

Monarch Butterfly ^{Fall} Migration Game

Play Virtually

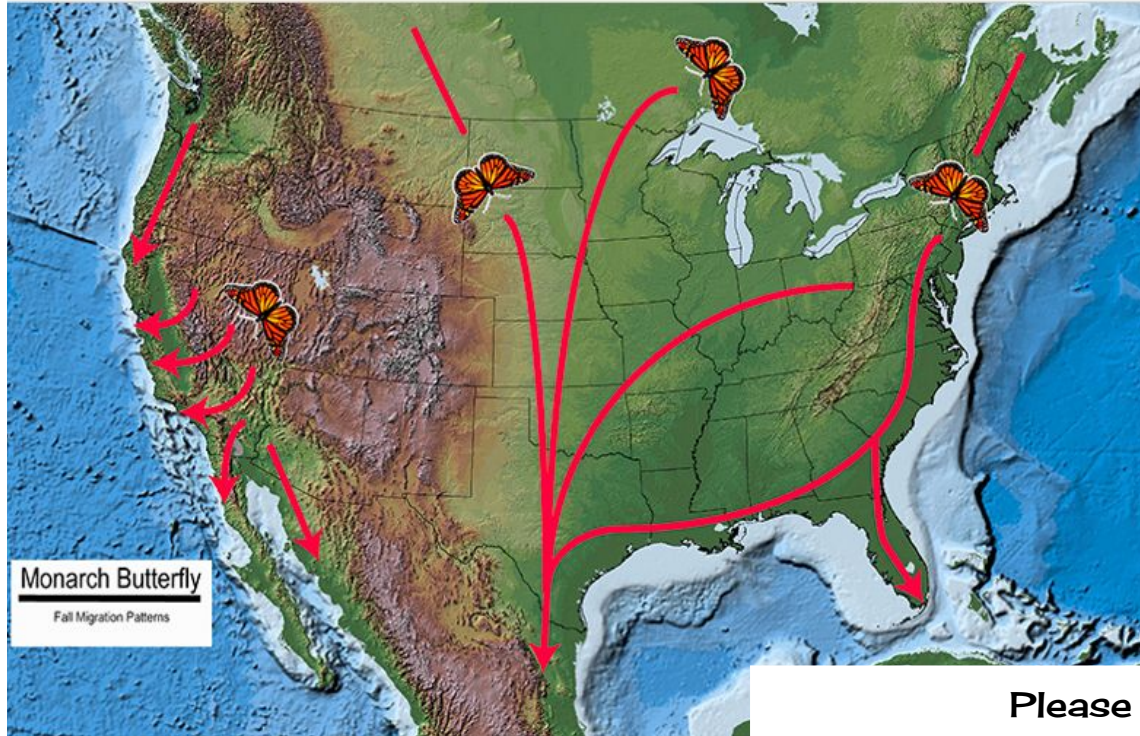
Traveling South

Eastern North American monarchs fly south using several flyways then merge into a single flyway in Central Texas. It is truly amazing that these monarchs know the way to the overwintering sites even though this migrating generation has never before been to Mexico!

Play In-Person

Go to a number to begin

Click on numbers to follow the journey of the Monarch



Monarch Butterfly Fall Migration Patterns. Base map source: USGS National Atlas.

*Use a US map to add bright colored arrows that noted the 'estimated' location of Monarch each month.

Print Game
single sided
2 sheets per page
Slides 4-43
20 sheets of paper
€

Use clothes-pin to hang outside

Print
Wristbands €
Bookmarks
Double sided
Slides 2-3
1 sheet of paper =
4 participants

Please contact

Catherine.sobieszczyk@gmail.com

A Texas Master Naturalist, Alamo Area
with suggested updates or changes

This is not to be sold

1

For
Geography

2

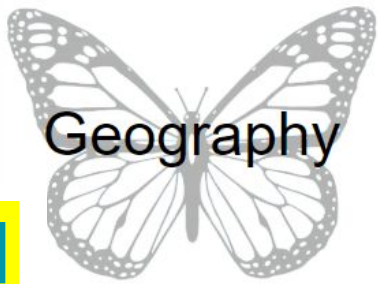
For
Host Plants

3

For
Nectar
Plants

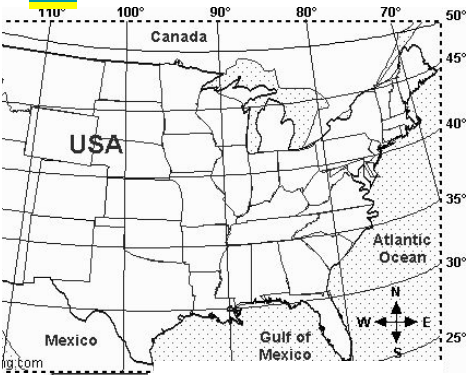
4

For
Life
Cycle



Geography

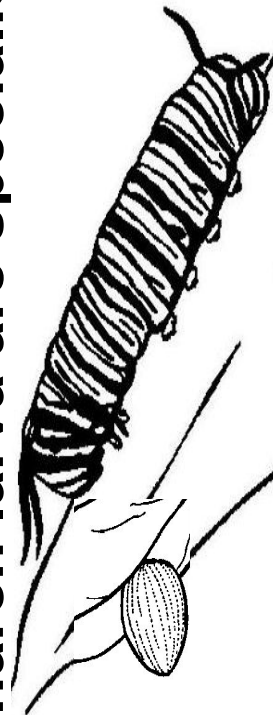
1



Host Plant is Milkweed

2

Monarch larva are specialists



feed exclusively on Milkweed

Most contain a toxic milky sap that deters prey!

