State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Director's Office
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

October 2016

Dear Principal and Teachers,

I am pleased to provide a new water conservation video to your school. This free video, produced by the California Department of Fish and Wildlife, was developed in coordination with a large teacher review group to ensure its effectiveness to teach science and conservation practices. It also serves to empower children to feel that they can make a difference in practicing sustainable water use. While the video is aimed at use for 2nd-5th grades, all students can benefit from it.

The enclosed video packet includes the following:

- Charts aligning the video to Next Generation science standards and the Environmental Education Initiative (EEI)
- Glossary of words used in the video
- Pre & Post activity for more effective classroom integration
- Pre & Post tests (mailed in tests will be compiled for evaluation summary)
- Introductory summary, sponsors list, and links to view the video online
- Handout on Project WILD and Project WET curriculum supplements

This video follows the successful prequel on water pollution and solutions (see the packet's summary for links to access the prequel online), and together they make for an excellent addition to your curriculum.

You can reach me at (916) 358-2353 or Bruce.forman@wildlife.ca.gov if you have any questions or would like to discuss.

Sincerely,

Bruce Forman
Video Producer
Interpretive Services Supervisor

“Water We Do – It’s Up to Me and You!”

Description:

Wildlife is in trouble. Fish are finding it hard to swim in shallow water, frogs can’t find cool water in which to lay their eggs, and the river ecosystem is off balance. In this sequel to *Hey – Something’s Fishy at the River, a* salmon takes a journey upstream to find out what is happening to the water, and in the process, helps children discover ways to share water with the wildlife.
Water We Do – It’s Up to Me and You! teaches children to only use water when they need it. This video also provides various practices for conservation inside the home and in the yard, while explaining the importance of water and energy conservation for the survival of wildlife. Songs and engaging puppets help to reinforce concepts introduced. Science and art education connections are easily made in a way that is sure to delight students and advance hopefulness. Students will learn while advancing their interest and ability to keep our world healthy for people, plants, and animals.

Curriculum Alignment: This video integrates science concepts to many elements in the Environmental Education Initiative (EEI) and the Next Generation science standards adopted by the California Department of Education (see enclosed charts).

Length: 41 minutes

Prequel: *“Hey – Something’s Fishy at the River – Let’s Keep It Clean” (18 minutes)*

On-line Access:

DFW Website: www.wildlife.ca.gov/learning

YouTube: https://www.youtube.com/watch?v=NqAer_NBFC8

TeacherTube: http://www.teachertube.com/video/water-conservation-ndash-ldquowater-we-do-ndash-its-up-to-me-and-youquot-425465

Vimeo: https://vimeo.com/169266613?utm_source=email&utm_medium=vimeo-cliptranscode-201504&utm_campaign=29220

Production: Both videos were produced by CA Department of Fish and Wildlife (DFW). The production team’s members are directly affiliated with professional theaters in Sacramento and the California Department of Water Resources (DWR) video program. A review team of 12 teachers and many naturalists and water educators supported script development. Puppets were made by a CSUS Theater Arts professor nationally renowned for his master puppet making.

Contact Information: Bruce Forman, CA Dept. of Fish and Wildlife, 1701 Nimbus Rd., Rancho Cordova, CA 95670 Bruce.forman@wildlife.ca.gov (916) 358-2353

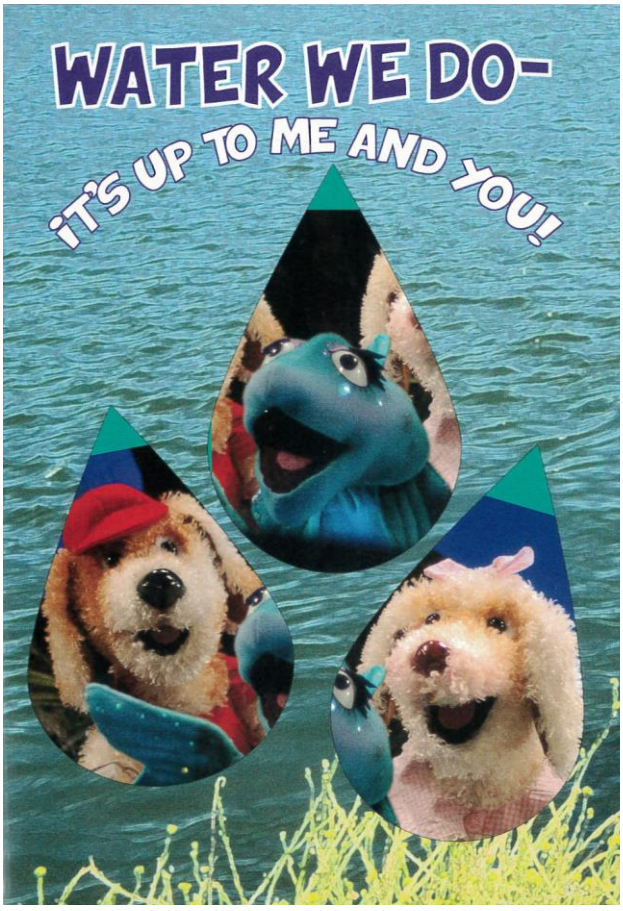
Sponsors

California Department of Fish and Wildlife
California Department of Water Resources
California Wildlife Foundation

Aerojet Rocketdyne Foundation
City of Sacramento, Dept. of Utilities – Water Conservation
East Bay Municipal Utilities District
Fresno Metropolitan Flood Control District
Regional Water Authority
Santa Clara Valley Water District
U.S. Fish and Wildlife Service –Schoolyard Habitat Program

