



Pilot Study: Exploring the relationship between Taylor's checkerspot and golden paintbrush

Nate Haan

Peter Dunwiddie

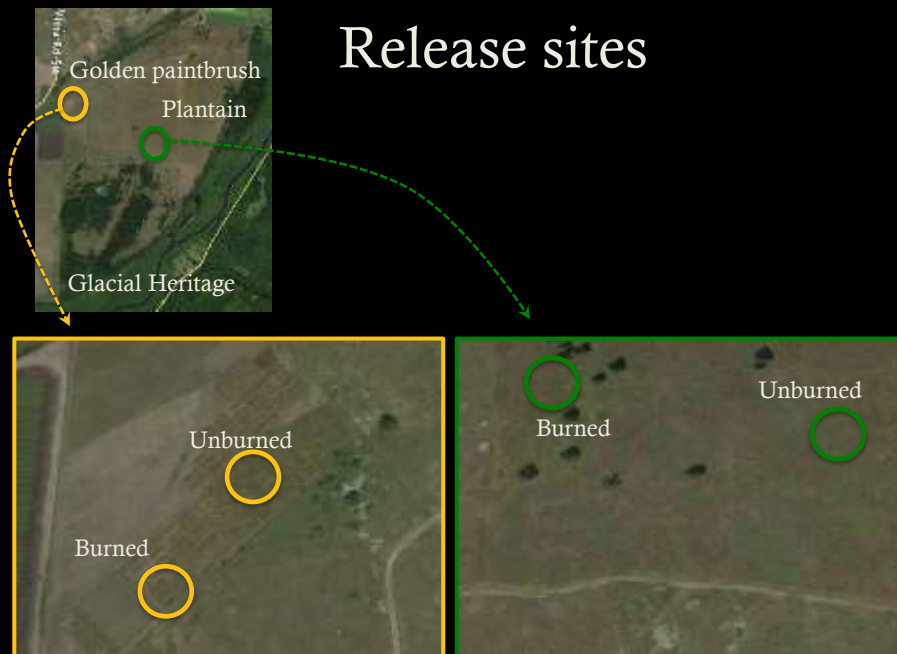
Questions

- Background
 - Was golden paintbrush historically a foodplant for Taylor's checkerspot?
 - Opportunity for synergistic recovery of both species?
- Broad question: what role could golden paintbrush play in Taylor's checkerspot recovery?
- Specific question: is golden paintbrush an acceptable host plant for post-diapause larvae?

Objective:

- Release post-diapause larvae onto both golden paintbrush and lanceleaf plantain
- Measure:
 - Do larvae remain on the plant to which they are released?
 - Can we re-locate them?

Release sites





Releasing larvae



March 4, 2013

- Five larvae per plant, 21 plants in each plot (420 larvae total)
- Flagged release plants



Monitoring

- Revisited each plot four times
 - March 9, 15, 25, 30
 - P Dunwiddie, C Fimbel, J Bakker, N Haan
- Recorded:
 - How many larvae are on the original release plant?
 - How many larvae are on surrounding plants in the plot?
 - Larval activity:
 - feeding, basking, in transit



Photo: Cheryl Fimbel

Iridoid glycoside analysis

- Haphazardly collected plants in all four plots (plus harsh paintbrush)



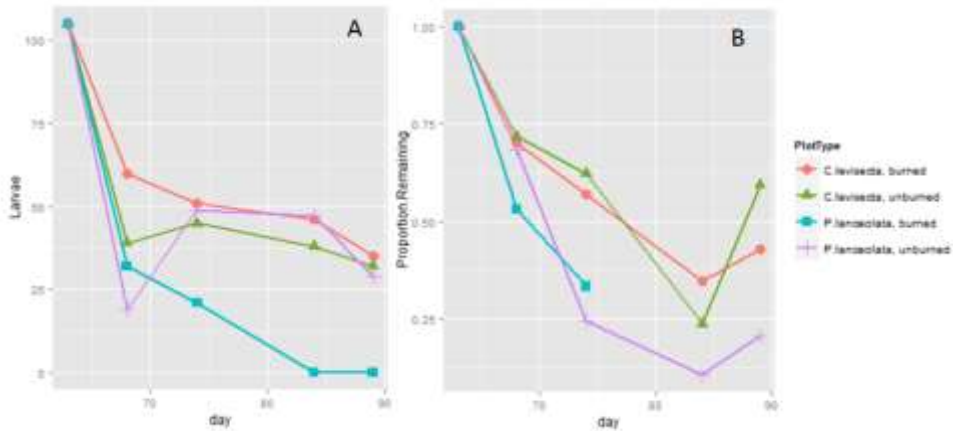




Larval survey results

- 32% re-location rate (average)
- No difference in larval abundance detected between foodplant species or burn treatments.
- Larvae on golden paintbrush: higher fidelity to *original release plant*?
- Disappearance at burned site with plantain
 - Robins?
 - Iridoid glycosides?

Larval survey results



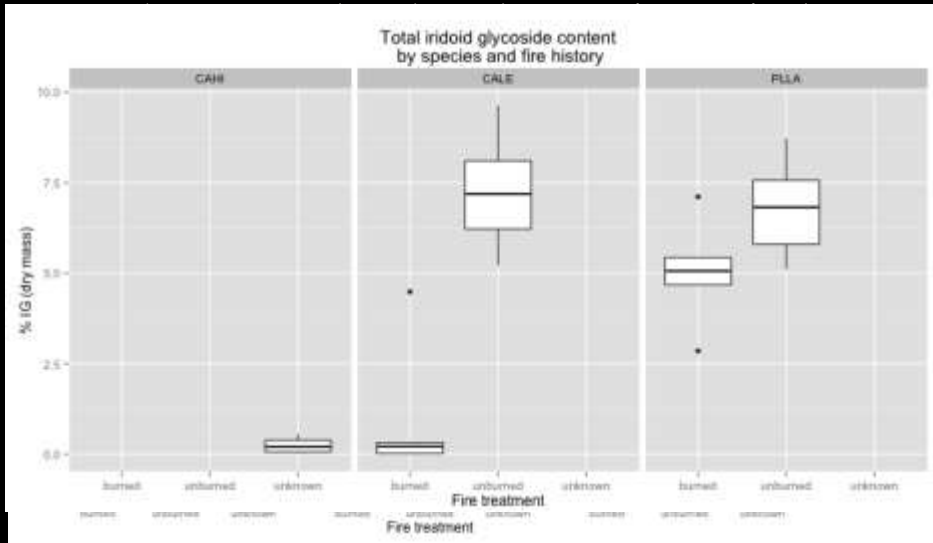
A. Number of larvae re-located at each release plot on each survey date.

B. Proportion of the re-located larvae still on the *original plant* to which they were released

- Couldn't locate pupae (no surprise)
- Found several adults in paintbrush plots



Iridoid glycosides



Conclusions

- Post-diapause larvae can feed on golden paintbrush and reach adulthood (!)
- Future directions:
 - Prediapause larvae? Oviposition?
 - More replicates, better study design
 - Extensive iridoid glycoside sampling
 - Time-lapse cameras

