SCO-SOC 2025

Practical tips for Open Science in Ornithology

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Dr. Steffi LaZerte
Analysis and Data Tools for Science

Resources
English slides
Diapositive françaises

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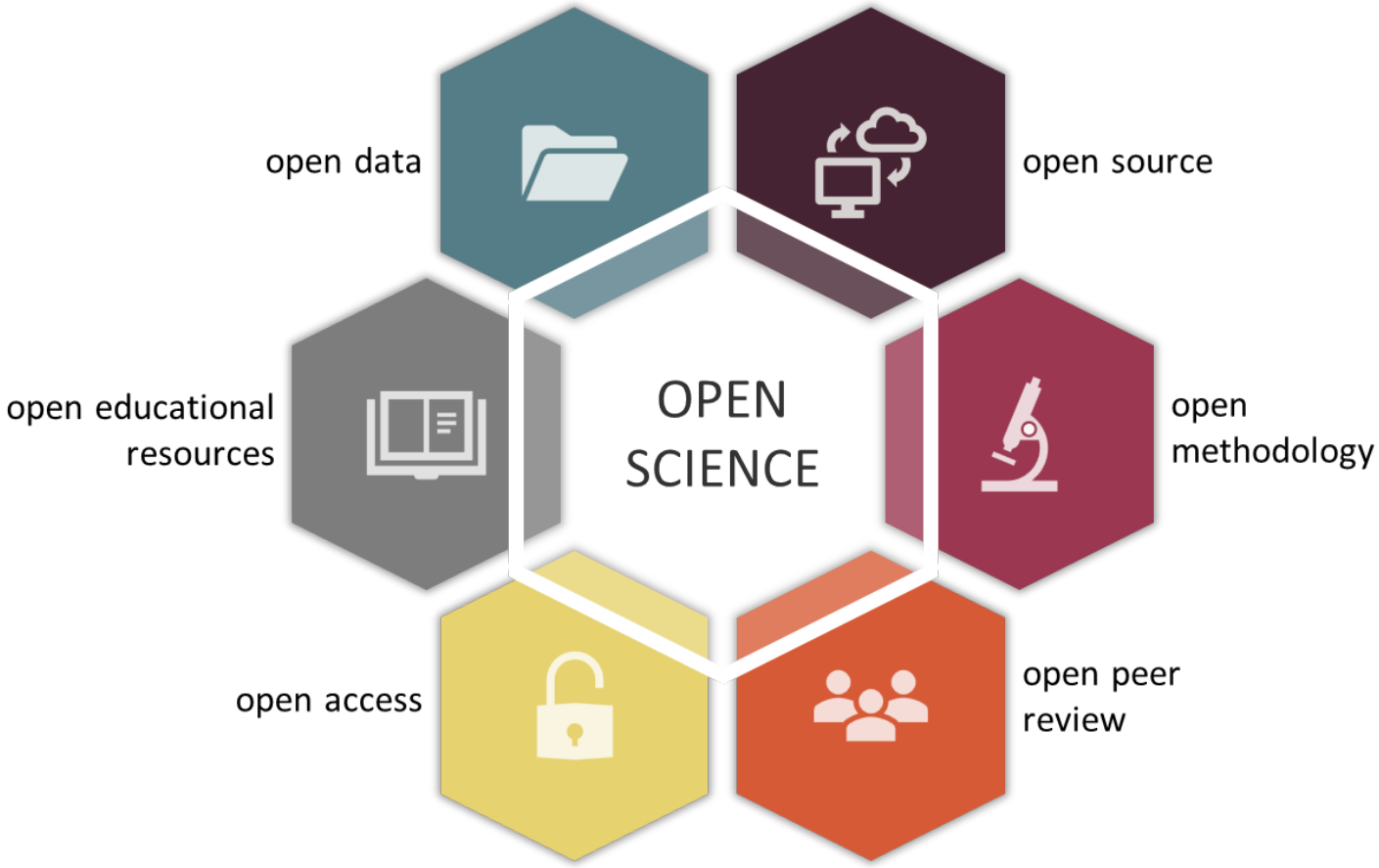
What is Open Science?

