



The Science of Organic Farming

Cultivating healthy agriculture in the Virgin Islands



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Agricultural Marketing Service
National Organic Program
Transition to Organic Partnership Program





Transition to Organic Partnership Program

**Cultivating healthy agriculture
in the Virgin Islands**

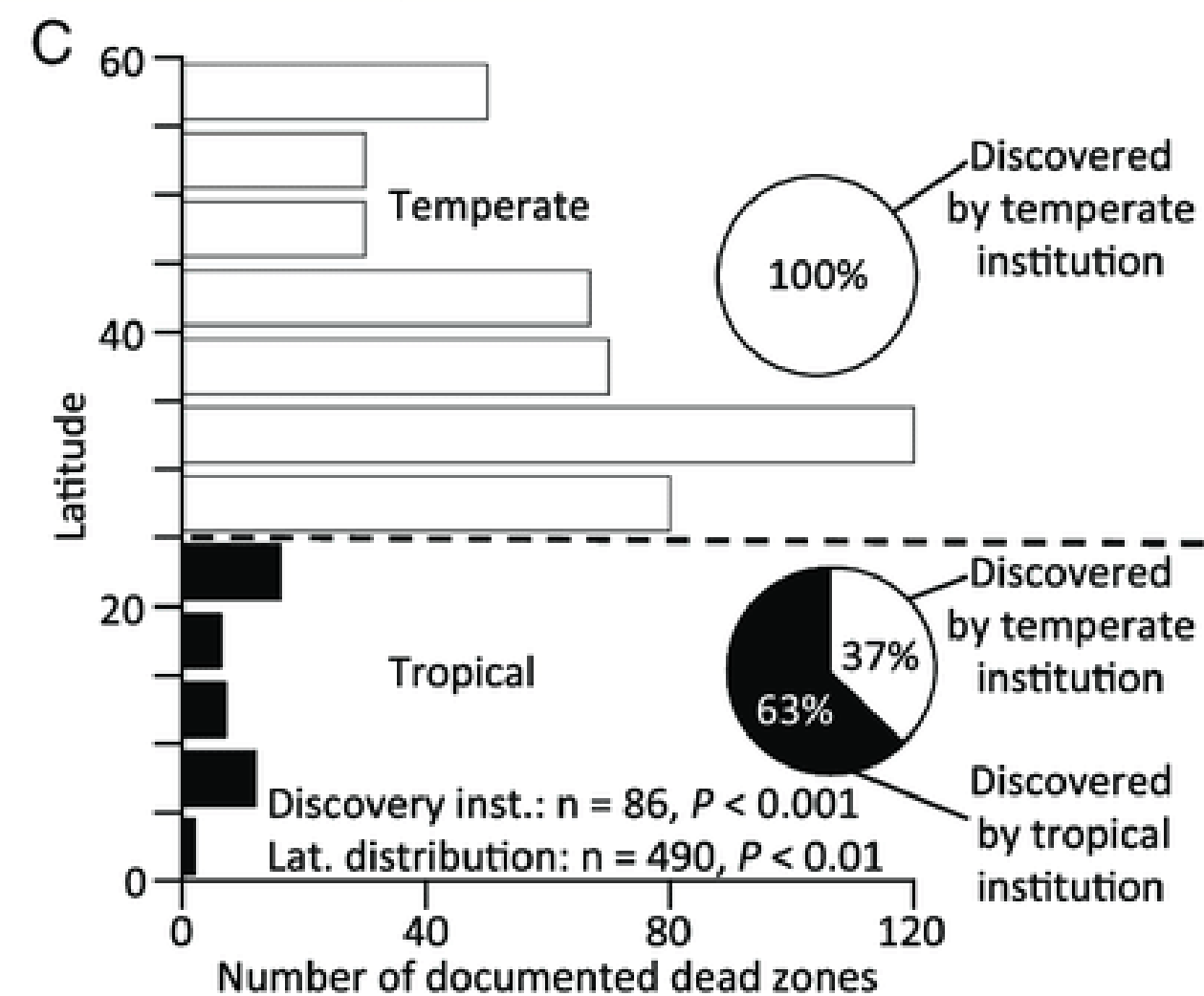
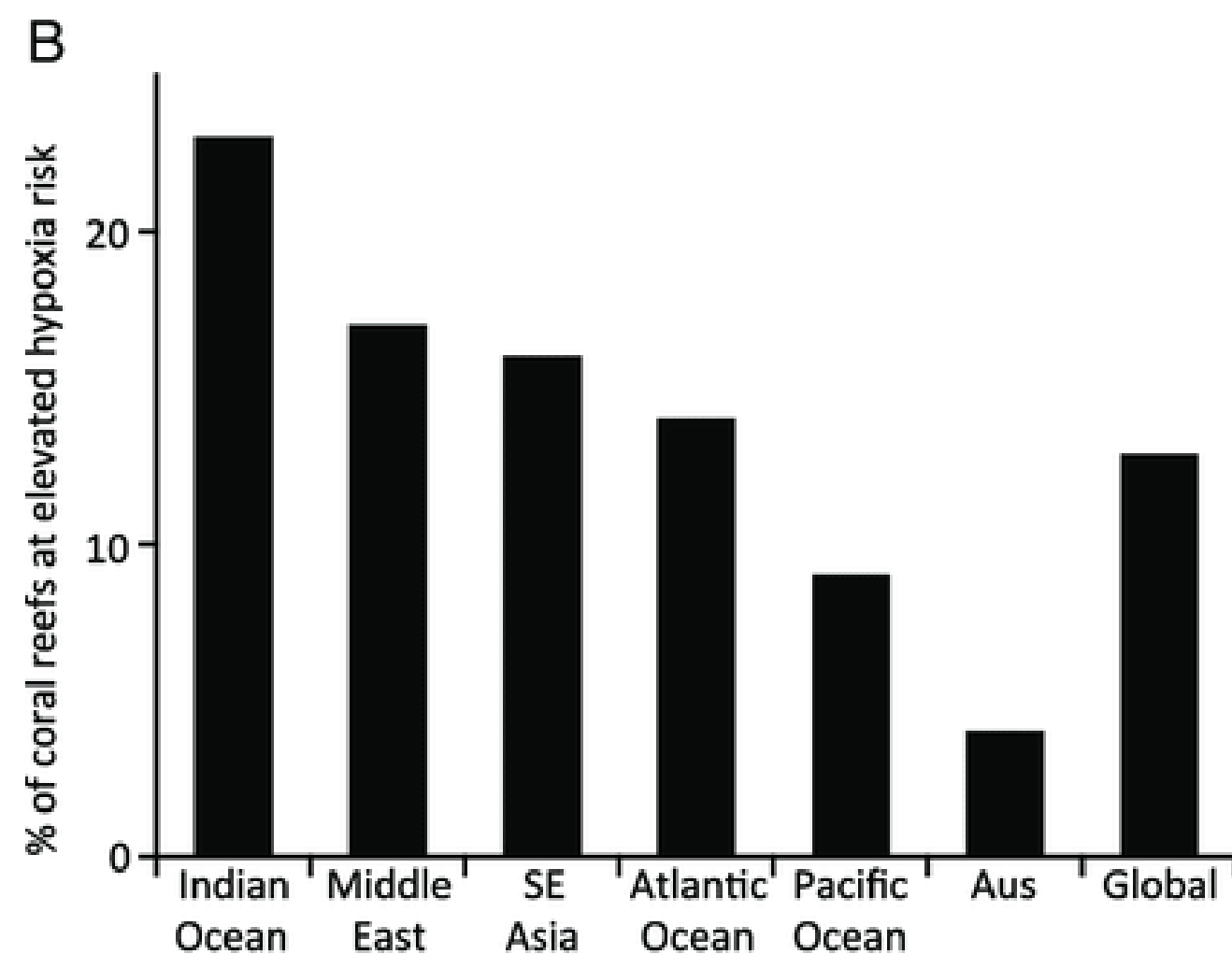
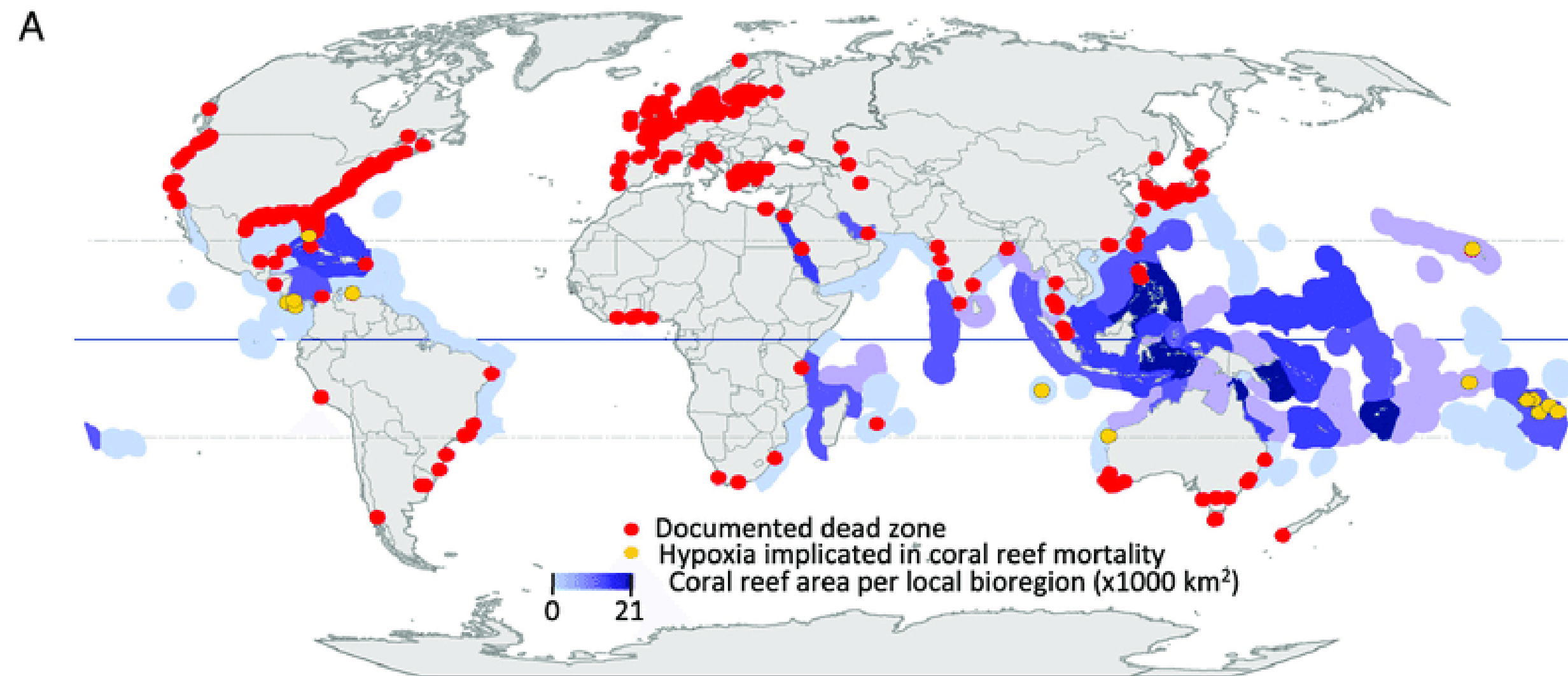