Nectar Plants

3



Frostweed, *Verbesina virginica* is the primary nectar plant for Monarchs



Both Nectar & Host Plant: Hierba De Zizotes *Asclepias oenotheroides*

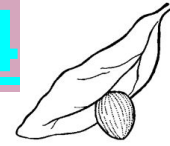


Both Nectar & Host Plant: Antelopehorns *Asclepias asperula*

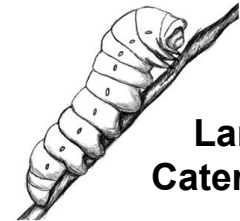


Life Cycle Focus

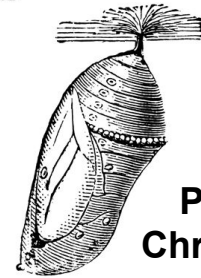
4



Egg



Larva Caterpillar



Pupa Chrysalis



Adult Female Butterfly



Adult Male Butterfly

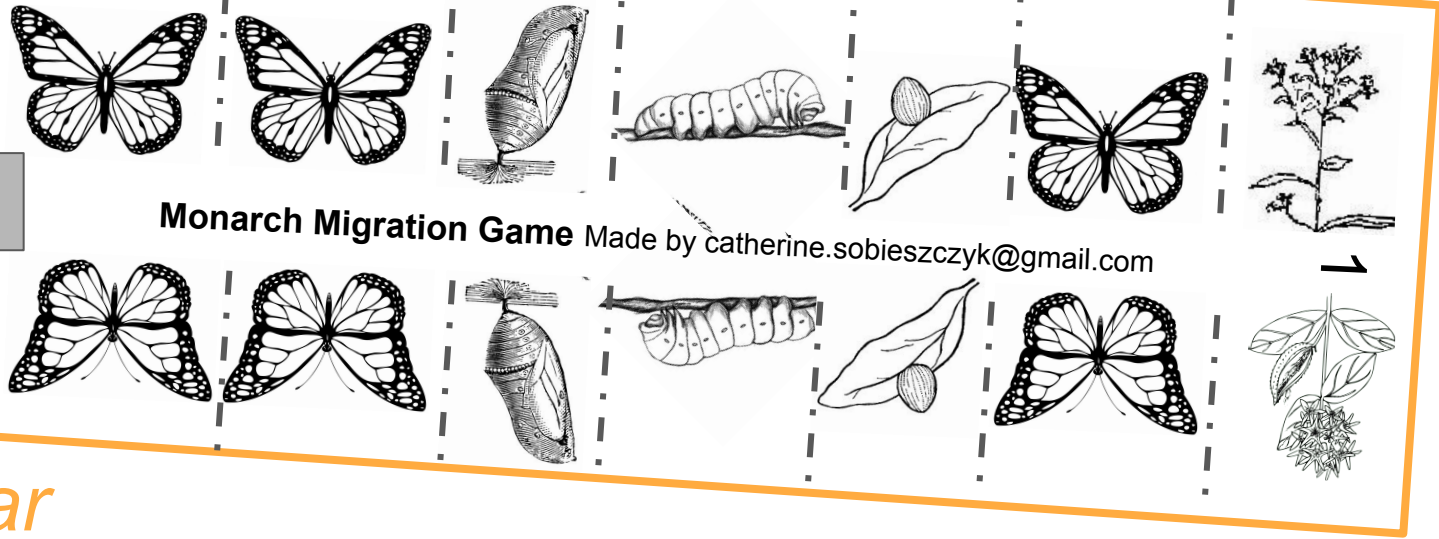
Wristband printed on back of the bookmarks

Set down a monarch

Raise a Chrysalis

Raise a Frostweed

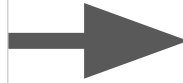
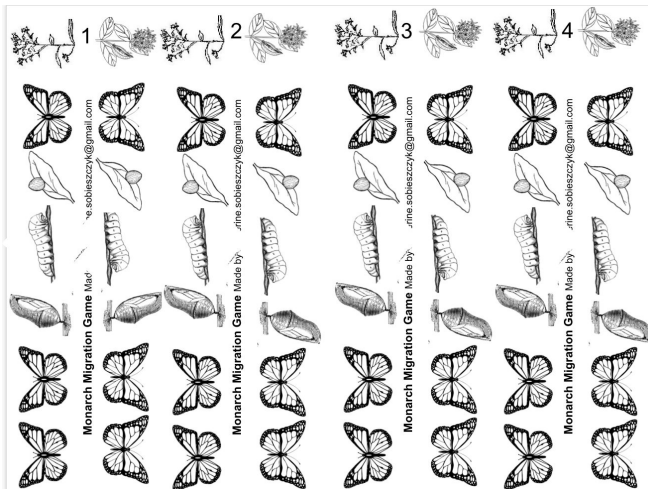
Small piece of tape



Monarch Migration Game Made by catherine.sobieszczyk@gmail.com

Raise a caterpillar

Print double sided wristbands & bookmarks [here](#)



Geography

USA

Latitude	Monarch in highest number
49	18-20 August
47	24 August - 5 September
45	29 August - 12 September
43	3 - 15 September
41	8 - 20 September
39	14-26 September
37	19 September - 1 October
35	24 September - 6 October
33	29 September - 11 October
31	4-16 October
29	10-23 October
27	15-27 October
25	20 October - 1 November
23	27 October - 8 November
21	3-15 November
19.4*	10-27 November

www.MonarchWatch.org

Host Plant is Milkweed

Monarch larva are specialists feed exclusively on Milkweed Most contain a toxic milky sap that deters prey!

Nectar Plants

Many Flowering Plants, especially Frostweed are nectar plants

Both Nectar & Host Plant: Hierba De Zizotes *Asclepias oenotheroides*

Both Nectar & Host Plant: Antelopehorns *Asclepias speciosa*

Life Cycle Focus

1 Egg

2 Larva Caterpillar

3 Pupa Chrysalis

4 Adult Female Butterfly

Adult Male Butterfly

1

Here begins the Monarch journey in late August or early September. Luckily there is a large refuge in Minnesota with **plenty** of nectar plants to store up energy, These fall Monarch store energy as fat in the abdomen!

Raise a Frostweed



& Flex Your Muscles
Power over to **#5**



2

Return
to
Host
Plant is
Milkweed



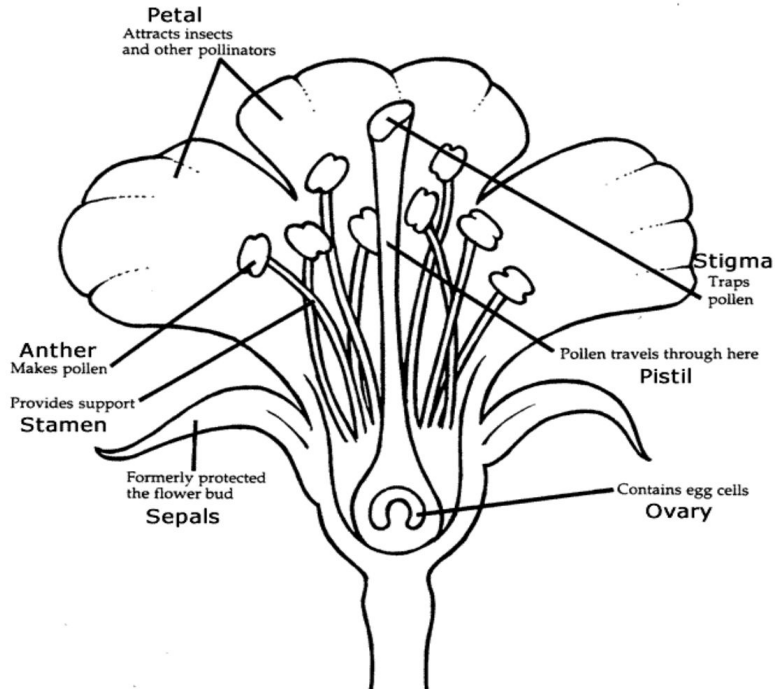
A branch supports a cluster of roosting monarchs at the Minnesota Valley National Wildlife Refuge. Photo by Kelly Nail/USFWS.

These butterflies have just emerged from their chrysalis at the Minnesota Valley National Wildlife Refuge,

Raise a Chrysalis, 

**Stretch your 'arms/ wings'
& move to #6**

Parts of a Flower



3



Get energy for your long flight by drinking nectar, produced in nectaries on various flower parts.

This is a photograph of Butterfly Weed, *Asclepias tuberosa*, it's a milkweed; both nectar & host plant for Monarchs!

Raise a Monarch



Stomp 2 times & move to [#7](#)



