

# Water Resources Sustainability

*Otter Point, Shirley and Jordan River*

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# Pacific Priority Solutions

Student research group comprised of:

Victoria Ntomola  
Emily Rudderham  
Kodi Bowman  
Gayle Hatchard

Project offers experience in the real world applications

- Water Resource Management
- Geographic Information Systems Technology





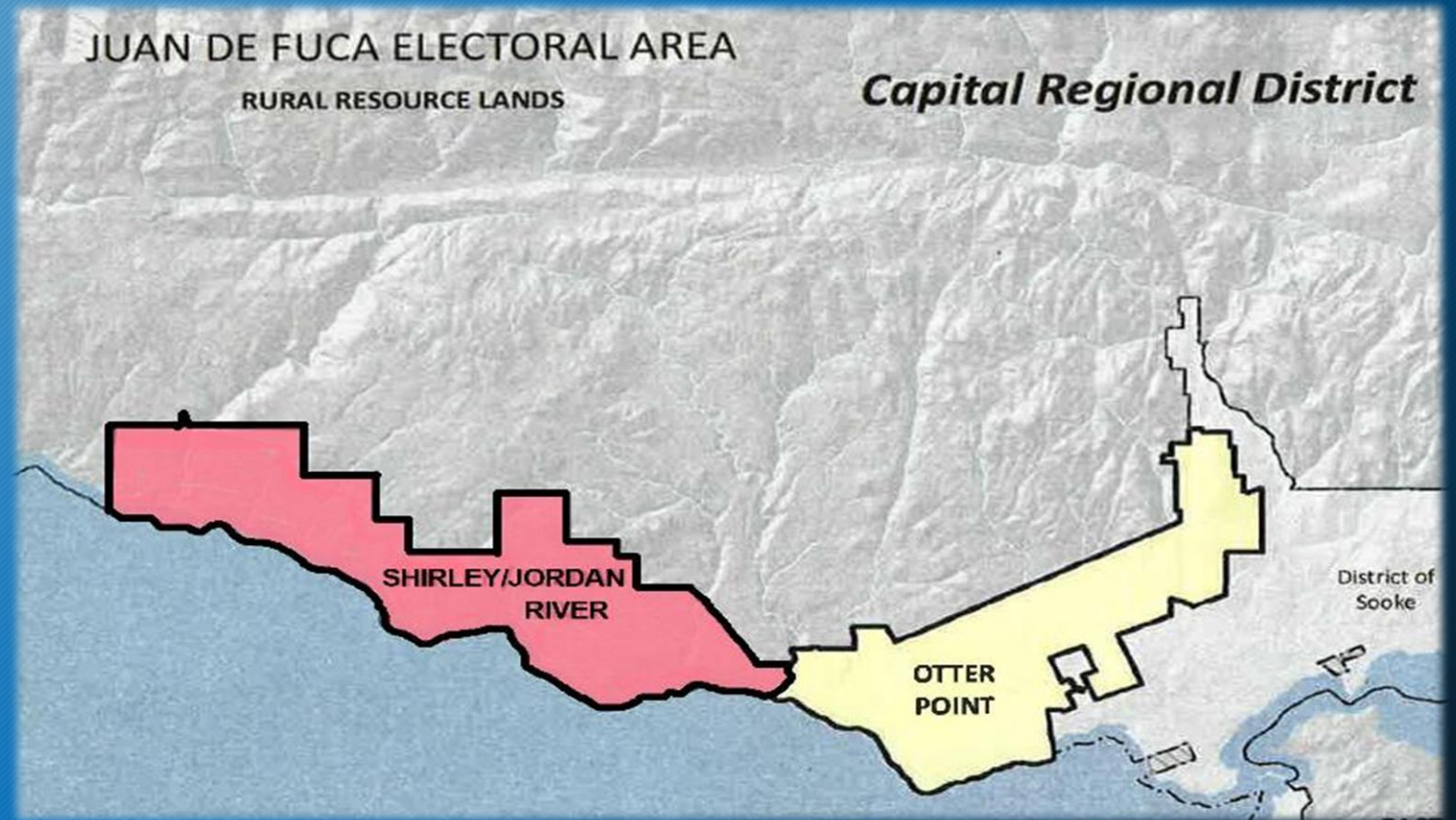
# Agenda

- Background
- Overview & Objectives
- Research Questions
- Purpose
- Methodology
- Current Status
- Upcoming Milestones
- Conclusion



