



Repatriation of the Eastern Regal Fritillary Butterfly at Gettysburg National Military Park

05-244

Background:

The regal fritillary butterfly (*Speyeria idalia*) historically ranged from Nova Scotia south to North Carolina and west to Wyoming. Though locally common in the past, there has been a severe contraction of the butterfly's range over the last four decades, especially in the East. Only one viable population (800-1,200 adults) remains east of the Mississippi River and resides at Fort Indiantown Gap (FIG) National Guard Training Center, PA. A second, nonviable eastern population (around 100 adults) is found at Radford Army Ammunition Plant in the Appalachian foothills of Virginia. The regal depends on grassland habitats which have persisted at these two areas due primarily to military activity. One of the last known PA populations outside of FIG was observed at Gettysburg National Military Park (GNMP) in 1983. Successful repatriation (return of a native species to an area from which it has been extirpated) at GNMP and other suitable sites would reduce the regal's risk of extinction while increasing the availability of the FIG grasslands (ranges and maneuver areas) for military training.



Photo by PA National Guard

The last viable eastern population of the regal fritillary butterfly is only found at Fort Indiantown Gap.

Objective:

The project goal was to attempt repatriation of the regal fritillary to GNMP by the PA Chapter of The Nature Conservancy and PA National Guard staff. In preparation of this attempt, objectives focused on improving the quality of native grasslands by increasing:

- Native grass cover (300 lbs FIG-ecotype little bluestem grass)
- Larval food plant abundance (arrow-leaved violet, *Viola sagittata*)
- Native nectar plant abundance by growing milkweeds, field thistle, and wild bergamot from seed collected at FIG.

Another objective was to gain knowledge to be used in future repatriation attempts of the regal fritillary, as well as other related grassland species. If successful, repatriation would reduce the risk of extinction, improve grassland quality at GNMP, and increase military training flexibility at FIG.

Summary of Approach:

Two locations at GNMP were selected as potential repatriation sites based on historical occurrences of the regal fritillary and similarity to currently occupied habitats at FIG. Restoration included planting 300 violets and 600 native nectar plants in mid-summer 2005. To repatriate the regal fritillary, six gravid females were transported from FIG to GNMP in September 2005. The butterflies were enclosed in mesh cages placed on violet plots for three to four days. Weather conditions were ideal and egg laying behavior was observed. The sites were surveyed during the summer of 2006 with the presence-absence technique used to locate adult regal fritillaries at FIG.

Benefit:

While the initial repatriation attempt did not produce any observed adult regal fritillaries the results of this pilot project provided data and lessons on repatriation methods to re-establish regal fritillary populations and closely related species at historically occupied sites.

Accomplishments:

Valuable lessons learned:

- A more thorough restoration and land management plan is needed before repatriation is attempted
- Multiple years of releasing may be necessary to compensate for unusual weather conditions
- Employ a captive rearing program to release individuals at different life stages in conjunction with the caged female technique used in 2005.

The project team recommends that repatriation efforts should continue by incorporating these lessons into future plans at GNMP and other suitable sites.

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