

Science Communication for Ecologists and Environmental Managers



Agenda

- Intro to science communication
- Platforms and audiences
- The importance of story
- Content formats
- Accessibility and inclusivity
- Copyright, credits and permissions
- Getting started
- Q&A

Image by Holly McKelvey www.holly-draws.com



What is SciComm?



Stonecrop Review

A JOURNAL OF URBAN NATURE WRITING, ART & PHOTOGRAPHY



THE POETRY OF SCIENCE



Friends 110

Enabling Customers

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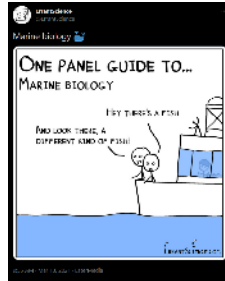
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THE SCIKU PROJECT

The latest scientific discoveries in haiku form – scikul



*Click images for hyperlinks

Why do it?



“Science communication is seen as critical for the disciplines of ecology and conservation, where research products are often used to shape policy and decision making... Publications that receive more attention on social (eg. Twitter, Facebook and blogs) and traditional (eg. news and radio) media reach a more diverse, non-scientist group than a publication with a lower media profile. For example, on Twitter—a platform scientists often use to discuss science amongst one another—up to 40% of followers from E&C scientists may be non-scientists, media, and environmental groups”

[Lamb et al. \(2018\) Tweet success? Scientific communication correlates with increased citations in Ecology and Conservation. PeerJ, 6, p.e4564.](#)

Getting started: platforms and audiences

- What is your purpose?
- Who is your audience?
- What is your message? Keep it clear and simple
- Why are you communicating? And why should people listen?
- Is the timing important?
- What outcome do you want?

What platform will best serve your message?

- Social media
- Blogs and articles
- Videos
- Webinars and talks
- Visuals

“Academic scientists on Twitter start by preaching to the choir but can eventually sing from the rooftops”

Côté, I.M. and Darling, E.S., 2018. Scientists on Twitter: preaching to the choir or singing from the rooftops?. Facets, 3(1), pp. 682-694

Resources

[A Comprehensive Guide to Science Communication](#)

[Multimedia Skillset Development](#) and [Social Media for Ecologists](#) (BES member login required)

The importance of story

We've been telling stories for 100,000 years
Aided by visual arts for 27,000 years
And writing them down for 3,500 years



Resources:

[Into The Woods: How Stories Work and Why We Tell Them](#) by John Yorke

[The Science of Storytelling](#) by Will Storr

[The Seven Basic Plots: Why We Tell Stories](#) by Christopher Booker

[Graphic Storytelling and Visual Narrative](#) by Will Eisner

[The magic of storytelling](#) by David JP Philips

[Don't Even Think About It: Why We Are Wired to Ignore Climate Change](#) by George Marshall



Story spine



- Once upon a time there was...
- Every day...
- One day...
- Because of that...
- And because of that...
- Until finally...

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Story types

- The Hero's journey – the research journey
- Rags to riches – site restoration
- Voyage and return – discovery of new data
- Overcoming the monster – tackling environmental threats
- Tragedy – not as useful but can describe negatives
- Rebirth – like tragedy but turns it around

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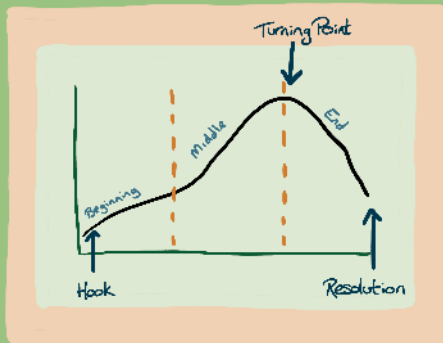
[The magic of storytelling](#) by David JP Philips

[Don't Even Think About It: Why We Are Wired to Ignore Climate Change](#) by George Marshall



Crafting a story

- Use images
- Key story points
- Pace/rhythm
- Story arc
- Use short sentences and avoid jargon
- Read out loud for flow/tone



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Stories and the emotional brain

"[advocates for action on climate change] need to maintain enough of the data and evidence to satisfy the rational brain that they are a credible source. They need to translate that data into a form that will engage and motivate the emotional brain using the tools of immediacy, proximity, social meaning, stories, and metaphors that draw on experience."

