Andrew Van Wychen

GIS Portfolio

*Note – Links within portfolio may not open when viewed in web browser. To ensure links function download the PDF file.

Biography

- I am currently an Entry Level GIS Professional looking to gain experience a expand my knowledge of spatial analysis. Prior to entering the GIS field I worked for ten years in a Food & Environmental Microbiology Laboratory.

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Confidentiality Statement

- This portfolio belongs to Andrew Van Wychen. Please do not print or copy without permission

Mission Statement

- Use the skills and training I have received as a GIS student at the Southern Alberta Institute of Technology (SAIT) to grow my career as a GIS professional.

- Combine analysis and predictive skills of GIS with my previous education in Biology.

- Provide high quality work in the field of GIS.

Work Philosophy

- Effectively work with team members within and external to my department. This allows for the successful flow of information within the organization.

- Dedicate myself to the organization and my role within it.

- Provide a calming presence and relaxed attitude regardless of stressful or demanding work schedules.

- Be a technical resource for the GIS department.

- Strive to gain experience and knowledge in the GIS field.

- Ensure all data is gathered and displayed in an ethically responsible manner.

- Challenge myself, and encourage others to advance their knowledge and skills.

Skills and Assets

Job Specific Skills	Transferable Skills	Self-Management Skills
ESRI ArcGIS Skill Certifications	Experience in a supervisory role	Time management
Image analysis	SOP development	Multi-tasking
Geoprocessing	Excellent computer skills	Dedication to ethics
Spatial Analysis	Training in Database management	Experience working in highly time dependant setting
Python Scripting	Experience training new staff	Quick learner
ArcGIS for Desktop experience	Process improvement	Driven to grow knowledge and skills
Web Application development with ArcGIS Online	Auditing of Methods and Standard Operating Procedures	Reliable
Cartography	Data review and validation	Team player

ESRI Skills Certificates

Link to Certificates:

- 3D Analysis of Surfaces and Features Using ArcGIS

- 3D Visualization Techniques Using ArcGIS

- Basics of Map Projections

- Basics of Python for ArcGIS

- Creating 3D Data Using ArcGIS

- Creating and Editing Metadata

- Georeferencing Raster Data Using ArcGIS

- Getting Started with the Geodatabase

- Getting Started with Linear Referencing

- Introduction to the ArcGIS for Server REST API

- Managing Lidar Data in ArcGIS

- Managing Lidar Data Using LAS Datasets

- Managing Lidar Data Using Terrain Datasets

- Network Analysis Using ArcGIS

- Python Scripting for Geoprocessing Workflows

- Regression Analysis using ArcGIS

- Using Lidar Data in ArcGIS 10

- Working With Annotation in ArcGIS

- Working with Geodatabase Domains and Subtypes in ArcGIS

SAIT Transcript

Link to transcript:
https://drive.google.com/open?id=0B5Z7053Qjb9ASURGOFNmNzJSc1k

- Bachelor of Applied Technology – Geographic Information Systems

  Cumulative GPA – 4.0

Mt. Allison Transcript

Link to Official Transcript:
https://drive.google.com/open?id=0B5Z7053Qjb9AbW45Q3o3OFc1M1U

- Bsc. Major in Biology, Minor in Psychology - 2007

   3.6 GPA

Capstone Project:

Working with Husky Energy to predict overland flow path of a pipeline oil spill for planning and response

GIS Coursework
Cartography – Effective communication with Thematic Mapping

GIS Coursework
Programming – Automating processing and analyzing data

```
File  Edit  Format  Run  Options  Window  Help
######################################################################
#
# The purpose of this script is to create a feature class that contains all
# areas of concern (research areas) within a defined distance of roads feature
# classes, which are most likely to be impacted by human activity.
#
# Paramters
#
# roads = arcpy.GetParameterAsText(0)
# bufferDist = arcpy.GetParameterAsText(1)
# researchAreas = arcpy.GetParameterAsText(2)
# outputFC = arcpy.GetParameterAsText(3)
#
# Script Created: March 19, 2016
# By: Andrew Van Wychen
#
######################################################################

# import arcpy module

import arcpy

# establish environment settings

arcpy.env.overwriteOutput = True

# Parameter defintions

roads = arcpy.GetParameterAsText(0)
bufferDist = arcpy.GetParameterAsText(1)
researchAreas = arcpy.GetParameterAsText(2)
outputFC = arcpy.GetParameterAsText(3)

# Buffer the input roads feature class

roadsBuff = arcpy.Buffer_analysis(roads, roads + "_buffer", bufferDist, "", "", "ALL")

# Clip the research areas input to the newly created buffered roads feature class

arcpy.Clip_analysis(researchAreas, roadsBuff, outputFC)
```

