Characterization of Hybrids between *Phytophthora lacustris* and *P. riparia*

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Studies of hybrid organisms often reveal two types of interspecific hybridization: polyploid hybridization, where the number of chromosomes changes during or immediately following hybridization, and homoploid hybridization, where the number of chromosomes is unchanged. Homoploid hybridization is thought to occur only between very closely-related species, while polyploidy can allow for the persistence of what would normally be a sterile or unstable cross between more distantly related species. Polyploid hybrids may not be able to interbreed with their parents, persisting through time as reproductively isolated species, while homoploids are likely to be able to back-cross, sometimes leading to a "hybrid swarm" of individuals related in varying degrees to the two parent species, blurring the lines between them. Polyploid hybridization has been well-documented in the plant-pathogenic genus *Phytophthora* (Phylum Oomycota), where it can lead to the formation of hybrid species with different host ranges and degrees of virulence than the parent species.

In California, two closely-related species of *Phytophthora*, *P. lacustris* and *P. riparia* are commonly isolated from freshwater environments, along with individuals that appear to be hybrids between the two species. Using a population of stream isolates obtained during sudden oak death monitoring activities, a traditional cloning approach was employed in an attempt to characterize the nature of these *P. lacustris* X *riparia* hybrids and to determine if a hybrid swarm is present. Results and their implications are discussed.