



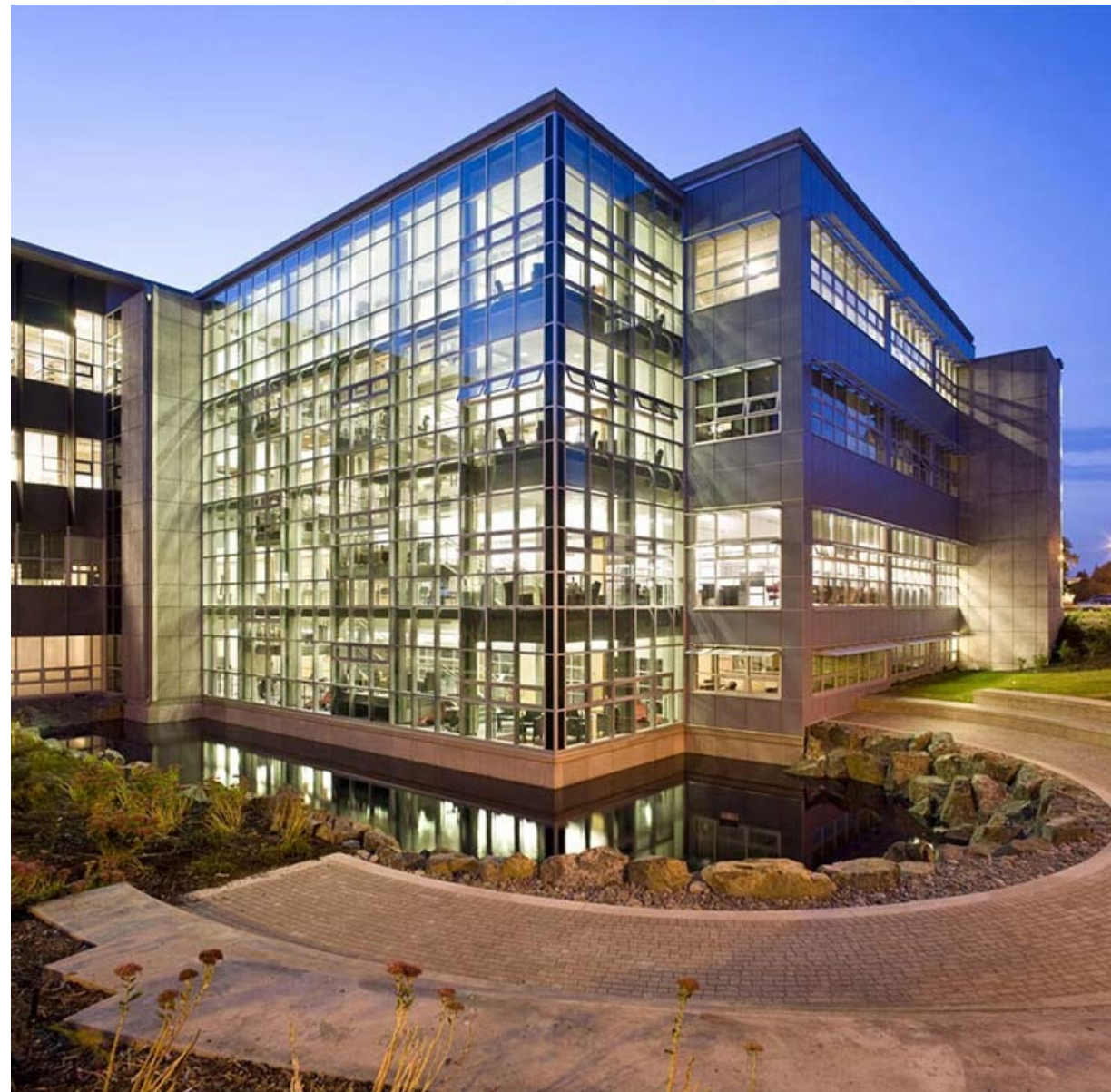
BCNET
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HIGHER ED & RESEARCH TECH SUMMIT

Petabyte-scale Challenges for Research Library Collections

Corey Davis
Digital Preservation Librarian
University of Victoria

University of Victoria Libraries

- 140 employees
- 2 million physical resources
- 162,000 journals and 850 research databases
- 2,283 linear metres of manuscripts and archival materials





What do our digital collections look like?

Digital collections at research libraries

1. Materials licensed from publishers and made accessible via the library
2. Unique or distinctive local collections managed by the library



Licensed materials

Scope

- Mostly journal articles and books
- Annual license fees (i.e. we don't own the materials)
- Discovery via library management systems and tools like Google Scholar
- Access via publisher's website
- Long-term preservation via external organizations like Portico, CLOCKSS, and Scholars Portal



What's involved?

