



What We've Learned:

Nearly all recruitment occurred in the year following the fire event. Few plants flowered one year post-fire, but nearly 80% were in flower the second year.

Monitoring wildfire effects, phenology, and longevity of Baker's globe-mallow

Baker's globe-mallow (*Iliamna bakeri*) is a fire-following forb, requiring high temperatures to break seed dormancy and induce germination of its long-lived seeds. In 2015, a large population of Baker's globe-mallow germinated in response to the 2014 Eiler Fire. We investigated whether fire severity was correlated with Baker's globe-mallow densities, and are also monitoring the phenology and longevity of this population.

Key Findings

- Post-fire densities ranged from 0 to 7 plants per 1-m²
- Germination was higher where fire severity was lower, and litter cover greater.
- Nearly all plants persisted from 2015 to 2016, despite drought conditions, and 80% flowered in 2016.



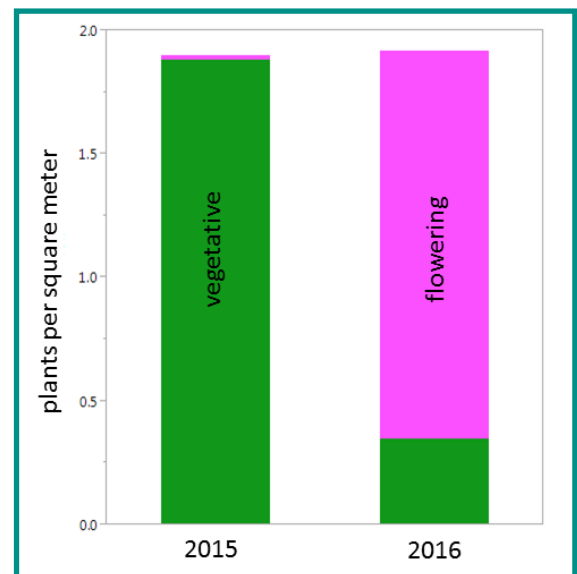
Baker's globe-mallow in flower.



Baker's globe-mallow seedling emerging one year post-fire.



Baker's globe-mallow at the base of Baker's cypress, another fire-dependent rare species.



Nearly all plants that germinated in 2015 survived into 2016, with 80% flowering in that year (2 years post-fire)..



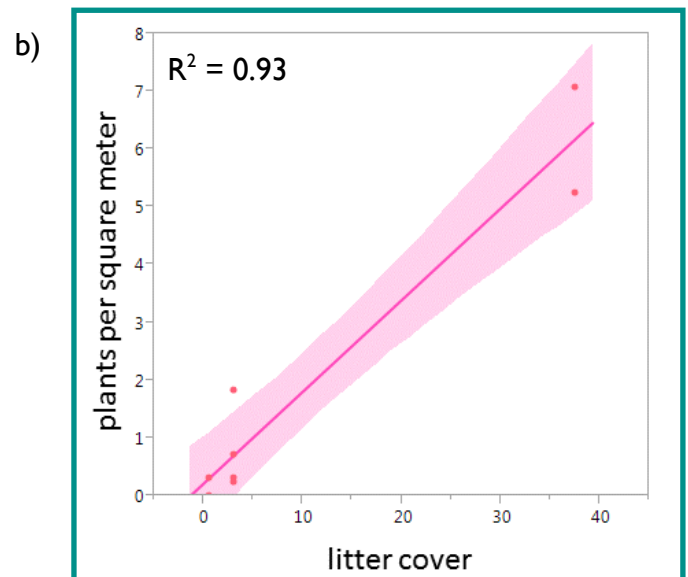
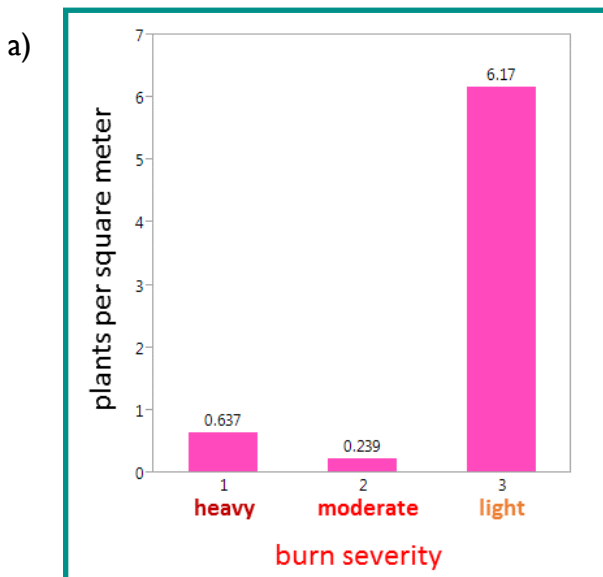
Monitoring Overview

Baker's globe-mallow (*Iliamna bakeri*) is a fire-following perennial forb that is considered rare in California. Seeds can persist in the seedbank for up to 100 years, but require scarification by fire to break dormancy and induce germination. The Eiler Fire of 2014 burned through a stand of the rare tree Baker cypress that had been monitored for a decade, with no record of Baker's globe-mallow occurring. In summer 2015, however, a large patch of Baker's globe-mallow seedlings were observed. Data were collected on vegetative and flowering Baker's globe-mallow densities, fire severity, and understory vegetative composition.

Densities were significantly higher with lower fire severity (a), and also strongly associated with litter cover (b). In high severity burn areas tree needles were completely consumed, but in lower severity burns dead needles later fell to the ground as litter. This litter layer may have decreased soil moisture loss during a drought year, and encouraged higher germination rates. Nearly all plants that germinated in 2015 survived into 2016, with 80% flowering in that year.



Specialist bees in the genus Diadasia located the Baker's globe-mallow population one year post-fire.



Baker's globe-mallow density was highest under light burn severities, which may have been related to increased litter from pine needles that fell post-fire and helped retain moisture during a drought year.