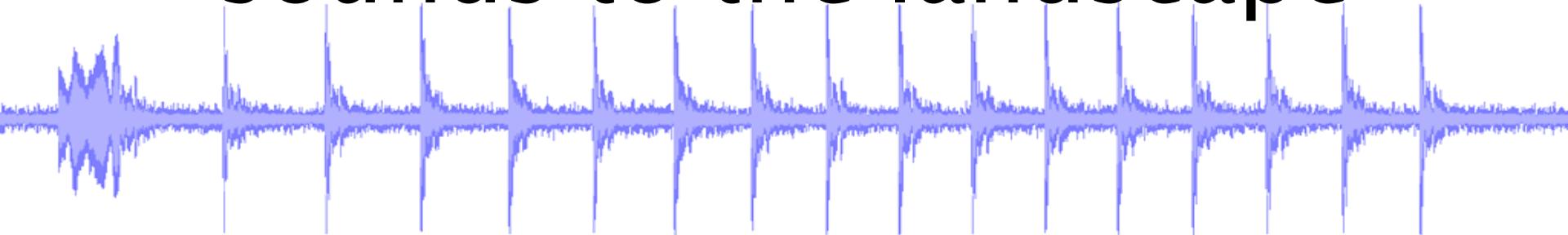


A web-based system to link sounds to the landscape



Luis J Villanueva-Rivera

Bryan C Pijanowski

PURDUE
UNIVERSITY

Soundscape Ecology: The Complexity of Acoustical Patterns in Landscapes

New tools to study soundscapes

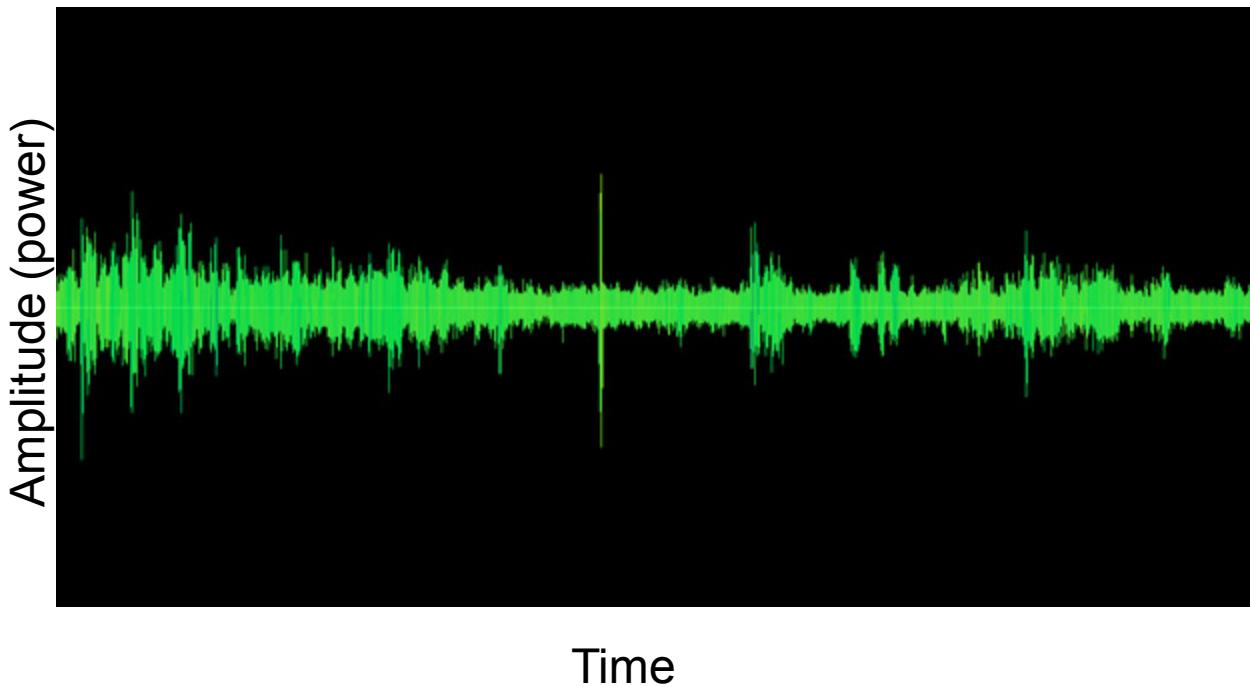
- Acoustic and bioacoustics software are limited in scope:
 - Single file workspace
- Need to store additional data
- Multiple users
- Manage large number of files

