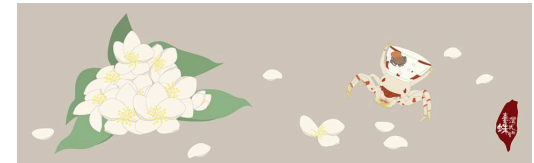


Collaborative Ecological Observation: Issues in Moving from Social Media to Research Data

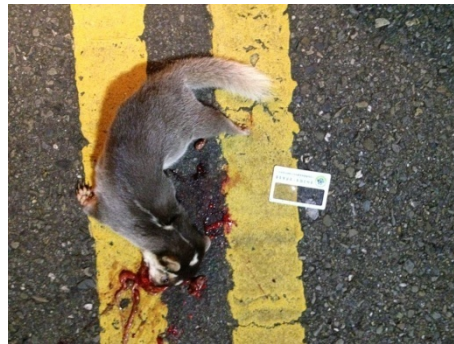


Te-En Lin (Taiwan Endemic Species Research Institute),
Chih-Yun Chen, Yu-Kai Chen,

Tyng-Ruey Chuang (Academia Sinica), Dong-Po Deng, Cheng-
Hsin Hsu, Lucien C. -H. Lin, Guan-Shuo Mai, Kwang-Tsao Shao,
Mei-Hsueh Wang

Roadkill (Road mortality)

- Definition
 - animals that have been killed by being hit by cars and other vehicles.



- Roadkill of animals were began to notice from the beginning of 20th century

Why do people care
wildlife road mortality?

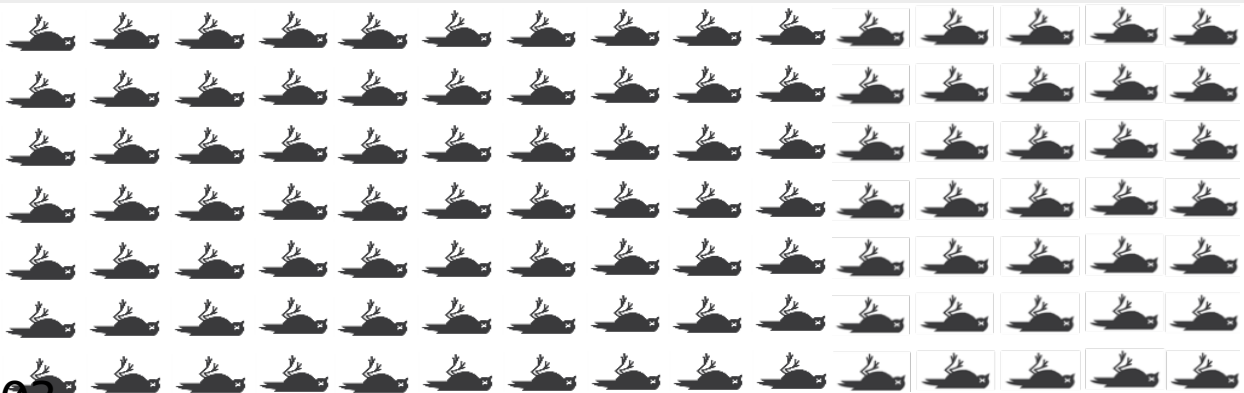
Because it is too many!!



1 million/year



In Europe
>27 million bird casualties
/ year



- In some case, a roadkill rate may be high enough to exceed natural causes of death due to predation and disease. (Calvo & Silvy, 1996; Haxton, 2000; Maehr, Land, & Roelke, 1991)



