

## **F26.15 Exploring natural enemies of an invasive insect (oystershell scale)**

### **Overview**

Oystershell scale (*Lepidosaphes ulmi*) is an emerging invasive insect that poses a serious threat to conservation of quaking aspen (*Populus tremuloides*) in the southwestern US. Although oystershell scale has been an urban pest in the US since the 1700s, it has recently spread into natural aspen stands in northern Arizona, where outbreaks are causing dieback and mortality. This is the first documented outbreak of oystershell scale in natural aspen stands. Therefore, there are no scientifically proven strategies for managing oystershell scale in aspen stands, which makes research and development of such strategies an immediate priority. One potential management strategy that has proved successful for other invasive insects is biological control by supplementing populations of natural enemies. The first step in implementing such a biological control strategy, though, is to assess which predators and parasitoids are associated with oystershell scale. The objective of this project is to determine which natural enemies are commonly found in association with oystershell scale in northern Arizona.

### **What the student will DO and LEARN**

Oystershell scale and natural enemy samples will be obtained from the field throughout the spring, summer, and fall by MS and PhD students in the School of Forestry who are studying oystershell scale. During the school year, the student intern will process and analyze these samples in the laboratory. Specifically, the student will use a microscope to identify and count natural enemies that are present in each sample. The student might also help with sampling in the field and temperature threshold studies, depending upon project needs and the student's interests. Training on oystershell scale biology and natural enemy identification will be provided. This is an excellent opportunity for students who are interested in biology, entomology, or forest health to study an invasive insect that has serious implications for the long-term sustainability of aspen forests in Arizona.

### **Additional benefits**

The student will gain valuable experience working in a research laboratory. The student will work closely alongside undergraduate and graduate students in the Forest Entomology lab, which is a great opportunity for students who are interested in learning more about graduate school. Finally, the student will contribute to our efforts to promote and maintain healthy aspen ecosystems in Arizona.

### **Additional qualifications**

Experience using a microscope, working in Microsoft Excel and coursework in forestry, biology, ecology, or natural resources. Experience or demonstrated interest in entomology or forest health is helpful but not necessary.

### **Time commitment**

6 hrs/week for 15 weeks