Name	Size	Type	Date Modified
SM86_20090405_150000.flac	54.2 MB	FLAC audio	Mon 13 Apr 2009 09:25:20 PM EDT
SM86_20090405_160000.flac	54.3 MB	FLAC audio	Mon 13 Apr 2009 09:26:23 PM EDT
SM86_20090405_170000.flac	50.7 MB	FLAC audio	Mon 13 Apr 2009 09:27:19 PM EDT
SM86_20090405_180000.flac	50.5 MB	FLAC audio	Mon 13 Apr 2009 09:28:19 PM EDT
SM86_20090405_190000.flac	53.5 MB	FLAC audio	Mon 13 Apr 2009 09:29:17 PM EDT
SM86_20090405_200000.flac	51.6 MB	FLAC audio	Mon 13 Apr 2009 09:30:17 PM EDT
SM86_20090405_210000.flac	50.3 MB	FLAC audio	Mon 13 Apr 2009 09:31:00 PM EDT
SM86_20090405_220000.flac	50.2 MB	FLAC audio	Mon 13 Apr 2009 09:31:15 PM EDT
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SM86_20090406_000000.flac	50.1 MB	FLAC audio	Mon 13 Apr 2009 09:31:47 PM EDT
SM86_20090406_010000.flac	50.1 MB	FLAC audio	Mon 13 Apr 2009 09:32:03 PM EDT
SM86_20090406_020000.flac	50.2 MB	FLAC audio	Mon 13 Apr 2009 09:32:19 PM EDT
SM86_20090406_030000.flac	50.2 MB	FLAC audio	Mon 13 Apr 2009 09:32:34 PM EDT
SM86_20090406_040000.flac	50.1 MB	FLAC audio	Mon 13 Apr 2009 09:32:50 PM EDT
SM86_20090406_050000.flac	50.1 MB	FLAC audio	Mon 13 Apr 2009 09:33:05 PM EDT
SM86_20090406_053000.flac	50.0 MB	FLAC audio	Mon 13 Apr 2009 09:33:20 PM EDT
SM86_20090406_060000.flac	50.0 MB	FLAC audio	Mon 13 Apr 2009 09:33:35 PM EDT
SM86_20090406_063000.flac	49.9 MB	FLAC audio	Mon 13 Apr 2009 09:33:51 PM EDT
SM86_20090406_070000.flac	49.9 MB	FLAC audio	Mon 13 Apr 2009 09:34:07 PM EDT
SM86_20090406_080000.flac	49.9 MB	FLAC audio	Mon 13 Apr 2009 09:34:24 PM EDT
SM86_20090406_090000.flac	49.9 MB	FLAC audio	Mon 13 Apr 2009 09:34:40 PM EDT
SM86_20090406_100000.flac	49.9 MB	FLAC audio	Mon 13 Apr 2009 09:34:55 PM EDT

