What to do with your old Kodachrome slides:

Archiving ecological research images in an Open Access Institutional Repository

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ABSTRACT

1. The Churchill Community of Knowledge *Digital Archive* is an *Open Access* research project led by York University's Institute for Research & Innovation in Sustainability (IRIS: 2004-2015) and Libraries. It is based in our *Institutional Repository*.
2. Its overall goal is to document, coalesce and mobilize diverse types of research outputs from long-term ecological field work at Wapusk National Park and, more broadly, Churchill, Manitoba, with excellent metadata and stable urls.
3. Anyone can access items in the archive via prioritized Google searches.
4. Here, we describe how one researcher's PhD field work slides were (i) digitized, (ii) had their metadata created, and (iii) are being uploaded to YorkSpace.

INTRODUCTION

YorkSpace is an ***Institutional Repository***. It is an ***Open Access*** online resource hosted by the university library. ***Institutional Repositories*** are self-archived collections created by a university's entire knowledge-producing community.
The ***Churchill Community of Knowledge*** is one of many ***Digital Archive*** collections in **YorkSpace**. It consists of digitized media about the long-term ecological research (1967 to present) at Churchill, Manitoba (Figure 1), including copyright-cleared peer-reviewed articles: the tip of the research iceberg.
Other digitized media in this collection include images, such as **Kodachrome slides**, which are a part of the ancillary information supporting published research. This also includes laboratory notes documenting failed experiments, photos, comments and ideas etc (Figure 2. Todd 2014). Field notebooks and photos may contain vital unpublished data about biodiversity for future researchers. The Smithsonian Field Book Project is an example of an ancillary information archive.

Figure 1: Map of Churchill, Manitoba and surrounding area (Parks Canada)

QR code for Smithsonian Field Book Project: http://bit.ly/1H0weO4

QR code for YorkSpace Churchill Community of Knowledge: http://bit.ly/1Fv9Q4z

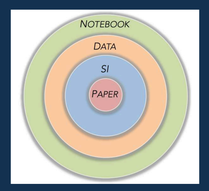


Figure 2. The research iceberg! Components of a paper: Paper, Supporting Information, Data and Notebook, including images. (Todd 2014)

RESEARCHER SPOTLIGHT

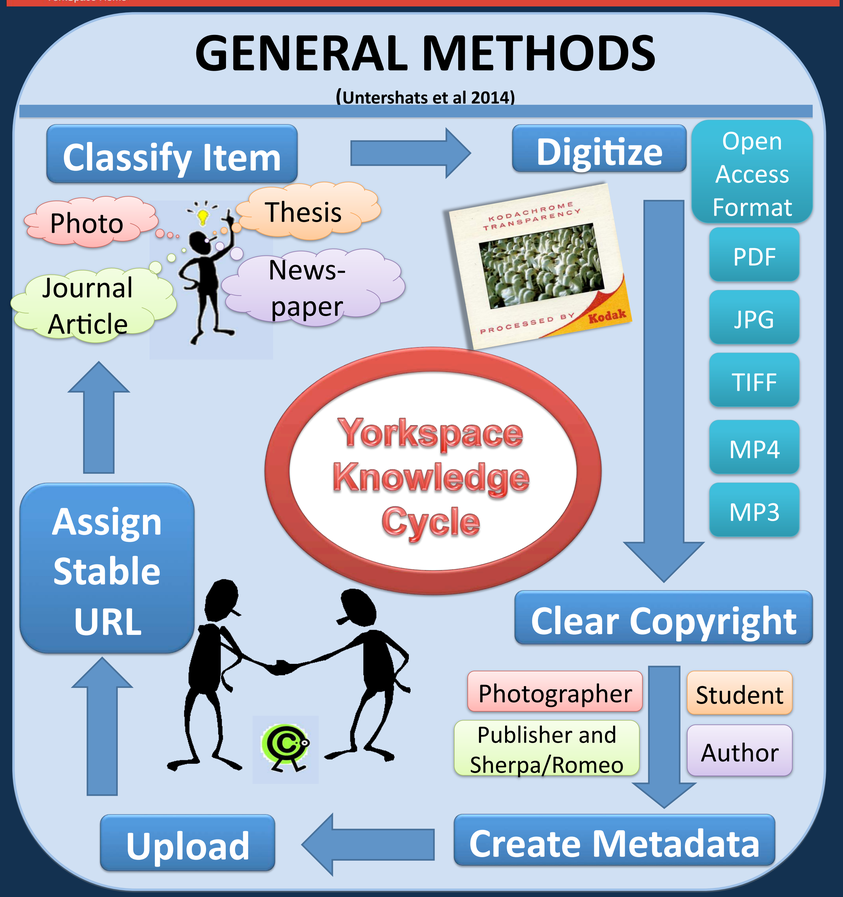
In 1967, Professor Emeritus Fred Cooke of Queen's University and colleagues began what would become long-term research on the ecology and genetics of Lesser Snow Goose populations and their impacts on the La Pérouse Bay saltmarshes of Hudson Bay. A 2011 Symposium celebrating Prof. Bob Jefferies' (1936-2009) research legacy, including his 30 years of La Pérouse Bay fieldwork, indicated that much of the ancillary research knowledge was dispersed, fragmented or being lost.