GIS Coursework

Geoprocessing – Analyzing and interpreting data (with models or by using GUI)
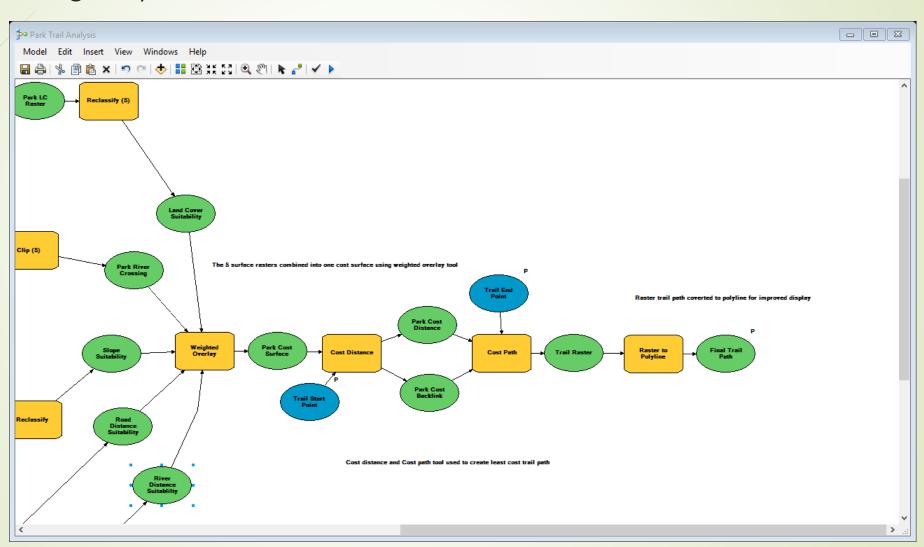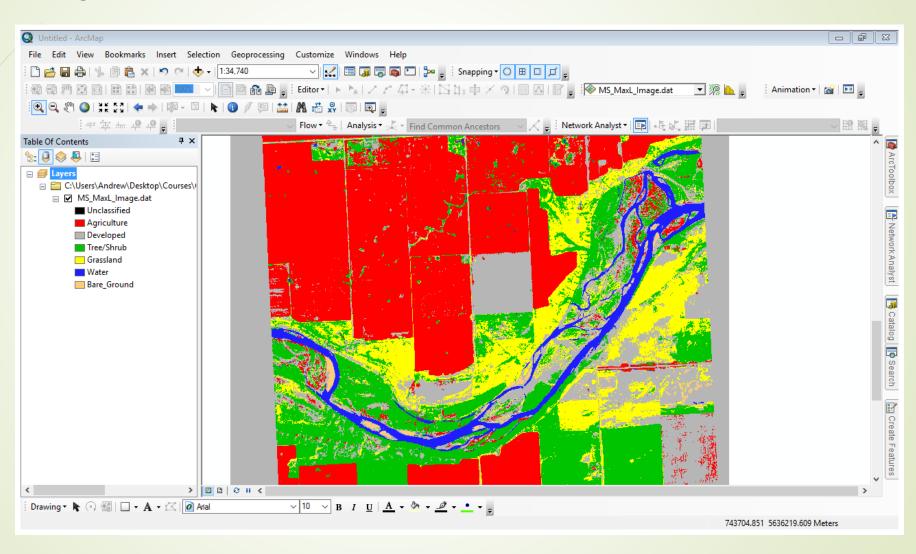
GIS Coursework
Image Classification and Surface Analysis
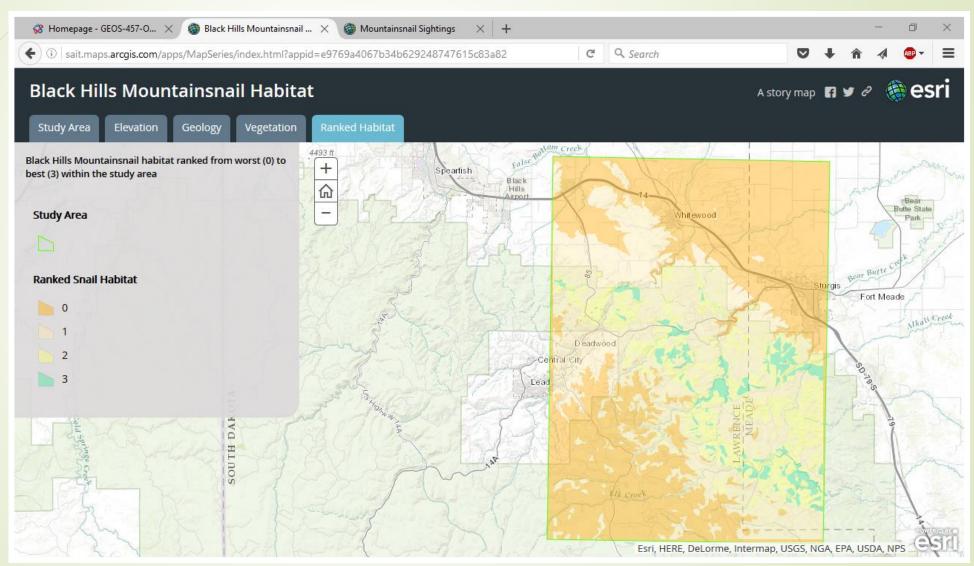
GIS Coursework
Network Analysis – Determining best routes, analyzing utility services

