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A mark and recapture study was performed on Assateague Island and the adjacent mainland May 26 through July 16, 1988. *Bufo w. fowleri* were significantly ($p < 0.05$) more abundant on Assateague Island ($4,820.1 \pm 2,117.6$ individuals/hectare) than the adjacent mainland (89.6 ± 14.0 individuals/hectare). *Bufo w. fowleri* were more abundant in wooded habitat than meadow habitat at both locations. However, significantly more individuals were found in meadow habitat on the island than the mainland. Lengths and weights of toads on the mainland were significantly greater than on the island. Male to female sex ratios close to 1:1, which is typical of young populations, were observed on Assateague Island (1.74:1) and the adjacent mainland (0.67:1). No sexual dimorphism in size (length and weight), which is typical of older populations, was observed in toads from either location. These data suggest that the population on Assateague Island is dominated by individuals younger than the adjacent mainland.

RELATIONSHIP BETWEEN GROWTH AND ISOZYME ACTIVITY IN THE EARTHWORM *EISENIA FOETIDA*. Walter J. Diehl, Dept. Biol. Sci., Mississippi State University, Mississippi State MS 39762.

In *E. foetida*, growth is correlated with multilocus heterozygosity for loci encoding glycerol-3-phosphate dehydrogenase 2 (GPD2), hexokinase 2 (HK2), and lactate dehydrogenase I (LDH1), but not for loci encoding GPD1 & LDH2. If differences in growth are due to the loci under scrutiny, then a relationship, consistent with a selection model favoring heterozygotes, should exist between growth and the phenotypes of implicated loci. Thus, the relationship between growth and activity of each isozyme was measured for individuals ($n=5$) held at high soil moisture (75% w/w) or low soil moisture (50%) for 1 week. Directional selection was tested by regressing growth on the normal deviate (Z) of isozyme activity summed across loci. Stabilizing and disruptive selection was tested by regressing growth on the absolute value of the normal deviate ($|Z|$) of isozyme activity summed across loci. Both models assume similar and additive effects of each locus. Implicated loci (GPD2, HK2, LDH1) were compared to non-implicated loci (GPD1, LDH2) in each model. No patterns were affected significantly by soil moisture ($P > 0.05$). There was no significant relationship between growth and either Z or $|Z|$ of activity summed for GPD1 & LDH2 ($P > 0.05$). There was no significant relationship between growth and Z of activity summed for GPD2, HK2, & LDH1 ($P > 0.05$). However, there was a significant negative relationship between growth and $|Z|$ of activity summed for GPD2, HK2, LDH1 ($P < 0.01$), a pattern consistent with stabilizing selection operating only at the implicated loci.

EFFECTS OF SOIL MOISTURE AND FOOD LEVEL ON GLYCOLYTIC ENZYME ACTIVITY IN *EISENIA FOETIDA*. Donald L. Williams and Walter J. Diehl, Dept. Biol. Sci., Mississippi State Univ., Starkville, 39762

The activities of rate-limiting glycolytic enzymes: hexokinase (HK), phosphorylase (PHOS), phosphofructokinase (PFK), fructose bis-phosphotase (FbP), and pyruvate kinase (PK), were measured in crude homogenates of earthworms raised in combinations of 2 levels of soil moisture (50% and 75% w/w) and 2 levels of food (10% and 100% body weight of the worm per day) for up to 6 days. Control individuals were sampled at day 0 from a stock population. Soil moisture and food levels showed significant interactive effects on the activity of PHOS ($P < 0.0001$), HK ($P < 0.05$), PFK ($P < 0.0001$), but not PK ($P > 0.05$). Soil moisture and food levels showed no significant effect on the activity of FbP ($P > 0.05$). When food levels were low, the activities of PHOS, HK, PFK, and PK were significantly greater ($P < 0.05$) in individuals held at low soil moisture than individuals held at high moisture by the end of six days. When food levels were high, there were no significant differences ($P > 0.05$) between individuals held at high moisture and individuals held at low moisture by the end of six days. Previously we have shown that low soil moisture and low food levels reduce growth, oxygen consumption, and carbon dioxide production. The patterns of change in enzyme activity suggest a compensatory catabolism of endogenous carbohydrate reserves to meet energy demands under conditions of low moisture and low food which are not necessary under conditions of low moisture and high food or high moisture and low or high food.

CONSTRUCTION OF A GRAVEL BAR HABITAT IN THE TOMBIGBEE RIVER NEAR COLUMBUS, MISSISSIPPI. Andrew C. Miller and Carl M. Way, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. 39180-6199.

Two riffles (each 46 m long and 24 m wide) were constructed in an abandoned channel of the Tombigbee River near Columbus, Mississippi, in March 1985. Approximately 24,000 m³ of coarse sand and gravel was used to provide substrate for benthic organisms and to constrict the channel, creating average water velocities of 45 cm/sec. Within three months 27 taxa of invertebrates were collected with an estimated density of 2610.6 (SD = 1776.4) individuals/m². By October 1988 fifty taxa were identified and total density was 45,225.7 (SD = 27636.3) individuals/m², which was greater than mean densities at sites in naturally occurring riffles in nearby Luxapalila Creek, Mississippi and Alabama. Total chironomid density increased throughout the four-year study; however, the relative percentage of *Glyptotendipes iobiferus* declined from 84% in June 1985 to 25% in June 1988. Density of naidid worms was less than 1100 individuals/m² for the first two years, then increased rapidly to a maximum of 20,774.2 (17723.5) individuals/m² in October 1988. Taxa diversity (H') and evenness (J) increased 4.8 and 4.6 times, respectively, over the 15 months, then up with