Finding Food Deserts: Food Access Index Approach

Internship Partners
- UF/IFAS Sponsorship
- Sarasota County Extension
- Sarasota County GIS Department
- Sarasota County Health Department
- Planning Service

Sunny Sulhee Yoon
Food Desert: What is it?

A food desert is any area in the industrialized world where healthy, affordable food is difficult to obtain.
Food Desert: Why is it important?

- Food Insecurity
- Community Health Issues
- County Extension Program Planning
- Food Access
- Urban and Regional Planning
AGENDA

INTRODUCTION

• History and Definition
• Current food access study of Sarasota County
• Food Access Index

FOOD ACCESS and AGED POPULATION

• Assess relationship between aged population and food access

FOOD ACCESS and TRANSPORTATION NETWORK

• Food Outlets Walkable/ Drivable Network
• Assess relationship between vehicle ownership and food access

FOOD DESERT CANDIDATES
Aspects of Food Desert

**INTRODUCTION**

Distance to food stores

Neighborhood environment

Derived from: Transportation environment

Physical environment

Built environment

Behavioral environment

Health environment

Food Environment

Vital issue in urban and rural area:

- Promote healthy diet
- Disease prevention/ Health growth
- Better quality of life

Food Access

Distance to food stores

Coverage of food stores

Food Desert
INTRODUCTION

Aspects of Food Desert

Area with low access to food stores involving socioeconomic, transportation network, and physical environment which may evaluate current health status.
## Food Deserts Studies Comparison

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<th>TRF Policy map</th>
<th>Sarasota County</th>
<th>This research</th>
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<td><strong>Census Tract Scope</strong></td>
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<td>• Low Access Community</td>
<td>• Compared low access area with residential density</td>
<td>• ¼ mile street network</td>
<td>• ½ mile walking network</td>
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<td>• 10 miles driving network</td>
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### Description:
- **USDA**:
  - **Census Tract Scope**:
    - Low Income Community
    - Low Access Community

- **TRF Policy map**:
  - **Census Block Scope**:
    - Own mathematical index for low access area
    - Compared low access area with residential density

- **Sarasota County**:
  - **Census Block Scope**:
    - Estimated 2010 population
    - ¼ mile street network

- **This research**:
  - **Census Block Scope**:
    - Food access index
    - ½ mile walking network
    - 10 miles driving network
Food Accessibility Methodology

**INTRODUCTION**

- Spatial and Statistical application with GIS tool
- Data provided from Sarasota GIS Department

**Information about your world**

**Represented by Points, Lines, Areas, and Images**

**For a range of geography**

**GIS (Geographical Interface System):**

A computer-based system that captures, stores, analyzes, manages, and presents data that is linked to location.

Source: ESRI
Food Accessibility Index

INTRODUCTION

Food Outlets
- Supermarket, Meat, Fish, Fruits, Vegetable Markets (exclude convenience store)

Proximity to Food Outlets

Coverage of Food Outlets

143 No Food Outlets
40 High Food Access
20 Medium Food Access
21 Low Food Access
Food Accessibility Index

INTRODUCTION

North Sarasota
South Venice
North Port
South Sarasota
Food Accessibility Index

INTRODUCTION
Research Questions:
To evaluate food desert adopting food access index

1. Is there a relationship between aged population and food access?

2. Is there a relationship between vehicle ownership and food access?

3. In Sarasota County, are there spatial inequalities of food access?
Food Access and Aged Population

Food Access Index
- No Food outlets
- Low
- Medium
- High
- No food outlets indicate there is no food outlet within each census block

Age 65+ (%)
- 2.65 - 24.68
- 24.69 - 46.71
- 46.72 - 68.74
- 68.75 - 90.78
1. Is there a relationship between aged population and food access?

Census block area with higher aged population density and food access does not have relationship.
2. Is there a relationship between vehicle ownership and food access?
0.5 mile walking food access network:

There is **no relationship** between vehicle ownership and food access in walking network

10 miles driving food access network:

Yes. There is a relationship between vehicle ownership and food access.
3. In Sarasota County, are there spatial inequalities of food access?

Low Food Access Index in Census Block Boundary (Proximity, Coverage) + Low Food Access Index (Proximity) → Food Desert Candidates
Food Desert Candidates

- Low Food Access Index in Census Block boundary (Proximity, Coverage)
- Low Food Access Index (Proximity)
- Protected Environmental Lands
- Food Desert Candidates

RESULTS

City of Sarasota
City of Venice
City of North Port
Food Desert Candidates

City of Sarasota

City of Venice

City of North Port

Food Deserts for Pedestrian
Food Desert Candidates

RESULTS

Food Deserts for Drivers

City of Sarasota
City of Venice
City of North Port
1. Is there a relationship between aged population and food access?
   • No relationship in statistical approach but possible relationship presented demographically

2. Is there a relationship between vehicle ownership and food access?
   • Yes. In driving food access network, it proved food access relates with vehicle ownership

3. In Sarasota County, are there spatial inequalities of food access?
   • Yes. According to the food access index
   • Depends on whose perception
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Food Access Index Approach

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