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Environment:

Ocean Dead Zones Worldwide



Caused by hypoxia

Agricultural runoff and untreated sewage

Insoluble synthetic fertilizers

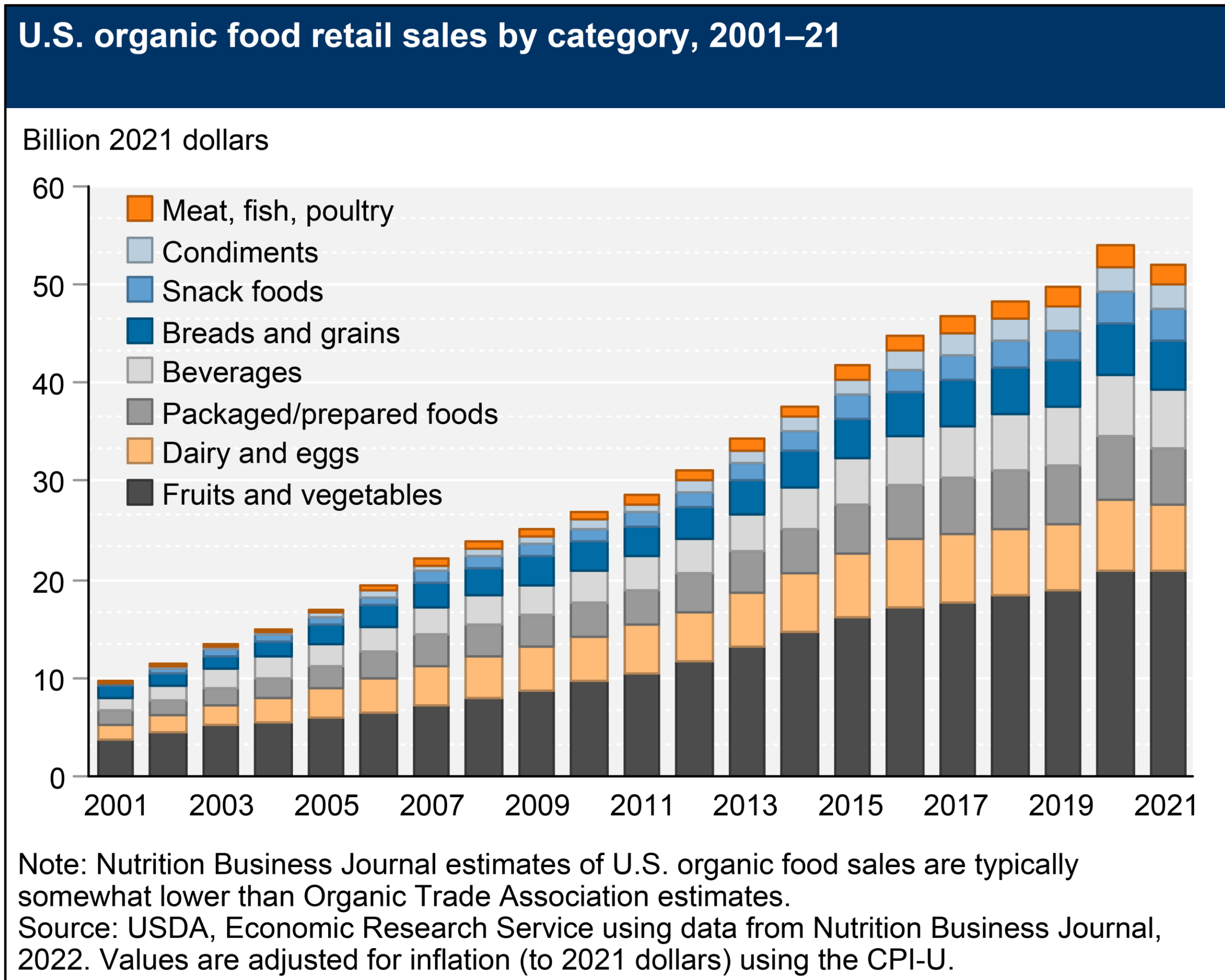
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Source: Alteri, Et al, 2017

Niche Market Profitability:

Certified Organic Market Growth



Niche Markets important for small growers

Increased market competition and need for differentiation

Opportunities for cooperative production

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Source: USDA Economic Research Service

Organic Soils in the USVI

Organic Soils vs. Conventional Soils

- A teaspoon of soil can contain several billion microorganisms
- >1 ton bacteria per acre

