Speciation in Cicada Populations: Data Management in Ecology & Evolutionary Biology

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**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.

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**Research Goals**

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

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**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.

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**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>Reduce amount of embargoed data</td>
<td>Migrate from website to IR &amp; Dryad</td>
</tr>
</tbody>
</table>

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**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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