Comparison of Crayfish Between Abe’s Creek and Jefferson’s Run at AFS
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Introduction

*At Abernathy Field Station (AFS) in southwestern Pennsylvania, two perennial streams run through the property: Abe’s Creek and Jefferson’s Run.
*Crayfish are an important organism in both streams and may play a major role in the food webs and set up of the community (Jones & Coulson, 2006).
*Because the creeks differ in water flow and size, with Jefferson’s Run not always having much water, a greater crayfish density may exist near this stream than the other, as was found in a study between permanent and intermittent streams (Flindersm & Magoulick, 2003).
*In this study, I sampled crayfish and the characteristics of their burrows to see if a difference exists in the density of crayfish between Abe’s Creek and Jefferson’s Run. It was predicted that Jefferson’s Run would have a greater density than Abe’s Creek.

Methods

*Transects of 100m were marked off at Abe’s Creek and Jefferson’s Run to count and record the characteristics of crayfish burrows in each stream and hand survey crayfish to estimate crayfish densities.

Results

Table 1. Differences in crayfish burrow characteristics between Abe’s Creek and Jefferson’s Run during July 2010. Asterisk indicates statistically significant differences (p<0.05).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Abe’s Creek</th>
<th>Jefferson’s Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Wet</td>
<td>28.7</td>
<td>52.9</td>
</tr>
<tr>
<td>Mean distance of a burrow*</td>
<td>2.91 ± 1.84</td>
<td>1.84 ± 1.15</td>
</tr>
<tr>
<td>Mean burrow diameter*</td>
<td>27.5 ± 12.95</td>
<td>33.37 ± 16.10</td>
</tr>
<tr>
<td>% Re-plugged</td>
<td>6.5</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Discussion

*The results suggest that Jefferson’s Run has a greater density of crayfish and crayfish burrows than Abe’s Creek.
*These results appear to agree with the results of Flinders and Magoulick (2003) because the stream with intermittent characteristics (Jefferson’s Run) has a significantly greater crayfish density than the permanent stream (Abe’s Creek).
*Because Abe’s Creek is larger, the likelihood of predators and competition is greater.
*Certain species of crayfish will stay in their burrow for long periods of time and will even plug them to keep moisture in. With this in mind, a larger population of crayfish may exist in both streams because it is possible crayfish densities were underestimated.

I will use a mark-recapture method to assess the stability of crayfish populations and study crayfish diversity at Abe’s Creek and Jefferson’s Run.

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Works Cited
