



## RECOMMENDATIONS FROM THE VALLE DE ORO NATIONAL WILDLIFE REFUGE PILOT PHENOLOGY MONITORING PROGRAM

*This document is meant to offer guidance to the National Wildlife Refuges implementing phenology monitoring using the USA National Phenology Network's plant and animal observation program, **Nature's Notebook**. More information about the program can be found at [www.usanpn.org/fws](http://www.usanpn.org/fws).*

### Program Background

A partnership embarked upon in 2012 between the US Fish and Wildlife Service's Inventory and Monitoring Initiative (USFWS I&M) and the USA National Phenology Network (USA-NPN) set the stage for the integration of phenology monitoring within the National Wildlife Refuge System.

Valle de Oro National Wildlife Refuge, established in September 2012 as the first urban wildlife refuge in the Southwest, was selected as the first pilot Refuge to intentionally utilize phenology monitoring with *Nature's Notebook* for both management and outreach purposes. Community outreach and ecological restoration are both central objectives of the refuge. Learn more at [www.usanpn.org/fws/VdO](http://www.usanpn.org/fws/VdO).

### Implementation Timeline:

June 2013 – Valle de Oro selected as pilot Refuge, Refuge Manager hired

August 2013 – Plan created for implementation of phenology monitoring at Valle de Oro

October 2013 – Volunteers recruited and trained via in-person and webinar trainings

December 2013 – Initial testing of monitoring design, modifications made and data collection begun

June 2014 – Broader phenology monitoring effort created, the Rio Grande Phenology Trail

### Recommendations based on Valle de Oro NWR Pilot:

Phenology monitoring can meet both management and outreach goals, provided science and visitor services staff are both involved in program planning early on in the program.

### Monitoring Design

The amount of time the volunteers can commit to monitoring and the focal species of the Refuge will be variable; choose a monitoring design that will answer management questions with the effort available.

- Consider the relationship of the Refuge to the ecosystem as a whole, and the indicators that may be monitored to best evaluate this relationship.
- Confer with local USFWS statistician/biologist about appropriate sample size for sites, replicates, monitoring frequency.
- Ask local stakeholders/potential volunteers (eg NGOs, Master Naturalists, Master Gardeners) about their species of interest before selecting species to monitor.
- Be prepared to change some of the monitoring design protocols after a trial period with volunteers.

### Volunteer Training and Support

To ensure sustainability of the program, identify a person who will act as the coordinator for the phenology monitoring program. If a staff person is not available, seek out local individuals, such as leaders of volunteer groups to assist with implementation of design, recruitment and organization of volunteers.

- For new volunteers, a field trip to the sites on the Refuge will be beneficial. If volunteers assist with flagging sites and tagging plants, they will learn the location of the sites. Those volunteers can then train others who join the monitoring program later in the process.
- Volunteers need more in-depth training, ideally 8 hours over 2 days, to understand *Nature's Notebook*, data collection, smartphone applications, data entry and fixing data errors. All of this information is available on the *Nature's Notebook* website, yet many volunteers need to be shown in person, by an individual who is familiar with the program and can assist them to navigate the *Nature's Notebook* website.

### **Volunteer Management**

Create a phenology monitoring sign-up method that works best for the group of volunteers, and have a local person in charge of scheduling.

- Designate a Refuge staff person (Science, Visitor Service staff or volunteer) as the point of contact at the beginning of the program. The staff person should seek volunteer assistance for organizing the monitoring program and plan to transition out of coordinator role once the program is sustainable.
- Once a volunteer joins the program, obtain his or her approval to share their email with the group of volunteers so that volunteers can coordinate amongst themselves.
- Consider using methods of scheduling such as Google docs, Doodle polls, Survey Monkey, etc.
- Having volunteers commit to a regular time may solve scheduling issues, though the number of volunteers who want to commit to a regular schedule may be few.
- Identify potential volunteer coordinators after the initial weeks of observations, when the volunteers have a feel for the commitment they are able to make to the project. Consider holding a separate training for coordinators before observations begin. These coordinators would then train the rest of the volunteers.
- Coordinators should at least have an initial in-person meeting with refuge manager to go over site map, data sheets, etc.

### **Volunteer Data Quality**

Data collected by volunteers may need to be checked for quality, even when volunteers receive training on the phenology monitoring process.

- Volunteers need more in-depth person training on plant and animal phenophases identification.
- Volunteer coordinators or other individuals may be designated as Data Entry Technicians in the *Nature's Notebook* program to fix data collection or entry errors.

### **Maintaining Volunteer Motivations**

Commit to a regular schedule for getting feedback from volunteers, sharing the results of data collected back with volunteers, and hosting local volunteer check-ins to encourage camaraderie and support.

- Leverage other organizations as a resource to support the Refuge. Encourage collaborations with these organizations in the form of a Phenology Trail. Specific recommendations for the creation and implementation of a Phenology Trail can be found on the USA-NPN website. In 2015 the NCO will be developing a Standard Operating Procedure for incorporating Phenology Trails within the Refuge System framework.
- Create a schedule for check-ins with volunteers and Refuge staff at the outset of the volunteer monitoring program. Leave the scheduling of subsequent check-ins to the volunteer manager.