# The Otter Point and Shirley Residents and Ratepayers Association (OPSRRA)

- Shirley
- Otter Point
- Jordan River



# OPPSRA-Objectives

**Development**

*Resident  
Best interests*

**Co-operate**

*Local  
Government bodies*

**Examine**

*Government  
Agencies policies and  
performance*

**Promote**

*Community spirit,  
Host community  
events  
and activities*

**Encourage**

*Citizens to vote*



# OPSRRA - Role in Water Sustainability

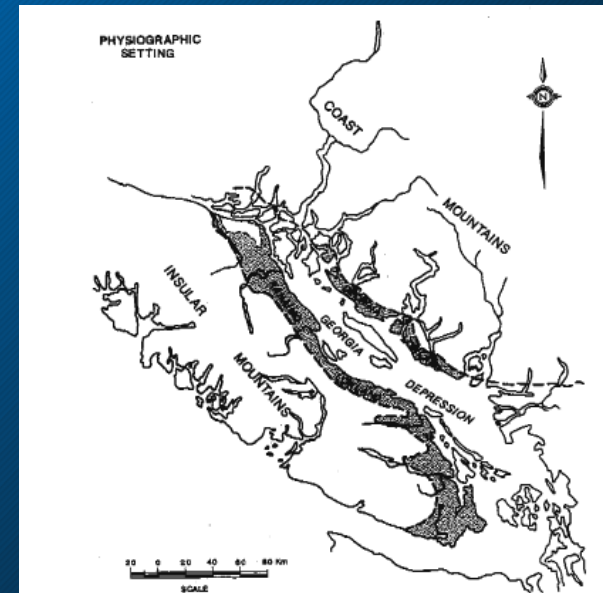
- Surveyed communities in 2013, 2013 and 2015 regarding water use and resources in the communities
- Responses included concerns regarding watershed legislation, water supply shortages and protection of local wells
- A localized approach to water governance has been discussed



# Status of Water Resources in the Study Region

- Nanaimo Lowland - physiographic region, low lying country
- Groundwater major freshwater resource
- Summer months dry - high pressure systems & rain shadow
- Thornthwaite classification - moisture deficit in summer
- Prime factor for water deficiency problems

Image taken from [http://www.env.gov.bc.ca/wsd/plan\\_protect\\_sustain/groundwater/gwbc/C0912\\_Nanaimo\\_Georgia.html](http://www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/gwbc/C0912_Nanaimo_Georgia.html)





# Project Overview & Objectives

## Project

Water Resources Sustainability Assessment of Otter Point, Shirley, and Jordan River

## Objectives

- ArcGIS map and database featuring wells, water licenses, watersheds, groundwater, aquifers, etc.
- Identification of information gaps in existing water source data
- Analysis of the 2016 Water Sustainability Act



# Research Questions

1. What geographical information (wells, water licenses, watersheds, etc.) is available to compile a GIS map and database?
2. What information gaps may impede the completion of a database and GIS map of the region's water resources? What further investigations may be needed?
3. Does the 2016 Water Sustainability Act reflect the communities' needs in terms of protection, regulation and development?



