

# Regal Quest: Regal Fritillary and Monarch Monitoring

Field Survey Protocol 2026

## Survey Method Overview

The goal of this survey is to document occurrences of regal fritillary (*Argynnis idalia*) and monarch (*Danaus plexippus*) butterflies throughout their range in Minnesota. Surveys follow a timed meandering walk (Pollard walk–style) approach. Observers walk slowly through suitable butterfly habitat for 60 minutes and record all Monarch and Regal Fritillary butterflies observed.

Appropriate habitat includes areas or remnant or restored prairie with patches of flowering plants. If a site contains varied topography, observers should ensure time is spent in both elevated areas (hilltops) and low-lying areas (swales).

The primary objective of this protocol is to document resident populations of Regal Fritillaries. Documenting female individuals is especially important for confirming established populations because male Regal Fritillaries can stray far from their natal habitat.

Incidental (not during a targeted survey) observations are also acceptable – use the incidental observations form linked at the bottom of this document.

See links to data collection resources at the end of this document.

## Survey Frequency and Site Revisit Guidelines

- **Surveys should be conducted mid-June – July** to coincide with the regal fritillary flight period
- If at least one female Regal Fritillary is observed at a site during a survey, no additional surveys are required at that site for the year.
- If no regal fritillaries are observed, the survey should be repeated up to six additional times during the flight period.

- Fewer surveys (even one or two per site) are still valuable and encouraged if time or access is limited.

## Survey Timing and Duration

- Regal fritillary flight period – mid-June through July
- Target survey duration: 60 minutes
- Acceptable range: 45–75 minutes
  - Adjustments may be made for site size or changing weather conditions.
- Time of day: Surveys may be conducted between 0900 and 1830 hours.

## Weather Requirements

Surveys should be conducted under favorable conditions to maximize butterfly detection:

- Temperature: > 70°F
- Cloud cover: mostly sunny or clear
- Wind: moderate, light or calm winds (<10 mph average)

If ideal conditions are difficult to achieve, at least two of the three primary weather criteria (temperature, cloud cover, wind) must be met.

## Survey Procedure and Data collection

1. **Start a new data submission form** by opening the Targeted Surveys – Survey123 form on a smartphone or tablet.
  - Collect pre-survey data before beginning the survey including date, time, weather, etc.
    - If you cannot collect data electronically, use a datasheet and enter your data online later.
2. **Begin surveying**
  - Start a timer to keep track of your time surveyed
    - Walk slowly through the site, moving between patches of flowers. Maintain a slow pace (approximately one step per second and periodically pause and use binoculars to scan within a ~5m radius for butterflies.

- Walk in a loop or forward progression that minimizes doubling back to reduce the likelihood of double counting individuals. While double counting cannot be entirely avoided, observers should make their best effort to prevent it.
  - When a regal or monarch butterfly is observed:
    - Stop briefly to identify and record it.
    - Pause your timer if you will be stopped for more than a few seconds
    - Record species, sex (if possible), and behavior
  - Restart your timer and continue surveying, stopping to record all monarchs and regal fritillaries.
  - After 60 minutes of surveying, stop your timer.
- 3. End your survey**
- Double check your data entries and identifications
  - Complete all end of survey data fields including the final two questions on the datasheet or app indicating whether regal fritillaries or monarchs were observed.
  - Submit your survey form and any photos you took

## Equipment

### Required Equipment

- Timekeeping device (phone, watch, or stopwatch)
- Data recording method (mobile device or paper datasheet)
- Pen and clipboard (if using paper)
- Hat
- Water
- Long-sleeved shirt and long pants
- Sturdy footwear
- Sun protection

### Optional Recommended Equipment

- **Binoculars**, close-focus models for identification confirmation but any type can work
  - Example: *Pentax Papilio II 6.5×21*
- **ID Guide**

## Data Collection Links and other resources

### Online Map – Search Areas

- [Online Regal Fritillary Search Area Map:](#)
- Online Search Area Map QR Code



### Targeted Surveys - Survey123 form

- [Targeted Surveys Data Collection Form \(Linked\)](#)
- Targeted Surveys Data Collection Form QR Code:



### Incidental Observations – Survey123 form

- [Incidental Observations MN DNR Plant and Animal Observation Form \(Linked\)](#)
- Incidental Observations QR Code



UNIT_NAME	UNIT_TYPE
Bob Dunn Forest Recreation Area	Forest Recreation Area
Blanketflower SNA	Scientific and Natural Area
Compass Prairie	Scientific and Natural Area
Cottonwood River Prairie SNA	Scientific and Natural Area
Glynn Prairie	Scientific and Natural Area
Kasota Prairie	Scientific and Natural Area
Mound Spring Prairie	Scientific and Natural Area
Otter Tail Prairie	Scientific and Natural Area
Rock Ridge SNA	Scientific and Natural Area
Sandpiper Prairie	Scientific and Natural Area
Sedan Brook Prairie SNA	Scientific and Natural Area
Yellow Bank Hills	Scientific and Natural Area
Pembina	Scientific and Natural Area
Richard M and Mathilda Rice Elliot	Scientific and Natural Area
Roscoe Prairie	Scientific and Natural Area
Twin Valley Prairie	Scientific and Natural Area
Sand Dunes	State Forest
Blue Mounds	State Park
Camden	State Park
Fort Snelling	State Park
Glacial Lakes	State Park
Sibley	State Park
Split Rock Creek	State Park
Anna Gronseth Prairie	The Nature Conservancy
Kettledrummer Prairie	The Nature Conservancy
Red Rock Prairie	The Nature Conservancy
Regal Meadow	The Nature Conservancy
Schaefer Prairie	The Nature Conservancy
Town Hall Prairie	The Nature Conservancy
Archerville WMA	Wildlife Management Area
Coleman WMA	Wildlife Management Area
Expandere WMA	Wildlife Management Area
Lac qui Parle WMA	Wildlife Management Area
Lac qui Parle WMA: Main Unit	Wildlife Management Area
Milan WMA	Wildlife Management Area
Salt Lake WMA	Wildlife Management Area
Sioux Nation WMA	Wildlife Management Area
Sioux Prairie WMA	Wildlife Management Area
Spirit Prairie WMA	Wildlife Management Area
Swan Lake WMA	Wildlife Management Area
Wahpeton Prairie WMA	Wildlife Management Area

