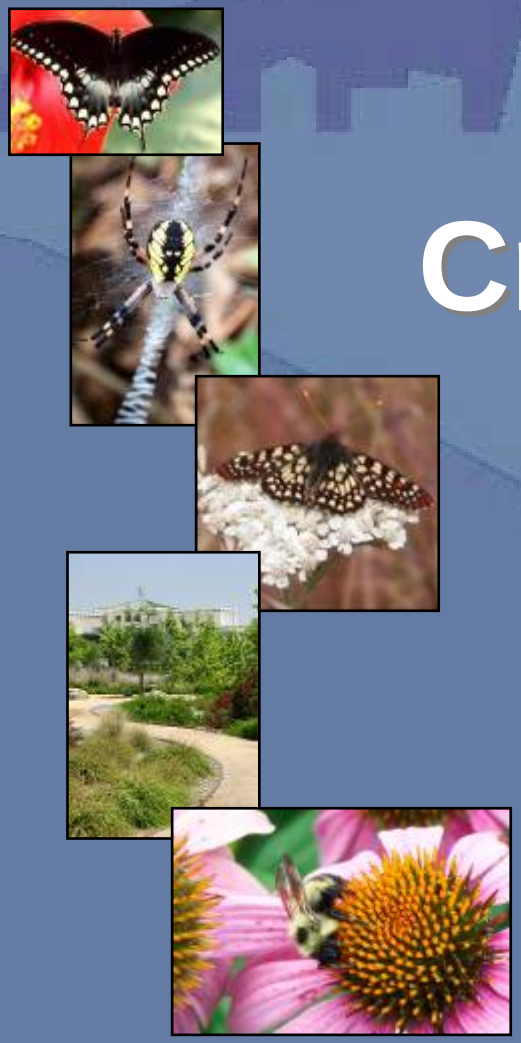
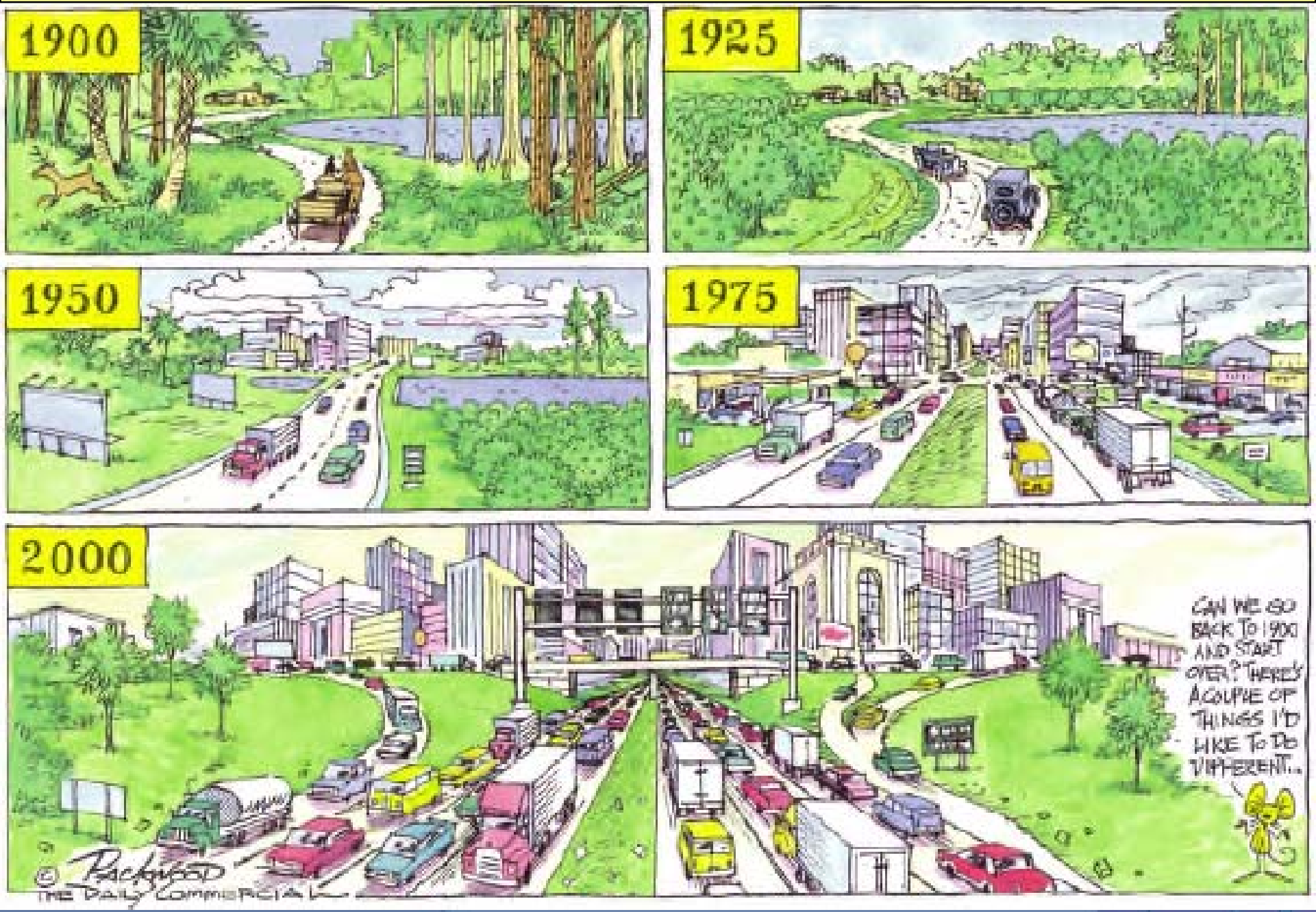


