



Transforming to Open Science workflows

Example from protected species
management at NOAA Fisheries

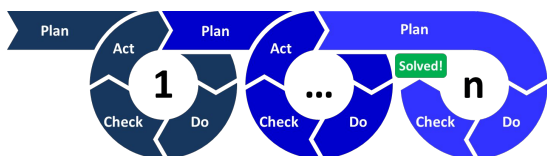
NW Fisheries Science Ctr: Eli Holmes, Mari
Williams, Katie Barnas, Chris Jordan
West Coast Regional Office: Diana Dishman

*Open Science is not just about
open tools and open data; it's
also teams of people and how
they work together*

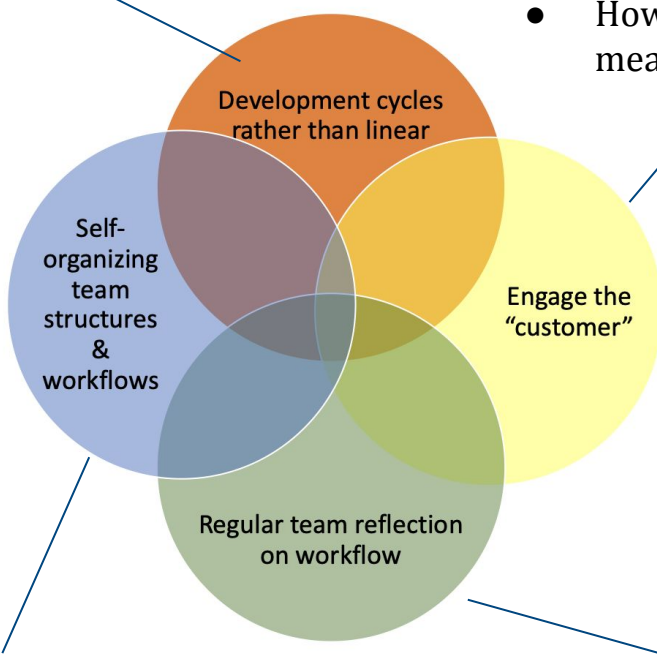


**NOAA
FISHERIES**

Introduce teams to the 4 piers of “agile” Open Science workflows



- Show regular minimal working product to end user
- Change if product is not meeting the end user needs
- How do you measure success?



This talk's topic

• Team awareness

- Regular face-to-face interactions
- Team member agency
- Psychological safety in the team

- Biweekly reviews
- What can we do better?
- Are we meeting our goals?
- Do we need to change our goals?

Appendix: food for thought!



NOAA
FISHERIES

5-year Status Reviews for Endangered and Threatened Salmonids



Biological Viability Assessment Update for Pacific Salmon and Steelhead Listed Under the Endangered Species Act: Pacific Northwest

Edited by Michael J. Ford^{1a}

From contributions by the editor and, in alphabetical order, Katie Barnas,^{1b} Lisa Crozier,^{1c} Monica Diaz,² Elizabeth Holmes,^{1b} Damon Holzer,^{1c} Chris E. Jordan,^{1b} Martin Liemann,^{1c} James Myers,^{1b} Mindy Rowse,^{1b} Laurie Weitkamp,^{1b} and Margaret Williams²

<https://www.noaa.gov/species/2020-04-07>

Section 4(c)(2) of the Endangered Species Act requires 5 year reviews of a listed species.

Science Centers (science)

Supports

Science, Service, Stewardship

Science, Service, Stewardship



2022 5-Year Summary & Evaluation of Lower Columbia River Salmon
Lower Columbia River Salmon
Lower Columbia River Salmon

National Marine Fisheries Service
West Coast Region



2022 5-Year Review Summary & Evaluation of Snake River Spring Chinook Salmon

Regional Office (policy & management)

Science, Service, Stewardship



2022 5-Year Review: Summary & Evaluation of Snake River Sockeye Salmon

National Marine Fisheries Service
West Coast Region

Background



NOAA
FISHERIES

How does a dispersed group of staff working on a large complex report change to a Open Science “workflow”?