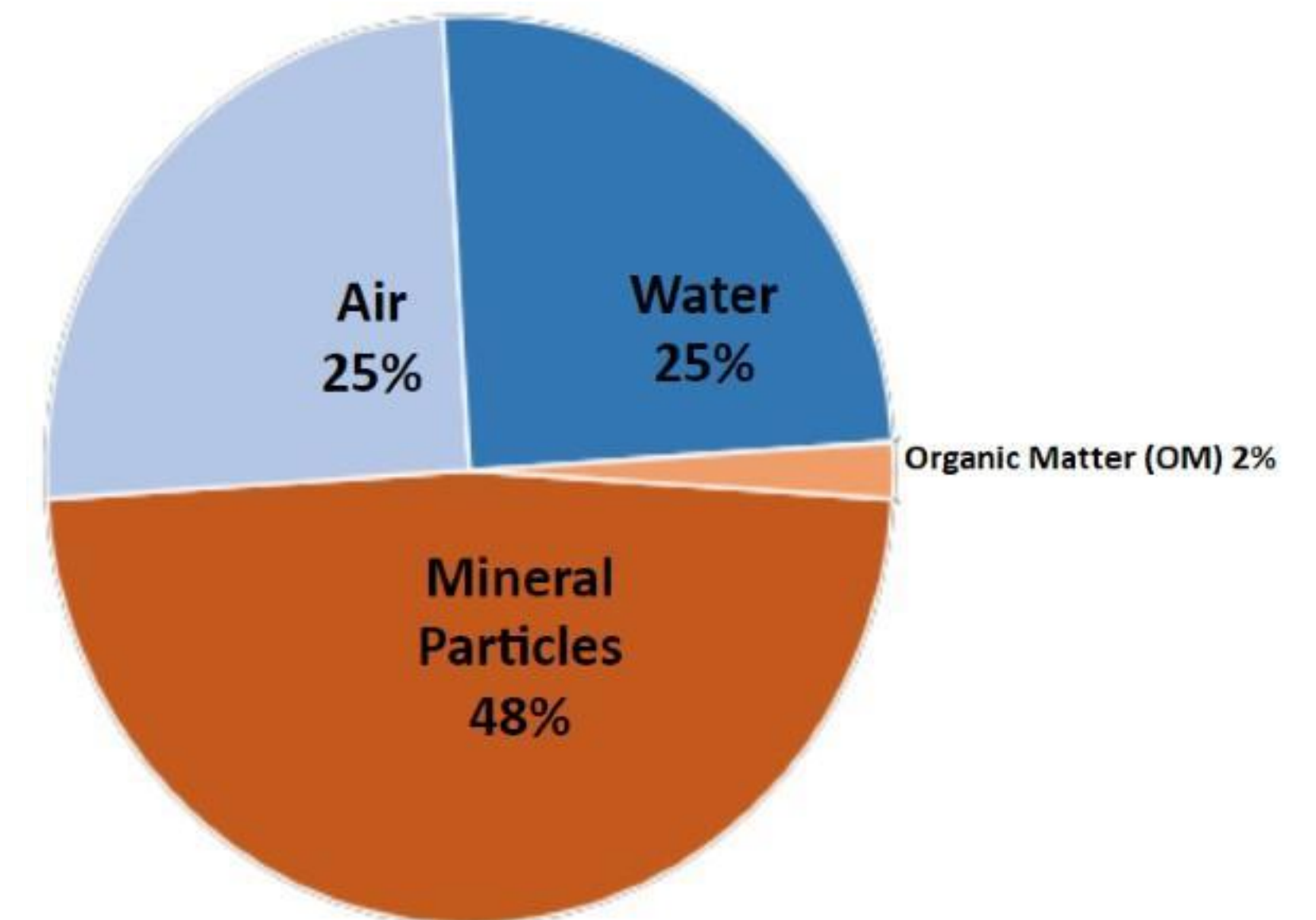
