

Ecosystem Genomics and Forest Health Network March 4, 2008 Meeting Summary Davis, California, USA

- Background presentations on (1) tree adaptations, conifer genomics and technology (2) a case study to integrate ecological and genomic approaches to address forest health issues, (3) philosophy, concepts and definitions of "forest health."
- Should we form an Ecosystem Genomics and Forest Health Network?
- > Opportunity to bridge across disciplines and move science from discovery to application.
- At a position to take advantage of technology and genomic information available to assess adaptive genetic diversity and potential in natural forest tree populations.
- An ecosystem genomic approach will integrate ecology and genomics to study and assess forest ecosystems and the interactions of organisms to their biotic and abiotic environment, to better understand patterns and processes at multiple spatial and temporal scales.
- Can genomics improve our understanding of patterns and processes in natural forested ecosystems?
- Genomics for the "forest health" toolbox: a way to determine adaptive genetic diversity and traits (a baseline) of forest tree species to better understand how these species might respond and adapt to environmental change and perturbations, as well as potentially identify populations at risk (e.g., non-native pathogens and insects, drought).
- Identify standing adaptive genetic variation of important traits (a database) to provide information for land managers in seed transfer and deployment strategies for reforestation, restoration, and assisted migration projects, for present and even future biotic and abiotic conditions.
- > Maintain established common gardens across taxonomic and functional groups.
- Evaluate adaptive genetic diversity of regional seed-banks.
- ▶ Use information to prioritize and guide monitoring and conservation.
- Education and outreach needed to inform about ecosystem genomics.
- Use the Ecosystem Genomics and Forest Health Network (EGFHN) as a formal mechanism to connect (both directions) research, databases, and monitoring with land managers and decisionmaking processes.
- ▶ **In conclusion** the meeting organizers will follow up with:
 - 1. Network objectives (aka Mission Statement)
 - 2. EGFHN website development of news, projects, resources, etc.
 - 3. Short- and long-term goals
 - 4. Process leading to white paper
 - 5. Meetings Forum
 - 6. Working groups on education, outreach, extension, data integration and data transfer, research, etc.
 - 7. Generate action items.