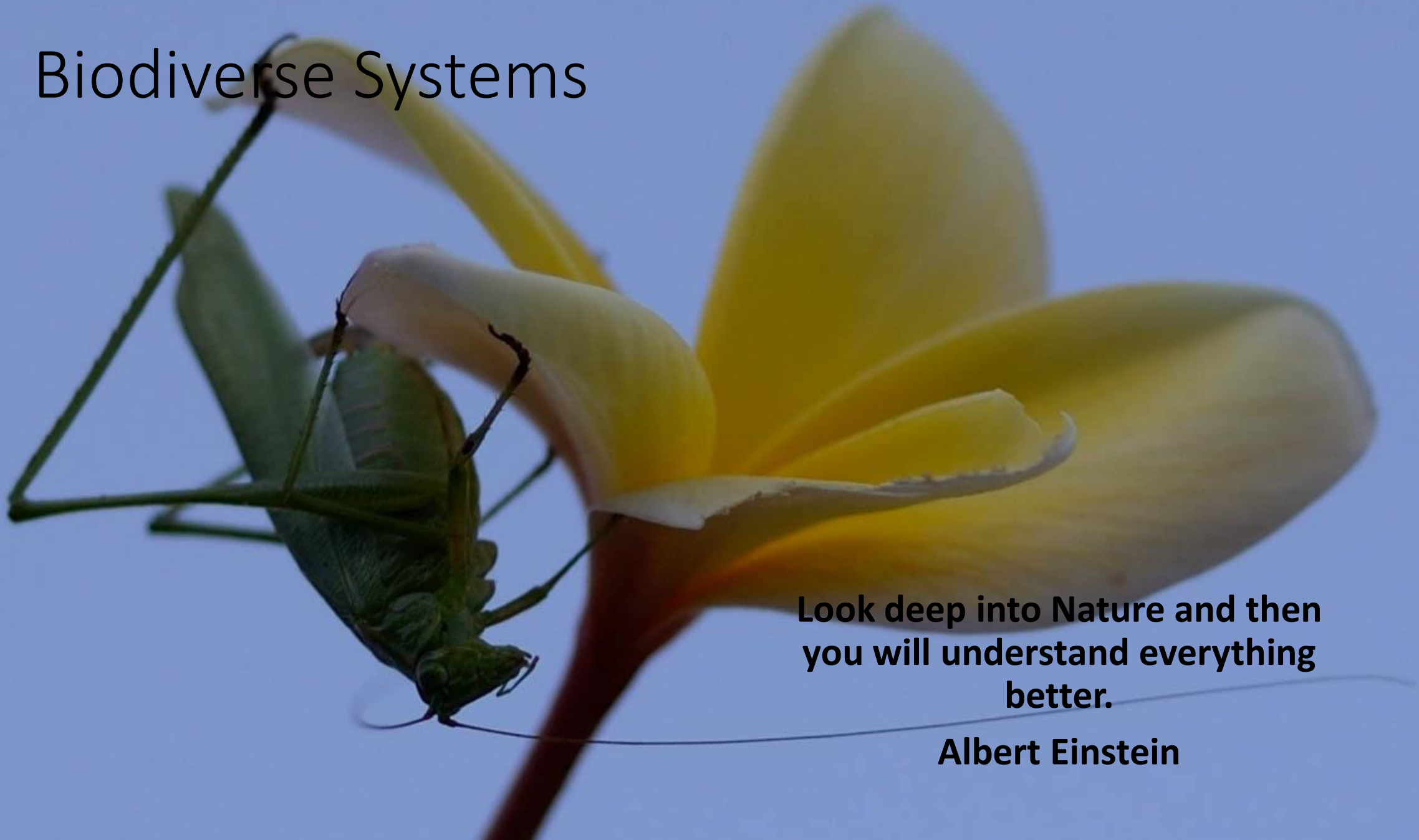
Biodiverse Systems



Look deep into Nature and then you will understand everything better.