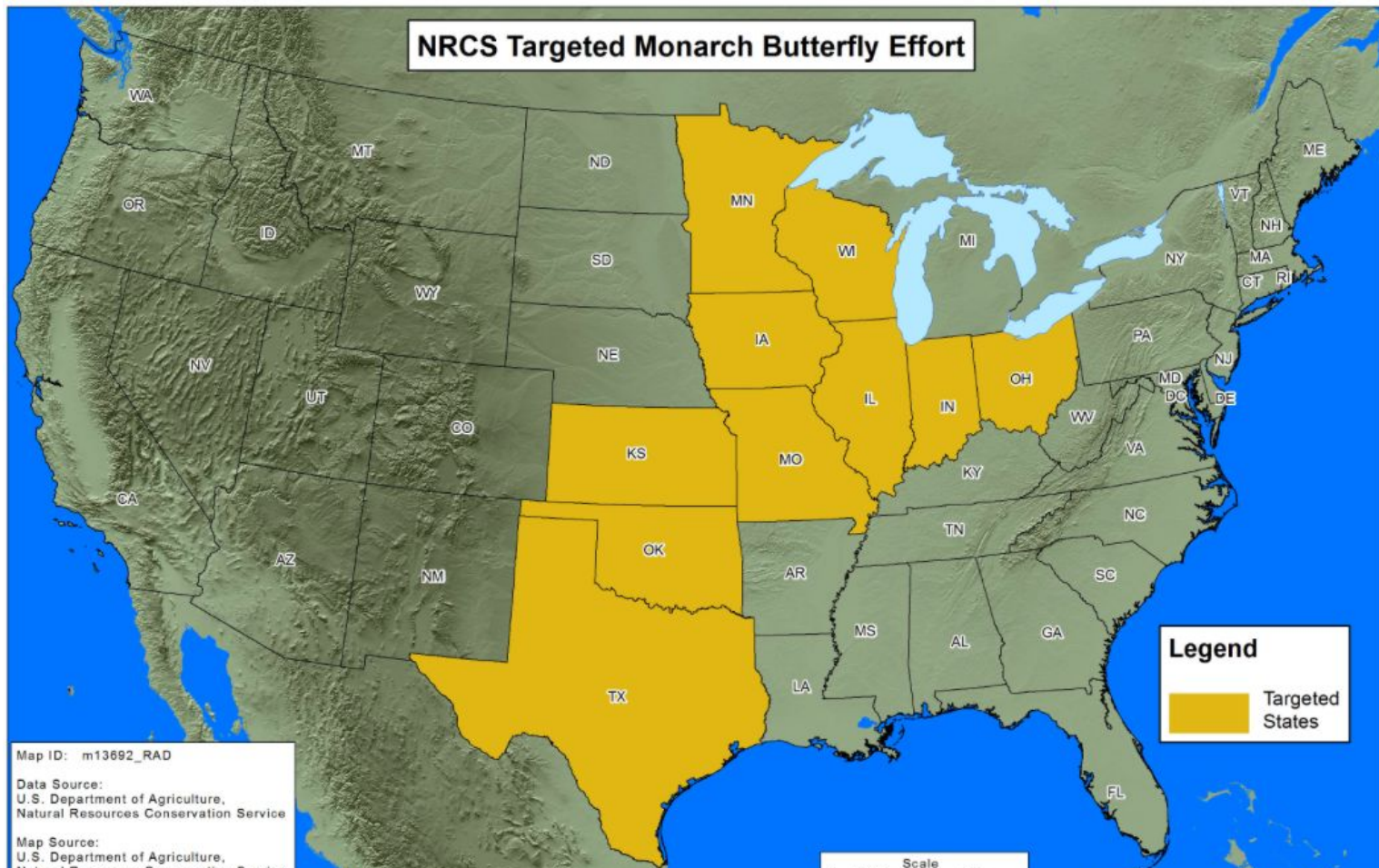
These Monarchs are now part of the 4th generation of butterflies and will make their way to the Southern US!

Raise a chrysalis

Do a **BIG** stretch and Continue to [#8](#)



5



It's the beginning of September, school has started & Monarchs are moving south through Iowa & Nebraska. Just keep flying, Just keep flying...



Raise two adult monarchs



Flap your forearms 4 times & continue 4 stops to [#9](#).

Texas milkweed

6

Milkweeds are the host plants for Monarch butterflies.

This means that the eggs must be laid on these plants so that larvae (caterpillar) can eat and grow.

Fuel up!

Milkweed is both a nectar & **host** plant!

Make chewing sounds, and move ahead to [#11](#)

Asclepias texana



Raise a caterpillar



7

Common Sunflower is a perfect **nectar** plant to stop for lunch.

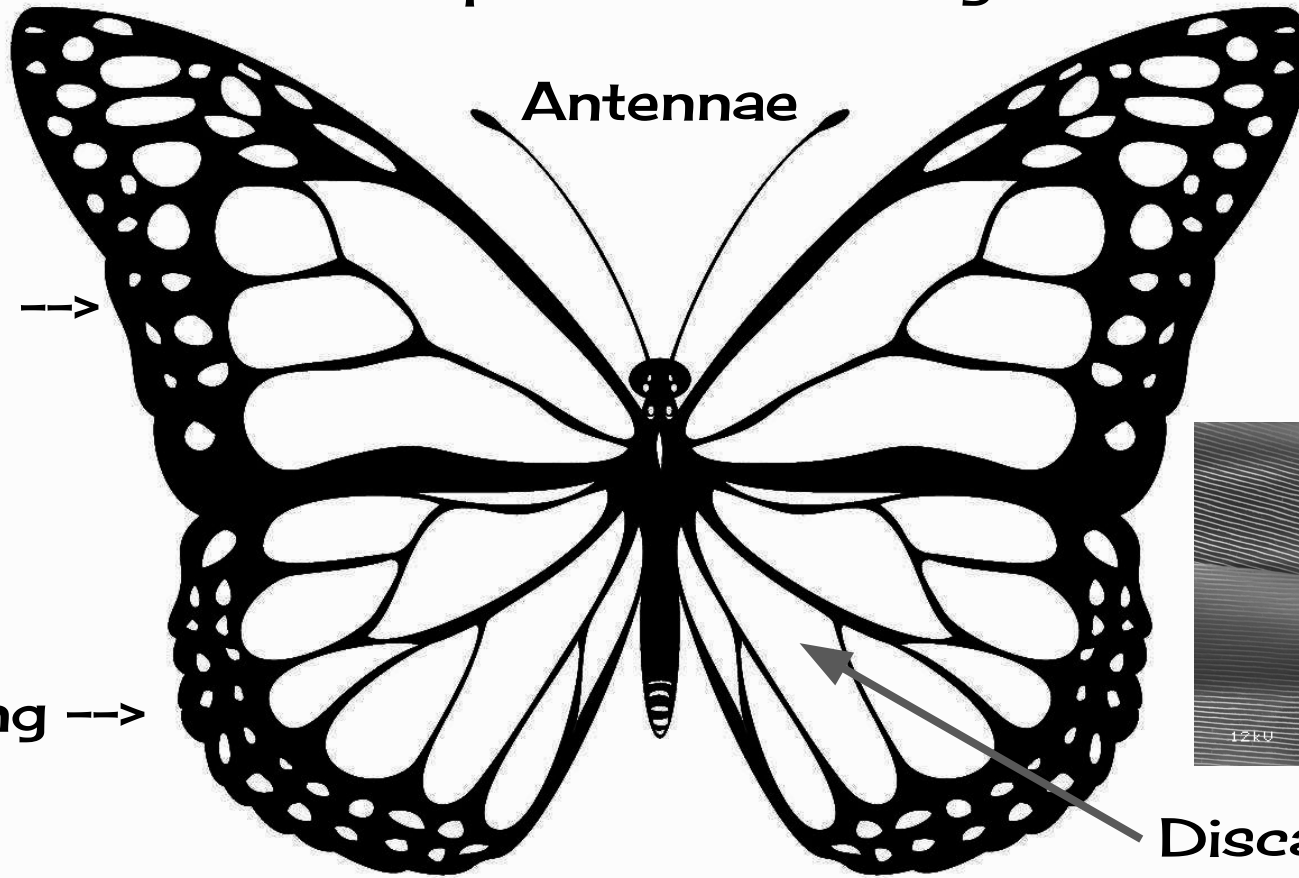
Raise a butterfly



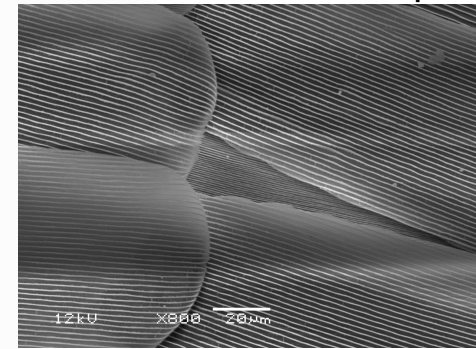
Newly energized,
**jump 3 times before
moving to #10**

8

Flight Position: Butterfly wings are densely covered with scales that improve their aerodynamic efficiency.



