

Visitation: Recreation and Tourism Model

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Visitation: Recreation and Tourism Model

- Supporting Ecosystem Services
- Final Ecosystem Services
 - Visitation: Recreation and Tourism

Outline

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 - Area of interest (AOI)
 - Purpose
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 - Photo - User - Days
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Introduction

Services

The services provided by recreation and tourism

- Important components of national and local economies
- Contribution to quality of life

Introduction

- Area of interest (AOI): Pellicer watershed and Its tributaries
- Purpose: To quantify the value of the AOI and predict the spread of person-days of recreation
- *Scenario: How future changes to natural features will alter visitation rates*

Model

Linear Regression

$$y_i = \beta_0 + \beta_1 x_{i1} + \cdots + \beta_{p-1} x_{ip-1} + \beta_p x_{ip}, \quad i = 1, \dots, n$$

y_i : empirical data on visitation for part i in the AOI

x_{ip} : predictor p of land use (LU) type for part i in the AOI

Model

Assumptions and Simplifications

- People's responses to attributes that serve as predictors in the model will not change over time.
- The model does not presuppose that any predictor variable has an effect on visitation.
- The model estimates the magnitude of each predictor's effect based on its spatial correspondence with current visitation in the area of interest.

Data

- Empirical data on visitation y_i
 - Photo-User-Days (PUD) of recreation and tourism, based on the *locations* of natural habitats, accessibility.
 - A crowd-sourced measure of visitation: *geotagged* photographs posted to the website *flickr* (2005-2014)
 - Data are available as the results of the regression

Data

- Predictor Variables
 - Selection:
 - natural capital (e.g. habitats, lakes)
 - built capital (e.g. roads, hotels)
 - industrial activities
 - access or cost (e.g. distance to major airport)
 - *Scenario Analysis: a set of modified predictors that represent a future or alternative scenario (e.g. modified road networks, additional hotel points, altered habitat distributions, etc)*

Data

- Predictor Variables

Visit Florida: Research FAQ

- Do most visitors come to Florida by car or plane?
- How many nature parks are in Florida?
- What activities do Florida visitors participate in the most?
- How many hotel rooms are in Florida?

Data

- Predictor Variables
 1. Major highways: I-95, Palm Coast Pkwy, Hammock Dunes Bridge, Matanzas Woods Pkwy, Moody Blvd, US 1/SR 5, and US 1
 2. Airports: Flagler County and St. Johns County
 3. Parks and recreational facilities
 4. Salt marshes habitat
 5. Swimming beaches:
 6. Hotels

Data Statistics



Dialog Box

Recreation Model



File Development


InVEST Version 3.3.2 (32bit) | [Model documentation](#) | [Report an issue](#)


Note, this computer must have an Internet connection in order to run this model.

Workspace  



Results Suffix (Optional)



Area of Interest (vector)  

Start Year (inclusive, must be >= 2005) 

End Year (inclusive, must be <= 2014) 

Compute Regression

Predictor Table  

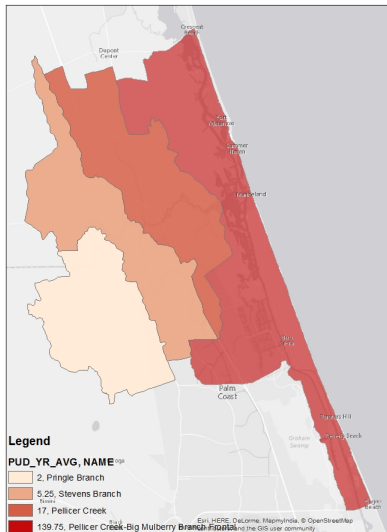
Scenario Predictor Table (optional)  

Grid the AOI

Parameters have been loaded from the most recent run of this model. [Reset to defaults](#)

