**New Jersey State Park Service ~ New Jersey Division of Fish and Wildlife**

**New Jersey State Forestry Services**

***Make a Difference for Monarchs ~ and other pollinators***

**UPDATES FROM AROUND THE STATE – January 1, 2016**

## Introduction

In March, 2015, The NJ State Park Service and NJ Fish and Wildlife, with assistance from the NJ Forestry Services at FREC, launched a "**Make a Difference for Monarch – and other Pollinators"** program. After professional presentations at a statewide meeting where park staff learned of the various ways they could assist in improving habitats for monarchs and other pollinators, many were inspired to either add to the programs already in progress at their parks and/or to institute new initiatives. These programs and initiatives included: establishing new butterfly gardens and/or milkweed meadows; maintaining areas of naturally-occurring milkweed in meadows and along roadsides as 'no mow areas' throughout the monarch's breeding period; improving and maintaining existing butterfly gardens; establishing new butterfly gardens; planting nectar-sources for pollinators; propagating and planting milkweed; and providing education and outreach programs. Staff at many of the parks took a "Pollinator Pledge", identifying of all the projects they hoped to achieve both short-term and long-term.

## Background and Need

**Monarch butterflies** are in desperate need of help as their population numbers have declined so drastically, there is a distinct possibility that they, or at least their migration pattern as a phenomenon, will become extinct over the next few years. The decline in population is due to a number of factors, including loss of over-wintering habitat and loss of suitable breeding habitat, the latter due to decreased availability of milkweed plants upon which they lay their eggs and their caterpillars exclusively feed. A formal petition has been submitted to the USFWS to have the monarch butterfly Federally listed.

There are many factors causing the decline over which we have no control, but the New Jersey Divisions of Parks and Forestry and Fish and Wildlife are working on improving the monarch's chances of survival by increasing suitable breeding, nectaring, and migratory stopover habitats. Monarchs are not alone in the threats and problems that they face. Many of NJ's butterflies and other pollinators face the same threats and are suffering similar declines. Habitat management to benefit the monarch will also serve to benefit a large number of these important pollinators.

Read on to discover the various ways New Jersey's State Parks have been helping the monarchs and other pollinators. For further information, please contact project managers, Diane Hewlett-Lowrie, NJ State Park Service (diane.lowrie@dep.nj.gov), and Robert Somes, NJ Fish & Wildlife.

**INDIVIDUAL PROGRAMS AND PROGRESS TO DATE** (January 1, 2016)

**Statewide staff**

NJDEP Division of Fish and Wildlife (F&W) & NJ State Park Service (SPS) staff collected seeds from local and native milkweed species which State Forestry Services (SFS) staff then propagated at the Forest Resources Education Center (FREC) in Jackson. SPS staff then distributed the successful milkweed plants plugs (approx. 6" plants in 3" peat pots) to a number of state parks to plant. Approximately 270 plants of three species of *Asclepias spp.* were propagated: Common (100 plants), Swamp (120 plants), and Butterfly Weed (50 plants). A variety of quantities was delivered to Bull's Island, Island Beach, Ringwood, Stokes, Spruce Run, Round Valley, and Bass River where they were planted in butterfly gardens and meadows.

Diane H-L presented "The Plight of the Monarch" (PP presentation) at the NJ Wild Outdoor Expo, to State Park staff, and at two schools.

**Allaire State Park**

Allaire has a managed, fenced 35' x 55' butterfly garden next to the Nature Center Parking lot. Two volunteers come twice a year to weed and do general clean up. Butterfly activity is unknown, but volunteer monitors would be welcome.

**Barnegat Lighthouse State Park**

BLSP Friends group has a plan for butterfly garden after gazebo is built, hopefully in 2016.