Close-up of the wing with a scanning electron microscope



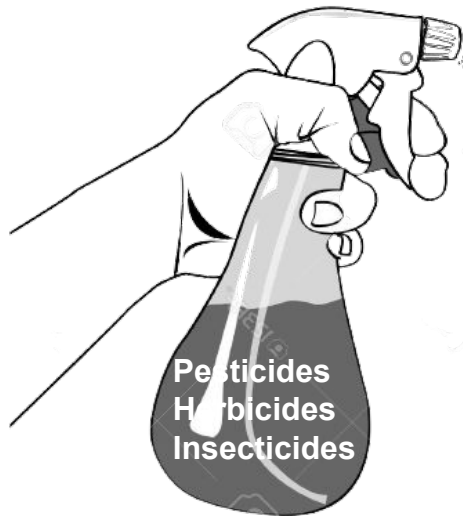
Discal Cell

Take Flight Position, spread your forearms & flap 3 times & continue to [#12](#)

Raise a butterfly



10



Pollinators, like butterflies drink nectar as food
BUT, when weed killers and pesticides are used on
lawns and gardens, the toxins harm pollinators

**Make some gulping sounds
& move ahead 5 stops to [#15](#)**

Rest a butterfly 

11



Return
to
Host
Plant is
Milkweed

You were just tagged! Don't worry, it won't hurt you, but will help gather information/ data to better help Monarch populations in the future!

Raise a monarch

Show you are still strong & move on to #19



12



There are so many predators.
This praying mantis was well camouflaged!

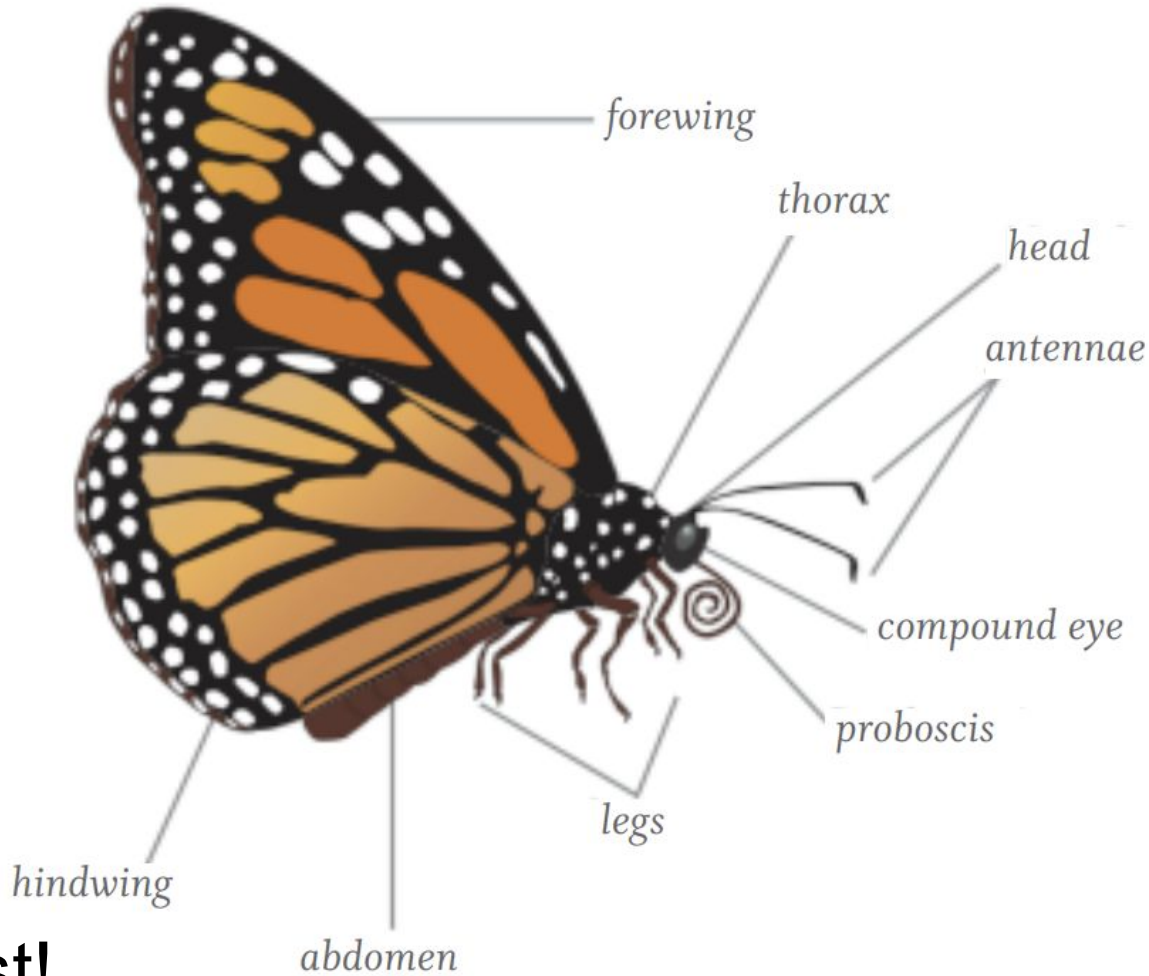


Lower a Monarch

Take a deep breath & move along to [#16](#)

13

Resting Position



Take a rest!

Can you name the body structures?

Raise a milkweed

Flap your wings 2 times & continue to [#28](#)



14



It's time to plant native perennials!
Native perennials serve as nectar plants and
host plants to pollinators.



Raise a Monarch Butterfly

Fall is a great time to establish plants in the ground,
native plants can handle the weather changes in Texas
better than other plants! **Move slowly 4 stops to [#18](#)**



15

Frostweed,
Verbena virginica,
is a native perennial
that is the monarch's
primary **nectar** plant.
**Rub your stomach 2
times**

Raise a butterfly



& move ahead to [#17](#)



Feast on some
frog fruit,

16

Phyla nodiflora.

It's a great ground
cover **nectar** plant
blooming March
through November!

Raise a monarch



A hurricane blows
through, rest & move
back to [#13](#)

17

Insecticides not only kill mosquitoes and other pests, but can harm other living things as well. Let's work together to limit pesticide use!

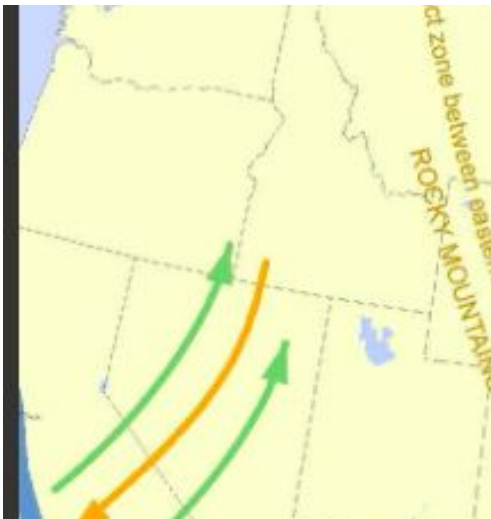
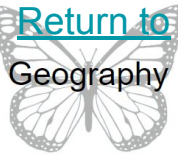
Take a deep breath to move along to [#21](#)

