

Centering Sustainability

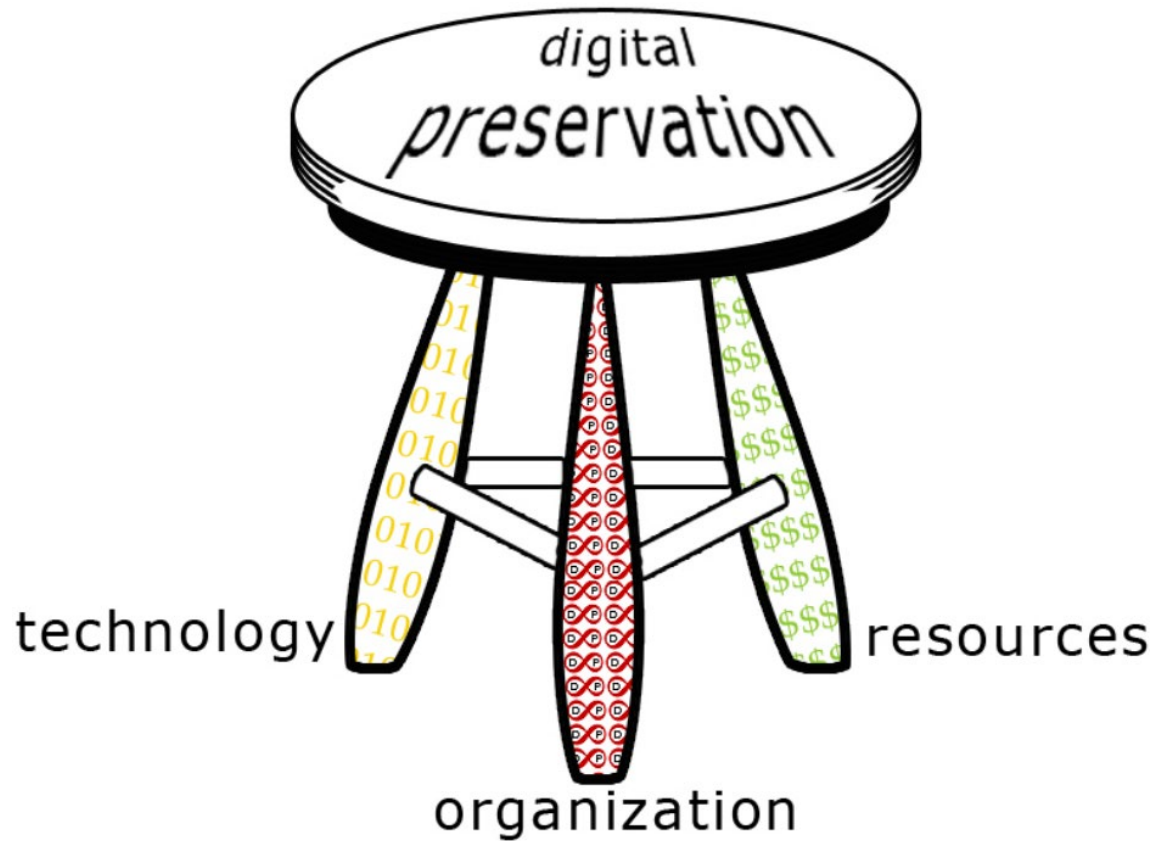
A new model for digital stewardship

Digital preservation for an uncertain future
Digital Preservation Coalition
12 November 2024

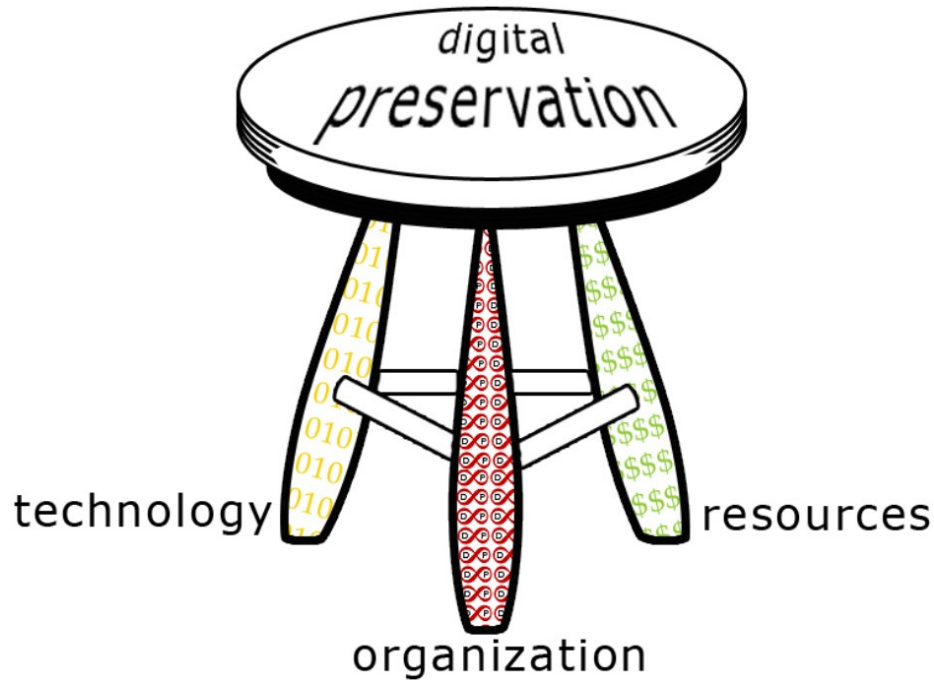
Keith Pendergrass, Harvard Business School



Digital stewardship centers value



Three-Legged Stool of Digital Preservation, Digital Preservation Management Workshop,
<https://dpworkshop.org/>.