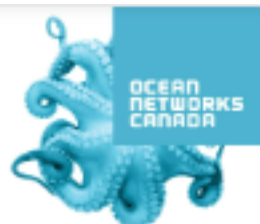
- Licensing
- Budgeting (\$USD + inflation = headaches)
- Managing title lists
- Creating and maintaining metadata records
- Subscribing to preservation services to ensure post-cancellation access
- Open access advocacy, managing author funds, research help, etc.



Distinctive collections

Scope

- Research data
- University publications (journal articles, pre-prints, theses and dissertations, etc.)
- Materials digitized from the analog collection (maps, newspapers, sound recordings and film)
- Born-digital records (from the university and from donors)
- Web archives
- Open educational resources (OER)



Ocean Networks Canada

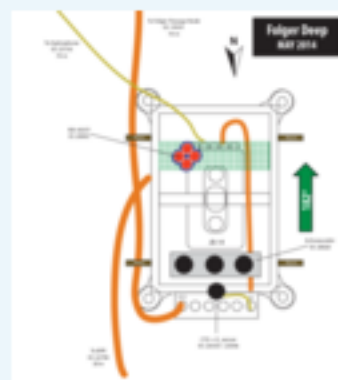
Discover the ocean. Understand the planet.

(Ocean Networks Canada)

Borealis > University of Victoria Dataverse Collection > Ocean Networks Canada >

Six years (2009-2015) of oceanographic temperature, salinity, pressure, density and dissolved oxygen observations from a Vancouver Island shelf cabled observatory.

Version 1.1



Ocean Networks Canada, 2020, "Six years (2009-2015) of oceanographic temperature, salinity, pressure, density and dissolved oxygen observations from a Vancouver Island shelf cabled observatory.", <https://doi.org/10.5683/SP2/5AMBHV>, Borealis, V1, UNF:6:nWcbYa+XduvV+k6o8CI6HQ== [fileUNF]

Cite Dataset ▾

[Learn about Data Citation Standards.](#)

Access Dataset ▾

Contact Owner

Share

Dataset Metrics ?

263 Downloads ?



A 100-year retrospective and current carbon budget analysis for the Sooke Lake Watershed: Investigating the watershed-scale carbon implications of disturbance in the Capital Regional District's water supply lands

Smiley, Byron

URI: <http://hdl.handle.net/1828/6117>

Date: 2015-05-01

Abstract:

Northern forest ecosystems play an important role in global carbon (C) cycling and are considered to be a net C sink for atmospheric C (IPCC, 2007; Pan, et al., 2011). Reservoir creation is a common cause of deforestation and when coupled with persistent harvest activity that occurs in forest ecosystems, these disturbance events can significantly affect the C budget of a watershed. To understand the effects of these factors on carbon cycling at a landscape level, an examination of forest harvest and reservoir creation was carried out in the watershed of the Sooke Lake Reservoir, the primary water supply for the Greater Victoria area in British Columbia. Covering the period between 1910 and 2012, a detailed disturbance and forest cover dataset was generated for the Sooke Lake Watershed (SLW) and used as input into a spatially-explicit version of the Carbon Budget Model of the Canadian Forest Sector 3 (CBM-CFS3). The model was modified to include export of C out of the forest system in the form of dissolved organic C (DOC) into streams. The fraction of decaying C exported through this mechanism was tuned in the model using DOC measurements from three catchments within the SLW. Site-specific growth and yield curves were also generated for watershed forest stand types, in part, by using LiDAR-derived site indices. C transfers associated with disturbances were adjusted to reflect the disturbance types that occurred during the 100-year study period. Due to the removal of C resulting from wildfire, logging and residue burning, as well as deforestation disturbances, total ecosystem C stocks dropped from 700 metric tonnes of C per hectare (tC ha⁻¹) in 1910 to their current (2012) level of ~550 tC ha⁻¹.

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Oaklands Engaging Neighbours Community Map Public

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CONTENTS

Oaklands map side FIN

Oaklands text side FIN

Oaklands Engaging Neighbours Community Map

Image 1 of 2 Go

MORE INFORMATION

Visions

A map showing the Oaklands community in Victoria, British Columbia. Map shows visions, community, sustainable and active living, arts, cultural, and heritage sites using icons from the Green Map System. Reverse of map features information about Oaklands; assets, visions and actions; and information on the Community Tables: Engaging Neighbours initiative and its goals. Created in conjunction with the United Way of Greater Victoria, BC Healthy Communities, the University of Victoria Department of Geography and the University of Victoria's Office of Community-Based Research. This map is part of the green map system.