California American Water
City of Roseville – Environmental Utilities Department
Sacramento Audubon Society
Sonoma County Water District

Green Incubators, Inc.
Sacramento Area Creeks Council
The Wildlife Society – Western Section



Grade	**EEI Curriculum**	**Video Alignment**
1st	**1.2. a.—Surviving and Thriving** Students know that healthy ecosystems offer benefits to humans as well as to the plants and animals that live there. **1.2.c.—Finding Shelter** Students know that a) animals, including humans, need shelter and food to survive; b) resources provided by natural systems, including other animals and plants, meet these needs; and c)human activities can influence the availability of resources and shelter. **1.2.4.—People and Places** Students understand that humans depend on goods and services provided by natural systems.	A healthy river provides both a place for quality recreation and a habitat where animals and plants can thrive. Fish, birds, insects, amphibians, and mammals use the river as an essential resource for food, water, and shelter. Humans can drastically change the quality and quantity of water in rivers through over-consumption and pollution. Water is vital for all life. As human consumption of water rises, less water is available within the natural system (for other living organisms). This is damaging to wildlife, especially when humans are using water without conservation in mind. People use the river many ways including recreationally, for drinking, and for watering gardens for food.
2nd	**2.2.a. and 2.2.b.—Cycle of Life** Students understand that humans depend on natural systems. In order to survive we need these resources to feed us, shelter us, and keep us warm. Plant and animals make up a large portion of these resources, so it is also important for students to understand their place as consumers and stewards of the environment. **2.2e and 2.2f —Flowering Plants in our Changing Environment** Students understand about environmental factors that affect the ability of flowering plants to grow and reproduce. Students learn that human's changes to the environment affect the growth and development of flowering plants.	Human activities that involve the careless use of water are changing the natural systems of life near and in the river. Humans behavior effects the well-being of the land, flora and fauna. Clean water is essential for a healthy environment, and a healthy human population. Flowering plants are important to the birds and other animals. Students will be introduced to flowering native plants that are drought tolerant and do not need much water to thrive. The native plants are ideal for planting at home and at school because they don't as much water or attention as non-native plants since they are adapted to the hot climate and low precipitation. Since native plants have evolved to thrive in a specific environment, they will be more capable of further adapting to a changing climate .
3rd	**3.3.a.—Structures for Survival in a Healthy Ecosystem** Students know that animal and plant adapt based on their environment. These adaptations are only passed down to offspring if the adaptations continue to aid in the survival of the individual within their environment. If survival continues, changes within the species occur. **3.3.c. and 3.3.d.—Living Things in Changing Environments** Students know that changes to the environment can have beneficial, detrimental, or neutral effects on other organisms. **3.1.1. and 3.1.2.—The Geography of Where We Live** Students know how to identify and explore the resources (ecosystem goods and ecosystem services) that are provided by the natural systems in their local region, and their uses. Students learn about the ways that people use the resources provided by the ecosystems where they live.	In the video, the animals each explain what the lack of water means to them. Beaver can't build a proper dam; frog and dragonfly need ample, cool water for their eggs. Salmon needs cold, clean and oxygenated water to reproduce. These animals have adapted to live in and around water in a healthy ecosystem. With the water quality and quantity changing rapidly, these animals are struggling to survive. Salmon teaches the children that human actions can harm the river environment by excessively using water. Humans can help the river environment by conserving water and electricity, both in their homes and in their yards. When Salmon talks about her life cycle, she describes the river, the delta, the bay and the ocean. Later, the children in the video learn about dams and how hydro-electricity is produced and used by people. The concept of a giant canal that takes water from northern to southern California is introduced.

4th	**4.2.a.—Plants: The Ultimate Energy Resource** Students know that all organisms, including people, consume energy and matter, and that natural systems are the ultimate source of those resources. **4.2.b.—The Flow of Energy through Ecosystems** Students learn about the components of an ecosystem and how organisms interact with the ecosystem. The flow of energy within a food web is explained, and students learn the role that humans play in helping (and hindering) the health of an ecosystem.	Fish, birds, insects, amphibians and mammals use the river as an essential resource for food, water, and shelter. The animals in the video generally co-exist with each other, but some of the animals prey on others. Dragonflies are eaten by frogs. Turtle and heron eat crawdads. Otters eat salmon. The video points out that humans are using too much water which decreases the water levels and increases the temperatures, making it hard for some animals to reproduce.
5th	**5.3.a.—Earth's Water** Students know where water is located regionally, whether that water is available for human use, what goods and services water ecosystems provide for people, and ways that people manage water in the present and for the future. **5.3.c.—Precipitation, People, and the Natural World** Students know about the natural precipitation patterns that exist in California and the rich variety of ecosystems that depend on these precipitation patterns for proper functioning. **5.3.d.—Our Water: Sources and Uses** Students have a broader perspective of how fresh water is managed, and how people interact with their environment in their communities.	Much of California's water comes from rivers which store rainfall and snow melt in reservoirs. Through hydroelectric dams, water can provide energy. Water travels from Northern California to Southern California in a giant canal. Although droughts are often unpredictable, they do regularly occur in California. Dry climates and droughts affect rivers and riparian habitats which are dependent on certain levels of precipitation. Humans can drastically change the quality and quantity of water in varied freshwater systems. Urban runoff through storm drains can pollute freshwater sources. A lot of water is used for family swimming pools and lawns.
6th	**6.2.b.—The Dynamic Nature of Rivers** Students are aware of the natural cycles within river systems and understand how humans benefit from and manipulate these systems **6.5. c.—Energy: Pass It On!** Students know that human actions influence the health and functioning of ecosystems; conversely, humans are dependent upon ecosystems for food and materials. **6.6. b.—Energy and Material Resources: Renewable or Not?** Students learn that ongoing use of resources is inextricably intertwined with human practices, management, and technological developments—all of which affect natural systems**.** **6.6.c.—Made from Earth: How Natural Resources Become Things We Use** Students know that the level of human consumption directly relates to the amount of resources that will be available in the future.	People redirect water from river sources for municipal and agricultural use which impacts the species that inhabit freshwater ecosystems and adjacent terrestrial habitats. There is a limited supply of fresh water. High rates of freshwater consumption for home use could outweigh the supply, thus limiting the amount available for other organisms. Freshwater is used by people for every day. By changing everyday habits such as washing full loads of laundry, shortening shower times, or turning off the water when brushing your teeth - we can help conserve water, thereby saving water for others. Parents can also help conserve water by installing low flow shower heads and low flush toilets, replacing lawns with native, drought resistant plants, and by using drip irrigation systems, rain barrels and hose nozzles. Children in the video learn the steps they can take to conserve water. We make hydroelectricity from water.

