

# Day 3: Food on Your Land

## Talk: Flavor and Ecosystems



- Food is a nexus off many systems
  - What is a system?
    - Systems are sets of interconnected things whose relationships have a function.
    - Society is a system of people connected by relationships.
    - A forest is a system of organisms transferring nutrients.
    - The brain is a system of neurons connected by synapses.
  - Why systems surprise us?
    - Adapted from "Thinking in Systems" by Donella Meadows
      1. Everything we think we know is a model.
      2. We've made some very good models of reality.
      3. However, models are always incomplete.
    - Humans tend to represent the world as linear, but systems behave "non-linearly" (i.e. disproportionate responses).
    - System behavior is often highly complex from indirect effects.
    - Alligators, frogs and snakes
      - Managers of the Okefenokee Swamp wanted to increase populations of

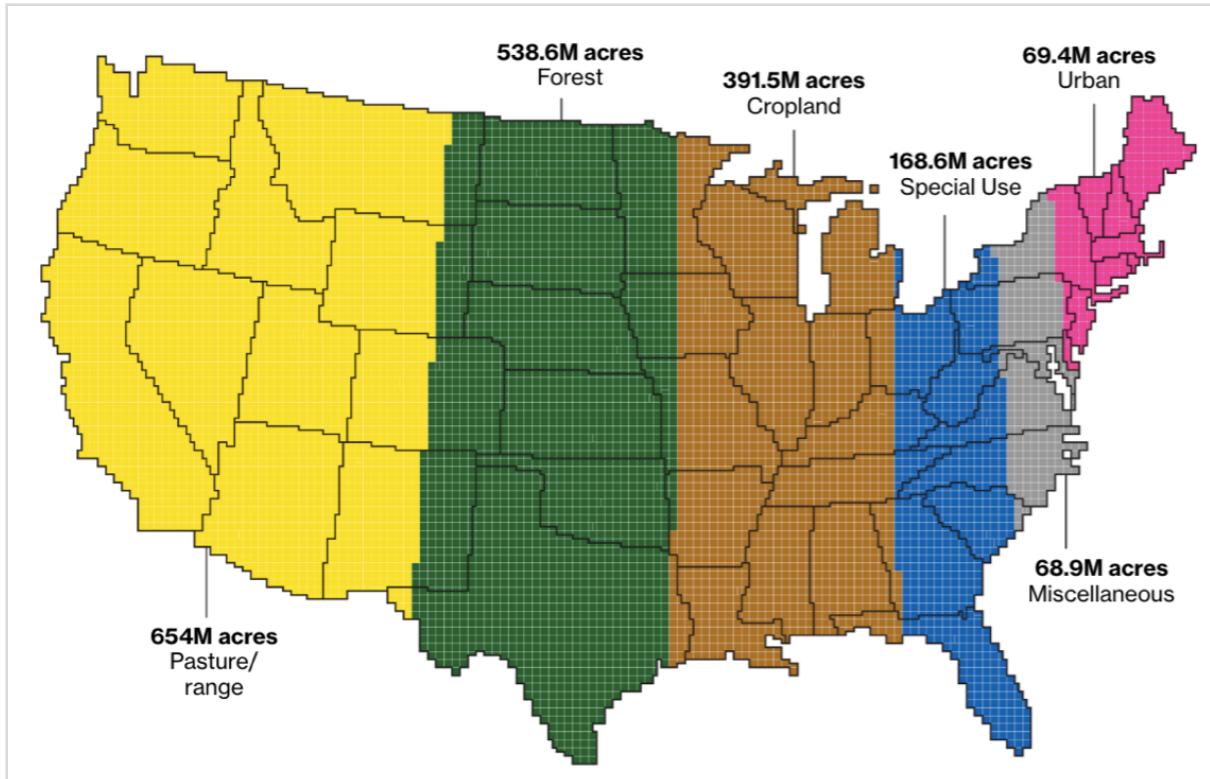
of frogs in the swamp. Alligators are predators of frogs, and intuition might suggest that decreasing alligators would lead to more frogs.

