

Australian Bushfires

How can the Conservation Tech + Citizen Science communities help?

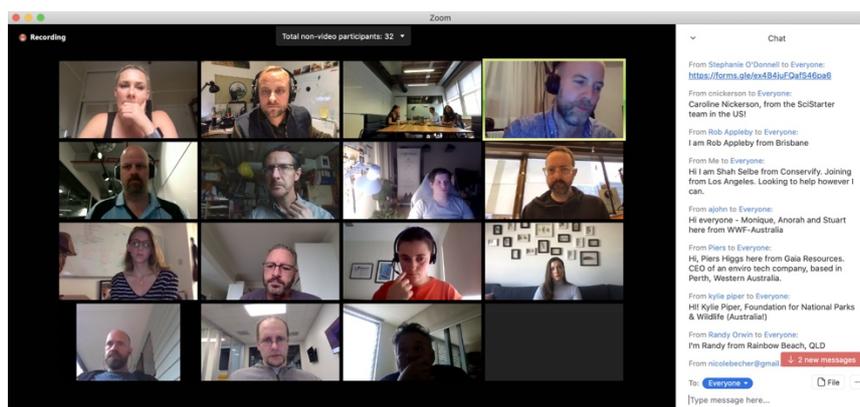
Alasdair Davies started a discussion (here on [twitter](#), here on [WILDLABS](#)) over the weekend, asking whether there was anything our conservation tech community could do to help tech-wise with responding to the bushfires. We saw a pretty immediate response, and an initial brainstorming call was organised for Tuesday morning.

We were joined by 50 people from a cross section of backgrounds - NGOs, universities, citizen science orgs, tech sector (hardware/software), GIS/mapping, disaster response, cybersecurity, comms, advocacy. (See page 3 for quick rundown of orgs represented)

We're looking at short, medium and long term needs that we as a tech community can help with. Message from Australian experts on the call was that any outputs responding to short term responses needed to be very simple – people are overwhelmed. Consensus was that our impact was probably going to be best focused in the medium/long term needs.

Even if we can only help in the aftermath, there has been interest in assessment efforts post fire (UAV surveys, donation of equipment, a plan to follow to rapidly assess priority areas, GIS/Mapping and data visualisation) and things that could be done quickly for wildlife (DIY water feeder builds etc, which would save lives in the interim). Citizen science could have a role here – see example of SPOTTERON bushfire app that was presented in the call.

We're currently mapping our immediate skill set and forming into working groups. Coordination is going to be key here. What's clear is we have a huge network here that wants to help – this was a response from just a few tweets and a blog post, we haven't even started tapping into our full community yet. Within the community we have the expertise need to cover really any tech approach, what we need is to hear exactly what the needs are so we can direct our efforts effectively. To ensure this, we're liaising with teams coordinating on the ground in NSW and VIC to understand what are the priorities and how we can coordinate with existing efforts so we're not hindering, we're helping.



[WILDLABS](#) is a global community for conservation tech, founded by WWF, WCS, Conservation International, Fauna & Flora International, ZSL and the Royal Foundation, and has partnered with Google.org, Microsoft AI for Earth, Amazon, Arm, and the UK FCO. With 3000+ members worldwide, our mission is to catalyse collaboration to accelerate the development and scaling of technology solutions for conservation impact.

Background

<https://www.wildlabs.net/community/thread/825>

Hi all,

The bushfire crisis in Australia is beyond words. I've been talking to a few Australian friends and WL community members [@Rob Appleby](#) [@JessieOliver](#) etc trying to answer "what can we do as a tech community to help directly?". The eastern bristlebird could be wiped out locally in NSW, along with so many more species. What is it - 500 million estimated dead? 8000 Koalas, 30% of the population known to have perished?

They too know we're looking at the reality of climate change unfolding at scale in Australia. All its wildlife, all its people, are now on the frontline now and for years to come. We still aren't even [reducing emissions](#) globally(!). What a disaster. The Amazonian fires, Californian fires, African fires - all devastating and not even close in comparison to what is going on in Oz and equally as disturbing. Watching it all unfold I keep looking for something we could do to help in the short term, as a community.