APHONICS

OUND

Realistic TR-284. The newest electronic! The finest styling! Has automatic 2-channel/4-channel sensing, automatic and manual track selection, volume, tone, stereo balance controls. Myster activates when cartridge is inserted for instant music—turns off when cartridge is removed. Program indicator lights and illuminated "4-channel" indicator, 15 x 5 x 11 3/4". Each speaker 7 7/8 x 5 1/2 x 9 7/8". AC 14-4001, Ship. wt. 28 lbs. 209.95

Realistic TR-284. The newest electronic! The finest styling! Has automatic 2-channel/4-channel sensing, automatic and manual track selection, volume, tone, stereo balance controls. Myster activates when cartridge is inserted for instant music—turns off when cartridge is removed. Program indicator lights and illuminated "4-channel" indicator, 15 x 5 x 11 3/4". Each speaker 7 7/8 x 5 1/2 x 9 7/8". AC 14-4001, Ship. wt. 28 lbs. 209.95



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Phil Smith, Manager
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Because doctors have not had a fee increase for three years, Anderson says it represents an annual increase of 2.7 per cent per annum "which I don't think even keeps up with increases in office expenses."

The result of the referendum, announced Thursday is an endorsement of BCMA policy that, effective July 1, doctors start billing under the new fee schedule, says Anderson.

"The contents of the fee

Stockers Tie Nanaimo Club

Stockers North Americans pulled goaliekeeper Bob Doherty and Gerry Caldwell scored with 28 seconds remaining to give the Stuffy McGuinnis Hockey League leaders a 5-5 tie with Nanaimo C. and H. Believers, of the Pacific Coast Amateur Hockey League in an exhibition game Thursday night at G. R. Pearkes Arena.

Errol Godden had three goals for Stockers, who raced to a 4-0 lead by the middle of the second period. Dave Williams got the other Stockers' goal. For Woodward, Don Brown, Larry Limacher, Joe Piper and Dave Jones scored for Nanaimo.

Find Offers Theft Lead

NEW YORK (AP) — Detectives recovered \$7,000 in stolen securities Tuesday and called it an important lead in their investigation of the smoothly-executed weekend heist of more than \$1 million from the fashionable Pierre Hotel.

Police said the securities were taken from the Drake Hotel on Christmas in a \$15,000 robbery authorities believe was pulled off by the same bidding team.

NO MONEY
TILL MARCH
HONDA
BEST DEAL EVER
PEARSON

Take Off Fat With Home Recipe Plan

It's simple how quickly one may lose pounds of unightly fat right in your own home. Make this home recipe yourself. It's easy, no trouble at all and costs little. Just go to your drugstore and ask for "Laran". Pour this into a pint bottle and add enough grapefruit juice to fill the bottle. Take two tablespoonful twice a day as needed and follow the Laran Reducing Plan.

If your first purchase does not show you a simple easy way to lose bulky fat and help regain slender more graceful curves, if redundant pounds and inches of excess fat don't disappear from neck, chin, arms, abdomen, hips, calves and ankles just return the empty bottle for your money back. Follow this easy way endorsed by many who have tried this plan and help bring back alluring curves and graceful slenderman. Note how quickly bloat disappears—how much better you feel. More slyva, youthful appearing and active.

Bills for patients who have been sent on to a specialist would not be rejected for some time because the combination in such cases pays only when treatment has been completed or involves an elaborate procedure or a set of tests that is well under way.

