

Hopland Research and Extension Center



Located 120 miles northwest of Sacramento in Mendocino County, the Hopland Research & Extension Center (HREC) is one of nine centers under the University of California Division of Agriculture and Natural Resources. HREC is designed to provide land and resources for researchers, as well as lead and facilitate

extension and education programs within the broader California agricultural and natural resource learning community.

HREC research is focused on finding better ways to manage natural resources and conduct sustainable agricultural practices in animal and veterinary science, entomology, plant ecology, public health, range management, watershed management and wildlife biology.

Predicting Disease Risk

Novel diseases of humans, animals and plants are being discovered all the time. Predicting whether a new disease will become an epidemic or fizzle out is key.

A research team at Hopland REC monitored the spread of a disease, barley yellow dwarf viruses, vectored by aphids to various assemblages of wild grass species in plots. A given population of hosts is not affected equally by the disease. Ones that show no symptoms when they are infected (tolerant hosts) can still transmit the disease to more susceptible hosts. The team found that a mix of susceptible and resistant plants was most likely to result in an epidemic.

Preliminary results indicate:

- Increased disease transmission is related to loss of biodiversity
- Human-induced changes, such as climate change, can increase epidemic risk. Since tolerant hosts can be people, animals or plants, this system can serve as a general model for disease spread and epidemics

Research conducted by Charles Mitchell, Miranda Walsh, A. Marm Kilpatrick, Fletcher Halliday



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Turkey Vulture Nesting Secrets

There is surprisingly little documentation on turkey vultures in California, despite their apparent ubiquity. A research project at Hopland hoped to determine whether this was as abundant a species as it appeared to be and what its nesting requirements were.

Turkey vultures are cavity nesters—they will nest in caves or in any large, empty hollow space. It turns out they are also a common nester in oak woodlands of California. Turkey vultures are large birds, with a 5.5' wingspan, and they need a large nesting cavity. When they find one in an old-growth oak tree, they enter the cavity all the way to the bottom, lay two eggs, and raise their young.

Mendocino/Lake County UCCE Director/Advisor Greg Giusti was interested in assessing how many of the trees in the 5,000 acres of Hopland's oak woodland actually provide the habitat elements necessary for successful nesting. Young trees cannot provide these big hollow cavities, which come with age and decay, helped along by lightning strikes. Giusti concluded that only 2–14% of HREC's trees may be large enough to support a turkey vulture nest.

This has policy implications, because current mitigation for woodland take cannot replace old-growth trees with cavities large enough to could support nesting turkey vultures.

Below is a photo of a turkey vulture incubating eggs inside a large 200-year-old blue oak.

Research conducted by Greg Giusti, Bob Keiffer



Outreach, Extension and Education

HREC Public Seminar Series

The Center inaugurated a series of monthly free public seminars in July 2013, inviting speakers who have conducted recent research at HREC. Designed to mirror the diversity of Hopland field research, these seminars draw together members of the local community who are interested to learn more about research and land management knowledge being developed as a result of UC's presence in the community. These seminars also introduce audiences to Rod Shippey Hall, a new resource for the region that serves to host educational events of all types.

UC California Naturalist Program

The new statewide UC California Naturalist Program is based at the Hopland Research & Extension Center. California Naturalist is a certification program developed to foster a committed corps of volunteer naturalists and citizen scientists trained to take an active role in natural resource conservation, education, and restoration. California Naturalist uses a science curriculum, hands-on learning, communication training, and community service to promote environmental literacy and stewardship through discovery and action. Continuing Education Units may be available to course participants.