

**FREE**  
Classroom Materials, too!

**FREE! FREE! FREE!**

# 2011-2012 SCHOOL WATER EDUCATION PROGRAM

(SWEP)  
for Middle and High Schools  
Aligned with CA State Content Standards



Jeffrey Beukelman  
12th grader, Dixon H.S.  
Ms. Long

**NEW!**  
**& Updated**  
**Programs**

## IN YOUR CLASSROOM & IN OUR WATERSHED

**Funded by:**  
City of Fairfield  
City of Vacaville  
Dixon Solano Municipal Water Service  
Fairfield-Suisun Sewer District  
Solano County Water Agency  
Solano Irrigation District  
Suisun City  
Suisun-Solano Water Authority

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# WATER IS ESSENTIAL FOR LIFE

PAGE 2

## The SCHOOL WATER EDUCATION PROGRAM (SWEP)

provides **FREE** water education resources to teach water awareness and conservation to students, teachers and parents in our service areas – Dixon, Vacaville, Fairfield, Suisun, and Travis AFB. The in-class education programs as well as the resource materials and assembly programs are innovative, fun, multi-disciplinary

and aligned to the content standards for California public schools for each grade level.

SWEP's offerings encourage students and adults to develop a healthy attitude of personal responsibility toward our environment and to develop skills needed to contribute meaningfully to the decision-making process on issues involving our resources, in particular, conserving our most precious natural resource, **WATER**.

## STUDENTS WITH A BETTER UNDERSTANDING OF THE VALUE OF WATER WILL:

- Personally use water more wisely
- Positively influence home & school water use
- Become more knowledgeable citizens

## BENEFITS TO TEACHERS:

- Quality materials, evaluated by educators across the state
- State content standards alignment
- In-service workshops with possible professional development credits
- Challenging and fun cross-curricular activities enriching student learning while promoting student appreciation and awareness of water conservation

## CLASSROOM PRESENTATIONS WITH ACTIVITIES FOR ALL GRADES EMPHASIZING:

- The science of water
- Where our local water comes from
- Water pollution prevention
- Water conservation tips
- Water and wastewater treatment
- The water cycle
- Water and its uses
- Water industry career opportunities overview
- Our local watershed, irrigation systems and canal safety
- And so much more

## HOW TO GET INVOLVED:

Simply choose the resources you need by using the order form at the back of this brochure. For further information or additional brochures please contact:

**Ursula Heffernon, School Water Education Program Consultant**  
Tele/Fax: 530.661.7149 [uheffernon@pacbell.net](mailto:uheffernon@pacbell.net) or [lump@sidwater.org](mailto:lump@sidwater.org)  
or go online to [www.sidwater.org](http://www.sidwater.org) or [www.solanosaveswater.org](http://www.solanosaveswater.org)

*Orders will be delivered to and picked up from your classroom  
FREE of charge on a first-come, first-served basis.*

## RESOURCES FOR LOAN

*Up to 2 weeks loan time.*

### ENVIROSCAPE MODEL **Grades 6-12**

A table top model of a community that may be used for hands-on activities to teach about point and nonpoint source pollution.

### GROUNDWATER MODEL **Grades 7-12**

Engage your class with a vivid demonstration of groundwater flow, its sources, its flow beneath the earth's surface, and how this resource impacts life at the earth's surface.

### WATERSHED & CALIFORNIA MAPS **Grades 6-12**

Excellent 2' x 3.5' relief map of California for students and teachers alike. A dynamic watershed relief map to teach students about our local watershed.

### WATER TEST KIT **Grades 6-9**

A simple water monitoring kit testing for pH, alkalinity, and dissolved oxygen.

### CADILLAC DESERT VIDEOS **Grades 9-12**

Five **videos** (55-131 minutes each) illustrate the history of our "invisible resource," while showing us the natural beauty of our waterways and the artificial beauty of reservoirs. What happens, however, when the reservoirs start silting up, rivers become contaminated, wetlands vanish, and rivers no longer flow to the sea? With desalination as a costly alternative, and with increased pressures to restore native ecosystems, what does the future hold?



**WAVES, WETLANDS AND WATERSHEDS**

**Grades 6-12**

A classroom and community activity guide that addresses issues such as endangered species, marine debris, coastal geology, water use and much more. It is carefully aligned to the California State Science Content Standards.

**WATER PRECIOUS WATER** *Grades 6-12*

Cooperative learning lessons about water and four activities that deal with the properties of water.

