

## **NBR RECRUITMENT CURVE PREDICTIONS METADATA:**

### **A. COLOR –**

- 1) Gray = year of study
- 2) Blue = HILL site (UTM 706453 EAST 5249980 NORTH)
- 3) Rose = TRIANGLE site (UTM 713570 EAST 5248100 NORTH)

### **B. YEAR –**

- 1) Study. The study began in 1992 at HILL site and in 1994 at TRIANGLE site and has continued every year. The dominant grasshopper species at both sites was *Melanoplus sanguinipes*, comprising respectively 70% and 50% of individuals at the two sites, and more than 80% of grasshopper biomass.
- 2) Experiment. Defined in RECRUITMENT CURVE EXPERIMENT METADATA and PREDATOR EXCLUSION EXPERIMENT METADATA.

### **C. WITHIN EACH SITE –**

- 1) BIMODAL CURVE. “YES” means bimodality observed; “NO” means that the distinction between bimodality and unimodality is uncertain or unimodality is observed. Bimodality means that the recruitment curve is best explained by two “waves” (see RECRUITMENT CURVE EXPERIMENT METADATA).
- 2) INTERSECTION ON PREDATOR OR FOOD “WAVE”. The reference line ( $N_t = N_{t+1}$ ) and the recruitment curve intersect only on the “wave” created by PREDATION (the left bimodal hump), only on the “wave” created by FOOD competition (the right bimodal hump), or BOTH “waves” are intersected (see RECRUITMENT CURVE EXPERIMENT METADATA).
- 3) PREDATOR LIMITATION PREDICTED. Is predator limitation of the grasshopper population expected? This is determined by where the hatchling density observed in the field for a given year intersects the recruitment curve (see RECRUITMENT CURVE EXPERIMENT METADATA). If the hatchling density intersects the left “wave”, then predator limitation is expected. If the hatchling density intersects the right “wave”, then food limitation is expected (see C.1).
- 4) PREDATOR LIMITATION OBSERVED. Is predator limitation of the grasshopper population observed? Predator limitation is observed if the density of grasshoppers in the predator exclusion pens is greater than in the control pens (see PREDATOR EXCLUSION EXPERIMENT METADATA).
- 5) HATCH PREDICTED NEXT YEAR. Based on the current year’s predicted recruitment curve (spline fit) and field hatchling density, how many hatchlings are predicted for next year (see RECRUITMENT CURVE EXPERIMENT METADATA)?
- 6) HATCH OBSERVED NEXT YEAR. What field hatchling density was observed (see RECRUITMENT CURVE EXPERIMENT METADATA)?
- 7) Graph. Comparison of predicted and observed field hatchling densities and regression statistics are presented.