At first I was thinking early warning fire / heat / smoke sensors for remote fire detection - we have all the comms and hardware to do it, but the sheer scale of it and limited resources on the ground to react seemed to suggest the impact wouldn't do much even if we started to deliver free hardware as a community. Maybe it would help in the long term post recovery next year, and the next, but then a post came up a few ago on the [Sydney Herald describing the "starvation event"](#) now facing the survivors that is just as heart wrenching.

From a technology perspective however, I think we could help. Equipment to quickly detect distressed wildlife in the aftermath / burnt land is certainly what we could help with. UAVs with thermal cameras could spot and find countless dehydrated or starving mammals for a start in the short term. I have no idea which org / people locally would be best to receive it, especially if we're looking at drone pilots, but we could explore the idea. I could probably build two thermal UAVs from spares in my room alone and I know plenty of pilots. We could even try and fund / donate to help build an equipment bank in a way we know how.

Maybe a special "unprecedented" Virtual Meetup to brainstorm a response from us a community?

In fact, we were going to do one for the rainforest Xprize that was to discuss rapid scanning / surveillance of rainforest habitat, so we're already in a similar realm.

****UPDATE 2****

Community Brainstorm Call was held, Monday 6th Jan where we were joined by 50 community members. Thanks everyone for the enthusiasm, there's clearly eagerness to figure out how we can help meaningfully. A full update will follow, including slack workspace to help coordinate efforts. We will continue to update info here.

CURRENT ACTION:

If you weren't able to join, we're mapping our group + skills + needs

here: https://docs.google.com/forms/d/e/1FAIpQLSc6du3n0mfcnCLw7fIRZR4bnnKcKB_rlMOJifYGZ_t3uKvIeQ/viewform

Brainstorming Call 7/1/2020

Organisations:

- Conservation Tech / Citizen Science Groups
 - Gaia Resources
 - Conservify
 - IRNAS
 - Wildspy
 - Zooniverse
 - Octophin
 - Safecast
 - SciStarter
 - OSGeo Oceania
 - New America Cybersecurity Initiative
 - Key Conservation
 - Cargoscreen
 - ConservationXLabs
 - SPOTTERON
- Academic:
 - Charles Sturt Uni
- UQ
- Adelaide U
- University of Virginia
- Deakin Uni
- On the ground: (NGOS + Community Groups + Gov + Consultants)
 - FNPW
 - WWF-Aus
 - WWF-Malaysia
 - Cooloola coastcare
 - WILDLABS
 - WWF-US
 - WCS
 - Queensland Trust for Nature
 - Conservation Volunteers Australia (Vic)
 - Ecology Australia
 - Taronga Zoo

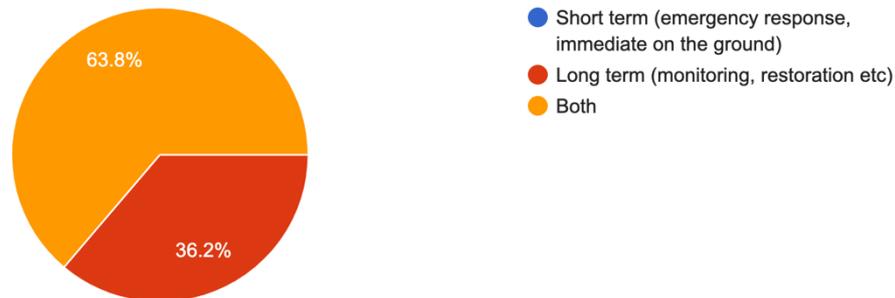
Locations:

- Australia
 - Adelaide
 - Albury
 - Hobart
 - QLD (4)
 - Melbourne (5)
 - Sydney (15)
 - Perth
- USA:
 - Colorado
 - Virginia
 - LA
- San Fran
- San Diego
- New York (2)
- Washington DC
- UK (8)
- Malaysia
- Slovenia
- Tokyo (2)
- Brussels
- Singapore
- Austria

How do you want to help?