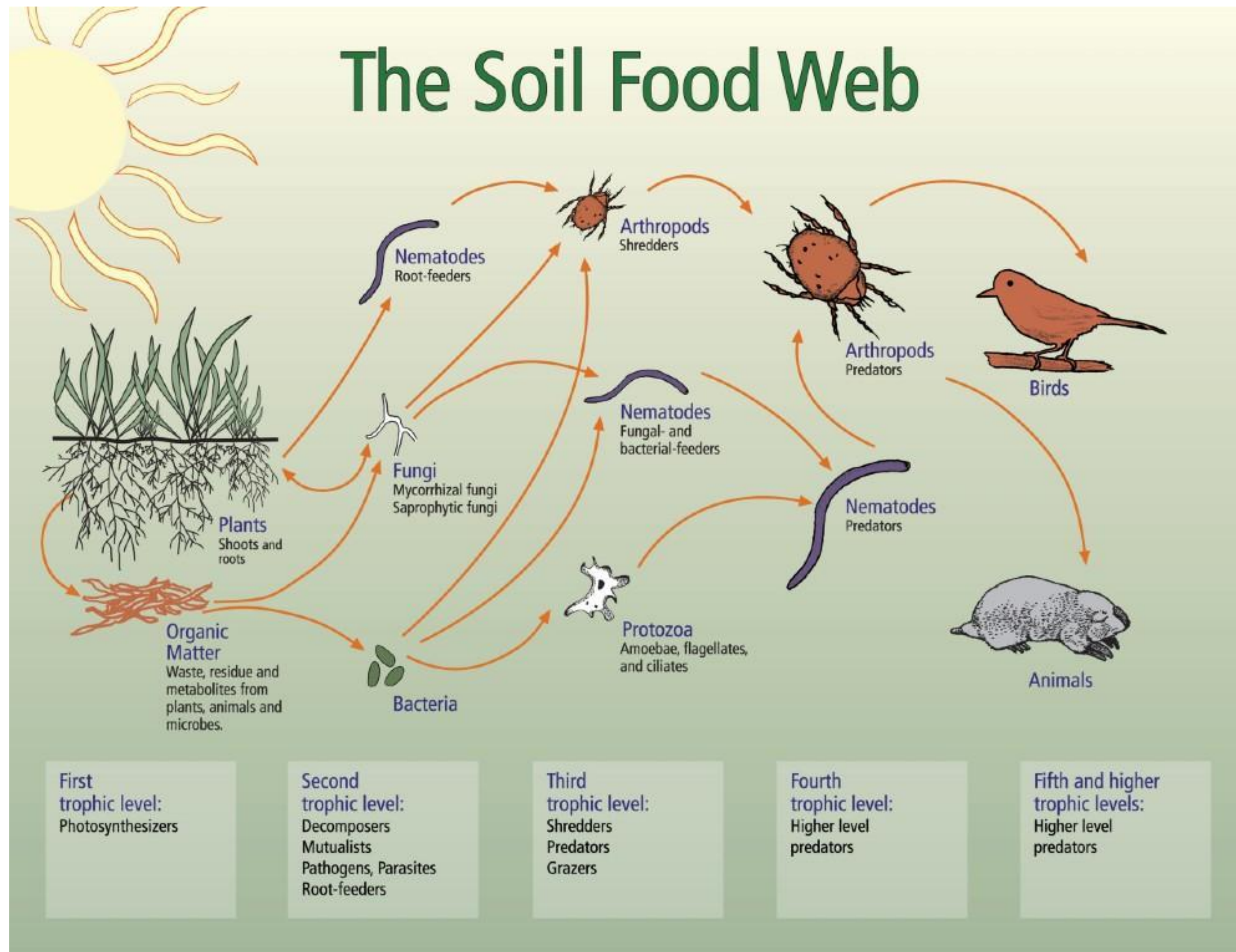