Creating a Backyard Wildlife Habitat

Scott Oneto
University of California
Cooperative Extension

A Short History of U.S. Development



Impacts to Wildlife

Photo by Lynn Betts, USDA / NRCS




Impacts to Wildlife

- Roadkill
  - 1 million animals are killed every day on roads
  - Over 200 human fatalities annually
  - Over 1.5 million deer are killed every year in US by vehicle collisions

40 million acres of lawn in the US

1 trillion gallons per year


80 million pounds of pesticides
100 million tons of fertilizer

What can we do?

1. Identify our needs
2. Identify the needs of wildlife
3. Modify our landscapes to best fit those needs

Benefits of Enhancing a Backyard Habitat

- Value for Wildlife
  - Wildlife will be attracted to your yard if you provide what they need to survive
  - A diverse habitat will attract more species

Benefits of Enhancing a Backyard Habitat

- Insect Control
  - Let the wildlife eat the insects
  - Relying on wildlife to control insect pests can greatly reduce or eliminate the use of pesticides

Benefits of Enhancing a Backyard Habitat

- Food
  - Many of the plants we use for food are also valuable to wildlife
  - Many herbs are used by bees and butterflies
  - Many fruiting shrubs, vines and trees are used as nectar for insects, as well as fruit for wildlife

Habitat Basics

- The secret in attracting wildlife is to “restore their natural habitat”
- Creating a wildlife habitat is more than planting a pretty garden
- When planning your garden, look to the natural ecosystems for inspiration

Importance of Balance

- The plants, animals and other living things growing in an area have interacted with one another for millions of years
- Formed a balanced ecosystem

Upsetting the Balance - Exotics

- Moving plants and/or animals to areas were they are not native can be harmful
- Introduced species can become invasive

Establishing Balance in Your Yard

- Plants are the tools to create wildlife habitat
- Native wildlife have co-evolved to depend on the food and other habitat requirements provided by native plants
- The conditions that have shaped the native plant communities that naturally occur where you live include
  - Soil moisture and nutrient level
  - Sun and shade exposure
  - Climate and precipitation patterns
  - Relationship with other plants and animals in the community

The Four Basic Wildlife Needs: Food, Water, Cover and Space

Providing Food for Wildlife

- One element most likely to attract wildlife
- Supplies energy and nutrients
- Plant a variety of food including fruits, berries, grains and seeds, nuts and acorns, browse plants, forage plants, and aquatic plants
- Wildlife needs change throughout the year
- Insects and other invertebrates that are attracted to the flowers, shrubs, and trees will also serve as food

Plants as Food

- Start with natives
- Plants produce attractive flowers, fruits, and seeds for wildlife
- Some wildlife depend on only one or a selected number of plants to survive
- Birds rely heavily on insects to feed young

Food in All Seasons

- Provide a mix of plants that provide a food source throughout the year
- Provide ample food in autumn and winter
- Migratory species need a steady source of food over a wide geographic area
  - Monarch butterflies are one of the few migratory insects