http://mainegazette.com/wp-content/uploads/2011/06/Bear_roadkill2.jpg



<http://www.jhwildlife.org/roadkill6.html>

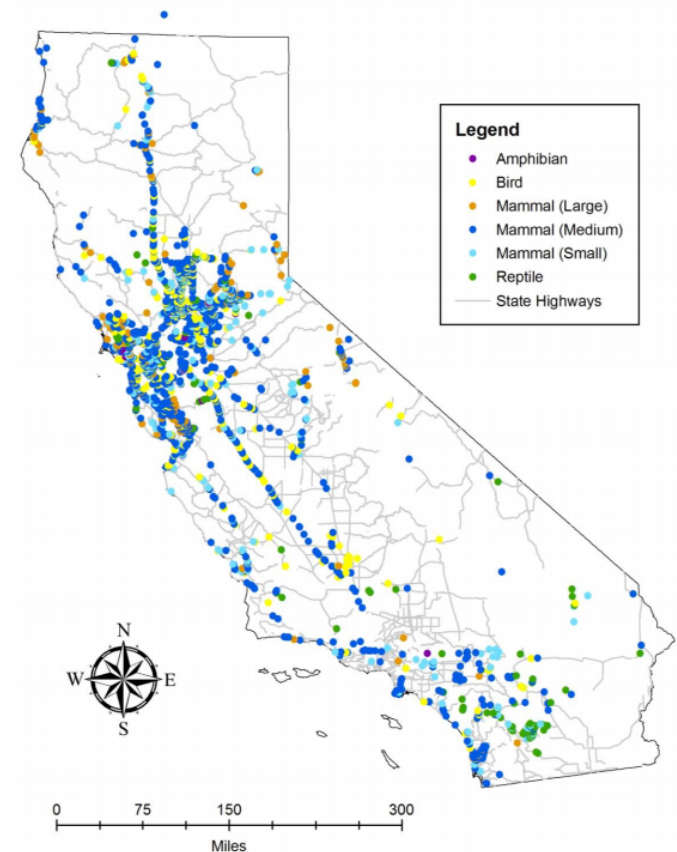
Roadkills in California

- Mammals, 81%
- Birds, 15%
- Amphibians & Reptiles, 3%

Top 20 Species Observed in 2010

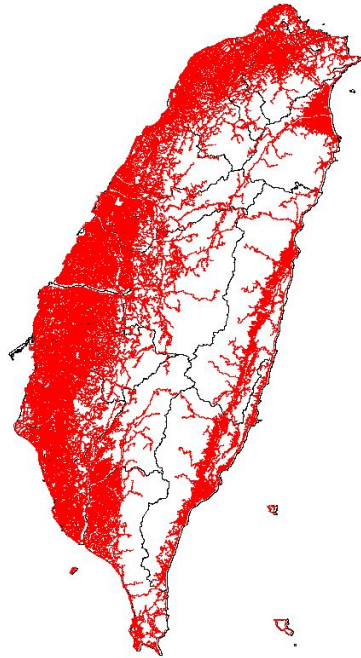
Scientific Name	Common Name	Observations
<i>Procyon lotor</i>	Raccoon	628
<i>Mephitis mephitis</i>	Striped Skunk	395
<i>Spermophilus beecheyi</i>	California Ground Squirrel	381
<i>Didelphis virginiana</i>	Virginia Opossum	366
<i>Odocoileus hemionus</i>	Mule (or Black tailed) Deer	273
<i>Lepus californicus</i>	Black-Tailed Jackrabbit	181
<i>Bufo boreas</i>	Western Toad*	179
<i>Tyto alba</i>	Barn Owl	159
<i>Sylvilagus audubonii</i>	Desert Cottontail	158
<i>Sylvilagus bachmani</i>	Brush Rabbit	147
<i>Pseudacris regilla</i>	Pacific Chorus Frog*	138
<i>Pituophis catenifer</i>	Gopher Snake	131
<i>Sciurus griseus</i>	Western Gray Squirrel	121
<i>Rana draytonii</i>	California Red-Legged Frog*	120
<i>Peromyscus maniculatus</i>	Deer Mouse	115
<i>Canis latrans</i>	Coyote	110
<i>Sciurus niger</i>	Eastern Fox Squirrel	104
<i>Sceloporus occidentalis</i>	Western Fence Lizard	53
<i>Ambystoma californiense</i>	California Tiger Salamander*	50
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	49

California Roadkill Occurrences



(From California Road kill Observation System
<http://www.wildlifecrossing.net/california/>)

Roadkills in Taiwan



- Area: 36,000km²
- Population: >23 million
- Cars: >7.7 million
- Motorcycles: > 15 million
- Length of roads: >40,901km

(<http://www.motc.gov.tw/mocwebGIP/wSite/lp?ctNode=551&CtUnit=103&BaseDSD=16&mp=1>)

The situation of roadkill in Taiwan should be very seriously

Set up a Facebook group “Reptile Road Mortality”

• August 8, 2011

The screenshot shows the Facebook interface for a group named "四處爬爬走(路殺社, Reptile Road Mortality)". The group has 1,023 members, with 37 new members. The page features a prominent banner with the text "行經山區 留意路面 蛇出沒注意" (When driving through mountainous areas, pay attention to the road surface, watch for snakes) and "DON'T BE A KILLER! STOP ROAD KILLING". Below the banner is a photo of a green snake on a dark, gravelly surface. The group's description includes "四處爬爬走(路殺社)" and "https://www.facebook.com/". The page also shows a list of members, including 蔡靖 (Chieh-te Liang) and 黃文俊 (Huang Wenjun), and a section for "你可能認識的人" (People you may know).