Marshall, George. Don't Even Think About It (p. 50).
Bloomsbury Publishing

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[The Science of Storytelling](#) by Will Storr

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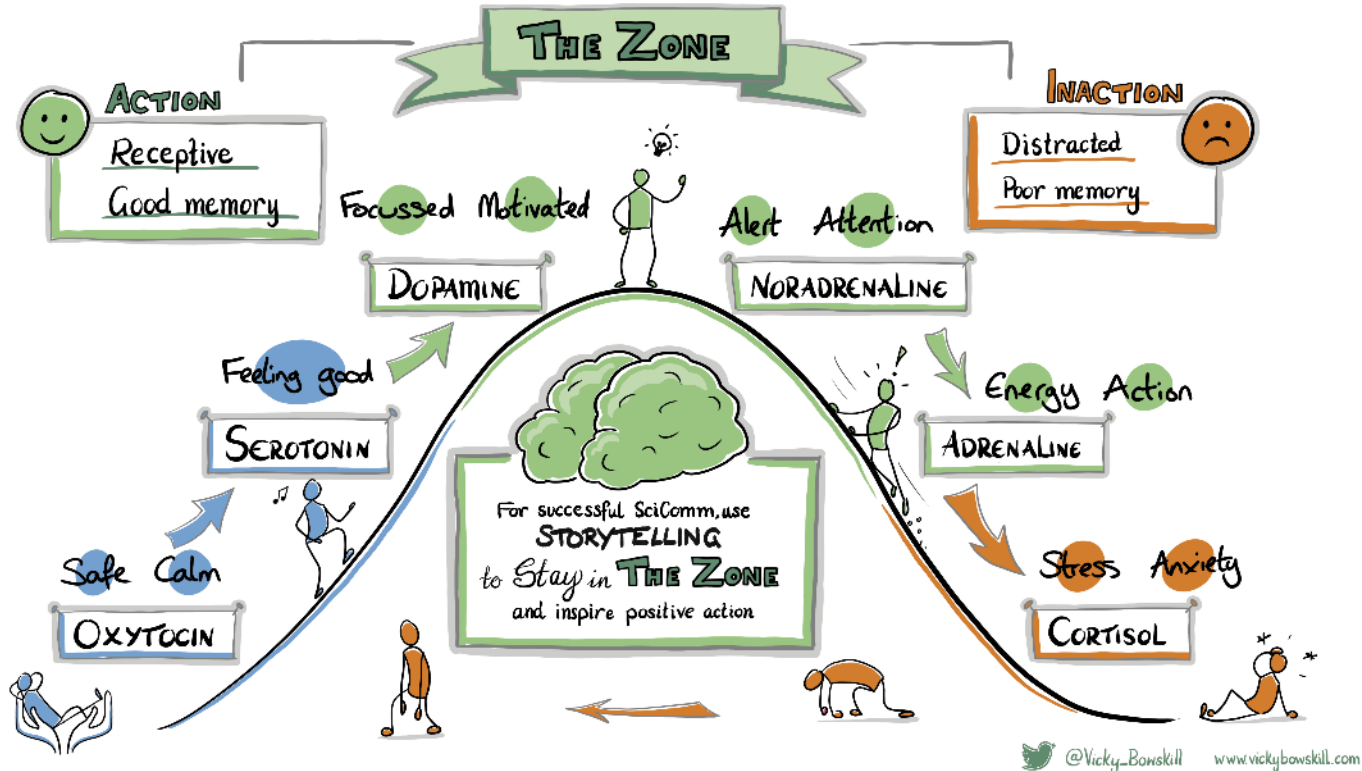
[Graphic Storytelling and Visual Narrative](#) by Will Eisner

[The magic of storytelling](#) by David JP Philips

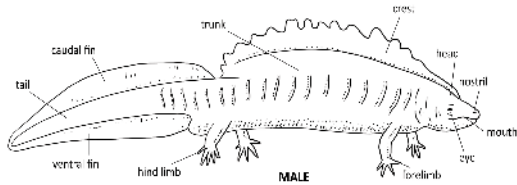
[Don't Even Think About It: Why We Are Wired to Ignore Climate Change](#) by George Marshall