**Bass River State Forest**

A BRSF Visitor Service Assistant (VSA), who is also a student at Stockton University, took on the special project of converting the native plant garden (created as an Eagle Scout Project in 2008 and in need of maintenance) into a butterfly garden. She and volunteers weeded the existing garden, installed more plants, mulched, installed 6' high chicken wire and watered often. There are now 17 species of pollinator-friendly plants including milkweed, goldenrod, aster, sunflower, joe-pye weed, butterfly weed, fennel, parsley and grasses. Young volunteers painted large rocks that help hold down the base of the fence. The artwork includes flowers, butterflies, and words. There is a bird bath inside the garden as well as basking rocks that help butterflies warm their bodies. An educational flyer was drafted and will be finalized over the winter. A map of the location of the different plants will be painted by another volunteer and installed in the spring to complement the flyer. The garden is about 8' x 14'. BRSF seasonal naturalist found five (5) black swallowtail caterpillars on the parsley and fennel at one time. The office staff and seasonal naturalist raised monarch butterflies from eggs and caterpillars brought in by another staff person. The milkweed plants were very small; no eggs or caterpillars were found on them this season. Common milkweed seeds will be sown in the bed this year. Once the

garden is more established, BRSF hopes to have the seasonal naturalist provide an educational program about the project.

**Belleplain State Forest**

Goldenrod and butterfly weed added to the plantings at the office. More work planned for 2016.

**Brendan T Byrne State Forest – at Whitesbog Village**

In June, 350 plugs of native pollinator plants were planted along the ditch that runs parallel with the road. Prior to the Blueberry Festival, small signs were erected and interpretive information was shared with the visiting public. Maintenance staff was informed about "no mow" areas.

By July, everyone has been respectful of the "weedy chaos in progress". (Thanks to the superintendent in the northern region who suggested using signage.) Staff/volunteers here are presently working on an interpretive handout for visitors so they can plant their own pollinator garden. They will collect seeds from the plants this season and put them in little envelopes for the Blueberry Festival next year. Maintenance staff is aware that there is "NO MOW AREA" at Whitesbog.


As a final look to this garden's success this 2015 season, there were the following changes in the garden: Whether it was due to the weather of the 2015 or the increase in botanical offerings, the pollinators arrived here in more abundance and were more diverse. Many visitors to the historic village stopped along the garden area for a more intense observation of the flowers and the pollinators. Staff believes they took note of the signage and explored from there. The increase in foot traffic also carried over into the new nature trail being developed around Suningive. The plugs quickly grew into robust specimens that we expect will fill in the gardens quite nicely.

This winter, the garden stewards will remove invasive and woody vines that have begun to take hold in the past few years. This will give the garden room to grow and expand in the coming years. They are hoping to harvest some seeds this coming season. They also plan to have their custom handout on ***Pollinator Plants*** complete by mid-summer. Visitors will find this helpful when choosing and purchasing plants for their own gardens.

**Cape May Point State Park**

Cape May Point already had 2 butterfly gardens: one almost exclusive for milkweed. The trail borders are managed to encourage growth of flowers for pollinators. In spring/summer 2015, staff also stopped mowing about ¼ acre of grass and allowed succession to take place.

Cape May Point maintains a display mid-summer through fall with monarch caterpillars to educate the public and is planning a new garden/meadow area at the entrance to the park where there is currently grass.

**Cheesequake State Park**

There's a fenced-in circular (15 'diameter) butterfly garden in Booth Field (former group campsite). A path around the perimeter of garden is a mowed to allow people to walk around and look in the garden. Small interpretive signs discuss the importance of the habitat and the butterfly-friendly plants.

Volunteer groups (corporate, boy scout, and a school group) helped weed the garden and maintain the fence.

The meadow around the garden (2-3 acres) is mowed once per year in fall to keep woody plants from establishing. It is full of milkweed and thistle.

**Corson's Inlet State Park**

A volunteer planted several goldenrod (*Solidago*) plants along the dunes.

**Delaware and Raritan Canal State Park**

Trained maintenance staff made a concerted effort to avoid cutting wild-growing milkweed along the D&R Canal towpath. There is a significant amount growing there.

The staff has completed an 80-acre grassland restoration project within Hopewell Township, Mercer County that provides native habitat for pollinators. This project was co-sponsored by D&R Greenway Partnership, National Park Service and US Fish and Wildlife Service. The park staff will be maintaining the grassland fields by conducting mowing the area in late winter or early fall to ensure the habitat remains suitable for grassland birds and pollinators.

