Using Social Media to Monitor Wildlife
Dr Jon Chamberlain (University of Essex)

Using Social Media for Biomonitoring:
How Facebook, Twitter, Flickr and Other Social Networking Platforms
Can Provide Large-Scale Biodiversity Data.
Chamberlain, 2018.
Advances in Ecological Research Vol.59

Help! Experts

Join a wildlife recording scheme.

Connect with experts.

They confirm what's in your pics.

But also...

An observation of wildlife is created.

Now we can find out where things live

and what they're doing.

Help! Experts but

User must be motivated to join

- Hear about the project and find it online
- Register to the website
- Create a profile
- Learn how to input data
- Become involved in the community

User must be motivated to participate

- How much will they submit?
- Can they "lurk"?
- What makes them come back?

Help! Social media

Ask your friends on social networks

Friends of friends get involved

Expert finding for specific wildlife

You know how the system works

How it works

RECREATIONAL DIVER

8 mins

FACEBOOK

Jon Chamberlain
17 hrs

Any ID for this please? Indonesia 10m down

Like · Comment · Share

👍 Rob Durrant and 11 others like this.

Ron Silver Phyllidia varicosa
17 hrs · Edited · Unlike · 👍 3

Michael Fineberg common name: Varicose wart slug
Both pretty, and common! 🙂
10 hrs · Edited · Unlike · 👍 1

Wayan Darma phyllidia varicosa
9 hrs · Unlike · 👍 1

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Facebook Groups

Identified 3 types of Facebook groups that might contain biodiversity information.

Task Request (TR)

Users are invited to ask for an identification of their picture
e.g., ID Please (Marine Creature Identification)

Media Gallery (MG)

User share and look at nice pictures
e.g., Underwater Macro Photographers

Knowledge Sharing (KS)

Users share knowledge or coordinate activities
e.g., National Forum for Biological Recording

Topic Specificity (-S or -G)

Dataset

Messages cached and analysed

- **39k threads**
- **14k users**
- **34 Facebook groups**
- **14k mentions of species**

Analysis

Topic-specific Task Request (TR-S) groups

High number of photo type threads (63% have images)

Likely to get a reply (71% of messages get a reply)

Have active users (36.5% of groups users participate)

Threads have species mentioned (73%)

Approximately 45% of threads could be useful

Accuracy

A sample of 61 difficult to identify images from 2 TR-S groups showed an identification accuracy of 93%

Groupsourcing: Distributed Problem Solving Using Social Networks. Chamberlain, 2014. Proc. HCOMP'14

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Language processing

Image + ID request (implied) + Location + Location (false)

Having a great time in Bali, look what I've seen!! ☺ Hope ur all having a gr8 time in rainy old Blighty

So jealous! What is that thing!?

Common name
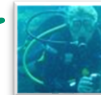
Blue Dragon sea slug – cool!!

Spam

Buy Raybans!! 3 for the price of 2!!

Scientific name + Interactions
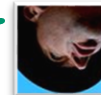
This is a Glaucus atlanticus nudibranch (sea slug), floats upside down on the water surface and eats jellyfish. Lovely photo!

Scientific name

Yep G atlantica eats jellyfish so jealous
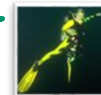
Scientific name (false)

Is this not g pacificus

Species morphology

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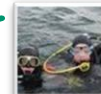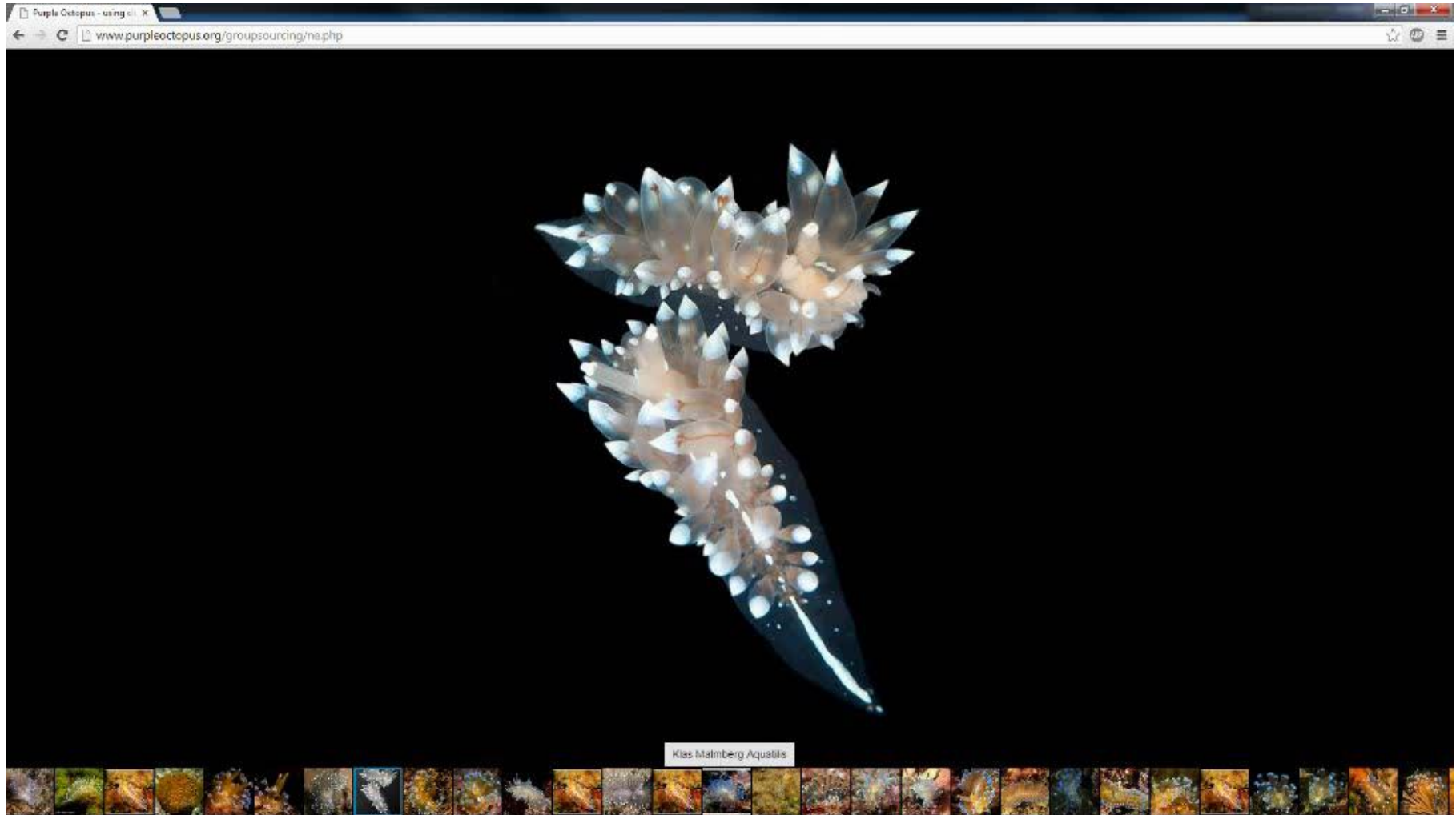
Species morphology

Janolus cristatus (delle Chiaje, 1841)

Erling Svensen

Species morphology image gallery   Worldwide heatmap of species diversity

Challenges

Bias towards charismatic species:
birds, sea slugs, dolphins, ladybirds, jellyfish, sea shells...

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Dangers

Bias of a black box system?

Abuse of data?

Consent?

More divers...

...taking and sharing more pictures

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