The Role of Predators

- Predators play an important role in your wildlife habitat
- Predators keep the ecosystem in check
- Predators come in a variety of shapes and sizes
  - Spiders / Insects
  - Amphibians / Reptiles
  - Birds / Owls
  - Bats

Supplemental Feeders

- Best way to provide food to wildlife is to restore native plant communities
- Sometimes plants can’t provide enough food
- Feeders should be used to supplement the natural food you provide through plants

Bird Feeders

- Birds can be safely fed with feeders
- Birds rely on natural food sources first and use feeders only to supplement their diet
- Birds won’t become unnaturally dependent on feeders
- Feeders great way to observe birds
- Add grit to birdseed in the form of fine sand or crushed oyster shells/egg shells







Best Seed for Feeders

- Black-oil sunflower
- Striped sunflower
- Sunflower hearts (hulled sunflower)
- Safflower
- Niger (aka thistle)
- Red millet
- White millet
- Cracked corn
- Peanuts (whole, shelled, or pieces)

Bird Feeding

Suet

- High energy food source for winter
- Rendered animal fat
- Many birds will eat suet (woodpeckers, nuthatches, chickadees, titmice and hawks)
- Feed only from October through April or May, depending on temperature

Bird Feeding Tips

- Use only good quality food
- Store food in a dry place
- Discard musty, moldy or food that rodents have been in
- Use feeders, don’t spread seed on the ground
- Keep feeders away from areas that provide cover for predators
- Avoid crowding by providing ample feeders
- Every few days clean up waste food and droppings from the ground


Nectar Feeders

Nectar Recipe

- Hummingbirds
  - 1 part sugar : 4 parts water
- Orioles
  - 1 part sugar : 8 parts water

- Boil and let cool
- Never use artificial sweeteners or honey
- Food coloring is not necessary

Nectar Safety

- Nectar can be kept in the refrigerator for a week
- Feeder nectar ferments in two to three days
- Drinking fermented nectar causes enlarged livers
- Only provide enough nectar to last 2 to 3 days
- Buy nectar feeders that come apart so all surfaces can be scrubbed and cleaned
- Nectar feeders should be cleaned and disinfected every 2 to 3 days


Other Bird Feeders

Butterfly Feeders

- Butterflies
  - 1 part sugar : 18 parts water
- Boil and let cool
- Butterflies will also consume sports drinks
- Nectar can be put in a feeder or shallow dish
- Change every few days

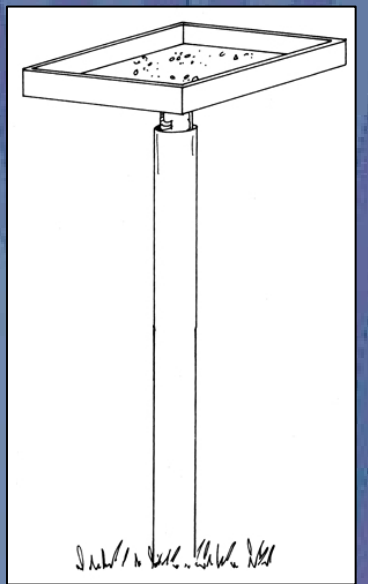
Butterfly Feeders

- Not all butterflies consume nectar!
- Some feed on tree sap, fermenting fruit and animal manure
- Hang ripe fruit or place in a shallow dish
- Mash skin so fruit oozes out
- To make more attractive, splash sugar water on fruit

Keeping Squirrels Out of Bird Feeders

Squirrels are “crafty”

- Use a baffle
- For post mounted feeders, put a 4 – 6 inch pvc pipe around the base



Keeping Squirrels Out of Bird Feeders

- Bird cages or screens

Keeping Squirrels Out of Bird Feeders

- Gravity feeders
  - uses gravity to close seed ports based on weight
- Multiple other “Squirrel Proof” feeders

Squirrel meets the Yankee Flipper.flv

Keeping Squirrels Out of Bird Feeders

- Changing seed type
  - Use safflower instead of sunflower
- Add cayenne pepper to your seed
  - Birds are not affected by capsaicin

