak communities have a nearly \$1 billion positive impact on our economy. Golden Hills RC&D provides an excellent article detailing the importance of oaks in the Midwest.

Unfortunately, human activities alone are reducing Iowa's oak woodlands by an average of 4,500 acres per year and the recently documented widespread decline and death of so many oaks threatens to drastically further reduce this species' vital role in our economy and natural areas. The swiftness of this decline and death makes it difficult to fully understand and increases the threat to the ecological stability of the Midwest's natural areas.

The Hitchcock Oak Inventory Project is a first-of-its-kind effort aimed at providing a high level understanding of how the recent death and decline of bur oaks is actively moving through Hitchcock Nature Center. Data collected by project volunteers will be provided to researchers and land managers for analysis and will hopefully provide insights for those trying to understand the disease and how best to plan and manage for the sudden loss of one of the most important species of the Midwest's ecological systems.



What's causing the decline and death of so many oaks in our area?

While the exact causes aren't clear, researchers suspect a changing climate, degrading ecological conditions, and the possible presence of a previously unknown fungus known as *Tubakia iowensis* may be to blame. Different species of *Tubakia* are somewhat common among certain species of oaks, but they rarely result in mortality. The newly discovered *T. iowensis* may be more harmful than other forms of *Tubakia sp.* but researchers need to conduct more research before they can say for sure how this and other factors are impacting upland bur oaks.

What do the symptoms look like?

Symptoms present as dark brown spots on the veins of the leaf with larger portions of the leaf affected in brown wedge-like sections. Often times, the leaves die by mid- to late-summer, leaving trees looking like it's late fall when it's only August or September. Several good images of the symptoms can be found through online searches.

What kinds of oak trees are affected?

The decline and death of oaks is most commonly seen in oaks of the white oak family, and more specifically, upland bur oaks (*Quercus macrocarpa var. oliviformis*). Upland bur oaks are the most common oak species at Hitchcock Nature Center and will be the focus of the Hitchcock Oak Inventory Project. Red oaks (*Quercus rubra*), while not affected by the widespread threat, are also present at Hitchcock, and will be included in the inventory.

Are bur oak trees outside of western Iowa affected?

Yes, many Midwestern states have been experiencing similar bur oak decline and death for several years. It was not until recently (within the last 5 years or so) that symptoms were noted to be so severe in western Iowa and at Hitchcock Nature Center.

What goals does the Hitchcock Oak Inventory Project hope to achieve?

The Hitchcock Oak Inventory Project hopes to:

- 1) Supplement the efforts of researchers studying the widespread rapid decline and death of bur oak trees in the Midwest by providing a high level overview of the types and spread of symptoms at Hitchcock Nature Center and surrounding areas;
- 2) Provide Pottawattamie County Conservation land managers with a better understanding of how the natural resources at Hitchcock Nature Center will be affected by this disease;
- 3) Introduce and educate members of the public on a unique citizen science opportunity unlike any in the region;
- 4) Promote the protection and propagation of oaks at Hitchcock Nature Center; and
- 5) Allow people to enjoy the outdoors by traveling off-trail at Hitchcock Nature Center.



How will GPS located field-data be collected?

Pottawattamie County's GIS Department has developed a smartphone app that possesses the capability to locate trees by documenting a tree's latitude and longitude. In addition to a tree's latitude and longitude, the smartphone app has the capability to document several characteristics of each tree including indicators of health, condition, setting, wounds, and many other types of data that will be beneficial to researchers studying the disease. The smartphone app is easily downloadable and very user friendly. The data collection process at each tree only takes a few minutes.

Why are volunteers necessary for this project?

The primary limiting factors to gaining a better understanding of this disease are personnel, time, and funding. Researchers and county staff simply don't have the time or man-power to adequately and quickly gain an understanding of how this disease is affecting our landscape. In addition, research and data collection efforts are costly. Pottawattamie County Conservation believes that members of the public can be provided the tools and training to supplement researchers' needs. Through project specific training, a user-friendly smartphone data collection app, and an experienced and knowledgeable volunteer/project coordinator, Pottawattamie County Conservation believes members of the public can play a critical role in helping researchers better understand what's happening to our oaks and our landscape.

How will volunteers be participating in the Hitchcock Oak Inventory Project and what will the project involve?

