**Introduction**:

**Methods**:

* Fecal sample collection 2019:
  + Collected opportunistically. For nestlings, collected poop from hands or sometimes ground if it didn’t get too dirty, scooping into tube. For adults, collected from defecation at time of capture on hand or clothing, or from paper bags that birds were stored in
  + Feces transferred to 1 mL tubes, stored on ice in field; transferred to -80 for permanent storage
* Extraction: Qiagen Power Soil Kit, following manufacturer’s instructions
* PCR: primers BF2/BR2, done in triplicate and pooled
* Sequencing: Cornell Biotechnology Resource Center
* Post-sequencing processing

**Results**:

**Discussion**:

**Major questions for paper:**

**Question 1: What do tree swallows eat in Tompkins County, New York?**

**Question 1.5: Brood size**

* Put in Question 2B and 2C models

**Question 2: What predicts aquatic insect content in the diet?**

**Question A: Do age, site, or an interaction between the two predict aquatic insect content in diet?**

Model: Beta Logistic Regression: (percent aquatic ~ age\*site + treatment + (1|nestID))

Age question

* Age – nestling vs. adult – this is fine because there are no consistent differences
* Only use provisioning samples

**Question B: Does a mother’s CORT, mass, and/or wing predict the percent aquatic in the diet of her nestlings?**

Include all available mom samples

Model: Beta Logistic Regression: (percent aquatic in individual nestling diet ~ mom’s CORT + mom’s mass + mom’s wing + site + 1|nestID)

Model selection:

* CORT
* Mass
* Wing
* Brood size?
* All models: site + 1|nestID
  + For each of models, include an interaction with site and no interaction with site

I’ve made a lot of figures here but nothing seems to show a clear relationship with nestling diet except perhaps experimental treatment and site.

This figure is made just with nestling day 12 samples. Also, note that this figure looks a little different than the boxplots in Question 2A because this only includes nestlings for which there are also adult samples. I need to go back and change the code so that this section of analyses also includes female information for females that do not also have fecal samples.

**Question C: Does a female’s CORT, mass, and/or wing predict the percent aquatic in her diet?**

Include samples from incubation and provisioning.

* Look at figure with percent aquatic
* Don’t worry about interaction with stage – don’t include stage in models
* Include treatment as covariate

Model selection:

* CORT
* Mass (capture x mass interaction)
* Wing
* Brood size?
* All models: site + 1|nestID
  + For each of models, include an interaction with site and no interaction with site

Model: Beta Logistic Regression: (percent aquatic ~ CORT + mass + site)

Like Question 2B, only experimental treatment and site seems to show any sort of relationship with diet.

Note that here, we’re only looking at third female captures (i.e. captures during provisioning)

**Question 3: Does aquatic insect content affect nestling morphology?**

Model: Linear?? (body mass ~ percent aquatic\*site + (1|nestID))

Differences between mass at sites

Day 15 – Day 12

* Do absolute mass gained