Working with sounds

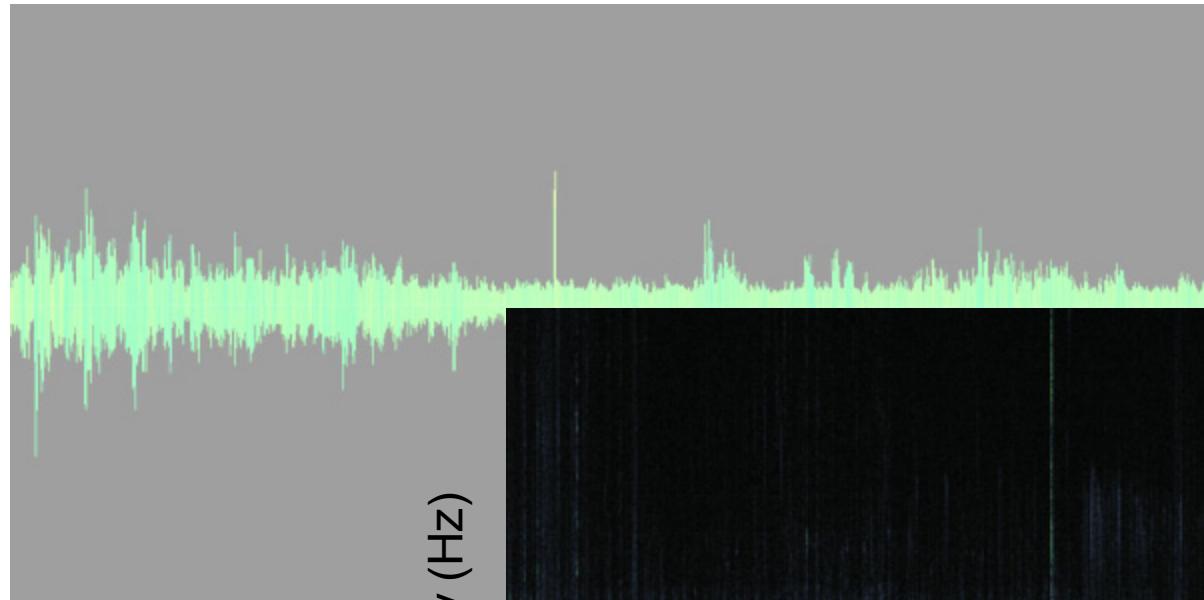


Working with sounds



Waveform

Working with sounds



Power in z-axis

Spectrogram

Time

Pumilio

- Free and open source web-based sound archive
 - Interface: PHP and JavaScript
 - Several libraries
 - Database: MySQL
- Front-end for sound and analysis tools
 - SoX, FLAC, LAME