> *Transparent **and** accessible*

- Data
- Methodology
- Code
- Peer Review
- Paper Access



Gallagher et al. 2020

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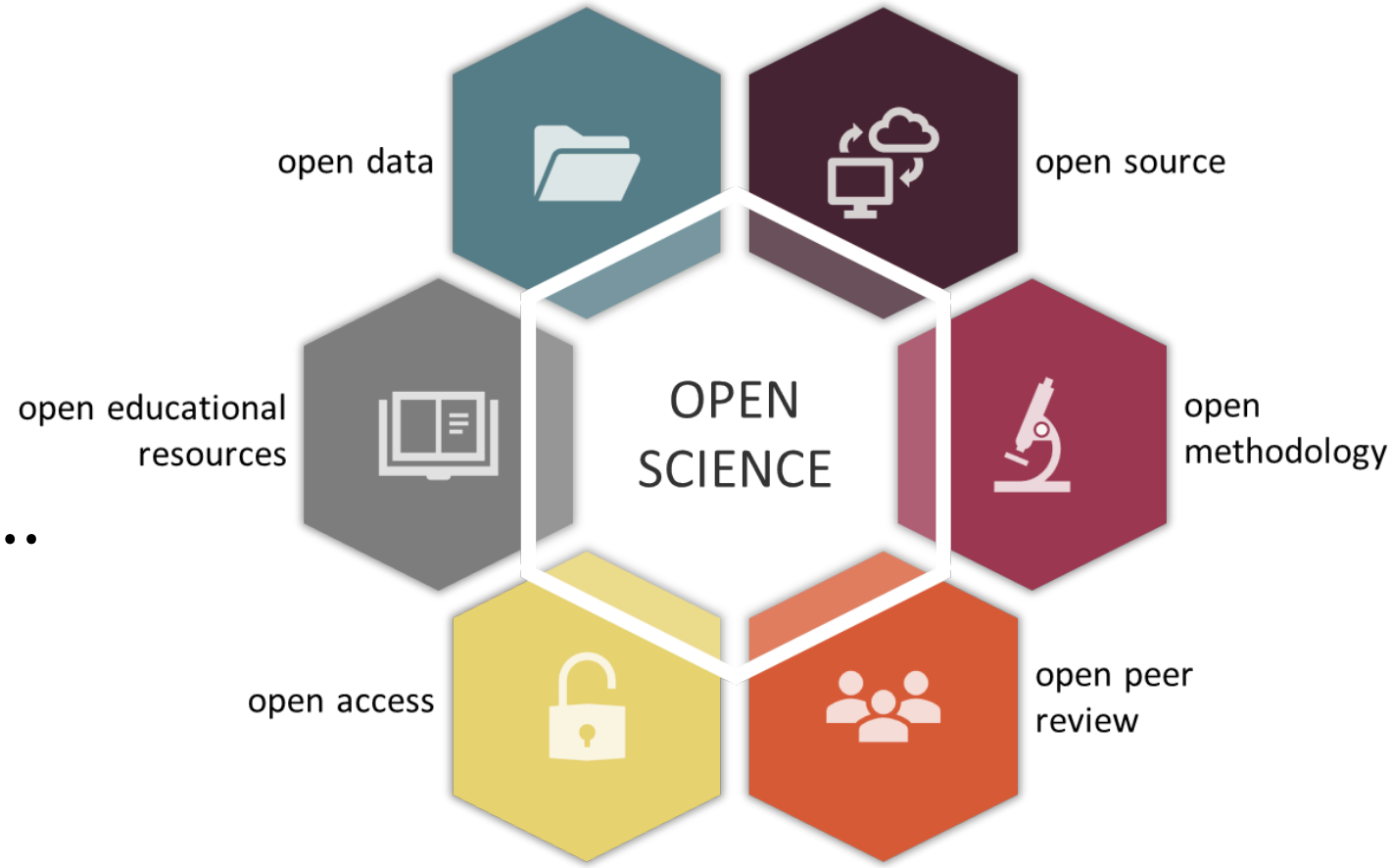
Implementing this can be hard…

- Takes time
- Takes skill
- Takes $$$ (sometimes)
- Takes courage



Gallagher et al. 2020

Whoa! That’s a lot

Why do Open Science?

Grey-crowned crane - Kuribo, CC BY-SA 2.0

Why do Open Science?

Good for Science 🧪 (and Ornithology)

Eurasian eagle owl - Robert C.

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- Support science and research everywhere
  - **Small non-profits, labs/groups with less funding**

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  - **Complex analyses and best practices (e.g., genetics, eBird)**

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Why do Open Science?

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- Support science and research everywhere
  - **Small non-profits, labs/groups with less funding**
- Science is more robust and reliable
  - **Complex analyses and best practices (e.g., genetics, eBird)**
- Improves collegiality and collaboration
  - **Avian Conservation & international collaborations**

Eurasian eagle owl - Robert C.

Why do Open Science?

Good for You 💡

- Visibility, show your skills
- Get credit for *all* your work (SOPs, complex analyses)
- Portfolio pieces

You might have to 😀

- Required by granting agencies and government

Yellow-legged gull - Joaquim Alves Gaspar, CC BY-SA 3.0

How do we *do* Open Science?