Data Statistics

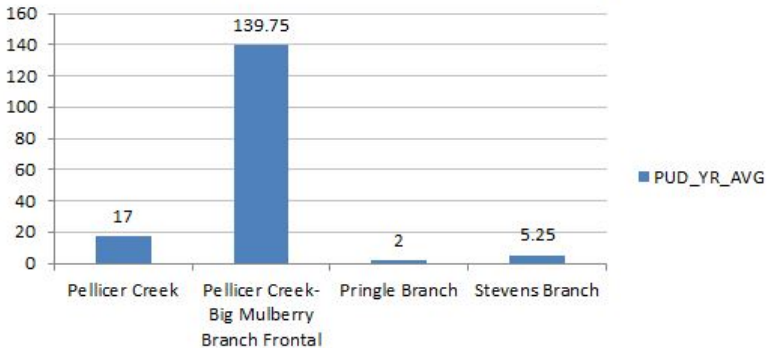
Visitation



Data Statistics

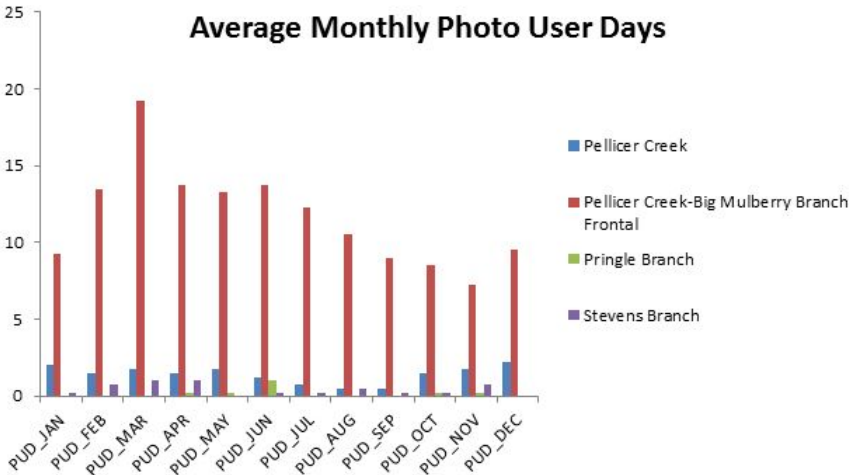
Visitation

Average Annual Photo User Days



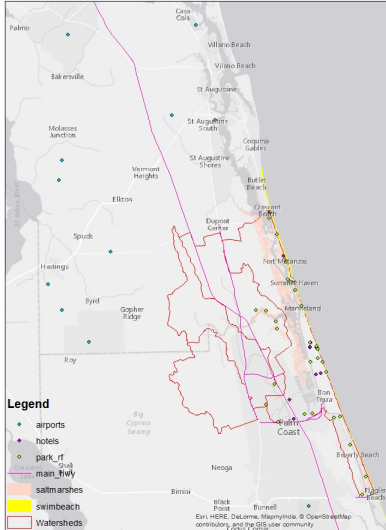
Data Statistics

Visitation



Data Statistics

Predictor Variables



Data Statistics

Predictor Table

id	path	type
habitats	saltmarshes.shp	polygon_area_coverage
rds	main_hwy.shp	line_intersect_length
hotels	hotel.shp	point_count
airdist	airports.shp	point_nearest_distance
beach	swimbeach.shp	polygon_area_coverage
park_rf	park_rf.shp	point_count

- Units: Maps/Display (Meters)

Results

Predictor p	Pellicer Creek	Pellicer Creek-Big Mulberry Branch Frontal	Pringle Branch	Stevens Branch
Main Highways	0.233	0.088	0.008	0.152
Airports	0.082	0.059	0.100	0.075
Parks and Recreational Facilities	4	33	0	2
Marsh Habitat	0	0.001	0	0
Swimming Beaches	0	0	0	0
Hotels	0	7	0	0

Interpretation and Preliminary Conclusion

- Roads: Length of roads intersecting with watersheds has significant impacts on the visitation of Pellicer Creek and Stevens Branch Watershed
- Airports: The distance of the nearest airport has positive effects on the visitation of Pringle Branch Watershed. With less disturbance of airports, the number of visitation will increase.
- Parks and recreational facilities: the number of park and recreational facilities is an important driven factor for the development of tourism in Pellicer Creek-Big Mulberry Branch Frontal. One more park or recreational facility can increase the time of visitation dramatically in Pellicer Creek-Big Mulberry Branch Frontal Watershed.
- Hotels: The number of hotels is also a driven factor for the development of tourism in Pellicer Creek-Big Mulberry Branch Frontal.
- *Swimming beaches: The overlap area on the map is*