One example

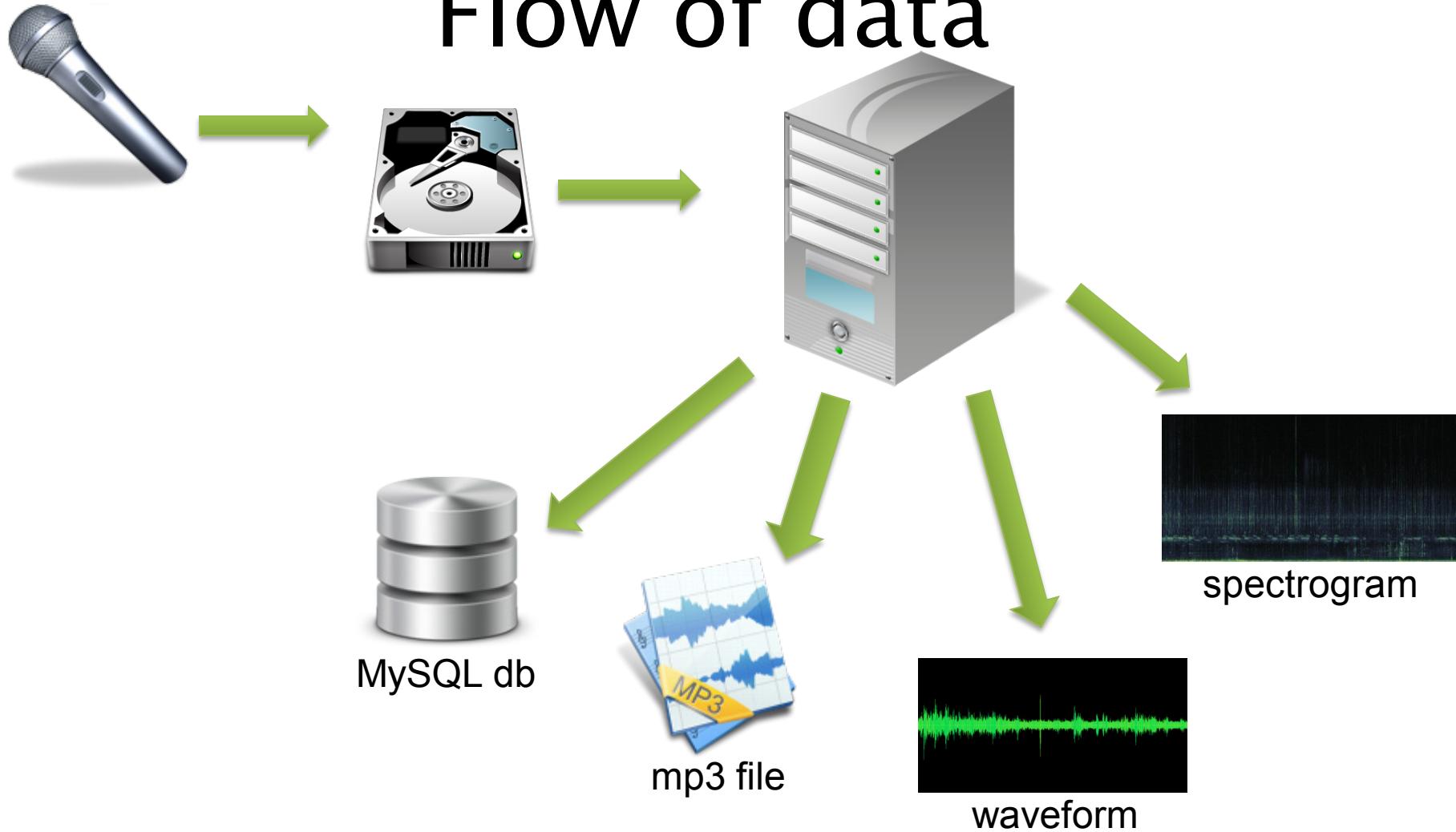
- Study of the Soundscape in the Tippecanoe County
 - 2009: 50,094 files (3.25 TB)

Flow of data



Pumilio Server

Flow of data



Flow of data



Tippecanoe Soundscape 2009 - Mozilla Firefox

File Edit View History Delicious Bookmarks Tools Help

http://128.210.108.158/tip2009/ Google ABP

Tippecanoe Soundscape 2009

Tippecanoe Soundscape 2009

Welcome to Tippecanoe Soundscape 2009

Soundscape database for the Tippecanoe Soundscape Project for 2009.

Browse sound archive

This system has the capacity to manage a collection of sounds. Each sound is imported to a source, which can be a disc, a country, or a project. You can see the file details, spectrogram, waveform, and technical information of each file.

The database has 50094 sounds in 215 sources.

Select a source to browse:

Ag Fields 1 01-Jun-2009 to 10-Jun-2009 - 233 sound files Select

Add files to the archive

You can select sound files from a map using the Google Maps system.

Open GoogleMaps

Tag cloud

Sample the archive

Execute an R script to all the files in a source

Pumilio v. 1.2.3 © 2010 LJV. Licensed under the GPLv3.

Done

Flow of data



Demo

Current Status

- SourceForge Project
(<http://pumilio.sourceforge.net>)
 - Live demo
- VMWare Virtual Machine demo
- Optional plugins (R scripts)
- Runs in Ubuntu Linux



Future Plans

- Windows version
- Export data to spatial formats (OGR library)
- Scripts for distributed computing

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- NASA-MSU Professional Enhancement Award
- HEMA Lab
- Discovery Park
- Purdue University
- Free and open source software community