- If all else fails…


08/20/2005

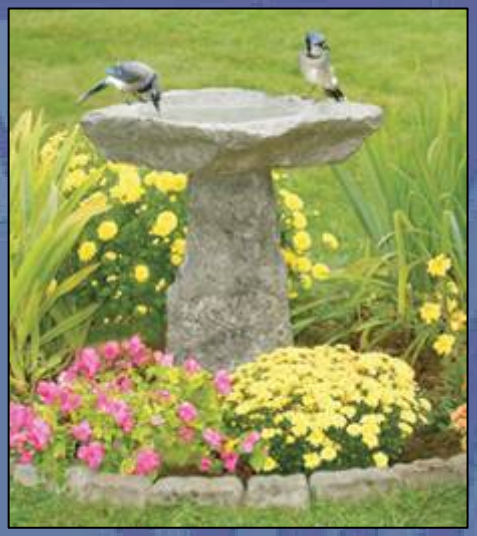
Squirrel Feeders

Feeding other Wildlife

- Never feed wildlife food scraps, trash or pet food
- Some wildlife can become dependent upon humans as a source
- Wildlife can lose their natural fear of humans and potentially be dangerous

Providing Water for Wildlife

- All wildlife need water
- Some species feed on aquatic prey
- Water provides cover and many species need water to reproduce



Providing Water for Wildlife

- Many ways to provide water
- The type will determine the species of wildlife you attract
- If you have a water habitat on your property, preserve it
- If you don’t, consider creating a pond, water feature, or use birdbaths
- When creating a water feature keep wildlife needs in mind

Birdbaths

- Birdbaths can replace natural water sources
- Many types and styles
  - Water should be no more than 3” deep
  - Have a rough, gradual sloping bottom to provide good footing
- Adding pebbles or a large flat rock can make baths more attractive to birds

Birdbaths

- Water should be emptied and refilled every 2-3 days to prevent mosquito larvae from maturing
- Place birdbaths 10 to 12 feet from cover
- In areas that freeze, consider a heated water source

Providing Water for Wildlife

- Provide ground level water for birds as well as rabbits, tortoises, frogs, and other wildlife that can’t fly or climb
- Create a mud puddle for butterflies