Albert Einstein

Emmy's Earth: Biodiverse Systems

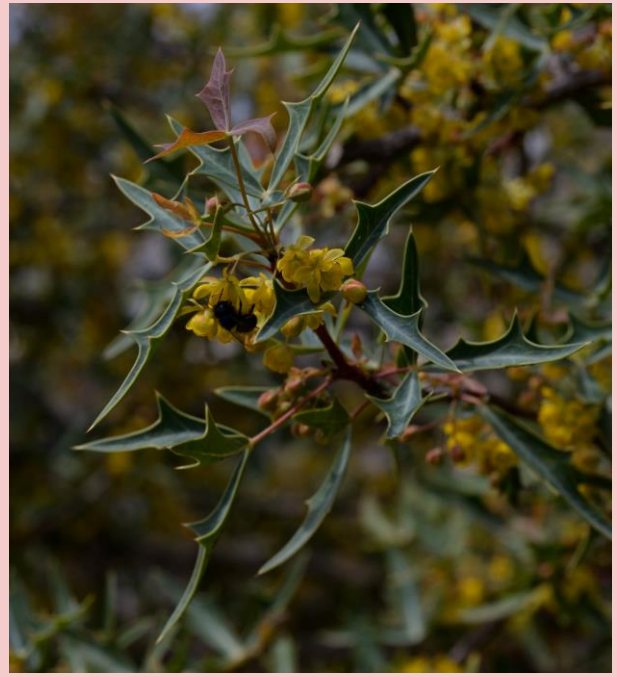
Goal: Increase **biodiversity** in the urban setting and by doing so create beauty and recharge for humans. In my yard, I:

1. use the resource elements of food, water and shelter to create habitat for local organisms,

2. have pollinator and butterfly gardens to provide appropriate resources all year long,

3. garden for wildlife and my yards is a certified National Wildlife Federation Wildlife Habitat and a North American Butterfly Association Butterfly Habitat.

4. include spaces for humans to sit, observe, and connect with Nature.



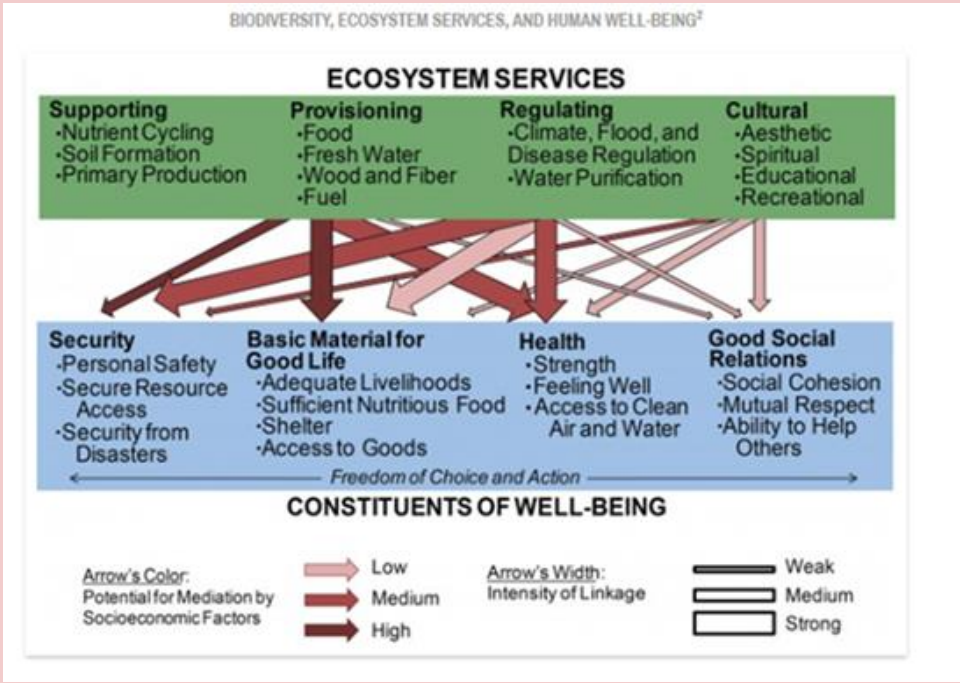
Why is this important? Because we are starting to recognize that our lives depend on relationships in natural ecosystems!

- BIG IDEA 2: **INTERACTIONS BETWEEN EARTH SYSTEMS (ERT)** The Earth is one interconnected system.
- BIG IDEA 3: **INTERACTIONS BETWEEN DIFFERENT SPECIES AND THE ENVIRONMENT** (EIN) Humans alter natural systems and have had an impact on the environment for millions of years
- BIG IDEA 4: **SUSTAINABILITY** (STB) Human survival depends on developing practices that will achieve sustainable systems.

From: AP Environmental Science Course and Exam Description: bttps://apstudents.collegeboard.org/sites/default/files/2019-05/ap-environmental-science-course-and-exam-description.pdf

We are disconnected

Profound changes are occurring in the American public's connections to nature, the outdoors, and wildlife. These pose a nationwide problem since human health and well-being depend on beneficial contact with nature.