Grade	NG Science Standards	Video Alignment
1st	**LS1.A: Structure and Function** Students know that animals have external parts that help them survive in different environments. **LS1.B: Growth and Development of Organisms** Students know organisms reproduce offspring of their own with behavior that help them survive.	Many animals have physical adaptations to live in and around water. Salmon reproduce in freshwater. In a river, the eggs hatch into little salmon where they grow and later migrate to the ocean and back to the river of origin to spawn. This cycle is affected by the health and characteristics of a river and ocean. Dragonflies live under water during the first part of their life cycle, and then live out of water for the rest of their lives.
2nd	**LS2.A: Interdependent Relationships in Ecosystems** Students know that water is essential for both animals and plants to survive. **LS4.D: Biodiversity and Humans** Students know that different plants and animals inhabit different types of environments. **ESS2.C: The Role of Water in Earth's Surface Processes** Students know that water can be found in oceans, rivers, lakes, and ponds.	Water is a vital substance for all life. As human consumption rises, allocation of the limited resource to other living organisms is impacted. Fish, birds, insects, amphibians and mammals use the river as an essential resource for food, water, and shelter. Freshwater flows from creeks, to rivers and into oceans. Runoff from streets flows into creeks and rivers, and eventually makes its way to the ocean.
3rd	**LS2.C: Ecosystem Dynamics, Functioning, and Resilience** Students know that humans their environment. Some of these changes can be detrimental or beneficial to select species (organisms). **LS4.D: Biodiversity and Humans** Students know when the environment changes, some plants and animals will survive while others will die or move to new locations.	Humans can drastically change the quality and quantity of water in varied freshwater systems. Low water conditions in the river can cause salmon nests to dry out and can also expose the eggs to harsh conditions while preventing oxygenated water from getting to the eggs. Pollution and over-consumption of fresh water may cause extirpation of a species in a particular region or the departure of organisms that inhabit a river ecosystem..
4th	**ESS2.E: Bio geology** Students know that living things can physically cause changes to their regions. **ESS3.A: Natural Resources** Students know that humans are dependent of natural resources for energy and fuels. They also know that while some resources are renewable over time, others are not.	Human consumption of freshwater can cause drastic physical changes to river and riparian habitats. There is a finite or limited supply of fresh water. High rates of water consumption for residential use could outweigh the supply, therefore limiting the amount available for other living organisms to use.
5th	**LS2.A: Interdependent Relationships in Ecosystems** Students know that an ecosystem is healthy when there is bio-diversity; that the needs of these varied organisms are met in a balanced way. **ESS2.C: The Roles of Water in Earth's Surface Processes** Students know that the amount of freshwater located in rivers, lakes, underground sources and glaciers is limited. **ESS3.C: Human Impacts on Earth Systems** Individuals and communities are doing things to help protect Earth's resources and environments.	If humans practiced varied water conservation methods, there would be more water for the benefit of diverse living organisms. Freshwater is limited and must be conserved. Using our water efficiently and conservatively decreases the amount being wasted and keeps it in the rivers and creeks where other species need it the most to survive. Human activities redirect water from river sources which impacts the species that inhabit freshwater ecosystems and adjacent terrestrial habitats. However through changing everyday habits such as washing full loads of laundry, shortening shower times, or turning off the water when brushing your teeth. Parents can also help conserve water by replacing a lawn with native drought resistant plants, using a drip irrigation system to water them; and consider swimming in rivers and community pools rather than individual pools.
6th	**ESS2.D: Weather and Climate** Climate patterns are complex, and predictions can be made based on many factors.	Droughts are often unpredictable but they regularly occur in California. Practicing water conservation reduces the impact that droughts can have on wildlife.

Water We Do – It's Up to Me and You!

Teacher's Guide

DVD Overview:

In this environmental education video, puppet characters talk, sing, and teach about the lack of water in our rivers and streams, and how people can make lifestyle changes to help. Through their dialogue and song, they demonstrate the effects of low rivers on organisms and how people are contributing to this problem by wasting water in their everyday lives. The puppets also show ways to conserve water and promote sustainable practices within our own homes, including but not limited to taking shorter showers, only running the dishwasher when it is full, turning off lights, reducing electricity use by electronics, planting native plants, composting waste, and recycling rainwater. The video ends with the characters singing and enjoying the rain after learning that children will practice water conservation.