**Digital stewardship has become a
growth-oriented endeavor**

Digital Stewardship Dissatisfaction

Journal of Contemporary Archival Studies

Volume 7

Article 13

2020

What's Wrong with Digital Stewardship: Evaluating the Organization of Digital Preservation Programs from Practitioners' Perspectives

Karl-Rainer Blumenthal
Internet Archive, karlb@archive.org

Peggy Griesinger
University of Notre Dame, mgriesi2@nd.edu

Julia Y. Kim
Library of Congress, j.y.kim29@gmail.com

Shira Peltzman
University of California, Los Angeles, speltzman@library.ucla.edu

Vicky Steeves
New York University Data Services and NYU Center for Data Science, victoria.steeves@nyu.edu

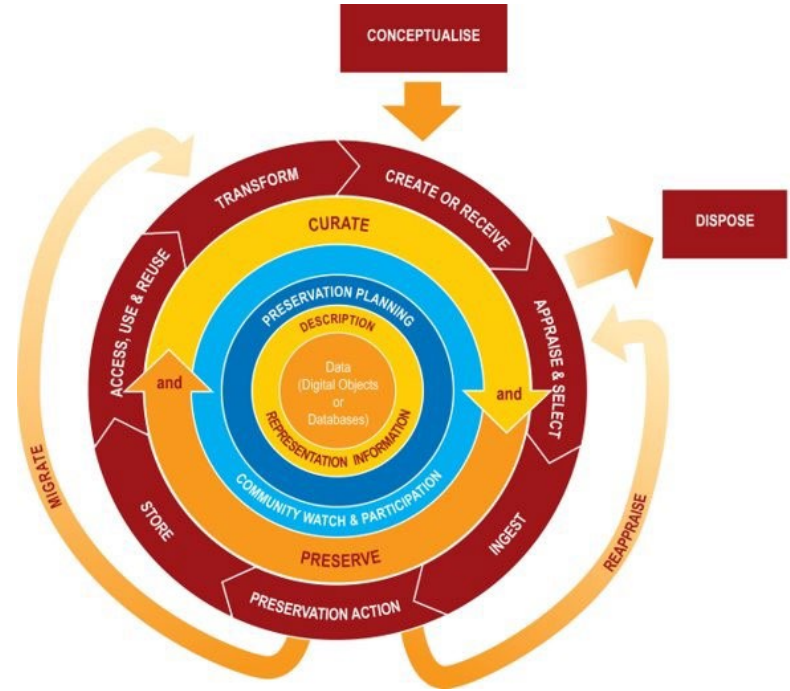
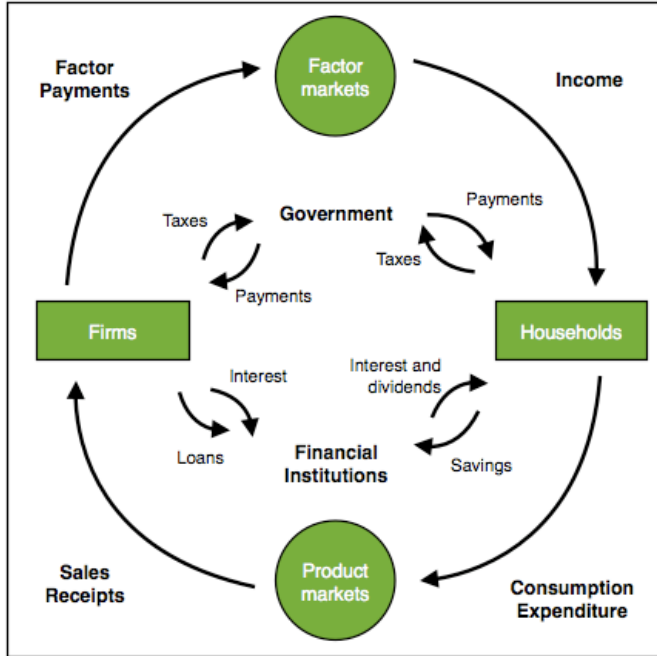
“Digital preservation is a maintenance-heavy undertaking that does not necessarily lend itself to ... bureaucratic performance indicators ...”

Blumenthal, Griesinger, Kim, Peltzman, and Steeves

“What’s Wrong with Digital Stewardship”

Journal of Contemporary Archival Studies 7 (2020)

Where is the environment?



