

## Fishery Applications of GIS I & II

### Course Topics

Fish Density Mapping, Biomass, Species Distribution, Suitable Location for Marine protection Zone, Mapping/Modeling CPU, Benthic Habitat Modeler, Correlation with Environmental Variables, Interpolating Point Data & more!!

### TOPICS COVERED

#### Introduction to ArcMap, ArcToolbox, and ArcCatalog

- Introduction to Arc Catalog
- Introduction to Viewing Data in ArcMap
- Using ArcToolbox
- Introduction to GIS Exercise

#### Manipulating Display Parameters in ArcMap

- Changing Simple Feature Symbology
- Labeling Features and Adding Text to Features
- Changing a Features Symbology Using Categorical Attributes
- Changing Raster Symbology
- Displaying Quantitative Data

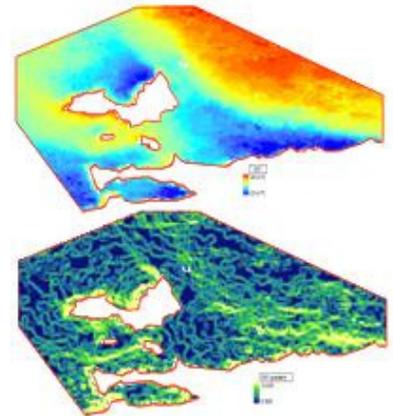
#### Map Making and Printing Maps Using ArcGIS

- Use a Map Template to Create a Map
- Creating Maps without Using a Template

### Analyzing & Reporting Spatial Data

#### Querying and Preparing Data in ArcMap

- Selecting Feature by Attribute
- Selecting Features by Location
- Clipping Features
- Projecting and Defining the Coordinate System or Spatial Reference



### Advanced Spatial Analysis

#### Suitable Location for Marine Protection Area

- Dissolving Features
- Creating Graphs
- Exporting Data
- Buffering Features
- Overlaying Layers

#### Correlation with Environmental Variables

- Creation of Sea Surface Temperature Gradient
- Fish Abundance Mapping
- Zonal Statistics
- Integration in Excel for Statistical Analysis

### **Mapping/Modeling Optimal Habitat Determination**

- Correlation with Environmental Variables Seasonal Optimal Habitat Determination for CPU Recommendation
- Graphing Seasonal Habitat Data
- Seasonal Comparison of Fish Habitat Maps (Using the Map Comparison Kit)

### **Biomass Mapping**

- Converting Vector Polylines to Raster
- Converting Vector Points to Raster
- Reclassifying Raster/Grid Datasets
- Use Tabulate Areas Command in Spatial Analyst Tools
- Calculation of Relative Biomass

### **Advanced Point Data Integration Methods**

- Density Mapping I: Estimate Density for Fish Population
- Density Mapping II: Estimate Density Using Attributes
- Species Distribution Mapping
- Random Sample Selection Tool
- Extracting Point Data from Raster

### **Contact Us**

Dr. Barnali Dixon / 140 7th Ave. South  
(Geo-Spatial Analytics Lab –Dav 206)  
University of South Florida St. Petersburg  
St. Petersburg, FL 33701  
Phone (727) 873-4025  
E-mail: [Barnali Dixon](mailto:Barnali.Dixon@usf.edu),  
bdixon@mail.usf.edu