USDA Forest Service, Pacific Southwest Research Station, Sudden Oak Death/*Phytophthora ramorum* Research Program

Fiscal Year 2010 funds to cooperators –$1,401,441 million

New Projects (presented alphabetically by principal investigator's last name)

Episodic abiotic stress and ramorum blight in nursery ornamentals: impacts on symptom expression and chemical management of *Phytophthora ramorum* in Rhodedendron – Richard Bostock, UC-Davis - $67,245
(Note – Project to be conducted at the National Ornamentals Research Site at Dominican University of California)

Origin of reproductively isolated lineages in *Phytophthora ramorum* and other globally invasive Phytophthoras – Clive Brasier, UK Forest Research - $11, 520

Evaluation of bark/wood mulches for suppressing the spread of *Phytophthora ramorum* – Gary Chastagner, Washington State University, Puyallup - $39,086

Inoculum thresholds, sporulation, and tissue colonization associated with infection of western hemlock, larch, and Douglas-fir by *Phytophthora ramorum* - Gary Chastagner, Washington State University, Puyallup - $24,868

Research in support of sudden oak death containment and management in Western tanoak forests - Everett Hansen, Oregon State University; Alan Kanaskie, Oregon Department of Forestry and Ellen Michaels Goheen, USDA Forest Service, Forest Health Protection, Central Point, OR - $73,880

Forest health research, education and outreach – David Lewis and Janice Alexander, University of California Cooperative Extension, Marin County - $69,042

Building public awareness of Sudden Oak Death, *Phytophthora ramorum* – Frank Lowenstein, The Nature Conservancy, Sheffield, MA - $50,188

Molecular diagnostics of *Phytophthora* spp. from natural ecosystems – Frank N. Martin and Guillaume Bilodeau– USDA Agricultural Research Service, Salinas and Steve Oak, USDA Forest Service, Forest Health Protection, Asheville, NC - $36,660

Re-measurement and analysis of long-term impacts of *Phytophthora ramorum* in mixed oak woodlands - R.K. Meentemeyer, University of North Carolina, Charlotte; N. E. Rank and J. Hall Cushman, Sonoma State University; David Rizzo, UC-Davis - $ 76,540 (2 years)

Efficacy of Sudden oak death adaptive management in Humboldt County – David Rizzo, UC Davis and Yana Valachovic, UC Cooperative Extension Humboldt and Del Norte Counties - $37,800

Identifying insect pollenators to tanoak flowers in forests impacted by *Phytophthora ramorum* – Jessica Wright, USDA Forest Service, PSW Research - $ 2,920

Comparative sporulation of *Phytophthora ramorum* on larch (*Larix*) and other key sporulating hosts, and the impact on Douglas-fir and Port Orford Cedar in the field – Joan Webber, UK Forest Research - $55,424

Accelerated breakdown of leaf litter naturally infected by *Phytophthora ramorum* and *P. kernoviae* as a method of disease management – Joan Webber and Sandra Denman, UK Forest Research; and Anna Maria Vettraino, University of Tuscia - $40,000

2010 Continuing Projects (Projects from previous years that received additional funds in 2010)

Ecology of *Phytophthora* spp in watercourses: implications for the spread and management of Sudden Oak Death and other diseases – Kamyar Aram, Elizabeth Fichtner and David Rizzo, UC-Davis - $20,000

Sporulation of *Phytophthora ramorum* on trees and shrubs in western Washington forests - Gary Chastagner, Washington State University - $41,410

Investigating inoculum behaviour, infection and disease expression in relation to temperature and inoculum density of two aerial Phytophthoras (*P. ramorum* and *P. kernoviae*) on detached foliage - Sandra Denman, UK Forest Research - $4,875

Southern California oak mortality: biology, management, and impact of the goldspotted oak borer with an emphasis on solarization treatment of infested firewood - Mary-Louise Flint, UC-Davis and Steven Seybold, USDA-FS, PSW - $40,517

Variation in tanoak's resistance to *Phytophthora ramorum* – Matteo Garbelotto and Katy Hayden. UC-Berkeley - $58,000; Jessica Wright, USDA Forest Service, Pacific Southwest Research Station - $4,547; Richard Dodd, UC-Berkeley - $27,784

Management of *Phytophthora ramorum* in tanoak and oak stands - Matteo Garbelotto, UC-Berkeley - $50,000; Ted Swiecki, Phytosphere Research -$25,070; Yana Valachovic, UC Cooperative Extension – Humboldt and Del Norte Counties - $14,120

Monitoring migration, population structure and evolution of the Sudden Oak Death pathogen *Phytophthora ramorum* in North America - N. J. Grunwald, USDA

Agricultural Research Service, Corvallis and E. M. Hansen, Oregon State University - $58,935

Epidemiology of *Phytophthora ramorum* in tanoak forests - Everett Hansen, Oregon State University - $98,182

Detecting and monitoring *Phytophthora ramorum* and other species of *Phytophthora* in forest streams in the Eastern USA - S. N. Jeffers and Jaesoon Hwang, Clemson University - $36,900

Sudden oak death information synthesis and delivery – Douglas McCreary and Katie Palmieri, UC-Berkeley - $50,001

The role of elicitins in the pathogenesis and biology of *Phytophthora ramorum* – Daniel Manter, USDA Agricultural Research Service – Fort Collins; Everett Hansen and Jennifer Parke, Oregon State University - $87,789

Global forest *Phytophthora* website - Jennifer Parke, Oregon State University - $13,120

Adaptive management of *Phytophthora ramorum* in the Big Sur Ecoregion: links between sudden oak death and fire, David Rizzo, UC-Davis -$96,450 and Ross Meentemeyer, University of North Carolina, Charlotte - $67,256

Studies on the latency period of *Phytophthora ramorum* - Marko Riedel, Stefan Wagner and Sabine Werres, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Germany - $23,645