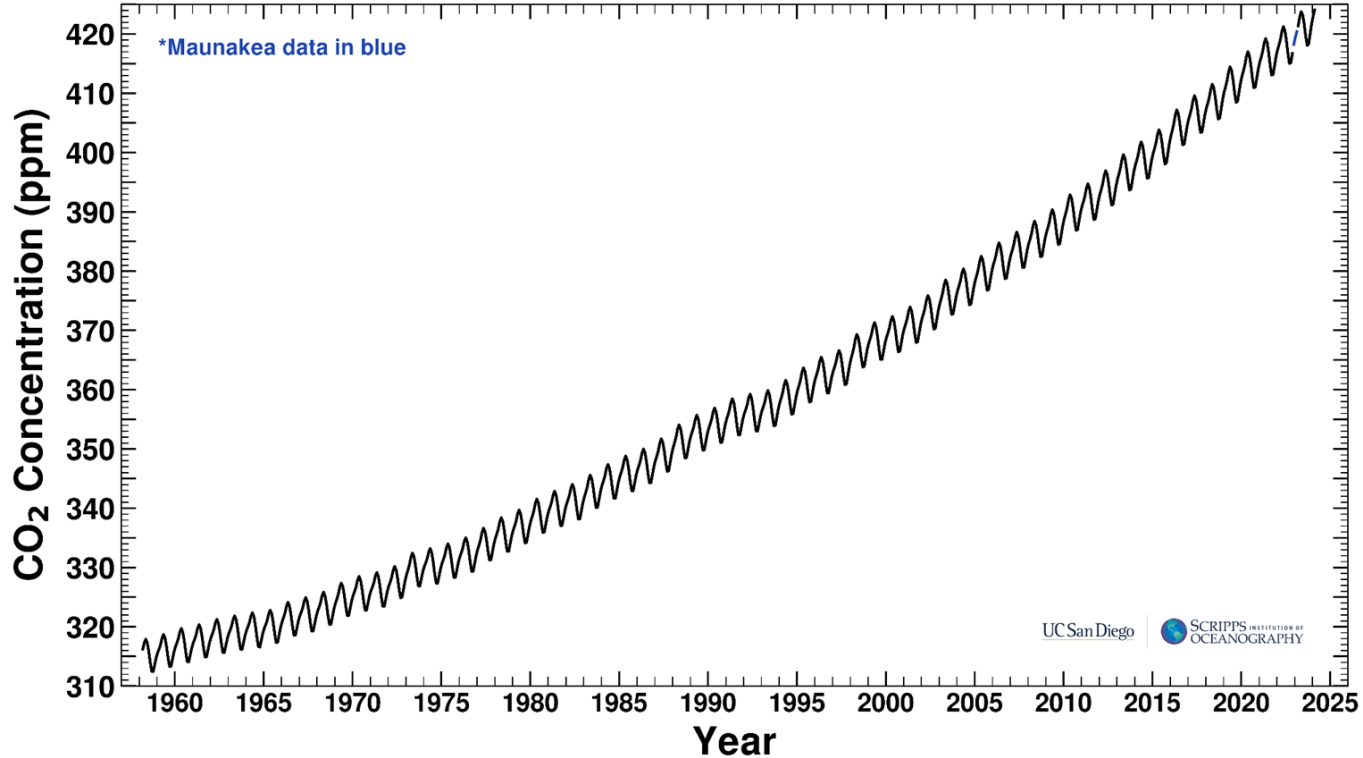
Circular flow of income (2009), https://commons.wikimedia.org/wiki/File:Circular_flow_of_income.png.
Curation Lifecycle Model, Digital Curation Centre, <https://www.dcc.ac.uk/guidance/curation-lifecycle-model>.

Reset

**Digital stewardship is a social contract
with a one-sided power dynamic that
prioritizes value over reducing harm**

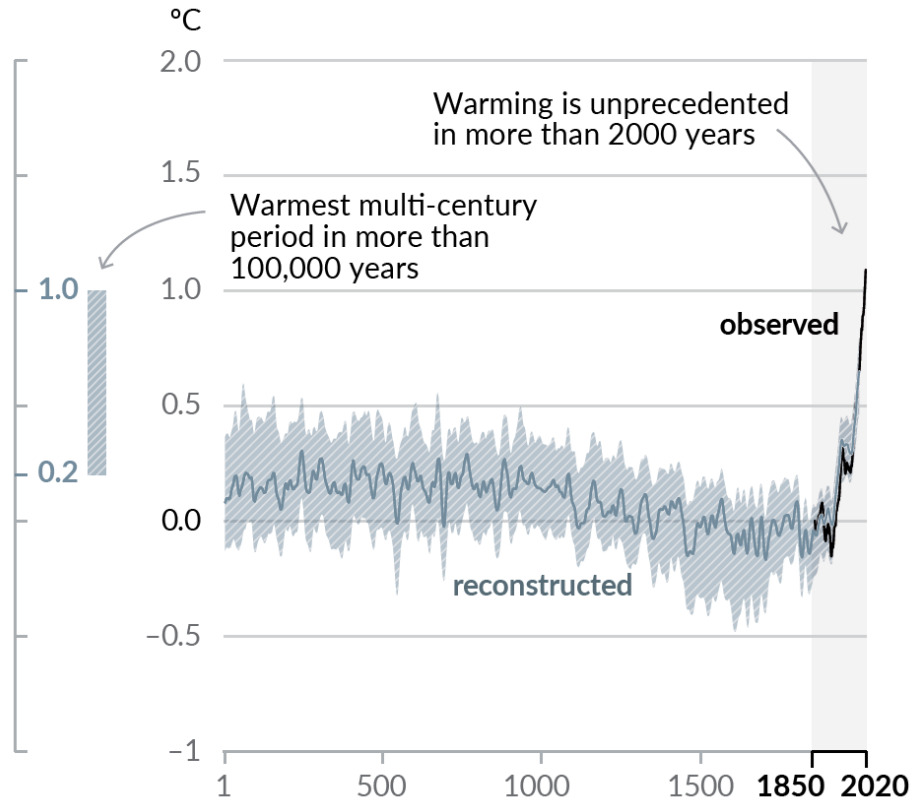
Mauna Loa Observatory, Hawaii* Monthly Average Carbon Dioxide Concentration

