Milkweed for Monarchs

Monarch Caterpillar

- The four stages of the Monarch life cycle are the egg, the larvae (caterpillar), the pupa (chrysalis), and the adult butterfly.
- A Monarch caterpillar will gain about 2,700 times its original weight in 10-15 days.
- The monarch larva (caterpillar) molts, or sheds its skin, five times before entering the pupa stage.
- The caterpillar is in the pupa stage for 9 to 14 days.
- A large monarch caterpillar can eat an entire milkweed leaf in less than 4 minutes.
- The ONLY food that monarch caterpillars eat is the milkweed leaf.
- Milkweed leaves contain toxins that monarch caterpillars accumulate in their bodies, which makes them taste unpleasant to many predators.

Monarch Butterfly

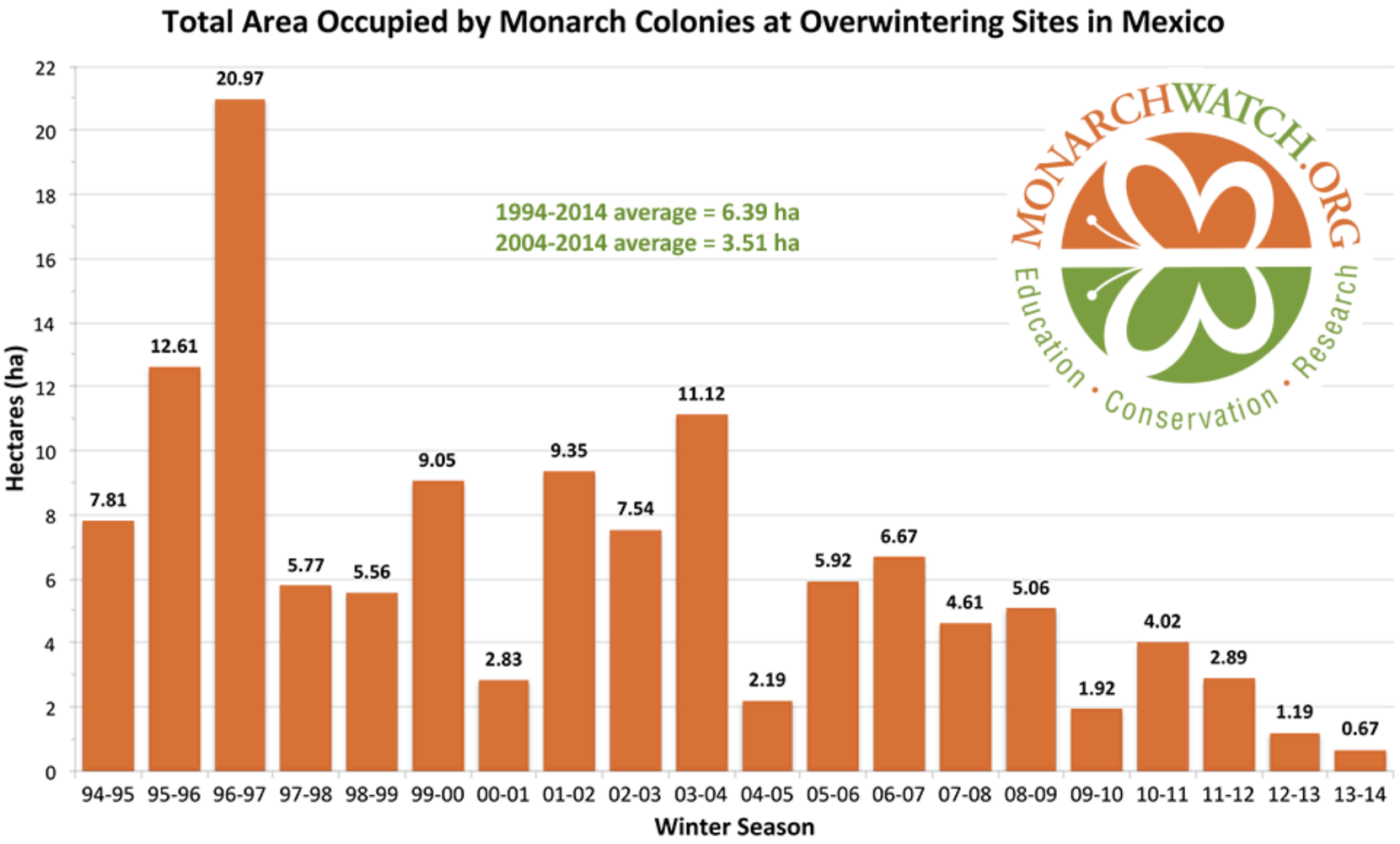
- Monarchs are sensitive to wet and freezing temperatures. As the weather turns colder in the fall, they migrate from the north, from Canada and states like Minnesota and Wisconsin, for a weekslong journey south to the mountains of Mexico. West of the Rockies, the butterflies travel to the Southern California coast.
- In Mexico, the butterflies amass in the tens of millions, returning to the same area and the same trees, often arriving just in time for the festivities surrounding el Día de los Muertos, or Day of the Dead, from Oct. 31 to Nov. 2. There, they spend the winter, until around February or March when they fly back north.