- However, alligators also prey on snakes, which are much more impactful predators of frogs than alligators.
- So, actually the management decision is counterintuitive.
- What are food systems?
  - Ecosystems = Water, Energy, Resources, Organisms
  - Human = Economic, Social, Information, Cultural
  - Consider a Farm:
    - Crops rely on nutrients supplied by its roots and soil microorganisms.
    - Humans harvest crops using equipment created by manufacturing systems.
    - Products are shipped via shipping supply chains.
    - Foods are sold via social interactions and prepared using human information systems.
- Feedbacks from flavor to landscapes
  - Places we don't eat are not experienced and valued the same way
  - Consider the Carrot (from "The Third Plate" by Dan Barber)
    - Compare the sugar content of two carrots: one organic and one from Stone Barns.
    - The Stone Barns carrot had extremely high levels of sugar and incredible flavor.
    - The organic carrot had absolutely no sugar and no flavor.
    - Barber goes on to discuss how animals, including humans, compensate for lack of nutrients (indicated by flavor) by increasing consumption.

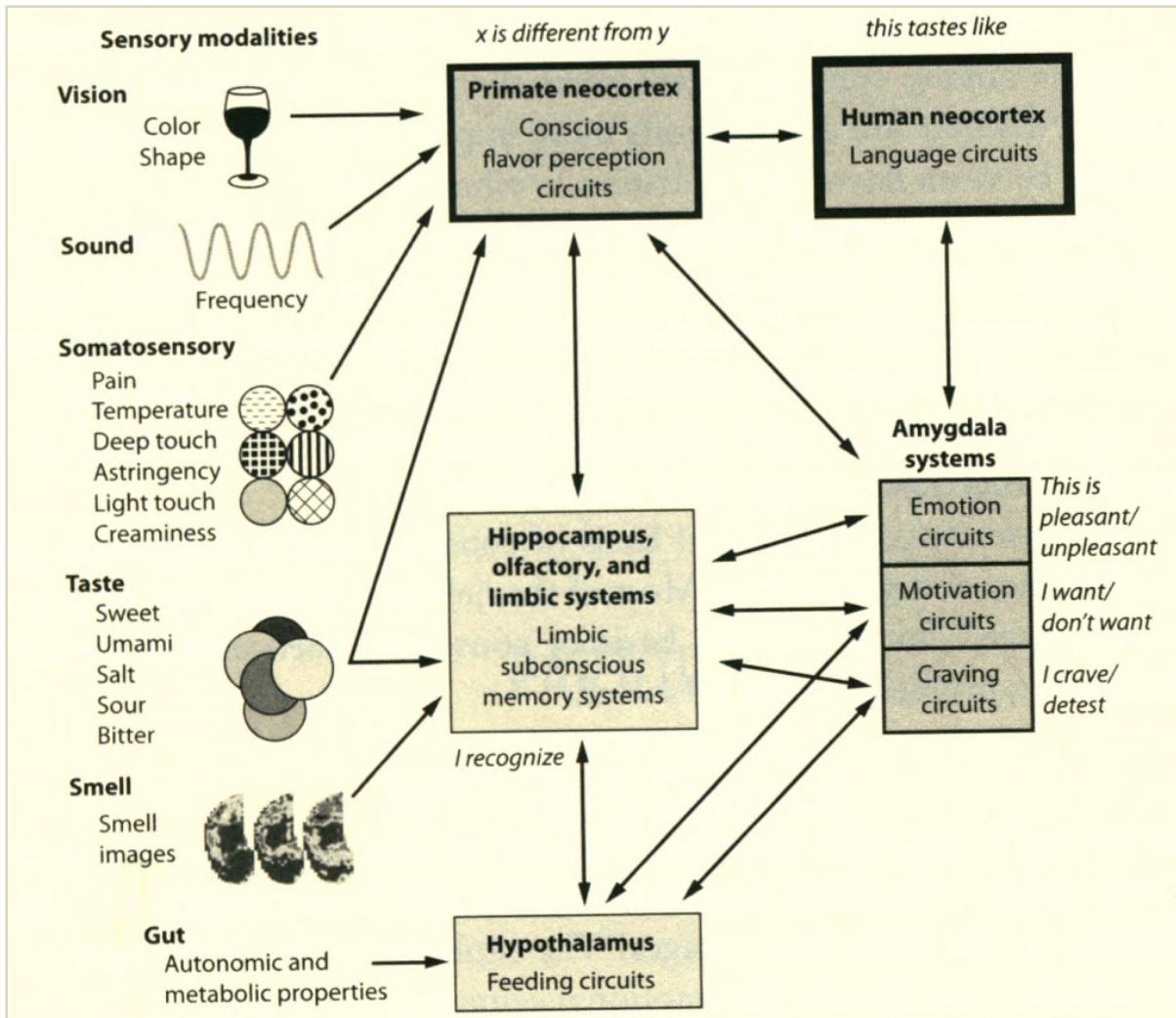
*A nutritionist would say, 'No, a carrot is a carrot is a carrot.' A scientist would say, 'No difference' But taste the damn carrot.*