Dr. Ken Abrahams with lesser snow geese. Some of Ken's papers are in YorkSpace. Scan the QR codes:

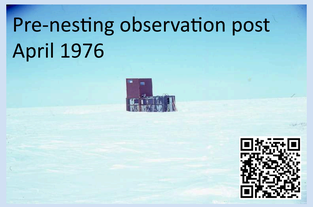
This included Dr. Ken Abraham's slides. Ken was a PhD student at La Pérouse Bay and later worked on snow goose populations as an Ontario Ministry of Natural Resources scientist. Ken has selected 80 Kodachrome slides from his 1970s PhD field work for digitizing. We worked with him to generate metadata for each image. His copyright-owned images are currently being uploaded under Creative Commons Licenses to YorkSpace, eg:

GENERAL METHODS

(Untershats et al 2014)



RESULTS



The images shown here provide visual information on snow cover, melt and vegetation, as well as information on equipment and logistics. Figure 3 shows a steady increase in downloads of Open Access items from YorkSpace. As more items are deposited we expect more downloads.

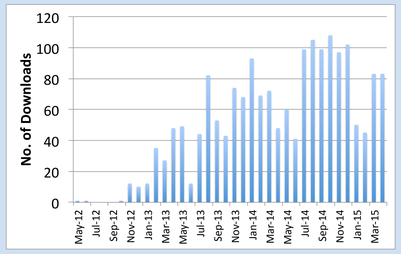


Figure 3: Monthly downloads from Churchill Community of Knowledge in YorkSpace (data from A. Kosavic).

CONCLUSIONS

Peer-reviewed articles are the "tip of the research iceberg". They mostly sit behind paywalls, but copyright clearance protocols in Institutional Repositories make them Open Access & accessible.
Valuable ancillary research information and data, e.g. images & field notes, are not always preserved post-retirement of scientists, to be made accessible to future researchers.
Ken Abraham's slides both give valuable context to his journal papers and may also inform future Hudson Bay research.
Scientists with personal archives approaching retirement should consider approaching their local university or *alma mater* about uploading items to its Institutional Repository.

1. Smithsonian. *The Field Book Project*. http://www.mnh.si.edu/rc/fieldbooks/
2. Todd, M. 2014. *Anatomy of an Open Science Paper*, Blog Post Dec. 14, 2014: https://intermolecular.wordpress.com/2014/12/15/anatomy-of-an-open-science-paper/
3. Untershats, N. et al. 2014. *The Churchill Community of Knowledge: an open access digital archive*. Poster presented at International Biocuration Conference, University of Toronto.
4. Thanks to Andrea Kosavic, York University Libraries for YorkSpace download data.