**HANDS-ON WATER ACTIVITIES** *Grades 6-12*

Several water science experiments promoting student math, graphing, manual dexterity, and interpretive skills.

**CONSERVE WATER EDUCATOR'S GUIDE**

**Grades 6-12**

A 300 page guide designed to teach students how to conserve water with innovative activities and case studies. Other activities move students beyond the classroom to the community.

**GROUNDWATER EDUCATION**

**Grades 7-12**

The material is designed to teach students about the relationship between groundwater and surface water, porosity

and permeability, geology of aquifers, and the concept of measuring contaminants. The 52-page teacher's booklet contains lesson plans, demonstrations, lab experiments, a board game, a groundwater map, and a groundwater model (loan item) for demonstration purposes. See page 4 for details.

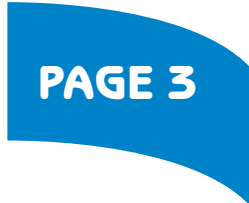
**CALIFORNIA WATER PROBLEMS**

**Grades 9-12**

Reproducible materials for four role-playing strategies that allow students to research and work out solutions to real problems involving the management of California water. The four topics included are: Delta Dilemma; Kesterson Clean Up; Colorado Cut-Back; and Groundwater Worries. Includes map and supplemental materials.

**PROJECT WATER SCIENCE** *Grades 9-12*

Designed for earth and physical science classes, these 14 labs include reproducible student sheets and background teacher materials. Consistent with California Content Standards, these labs can be used individually or as a unit. They are divided into three sections: Water Quality; Water and the Environment; and Water and People.



**FREE** TEACHER WORKSHOPS & OTHER OPPORTUNITIES

**PROJECT W.E.T. TEACHER WORKSHOP**

This **FREE** hands-on workshop will allow participants to receive and explore a 516 page curriculum guide. This guide, highly rated in the Environmental Compendium for Water Resources from the State Department of Education, has activities for grades K-12. The teacher friendly guide includes indexes by topics, subject areas, concepts, time requirements, and much more. Each activity includes background material, supply lists, prep time, and reproducible student worksheets. It is aligned with the California State Content Standards.

The Project WET workshop is scheduled in Solano County on Saturday, November 12, 2011 and February 11, 2012. Breakfast and lunch provided on site (TBA) along with all educational materials and prizes! Mark your calendar and request registration forms for this upcoming FREE workshop. Workshops fill up quickly. A great way to earn professional development credits or college units!

Contact Ursula at 530.661.7149 or [uheffernon@pacbell.net](mailto:uheffernon@pacbell.net)

**COASTWEEKS: September 17 – October 9, 2011**

A 3-week long celebration encourages appreciation and preservation of our coast and inland waterways. A calendar of events for you and your students to participate in is posted at [www.coastforyou.org](http://www.coastforyou.org). International Coastal Cleanup Day kicks off September 17, 2011. Marianne Butler is our Solano County Coordinator for this year's event. Contact her at 707.301.5778 or [Marianne.Butler@solanorcd.org](mailto:Marianne.Butler@solanorcd.org) for further information. Plan ahead for next year if you missed the fun this year.

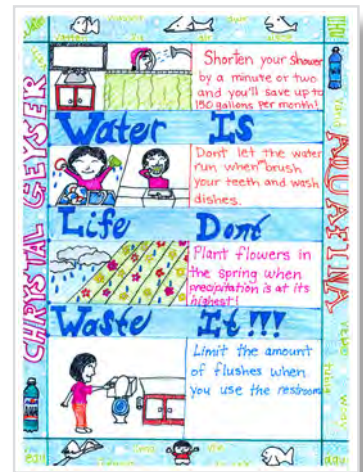
**EEl – CALIFORNIA EDUCATION AND THE ENVIRONMENT INITIATIVE**

expands environmental literacy for K-12 students. The newly developed and CA State Board of Education approved EEI curriculum of 85 units is available teaching selected science and history-social science standards to mastery while not placing an extra burden on teachers. It will help students better understand how they influence the environment and how it influences them. It engages students making learning both relevant and fun resulting in students who are better informed decision makers. Online at: [www.calepa.ca.gov/education/eei/Curriculum/](http://www.calepa.ca.gov/education/eei/Curriculum/)

**SEE-SOLANO ENVIRONMENTAL EDUCATORS**

meet 3 times a year. Funding is provided by Potrero Hills Landfill. SEE has produced a web-based information resource that provides information about environmental education programs including outdoor field trips and community education opportunities within Solano County.