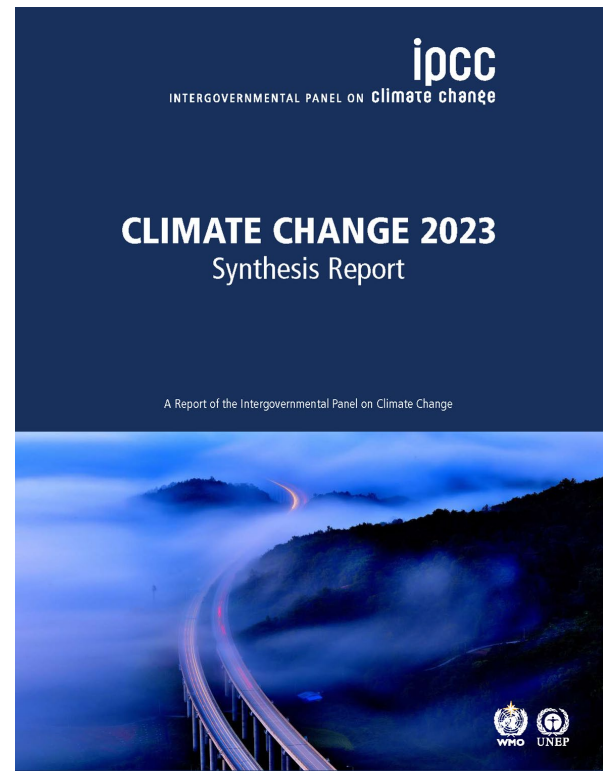
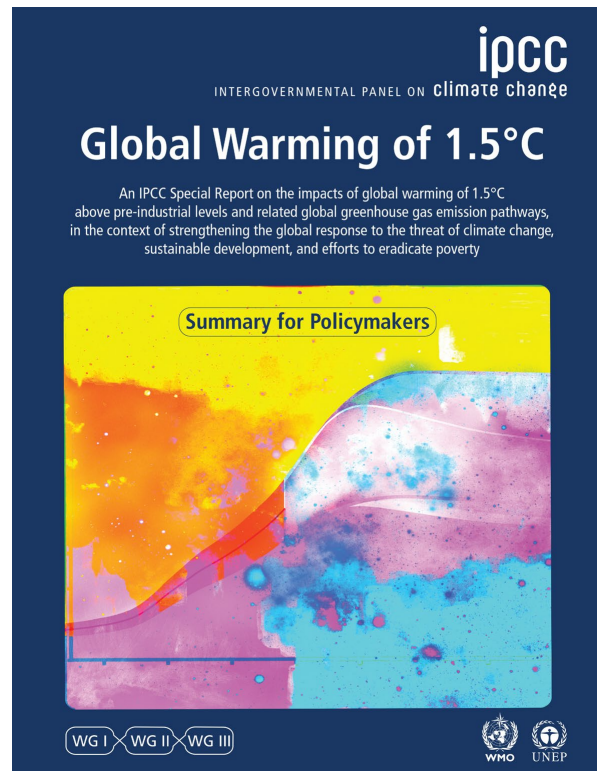
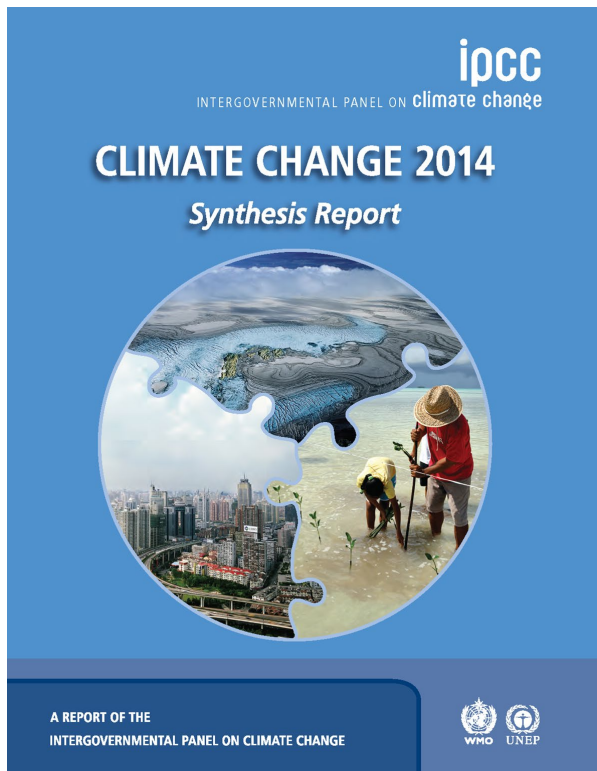
Data from Scripps CO₂ Program Last updated May 2024



The Keeling Curve, Scripps Institution of Oceanography at University of California San Diego,
<https://keelingcurve.ucsd.edu/>.

Changes in global surface temperature relative to 1850-1900





IPCC AR5, IPCC SR15, and IPCC AR6 cover images, <https://www.ipcc.ch/reports/>.