# Purpose

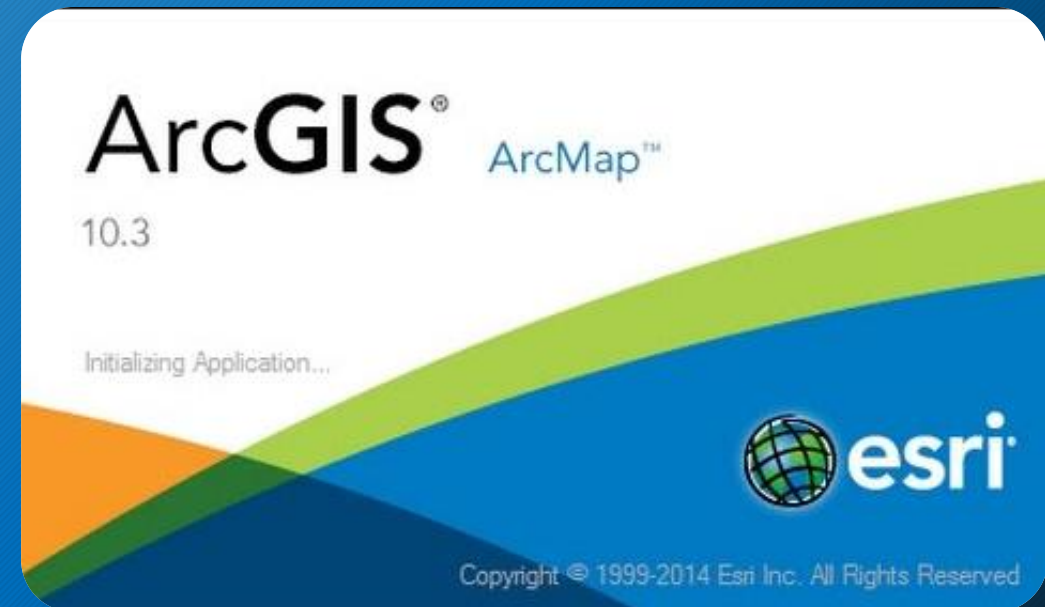
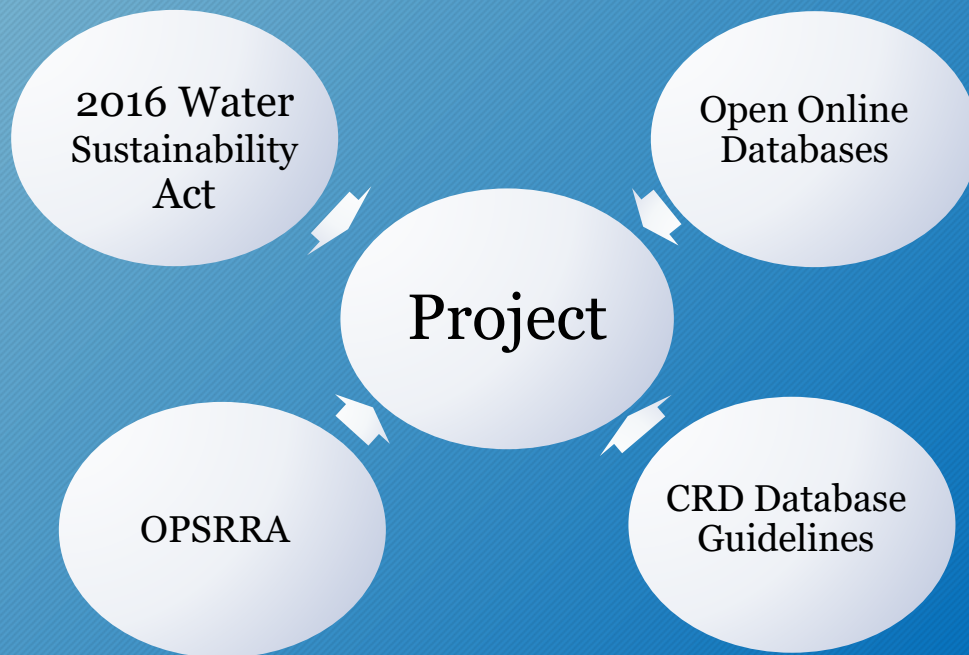
Provide a tool which will :

- Improve water security
- Enable the community to make informed decisions regarding current and future water use
- Anticipate the impacts of development on existing resources, the community, and ecology
- Aid in maintenance, regulation, and protection of existing water resources



# Methodology: ArcGIS Map and Database

## Stage 1: Data Acquisition



# ArcGIS Map and Database

Stage 2: Process and standardize to fit CRD GIS data standards for external agencies

- Metadata requirement
- Data formats
- Data standards





# ArcGIS Map and Database

## Stage 3: Organization of Converted Metadata

- GIS data layers

## Stage 4: Creation of a Water Resource Archive

- ESRI geodatabase
- Computer backup





# Identification of Information Gaps

## Identifying information gaps

- Unlicensed wells
- Trucked water
- Roof top collection systems

## Ways to fill information gaps

- Detailed Aquifer Studies
- Community surveys of unconventional water acquisition.



# Analysis - 2016 Water Sustainability Act

- To analyze and summarize findings of the 2016 Water Sustainability Act.
- Compare current water resources sustainability to past and anticipated use.
- Compare past WSA to the 2016 WSA, what changes occurred that may affect water resources.



# Current Milestones

- Established methodology, and direction of project
- Finalized Project Agreement
- Annotated Table of Contents
- Timeline
- Budget



# Timeline 3<sup>rd</sup> Quarter -2016

**Data  
Gathering**

**Site Visit**

**29<sup>th</sup> March**

**Interim Report  
including  
Progress Report**

**31st May**

**Financial  
Statement**

**31st May**

**Interim  
Major  
Project  
Presentation**

**10th June**

# Timeline 4<sup>th</sup> Quarter -2016

**Final Report  
To RRU**

**19<sup>th</sup> August**

**Project  
Financial  
Statement**

**26<sup>th</sup> August**

**Major Project  
Presentation**

**26<sup>th</sup> August**



# Conclusion

## Our Tasks

- Collect Data
- Identify Data Gaps
- Analyse the 2016 Water Sustainability Act





Thank you  
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