



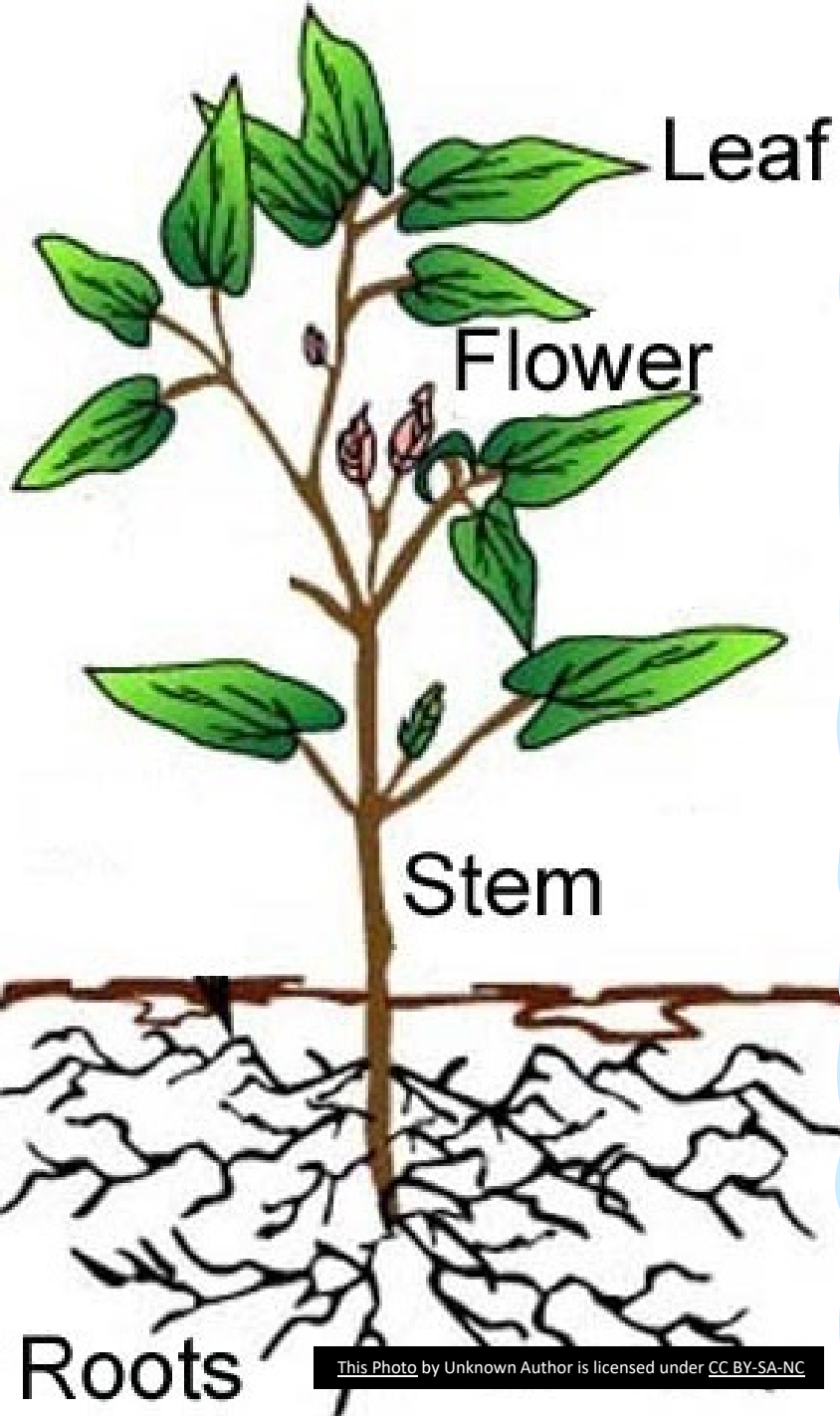
Drought Dilemma: Change Growing Methods for Plants

4th and 5th Grade

What Do Plants Need to Grow?

- Soil
- Air/Oxygen
- Water
- Light/Sun
- Food/Nutrition
- Place/Garden





Parts of a Plant

What are the parts of a plant?

- Roots
- Stem
- Flower
- Leaf

Where is the Soil?