Visit [www.OutdoorSolano.info](http://www.OutdoorSolano.info) or for more information contact Marianne Butler at 707.301.5778.



Mariah Patrick, 11th Grade  
Armijo High School, Kelly Chapman

## FREE STUDENT WORKBOOKS

Available while supplies last.  
Substitution may be made  
pending availability of materials.

### SALMONID SAVERS *Grades 6-8*

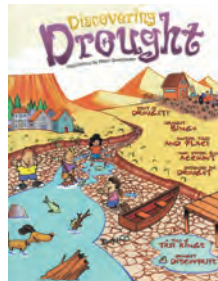
Capture the imagination of your students as they learn about the anadromous species native to their local waters in this beautifully illustrated activity book. Tiny and Flo, a Chinook salmon and a steelhead trout, share their experiences as they travel from the ocean back to their spawning grounds in seven engaging, cross-curricular activities.

### DISCOVERING DROUGHT

*Grades 6-10*

Teaching about DROUGHT cannot come at a better time for Californians!

Reading and math skills are promoted in this fun-filled activity booklet developed by Project WET and other water agencies. (14 pages)



PAGE 4



### CALIFORNIA WATER WORKS AND WHY IT DOES *Grades 6-10*

This colorful student workbook helps students understand the water cycle and how water is delivered by natural and man-made systems in California. Conservation is also discussed. Available in English and Spanish. (16 pages)

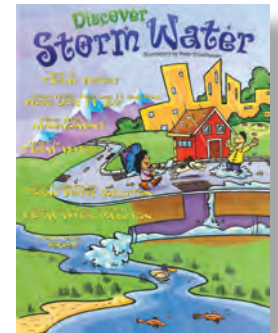
### CONSERVE WATER STUDENT'S BOOKLET *Grades 6-10*

A 16 page booklet of games, puzzles, and activities designed to teach students about water conservation. To be used with CONSERVE WATER EDUCATOR'S GUIDE. (See page 1)

### DISCOVER STORM WATER

*Grades 6-12*

This lively booklet explains the importance of storm water management and is filled with interesting facts, engineering and mathematical exercises, vocabulary, puzzles and ways in which we all can prevent storm water pollution.



### CAPTAIN HYDRO, A WATER CONSERVATION WORKBOOK *Grades 6-12*

A comic book story of Captain Hydro chasing down the Evil Water Bandit with 26 pages of student worksheets, projects, and problem-solving situations. Available in English and Spanish. (30 pages)

## FREE MAPS, POSTERS AND OTHER ITEMS

### FREE STUDENT INCENTIVE ITEMS

**LIST A**—Teach a unit on water and request a classroom set of **THREE ITEMS** from the following list to distribute to participating students. Colorful items below boast a variety of water messages; great for extending students' awareness.

• Erasers • Pencils • Rulers • Stickers

**LIST B**—The following items are also available for teachers to order. Please check 1 to 5 of these items on the order form for students to receive.

**California's Amazing Delta Book Covers:** graphics and activities students complete illustrating the routing of water through our Sacramento-San Joaquin Delta—our vital source of drinking water for California!

**Bookmarks:** student designed providing water conservation tips.

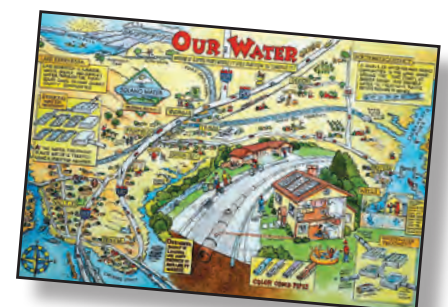
**California Water Facts Booklet:** provides important facts about California water.

**"F.O.G. - No Fats, Oil or Greasy Scraps Down the Drain!":** plastic scrapers to remind families of disposing "F.O.G." in the garbage rather than drains to prevent clogs.

**Parent/Student Water Conservation Survey Checklist Sheets:** Students and families complete their household survey checklists and return them to class for further discussion and ways of taking action. Prizes for students included.