- Consider the Cow



- From "How America Uses Its Land by Dave Merrill and Lauren Leatherby)
  - 41% of land in the US is devoted to raising cattle for beef.
  - *How much of this is overconsumption driven by issues with flavor?*
- The Food Flavor Systems



- Flavor connects directly to emotion, memory and planning centers of the brain without direct connection to the conscious centers of the brain.
- Without conscious observation of behavioral patterns, food decisions can be completely driven by flavor circuits.
- This supports hypotheses about issues with food overconsumption, such as obesity, and points to the need for considering flavor in discussions of food sustainability.



- Living in Food Systems
  - Adapted from "Thinking in Systems" by Donella Meadows
  - 1. Observe systems in time (i.e. behavior, not just structure)
  - 2. Challenge your models by making predictions
  - 3. Acknowledge the importance of things you can't observe
  - 4. Learn from the system (feedback to feedbacks)
  - 5. Stay a humble
  - 6. Celebrate complexity
  - 7. Expand horizons: time, thought and caring

*If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.*

– Aldo Leopold

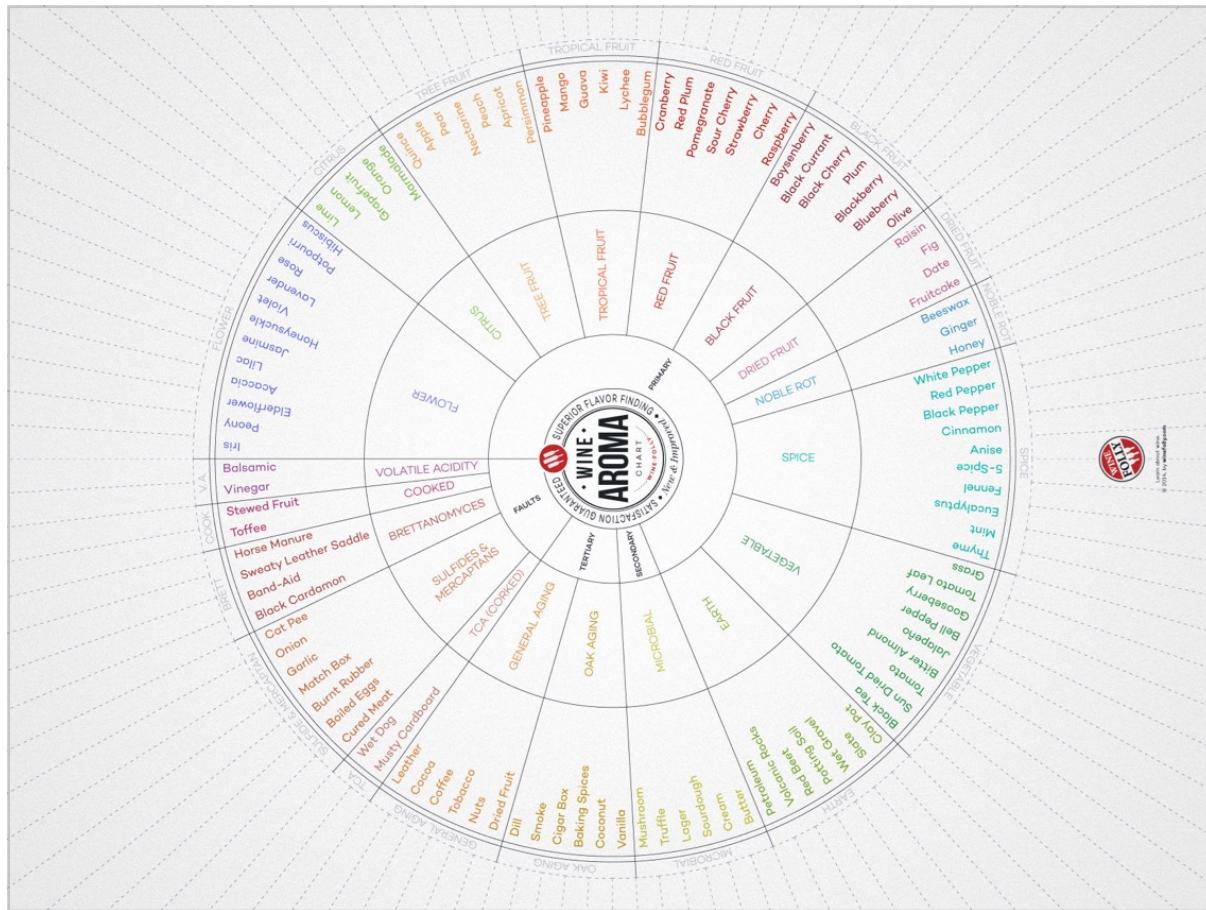
*How much of our landscape and ecosystems is dominated by consumption driven by issues of flavor impacting how we value food?*