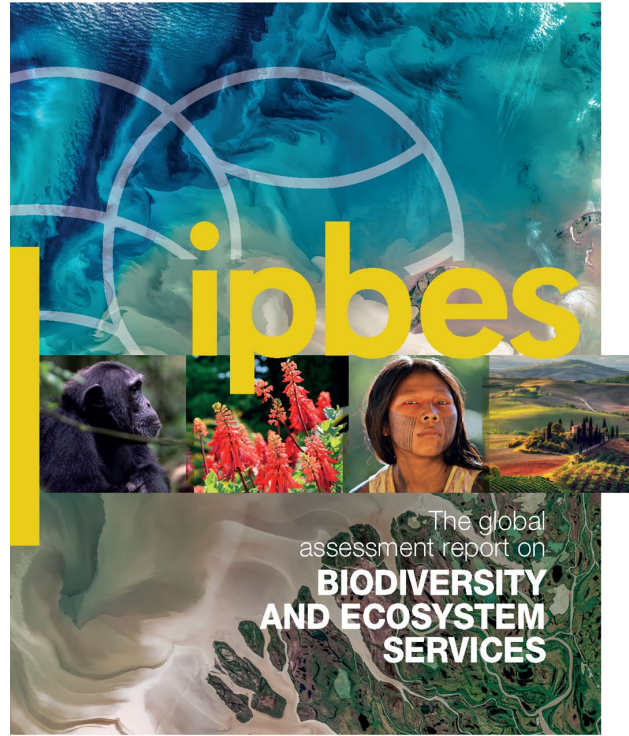


Flood in Sindh province, Pakistan, Ali Hyder Junejo (2022), https://commons.wikimedia.org/wiki/File:Flood_in_Pakistan_2022.png.

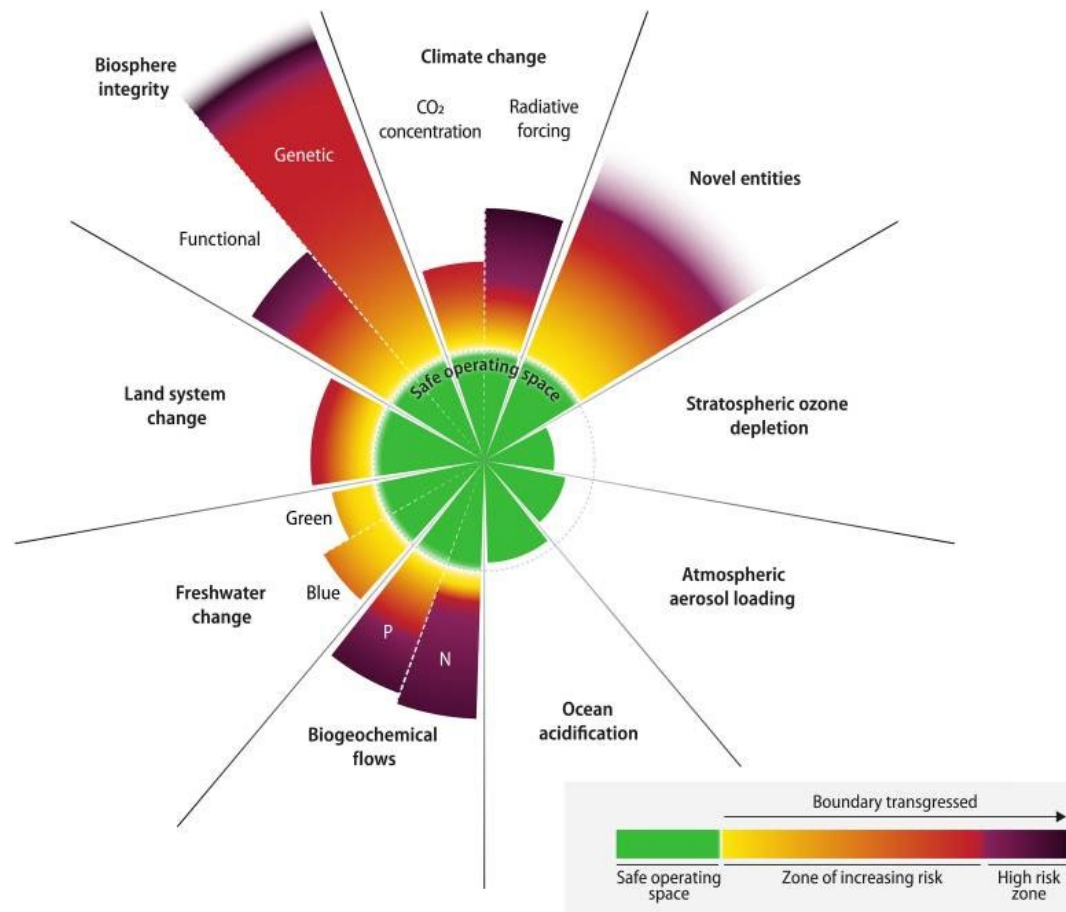
Fires in Southern California, USA, NASA (2003), https://commons.wikimedia.org/wiki/File:Wildfire-ISS007_Mosaic2.jpg.

Drought in northern Yobe state, Nigeria, Sa' adatu M. Babayo (2023), https://commons.wikimedia.org/wiki/File:Drought_in_northern_Yobe.jpg.

Typhoons Maria, Bopha, and Saomai, NASA (2006), https://commons.wikimedia.org/wiki/File:Maria,_Bopha_and_Saomai_2006-08-07_0435Z.jpg.



IPBES Global Assessment Report on Biodiversity and Ecosystem Services (2019),
<https://www.ipbes.net/global-assessment>.



Richardson *et al.*, “Earth beyond six of nine planetary boundaries,” *Science Advances* 9, issue 37 (2023), <https://doi.org/10.1126/sciadv.adh2458>.