Open Data, Methodology & Code

1. Get it online!

- Post in a repository: **data, code, or catch-all**

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2. Aim for long-term storage

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3. Consider how you work

- Data and catch-all: Dryad, figshare, Zenodo, etc.
- Project-based: Open Science Framework (OSF); Quarto Manuscripts on GitHub
- Code-based: GitHub (when paired with Zenodo)

For example…

GitHub with Zenodo

bluebird_migration Public

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Scripts	omit repeat data	3 years ago
.gitignore	Re organize and clarify	3 years ago
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DOI 10.5281/zenodo.6885688 status published

Rapid shifts in migration routes and breeding latitude in North American bluebirds

Published in Ecosphere 2022

Jared Sonnleitner[1], Steffi LaZerte[2], Ann E. McKellar[3], Nancy J. Flood[1], and Matthew W. Reudink[1,*]

* Corresponding Author
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[3] Wildlife Research Division, Environment and Climate Change Canada, Saskatoon, SK S7N 0X4, Canada

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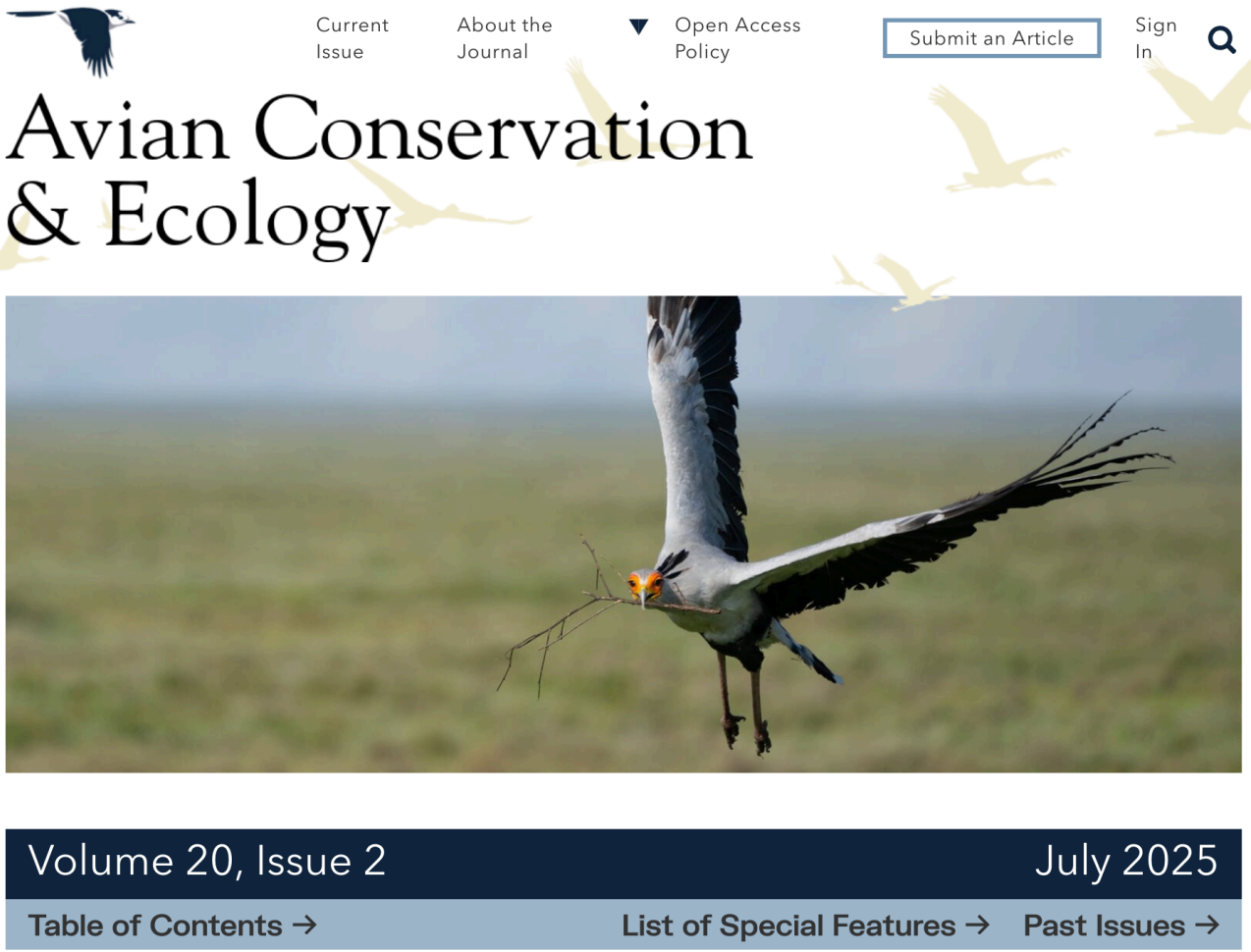
Open Publication