Rest a butterfly



17

18



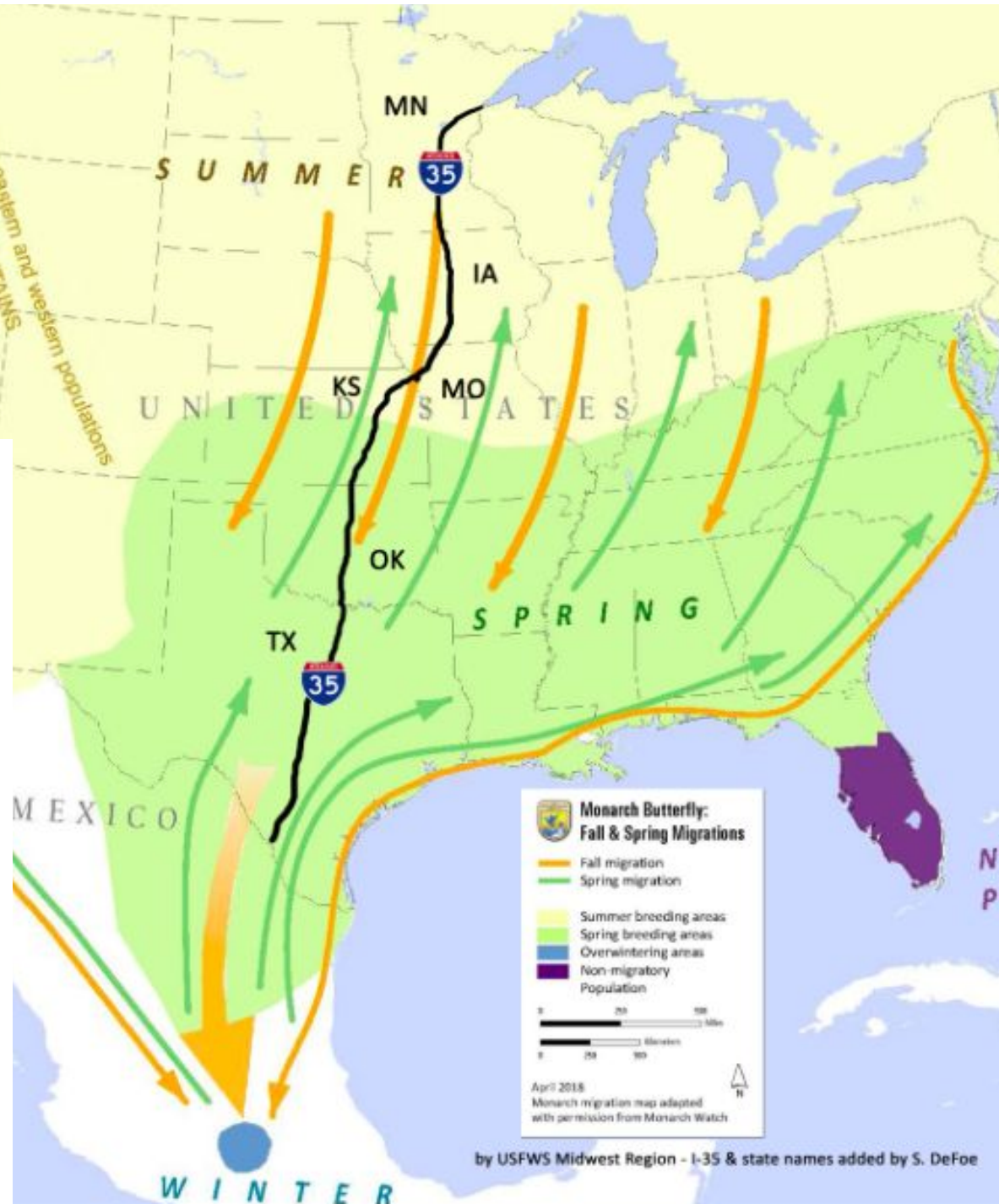
During September, Monarchs fly through Kansas and Missouri. Hopefully there are no mow zones and lots of wildflowers for nectar!

Make steering motions

Raise a milkweed



fly south to #20



by USFWS Midwest Region - I-35 & state names added by S. DeFoe



Predators and Parasites

19

[Return to Host Plant is Milkweed](#)

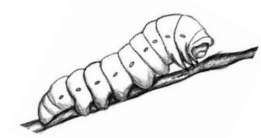
19

Even though the Monarch larvae and adults are poisonous to vertebrates (due to larvae feeding on milkweed with cardiac glycosides), there are still many predators.

Rest a caterpillar

Can you name an invertebrate predator?

Take a deep breath & move along 5 steps to [#24](#)



20



Caution:
It's a spider web.
There are so many
predators.
This monarch was not so
lucky.

Take 2 deep breaths
Set a Monarch to rest



& move along to [#27](#)

21

NECTAR PLANTS

FLOWERING NATIVES FOR MONARCHS



Common
Boneset



Frostweed



Goldenrod



Gregg's
Mistflower

Monarch
drink
nectar
from many
types of
flowers!

Plant native fall flowering plants.

The choice of nectar plant preferences of adult Lepidoptera are much less strict.

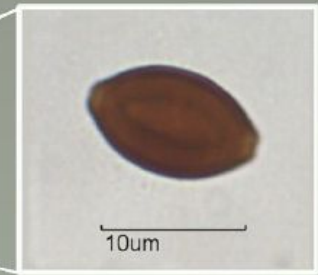
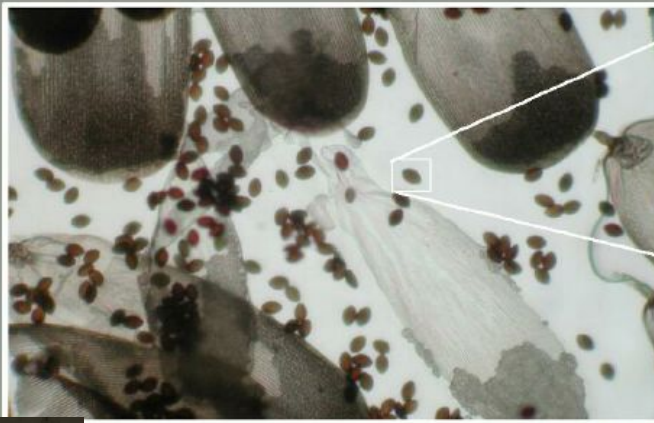
Jump up & down 2 times
and move along 2 stops to [#23](#)

Raise a butterfly



22

Host
plant



Return
to
Host
Plant is
Milkweed



OE PARASITE



Tropical Milkweed transfers OE & is deadly to the next generation of Monarch. Remember to cut back Tropical Milkweed the day after halloween to STOP the spread of this deadly parasite



Rest a Monarch egg

Shake your head & move ahead 3 stops to [#25](#)

23

Mealy Blue Sage
is a perfect nectar plant to
stop for lunch.
Newly energized, **spin in
a circle 2 times before
moving to [#31](#)**

Grow a native perennial

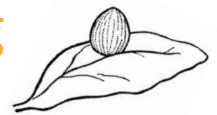


24



A Monarch stops and lays eggs on **host** plant
Hierba De Zizotes (*Asclepias oenotheroides*).

Raise an egg



A storm blew in & you are pushed in the wrong direction.

Spin 2x & move 2 stops back to #22

25

Have you seen this plant growing along roadside in the hill country?

It is Antelopehorns

Asclepias asperula

Milkweed is a perfect spot for the Monarch to lay eggs!

Give a high five

Raise a larvae



then go 1 stop to [#26](#)



26

Milkweeds are host plants, they contain a milky white sap that is toxic to most animals & people... HANDLE WITH CARE.



Do a wiping motion w/ your hands & move 4 stops to [#30](#)



Raise a milkweed



27

Take a look at when monarchs will be near the city of

San Antonio:

Latitude:

29.4241° N

Longitude:

98.4936° W



Raise a Monarch
Jump as high as
you can & move
ahead to [#32](#)



Midpoints and peaks of the migration by latitude.

