

# Upper Santa Clara River Watershed Suitcase

## Learning Objectives

As a result of seeing this display people will:

- Understand the flow of water across the Santa Clara River Watershed.
- Observe the two different aquifers of the area.
- See how the Santa Clara River flows to the ocean.
- Understand that groundwater is the best source of water for the area.
- Understand that invasive arundo in the river, and other waterways, acts like a straw to deplete groundwater and can spread fire.
- See the difference between rural water and urban water flow.
- Understand that urban water contains toxins and other contaminants such as dog waste, fertilizers, and more.
- Understand that there are a variety of infrastructure projects that are helping the water quality and quantity of the area.
- Understand that there are a variety of solutions that the public can participate in:
  - **Clean Water Supply**
    - Redirect water to aquifer
    - Reduce use of toxins/chemicals/dog waste
    - Remove arundo from the Santa Clara River and other waterways
  - **Water Conservation**
    - Replace lawn with low-water use plants, using rebates
  - **Flood Protection**
    - Redirect water
    - Plant trees
  - **Restored Open Space**
    - Native plant restoration
    - Add more parks and recreational areas in urban areas

## Santa Clara River Watershed In A Suitcase Description

- Rolling Samsonite (or other) plastic suitcase

## **1) Landscape on horizontal section in the bottom of the suitcase**

- a) 3-D landscape showing the following:
  - i) Major freeways/highways
  - ii) Major landmarks: Castaic Lake, Bouquet Canyon, Santa Clara River, Central Park, Placerita Canyon Nature Park, College of the Canyons, Six Flags Magic Mountain, College of the Canyons, Cal Arts
  - iii) Current and future projects: Canyon Country Community Center, Via Princessa Park and Regional BMP Project, Pico Canyon Park Stormwater Improvement Project, Jake Kuredjian Stormwater Improvement Project, Hasley Canyon Park Stormwater Improvement Project (Newhall Park Infiltration project, *currently on hold*)
  - iv) Housing areas
  - v) San Francisquito restoration area
- b) Faded color in background showing the two major aquifers
- c) Small dips in and around the area to place the sponges, including major infrastructure projects
- d) Small holes in areas of the Santa Clara River to add arundo straws (one wide enough to have a candle)

## **2) Rural area on left vertical section in the lid of the suitcase**

- a) Image of a the side of a house
- b) Image of a well with access line down into ground water
- c) Trees and open space
- d) Background of mountains along the back rolling into the right vertical image
- e) Plastic piece designed to capture sprayed water and demonstrate water being held in the aquifer
- f) Aquifer image moving along the base of the overall image and into the right side

## **3) Urban area on right vertical section in the lid of the suitcase**

- a) Image of a the side of a house
- b) Lawn in front of house
- c) Background of mountains along the back rolling into the left vertical image

- d) Street and gutters sticking out in a way to capture water and not go into the aquifer
- e) Aquifer image moving along the base of the overall image and into the right side

## **Santa Clara River Watershed In A Suitcase Script**

### **MATERIALS**

- SC watershed suitcase
- Blue-colored water in spray bottle
- Brown-colored water in spray bottle
- Green tree sponge plugs
- Green arundo straw plugs
- Towel
- Foam raiser / knee pad

### **BEFORE PRESENTATION**

- Place the suitcase on a table
  - Put foam raiser under the back of the suitcase and tilt forward, to create a slope for water to travel
  - Take out spray bottles and other supplies

### **PRESENTATION**

#### **Step One: Engage the group**

- Hi my name is \_\_\_\_ and I'm here with TreePeople.
  - Share a little about the work of TreePeople
- Today I am sharing about water in the Santa Clara Watershed area.
- TreePeople engages communities across Los Angeles County, who are dealing with environmental issues related to water, trees, and restoration.

- Let me show you what I am talking about...