GIS Coursework

Web mapping and web application development

http://sait.maps.arcgis.com/apps/MapSeries/index.html?appid=e9769a4067b34b629248747615c83a82

Professional Certificates: Canadian Aquatic Biomonitoring Network (CABIN)

Professional Certificates: Internal Auditor

MAXXAM INTERNAL AUDITOR PROGRAM

This certifies that

Andrew Van Wychen

has successfully completed the
Maxxam ISO 17025
Internal Auditing Course
and is a Qualified Method Auditor.

Maxxam's Internal Auditor Program improves the day-to-day operations of the business and also verifies compliance with corporate policies and procedures. Participation for laboratory staff is voluntary however their involvement is necessary to meet our auditing goals.

Elizabeth McKinnon
QA Manager, Atlantic and Quebec
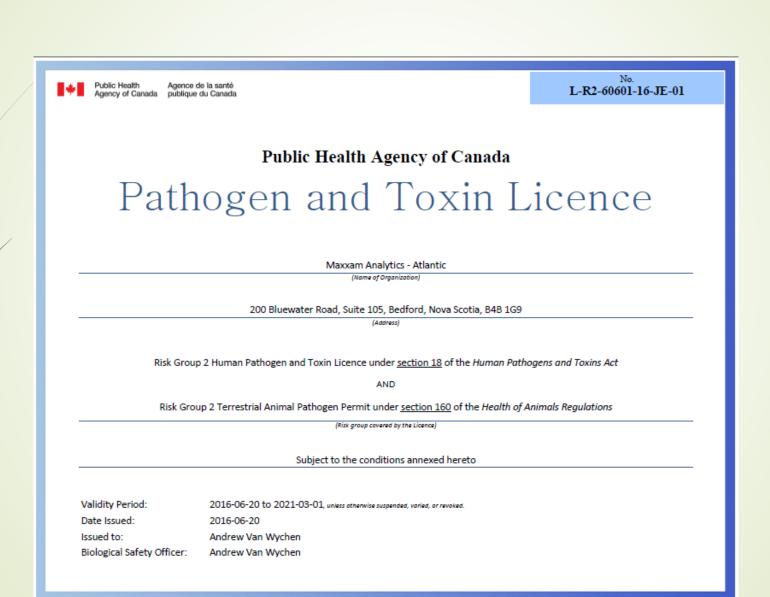
Date: 2014/05/06

Success Through Science®

Maxxam

Professional Certificates: Public Health - Biosafety Officer

Special Projects – Work Experience
Health Canada Community Based Water Monitor Program

Part of my duties while working as a Microbiologist at Maxxam Analytics as been the performance of assessments of the Health Canada, First Nations Community Based Water Monitor Program (CBWM).

This project involves travelling to First Nations Communities throughout Atlantic Canada including remote areas of Newfoundland and Labrador to perform assessments of water monitoring practices.

Innu Air flight to Natuashish, Northern Labrador.

Special Projects – Work Experience
Operational Excellence

I have been involved in operational excellence initiatives designed to examine how procedures are performed and then make improvements to the processes to increase efficiency.

Process mapping to determine all steps in a procedure and the time commitment of each step.

Bachelor's of Applied Geographic Information Systems – SAIT (1 of 2)

- **Program Description**

- Geographic Information Systems (GIS) is a computer-based science and technology that integrates computer hardware, software, data and skilled professionals. This tight integration enables the user to leverage the visual clarity of the maps with the analytical capabilities of a database to improve the decision making process.

- GIS is a multidisciplinary tool that can be used anywhere geography based data and information are used. In recent years, GIS has seen explosive growth in numerous industries and has become a standard in industry sectors including oil and gas, archaeology, business and marketing, environmental sciences, real estate, urban planning and more.

