

## SPOTTED OWL RESEARCH SUMMARY

The California spotted owl (CSO) was once considered an 'old-growth' obligate species. This theory is changing. Studies are underway in an attempt to understand why CSO populations appear to be in decline on Federal lands within the long-term demographic study areas but show steady to increasing trends on privately owned lands with a management emphasis on sustainable timber production. The private lands appear to have higher densities, higher occupancy and higher reproduction success. Interestingly, the managed lands' trends are similar to the CSO population trends reported within national parks, that are managed by use of natural and prescribed fire.

Recent publications indicate that the generally lower elevation industrial timberlands are producing a relatively abundant population of the CSOs primary preferred prey, the dusky-footed woodrat, while the higher elevation lands of the US Forest Service are primarily producing the smaller prey item, the Humboldt flying squirrel. In the national parks, at comparable elevations to the USFS, the primary prey is the flying squirrel, and with the largest reported secondary prey item being the pocket gopher (27%). Recent research has found that the CSO populations are a "bottom-up control species", where the abundance and availability of the primary prey items control the population demographics of the predator, the CSO.

High intensity wildfires have an immediate and long-term negative effect on the CSO. Whereas timber harvest and lower intensity fires have a lesser and short-term effect and a positive long-term impact likely due to more prey producing habitat and therefore more prey items and multiple prey species becoming available. Research and monitoring have shown that up to 60% of the acreage of CSO territories can be "treated" resulting with long-term positive effects on the CSO population.

The population of barred owls (while a potential significant threat) within the range of the CSO can currently be considered controlled and on-going cooperative research and maintenance/removal of new occurrences will likely keep the invasive species from negatively impacting the CSO on a population scale.

SPI's research, conducted to support the issuance of a CSO and NSO Habitat Conservation Plan (HCP) indicates a stable to increasing population of CSO on/near our lands with on-going harvest activities within close proximity to the owls. Occupancy, densities, number of adults and reproductions are comparatively high to those occurring on or near the US Forest Service lands. No significant change can be detected in yearly Activity Center movement distances, and year-to-year occupancy or reproductive status; between sites that had timber harvest activities within 0.5 mile and those that did not.

With over 600 (average) CSO and NSO sites monitored each year, SPI's ownership wide project-level surveys of known and active sites indicate a population with a relatively high average yearly occupancy rate of 71% with a high proportion of sites with paired status (greater than 50%).

These findings can help support efforts to improve CSO populations on Federal lands by allowing more fuels reduction treatments to mitigate fire risk in closer proximity to CSO sites while increasing the abundance of desired prey species. Additionally, management activities further from the owl site are not likely to have negative impacts on the CSO (site or population).

## Literature

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