Open Peer Review

- Consider open reviews



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Open Access (without $$$)

- Your library
  - Repository for preprints
  - Open-access agreements
  - Grants/funds for open access
- Preprint servers

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Open Access (with some $$$)

- Write funds into your grant
- Look for non-profit journals

Now for some tips…

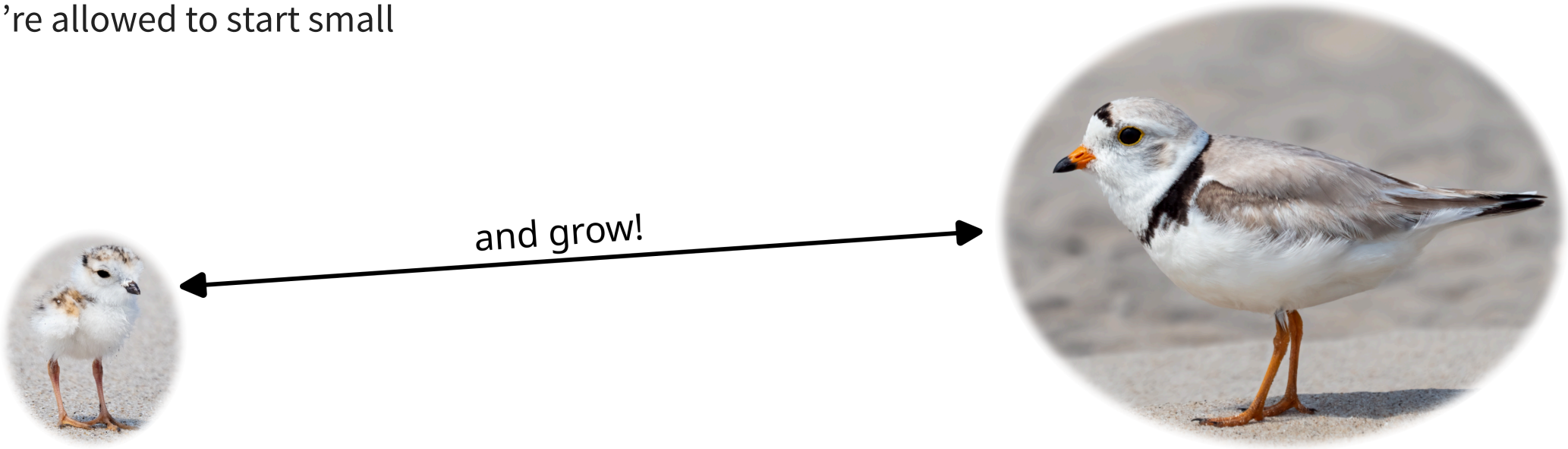
Tip 1

Don’t try to do everything

Tip 1: Don’t try to do everything

> “Perfect is the enemy of good” – Voltaire

- Be kind to yourself, don’t expect perfection
- You’re allowed to start small



Piping plover and chick - Rododendrites, CC BY-SA 4.0

Tip 2

Do one new thing

Tip 2: Do one new thing

> *On every project, expand your skill set, just a little bit*

A code example…

- 1st time - keep a script of your analysis
- 2nd time - share the script in a data repository
- 3rd time - share on GitHub (with the browser upload)
- 4th time - share on GitHub (with git!)

Next thing you know, you're sharing code *and* learning new tools

Birdstrips

Tip 3

It’s okay to be nervous

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> *and remember you’re awesome!*

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“What if I make a mistake?”

- Mistakes happen -> But you’re being transparent!

Birdstrips

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“What if someone steals my data/idea?”

- It’s easier to make up data than to steal data
- You have a record!

Birdstrips

Tip 3: It’s okay to be nervous

> *and remember you’re awesome!*

“What if I make a mistake?”

- Mistakes happen -> But you’re being transparent!

“What if someone steals my data/idea?”

- It’s easier to make up data than to steal data
- You have a record!

It’s also okay to keep it private to start

Birdstrips

Tip 4

Work with others

Tip 4: Work with others

Organizations / Communities

ROpenSci

SORTEE
Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology

SCO-SOC!

- **Networking Mixer** - Coming up soon!

Birdstrips

Open Science for Ornithologists!

- Tip 1: Don’t try to do everything
- Tip 2: Do one new thing
- Tip 3: It’s okay to be nervous
- Tip 4: Work with others

American crow - mycol CC0

Open Science for Ornithologists!

- Tip 1: Don’t try to do everything
- Tip 2: Do one new thing
- Tip 3: It’s okay to be nervous
- Tip 4: Work with others

Thanks to Alex Koiter for ideas and brainstorming!
(See Alex’s talk, Open and Reproducible Soil Science)

American crow - mycol CC0

Thank you!

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