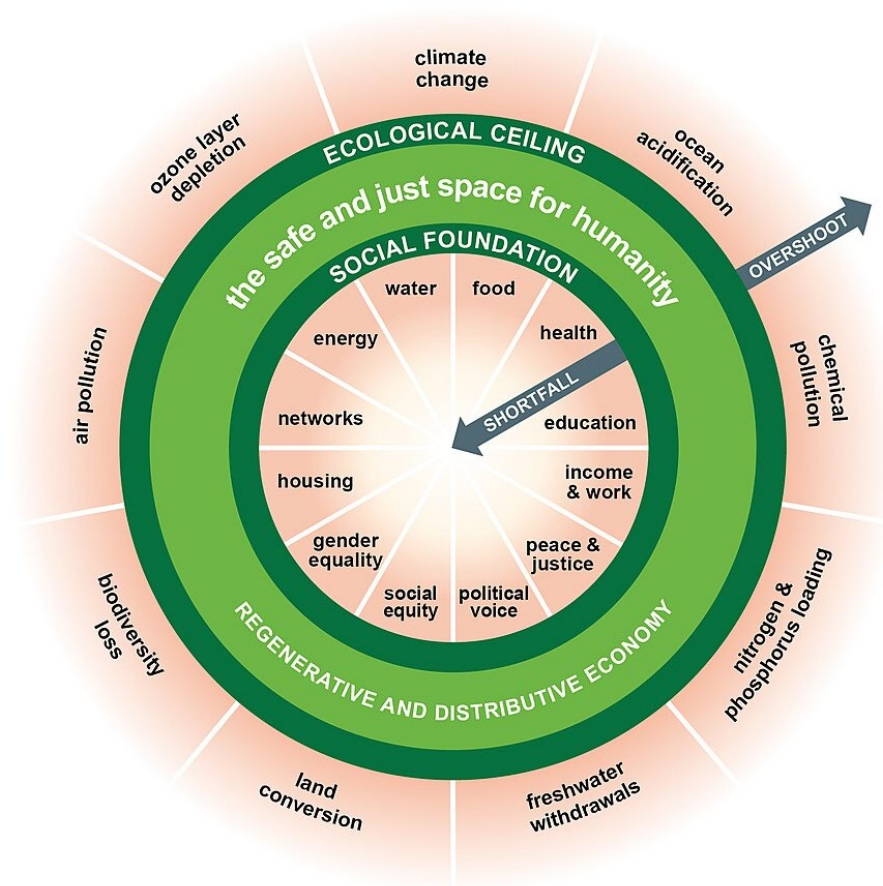
“The climate crises and the relentless human crises ... are symptoms of a singular crisis of exploitation and disdain whether for the planet, or for each other.”

William Kilbride

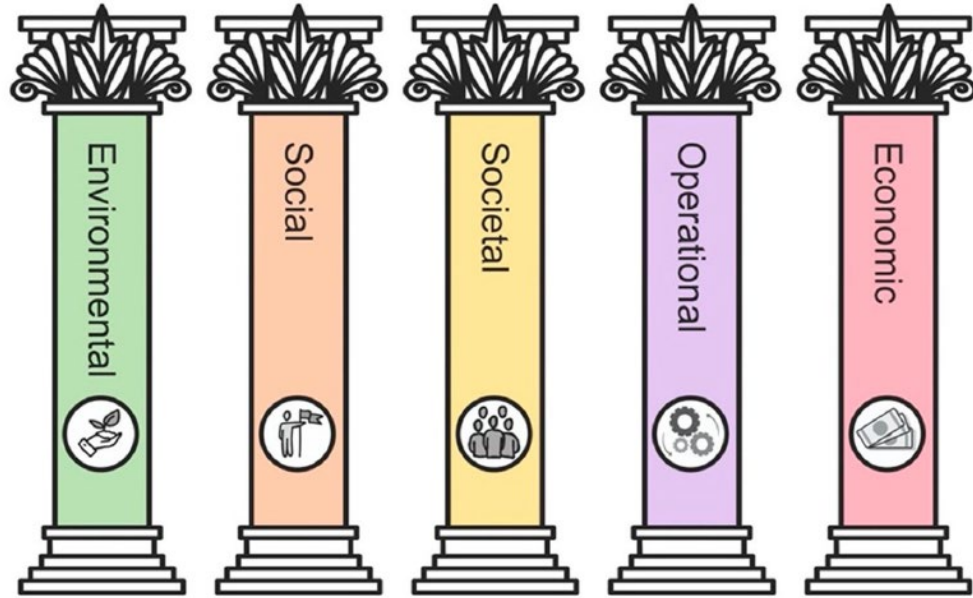
Personal communication, 28 March 2024

SUSTAINABLE DEVELOPMENT GOALS





Kate Raworth, *Doughnut Economics* (White River Junction, Vermont: Chelsea Green Publishing, 2017).

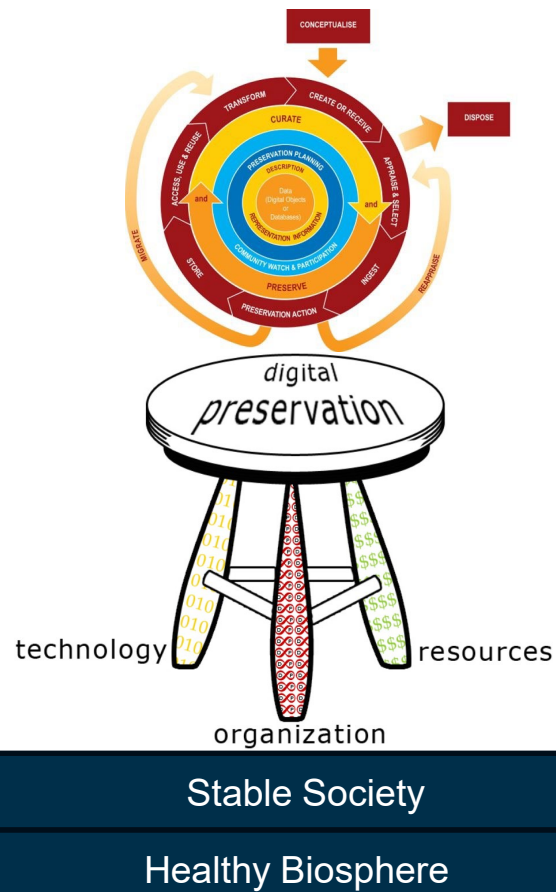


The five 'pillars' used to model sustainable decision-making.