Environmental Education Concepts in DVD:

This video examines the importance of water for native plants and animals, while also discussing human's role in the depleted water supply. It ties these two topics together, as well as the use of electricity, by showing what is happening to river animals as the water levels decrease. The salmon has trouble breathing and swimming without enough oxygen and water in the river. The eggs of the salmon, frog, and dragonfly are all suffering without cool and clean water. The turtle is suffering from a shrinking food supply, the otter is losing habitat and places to play, and the beaver is struggling to build his home. The video highlights a need for thoughtfulness and environmental stewardship among people, especially in the younger generation. Linking children's everyday actions to the lives of animals shows that students' actions can have a huge impact on nature. One of the main lessons woven throughout this video is that human practices shape and alter natural cycles and the livelihood of plants and animals.

Learning Objective:

After viewing the DVD, drawing pictures, and participating in a small group and whole class discussion, students will be able to: 1) state that the river is a habitat for fish and wildlife; 2) recall the impacts that low water has on various river animals; 3) describe ways to practice water conservation at home, inside the house/apartment, and outside; 4) recognize that California has a limited supply of water, and is needed by nature and people all over the state; and 5) understand that much of the water people use comes from rivers.

Materials:

DVD, 8 x 10 (or larger) papers, pencils, whiteboard/chalkboard, assessment (provided in packet)

Format:

Whole class → Small group → Partner discussions → Graphic organizer

Part I – Pre-Video Activities:

1) Whiteboard activity
    a. Animals and Waterways
        i. **Assess Prior Knowledge:** Ask students to raise a hand if they have ever visited a river, creek, or stream (define creek and/or stream if necessary). Explain that these fall under the term "waterways" and ask them to think about what they did and saw there. Have a few students share aloud.
        ii. **Partner discussion:** Have students turn to a classmate and talk briefly about what animals they know (or think) live in or near these bodies of water. Tell them they will share with the whole class when time is up.
        iii. **List Responses:** As they are discussing, make 4 columns on the board labeling the first one "Animals by the river" and leave the three others blank (you will use the blank columns over the course of the next few activities). Call on students, and as they name organisms, write them in the first column. After getting 6-7 listed, ask the whole class to review by reading the names of organisms in the column.
    b. Types of Practices
        i. Assess Prior Knowledge: Next ask students "How do you use water?" Their answers will probably include showering, washing hands, brushing teeth, drinking, washing clothes, washing dishes, cleaning, and yardwork. Ask them to talk with a classmate about other ways humans use water; these examples can extend outside of the home setting. Tell them they will share afterwards.
        ii. Partner Discussion: As they talk with a classmate, write "Water Use" above the second column. Once they have finished sharing ideas, ask the students to give their answers, and write the responses in column 2. Read the words in the column orally or call on individuals.
        iii. List Responses: Label column three "Saving Water." Next, ask students 'How do you/how could you reduce water use?' Some possible responses are: taking shorter showers, using a bucket to catch excess water from showers to use in the yard, using less electricity, turning off lights, using less air conditioning, and planting drought resistant plants. Take the responses and write the answers given in column three. Read phrases with them.
2) Conceptual Drawing:

    Tell them to choose one of the river animals from the first column and choose a water-saving practice. Then ask them to draw a picture showing how the water-saving measure would help their chosen animal. Ask them to orally share an example of what they are thinking about drawing while passing out drawing paper and pencils.

3) Small Group/Partner Discussion:

   Tell them to share what they drew with their group or partner, and then choose a few to share out to the whole class.

4) Alternative Project Ideas
   a. Ask the students to tap into their creativity by writing a song about ways to conserve water and electricity using a beat of their choice, or to the tune of "Mary Had a Little Lamb" or "Row Row Row Your Boat."
   b. Ask students to draw a diagram on how they think a hydro-electric dam generally operates. Then provide them a diagram accurately displaying how a hydro-electric dam works and compare their drawings to the display you provide. You can then ask the students: What might be some benefits of a dam? What could be some environmental challenges created by a dam?
   c. Ask the students to draw or list as many appliances in their home they can think of. Then ask them to draw a fish next to all of the appliances that use water. If you would like an extra step to this activity, you can ask the students to also put a star next to all of the appliances that they could use less.

Part II – Show the DVD

1) Establish Purpose: Tell students they are now going to watch a DVD called "Water We Do- It's up to Me and You!" which is about a group of animals that live in or near rivers and streams. Tell them you would like them to listen and watch for these things:
   a. Aquatic animals that students identified, and any animals they didn't think of.
   b. Water usages they thought of, and ways water is used that they didn't realize.
   c. They should also listen for ways water can be saved at home, and how they can incorporate these methods into their daily lives.
2) Show DVD: As they watch it, add a fourth column to the graphic organizer with the heading "Lets Save Water – At School?"

Part III – Post Video Discussion and Drawing

1) Class Discussion/List Responses: Tell students to name some of the animals they saw in the video, and ask if it's listed on the board in the first column. If so, put a star next to it. If no, add to the list. Have students name ways water is wasted that they saw in the video, again adding these to the second column: "Water Use". Next, ask them what the salmon and other characters said could be done about conserving water so that there is enough for all of the wildlife to thrive in the river. List any new items in the third column: "Saving Water." Finally, ask the students to think outside of the box using the information they just learned from the video to come up with ways to save water at school. Fill in the fourth column, "Lets Save Water – At School" with their ideas.
2) Should people practice water conservation in regions where there are no rivers? Why or why not?
3) Should people practice water conservation when there isn't a drought?