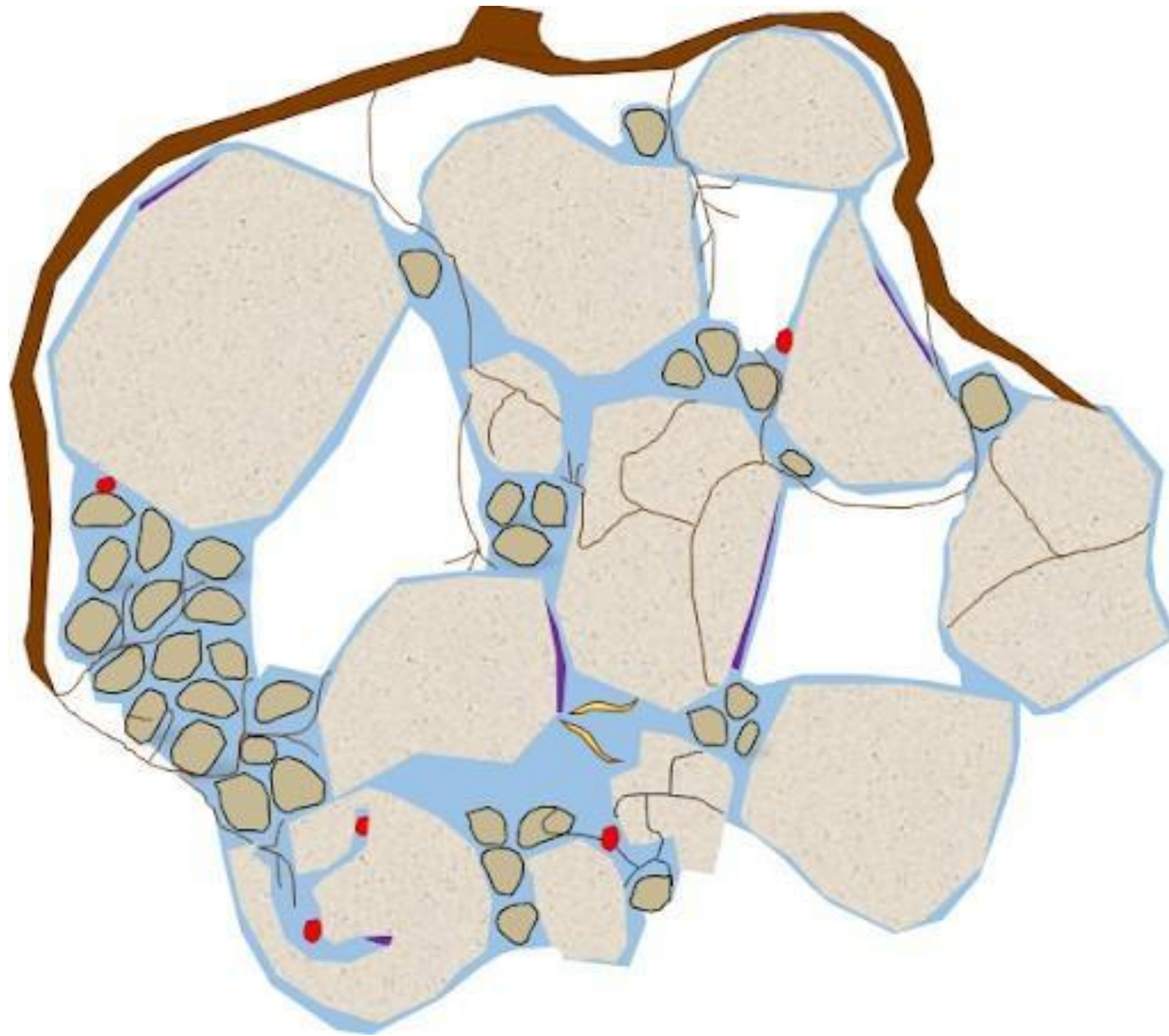
Figure: Melissa L. Wilson, Ph.D. and Patricia Steinhilber, Ph.D.