Stories and the emotional brain



Stories and the emotional brain



Resources

[IUCN: Love. Not Loss](#)

[Sustainable Sidekicks](#)

[The Influence of Colour on Memory Performance: A Review](#)

Graphic recording and sketch noting



<https://www.holly-draws.com>

FOCUS ON the BIG IDEAS

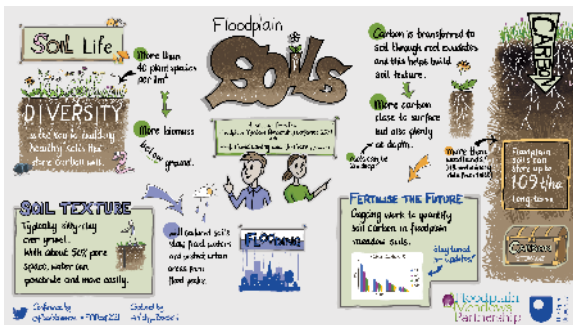
CAPTURE IDEAS THAT RESONATE.
LISTEN FOR KEY THEMES AND IDEAS, THEN CAPTURE THEM WITH IMAGES AND WORDS.
Rather than trying to record every detail, focus on the most relevant, useful ideas you can apply in your life right away.

AS YOU TRAIN YOUR EARS AND MIND, YOUR ABILITY TO LISTEN AND CAPTURE IDEAS WILL IMPROVE.

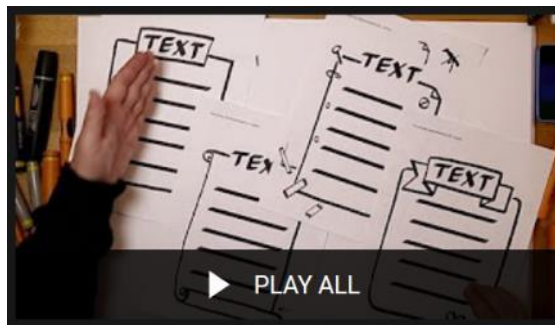
MIKE ROHDE
SKETCHNOTES TIP #1

Get more sketchnoting ideas for OneNote in *The Sketchnote Handbook* and *The Sketchnote Workbook* at rohdesign.com/books

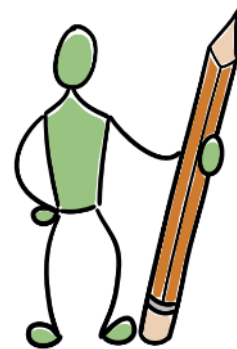
Mike Rohde <https://rohdesign.com/books>



<https://vickybowskill.com>



Graphic Recording Tutorials from Benjamin Felis





Get it proof read!

Language:

- 800-1000 words (or less)
- Informal voice – write it as you'd say it
- Active over passive voice
- Use "you" or "we"
- Avoid "Obviously..." Or "As we all know..."
- Short sentences

Structure:

- Provocative title
- Lead paragraph – sets the scene
- Main body – lays out your story
- Tail – summarise and give your call to action
- End with a short author bio (50 words) and contact details if appropriate.

Resources

[Science blogging 101](#)

[Science blogging: the essential guide](#)

Creating videos



Script and subtitles: 500 words = ~3 mins

Storyboards and footage: Framing, horizontal vs vertical, wipe the lens, cut-aways, variety

Light: Where is it coming from and what effect does that have on your footage?

Sound: Microphones, voice-over, music

Supporting equipment: tripods and gimbals

Software: MS Movie Maker Pro, Da Vinci Resolve, Science Story Lab

Length: Keep it short (Twitter, 2m20s) call to action early, half views don't reach the end



Resources:

[Science Story Lab](#)

[Da Vinci Resolve](#)

[Gimbal moves for beginners](#)

Example videos:

[Video 1](#): with voice over

[Video 2](#): with text and music

Photography

- Light, light, light!
- Composition and framing
- Getting it right in your camera
- Remember to ask for permission



***"Art consists of limitation.
The most beautiful part of every
picture is the frame."***

G. K. Chesterton

- Understand the “exposure triangle”
- Use depth of field to isolate a subject if needed
- Use a tripod to get sharper images
- Use filters, especially polarizing filters
- Consider using flash or reflectors
- Post processing can really add that pop to your images
- Take the time to understand your equipment
- And practice!