Water Conservation Video Glossary

This Glossary was developed with third, fourth, and fifth graders in mind.

Amphibian: Amphibians are cold-blooded animals with backbones; the adults breathe air with their lungs, and can also breathe through their moist skin. Amphibians, such as frogs or toads, live on land and in water. When reproducing, amphibians lay their eggs in water. The eggs hatch into gill-breathing larval – like tadpoles, and later develop into adults with lungs.

Aquatic: Plants and animals that live near or in the water most or all of their lives.

Bay: A large area of water that is partially surrounded by land but opens to an ocean or lake. San Francisco Bay is a body of water with an opening that leads to the Pacific Ocean. (see estuary)

Chemical: A pure substance or a product which is often prepared or created by humans. Many chemicals can hurt the environment or people if they are inhaled, eaten, or absorbed through the skin.

Chlorine: A chemical that is often added to water to kill bacteria, but may also harm wildlife.

Climate: The long-term weather patterns in a place or region.

Community: A group of plants and animals that live in the same area and interact with each other.

Compost: A decaying and rotting mixture of plants or plant food leftovers (such as leaves, grass, fruit, vegetables etc.) that is used in the garden to improve soil health and promote the growth of plants.

Conservation: The careful use of natural resources (such as trees, oil, and water) to prevent them from being wasted, depleted, or damaged.

Dam: A wall that is built across a river or stream to slow the natural flow of water. Dams serve to control floods, store water for people, and often produce hydroelectric energy.

Delta: The area where rivers meet and join, or where one major river begins to 'spit off'. In California, the largest is the Sacramento-San Joaquin Delta, where the Sacramento and San Joaquin Rivers meet to drain into the San Francisco Bay. This region includes many kinds of habitats—riparian, marsh, river, agricultural lands, grassland, and estuary.

Disease: An illness which impacts people, plants, or animals.

Drainpipe: A pipe that carries water and liquid waste away from buildings and streets.

Drip tubing: A method of watering plants that saves water. A small hose or tube is laid on the ground or buried just under the surface of the soil. The tube has small holes in it, allowing water to drip out slowly.

Drought: A long period of time during which an area that usually has precipitation gets very little to no rain, or snow.

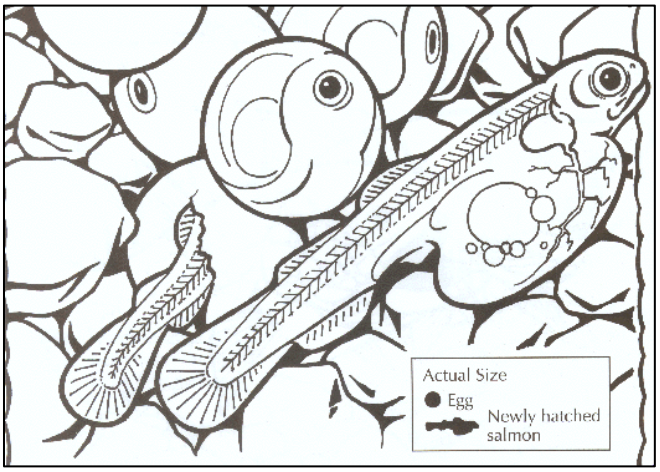
Electricity: A form of energy that is carried through wires and is used to operate machines, lights, appliances, etc. Electricity has many sources.

Estuary: An area where a river flows into the sea and there is a mixing of salt water and freshwater. Estuaries are important habitat for fish, birds, and other animals.

Evaporation: Water dries up when the sun heats it and turns it into vapor or steam. The water vapor or steam leaves the river, lake, ocean, or land, and rises into the atmosphere.

Food Chain: Food energy is transferred from one living thing to another. Every organism can be thought of as a link in a chain. For example, insects eat plants, salmon eats insects, and otters eat salmon.

Gravel: Consists of small rocks. The life-cycle of a salmon begins when eggs are laid in the gravel habitat along river or stream banks. When the eggs hatch, the *alevin* stage of the salmon develops in the gravel, growing into small fish which then leave the gravel to feed on plankton in the rivers.



Groundwater: water within the earth that supplies wells and springs. Geological formations called aquifers hold and contain groundwater.

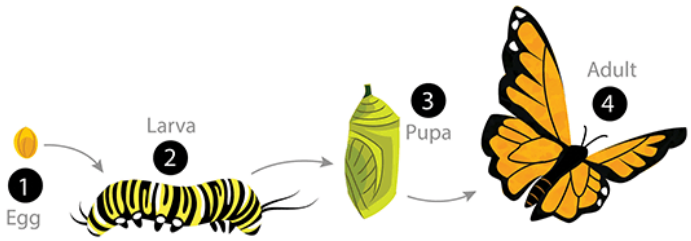
Habitat: The place where an animal lives. A habitat provides the animal with food, water, shelter, and space. There are many different types of habitats around the world, including rivers, forests, grasslands, mountains, and deserts. Different habitats are home to different animals.

Hydroelectric/Hydro-power: Energy that comes from the force of moving water, usually from a dam. The word "hydro" means water.

Irrigation: Man-made ways of taking water from its source to an area that would normally be dry. For example, sprinklers and hoses are ways to irrigate a farm or garden.

Lifestyle: A particular way of living, the way a person lives or a group of people live.