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Organic Soils in the USVI

Organic Soils vs. Conventional Soils



- Water clings to smaller soil particles (i.e, clay)
- High Soil Organic Matter (SOM) associated with High Filtration and water regulation
- SOM filters and regulates water and nutrient retention (less leaching)
- Increased capacity of nutrient production

Overall Soils in the USVI

Soil Orders and General Descriptions Type & Description

[Entisols](#)

Little, if any horizon development

[Aridisols](#)

Soils located in arid climates

[Alfisols](#)

Deciduous forest soils

[Ultisols](#)

Extensively weathered soils

[Gelisols](#)

Soils containing **permafrost**

[Andisols](#)

Soil formed in volcanic material

[Inceptisols](#)

Beginning of horizon development

[Mollisols](#)

Soft, grassland soils

[Spodosols](#)

Acidic, coniferous forest soils

[Oxisols](#)

Extremely weathered, tropical soils

[Histosols](#)

Soils formed in organic material

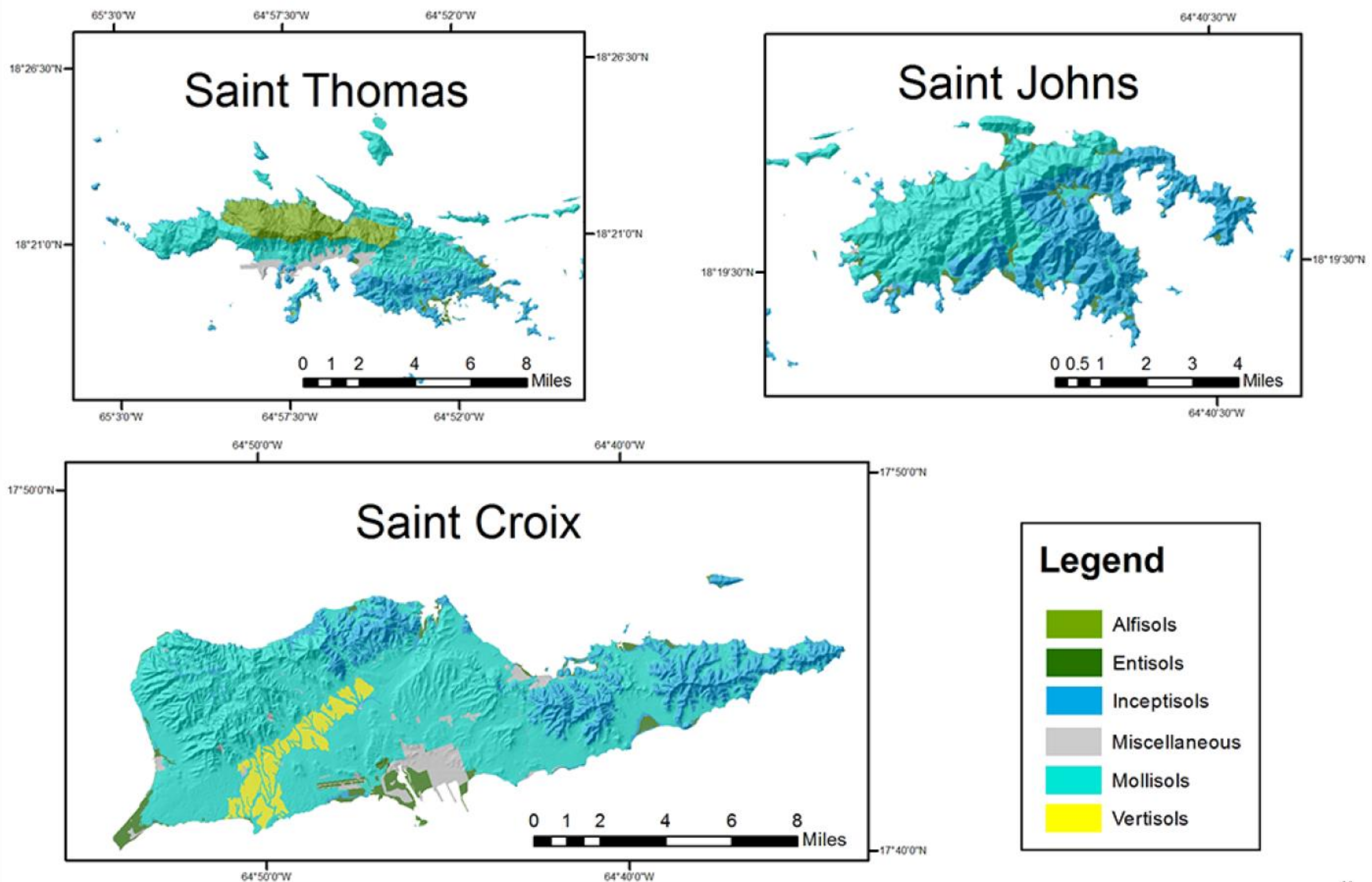
[Vertisols](#)

Shrinking and swelling clay soils

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Soil Orders of the United States Virgin Islands



Map Created by: Manuel Matos
State Soil Scientist/ State Geodata Coordinator
USDA-NRCS Caribbean Area



Growing Soil

1. Adding Carbon
2. Crop rotation
3. Fallows
- 4. Cover crops**
5. Reduce or no till
6. Compost/manure
7. Rotational grazing



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Organic Grower Plan

USEFUL FOR ANY SUSTAINABLE FARM BUSINESS

1. Organic Crop Production Summary
2. Parcel Information
3. Crop Rotation
4. Water & Natural Resources
5. Seeds & Planting Stock
6. Greenhouse and Indoor Production
7. Mushroom Production
8. Pest, Weed, and Disease Management
9. Inputs
10. Compost & Animal Manure
11. Assurance of Organic Integrity
12. On-Farm Processing



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Initiatives

- FARMER SURVEY
- BARRIER BUSTING
- OUTREACH/ WORKSHOPS
- TECHNICAL ASSISTANCE
- MENTORING

• LFFFC Organic Farming Subcommittee

- Local Cost Share
- Buffer Establishment
- Organic Inputs
- Organic Market Development

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