# Lab 10 Response: Exploring Your Foodshed

**Directions:**Use the information from your food audit (as recorded in Datasheets 1 and 2), your notes from your walk through the grocery store (as recorded in Datasheet 3), and other supporting information. In addition to the sources provided in the Lab Response below, you may use other credible resources, e.g., from your textbook or the internet. Embed citations within each response as appropriate. Provide complete citations for your resources, not simply URLs/web addresses.

**Remember to submit Datasheet 1, Datasheet 2, and Datasheet 3 with your lab response.**

## Questions

1. **Research process and insights**

How did you go about researching the information to complete Datasheets 1 and 2? Describe your research process and the sources you used. Which food items were easy to research? Which food items proved challenging? What information about your food was easy to find?  What information was difficult to find? What does that tell you about our food system?

1. **The trophic level efficiency of your food choices**
   1. Show your calculations and report the proportion of plant and animal sources represented in your food choices.

proportion of plant sources (%) =

proportion of animal sources (%) =

* 1. At what trophic level do you predominantly eat - at the second trophic level (primarily eating plants) or at the third or higher trophic levels (primarily eating animals)? Apply the second law of thermodynamics and explain how efficient your food choices are in terms of energy flow, i.e., what are the consequences of eating at the trophic level that you do?

1. **The biodiversity impacts of your food choices**
   1. Report total number of plant sources recorded in your 4-day food audit. Discuss if this number is typical for you. If not, how much more variety do you think your diet has? Provide a number and a rationale.
   2. Show your calculations and report the proportion of actively cultivated food crops in your diet (%):
   3. Show your calculations and report the calories from *wheat* in your diet (%) =
   4. Show your calculations and report the calories from *corn* in your diet (%) =
   5. Show your calculations and report the calories from *rice* in your diet (%) =
   6. Show your calculations and report the calories from *potatoes* in your diet (%) =
   7. According to agronomist György Füleky (2009), “There are 350,000 plant species in the world, and about 80,000 are edible for humans. However, at present only about 150 species are actively cultivated directly for human food or as feed for animals, and of these, 30 produce 95 percent of human calories and proteins. About half of our food derives from only four plant species: rice (*Oryza sativa*), maize (*Zea mays*), wheat (*Triticum* ssp.), and potato (*Solanum tuberosum*)” (p. 1). Discuss the ways in which your diet confirms and/or contradicts these facts about biodiversity in human diets. As part of your response, be sure to include supporting evidence from your calculations above.
   8. Considering both the proportion of your food that comes from plant versus animal sources, and the diversity of your plant sources, explain whether and how your food choices help to enhance biodiversity and/or undermine it. Use *at least two specific examples* to support your conclusions.

Here are a few sources to help you with your analysis:

* Our World in Data has several articles including [Half of the world’s habitable land is used for agriculture](https://ourworldindata.org/global-land-for-agriculture), and [To protect the world’s wildlife, we must improve crop yields — especially across Africa](https://ourworldindata.org/yields-habitat-loss).
* The FoodPrint website offers the following discussion about [Biodiversity and Agriculture](https://foodprint.org/issues/biodiversity-and-agriculture/).

1. **Impacts of food production, transportation, processing, and packaging**
   1. From Datasheet 2: What did you learn about *how your food is grown*?
   2. From Datasheet 2: What did you learn about *where your food is grown and how far it travels* to get to you?
   3. From Datasheet 2: What did you learn about *the processing and packaging involved in your food choices*? Discuss things like the types of food processing involved, the predominant types of packaging, and whether the packaging is recyclable.
   4. Report the carbon, nitrogen, and water footprints associated with your food choices from the foodprint calculator:
      * Carbon emissions:
      * Nitrogen waste:
      * Water consumption:
   5. Based on your assessment above (i.e., 4a-4d), reflect upon and discuss the environmental impact of your food choices. Were you surprised by these impacts? Are you concerned about these impacts? Which impacts concern you most? Explain your thinking. Use *at least three specific examples* to support your conclusions.