**Forest Resource Education Center (FREC)**

The state nursery at the FREC propagated milkweed seeds from butterfly weed, swamp and common milkweed; approximately 270 young plants were distributed to various state parks to plant

**Hacklebarney State Park**

Staff has reached out to members of the Garden Club of America but has not received a response. This has delayed the establishment of new pollinator gardens in the park. They are planning on spreading milkweed seeds here in the fall. Staff will continue to not mow areas where milkweed has been seen growing.

**High Point State Park**

Continue to maintain “no mow” areas at critical times where there are stands of milkweed or important pollinator plants (includes road sides). Plan to attempt to transplant milkweed within the park

Unfortunately, no monarchs have been spotted in the park for two years.

**Island Beach**

IBSP staff and volunteers planted milkweed plugs at the nature center. Several monarchs were observed in the small garden in 2015. They hope to expand the garden in 2016.

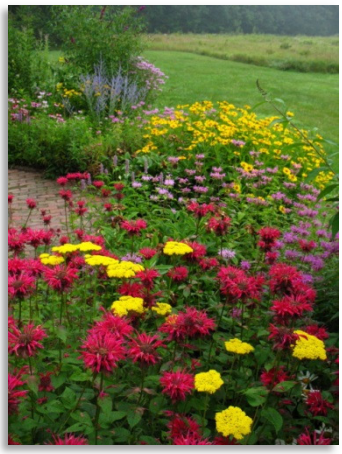
**Kittatinny Valley State Park**

The KVSP Butterfly & Hummingbird Garden was created by the park naturalist in 2001, and it won the Rutgers Master Gardener Award for Excellence in 2007. As of summer 2015, KVSP maintenance staff has agreed to stop mowing a 0.25-acre of meadow formerly used for ATV training. It is slowly reverting back to native grasses.

In December 2015, in cooperation with NJFFS-Division A, 30 acres of meadow near the visitor center were brush-hogged to remove invasive autumn olive, multiflora rose, and wineberry, and to support the growth of native nectar and host plants.

This past summer, the Sussex County Master Gardeners have been busy helping keep the butterfly & hummingbird garden blooming, weed-free, mulched, and watered.

Interpretive staff conducted four interpretive programs on monarch ecology scheduled between July 1 and September.



**Liberty State Park**

Liberty State Park resource interpretive staff has been involved in monarch butterfly programming and habitat restoration efforts since 2007. Staff developed a multifaceted approach including planting of host and nectar plants, education and outreach, captive raising, staff training and stewardship activities.

**Planting**

Additional planting in 2015 of host and nectar species totaled roughly 0.5 acres between the Nature Center Wildlife Habitat gardens and the Scout Garden over the past year. Host species included common milkweed, *Asclepias syriaca*, swamp milkweed, *Asclepias incarnate,* and butterfly weed, A*sclepias tuberosa.* Nectar and other pollinators included bee balm, bergamot, *Lobelia cardinalis*, columbine, *Echinacea purpurea*, eupatorium, mountain mint, *Solidago sp*., and iris. Additional seeding included 6lbs of native wildflower/pollinator mix.

**Staff Training**

Maintenance staff was trained on milkweed identification and requested not to remove or mow. The park gardener was asked to leave milkweed in flower beds until the end of September and to notify park interpretive staff before removing so plants can be inspected for larva before removal.

**Stewardship**

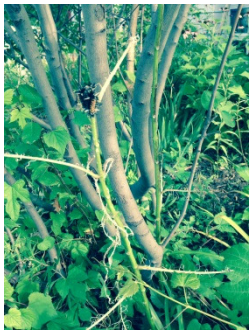
Stewardship through volunteerism and interpretive programming has played a major role in monarch habitat restoration. Dozens of scout troops and hundreds of volunteers have had a hand in creating new habitat and maintaining and expanding present wildlife habitat gardens. The Student Conservation Association spent three weeks in the summer of 2015 weeding and mulching our two primary sites. Numerous school groups have also participated in conjunction with environmental education programming and specific volunteer days have been hosted to foster community involvement.