Latitude	Midpoint	Peak in monarch abundance
49	26 August	18-30 August
47	1 September	24 August - 5 September
45	6 September	29 August - 10 September
43	11 September	3 - 15 September
41	16 September	8 - 20 September
39	22 September	14-26 September
37	27 September	19 September - 1 October
35	2 October	24 September - 6 October
33	7 October	29 September - 11 October
31	12 October	4-16 October
29	18 October	10-22 October
27	23 October	15-27 October
25	28 October	20 October - 1 November
23	4 November	27 October - 8 November
21	11 November	3-15 November
19.4*	18 November	10-22 November

*This latitude represents the general vicinity of the overwintering colonies.

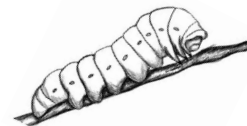
28



Here in San Antonio, the 5th generation of butterflies emerge to make way to Mexico!

Raise a larvae

Jump 5 times & move slowly to #29



29

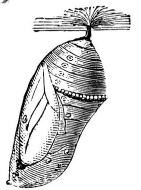


The chrysalis of a monarch butterfly.

Algerina Perna/Baltimore Sun/TNS, via Getty Images

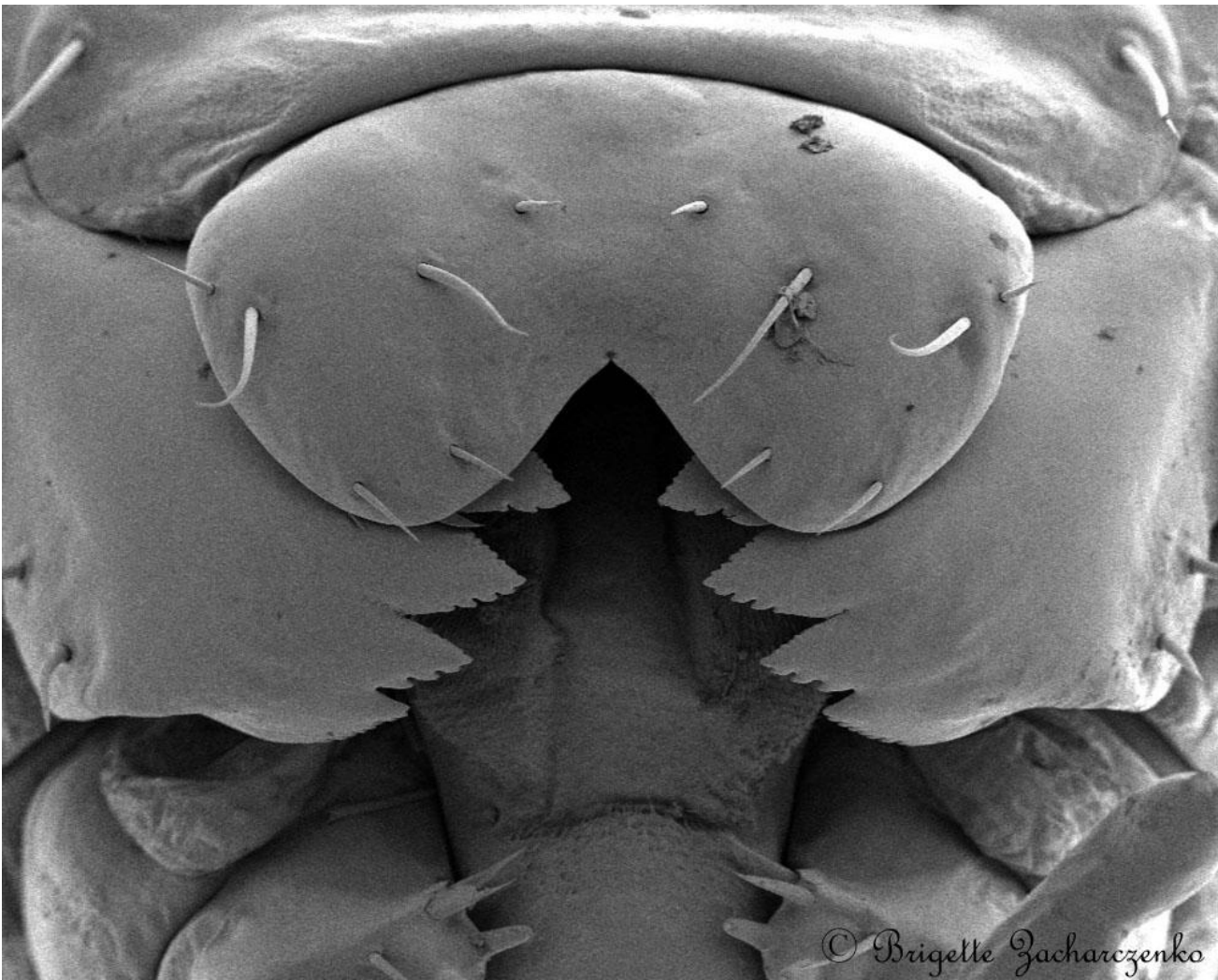
The Chrysalis was formed by the caterpillar and once emerged, it will be part of the 5th generation of butterflies & make way to Mexico!

Raise a Chrysalis



Hug yourself for 3 seconds move to [#33](#)

30



Raise a
larvae



Take a look at monarch caterpillars nearby, they are busy eating leaves from Asclepias, Milkweed are host plants!

Rub your stomach 3 times & move to [#37](#)



National BLOOMS

SUMMER-FALL

Milkweeds
are nectar
plants too!

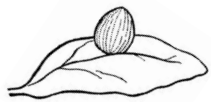


31

Photo: Jeff McMillian

Butterfly milkweed Asclepias tuberosa

Not to be confused with Tropical Milkweed.
This native milkweed is a host plant & safe to lay eggs.



Raise an egg

Do 2 fist pumps & move to [#35](#)



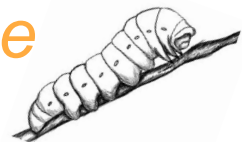
32



The Mayor's Monarch Pledge solidifies our dedication in maintaining and restoring habitat for the monarch butterfly while encouraging our citizens to do the same. It is important to protect habitats for our local pollinators, maintaining the ecosystem and quality of life." — Mayor Ron Nirenberg