Take photos and upload to our group

Photos

Scale

When

Who

Where



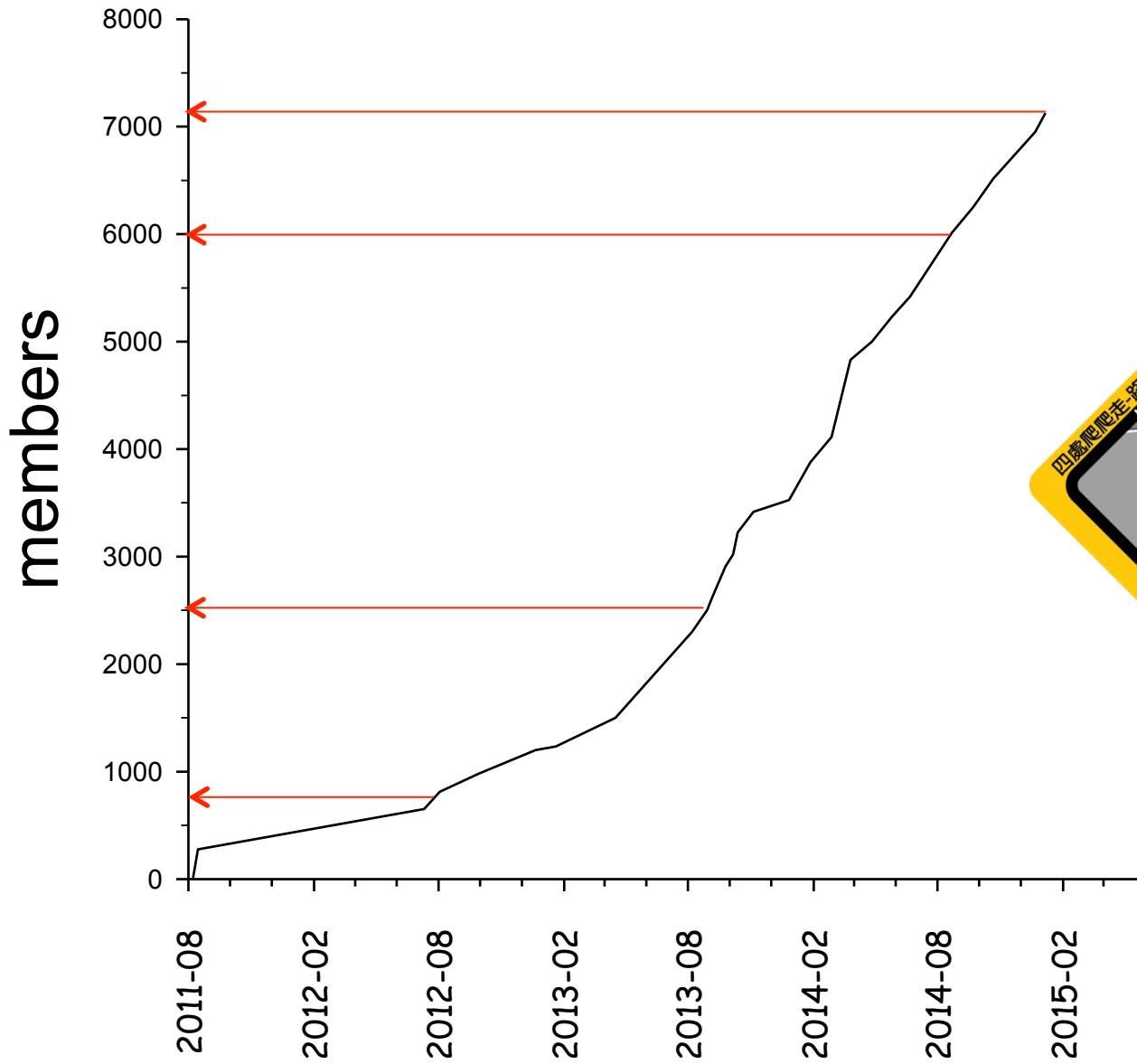
Identified by scientists

workable?

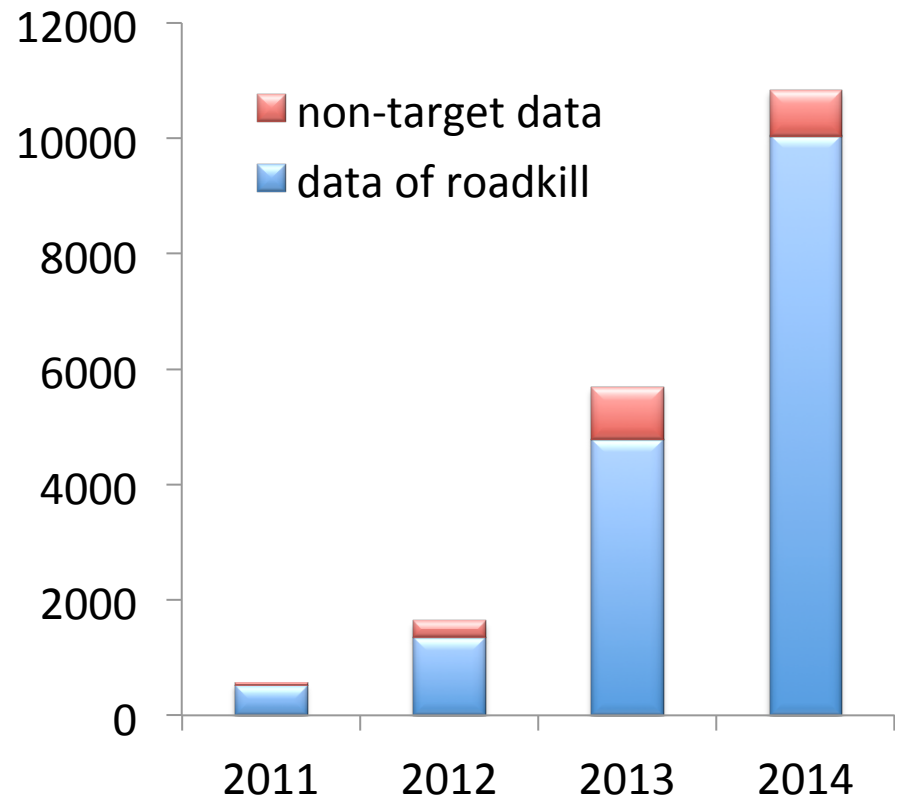
