

# Monarchs in Motion At Monarch Camp

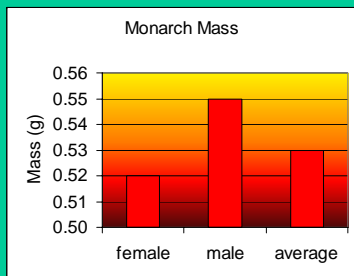
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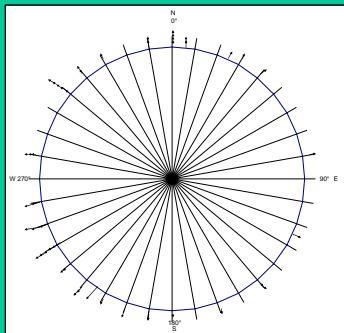
## Results

**Questions:** What is the average mass of migrating monarchs?  
Is there a difference in the average mass of migrating males and females?  
Will all migrating monarchs fly the same direction?

**Methods:** On October 17-18, 2005 we went to Garner State Park in the Monarch Central Flyway of Texas. We found a spot with nectar plants for migrating monarchs. We caught 62 male monarchs and 79 female monarchs with the swoop and swish method, and then we put them in net cages. We measured and weighed the butterflies, and then we tagged them. We held them in a cage overnight and then released them the next morning. We watched them until they disappeared, and wrote down their direction of flight using a compass to find their heading.



We measured the mass of 58 males and 85 females, and used a t-test to determine if there was a significant difference between the male and female masses. The t-value was -2.47 ( $p = 0.0148$ ).



41% of the monarchs went S or SW.  
59% of the monarchs went other directions.

## Conclusions:

**Mass:** There was a difference between male and female masses. On average male mass was .03g greater than females.

**Migration:** From our observations we found that most of the monarchs did not appear to be migrating as soon as they were released. Some of the monarch might have stayed to find food. Some had broken wings. Some may have been confused after being in a cage overnight.

## References

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Glassberg, J., *Butterflies Through Binoculars*, Oxford University Press, New York, 2001.

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<http://www.monarchwatch.org>

<http://www.monarchlab.org>

