

Pollinator Habitat Creation & Enhancement

- 1) Habitat enhancement and management opportunities

- 2) Ecological restoration
 - a. Site preparation
 - b. Implementation
 - c. Maintenance



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PARTNERSHIP**



ECOLOGICAL
RESTORATION



HABITAT
ENHANCEMENT

Habitat Enhancement

What can you do right now on the lands you currently manage?

Integrated Vegetation Management (IVM)

“the practice of promoting desirable, stable, low-growing plant communities that will resist invasion by tall growing tree species through the use of appropriate, environmentally-sound, and cost-effective control methods. These methods can include a combination of chemical, biological, cultural, mechanical, and/or manual treatments.”

Environmental Protection Agency Fact Sheet:
<https://www.epa.gov/peps/integrated-vegetation-management-fact-sheet>

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Habitat Enhancement

Selective herbicide use*

Modify mowing practices

Utilize rights-of-way for habitat

Incorporate native plants

Use social media

*The use of herbicides in site preparations and maintenance can be an important tool for enhancing pollinator value in areas that are large and/or contain particularly difficult to control invasive plant species.

For smaller habitat projects or those without difficult to control species, initial preparation and maintenance methods such as hand-pulling, solarization, smothering, etc. can be feasible. Always use an Integrated Vegetation Management approach to site prep and maintenance.

American River Parkway (ARP) Pollinator Partnership Project



The “Jewel of Sacramento”

- 23 miles long with over 5 million annual visitors
- Multiple land and management issues



Multiple Utility ROW



Partners

Pacific Gas and Electric Company
(PG&E)

Sacramento Municipal Utility District
(SMUD)

Sacramento County Parks

American River Parkway Foundation

The Opportunity

Enhance habitat

Provide habitat connectivity

Provide recreation

Support public safety

Educate the public



American River Parkway (ARP) Pollinator Partnership Project

Project Activity Overview

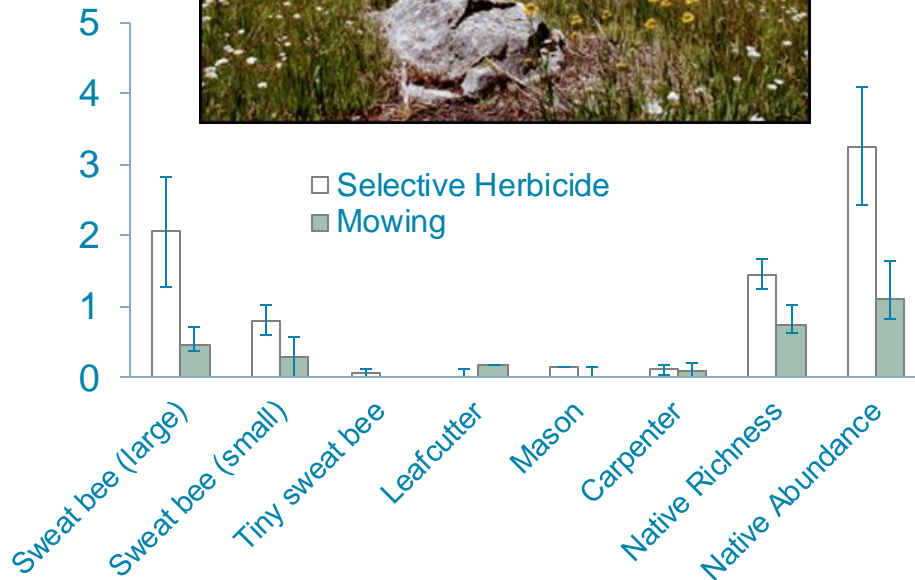
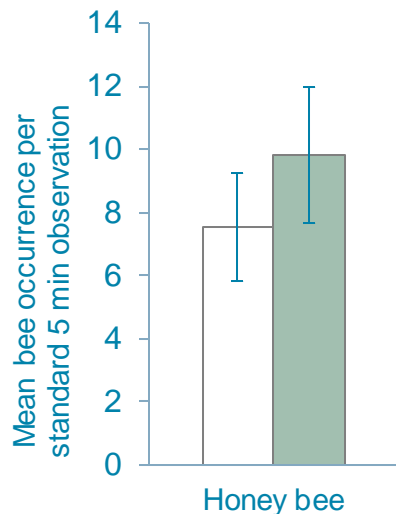


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Pollinator Assessments



Results





Restoration

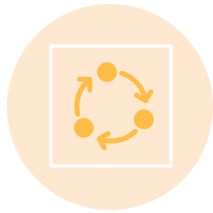
Standards



Planning and design



Implementation



Monitoring,
documentation,
evaluation, and reporting



Maintenance

Principles

1. Engages stakeholders
2. Draws on many types of knowledge
3. Is informed by native reference ecosystems, while considering environmental change
4. Supports ecosystem recovery processes
5. Is assessed against clear goals and objectives, using measurable indicators
6. Seeks the highest level of ecosystem recovery possible
7. Gains cumulative value when applied at large scales
8. Is part of a continuum of restorative activities



Evaluating a site

Soil type

Land use history

Adjacent land use

Hydrology

Aspect

Existing vegetation

GIS (valuable resource)



Design

Considerations

- What makes good pollinator habitat?
- Microclimates, microhabitats
- Selection of plant materials

Species selection

- Locally adapted, native species
- Track bloom times

Site preparation



Planning



Patience



Persistence

Site preparation

SMALL AREAS

< 1 acre

Examples: school gardens, educational areas, residential lawns

Organic options:

- Solarization
- Sheet mulching
- Manual Labor

Other options:

- Herbicide

Photo by Amber Barnes

LARGE AREAS

> 1 acre

Examples: Crop fields and agricultural properties, transmission lines and ROWs

Organic options:

- Tillage (very intensive, longer timelines) or soil inversion
- Smother cropping

Other options:

- Herbicide

Photo by Amber Barnes

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Herbicide

Types of herbicide:

- Broad spectrum
- Selective
- Contact
- Systemic
- Residual

Back to site preparation...



Choosing an appropriate herbicide application method

- For heavily weed-infested sites, consider multiple applications
- Broadcast applications

Timing of actions

- Multiple season approach
- Based on plant biology



Limiting exposure to pollinators

- Low temperature periods
- Match the actions and conditions to target species and project goals





Photo by Amber Bames

Site preparation

Things to remember:

- Site preparation depends largely on the existing vegetation at the site
- Pollinator plantings will vary in size
- Smaller projects may receive more care per unit area, but the steps for establishment are essentially the same as for larger projects

Implementation

Considerations from the planning phase

- Predation
- Irrigation
- Weather and climate

Seeding methods

- Drill seeding
- Broadcast seeding
- Hydroseeding

Planting depth = 2x diameter of the smallest seed

Seeding rates = 30 to 60 seeds/ft²



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Maintenance

Guiding question: What are we maintaining?

- Natural succession
- Life form
- Diversity
- Benefit

Do a little bit each year



Short term (0-2 years)

Irrigating

Weeding

Mowing

Long term (3+ years)

Protecting

Adapting

Disturbing

Maintenance

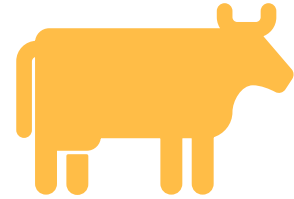




Mowing



Prescribed fire



Grazing

Adaptive Management



MONITORING AND
EVALUATION



DOCUMENTATION
OVER TIME



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Thank you

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