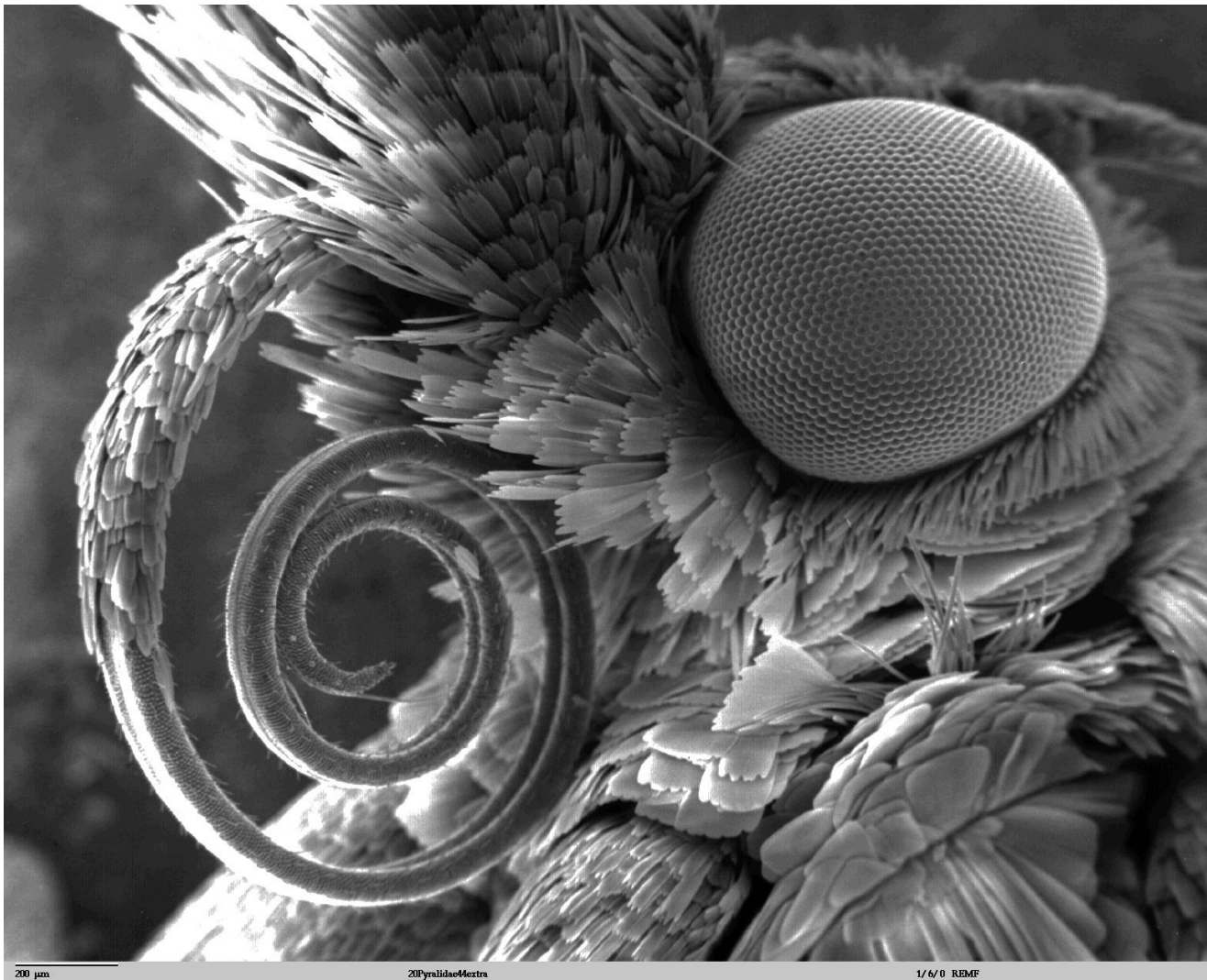
It's almost the end of October & you've just arrived to San Antonio, luckily this city has **'no mow' zones** and plants **plenty of milkweed.**

Raise a monarch larvae



Do a dance move & go to [#36](#)

33



Butterflies can see a wide range of color using UV light and enhanced infrared. They use patterns of UV light to communicate!

Stop & drink nectar using your proboscis.

Raise a butterfly

Arms together in 'resting position' and move ahead one stop to [#34](#)

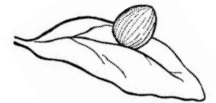


34

Save the
next
generation
of Monarch,
it's almost
time to cut
back the
Tropical
Milkweed!

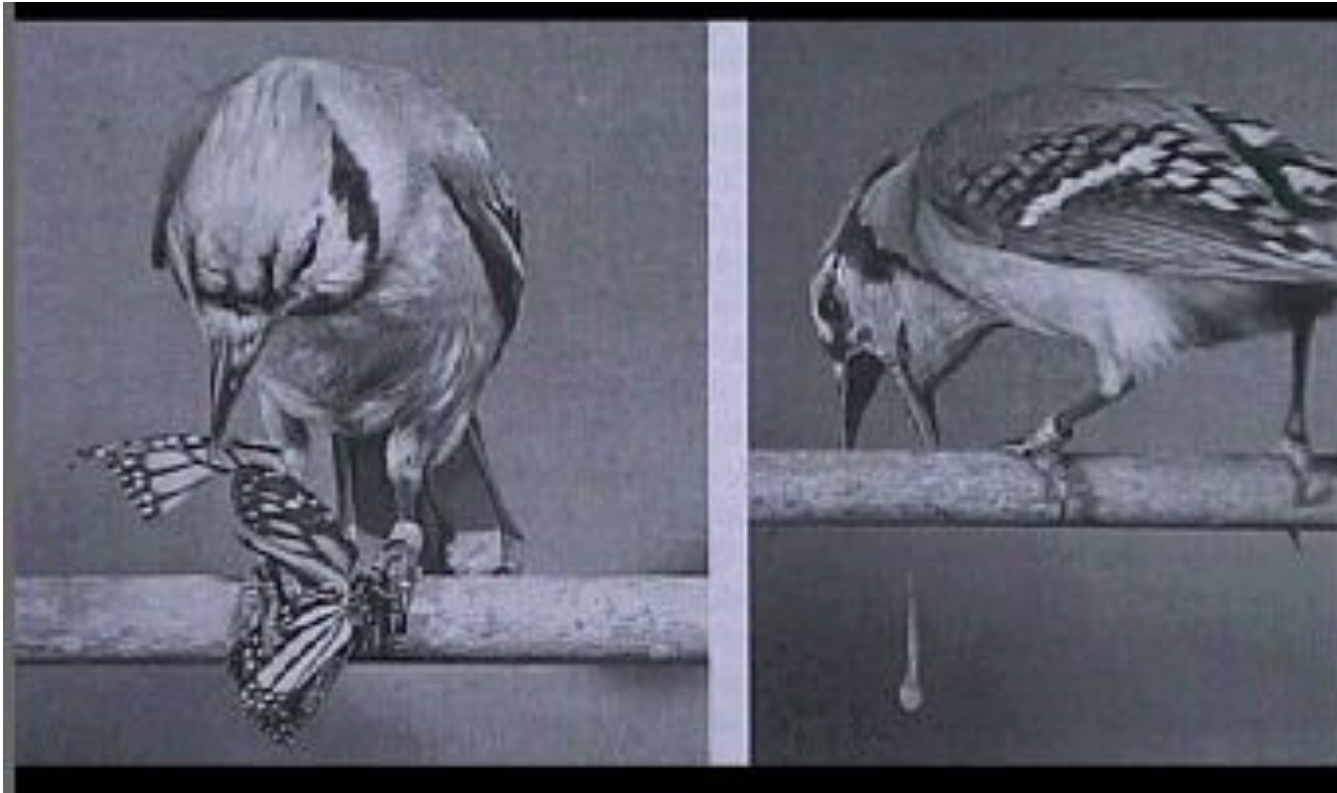


Tropical Milkweed often transfers OE & is deadly to the next generation of Monarch.



Raise an egg

Shake your head & move ahead to [#39](#)



Birds have learned that Monarchs & their mimics are toxic (thanks milkweed!). They usually avoid eating butterflies like you!

Raise a butterfly



Do a cheer and move 5 stops to [#40](#)

36

Do you know
what triggers
Monarch
migration
in fall?



Scientists aren't entirely sure how Monarchs know where to go, most likely a combination of directional aids such as the magnetic pull of the earth and the position of the sun.

