

## Project Year-End Summary Report 2021

Title of Project: Host Plants for Recovery of the Sacramento Mountains checkerspot butterfly

*Begin answering in the shaded box right beside or below each question and it will expand to accommodate as you type. Use up to a total of two pages. More detailed presentations, articles or posters are welcome separately\* (See final instructions at the end of this form.)*

1. Organization name or Individual who received the grant: Institute for Applied Ecology (IAE)

2. Amount of Grant: \$1,500 + \$1,500 grant rollover amount

4. Was additional outside funding obtained? (check box that applies) Yes  No

Other funding source(s) if you checked "yes." US Forest Service (USFS) supplied \$7,000 for project coordination, planting, travel, supplies, seeding

5. Briefly, how was the grant money from the Carter Conservation Fund used?

Contract production with the Pueblo of Santa Ana Native Plant Nursery (1593 plants in 8" pots)

6. Write an abstract or summary of the activities performed and the progress that was made this year on your project. Save any conclusions, lessons learned, and benefits achieved for the final sections, 7&8.

Sacramento Mountains checkerspot butterfly populations reached such record lows in 2020 that butterfly experts were concerned the species would go extinct in 2021 without intervention. IAE partnered with the NPSNM and the SW USFS & US Fish and Wildlife Service to take emergency action and install larval and nectar resource plants critical to the butterfly's survival in the Lincoln Forest. On March 19, 2021, locally sourced seeds collected in the Lincoln Forest 2020 were delivered to the Pueblo of Santa Ana (PSA) to nursery produce 520 New Mexico beardtongue (*Penstemon neomexicanus* = larval host plant) and preferred nectar: 541 sneezeweed (*Hymenoxys hoopesii*), 196 upright prairie coneflower (*Ratibida columnifera*), 150 yarrow (*Achillea millefolium*), and 186 Geyer's onion (*Allium geoyeri*) in restoration-ready containers. Following cold stratification (penstemon -6 weeks, sneezeweed -30 days), PSA grew all of the plants until they were ready for outplanting. In July and early September 2021, plants were outplanted into previously occupied butterfly areas on the Lincoln Forest (within herbivore exclusions). Plantings occurred in connected clusters to facilitate optimal foraging for adult and larval butterflies. Plants were watered during both days of planting, and then the USFS continued watering individual plants 2-3 x/week for 4 weeks, and 1x/week as needed for an additional 2-3 weeks. Each individual/planting location is georeferenced for followup monitoring. Plots were also sown with seeds from nectar species.

7. State how your project furthers a Native Plant Society mission area. Pick the best fitting area: achieves plant or ecological education, contributes to conservation/restoration of native plants and habitats, adds to botanical research, or promotes appropriate use of native plants to conserve water, land and/or wildlife.

This project promotes appropriate use of native plants to conserve wildlife. Wildlife habitat restoration projects often underestimate the importance of using appropriate native plant materials. During a checkerspot working group meeting in the early planning phase, a few individuals suggested using Rocky Mountain penstemon at the Lincoln Forest recovery sites to supplement the NM penstemon plantings (due some evidence that the caterpillars will use Rocky Mountain during captive rearing). However, Rocky Mountain penstemon does not naturally occur in the Lincoln Forest. IAE was able share a rationale for only using plants native to the region and provided examples of how native species support the local ecology. Then IAE went to great lengths to utilize only locally sourced seed for the project to ensure the phenology of the plants was synchronized with the phenology of the pollinators and to not upset the genetic integrity of natural populations of these species. 14 volunteers with the Forest Service, upper management with USFS, USFWS, and Sacramento Mountains checkerspot butterfly experts received training on appropriate plant materials to use in the restoration of critical habitat for the butterfly and how to appropriately plant and care for native species introduced. We anticipate that thanks to this planting event and training, future projects by these agencies are more likely to use native, locally sourced materials in appropriate locations.

8. State any other conclusions. Include any lessons learned that would assist others. What benefit to you, the community or the environment resulted or do you hope will result from your use of this grant?

The project was a great restoration & outreach success story. October monitoring by the USFS revealed very high survival rates for plantings completed in September (99% survived) despite very rocky conditions for the NM penstemon plants (NM penstemon prefers well drained soils, often found on rocky slopes/roadside). We attribute this success to careful habitat matching, planting training for all volunteers, use of herbivore protective cages, and, perhaps most importantly, frequent & regular watering. We found 2 checkerspot tents adjacent our planting area, suggesting approx. 40 caterpillars will have a ready supply of food when they emerge. July plantings were not as successful as the September plantings which may be attributed to weather & site differences, shorter time to develop roots, and/or less frequent supplemental watering by the USFS in July. Our original plan was to utilize USFS & NPSNM funding to grow 2,500-5,000 plants. IAE supplied sufficient seeds to sow 3-5 seeds/pot in >5000 containers, but only 1593 seeds germinated and resulted in a hardy individual for outplanting. This is likely due to the fact that seeds were collected during an extreme drought year, compromising seed viability and resulting in fewer seeds germinating than expected, and/or seed dormancy was stronger than expected.

## Final Instructions

**Please send your completed form in MS Word as an email attachment to [cartergrantapps@gmail.com](mailto:cartergrantapps@gmail.com) by November 31.**

*\* To remain in good standing for any future funding from the Native Plant Society of New Mexico, plan to write an article (600-1000 words, illustrations welcome) for our newsletter, **or** create and present a poster at our annual state conference, **or** send us a copy of or link to a published article connected with the past year's work, **or** work with a local chapter of NPSNM to make an educational and visual presentation to a group.*

*What are your intentions in this regard? Poster presentation @ annual state conference (on request)*

*Our next state conference is scheduled for August, 2022 in Albuquerque. Contact our Albuquerque chapter if you wish to contribute in that way. Write to [cartergrantapps@gmail.com](mailto:cartergrantapps@gmail.com) at any time with questions.*