Providing Water for Wildlife

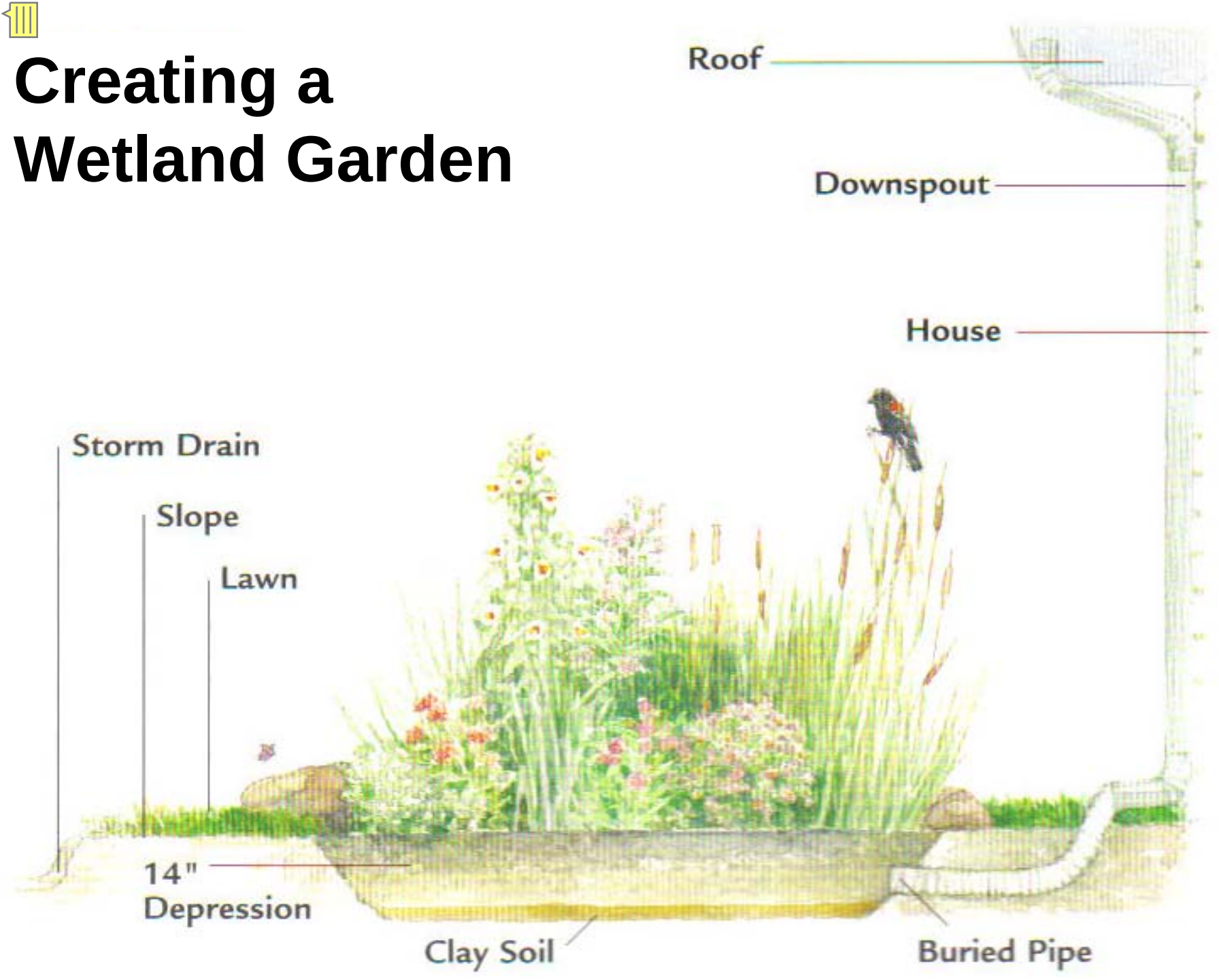
Puddling station for butterflies

Butterflies obtain water and minerals from liquid in pore spaces.

Design a Puddling Station

1. Layer sand in saucer
2. Add layer of compost
3. Place pebbles on top
4. Add water slowly (to pebble layer)
5. Place saucer on upside down pot

Creating a Wetland Garden



Maintaining Your Water Features

- Consider the amount of maintenance
- Small, or shallow water sources can be easily polluted or dry up
- Small sources need to be cleaned and refilled frequently
- Water gardens provide a number of ecosystem services: food, cover, places to raise young, natural filters to remove waste and nutrients
- Be careful of mosquitoes
- Be cautious when using non-native fish including koi and goldfish

Providing Cover for Wildlife

- Cover provides protection from elements and from predators
- Cover is used by predators to stalk prey
- Cover is used for feeding and resting
- Types of living cover include; trees, shrubs, grasses, flowering plants
- Non-living cover include; rock piles, brush piles, rock walls, cavities in trees, birdhouses

Restoring Cover

- Start out with native plants
  - Best food sources and best cover
- Wildlife have co-evolved with native plants
- Mimic nature
  - Think diversity and layers

Plant Species Diversity

- Having a variety of trees, shrubs, perennial and annual flowers and grasses will attract more varied wildlife
- The presence of many species makes it less likely that pests and diseases will cause severe problems in your landscape
- Diverse plants can provide a wider abundance of food throughout the year

Plant Structural Diversity

- Shape and size of different plants combine to create a structure in your landscape both vertically and horizontally
- Increase the diversity at edges by planting structurally different plants (turf that meets up to a line of trees)
- Add to the vertical diversity by adding more layers of vegetation between the ground and the tree tops

Restoring Cover

- Non-living things also serve as critical cover


Habitat for Humanity
Detroit
Mobil
313-521-6691

Providing Space for Wildlife

- Space for wildlife to bear and raise young
- Space for courtship and mating
- Space and materials for nest building
- Space to dig dens and burrows
- Safe conditions and space for laying eggs or live birth
- Adequate space and resources to raise young

Providing Space for Wildlife

Space

- Many species are territorial, defending an area that contains food, water and cover
- Other animals may occupy more of a home range in which they rely on food, water and cover
- The amount of space needed varies and may change throughout the year

Natural Nesting Places

- Preserve and enhance native plant communities
- Importance of snags, downed trees and brush piles


Houses for Critters

Bird House

- A.k.a nest boxes, used by cavity nesting birds
- Not all bird houses are the same
- Birds are very particular and have specific requirements ranging from hole size to depth of cavity


LOVE
SHACK


i'm in ur bird house
waitin 4 snaks


VACANT

Bats

- More species of bats than any other group of mammals
- Consume millions of insects each night
- Not all bats eat insects
- 3 species of “vampire” bats