Metamorphosis: A major change in the form or structure of all insects and some animals, which happens as the insect or animal becomes an adult. For example, when a frog hatches from its egg it is a tadpole, but later it changes into a frog.



Migration: To travel a large distance from one area or region to another at different times of the year.

Mulch: A material made from various organic ingredients such as leaves, bark, or compost. Mulch is spread around or over plants to enrich, insulate, and protect the soil and plants. Mulch is also used to limit the amount of evaporation that happens. Mulch allows the plants and soil to stay cool and moist.

Native: refers to animals or plants that naturally occur in an area.

Native plants: Plants that have always lived here rather than those brought here by humans. Over time, native plants have adapted to the local temperatures, water availability, and soil types (among other things.)

Non-Native: A non-native organism is one that has been introduced or brought into a new area to live by people.

Organism: A living thing such as an animal, plant, fungus, or bacteria.

Oxygen: A gaseous element that is found in the air. It has no color, taste, or smell, and it is a main building block for life on Earth. Sometimes oxygen is used as another word for "air."

Predator: An animal that kills and eats other animals.

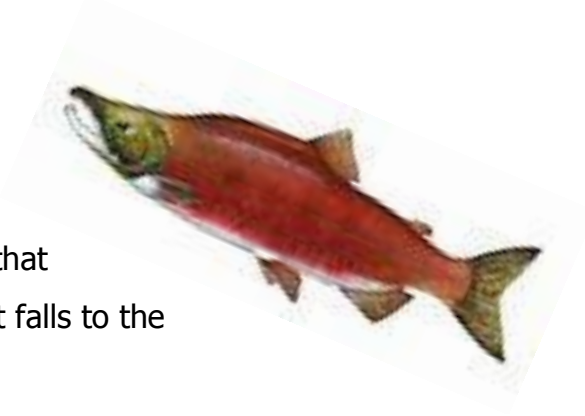
Prey: Animals that are killed and eaten by other animals.

Reptile: Cold-blooded, air-breathing vertebrates having skin covered with scales or bony plates, true claws (if they have legs), and lay soft-shelled leathery eggs. Most common examples are tortoises, turtles, lizards, snakes, alligators, and crocodiles.

Riparian: The community or habitat of plants living along or near a stream, river, or body of water. It is usually a type of woodland habitat.

Runoff: Water that drains or flows off the surface of the land (including streets).

Salmon: A large fish that is hatched in streams or rivers, but lives most of its life in the ocean, before returning to spawn in rivers.



Sediment: Material such as stones, soil, and sand that is carried into water by wind or water. The "dirt" that falls to the bottom of the river is called, "sediment."

Showerhead: The nozzle that sprays water on you when you are in the shower. A low flow showerhead decreases the amount of water that comes out so you use less.

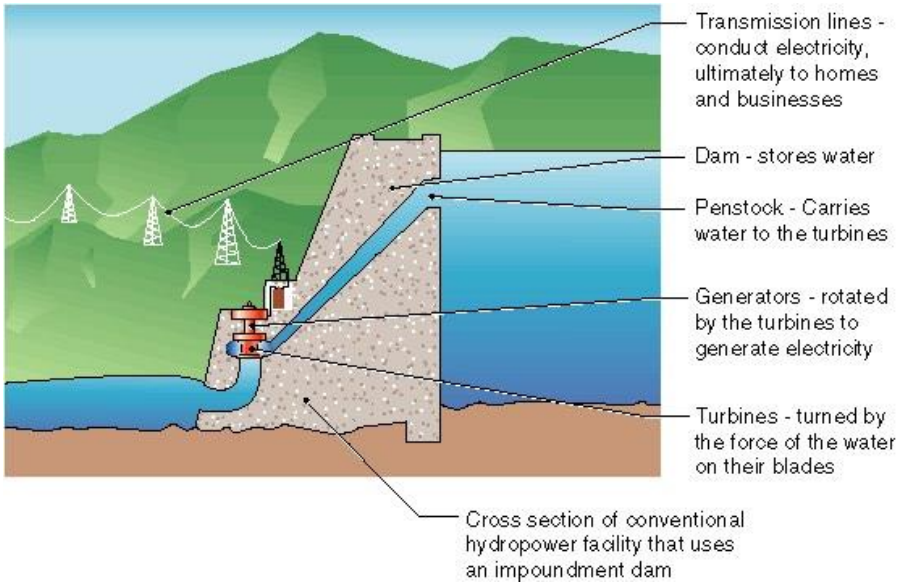
Snowmelt: Melting snow produces water that flows over the surface of the ground into streams and rivers.

Spawning: The process where some aquatic animals release and deposit sperm and eggs into the water for reproduction.

Species: A population of individuals that are more or less alike and are able to breed and produce fertile offspring under natural conditions.

Storm drain: A system of large pipes designed to drain extra rain and surface water from paved streets, parking lots, sidewalks, and roofs. There is often a grate on the street that covers the drain pipe. Storm drains usually lead to creeks or rivers.

Turbine: An engine with large blades that spin when water flows through them. At dams, they transform the energy from the water to electricity and provide energy for houses, hospitals, and schools. Windmills are another kind of turbine that captures the energy from the wind.



Water Conservation: The use of water-saving methods to reduce the amount of water needed for homes, lawns, farming, and industry. By conserving water people can save money, live better, and help the natural world.

Water Cycle: The continuous circulation of water in systems throughout the planet, involving condensation, precipitation, runoff, evaporation, and transpiration.

Watershed: The land area from which surface runoff drains into stream channel, lake, reservoir, or other body of water; also called a drainage basin.