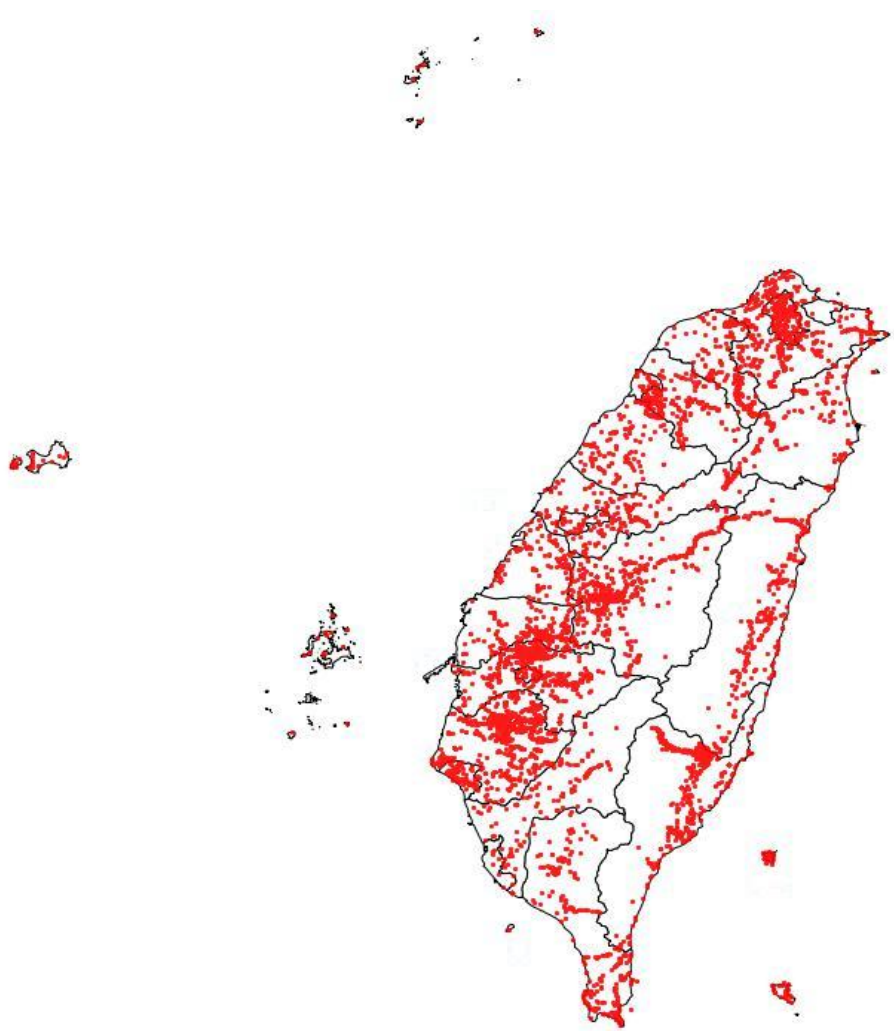
The Facebook logo, consisting of the word "facebook" in white lowercase letters on a blue rectangular background.

