



# Barn Swallows Foraging For Food

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### Cache La Poudre Jr. High



#### Introduction

The Barn Swallow can be told from all swallows by its deeply forked tail. Observing Barn Swallows foraging for food is very interesting.

In traditional swallow colonies, there is a great deal of social interaction including non-parent "helpers" feeding the young of others and egg tossing by bachelor males. The complex interactions of the swallows nesting in a colony are not only fascinating to observe, but are, likely, advantageous to the species.

The rim of the nest of Barn Swallows is 1 ½ inches from the ceiling.

Barn Swallows build solid nests out of mud pellets brought by the beak full from puddles and river banks, combined with dry long grasses. With both parents participating, these pellets are arranged much like bricks to form half-bowls or saucers. Up to 1,000 trips may be made to bring the mudballs to make the nest. The nest is lined with fine grasses, hair, curly feathers. Barn Swallows usually nest in man-made structures that provide shelter (because the mud would disintegrate in the rain) and warmth. Previously, they built in cliffs or caves, but now prefer man-made structures such as bridges.

All swallows are insectivores, catching a variety of insects. Stomachs of 375 cliff swallows and 467 barn swallows collected in different areas of the country contained prey from the following orders: *Hymenoptera* (bees, wasps, and ants) 29%, 23%; *Coleoptera* (beetles) 27%, 16%; *Hemiptera* (true bugs) 26%, 15%; and *Diptera* (flies) 13%, 40% for cliff and barn swallows, respectively.

#### Hypothesis

- I predict that site A and B would receive the most activity.
- I predict that there will be very little interest in the unnatural feeding



#### Site Description

Data was collected on June 27, 2007 at Learning Lake located at the Poudre learning Center in Greeley, Colorado. Learning Lake is an 18 acre lake with a gravel road surrounding the entire lake. My sites were located 15 meters from shore line in different vegetations. The lake where my data was taken was located on the South end of the lake.

The lake is 22-25 feet deep when it is full. It is fed through Jones ditch that passes through the lake. The lake is lined underneath so ground water can not get in, nor any insecticides through runoff. The lake is only filled through precipitation.

The slope of the lake is 3:1, for every foot, the lake gets 3 feet deeper.

	Site A (SW)	Site B (S)	Site C (SE)
<b>Prominent Plants</b>	•Cut grass •Serrated	• Sunflower	• Kowhai
<b>Height of Plants</b>	35-45 cm	5 cm	30-70 cm
<b>Secondary Plants</b>	•Milk Weed •Tall Mustard •Curly Dock	•Salt Grass •Goats Beard •Prickly Lettuce •Thistle •Squirrel Tail	•Curly Dock •Goose Foot

#### Abstract

The Poudre Learning Center is an area dedicated to teaching children and adults history, ecology, geology in a diverse community located in the surrounding area of Greeley Colorado. This area is rich in many types of birds, mammals and reptiles. The 65 acre area contains lakes, the Cache la Poudre River, prairie, wetlands, marsh and a riparian area. A large population of Barn Swallows exist under a bridge located in the northeast part of the property. I chose 3 different areas to observe the feeding habits of Barn Swallows. The areas are located on the south side of the lake, approximately 10 meters south of the Lacustrine Road. Each site has a different main vegetation and height, with varied surrounding vegetation



#### Methods

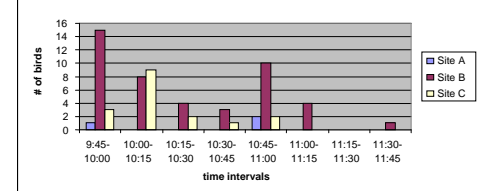
- I picked an area in close proximity to the nesting colonies of Barn Swallows. The area provided various types of vegetation for a feeding area. Three sites were chosen.
- The nearby lake has several algae growth areas where I collected a 5 gallon bucket full of lake water containing mosquito larva.
- A large flat container was placed in the field near the lake and the mosquito larva was added to the container.
- Site A, located on the Southwest side of the lake.  
Site B, located on the South end of the lake  
Site C, located on the Southeast end of the lake
- Observations were made by visually observing Barn Swallows feeding for 2 hours.
- A data chart was completed and numbers of Swallows were recorded and tallied every 15 minutes.

#### Results

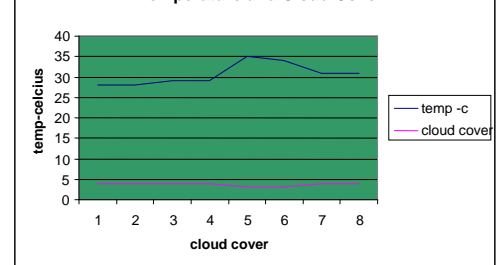
- Barn Swallows feed in the morning when the temperature is cooler.
- The foraging behavior is that the birds will swoop down to an area that may contain insects.
- Site B had the most foraging activity due to the similarity of habitat
- Barn Swallows tend to feed in small groups
- The flight pattern of Barn Swallows to forage and eat insects tend to be from the nesting area under the bridge to the South part of Learners Lake.



Feeding activity of Barnswallows



Temperature and Cloud Cover



#### Discussion

Barn Swallows build solid nests out of mud pellets brought by the beak full from puddles and river banks, combined with dry long grasses. With both parents participating, these pellets are arranged much like bricks to form half-bowls or saucers. Up to 1,000 trips may be made to bring the mudballs to make the nest. The nest is lined with fine grasses, hair, curly feathers. Barn Swallows usually nest in man-made structures that provide shelter (because the mud would disintegrate in the rain) and warmth.

The Barn Swallows in this study nested under a cement bridge that crosses the Poudre River. The Swallows will typically get their insects from an area around the river. They also feed over a lake toward the shores.

The 3 sites, A, B and C varied greatly in the type of vegetation. The Barn Swallows preferred site B probably because it was the most similar to their feeding area. They could see the water more easily because it was more out in the open.

I observed behavior in the sites that was consistent with their behavior of feeding over the lake. The birds tended to fly in groups of 2, 3 or 4. Sometimes there would be a single bird. They would swoop over the feeding area to a distance of between 1 and 2 meters, and then continue to fly upward until they got to an area of cattails.

In conclusion, site B, which was most out in the open attracted more Barn Swallows than any other site. This area provided feeding that was most like the area they feed in. Barn Swallows will be attracted to an area away from their feeding area if it could possibly have any insects.

#### Research links

Food habits of the swallows, a family of valuable native birds. [links.jstor.org](https://www.jstor.org/stable/4086482)  
[www.wild-bird-watching.com/Barn-Swallow.html](http://www.wild-bird-watching.com/Barn-Swallow.html)  
[www.americanartifacts.com/smma/per/b4info.htm](http://www.americanartifacts.com/smma/per/b4info.htm)  
**Protocols:** Optical Foraging, Bird Behavior