EARTH SC/ENVIR SC/GEOG 2GI3

Exercise 3: Overview

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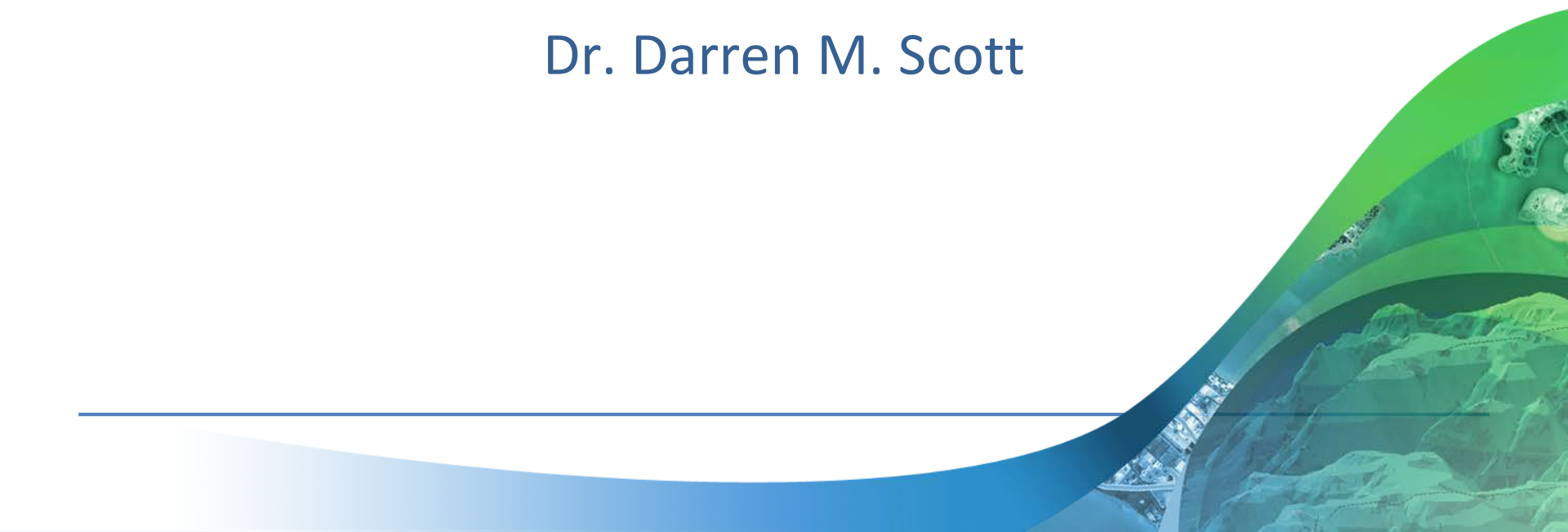