### Readings

- Barber 234-250
- Meadows 11-14

- Jacobson 20-28

## Lab: Terroir



- What is terroir?
  - A sense of place conveyed by a wine (or other food).
  - Contributors to wine flavor:
    - Genetics = species, varietal, clone
    - Environment = Soil, viticulture, weather, climate, organisms
    - Oenology = harvest, crush, filtering, fermenting, aging
    - Presentation = narrative, labeling, service, food
- **Activity: Tasting Terroir**
  - Purpose: taste wines to explore the concept of terroir.
  - Part 1: Sauvignon Blanc
    - Sauvignon Blanc is a variety of grape used to make many styles of white wine throughout the world with flavors driven by growing climate.
    - Warmer regions can have strongly grassy or sweet tropical fruit aromas, such as papaya, with some citrus (e.g., grapefruit) and stone fruit (e.g. peaches) aromas.
    - Cooler regions tend to produce wines that are dominated by herbal or "green" flavors, such as bell pepper, and floral aromas.
    - Three major regions known for the sauvignon blanc wines are

Marlborough Valley (New Zealand), coastal California and Loire River (France).

- These locations produce wines from sauvignon blanc with distinct aromatic profiles:
  - New Zealand: tends to be dominated by sweet tropical fruits.
  - California: historically “aggressively grassy”, now are often influenced by New Zealand with more tropical fruits; however, some, particularly those produced by Robert Mondavi vineyards, have strong melon aromas.
  - France: tends to be cooler, and have higher acidity and “greener” aromas with “mineral” flavors (think of the smell of wet stone or salt, maybe the seashore).
- Taste each wine and make tasting notes.
  - What are at least three aromas that you detect?
- **Which wine do you think is from where?**
- Part 2: Chardonnay
  - A variety of grape that is used to make many types of white wines. It is capable of growing in a wide range of conditions, and, because of this, its flavor often reflects the manner in which the wine was made.
  - Two distinct examples are chardonnays from California and Burgundy (France).
    - *California*: typically fermented using techniques often applied to red wines and aged in oak, they tend to have aromas of vanilla, butter and tropical fruits and often feel more viscous (e.g., silky or oily).
    - *Burgundy*: some wine styles here are required by law to be fermented in stainless steel not oak without the additional fermentation methods as used in California, and because of this tend to have aromas of citrus and apple aromas and are typically more acidic and less viscous.
  - We will taste three chardonnays, two from California and one from France (Burgundy).
  - Taste each wine and make tasting notes.
    - What are at least three aromas that you detect?
  - **Which wine do you think is from where?**

- Weekly Forage

- Knotweed (*Fallopia japonica*)
  - Identification: stems are hollow and dead stems are woody tending to persist and form thickets similar to bamboo. Young shoots are red eventually

forming "jointed" stems with oval, toothless, hairless leaves.

- Timing: Early spring.
- Environment: highly invasive, seems to grow almost anywhere! Often found along rivers in Boston from the original plantings by Frederick Law Olmsted.
- Methods: The young shoots can be cooked in a manner similar to asparagus. Can be pickled but don't over cook, as they can become mushy. The shoots have a sour flavor similar to rhubarb and can be used similarly in pies and other pastries. **Note:** knotweed is high in oxalic acid, so avoid it if you are limiting your consumption of foods with oxalic acid, like rhubarb or spinach.
- Local Winery: Turtle Creek in Concord, MA.