Current workflow: Waterfall

Each step in process is done solo
and low team awareness



Desired workflow Agile: The work is done collaboratively with high team awareness



10 Openscapes cohorts
2020-22: ca 400 NMFS staff

Common themes have emerged across the agency

- Work is very siloed
- Lack of team awareness.
- Lack of reproducibility
- Inefficiency. Too much duplication of effort across team and across the agency
- Retirements lead to loss of knowledge

Art by DALL-E (OpenAI)

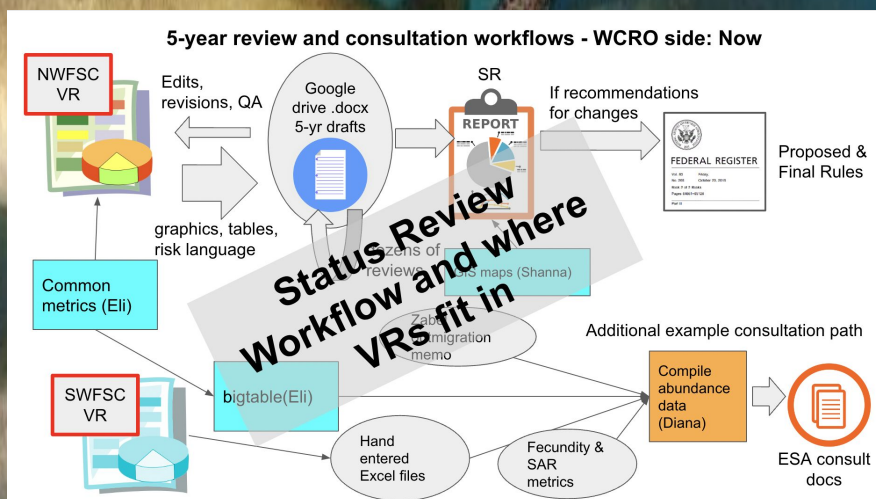
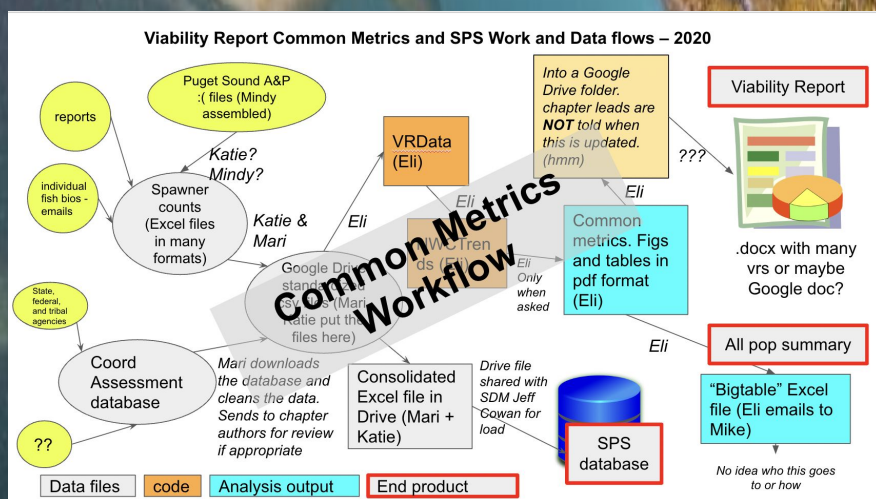
The goal