Monarch Migration

- The flight of the butterflies is the longest known distance insect migration on Earth, and it's been occurring for thousands of years.
- It takes four generations, including a "Super Generation" of butterflies, to travel all the way from Canada to Mexico, overwinter, and make one final short trip to the southern United States to lay eggs. Then, the cycle begins again.
- Monarchs joining the migration each fall are three or four generations removed from those that made the journey the previous year – yet somehow, they find the same groves of trees visited by their ancestors.
- How monarchs navigate to theese forest groves remains an unsolved scientific mystery.

Monarch Butterfly Population Decline

- 1 billion: Monarchs counted in 1996, the most ever recorded
- 300 million: Average year
- 55 million: Monarchs counted in 2014



Data for 1994-2003 collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Natural Protected Areas (CONANP) in Mexico. Data for 2003-2013 collected by World Wildlife Fund Mexico in coordination with the Directorate of the MBBR.

Monarch Butterfly Population Decline Factors

- Loss of milkweed habitat (see next page) – the ONLY plant that monarch caterpillars feed on.
- Research by scientists from the Universities of Iowa and Minnesota in 2012 showed a direct correlation between declining monarch numbers and increasing adoption of herbicide tolerant soybeans and corn.
- Pesticide use, particularly neonicotinoids, which are used on farms and around homes, schools, and city landscapes. These insecticides are extremely toxic to arthropods. They are systemic, meaning that when they are applied, plants absorb and distribute the compounds to all parts of the plant, making the leaves, nectar, pollen, and woody tissue toxic to insects and other arthropods that feed on them. (Use of neonicotinoids has also been linked to drastically reduced honeybee populations.)
- Overwintering habitat loss due to development and decay of overwintering trees as they age.
- Habitat loss in overwintering sites in Mexico, due to illegal logging.

Milkweed Habitat Decline Factors:

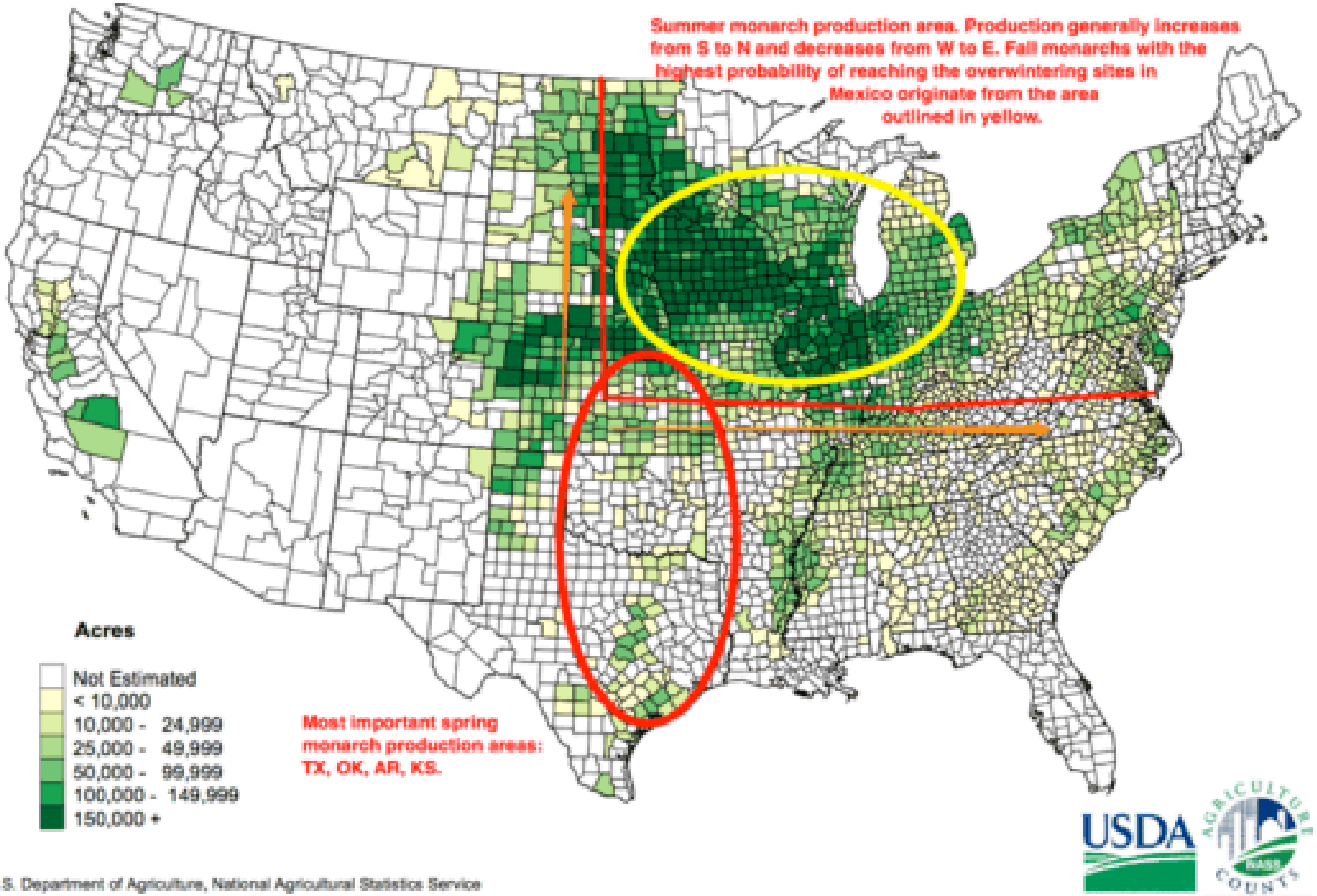
- Losses of milkweed habitat due the adoption of glyphosate tolerant (RoundUp Ready) corn and soybeans in the last 10 years amount to at least 100 million acres. The conversion of 7 million acres of Conservation Reserve Program (CRP) land to crops for the production of biofuels adds to the total. In all, it is estimated the loss of milkweed habitat to be 147 million acres since 1992 – an area 4 times the state of Illinois.
- We are losing 6,000 acres of potential monarch/pollinator habitat a day in the United Stated due to development (2.2 million acres per year).
- Herbicide application and increased mowing in roadside ditches and agricultural margins is eradicating milkweed habitat even more from rural areas.
- Due to specialized requirements and long life histories, many milkweed species have low replacement rates. That is, they may produce seeds for many years, maybe even 10s of years, before a new plant is established from a seed. In extreme cases, the life histories of the long lived species is not unlike that of many trees.

Sullivant's Milkweed (A. sullivantii)

Whorled Milkweed (A. verticillata)

Common milkweed (A. syriaca)

IOWA IS KEY!



U.S. Department of Agriculture, National Agricultural Statistics Service

Current Milkweed and Monarch Conservation Initiatives

- In August 2014, the Center for Biological Diversity was one of several conservation groups that petitioned the U.S. Fish and Wildlife Service to declare the monarch a threatened species under the federal Endangered Species Act. The wildlife service is considering the petition.
- U.S. Fish & Wildlife Service joined forces with the National Wildlife Federation and the National Fish and Wildlife Foundation to pledge an immediate $2 million for "on-the-ground" conservation projects, namely to plant some 200,000 acres of milkweed on lands the agency controls.
- The service also earmarked an additional $1.2 million to the wildlife foundation as startup money, to be matched dollar for dollar by private donations and spent on future projects dedicated to conserving monarchs.
- The major key to monarch survival is milkweed, the only plant that the monarch, as a butterfly or in its caterpillar stage, dines on. As such, the service and other organizations are calling on people to plant milkweed in their own gardens to help replace millions upon millions of acres of milkweed that have been lost in recent decades.
- Although the wildlife service's plan to plant 200,000 acres of milkweed is a positive step, some 1 million acres of milkweed have been lost each year for many years.

Milkweed for Monarchs Goal - Education

- Certify Lake Manawa State Park as a "Monarch Waystation"
- Educational signs throughout Lake Manawa State Park

Milkweed for Monarchs Goal – Establish Milkweed Habitats/Conservation

- Host a milkweed planting day at Lake Manawa in the spring, to become an annual event.
- Collaboration in future years with other entities

Milkweed for Monarchs Goal – Become a Resource

- Become a leader/resource/supporter for other monarch/milkweed efforts in Iowa and state parks nationwide.