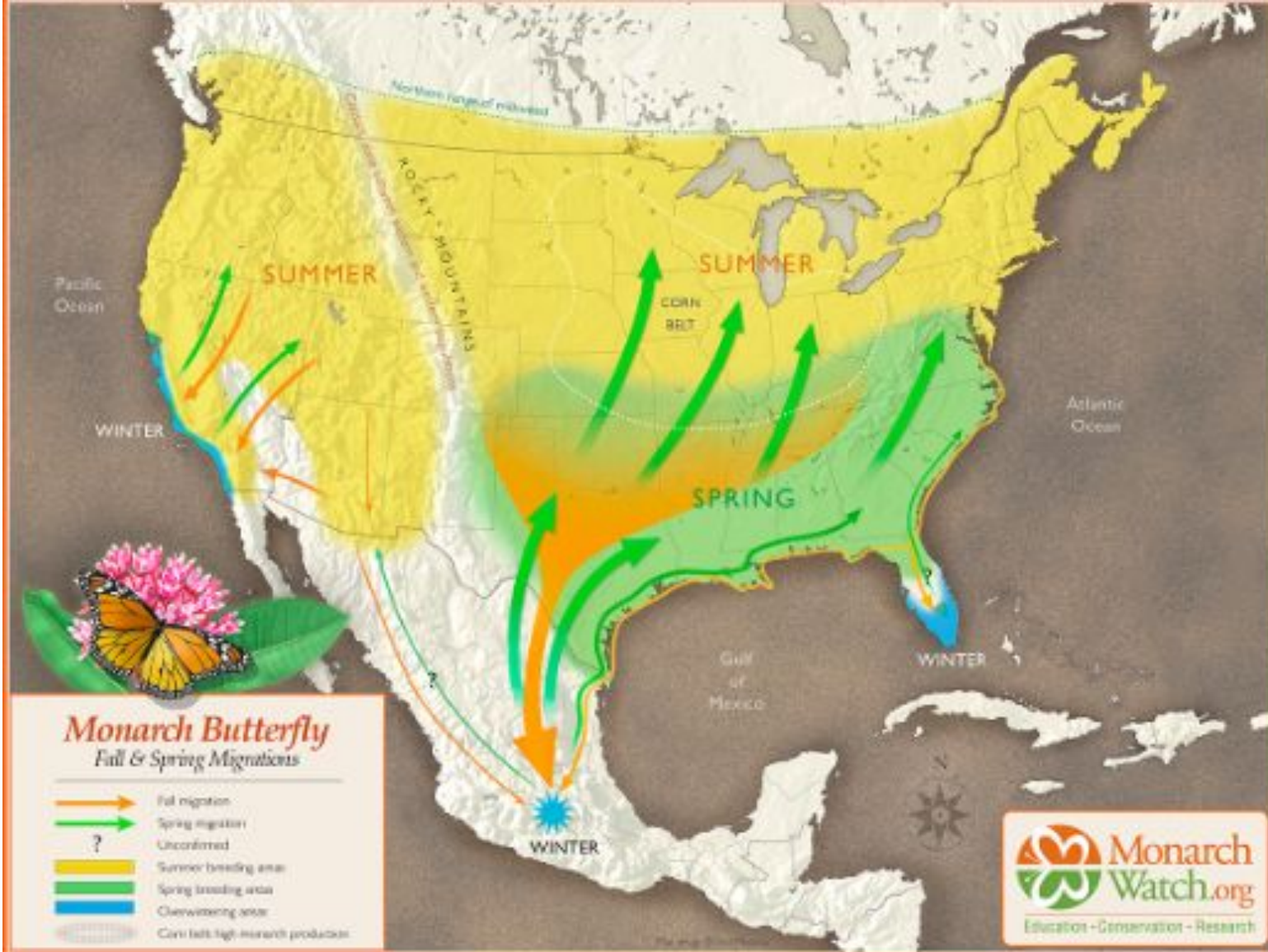
Raise a Monarch

Tap your wrist 2 times and move to [#38](#)





**Great Job! A monarch can travel up to
2,700 miles (4,345 km)!
From Canada it to Mexico to spend the winter!**



The longest recorded flight for a monarch was one tagged in Nova Scotia and recovered in central Mexico, a distance of 2,690 miles (4,200 km).

Female ♀

Male ♂



No Hingwing Pouches

Black spot on a vein located on hind wing

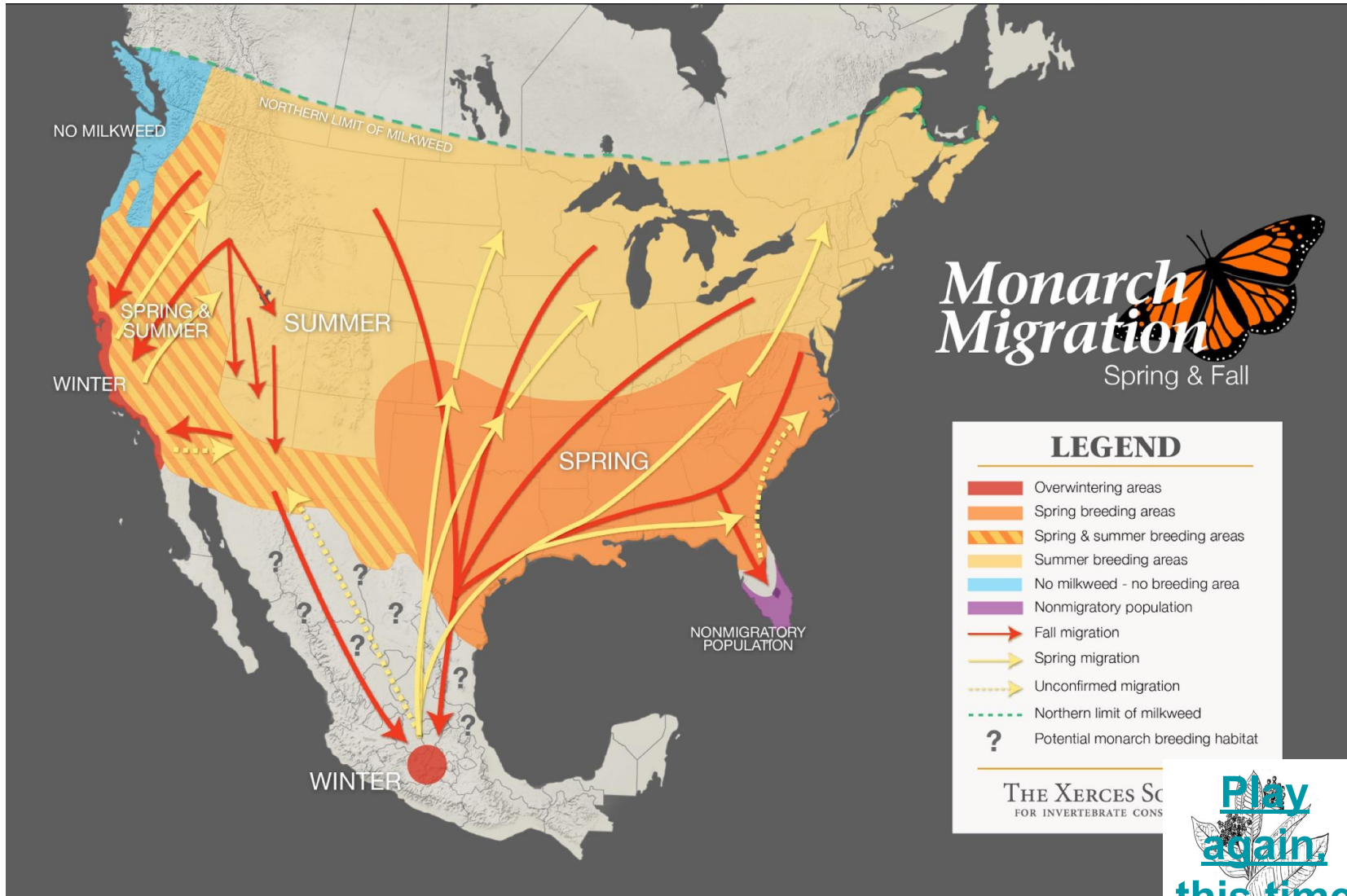
Notch before the end of abdomen clearly stands-out

Pheromone spots: no longer used

Darker and Wider Black Veins

Triangular shaped claspers on abdomen

Can you tell the difference between a male and female Monarch Butterfly?



**You've made it to Mexico to spend the winter!
In just 5 months the Monarch Butterflies will
begin the journey north again!**