There are several sources that can help you with your analysis:

* + - Our World in Data has several [charts](https://ourworldindata.org/data?topics=Environmental+Impacts+of+Food+Production) as well as [brief articles](https://ourworldindata.org/environmental-impacts-of-food) that explore the environmental impacts of food production, such as the [connection between food production and greenhouse gas emissions](https://ourworldindata.org/food-ghg-emissions), [food transportation](https://ourworldindata.org/food-choice-vs-eating-local), and [organic versus conventional agriculture](https://ourworldindata.org/is-organic-agriculture-better-for-the-environment).
    - The Water Footprint Calculator has information on [the waterfootprint of your food](https://watercalculator.org/water-footprints-101/water-in-your-food/).
    - The FoodPrint website offers information about various [food- and agriculture-related issues](https://foodprint.org/the-total-footprint-of-our-food-system/issues/) such as [how agriculture contributes to water pollution](https://foodprint.org/issues/how-industrial-agriculture-affects-our-water/) and [the environmental impact of food packaging](https://foodprint.org/issues/the-environmental-impact-of-food-packaging/).
    - Center for Sustainable Systems at the University of Michigan provides a couple of factsheets on the [U.S. Food System](https://css.umich.edu/publications/factsheets/food/us-food-system-factsheet) as well as [food footprints](https://css.umich.edu/publications/factsheets/food/food-footprints).
    - Oregon’s Department of Environmental Quality has two reports on [food transportation](https://www.oregon.gov/deq/FilterDocs/PEF-FoodTransportation-ExecutiveSummary.pdf) and [food packaging](https://www.oregon.gov/deq/FilterDocs/PEF-Packaging-ExecutiveSummary.pdf).

1. **How the marketplace shapes your diet**

From Datasheet 3: Summarize and discuss what you learned about food choices available in the marketplace. What did you learn about food choices and how you (and your family) shop for food? What factors are important to you when you (and your family) shop for food? How do food labels, store marketing, prices, etc. influence how you shop? Were you surprised by anything you learned? Explain your thinking. Use *at least three specific examples* to support your conclusions.

1. **Industrial versus responsible eating**
   1. In [The Pleasures of Eating](https://www.ecoliteracy.org/article/wendell-berry-pleasures-eating), Wendell Berry distinguishes between what he calls “industrial” and “responsible” eaters. Briefly define the two categories, “industrial eater” and “responsible eater,” as you understand them after reading the essay.
   2. After reviewing your diet for this lab, would you consider yourself a “responsible” eater? An “industrial” eater? Something between the two? Something besides these two (a category of your own)? Explain your choice. As part of your response, also reflect on the basis for your diet choices (i.e., why do you eat what you eat and eat it in the way that you do).
   3. How does the marketplace, as revealed in the grocery store you explored, support "industrial" or "responsible" eating? Explain your response.
2. **Lab analysis and reflection**
   1. Based on what you learned about the environmental impact of your food choices would you recommend your food choices? *Explain and support your recommendation using data you obtained and analyzed in the course of doing this lab*, which included: the trophic level efficiency of your food choices; the biodiversity impacts of your food choices; and the environmental impacts of your food choices, like how your food is grown, processed, and packaged, and how far it travels. Use *at least four specific points of evidence* to validate your recommendation.
   2. How could you reduce the environmental impact of your diet and become a more "responsible" eater? *Identify three ways.*Besides the resources you have already reviewed in this lab, here are some additional sources that can help you with this question as well as the last one:

* The [FoodPrint website has information about how to make sustainable food choices](https://foodprint.org/eating-sustainably/" \t "_blank).
* The [Nutrition Source provides information how to make diets more sustainable](https://nutritionsource.hsph.harvard.edu/sustainability/plate-and-planet/).
* The [Water Footprint Calculator has information on how to reduce your food waterfootprint.](https://watercalculator.org/how-to-save-water/change-your-diet/)
  1. How could the marketplace promote more “responsible” eating? *Identify two ways.*