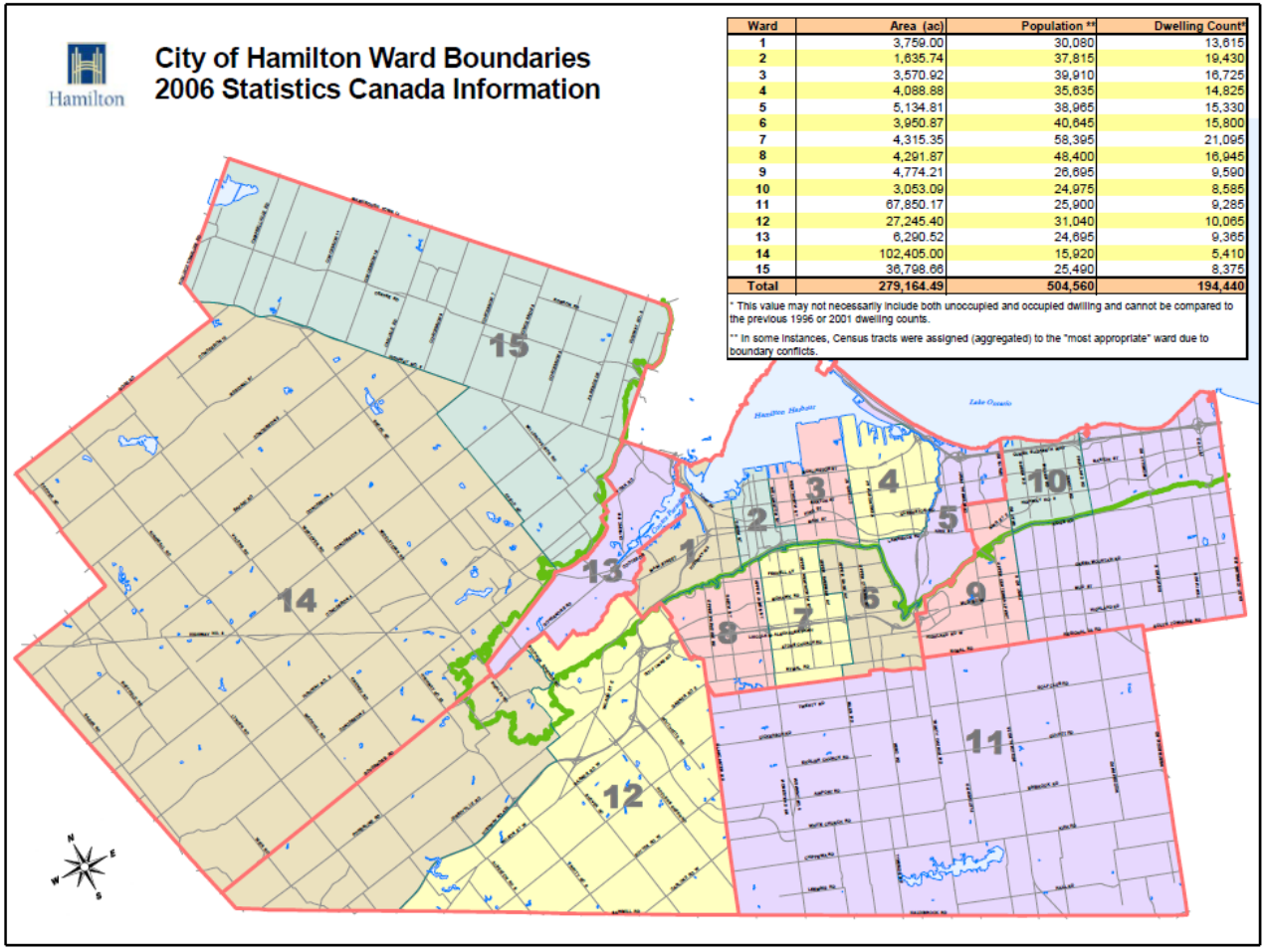
Learning Objectives

- Working with vector data
  - Selecting data
  - Editing data
  - Creating shapefiles
  - Understanding topology
- Working with raster data structures
  - Creating GRIDs
  - Understanding the mixed pixel problem

Details About Part A (1)

- You are given the following shapefile:
  - Hamilton census tracts (CTs)
- Create four wards from CTs
- Construct a new ward shapefile
- Construct topology tables

Details About Part A (2)



Details About Part B (1)

- Provided with a shapefile of land uses in Hamilton
- Compute area of each parcel of land, then summarize to get total area in square meters for each land-use category
- Using a vector grid, examine the data set for potential issues due to the mixed pixel problem
- Using a vector grid (SampleArea), encode the grid cells using the *cell center* approach
- Use the Spatial Analyst extension to construct GRIDs with 250 m and 750 m resolutions

Details About Part B (2)

- Compare the rasters you construct to the vector data set by looking at percentage change in area

Style and Format Guidelines (1)

- Answers must be typed using MS Word, OpenOffice, or some other word-processing package; otherwise your grade = 0
- Style and format is worth 20% of your mark or 5 marks out of 25 for this exercise
- 1 mark is deducted for each unique mistake

Style and Format Guidelines (2)

- To avoid losing marks, ensure the following:
  - Title page contains the exercise number and name (Exercise 3: Vector and Raster Data), your name and lab section, submission date, and your TA's name
  - Staple your submission in the upper left-hand corner
  - Use 12 point font
  - Use 1.5 spacing between lines
  - Use 1 inch borders
  - Pages must be numbered in the bottom right-hand corner
  - Correct all spelling and grammatical mistakes
  - Do not use ink or pen on the submission