Do you want to help:

47 responses



How can you help?

- Software (22)
- Hardware (13)
- Networks and Connections (36)
- Other (examples):
 - Spatial data
 - Funding
 - PM/Coordination
 - Access to our supporters (1mill)
 - Advocacy, comms
 - On the ground staff
 - Strategy, systems and planning

Tell us how you want to help:

Sean Bonner, Safecast

I run Safecast, a global project/community that started in Japan after the Fukushima meltdowns originally focused on enabling communities to monitor and publish radiation data but now also doing air quality.

Gaia Resource (Perth based)

We're a bunch of technologists - mainly software, mobile, spatial, mapping etc. We're also involved in helping the human side of the work at the moment (we're working with volunteer associations at the moment), we're also helping coordinate a mapping response (mapathon style) with some of the other groups and volunteer organisations (human side as well) but we're also looking to do something in the environment/conservation space. So we're around to help.

Brooke Simmons, Zooniverse

I run the Zooniverse's disaster relief arm so we can mobilise the community if there is data that needs sifting by humans, rapidly. I have expertise in citizen science data reduction and disaster mapping and we can help people build their own citizen science projects or contribute a project that we build and run ourselves to a wider effort, etc. We are very needs-driven with the Planetary Response Network so we would want to get a good sense of what information specifically is needed and by whom. From past experience that allows us to

mount the most effective responses (versus more exploratory or cover-everything type projects).

Shaun Noordin, Zooniverse

Initial idea: using cit sci to identify areas requiring response (short-medium term) and wildlife recovery (longer term) // Pt 1: the Zooniverse.org citizen science platform can help process large amounts of image data - i.e. are there fires in this satellite photo? Are there animals in this wildlife camera trap, if so, what species? etc // Pt 2: the photos + geographical metadata + identified information can be fed into a custom map system to identify areas for ground response. // Follow up: these ideas will need to be revised/updated as - over the course of the conversation currently ongoing in my adjacent Zoom window - we get a better idea of what people in Australia really need.

David Watson, CSU: Happy to contribute to coordinating efforts

Shah Selbe: Nat Geo Explorer, Founder Conservify

Happy to help with any technology development that might be needed or deployment support and can donate gear/hardware/etc. I can also help with finding funding for this effort.

Kylie Piper, FNPW

We are working with wildlife groups & parks across the country on rescue efforts. We have funded over \$200k to date & looking at another \$200-300k for wildlife rescue & rehab following bushfires. We also have grant round open for application for longer term conservation programs & would love to receive an application from this group.

Luka Mastafa, IRNAS

At <https://www.irnas.eu/conservation/> we develop specialized hardware solution for conservation technology, from mechanical solutions to fully standalone IoT solutions. We are happy to work with conservation specialists to figure out the best possible solution and offer technical support.

Rob Appleby, WILDSPY

I am principally an ecologist, but I am interested in lots of tech., and am willing to donate whatever I can, including anything from our equipment: <https://www.wildspy.com.au/>

Filip Hnizdo, Octophin

I run (Octophin Digital) a software agency in London focusing on conservation. We've done lots of mapping, citizen science, database, and software-for-hardware stuff so happy too help on that front. Also a former newspaper journalist with lots of media contacts so can use that to try to nudge certain stories into the press if needed.

Remi, Octophin

Build apps or graphic interfaces. Data coordination, amagamation etc. Mapping? Open to assisting in other ways.

Cris, Octophin

Website, database, online mapping?

WWF-Aus

Stu Blanch: Provide conservation science advice, via WWF folk. Can help with media commentary, policy advocacy in Australia

Monique Isenheim: Outreach to our 1 million supporters. through connecting and outreach, innovation approach

Anorah John: In any way at all.

Duncan Geere.