The Hitchcock Oak Inventory Project hopes to catalogue the location, health, and condition of oak trees at Hitchcock Nature Center. Using their smartphones and a specially designed smartphone app, volunteers will receive specific training and will be asked to document the location and attributes of individual oak trees at Hitchcock Nature Center over the course of the spring, summer, and fall seasons. More specifically, volunteers will be allowed to travel off-trail at Hitchcock Nature Center collecting data points at oaks trees with the smartphone app as they travel. These data points will be uploaded by volunteers to Pottawattamie County's GIS department through a very simple process (the process is explained in the training sessions). To avoid duplicate documentation in the field, volunteers will mark trees that have been documented with aluminum tree tags that possess a unique number. The unique number will also be entered into the smartphone to correspond with that particular tree. The collection of this data will be loaded into GIS software for analysis.

What will volunteers need to provide in order to participate?

Volunteers will need to provide the following: 1) a smartphone, 2) appropriate attire and footwear for off-trail travel at Hitchcock Nature Center, and 3) their time. Pottawattamie County will provide the rest.



What sort of training will be provided to volunteers looking to participate in the project?

Pottawattamie County Conservation, in partnership with The Naturalist School, will provide three trainings that will equip volunteers with the information and tools they'll need to participate in each phase of the project.

1) Spring (February 24th, 8am) During the spring training volunteers will gain a better understanding the project, oak ecology, and on the identification and effects of fire wounds on oak trees. During this training, volunteers will also be provided the links to download the data collection smartphone app and will receive training on how to navigate and use the app. Training on the app will be revisited during each training.

2) Summer (June 23rd, 12pm) During the summer, volunteers will learn to identify the outward signs related to the rapid decline and death of bur oaks trees in our region through signs in the trees' canopies.

3) Fall (September 22nd, 12pm) The final training in the fall will educate volunteers on the propagation of future oaks (acorn selection and planting) and the protection of existing oaks from prescribed fire.

Trainings will be repeated every year until the project's completion.

Are there formal requirements for people interested in volunteering?

Yes, individuals interested in participating will need to formally enroll as a Hitchcock Nature Center volunteer which will require the completion of a background check. In addition to being able to participate in the project, enrollment as a volunteer provides additional benefits. Learn more about all the benefits volunteers receive on Pottawattamie County Conservation's website under the Support tab.

Does it cost anything to participate?

No, there is no cost to participate in the project.

Will volunteers need to commit to the entire project to participate?

No. Volunteers can commit as much or as little of their time as they're able. The project is a multi-year project that will provide ample opportunities for participation. However, to properly collect the required data, volunteers will need to attend corresponding training. If a volunteer has not been trained, we ask that they not participate in that phase of the project, as this may compromise the integrity of the data collected.

What if I miss a training?

Depending on staff and project partner availability, additional or follow-up trainings may be provided.



How physically demanding will this project be for volunteers?

The project will primarily occur off-trail at Hitchcock Nature Center, a 1,268-acre preserve located on the rugged western edge of Iowa's Loess Hills. Accordingly the project will be physically demanding for some. Participants should consider their level of physical fitness and any mobility restrictions prior to participating. The project may not be a good fit for young children (under 15 years of age). In addition, appropriate footwear and clothing for off-trail travel will be encouraged for a safe and enjoyable off-trail experience.

What things should I be aware of during off-trail travel at Hitchcock Nature Center?

Project participants should expect to encounter areas that are steep, uneven, and difficult to access even while on-foot. Participants may also encounter annoying plants (poison ivy and plants with thorns), and hungry and territorial insects (mosquitoes, ticks, and bees/wasps). In addition, the weather in western Iowa can be unpredictable, hot, cold, humid, and wet. Participants should plan to provide their own durable and weather-appropriate clothing and footwear (hiking shoes, pants, and potentially long sleeves are recommended), insect repellent, sunscreen, water, and any other personal requirements they may need while in the field.

While rugged and wild, Hitchcock Nature Center is also beautiful and serene. Participants should expect to encounter one of the area's most beautiful preserves featuring one of the most unique ecosystems on the planet.

How can I become a part of the project?

Interested parties should register for the trainings at www.pottcoconservation.com. After each training, those interested in becoming a volunteer can fill out the required documentation and get started assisting with the project.