David Saunders, "A Methodology for Modelling Preservation, Access and Sustainability," *Studies in Conservation* (2022), <https://doi.org/10.1080/00393630.2022.2055933>.

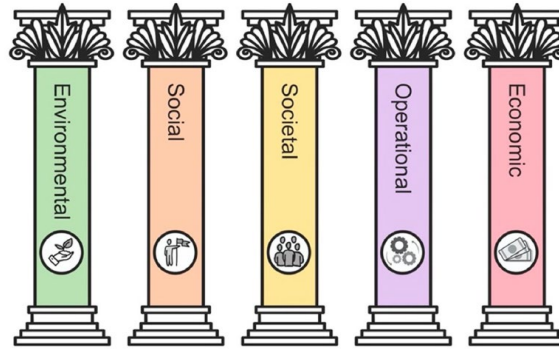
Digital stewardship's environmental impact is relatively small.

Why does it matter?

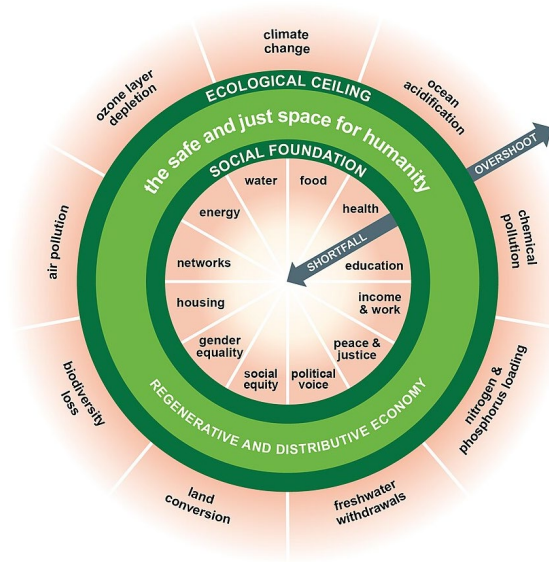


Three-Legged Stool of Digital Preservation, Digital Preservation Management Workshop, <https://dpworkshop.org/>.
 Curation Lifecycle Model, Digital Curation Centre, <https://www.dcc.ac.uk/guidance/curation-lifecycle-model>.

SUSTAINABLE DEVELOPMENT GOALS



The five 'pillars' used to model sustainable decision-making.



United Nations Sustainable Development Goals, <https://www.un.org/sustainabledevelopment/>.

Kate Raworth, *Doughnut Economics* (White River Junction, Vermont: Chelsea Green Publishing, 2017).

David Saunders, "A Methodology for Modelling Preservation, Access and Sustainability," *Studies in Conservation* (2022), <https://doi.org/10.1080/00393630.2022.2055933>.

**Connecting varied practice with a
sustainability model is not feasible
across the profession**

**Seek sustainability principles to apply
to digital stewardship practice**

Connectioning environmental degradation and racism

First Three Principles of Environmental Justice

1. Environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
2. Environmental justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
3. Environmental justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.

WE, THE PEOPLE OF COLOR, gathered together at this multinational People of Color Environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby re-establish our spiritual interdependence to the sacredness of our Mother Earth, to respect and celebrate each of our cultures, languages and beliefs about the natural world and our roles in healing ourselves; to ensure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure our political, economic and cultural liberation that has been denied for over 500 years of colonization and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples, do affirm and adopt these Principles of Environmental Justice:

The Principles of Environmental Justice (EJ)

- 1) Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
 - 2) Environmental Justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
 - 3) Environmental Justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
 - 4) Environmental Justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
 - 5) Environmental Justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
 - 6) Environmental Justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
 - 7) Environmental Justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation.
 - 8) Environmental Justice affirms the right of all workers to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
 - 9) Environmental Justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
 - 10) Environmental Justice considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
 - 11) Environmental Justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
 - 12) Environmental Justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources.
 - 13) Environmental Justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
 - 14) Environmental Justice opposes the destructive operations of multi-national corporations.
 - 15) Environmental Justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
 - 16) Environmental Justice calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
 - 17) Environmental Justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reorientize our lifestyles to ensure the health of the natural world for present and future generations.
- More info on environmental justice and environmental racism can be found online at www.ejnet.org/ej/**

Delegates to the First National People of Color Environmental Leadership Summit held on October 24-27, 1991, in Washington DC, drafted and adopted these 17 Principles of Environmental Justice. Since then, the Principles have served as a defining document for the growing grassroots movement for environmental justice.

Principles of Environmental Justice, drafted and adopted at the First National People of Color Environmental Leadership Summit, Washington, D.C., October 24-27, 1991.

“Ecological justice involves the recognition that humans and all other species on Earth, as well as abiotic natural systems, are intricately interlinked.”

Denver University Institute for
Human-Animal Connection

“Ecological justice also demands that humans recognize Earth’s limits.”

Denver University Institute for
Human-Animal Connection

“Ecological justice ... asks that humans create new systems based on promoting flourishing and wellbeing for all humans, all species, and the natural world.”