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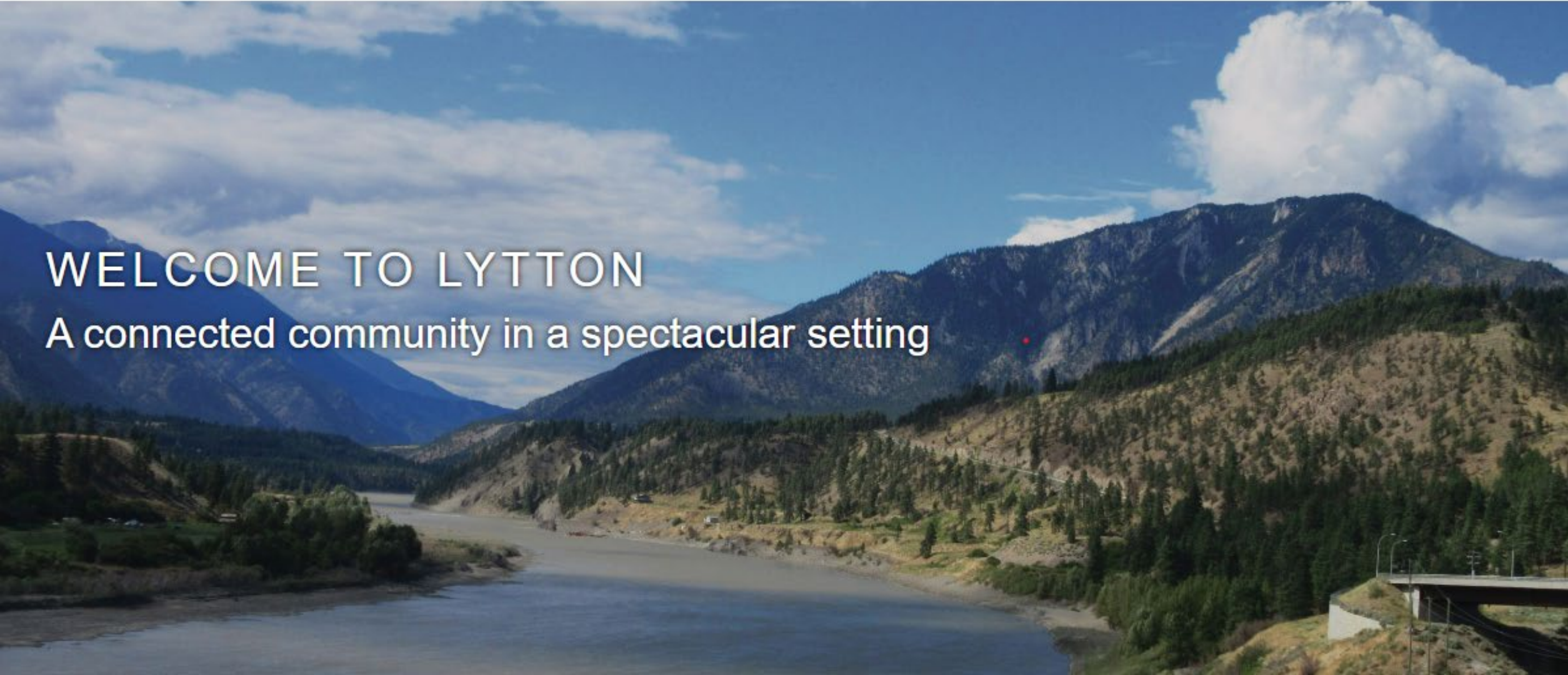
'2318
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PETER POLLEN FORD

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of Victoria**

Special Collections and
University Archives

Fonds AR446 - Elders Council for Parks in British Columbia fonds

[Fonds] AR446 - Elders Council for Parks in British Columbia fonds, 1948-1985

[Series] Audio Recordings, ca. 1970s-ca.1991

Quick search

Search



Title and statement of responsibility area

Title proper	Elders Council for Parks in British Columbia fonds
General material designation	<ul style="list-style-type: none">Textual recordSound recording
Title notes	<ul style="list-style-type: none">Source of title proper: Source of title proper: Title based on contents of fonds.
Level of description	Fonds
Repository	University of Victoria Special Collections and University Archives
Reference code	CA UVICARCH AR446

Dates of creation area

Date(s)	<ul style="list-style-type: none">1970 - 1991-02-01 (Creation)1948-1985 (Creation)
Creator	Elders Council for Parks in British Columbia

