**Introduction**

- Over 7,500 amphibian species are listed on the IUCN Red List (an assessment tool which provides species' conservation status, perceived threats, and distribution range). Figure 1
  - Of these 7,500 amphibians, 1/3 are classified as threatened.
- This data, however, is not easily accessible for wide-scale analyses. This is especially the case for Southeast Asian amphibians, of which much less attention has been paid to compared to other parts of the globe.
- Because SE Asia is a biodiversity hotspot, it was the focus of this research.
- The aims of this project were as follows: (1) utilize bioinformatics to increase accessibility to IUCN Red List data, (2) analyze the IUCN data repository to identify trends in Southeast Asian amphibians, and (3) plot IUCN threat data.

**Results**

**Amphibian Threats Worldwide**

**Vulnerable Amphibians in Southeast Asia**

**Results cont.**

**Amphibian Threats in Southeast Asia**

- The three most prominent threats affecting Southeast Asian amphibians are (1) Logging & wood harvesting, (2) Annual & perennial non-timer crops, and (3) Agricultural & forestry effluents.
- The majority of threats are listed as Low Impact or NA.

**Conclusion**

- Across amphibians worldwide, the number of threats alone does not solely contribute to IUCN Red List Status.
- Species extinction risk is more complicated than analyzing singular threats.
- In SE Asia there are concentrated pockets of Vulnerable amphibians.
- IUCN Red List Status appears to be location-specific. (likely due to sampling efforts)
- Increasing the accessibility of IUCN Red List data can enable researchers to create more holistic conservation models.
- Mapping IUCN Red List Status and threat types can illustrate endangered areas to target through conservation.

**Methods**

**Data Collection and Accessibility**

- Southeast Asian amphibian data collected from the IUCN Red List (2018) and Amphibiio.
- R version 3.3.2 (2016-10-31) – “Sincere Pumpkin Patch” utilized for scripting and statistical analysis.
- Scripted code works off of package rredlist created by Scott Chamberlain.
- Developed code available at [https://github.com/gonzabio/Thesis](https://github.com/gonzabio/Thesis)

**Data Analysis**

- All Statistical analyses performed in R version 3.3.2.
- Logistic regression models created.
  - Red List Categories divided in two: Threatened (Critically Endangered, Endangered, Vulnerable) or Not Threatened (Least Concern, Near Threatened).
  - Third category threats excluded from the analyses.

**Threat Visualization**

- Red List status and amphibian threats plotted using ArcGIS Desktop 10.6.