He's currently Senior Creative Producer at Information is Beautiful and is pretty much the perfect person to get data about this into the right people's hands. His bio:

"I'm a writer, editor and data journalist with more than 10 years of experience. I cover the intersection of science, technology and culture, with a particular interest in environmental issues."

He was previously editing at Wired and has written / worked for a lot of different places. He'll also know lots of other people in the sector. Filip emailed and he replied straight away with comments about a misleading map of the fires doing the rounds and said he would love to help. Could we add him to the group so he could get some questions in and help formulate a plan?

Hui Shim TAN, WWF Malaysia

XFire innovation challenge is currently in phase 2 of 3 phases, and focused on Southeast Asia. Possibility to scale up to a global challenge if there are interested partners to collaborate together

Randy Orwin, cooloolacoastcare.org.au

We are a citizen science nonprofit and willing to help any way we can.

Caroline N, Sci Starter

SciStarter can provide a microsite (similar to SciStarter.org/NASA) for citizen science efforts and can use its blog network (including Discover Magazine) to get the word out. Happy to do this for free.

Serge

Software/Hardware engineering or consulting, analytics. Networking into big4

Talia Speaker, WILDLABS

Limited tech skills but familiar with cons tech and happy to help in any way I can! Maybe coordinating future Zoom calls, helping with comms? Can also facilitate communication with WWF network if helpful

Tara Tiger Brown

My expertise is to support people without technical knowledge to utilize solutions that benefits them where they are and that doesn't cause them more work or require a lot of training. My skills include software and hardware project/product management, community

engagement, prototyping and developing hardware and environmental monitoring education programs.

John Bryant, OS Geo Oceania

I am a director of a not-for-profit called OSGeo Oceania, focused on the open geospatial community. I can potentially help mobilise this community on mapping efforts.

Nicole Becher, New America

open to anything based on need. Generally interested in helping out in hardware, software, networking, cameras, security, etc.

megan Crompton, Key Conservation

Help with mobilizing people, figuring out ways we can map access and getting resources to those who need it.

Joanna Osborn, QLD Trust for Nature

National access to expertise, land and resources. Contributing ideas, expertise and networks.

Sivan Goldberg, CargoScreen

Also coordination/PMO

Can support with international network but then also with coordinating tasks, tracking and managing the efforts of this group so others can focus on hard/software etc.

Michael Hakkennes, GIS Analysis

Ideas for an app/website to identify locations to put water/feed stations. Then have interested parties ensure that they are regularly filled up on going basis for months/years to come. Similar to Geocaching (www.geocaching.com) encourages users to visit a hidden cache. Gamification of an app/website could potentially reach a larger group of volunteers to fill up stations ongoing in the long term.

Daniel Mietchen, University of Virginia

I have experience in digital disaster response from the following perspectives (see my notes at <https://github.com/Daniel-Mietchen/datascience/blob/master/emergency-response.md>) and am ready to join similar efforts this time.

Specifically, I was or am part of

– the team of Wikipedia volunteers that made Wikipedia the most accessed website on the Ebola virus in the countries affected by the 2014-2015 outbreak, by providing information related to the virus in the languages of the people actually affected.

- the regular contributors of biodiversity and conservation-related content on Wikipedia, Wikimedia Commons, Wikispecies and Wikidata

- contributors to Wikimedia coverage of various other disasters, e.g Fukushima, Nepal earthquakes, Brazilian National Museum, Hurricane Dorian

- the Zika response team the National Institutes of Health throughout 2016, focusing on efforts around data sharing

– the communities who contributed to various Humanitarian OpenStreetMap and MissingMaps tasks, e.g. during Hurricane Maria

- the team establishing an open hardware lab at the School of Data Science at the University of Virginia, and one of the first projects we are about to launch is about monitoring fires in the Brazilian rainforest in collaboration with indigenous communities
- the team developing Internet in a Box, a Raspberry Pi deployed as a WiFi router to serve online content (in our case Wikipedia and OpenStreetMap) offline I am also on the editorial board of the Biodiversity Data Journal that can help publish conservation data <https://bdj.pensoft.net/> and a co-founder of the open-science journal RIO (Research Ideas and Outcomes) that also publishes citizen science projects and things other than (or leading to) formal publications <https://riojournal.com/> .