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Inventory

Browse as list

Export

Dublin Core 1.1 XML

EAD 2002 XML

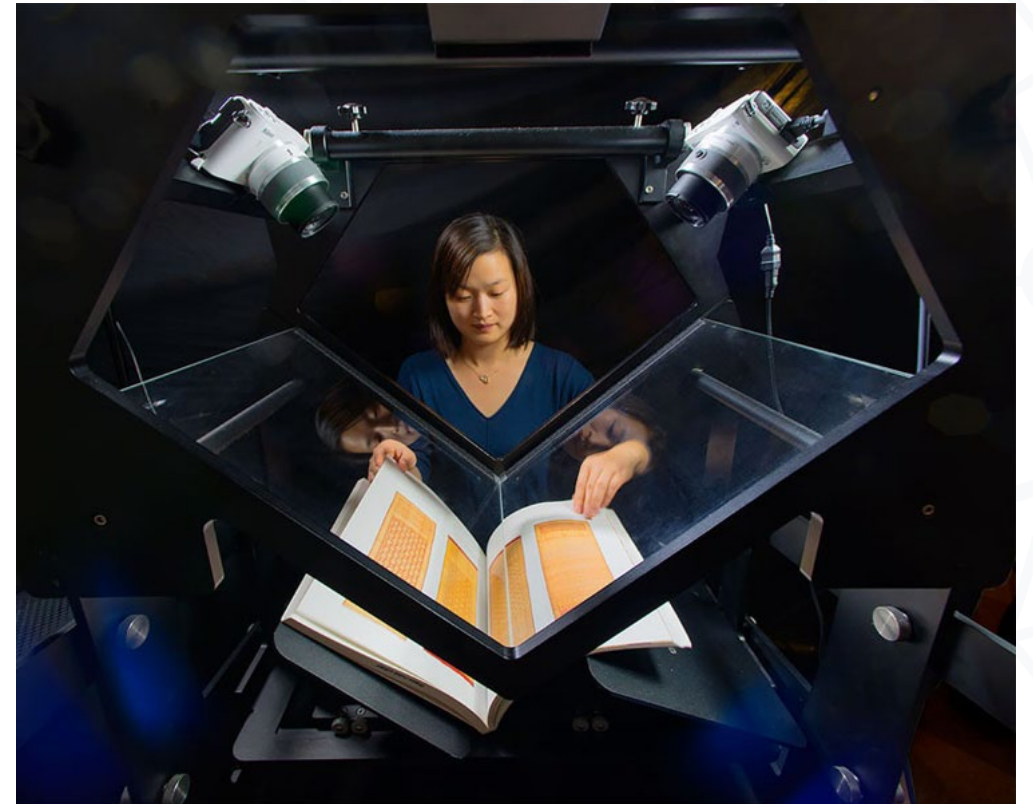
Related subjects

Parks
Parks--Employees
Parks--Management
Oral histories

Related people and organizations

What's involved?

- Born-digital accessioning and large-scale digitization
- Metadata creation and persistent identifiers
- Managing repository and access platforms
- Long-term preservation processing
- **Storage infrastructure**






Key challenges with our distinctive collections



Here are some synonyms for "haphazard":

1. Random
2. Casual
3. Arbitrary
4. Chance
5. Unplanned
6. Hit-or-miss
7. Unsystematic
8. Disorganized
9. Unscheduled
10. Accidental
11. Indiscriminate
12. Sloppy
13. Chaotic

 Regenerate response



Send a message...



Workflows, organizational structure, and capacity

- Organizational silos
- Knowledge sharing issues
- Communications issues
- Expertise is not widespread enough

Digital asset management

- Diversity of materials and platforms
- Hard to get a comprehensive, high-level overview of all digital assets
- This means its hard to plan and be strategic

Growth

- 100 Tb of managed data and growing quickly
- A handful of new accessions can quickly push us towards petabyte scale



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Growing up

Open Archival Information System (OAIS) model

- Initially developed by the space data community
- Preservation must be disentangled from access copies
- AIPs are platform-independent and contain preservation metadata



Archival Information Packages (AIPs)

- BagIt standard for packaging
- PREMIS metadata for integrity and authenticity
- Ideal is to have multiple georedundant copies using different underlying technologies
- **Restricted and sensitive data is a particular challenge**

Remote storage

- OpenStack Swift (Ontario Libraries Research Cloud)
 - Three copies at campus data centres in Ontario
- LOCKSS (WestVault)
 - 5 copies at campus data centres in Western Canada
- AWS (S3 Glacier)
 - Copies of last resort across multiple availability zones, both in Canada and internationally

Issues with remote storage

- PIA / security
- Scalability / organizational viability
- Intelligent tiering
- Costs / Lock-in



Local storage

- Archivemata used to create AIPs
- AIPs stored on 15tb network shares backed up to Kamloops via BCNET Educloud Backup Service

Local storage issues

- We're quickly outgrowing this 'business operational' approach to storage
- Working with Research Computing Services on the possibility of using OpenStack
- We need 'intelligent tiering' to keep costs low
- Need to combine best of onsite and offsite for restricted/sensitive data



What's we're doing

Digital Collections Growth Strategy Task Group

- How do we optimize workflows and organizational structures to accommodate anticipated future growth in our unique digital collections?
- **What technologies do we need to effectively manage this growth?**
 - **DAMS**
 - **Storage**
- What expertise and staffing levels are required to effectively manage this growth?

Let's talk storage!

- What would you do?
- Lots of stuff, and growing quickly
- Need to scale sustainably and avoid lock-in or proprietary solutions
- Some data is restricted/sensitive
- Need multiple copies offsite
- AIPs do not need to be instantly available



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Thanks!

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