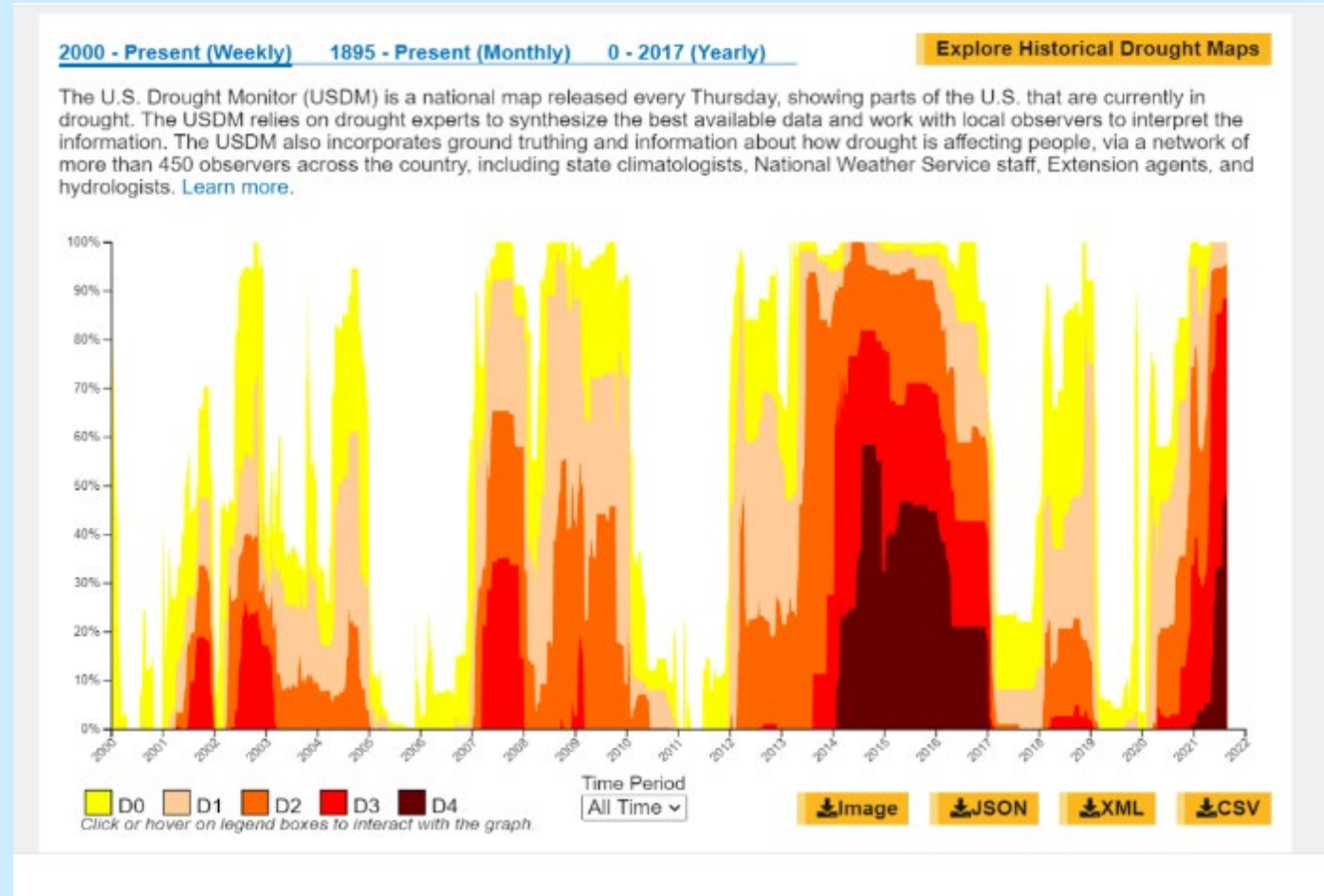
- Plants take water from the soil
 - Water enters the plant through the tips of the roots.
 - Water must be available in the soil to the root tips for plants to use it.

What is a drought?

A drought is a shortage of water from rain and snow

- During a drought we have less water available for people, animals and plants.
- The chart shows changes in California drought conditions from 2000 to 2021.
- Darker areas on chart are times with most extreme drought conditions.

California areas affected by drought are increasing





Researching Ways to Reduce the Drought Impact: Change Growing Methods for Plants



Why is this important?

Plants are a major source of food for people and animals around the world.

Reduce Drought Impact on Plants: Change Growing Methods

- Use plants that need less water.
- Water only when plant needs water.
- Planting and maintenance methods
 - Maximize water availability
 - Plant close together to share water
 - Cover soil with mulch



Some Plants Can Survive with Less Water

Plants vary in the amounts of water they need to grow.

- Some plants are dormant (do not grow) in the hot summer when water is limited.
- Some plants have deep roots that find water in the ground.
- Some plants have roots, stems and leaves that increase water movement through the plant.
- Some plants, like succulents in the picture, retain water for future use.



Signs a Plant Needs Water

- Plants that do not receive enough water show signs of stress.
 - Wilting or drooping
 - Curled or yellow leaves that may fold up
 - Leaves that become gray or bluish
 - Sunburned leaves
 - New leaves that are smaller and close together
 - Lawn grasses that show footprints



Change Growing Methods: Watering

- Watering
 - Water based on climate.
 - Water based on soil type.
 - Some soils hold water better than others.
 - Water just below the root zone.
 - Use gray water irrigation (recycled water).
 - Water early in the morning.
 - Capture and reuse rainwater.



Change Growing Methods

Planting and Maintenance

- Planting and Maintenance
 - Avoid planting in hot temperatures.
 - Mulch around plants to keep water in soil.
 - Mulch includes bark, straw etc.
 - Do not use too much fertilizer.
 - Fertilizer provides nutrients to plants.
 - Remove weeds because they use water needed by plants.



Mulch

Change Growing Methods

By Type of Plant

- Trees
 - Water mature trees slowly and deep two to three times during summer.
- Shrubs
 - Plant shrubs that are low water use.
 - Shrubs can survive a long time in dry soil.
 - Water thoroughly in the spring and twice in the summer.
- Vegetables and Fruits
 - Only plant vegetables and fruits that you will use.
 - Plant varieties that use less water.
- Groundcovers
 - Groundcovers often survive on half the recommended water.



Change Growing Methods

Low Water-Use plants

- Plant New Water Efficient Landscape
 - Choose plants that are low water use that grow in your climate.
 - Apply water directly to the root zone for new plants.
 - Grow plants with similar water needs in the same area (hydrozone).
 - Mix soil amendments into soil to improve use of water.
 - Drip irrigate to apply water directly to plants.
 - Does not apply to turf or groundcover.