Li Ling Choo, WCS

I'd truly like help anyway I can! Depending on priorities, this could be e.g., GIS/mapping, data management/analysis, coordinating resources within my organization or outside, etc. Looking forward to next steps and thank you for organizing this response.

Rob Harcourt, Macquarie uni

ensure that we can use our resources to the max to minimise damage to in particular the endangered species and communities

Grant Williamson, UTAS

Researcher at UTas - research interests include bushfires, smoke and landscape ecology, with a focus on GIS and satellite monitoring.

Sam Rye, Conservation Volunteers Aus

Support available with one of Australia's largest conservation volunteering organisations. We could coordinate on ground efforts, and we're also building a monitoring and reporting platform which could be repurposed for fire recovery efforts.

Patrick Doup

I can like to volunteer a few hours a week to any project that allows remote. Have a data science and economics background, including mapping for global health. My motivation is that I'm from Australia and would like to help out from my now home.

Peter Jacobs

It's a massive and complex issue so I can help structuring that into workstreams and steps required - both tech and non tech

Christopher Watson, Ecology Australia

My professional activities have me in Gippsland, the Vic Central Highlands and NE Vic for most of the year doing fauna surveys and habitat assessments. I may be able to assist with deployment and retrieval of monitoring devices in remote areas and the processing of imagery and acoustic data.

Andrew Hill, Audiomoth

Tech ideas, development and deployment

Euan Ritchie, Deakin

Ecological knowledge and identify key information we need tech to help with. Wildlife ecologist in southeast Australia, the fire affected area. Experienced in fire ecology.

Philip, SPOTTERON

On SPOTTERON, we can launch well working and polished Citizen Science App tool-kits very fast. With the information what science teams or other stakeholders need as data classifications by Citizen Scientists and the public we can have a wildfire effects spotting package ready within a week. The apps on the SPOTTERON platform are highly community driven and can not only help with data collection, but also on an engagement level, community building and creating awareness. The toolkit can be provided for free for the cause with all features of the SPOTTERON platform out-of-the-box. (please see the presentation PDF with previews (drafts for sure) and a short concept overview) Design, providing a toolkit based on the established SPOTTERON Citizen Science platform (www.spotteron.net)

Malcolm McLennan

Communications - publicity I'm a former publicist/editor with Greening Australia. Investigating fundraising options to assist with the groups aims and raising awareness. Networking with Bush Heritage, Wires, Greening Australia. Does the group need to set up a non-profit body to coordinate efforts in the medium term and use funds raised in most effective way? I set up a charity for the Amazon fires in 1987 with the cast of Les Miserables and put out a record on Festival records and coordinated media appearances to raise funds.

Don Driscoll, Deakin Uni

Attending a meeting in Victoria led by state agency DELWP on Friday to discuss response and priorities. Please keep me in the loop on what direction this group takes.

John Martin, Taronga Zoo

Keen to discuss biodiversity assessment and monitoring recovery

Michael Hakkennes

Ideas for an app/website to identify locations to put water/feed stations. Then have interested parties ensure that they are regularly filled up on going basis for months/years to come. Similar to Geocaching (www.geocaching.com) encourages users to visit a hidden cache. Gamification of an app/website could potentially reach a larger group of volunteers to fill up stations ongoing in the long term.

Yaela Golumbic

I'm not sure exactly how I can assist, but would love to. I have experience in engaging communities in citizen science projects around environmental issues, monitoring the environment and building monitoring technologies.

Natalie Downe

I want to help any way I can

Alan Stenhouse

In any way I can really. Software developer, mobile CitSci apps, backend systems, ML a bit.

Jessie Oliver

Heavily involved with citizen science locally, nationally, and internationally