Speciation in Cicada Populations
Data Management in Ecology & Evolutionary Biology
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Introduction
This case study was developed for the Scientific Research Data Management course at Simmons College, and focuses on research led by an ecology & evolutionary biology laboratory at a reputable research university in New England.

Research Goals
To understand the effects of landscape & climate changes on speciation in New Zealand cicadas.

Case Study Method
An interview instrument was developed using the Johns Hopkins University DMP template and the New England Collaborative Data Management Curriculum simplified DMP template to interview a postdoctoral researcher over Skype, and twice more over email. A case study and DMP were subsequently written.

Data Management Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Data Types &amp; Products</th>
<th>Contextual Details (Metadata)</th>
<th>Storage, Backup &amp; Security</th>
<th>Legal &amp; Ethical Concerns</th>
<th>Sharing &amp; Reuse</th>
<th>Archiving &amp; Preservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>Specimens, DNA, JPGs, SHPs, RAW Audio</td>
<td>Specimen code applied at each stage</td>
<td>Hard drive &amp; Cloud storage &amp; backups</td>
<td>No anonymization or animal welfare concerns</td>
<td>Data available for sharing and reuse</td>
<td>Dryad, Genbank, museum repositories &amp; lab website databases</td>
</tr>
<tr>
<td>+</td>
<td>Use archival-quality TIFF</td>
<td>Apply metadata schema as well</td>
<td>Migrate from paper to ELNs as well</td>
<td></td>
<td></td>
<td>Migrate from website to IR &amp; Dryad</td>
</tr>
</tbody>
</table>

Processed in lab in US
• Migrate from paper to ELNs as well

Metadata is Key
Specimens collected in NZ during field season
• Metadata assigned for storage and use

Conclusion
Metadata and the storage and preservation of research data are critical to sharing and reuse for future research, as stipulated by the DMP.

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