Photography



"McWay Falls" by [Wilson Lam {WLQ}](#)
is licensed under [CC BY-NC-ND 2.0](#)



"Glen Etive Golden hour" by [PoetheusFotos](#)
is licensed under [CC BY-NC-SA 2.0](#)



Photography



"Rule of Thirds Grid" by AngryBeth
is licensed under [CC BY-NC-SA 2.0](https://creativecommons.org/licenses/by-nc-sa/2.0/)



Photography



"Plum blossoms with colorful bokeh" by [tanakawho](#) is licensed under [CC BY-NC 2.0](#)

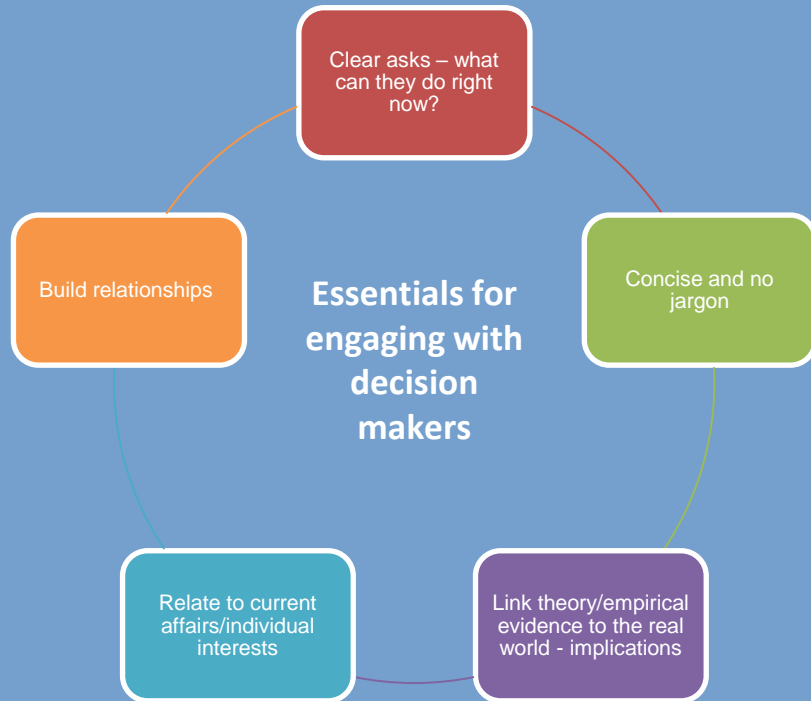


"Shallow Focus" by [James Feller](#) is licensed under [CC BY 2.0](#)



"Shallow focus photography of pink flowers - Credit to <https://homegets.com/>" by [homegets.com](#) is licensed under [CC BY 2.0](#)

Infographics and policy engagement



CIEEM Webinars

- [An Introduction to Policy and Practice: Understanding how policy and law is made and opportunities](#)
- [Influencing Policy For Ecologists and Environmental Managers](#)

Resources

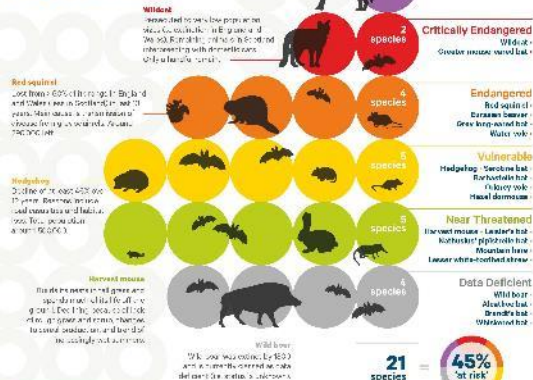
- [Gestalt Principles for Data Visualization](#)
- [Fundamentals of Data Visualization](#)
- [infohackit: design training for researchers](#)
- [Canva](#)