## **Step Two - Landscape on horizontal section**

- This is a watershed. A watershed is the land area that 'sheds' water into a drainage system or river. Gravity moves water through the watershed from higher to lower areas.
  - Point out the mountains that surround the upper Santa Clara watershed area and how it slopes down to the Santa Clara River that leads to the Pacific ocean.
    - Using the blue water spray bottle, spray the area with water as you talk.
    - Point out how rain flows down the mountains, across the landscape, into the Santa Clara river and to the ocean.
  - The land area has a lot of open space, but we also have urban areas with buildings, streets, highways, and more.
    - Point out some major landmarks .
    - Point out that water slides across paved areas and rooftops.
      - Using the colored water spray bottle share that as water makes its way through the streets it picks up and carries trash, oil and other pollutants along with it to the Santa Clara River and then on to the ocean.
  - Other than receiving wasted and polluted water, the Santa Clara river has another issue — Arundo donax. Arundo is an invasive species that is not only listed in the top five invasive species, but it depletes the groundwater supplies, threatens our riparian ecosystems, but also can spread fire.
    - Place the green straws into the slots along the river
    - Explain how Arundo sucks up groundwater and that fire can cross the river going through the Arundo
  - In the Santa Clara area, our greatest source of water is groundwater stored in aquifers below. It provides X% of our water needs.
    - Point out the two major aquifers by their background color on the map
    - Let's see how this works...

## **Step Three – Rural area on the left of the vertical section**

- When it rains, water seeps into the ground and is carried down through layers of soil where it is then stored in the aquifer below. This water can be used for our various water needs.
  - Squirt water on that area showing water being captured (in the plastic device)
  - Point out how the water makes its way to the aquifer.
- We can then pump this water back up, and use it for drinking, watering gardens, and more.
  - Point out the well.

#### **Step Four – Urban area on the right of the vertical section**

- When it rains in our urban areas, it is a little different. Imagine that this is your house.
  - Point at the house on the upper right side
  - Squirt water on that area where it sits on the street
- When it rains on street and other impermeable surface, where does the water go? When we use hoses and wash it off driveways into the street, where does the water go?
  - Most of it travels through streets into storm drains, into the Santa Clara River leading to the ocean.
- As I already shared, as this water makes its way through the streets and parking lots, it picks up and carries trash, oil and other pollutants along with it to the Santa Clara River and then on to the ocean.
- Impermeable areas can also cause flooding in certain areas.

#### **Step Five - Landscape on horizontal section**

- There are things we can do to actually reduce flooding, and reduce the amount of wasted, polluted water going into the streets.
  - We can (add a sponge *solution* to each indent as you talk):
    - Support water conservation efforts by replacing thirsty lawns with low-water use plants using rebates
      - Add sponges in neighborhood areas
    - Redirect water away from streets and into the land to reach the aquifer, supporting clean water efforts and growing water supply
      - Add sponges to major street areas

- Add bioswales to our parkways and parking lots - these are planted dry creek areas that can redirect water into the ground
  - Add sponges to parking lot areas
- Support infrastructure projects that reduce flooding and redirect the water into the aquifer - just like they did at the Canyon Country Community Center
  - Add a sponge to CCCC
- Add more parks and recreational areas in urban areas to increase areas of water infiltration
  - Add a sponges all over
- Restore open space areas, so that healthy native plants grow supporting the local aquifer and reducing fire risk.
  - Add sponges in San Franciscquito area
- We can also plant trees! Trees have so many benefits including capturing rain water in their branches and redirecting it into the soil below.
  - Add sponges all over
- And, we can remove invasive Arundo from our waterways
  - Remove straws.

### **Step Six – Landscape on horizontal section**

- By doing all these different solutions, next time it rains instead of flooding, polluting, and losing all of that water, we can save it!
  - Using the blue-water spray, squirt the sponge *solutions* in the cityscape.
  - Scoop up sponges and squeeze the water out.
- Look at all this water! Make sense?
  - Show resources/QR codes

### **AFTER PRESENTATION**

- Once done for the day:

- Make sure that the suitcase and all the sponge plugs are completely dry before storing
  - It helps to leave them out in the sun to dry out
- Make sure all supplies are stowed in the suitcase and ready for the next person
- Be careful with the closing mechanisms so they don't get bent or broken