**Education & Interpretation**

Over the past several years, numerous school groups, summer camps, families and individuals have attended education and interpretive programs focusing on monarch ecology and the role of human influence both negative and positive. Programming includes hands on investigation of the monarch lifecycle, host plant identification, planting activity, story or craft depending on the age group. Monarch eggs and larva are collected from the park and raised in enclosures for use in education and interpretive programs. Adult monarchs are released back into the wild.

**Outreach**

Outreach efforts include education programs in schools and libraries and habitat creation in school gardens. Education programs are similar in scope to in-house programming and have included planting activities in school butterfly gardens as well as raising monarchs in the classroom. Additionally, park interpretive staff worked with Bedwell Elementary School in Bernardsville NJ, over the past several years to create a butterfly garden. This past year the garden was registered as a certified Monarch Waystation by Monarch Watch. Discussion is ongoing with second grade teachers to raise monarchs in the classroom as part of their insect curriculum in lieu of painted ladies. We are researching the availability and cost differential.



**Observations**

Collection of eggs and larva from the local milkweed population has been declining for the past several years. Last year, 2014 was an all-time low, none were found on the park milkweed. Local population seems to have increased dramatically from last year. Staff collected approximately 40 eggs and larva from the park milkweed sources. There was roughly a 25% mortality rate. The rest were successful and released. In response to the possibility of low availability, larva was additionally purchased through Monarch Watch. Mortality rate was slightly higher at approximately 30%. Adults were released into the park.

Monarch larva and eggs have only been found on *Asclepias syriaca*, which has grown wild in the park for years. Both *Asclepias incarnate* and *Asclepias tuberosa* have been planted but not been found to be populated by larva or eggs.

The milkweed patch near the Nature Center has been ravaged for the last few years by the milkweed tiger moth, *Euchaetias egle* and monarch larva has been has been notably absent from those patches.

**Monmouth Battlefield State Park**

Over the past few years, staff has actively transformed forest to meadow to increase grassland habitat. Upland brush was cleared and native grasses planted (little bluestem, switch grass, Indian grass). Mowing limited to early spring or after August 15th in native grasslands. Former meadows were cleared and orchard grass, Timothy grass, and red clover were planted. These have evolved into goldenrod meadows.

**Parvin State Park**

A small area near park office it is filled with milkweed; staff tries to keep it that way. No monarchs seen in summer 2015.

Parvin maintains a meadow that is mowed only 2 times a year – in early spring and late fall. No milkweed has grown there yet.

**Ringwood State Park**

A huge milkweed planting was done at the New Jersey Botanical Garden/Skylands on Sat. May 16, 2015. It involved 3 State garden staff, members of the friends group (the Skylands Association), members of the Bergen Co. Audubon Society and the general public. Altogether, there were approximately 20 volunteers planting two species of milkweed; *Asclepias tuberosa* and *A. incarnata* – 500 each, in total 1000 plugs.

Volunteers and staff planted swamp milkweed in wet areas surrounding the Bog Pond and butterfly weed in the dry meadow areas of the Garden. It turned out to be a very dry summer; volunteers watered as much as they could.

The purchase of plants was funded through the Bergen County Audubon Soc. with a grant from the National Audubon Society. The planting program was advertised through the efforts of the Skylands Association and attendees were provided with hands on planting instruction and information regarding Monarch butterfly nectaring habitat. Milkweed plugs were also supplied by the state.

**Round Valley Recreation Area**

Planted swamp milkweed in butterfly garden.

**Stokes State Forest**

Staff targeted about 5 acres of shrub and wood stemmed overgrown fields that was mostly Russian olive, and returned it to herbaceous fields. They changed mowing schedules in approximately 15 acres of fields with known milkweed until after October. Planted two trays of milkweed.

