



American Chemical Society
Orange County Section

College Awards Dinner Meeting

Wednesday, April 23, 2014

Concordia University, Irvine
Grimm Hall Conference Center North, 3rd Floor
1530 Concordia West, Irvine, CA 92612

Registration & Social : 6:15 pm Dinner : 6:30 pm
Speaker Presentation : 7:15 pm Awards Program : 8:00 pm

**Linking Air Pollution with Fire and
Conservation of California Shrublands**
Dr. Edith B. Allen

Department of Botany and Plant Sciences, University of California, Riverside

Abstract: Anthropogenic nitrogen (N) deposition is a global and local problem, with oxidized forms of N in industrial and urban areas and reduced forms of N in agricultural areas. These pollutants are deposited downwind from source areas along gradients that may be as high as ~30 kg N/ha/yr in California, declining to background levels of ~2 kg N/ha/yr. Critical loads (CL) of N deposition have been determined for undesirable impacts on ecosystem parameters, such as loss of diversity and increases in fire. In California more than 35% of desert land area exceeds a CL of 3.2 kg N/ha/yr, while 53% of coastal sage scrub exceeds a CL of 10 kg N/ha/yr. To assess ecosystem impacts of N deposition, studies were done along N deposition gradients and in N-fertilized plots in desert scrub and Mediterranean-type shrubland. Both vegetation types have been invaded by exotic annual grasses. Productivity of exotic grasses is high in areas with elevated N, both in fertilized plots and at high deposition points on the gradient. Native forb diversity decreased by 75% or more at the high N deposition end of gradients and fire is more frequent because the grasses produce high fine fuel loads. Because of the conservation issue of diversity loss and fire hazards associated with N deposition, I recommend reducing levels of N deposition below these critical loads.

Biography: Dr. Allen is a Professor and Cooperative Extension Specialist in the Department of Botany and Plant Sciences, University of California, Riverside. She has a B.S. degree in Biology from Tufts University, Boston, and M.S. and Ph.D. degrees in Botany from Rutgers University, New Jersey, and the University of Wyoming. Her main areas of research interest are restoration ecology, soil ecology, and invasive species ecology, and she has worked in boreal forest to tropical forest, shrublands, grasslands, and deserts, including sites disturbed by various anthropogenic activities, air pollution and nitrogen deposition, invasive species and frequent fire. Dr. Allen has published over 100 research articles, and served as an editor for Restoration Ecology, Invasive Plant Science and Management, and Functional Ecology. She has served on numerous grant review panels for the National Science Foundation, US Department of Agriculture, and other agencies. She is past president of the Soil Ecology Society, and received the professional achievement award from the SES. She is currently principle investigator for a U.S. Geological Survey Powell Center working group to assess the impacts of nitrogen deposition on plant species diversity across the United States.

Reservations: Make your dinner reservations online before **1:00pm** on **April 16, 2014**, through the website www.ocacs.org/collegeawardsprogram.htm. Click the "Register for the Awards Dinner" link and follow directions to register all your guests and pay for their dinners. **Cost: \$22 per person.** Payment options are credit/debit card and PayPal. Please print the PayPal receipt and bring it to the registration desk on the day of the College Dinner. Note that all reservations and payments are final once they are submitted and we cannot accommodate any changes in reservations or refund your payment. Also, we cannot accept any payment on the day of the event.

For more information contact Dr. Allison Gotoh at ocacs.reservation@gmail.com

Directions: From the 405 Freeway, take the Jeffrey-University exit, and then drive west toward UC Irvine. Turn left off University on to Ridgeline, then immediately right on to Concordia. Gate attendant will direct you to free parking in the Main Parking Lot.