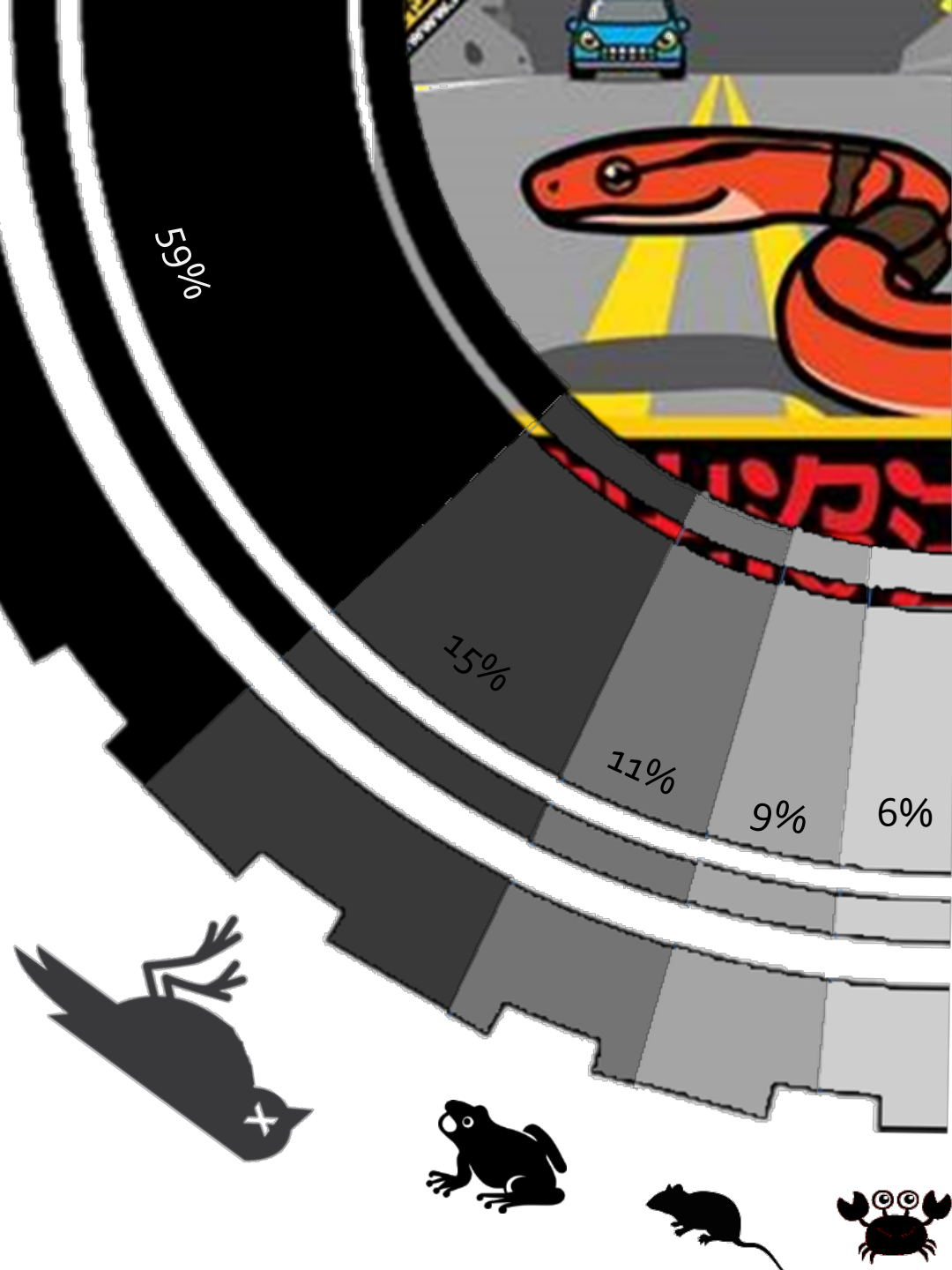
facebook

Members of our FB group



1,222 peoples upload 21,454 photos of roadkill events





>96% record are identified to species level



Social media is not a database system

How do we store and management the data?



Social Media



Terms of Service (ToS)

- The pre-conditions one must agree to before using the provider's service:
 - rights to user contributions
 - use of personal data
 - level of service quality
- The service providers makes the rules!
 - (Citizen) Scientists are just users
- Users can make parallel arrangements for themselves.

Research Data

Moving From Social Media to Research Data: A Work-in-Progress



Overview

- Use Facebook APIs to fetch posts (with images, comments, etc.)
 - normalize place locations and species names
 - store all records in a relational database
 -
- Release datasets to the public
 - deal with sensitive and personal data
 - arrange the public licensing of images
 - put datasets in a content management system
- Apps & workflow integration (to-do)

“Using Social Media for Collaborative Species identification and Occurrence: Issues, Methods, and Tools”. In 1st ACM SIGSPATIAL International Workshop on Crowdsourced and Volunteered Geographic Information. Nov., 2012.

一雙無法瞞上的深邃眼珠,你看見了嗎~
請和我們一同努力,讓悲劇不再發生!



Nature's Eyes

路死個體資訊一: 23°28'45.02" N 120°28'43.80" E
發現地點:市區海拔高度100公尺,發現日期 102年2月。

路死個體資訊二: 23°22'26.42" N 120°34'17.25" E
發現地點:台三線海拔高度452公尺,發現日期102年3月。



四處爬爬走(路殺社, Reptile Road Mortality) 成員 活動 相片 檔案 通知 建立社團

撰寫貼文 新增相片/影片 提問題 新增檔案

留個言吧.....

關於 3,536 位成員

公開社團

社團四大宗旨：
1.改善路死——藉由大量的資料蒐集，分析路死嚴重的路段、季節及種類，改善道路設計或增加廊道、圍籬等設施，以減少野生動物因國內道路開發與車流量日漸增加而造成的直接死亡(roadk..... 更多

3,536 位成員 (56 位新成員) · 以電子郵件邀請

+ 加成員到社團

置頂貼文



林德恩

各位夥伴大家好：
由於「台灣野生動物路死觀察網」資料彙整進入最後階段
目前電腦程式已順利自動擷取下6成的資料
但還有4成資料是在「相簿」中，無法被程式讀取到
為了盡快將這4成資料擷取到資料庫裡.....

更多



Water Chen 標本號RN1296 採集號ZHX20131007 感恩

11月18日 10:42 · 讚



留言.....



謝中和

2013/10/03 南蛇-幼蛇
台東縣池上鄉台20甲線約3.05k
緯度: N 23°7.873' (23°7'52.4")
經度: E 121°11.482' (121°11'28.9")



讚 · 留言 · 分享 · 追蹤貼文 · 10月6日 23:28

12 個人都說讚。



林德恩 #南蛇#, *Ptyas mucosus*

10月7日 1:17 · 已編輯 · 讚



Water Chen 標本號RN1295 採集號ZHX20131003 感恩

11月18日 10:37 · 讚



留言.....





主選單

- 關於路殺社
 - 社團宗旨
 - 管理員介紹
 - 創用CC授權
 - 最新消息
 - 加入我們
- 路殺資料庫
 - 物種分類樹
 - 物種圖庫
 - 圖片審核總覽
 - 路殺觀測紀錄
 - 路殺分布地圖
- 學習教室
 - 如何記錄路死動物
 - 照片上傳檢查社團說明
 - 路死動物拍照說明
 - 定位教學
 - 路死標本寄送SOP
 - 全台同步大調查說明
 - 生物小百科
- 下載
 - App
 - 記錄表格下載
 - 路殺社第1屆年會
 - 保育類野生動物名錄
 - 下載路死紀錄

























miseru

- 首頁
- 建立路死紀錄
- 我的路死紀錄
- 使用者列表
- ADMIN內容管理
- (管理者)我的內容
- 文章內容管理
- 建立內容
 - Panel
 - 文章頁面
 - 最新消息
 - 路死紀錄
- 資料匯入管理

首頁

圖庫總覽

前往分類圖庫: [動物圖庫](#) [地圖瀏覽](#)

					
521357714617045 ... ▶ 作者: 吳銘 (CC) BY 2013-10-07 13:46:04	663608226993136 ... ▶ 作者: 劉珊珊 (C) ALL RIGHTS 2013-10-07 13:20:11	663607350326557 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:28:15	663607350326557 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:25:20	663605940326698 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:22:34	663605733660052 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:20:34
					