- Some of the key GIS uses include the following:

- as a support tool, helping companies inventory, manage and map their assets

- as a powerful decision-making tool capable of presenting very effective solutions to problems

Bachelor's of Applied Geographic Information Systems – SAIT (2 of 2)

- to create models that help predict future trends

- The Bachelor of Applied Technology in Geographic Information Systems at SAIT is a fast-paced learning environment where we offer state-of-practice training in GIS and associated technologies such as cartography, computer programming, databases, global positioning systems (GPS) and remote sensing.

- To obtain the Bachelor of Applied Technology in GIS, you must have a minimum of two years of post-secondary training from a recognized educational institute.

- Degree candidates must complete a total of 60 SAIT academic credits and 800 hours of work practicum to graduate.

Program Description taken from: http://www.sait.ca/programs-and-courses/continuing-education/degrees-and-applied-degrees/bachelor-of-applied-geographic-information-systems-(gis)

Retrieved on October 30, 2016

BGIS Course Descriptions

- **Geospatial Project Foundations** (30 hrs)
  This course introduces the learner to the foundation, history, development and application of GIS project management theory. Topics include: the GIS cycle, GIS project management concepts, proposal writing, project planning and management as well as methods for controlling and closing out projects

- **Professional Communications** (30 hrs)
  This course explores professional communication, including interpersonal communication, critical thinking, business writing, team management, ethics, and professionalism in the workplace.

- **GIS Data Capture I** (75 hrs)
  GIS Data Capture I introduces the learner to the considerations and processes involved in the data capture stage of the geographic information system (GIS) development cycle. Topics include basic geospatial concepts, geospatial data models, and data acquisition techniques such as digitizing, global positioning system (GPS), remote sensing, and geocoding.

- **GIS Data Manipulation and Transformation** (75 hrs)
  Managing core data is critical to the accurate integration, management, analysis and output of data in a GIS work environment. This course focuses on the fundamentals of managing and manipulating core data and how to troubleshoot problems. Topics include data security, data backup and archival procedures, metadata, data transformations, conversions and translations, survey and mapping systems as well as data generalization and filtering techniques.

- **GIS Data Modeling** (75 hrs)
  GIS Data Modeling introduces the learner to the fundamentals of data modelling through the design, construction and management of relational databases and geodatabases. Topics include database components and fundamentals, relational database design and creation, querying techniques, tabular data analysis, optimization and geodatabase modelling.

- **GIS Data Analysis and Output** (75 hrs)
  This course introduces the learner to spatial analysis and cartographic representation with a focus on processes and techniques used during the data analysis and data output stages of the GIS development cycle. Topics include map design principles, symbolization, data classification, map scale and generalization, typography, colour theory and analytical processes such as spatial queries, spatial joins and map overlays.

BGIS Course Descriptions

- **GIS Data Capture II** (75 hrs)
  This course focuses on the role of remote sensing systems using the Global Positioning System (GPS) for GIS data capture. Learners will gain a deeper understanding of a geographic information system (GIS) by articulating how this relationship works. Topics include passive and active remote sensing systems such as photographic and multispectral systems, as well as image processing techniques, mobile mapping and GIS integration.

- **Data Management and Analysis** (75 hrs)
  This course introduces the learner to the enterprise geographic information system (GIS) environment which is used by companies to support their decision making by compiling new information and analyzing it. The focus is on the techniques for the storage and management of spatial and non-spatial data. Topics include enterprise geodatabase development, editing and enhancement coupled with data analysis involving surface models, grid statistics, vector and raster data.

- **Geoprocessing and Programming** (75 hrs)
  This course introduces the learner to advanced geoprocessing techniques and Python scripting. Topics include the creation of geoprocessing models and Python scripts, customizing the look and functionality of ArcGIS using ArcObjects as well as publishing geoprocessing models and using program techniques to create web mapping pages.

- **Cartography and Geovisualization** (75 hrs)
  This course introduces the learner to advanced geoprocessing techniques and Python scripting. Topics include the creation of geoprocessing models and Python scripts, customizing the look and functionality of ArcGIS using ArcObjects as well as publishing geoprocessing models and using program techniques to create web mapping pages.

- **Applied GIS Capstone Project** (75 hrs)
  During this course, the learners identify a typical business challenge that can be satisfied in a cost effective and timely manner using a GIS-based solution. Learners research, plan, build, implement, test, and present the GIS solution. Topics include project selection, developing a project plan, data capture and management, data analysis, data output and project closure. For my capstone project our three person project group, with Husky Energy Inc. as our project sponsor developed models and tools that could be used to predict the flow path of an oil spill from a land based pipeline.

References

Jim King: Inorganic Chemistry and Microbiology Manager – Maxxam Analytics, Bedford

    Direct manager from June 2015 to June 2016

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Vicki Green: Microbiology Supervisor – Maxxam Analytics, Burnaby, BC

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