

# MONARCH WATCH PRE-MIGRATION NEWSLETTER - JULY 2009

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**Welcome!** Thank you for participating in the eighteenth fall season of monarch tagging sponsored by Monarch Watch at the University of Kansas. Your tagging efforts, and the subsequent recoveries of tagged butterflies, contribute to our overall understanding of the dynamics of the monarch population. One of our long-term goals is to assure the perpetuation of the monarch migration in eastern North America. To accomplish this goal, we need to monitor the monarch population and educate the public and the policy makers to all factors, human caused and natural, which affect the monarch population. By participating in this program and educating others about monarchs, and the conservation issues associated with this species, you will help in the efforts to maintain the monarch migration.

## Status of the Population July 2009

The number of migrating monarchs this fall should be similar to those observed in each of the last three years and the total area occupied by monarchs at the overwintering sites in Mexico should once again be close to five (5) hectares.

The last two strong migrations in recent history occurred in 2005 and 2003. It appears that strong monarch migrations occur when the temperatures and rainfall are favorable during the breeding season, including the two periods of migration in the spring and early summer.

This year, the temperatures were a bit higher than normal during the March-April period but perhaps more important were the conditions during the period from late April through mid June. Temperatures in May and June were below normal in many areas, and Minnesota (one of the big production areas for monarchs) experienced

below normal rainfall and moderate drought conditions. Overall, the production of monarchs in the south appears to have been moderate, followed by conditions that limited the numbers and reproductive success of the monarchs reaching the northern breeding areas.

Nevertheless, if you have been tagging over the last three years, you should expect to see and be able to tag a reasonable number of monarchs this fall.

Please visit our website for updates as the season progresses.

## Overview of the Monarch Watch Tagging Program

For information about "Peak Migration Dates" in your area please see

[www.MonarchWatch.org/tagmig](http://www.MonarchWatch.org/tagmig)

## Recording Tagging Data

- **It is very important that participants record their complete name and contact information on each and every sheet.** If you anticipate tagging more than 25 monarchs, fill in your name and address on the datasheet first and then make photocopies. To make the tracking process easier, the person to whom the tags were issued by Monarch Watch should be listed in the top right corner.

- **When you record your data, use the complete six-symbol tag code.** Without the complete code, tracking is virtually impossible. **DO NOT USE the page number tags;** these are only on the sheet as a printing reference. Pages numbers are repeated each year and are meaningless.

- Use the datasheet example as a guide for the information to include on your tagging records. Be sure to record the tag code, date, and location (city, state, zip) for each tag you use.

- If you happen to recover a monarch

while you are out tagging, please send that recovery information to us separately. We receive thousands of datasheets but only hundreds of recoveries, so sending these reports separately will insure that the recoveries are not overlooked.

## Returning the Datasheets

**Please, please, return your datasheets as soon as you are finished tagging for the season.** Believe it or not, many people receive tags, tag monarchs, record data and then never return their datasheets. Every year the Monarch Watch staff spends countless hours (and a lot of money) contacting people who have recoveries but did not return their data. The data for a recovery is useless if we are unable to verify when, where, and by whom the butterfly was tagged.

## Recoveries!

Most of the tagged monarchs recovered within the United States and Canada are found dead by people who know nothing about Monarch Watch or our tagging program. Usually these people either return the dead specimen with the tag, the tag itself, or just the tag code. Most of the recoveries arrive with information on the location, date and circumstance of the recovery. If this information does not arrive with the tag, we do our best to collect it. Once we have the tag code for a recovery, we search the tag database for that particular tag. If a record has not been returned, we must contact the person who received the tag. When we locate the datasheet for the recovered monarch, we record the participant's name, along with the tagging location, date, monarch gender, etc., in the recovery database. We calculate distance according to latitude and longitude to obtain information for the straight-line course (a minimal estimate for the distance the monarch traveled). The recovery is available as soon as it is entered and both the tagger and the person who recovered the tag can view the record

online and print a certificate.