Myths about bats

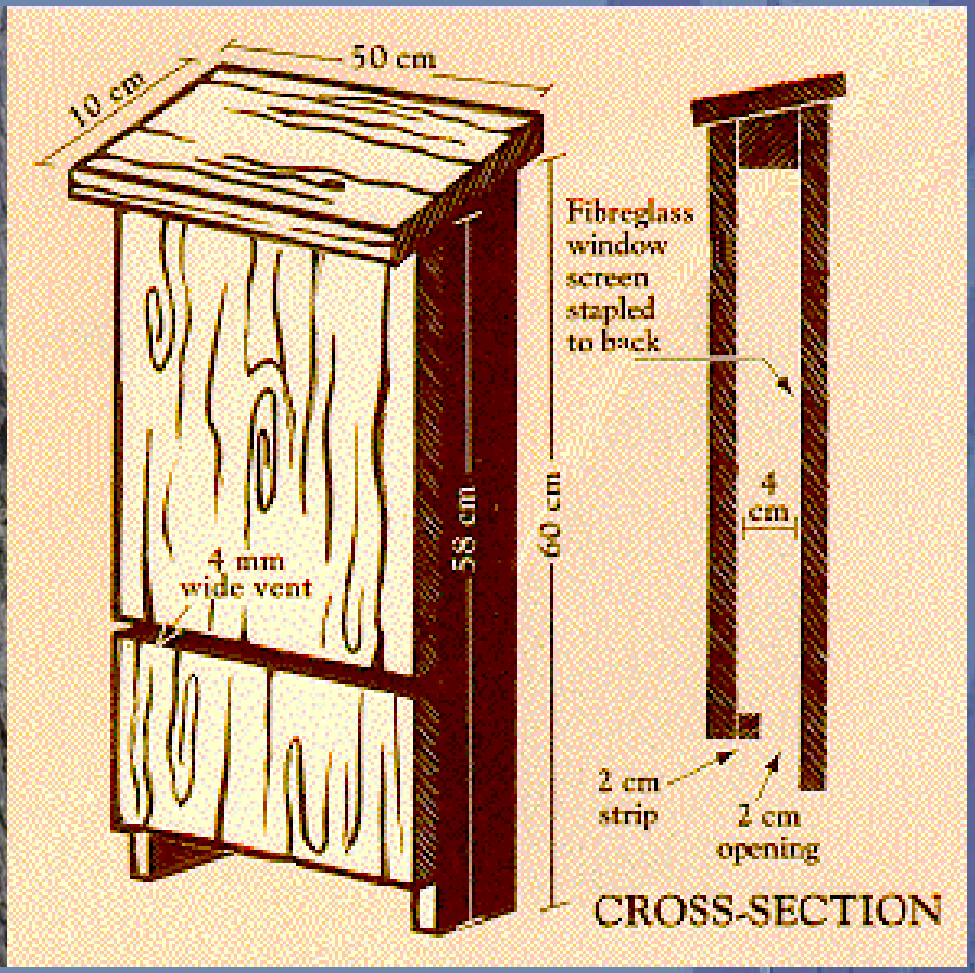
- Don’t get caught in people’s hair
- Don’t suck on human blood

Bat Box

- Bat boxes can replace valuable habitat
- Well designed box can attract a number of bat species
- Many bats need warm temps inside the box (85-100F)
- Mount in a sunny location
- Attach to a house or tall pole 15-20 feet above the ground

Bat Box


ORGANIZATION FOR
BAT CONSERVATION


50 cm
10 cm
4 mm
wide vent
58 cm
60 cm
Fibreglass
window
screen
stapled
to back
4
cm
2 cm
strip
2 cm
opening
CROSS-SECTION

