Research Objective
Evaluate population level responses of California Spotted Owls to forest treatment at the watershed level by estimating and comparing survival, occupancy, and reproductive output of owls between treatment and control populations.

This study will be an investigation of chronic effects of SPLAT treatments on owls, which is complementary to an on-going radio-telemetry study of acute effects of SPLAT treatment on owls in the Central Sierra Nevada.

Methods

Field Measurements
- Survey entire treatment and control watersheds and surrounding habitat for owls;
- Capture, band, and color mark all owls within the survey areas;
- Annually recapture or resight all color marked owls;
- Annually estimate reproductive output of owls on survey areas;
- Annually follow same procedures on the nearby Eldorado Spotted Owl study area, which is a long-term spotted owl population study.

Analyses
- Develop a priori models about treatment effects on spotted owls;
- Estimate Survival using Cormack-Jolly-Seber estimator in Program MARK (sample size limitations may preclude this estimation);
- Estimate Occupancy using occupancy estimator in Program MARK;
- Evaluate owl responses to treatment using model selection (AIC or BIC).

Immediate next steps for implementation
- Develop detailed work schedule (survey protocols and study design have been employed for many years on spotted owl studies with great success);
- Solicit applications from field technicians;
- Funds are needed to hire field technicians to start on 1 April; and
- Funds are needed to purchase field supplies and lease vehicle and provide their support (gas, tires).

Products and Opportunities
- Estimate density and distribution of owls in three watersheds;
- Opportunity to use results of on-going radio-telemetry study of owl response to SPLAT treatments to refine or develop a priori models;
- Opportunity to use results of on-going radio-telemetry study in adaptive management context depending on results of telemetry study (for example, by placing SPLATS in areas that achieve fire spread objectives but that reduces chance of impacts to owls); and
- Opportunity to integrate on-going long-term Eldorado study to support research and adaptive management.

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