**Spruce Run Recreation Area**

Two areas near the entrance of the park were converted into small pollinator gardens. Both nectar and larval sources consisting of marigold, snapdragon, oregano, parsley and basil were planted. An area was also planted with a mix of perennial and annual seeds that are suitable for pollinators. These seeds were sewn directly into the ground and have been a bit slow to get going, but are beginning to flower (June).


A small in-house made sign is present explaining that a pollinator garden is growing and encouraging visitors to come inside to learn more. A mix of perennial and annual seeds for pollinators was placed in an in-house made seed packet to give to visitors. The text on the packet explains the importance of gardening for pollinators and encourages visitors to take the seeds home to create their own pollinator gardens.

An existing bed at Picnic Area 4 has been identified to contain daylilies and common milkweed. Once the lilies flower, the plan is to thin out some of the lilies to provide more room for the milkweed. This will be an area where we will collect milkweed seed pods in the fall.

Two areas at the entrance to the park's administration office have also been planted with nectar and larval plants. Mixtures of perennial and annual seeds for pollinators were put in the ground here in three sections. Butterfly weed plants were also put in this location along with cosmos and bergamot. The plan is to let these plants become established and then divide them in the future to spread throughout the park.

A large circular bed exists near the Beach Area. There are currently iris, lilies, *Spirea,* pine trees and dogwood trees growing. This space was cleaned out of leaves and covered with wood chips. Then several areas within this space were planted with nectar and larval plants consisting of marigold, snapdragon, basil, oregano and parsley. Several areas were also planted with the common and swamp milkweed that was grown at the State Nursery. We are hoping the milkweeds will become established and over time fill in this entire bed. In the fall, seeds from other milkweeds in the park will be spread here.

A large field in the park has not been mowed and there is a great quantity of common and swamp milkweed growing there. This field has become a natural pollinator area that will be maintained as such. Plans are being discussed to possibly mow a "path" to create a walking trail for park visitors and to install interpretive signage relating to pollinators. This new walking trail would also provide park visitors using Group Picnic Area 4 a new way to walk to the beach area. They currently have to walk along the road.

Swamp milkweed has been discovered growing at the water's edge at the Boat Rental in the park. This milkweed will be monitored and some of the seeds will be collected for sewing in other areas.

There are several smaller stands of common milkweed coming up along the Boat Launch Road. These areas will continue to be monitored and maintained as "no mow zones". Seeds will be collected from here in the fall.

**Swartswood**

Staff sowed wildflower and milkweed seeds in the field by the office and is hoping to see results in spring 2016.

**Voorhees State Park**

A pollinator garden, growing on its own, was discovered. There are a few landscaped beds at the State Park Police Office building just inside the entrance of the park. Swamp milkweed is growing here along with lilies, *Spirea* shrubs and other flowers. As such, these areas will be weeded and maintained as pollinator gardens. Milkweed seeds may also be collected from this location in the fall.

Staff has been keeping an eye on the power line right-of-way in the park. It seems that this would be a good place to try and encourage milkweed to grow. It is a large, long, continuous piece of land in full sun that does not get mowed. This land is ideal for milkweed, so we plan to spread some seeds here in the fall. A few plants have been observed growing here. Suggestion: Consider reaching out to the power companies to get them on board with growing milkweed along all power line right of ways.

**Juvenile Justice Commission Greenhouse at Voorhees Partnership -** Staff has reached out to the JJC Greenhouse staff to have them order and grow pollinator plants for next year. We have recommended they grow both larval and nectar plants such as cosmos, bergamot, butterfly weed, marigold and zinnia to name a few. They are also willing to try and grow milkweed if we provide seed for them. These plants will be started in the winter/early spring by their staff in the greenhouse for planting in the ground for spring 2016.

**Washington Crossing State Park**

WCSP has a fenced-in butterfly garden at the entrance to the visitor center. It has become quite overgrown and in need of maintenance. We are trying to recruit volunteers to maintain.

**Wawayanda State Park**

Wawayanda has a nice size meadow that has been maintained for a few years. It is mowed in the late fall. It has a lot of well-established milkweed.