663605453660080 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:18:35	663603120326980 ... ▶ 作者: 陳秀晴 (C) ALL RIGHTS 2013-10-07 04:08:43	499196486843671 ... ▶ 作者: 劉珊珊 (C) ALL RIGHTS 2013-10-07 03:34:21	521017964651020 ... ▶ 作者: 吳銘 (CC) BY 2013-10-06 17:14:31	521017287984421 ... ▶ 作者: 吳銘 (CC) BY 2013-10-06 17:12:08	521016774651139 ... ▶ 作者: 吳銘 (CC) BY 2013-10-06 17:10:14
					
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台灣野生動物路死觀察網 (Taiwan Roadkill Observation Network)

改善路死 · 公民科學 · 環境教育 · 珍稀典藏

關於路殺社 | 路殺資料庫 | 學習教室 | 下載

主選單

- 關於路殺社
 - 社團宗旨
 - 管理員介紹
 - 創用CC授權
 - 最新消息
 - 加入我們
- 路殺資料庫
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miseru

- 首頁
- 建立路死紀錄
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 - 最新消息
 - 路死紀錄
- 資料匯入管理
- 管理
- 聯絡網站管理員

首頁

499195176843802

檢視 編輯 書籍大綱 Devel

由 import 在 2013, 十月 6 - 14:28 發表
Ptyas mucosus Cope, 1861

標記之物種:

Ptyas mucosus

標記之俗名:

南蛇

Facebook:

<http://www.facebook.com/photo.php?fbid=499195176843802&set=gm.660168334023982&type=1>



圖片作者: 謝中和

2013/10/03 南蛇-幼蛇

台東縣池上鄉台20甲線約3.05k
緯度: N 23°7.873' (23°7'52.4")
經度: E 121°11.482' (121°11'28.9")

資料來源:

路殺社 (FB)

紀錄地點:

鳳林鎮, 花蓮縣
Taiwan



You Have Got App!

"Drupal In the Middle" App

- Requirements for a (road)killer App:
 - Written arrangements for all participants
 - We like roadkill images raw! (EXIF et. al.)
 - Provenance information is paramount
- The App uploads raw images to a [Drupal site](#)
- The Drupal site posts digests to the Facebook group for user interaction. Note:
 - sanitized sensitive/personal data in posts
 - including links back to the original images at the Drupal site



Privacy Policy



Public Licensing

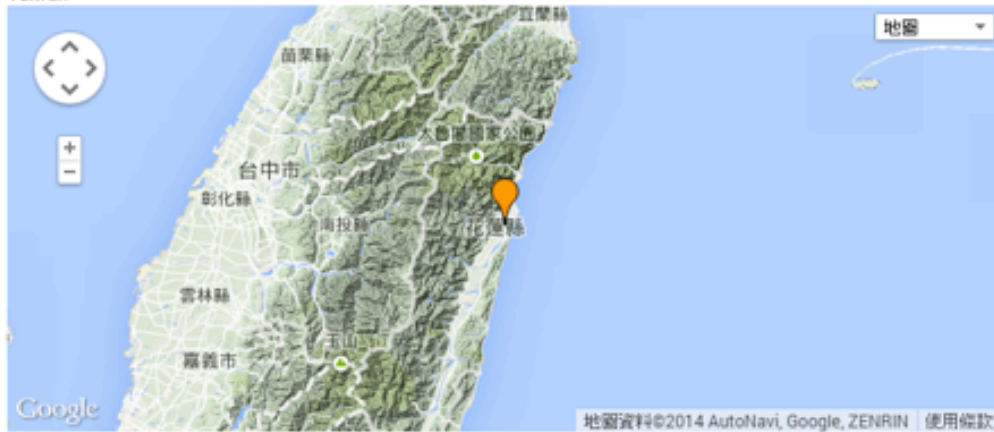


Anonymous Posting

2014, 十月 14 - 15:02 — jimshsu



圖片作者: 許正欣
App發布選項:
以自己FB帳號發布
資料來源:
App回報
紀錄地點:
花蓮縣吉安鄉民治路
Taiwan



路死紀錄時間: 2013/09/01
審查狀態: 未確認
是否為路死:
Yes
FB PHOTO_ID:
10203028733901417
FB_POST_ID:
10202094276380563_1505820266353613
瀏覽次數: 2

In Drupal

In Facebook

許正欣貼在 FB推送測試-路死觀察網的相片
回到相簿



許正欣 > FB推送測試-路死觀察網
[roadkillApp: 13566]
發現於: 花蓮縣吉安鄉民治路
[latlng: 23.97929444444444, 121.59169999999999]
紀錄時間: 2013-09-01
EXIF時間: 2013.09.01 09:48:43
讚 · 留言 · 接收通知 · 分享 · 1小時前