The majority of the recovered tags are obtained in Mexico. Early each year we visit the overwintering sites, particularly El Rosario and Sierra Chincua, where we purchase tags from the guides and ejido members. The ratio of untagged to tagged monarchs is quite high and it takes most residents several hours to find each tag among the butterflies visiting sites along streams or dead butterflies on the trails and under the monarch covered trees. We pay 50 pesos (about \$5US) for each tag - reasonable compensation for the time and energy spent locating each tag. Part of the cost of the tagging kits covers these recoveries. However, in years in which there is high mortality at the overwintering sites the number of recoveries is high and exceeds the funds available to purchase tags. The Monarch Watch Tag Recovery Fund has been established to address the costs associated with tag recovery incurred by us each year. Contributions to this fund and to Monarch Watch in general are always welcome and appreciated:

[www.MonarchWatch.org/donate](http://www.MonarchWatch.org/donate)

### What do we do with the data?

The recovery data is posted on our website and is analyzed to test hypotheses concerning monarch orientation and navigation. The data are also used to determine mortality during the migration and estimate the number of monarchs in the overwintering population. These analyses will be summarized on our website after the publication of articles.

### When Does Tagging Begin?

As the length of daylight shortens in mid-August, monarchs in northern latitudes (i.e., near the Canadian border) begin to migrate. Monarchs farther south will begin their journey a few weeks later. Tagging and monitoring should begin in early to mid August north of 45N (Minneapolis) and late August at other locations north of 35N (Oklahoma City, Fort Smith, Memphis, Charlotte) and in

September and early October in areas south of this latitude. An explanation of when to begin tagging in your area can be found in the "Tagging & Migration" section of our website.

### Capturing a Monarch

When in flight, monarchs are wary, elusive and difficult to catch. To maximize the number of monarchs collected for tagging, it's best to locate monarchs feeding on flowers or in roosts late in the day or early in the morning. With a butterfly net in hand, approach each butterfly slowly (from behind if possible), as sudden movement will startle it into flight. Sweep the net forward quickly and flip the end of the net bag over the net handle. You want the butterfly in the deep end of the net. With one hand holding the handle, use the other hand to collapse the end of the net bag. Flatten the net bag so the wings of the butterfly are closed over its back (thorax) and place thumb and forefinger over the leading edge of the wings (from outside of the net). Next, with the thumb and forefinger of your other hand, reach into the net and firmly grasp the thorax. Remove the butterfly for tagging.

### Butterfly Nets

You can purchase a good butterfly net directly from the Monarch Watch Shop (item# 120003; 1-800-780-9986 or [Shop.MonarchWatch.org](http://Shop.MonarchWatch.org)) or make one. The opening of the net should be 12" or more in diameter and the net bag should be at least 24" deep, allowing you to trap the butterflies in the end of the net without harming them. Net bags can be made from a variety of materials but it is advisable to choose see-through materials that won't rip easily as the net is swept over vegetation. The mesh should also be small enough that the monarchs aren't able to wiggle free. Landing nets used by fisherman (available at most discount stores) can usually be converted to butterfly nets.

### Storing Live Monarchs

If you collect more monarchs than

you can tag immediately, you can store them in paper triangles or glassine (#3 stamp) envelopes overnight or for several days (no more than three). Simply place the envelopes in a plastic box or zip-lock bag in a refrigerator. A moist paper towel should be included to keep the butterflies from becoming dehydrated.

### Sexing Monarchs

Once you become familiar with monarch adults, sexing is relatively easy. Males have an enlarged pouch midway along a vein that is directly below the discal cell on the hindwing (see below). In species closely related to the monarch, this is a source of pheromones used in courtship. The pouches do not appear to be functional in the monarch. Females lack these pouches and appear to have thicker veins than males - this is actually only a difference in pigmentation. Upon close examination, you will also notice that males and females differ significantly in the anatomy at the tip of their abdomen.



It's pretty easy to tell a male monarch (above) from a female monarch (below) when you know what to look for.



Monarch Watch is a cooperative network of students, teachers, volunteers and researchers dedicated to the study of the monarch butterfly. Our goals are to further science education, particularly in primary and secondary school systems; to promote the conservation of monarchs and their habitat; and to involve thousands of students and adults in a cooperative study of the monarchs' fall migration.

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