Wildlife: Animals that are not tamed or domesticated, including, but not limited to: insects, spiders, birds, reptiles, fish, amphibians, and mammals.

Grade__ School _____ First Name _____ Last Name_____

Pre-Test / Water We Do—It's Up to Me and You!

Take this quiz before watching the video to test your knowledge of water conservation. Circle the best answer.

1. Rivers get most of their water from:
   a) People
   b) An estuary
   c) Creeks in the mountains
   d) Pipes

2. Most of the water people use in their homes comes from:
   a) Factories
   b) Recycling centers
   c) Stores
   d) The Water Cycle

3. Water that is on neighborhood streets (from water or rain) will flow to nearby creeks or rivers. How does the water on streets get to the river?
   a) By trucks
   b) Through storm drains and sewers
   c) Through a dam
   d) Through water treatment plant

4. Water that collects on streets flows into the river. This water can have dirt, chemicals, and animal waste in it. Dirt from street runoff can flow to the river where it might:
   a) Harm frogs or fish
   b) Be collected for playgrounds
   c) Be pumped back to the streets
   d) Be used by beavers

5. If there is not enough water in the river, some animals:
   a) May get too warm and become sick
   b) May have difficulty hatching eggs
   c) May have to move to a new, better home
   d) All the above

6. When I hear the word "river" I think about a place that I would:
   a) Not want to visit
   b) Might want to visit
   c) Would love to visit
   d) Not sure

7. Which of these animals live in rivers or creeks in California?
   a) Salmon, beaver, frog, heron
   b) Otter, dragonfly, quail, salmon
   c) Duck, snake, crawdad, tortoise
   d) All the above

8. On Earth, the fresh water supply is:
   a) Unlimited or endless
   b) All polluted
   c) Limited
   d) Increasing

9. When rivers or creeks get very low, their water temperature:
   a) Goes lower
   b) Goes higher
   c) Stays the same
   d) Sometimes goes lower, and sometimes goes higher

10. To conserve water means:
   a) Not using water
   b) Using as much water as possible
   c) Using water carefully, and just when you need it
   d) Only using water on certain days

11. Dishes in a dishwasher and clothes in a washing machine should be washed:
   a) When the machine is half full
   b) When the machine is all the way full
   c) On Saturdays or Sundays
   d) Only when items are very dirty

12. You save water when you:
   a) Turn off the lights
   b) Take a shorter shower
   c) Turn off the water while you brush teeth
   d) All of the above

13. The best way to reduce water use and water lost to evaporation is to:
   a) Use a hose to clean your driveway
   b) Build canals
   c) Use a sprinkler system
   d) Use drip irrigation at night

14. The best way to help plants hold on to their water is to:
   a) Place a tarp over the yard
   b) Use fertilizer
   c) Put mulch on the plants
   d) Use herbicide

15. When it has not rained or snowed for a long time, it is called a:
   a) Heat wave
   c) Drought
   c) Vacation
   d) Climate

16. It is important to have a nozzle on the end of a yard hose because:
   a) It is fun to nuzzle with
   b) It is usually very expensive
   c) It is useful just in a drought
   d) It is an easy way to turn water off and on as needed

17. Saving water is important:
   a) Only during a drought
   b) All the time
   c) Only in the summer
   d) Only when you are told to do so

18. A native plant in California is one that:
    a) Only lives in the desert
    b) Is planted during a drought
    c) Comes from any place in the world but uses little water
    d) Naturally occurs, and evolved to live in California

19. How can you save water AND help birds in your neighborhood?
    a) Plant drought-tolerant non-native plants
    b) Plant drought-tolerant native plants
    c) Plant a mixture of (a) and (b)
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20. Water stored behind dams is used for:
    a) Boating and swimming
    b) Making hydro-electricity for people
    c) Farming
    d) All of the above

21. If you want to save water, which of these things should you do?
    a) Polishing a leaky faucet
    b) Using a high flush toilet
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22. Lowering my use of water at home:
    a) Can help other people
    b) Can help river or creek animals
    c) Both a and b
    d) Does not help others

23. How important is it for you to protect the river?
    a) Not important
    b) Important
    c) A little important
    d) Very important

24. How important is it for you to help your family reduce the amount of water used in your yard and home?
    a) Very important
    b) Important
    c) A little important
    d) Not important

Grade__ School _____ First Name _____ Last Name_____

Before viewing the video:

I save water in these places
(check any boxes that apply)

	Yes	No
Home Electricity		
Bathroom		
Kitchen		
Laundry		
Yard		

You have finished. Thank you!
Now enjoy the video:
"Water We Do — It's Up to Me and You!"

Teacher: Please mail pre-tests and post-tests to:

Interpretive Services- Video Surveys
CA Department of Fish and Wildlife
1701 Nimbus Road
Rancho Cordova, CA 95670

Grade__ School _____ First Name _____ Last Name_____

Post-Test / Water We Do—It's Up to Me and You!

Take this quiz after you watch the video to find out what you learned about water conservation. Circle the best answer.

1. Rivers get most of their water from:
   a) People
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2. Most of the water people use in their homes comes from:
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5. If there is not enough water in the river, some animals:
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    a) Not important
    b) Important
    c) A little important
    d) Very important

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    b) Important
    c) A little important
    d) Not important

Grade__ School _____ First Name _____ Last Name_____

After viewing the video:

I plan to save water in these places
(check any boxes that apply)

	Yes	No
Home Electricity		
Bathroom		
Kitchen		
Laundry		
Yard		

You have finished. Thank you!