來自: 許正欣貼在 FB推送
測試-路死觀察網的相片
分享對象:
FB推送測試-路死觀察網
標籤出你的朋友
編輯拍攝地點

Comparisons

WIKIPEDIA

English

The Free Encyclopedia
4 000 000+ articles

日本語

フリー百科事典
815 000+ 記事

Español

La enciclopedia libre
900 000+ artículos

Русский

Свободная энциклопедия
875 000+ статей

Italiano

L'enciclopedia libera
939 000+ voci

Português

A enciclopédia livre
742 000+ artigos

Deutsch

Die freie Enzyklopädie
1 430 000+ Artikel

Français

L'encyclopédie libre
1 270 000+ articles

Polski

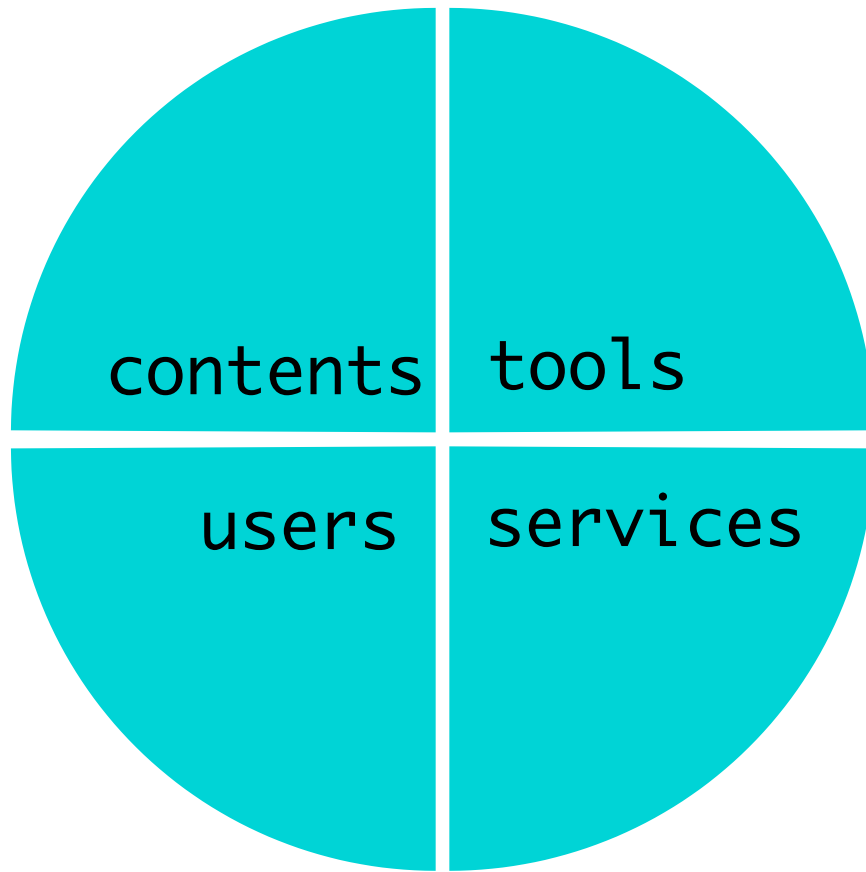
Wolna encyklopedia
908 000+ haseł

中文

自由的百科全書
500 000+ 條目



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Busca · Sök · 搜尋 · Tìm kiếm · Пошук · Cerca · Søk · Haku · Hledání · Keresés · 찾기 · **Cari** ·
Ara · جستجو · Căutare · بحث · H'adaŋ' · **Søg** · Serĉu · Претрага · Paieška · Poišči · **Cari** · חיפוש ·
Търсене · Izdeu · **Bilatu** · **Suk** · Bilnga · Traži · खोजें