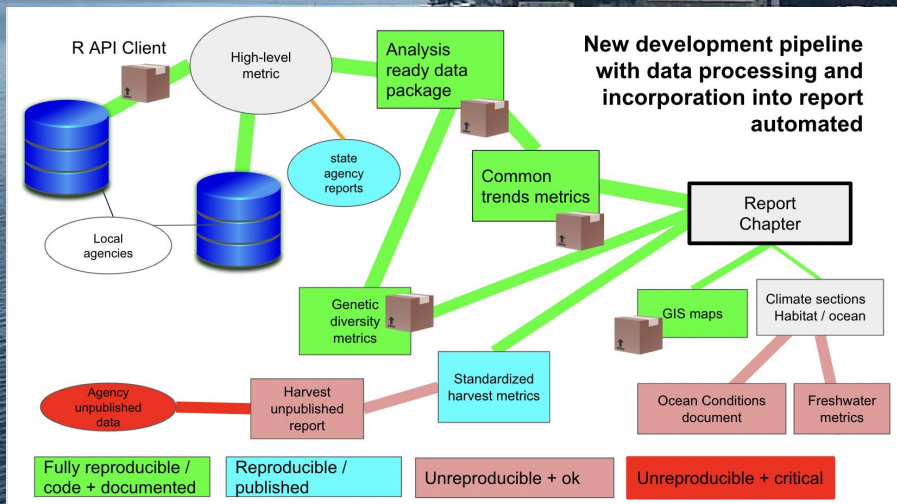
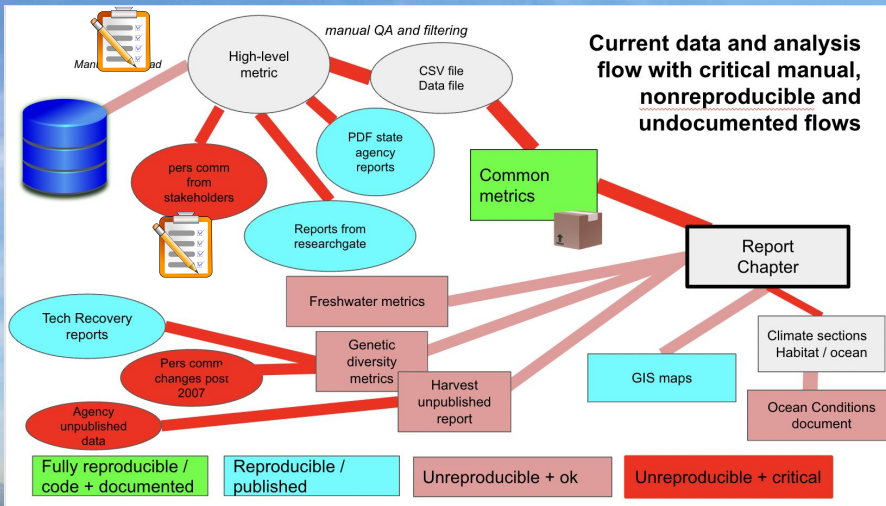
NOAA
FISHERIES

Pathway diagrams to develop team awareness: 4-5 one-hour meetings plus interviews with staff

6-8 of these types of diagrams



Pathway analysis to identify our **problematic** pathways and **actions** we can take to improve



Set up single email address for pers comms re data requests



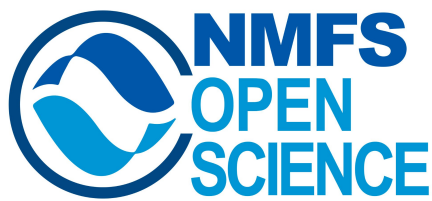
Workflow analysis 2



NOAA
FISHERIES

This was just a small piece of the 10-week “transform to Open Science” Openscapes Champions Program

*Learn about
Openscapes at the
“Better science for
future us: Openscapes
stories and approaches
for the Year of Open
Science” ESIP session:
Thursday, January 26 •
1:30pm - 3:00pm*



NMFS Open Science
<https://nmfs-opensci.github.io>

NMFS Openscapes
<https://nmfs-openscapes.github.io>

**NOAA
FISHERIES**



More info



**NOAA
FISHERIES**