Teacher Information

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Grade__ School _____ First Name _____ Last Name_____

Pre-test and Post-Test Answer Key / Water We Do—It's Up to Me and You!

The students should take the surveys before and after they watch the video to determine what they learned from the video. Collect both copies and ensure that they wrote their name and grade on both quizzes before sending it to the address written at the end of this document.

1. Rivers get most of their water from:
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23. How important is it for you to protect the river?
    a) Not important
    b) Important
    c) A little important
    d) <u>Very important</u>

Grade__ School _____ First Name _____ Last Name_____

24. How important is it for you to help your family reduce the amount of water used in your yard and home?

    a) Very important
    b) Important
    c) A little important
    d) Not important

25. I save water in these places (check any boxes that apply)

	Yes	No
Home Electricity		
Bathroom		
Kitchen		
Laundry		
Yard		

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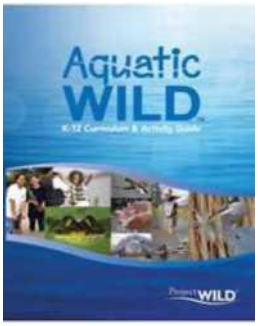
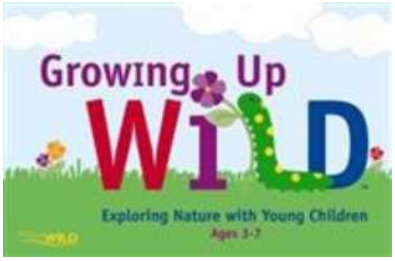
For Educators



Ask us about* Project Wild, *the award-winning environmental education curriculum for K-12 students.* Project Wild *guides are aligned to California statestandards, Common Core and Next Generation Science Standards!

Water in all its forms is one of the most dramatic of today's arenas in which informed, responsible, and constructive actions are needed. *Aquatic WILD* uses the simple, successful format of Project WILD activities and professional training workshops but with an emphasis on aquatic wildlife and aquatic ecology. The Aquatic WILD program and curriculum guide is available to formal and nonformal educators who attend an *Aquatic WILD* training through our *Project WILD* state partners.

The *Project WILD K-12 Curriculum and Activity Guide* focuses on wildlife and habitat. It is organized into topic units and is based on the Project WILD conceptual framework. These activities are designed for integration into existing courses of study, instructors may use one or more of the *Project WILD* activities. The entire set would be most effective as the basis for a course.



Growing Up WILD is an early childhood education program that builds on children's sense of wonder about nature and invites them to explore wildlife and the world around them. Through a wide range of activities and experiences, Growing Up WILD provides and early foundation for developing positive impressions about the natural world and lifelong social and academic skills.

For more information and to locate your Regional Project Wild Coordinator, visit www.projectwild.org or contact Carol Singleton at (916) 322-8962; carol.singleton@wildlife.ca.gov.

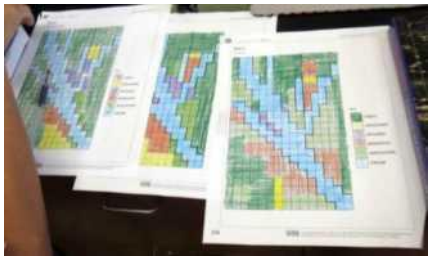
CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

California Project WET

(Water Education for Teachers)

The California Project WET program and our sponsors are eager to assist in supporting local professional development and water education outreach efforts. California Project WET works with water agencies, water research scientists, professors of teacher education, school professional development coordinators, after school program directors and California Department of Education environmental education coordinators to meet the demand for high quality professional development opportunities that can be tailored to specific or broad range audiences throughout the state.

Our professional development trainings maximize the time engaged in hands-on activities, allowing educators to experience Project WET activities as a learner and become familiar with the teacher designed features of the activities and guide. Every Project WET activity was created by teachers for teachers and each incorporates nationally recognized education principles and practices. Project WET activities incorporate low cost materials and provide step-by-step instructions making the activities very popular with California educators of all levels of teaching experience. Project WET activities are correlated to ***Common Core Standards, California Education & the Environment Initiative (EEI)*** and the process has begun to provide more detailed Project WET correlations and alignments to ***Next Generation Science Standards.***



Project WET is at home in the classroom as well as the afterschool program, college methods course or in water education outreach programs. Project WET activities are designed to easily integrate knowledge of local water resources - and our professional development workshops for educators can be specifically tailored to highlight local water issues including: ***water conservation, storm water run-off, water quality, climate change*** *and* ***watershed management.***

California Project WET can also offer content-specific Project WET workshops. In partnership with the US Geological Survey, California Water Science Center and California Department of Water Resources, Project WET has offered workshops highlighting the role of science in studying subjects ranging from water issues in the Sacramento-San Joaquin Delta to groundwater issues in the Coachella Valley. California Project WET is seeking partners and host locations throughout California for workshops in ***2016*** - and has funding to cover the majority of workshop costs for locations within the Central Valley Project and Sacramento – San Joaquin River watersheds.

WATER EDUCATION FOUNDATION

California Project WET is a program of the non-profit Water Education Foundation and is funded by grants from the U.S. Geological Survey- California Water Science Center, Bureau of Reclamation and the California Department of Water Resources and local water and education programs.

Please visit our website - www.watereducation.org - to find a list of upcoming Project WET workshops OR contact Brian Brown, California Project WET Coordinator at: projectwet@watereducation.org or (916) 444-6240 if you would like to host a Project WET workshop