"These trends pose a nationwide problem, since overwhelming evidence shows the **physical, psychological**, and **social well being of humans depends on** contact with **nature**."

From: The Nature of Americans National Report p. 3

I am only **ONE** person, what can I do?

- You can **CARE**
- You can **CREATE HABITAT**
- You can do **NO HARM**
- You can **FIND JOY** in Nature

WHAT do you need to survive?

Habitat: where individuals of a species live: contains food, water, and shelter to meet the organism's needs.

Resources: things an organism needs to live: food water and shelter

Plant mostly natives that bloom throughout the year in a variety of shapes, colors, and sizes….

FOOD

for urban wildlife

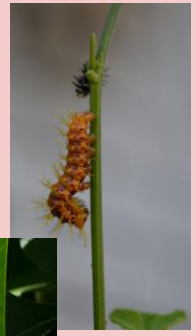
Color

Shape

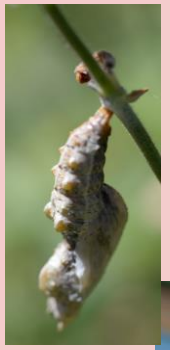
… and you will have pollinators, butterflies, and other inverts as well as birds, turtles, lizards and small mammals!

Season

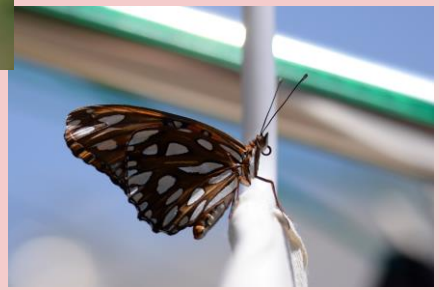
Adults and larvae may have different foods!



Passio n vine

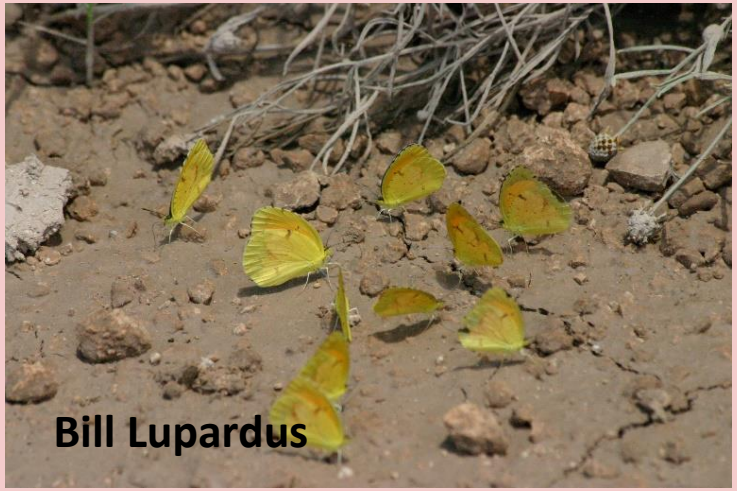


Gulf Fritallary



Water

- Shallow basins
- Pebbles
- Wet mud
- Mosquito deterrent



- Leave bare ground and avoid weed cloth.
- Leave brush piles, hollow twigs and rotten logs; be slow to take down garden.
- Maintain cleanliness.

Build a Bee Nest Bundle

PROMOTING BEES IN YOUR NEIGHBORHOOD

BUILD A BEE NEST BUNDLE

- Instead of drilling holes into a piece of wood, you can provide premade tunnels in twigs for bees.
- Cardboard straws, either prepackaged in a ready-made container and available from an insect supply store, or singly, can be purchased.
- Alternatively you can tie together bundles of hollow elderberry stems, pieces of bamboo, teasel, reeds, yucca stems, or other hollow stemmed plants. Roughly one to two dozen stems can be bundled together.
- The straws should be roughly 6–9 inches in length, and it is important that one end of the straw is closed. Ideally, cut your natural stems just below a node, so that one end is naturally sealed. Otherwise, a small dollop of caulk will work.
- Straws can be stuffed inside a piece of 2- or 3-inch PVC pipe with one end capped. Don't be surprised if some bees nest in the spaces between your straws too!

Information from: Wilson J.S. and O. Messinger Carril. The Bees in you Backyard. Princeton University Press. Princeton NJ. p. 18 and 58.

Shelter

But not just in yards…

Anywhere!

Schools and Churches

Yards

Agricultural Areas

Urban Commons

What if nothing moves in your landscape but a lawnmower?

--Laurie Ott