contents

tools

users

services



contents

tools

users

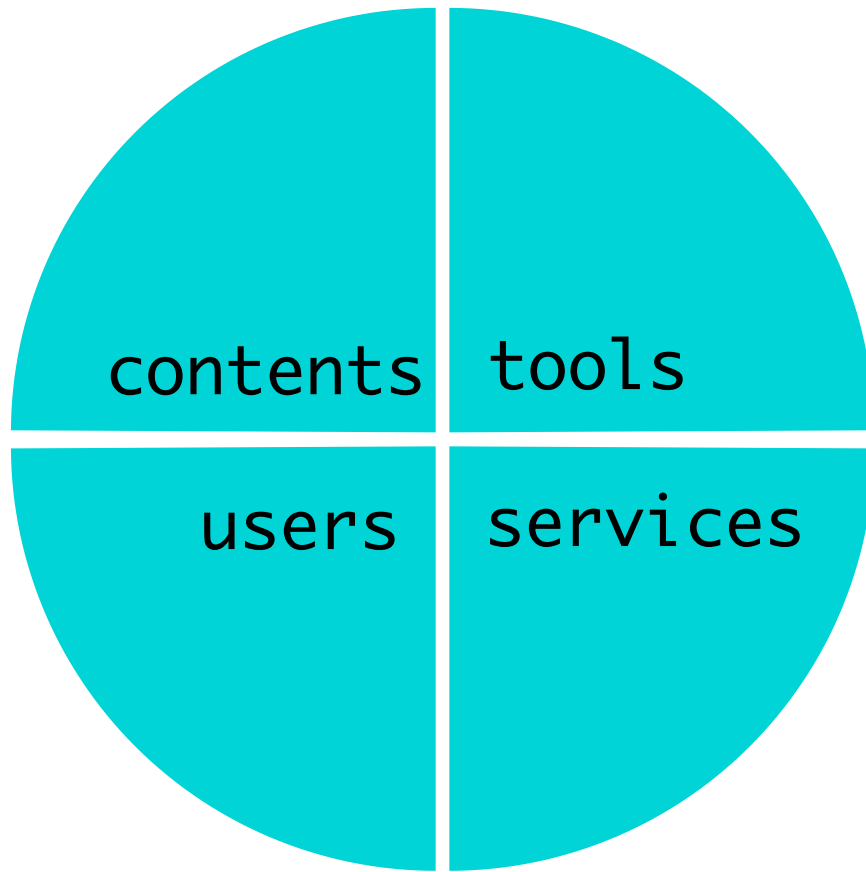
services



WIKIMEDIA
FOUNDATION





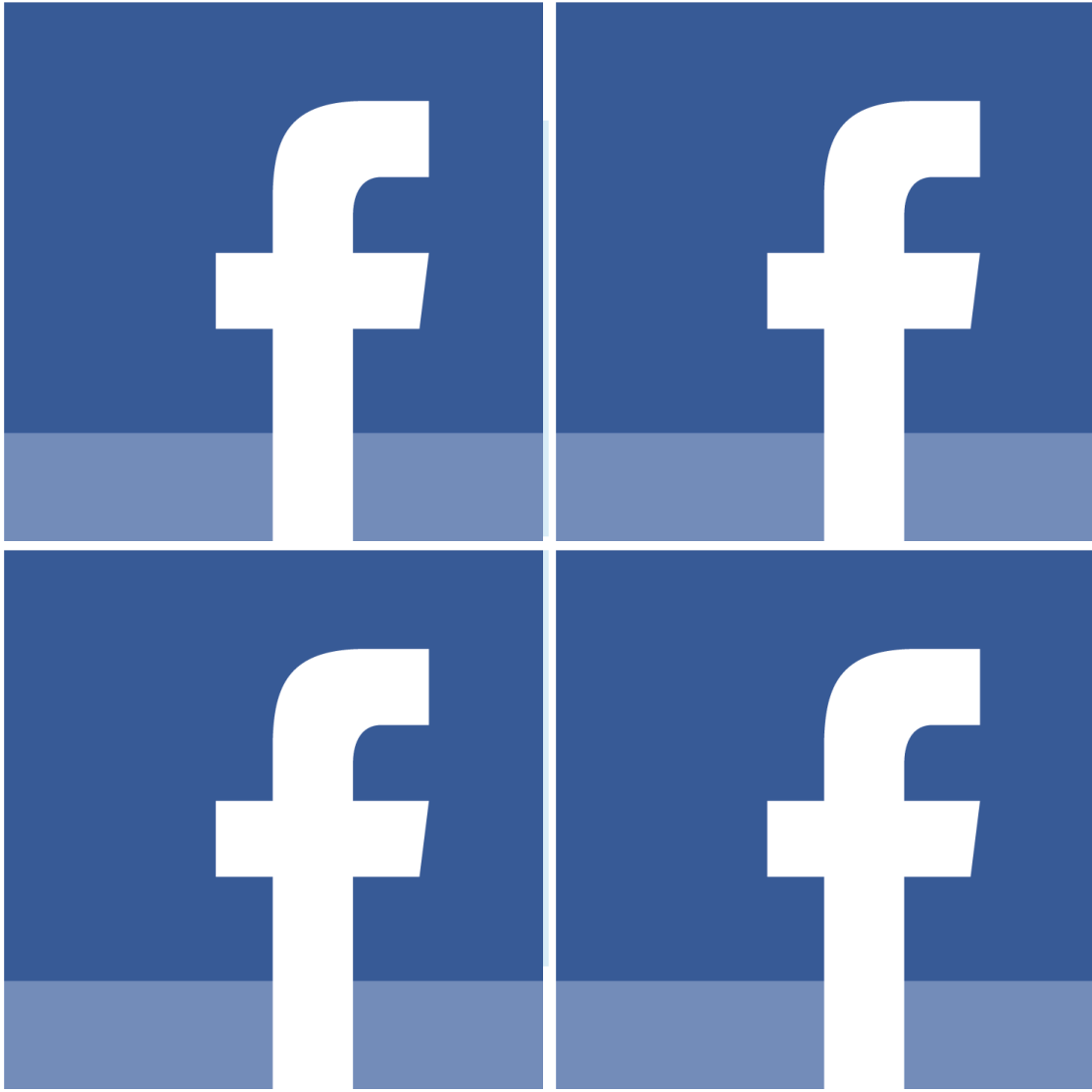


contents

tools

users

services



Citizen Science Projects

- Not all contributors are equal?
 - scientists
 - Participants
- Not all contributions are good?
 - data quality
 - personal data
 - sensitive information
 - BTW, Is this data or creative work?

Making Arrangements

- Put them into writing:
 - public licensed/domain; use of personal data; dealing with sensitive information
 - principles of data quality, integrity, and availability
- Community feedback and overseeing
- Use common legal, technical, and practical tools to ease the task
- Good provenance makes useful data products

Openness

Openness?

- Libre
 - can be used by people
- Digital
 - can be used by machines and put online
- Raw
 - can be modified and repurposed
- Common (format & vocabulary)
 - can be exchanged and interlinked
- Transparent
 - (the process) can be fixed; meta-level

Openness as Best Practice

- . Libre
- . Digital
- . Raw
- . Common
- . Transparent

Open Content, Open Data, Open Source,
Open Collaboration, Open Science, ...

Contact us

- Te-En Lin, dnlin@tesri.gov.tw
- Tyng-Ruey Chuang, trc@iis.sinica.edu.tw
- Taiwan Roadkill Observaion Network (TaiRON) <http://roadkill.tw>
- Our Facebook group, <https://www.facebook.com/groups/roadkilled/>