Denver University Institute for
Human-Animal Connection

Holistic Sustainability Principles

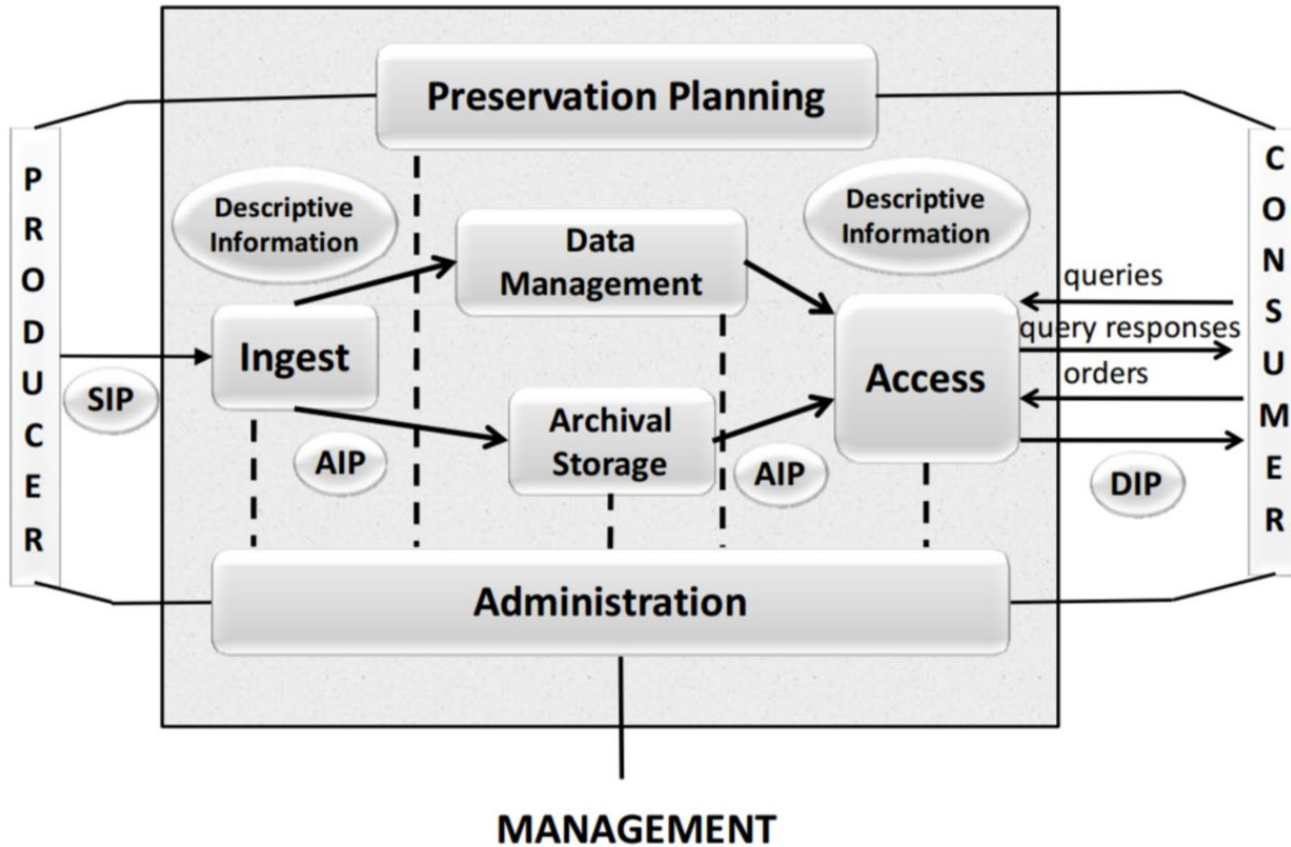
Reduce and equally distribute the environmental harms that come from our industrialized society

Step back from a human-dominated view of nature to include the flourishing of all species

Stay within our planet's ecological limits

**Varied practice is a persistent
sustainability challenge**

**Implementing sustainability in
digital preservation theory
may be a way forward**



OAIS Functional Model

Image: Digital Preservation Coalition, https://wiki.dpconline.org/index.php?title=4.1_FUNCTIONAL_MODEL.

“Designated Community: the subset of Consumers expected to independently understand the archived information ...”

Brian Lavoie

“OAIS Reference Model: Introductory Guide”

DPC Technology Watch Report (2014)

“Whilst an archive may have a wide user base, their designated community is typically a narrower set of users with specific knowledge and skills ...”

Christian Keitel and Jenny Mitcham

“Defining the Designated Community”

DPC Technology Watch Guidance Note (2023)

**The Designated Community concept
is not perfect**

“Designated Communities are fundamentally at odds with the professional ethos of certain memory professions ...”

Rhiannon Bettivia

“The Power of Imaginary Users: Designated Communities in the OAIS Reference Model”

ASIST '16: Proceedings of the 79th ASIS&T Annual Meeting

**The Designated Community concept
is a good leverage point**

**Is it a good *sustainability*
leverage point?**

A new model for digital stewardship

Designated Community
as a sustainability
leverage point

Include not only those
who derive value from
preserved materials,
but also those who
experience harm from
stewardship activities

**Considering the harm that the
materials we steward could cause is
standard practice**

**Expand these considerations to include
the environmental, ecological, and
social harm of our practice**

**Centering sustainability:
a new model for digital stewardship**



“The Blue Marble,” Astronaut photograph AS17-148-22727, Apollo 17 (1972), NASA Johnson Space Center Gateway to Astronaut Photography of Earth, <https://eol.jsc.nasa.gov/SearchPhotos/photo.pl?mission=AS17&roll=148&frame=22727>.