Red List for Britain's Mammals



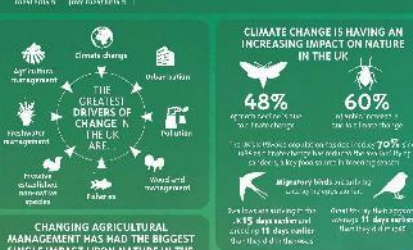
1 in 4 species threatened with extinction

45% need urgent action



For more information, visit mammal.org.uk

THE UK'S BIODIVERSITY IS DECLINING



Using Nature-Based Solutions to Tackle the Climate Emergency and Biodiversity Crisis

CIEEM Briefing Paper
July 2020



THE CHARTERED INSTITUTE OF ECOLOGY AND ENVIRONMENTAL MANAGEMENT (CIEEM) IS THE PROFESSIONAL BODY FOR ECOLOGISTS AND ENVIRONMENTAL MANAGERS WORKING TO MANAGE AND ENHANCE THE NATURAL ENVIRONMENT IN THE UK AND IRELAND.



We, like many other organisations, recently declared a climate emergency and biodiversity crisis. In doing so we recognise that these crises are inextricably linked and cannot be addressed in isolation, and nor can they be fully understood without reference to social issues. We acknowledge that nature-based solutions, which our members are well placed to facilitate, must play a key role in mitigating against, and adapting to, climate change, and reversing, or slowing, declines in biodiversity. This briefing sets out what nature-based solutions (NBS) are and why we should use them.

What are Nature-Based Solutions?

The International Union for the Conservation of Nature (IUCN) defines NBS as "actions to protect, sustainably manage and restore natural or modified ecosystems, which address societal challenges (such as food security, climate change, water security, human health, disaster risk, social and economic development) effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits". The IUCN has grouped the NBS approach into five categories:

- Ecosystem restoration approaches: ecological restoration, rewilding and regenerative agriculture
- Key sectoral management approaches: for example, climate adaptation
- Infrastructure-related approaches: green infrastructure and nature infrastructure
- Ecosystem-based management approaches: integrated coastal zone management and water resources management
- Ecosystem protection approaches: area-based conservation

There are slight variations in the definition of NBS, for example, the European Commission (EC) has developed its own definition which varies in that the core of IUCN's definition is to



Accessibility and inclusivity



- Plain language
- Text formatting and colour choice
- Alt text and image descriptions
- Subtitles and transcripts
- Alternative formats
- Pronouns and identity
- Inclusive visuals

Resources

[Designing for accessibility](#)

[How to check for accessible colours](#)

Twitter [@AltTextReminder](#)

Copyright, credits and permissions



- Copyright and usage rights
- Credit and references
- Model permission

COPYRIGHT



Resources:

[Creative Commons: About the licences](#)

[Copyright for illustrators](#)

[Fair Use Copyright Explained](#)

Copyright by [Nick Youngson](#) CC BY-SA
3.0 Alpha Stock Images

Resources

Images:

<https://search.creativecommons.org/>
<https://commons.wikimedia.org>
<https://ian.umces.edu/imagelibrary>
<https://www.flickr.com/photos/biodivlibrary/albums/page2>
<https://www.pxfuel.com>
<https://www.pickpik.com>
<https://unsplash.com/>

Icons:

<https://www.flaticon.com>
<https://thenounproject.com>

Social media image sizes:

<https://sproutsocial.com/insights/social-media-image-sizes-guide/>

Sound:

<https://mobygratis.com/catalog>
<https://www.bensound.com/>
<https://studio.youtube.com/channel/UCnDbY5pdCQcW-nlfvGj8KnQ/music>

Software:

[Snapseed](#) image editing app for your phone
[Gimp](#) for image editing
[Audacity](#) for sound editing
[DaVinci Resolve](#) for vid/animation/sound editing
[Canva](#) for graphic design

Always check usage rights and attribution

Getting started

Purpose: Why does this story need to be told? Why does it matter?

Format and Platform: What format will best suit this story and where will you post it?

Audience: Who do you want to engage with this communication? Be specific.

Key messages: What are the main points you want them to know about?

Call to Action: What do you want them to do as a result of seeing this?

Style and Tone: What style and tone would best suit this message?

Outcomes: How will you know if this has worked?

Draft: Pencil sketch your storyboard, script your video or rough out your blog.

Design: Work up your finished piece and get some feedback.



Enjoy it!

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