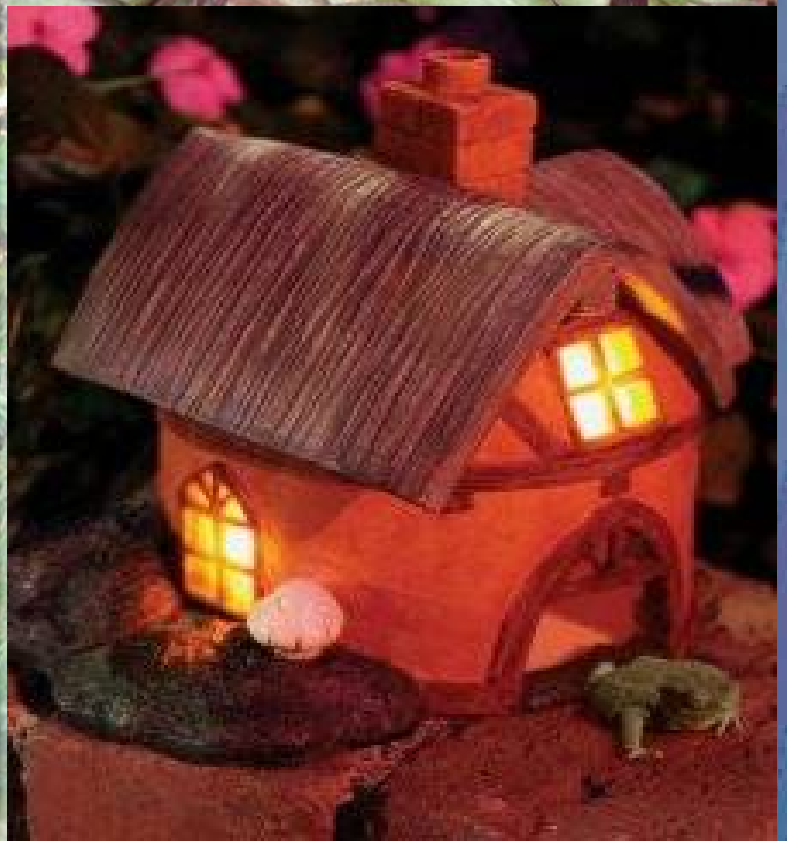
Butterfly House

- Although attractive, rarely, if ever used by butterflies
- Prefer natural cover in dense vegetation
- Brush piles make for great cover

Amphibian and Reptile House

- Frogs, toads and salamanders need a home too
- Homes can be purchased or made from a number of materials

Toad Abode



Amphibian and Reptile House

Bee Nesting House

- 3500 species of native North American solitary bees
- Non-aggressive, non-hive dwelling
- Excellent pollinators

Ten Tips for Landscaping for Wildlife

1. **Limit the Amount of Lawn**: Grass offers very little food or cover for wildlife.
2. **Increase Vertical Layering**: Increase plant structure between the ground and the tree canopy.
3. **Provide Snags and Brush Piles:** As trees become diseased or die, consider leaving them either standing or lying.
4. **Provide Water:** Water is an essential part of productive wildlife habitats.
5. **Plant Native Vegetation:** Use native plants whenever possible. Natives provide better food / cover, and require less care and maintenance.
6. **Provide Bird/Bat Houses and Bird Feeders:** Adding feeders and houses of different types may increase the diversity attracted to your yard.

7. **Remove Invasive Exotic Plants:** Invasive plants aggressively take over natural habitats and can replace all the native vegetation.

8. **Manage Pets:** Cats and dogs can drastically impact wildlife. Cats are extremely good hunters and kill millions of birds and mammals each year.

9. **Reduce Pesticide Use:** Anything you can do to reduce pesticide use in your yard will benefit wildlife. Most pesticides do not target one pest, but anything that comes into contact with it.

10. **Expand the Scale of Habitat:** The required habitat for many species is much larger than what you could provide within your yard. Consider working with your neighbors about creating larger wildlife habitat patches by landscaping together.

Case Study – Santa Monica CA

Project: Garden / Garden

- Encourage residents and landscapers to adopt sustainable garden practices
- Promote practices that conserved water and energy, reduced waste and decrease urban water runoff
- Identified two homes of equal size 1900 square feet
- One home was traditional landscaping, the other native landscaping
- Budget: $29,100 for each

Traditional Landscaping

Native Landscaping

The Match up

	Traditional	Native
Cost	$12,400	$16,700
Water Consumption	283,961 gallons/yr	64,396 gallons/yr (77% less)
Green Waste	647 pounds/yr	219 pounds/yr (66% less)
Maintenance (Labor)	$223/year	$70/year (68% less)


Designing Your
Wildlife Habitat

Voluntary Programs Promoting Wildlife Enhancements

- Backyard Wildlife Habitat Program
- Butterfly Garden Certification Program
- Healthy Yard Pledge
- NestWatch

Resources

- Cornell Lab of Ornithology
  - www.birds.cornell.edu
- Backyard Bird Problems
  - http://library.fws.gov/Bird_Publications/prob.html
- University of Maine Cooperative Extension
  - http://extension.umaine.edu
- National Wildlife Federation
  - www.nwf.org
- National Audubon Society