### MAPS & POSTERS! ONE PER TEACHER:

- The Water Cycle Map *Grades 6-12*
- California Water Ways Poster Map *Grades 6-12*
- The Delta Map *Grades 6-12*
- How Does Groundwater Affect Your Water Supply *Grades 6-12*
- How We Can Save Water At Home Poster *Grades 6-12*
- Our Water for Solano County Poster *Grades 6-12*



# FREE WATER EDUCATION PROGRAMS & MORE

## IN-CLASS SWEP WATER CONSERVATION PRESENTATIONS

Take advantage of this **FREE**, varied and highly interactive 45-60 minute water conservation presentation based on CA State Standards (6 - 12 grades). Useful and fun FREE teacher and student give-a-ways included. Why not invite your entire grade level at your school to participate?



### Investigate Water/Wastewater Industry Career Opportunities in your classroom for Middle and High School students

Through an overview of water science and water conservation, students will engage in an exciting activity to explore the possibilities of careers in the world of water/wastewater industry. It is never too early for students to become aware of the skills they will need in the professional world and to set a goal for achieving a fulfilling career. The program is in collaboration with Solano Community College (SCC) and Solano County Office of Education (SCOE). Please contact Ursula Heffernon at [uheffernon@pacbell.net](mailto:uheffernon@pacbell.net) as soon as possible to schedule your in-class reservation.

Contact directly:  
**Ursula Heffernon**  
 at  
**530.661.7149**  
 or  
**[uheffernon@pacbell.net](mailto:uheffernon@pacbell.net)**

## Faculty In-Service Presentations at Your School

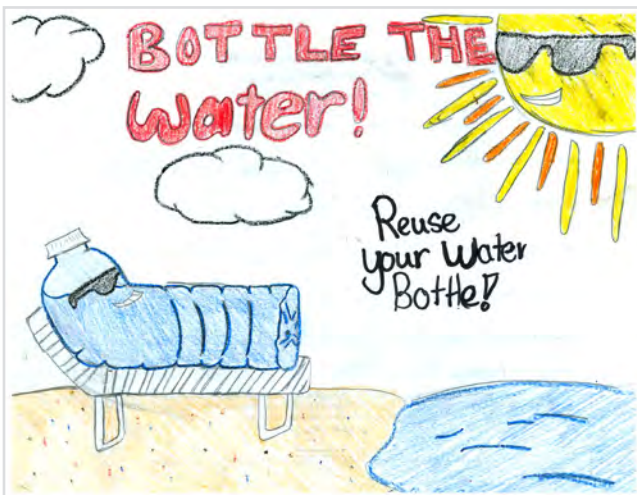
This is an opportunity for entire school staff or individual grade level/subject area teachers, to learn about SWEP programs as well as preview and receive/order materials. General information about local water sources and issues will be presented. Presentations are 10-20 minutes and are scheduled at staff's convenience. We recommend scheduling an abbreviated version during monthly school in-service programs.

## 2011-2012 Conserve Water Bookmark Art Contest

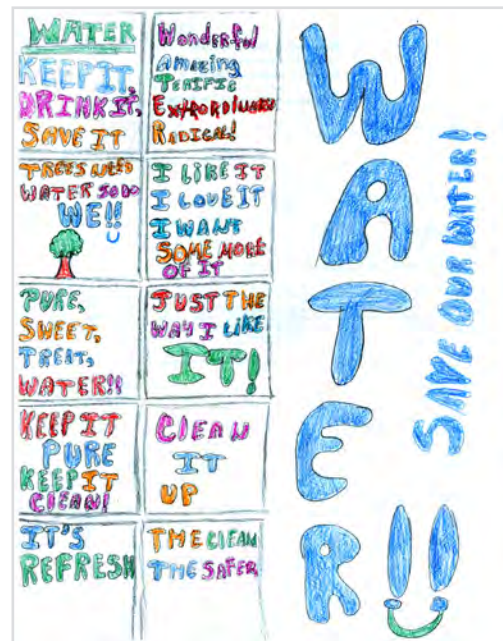
SWEP's annual contest for all grades in our region will be in April/May 2011 through your local libraries which will provide contest information and entry forms. This event is in anticipation of California's recognition of "May-Water Awareness Month." Entry deadline May 15, 2012. **Wonderful prizes such as tickets to Six Flags, movie theater tickets, teacher gift certificates, etc.** plus public recognition will be awarded in June to student contest winners and their classmates.

## 2011-12 Conserve Water Video Contest for High School Students

In honor of MAY-Water Awareness Month, Solano County Water Agency will sponsor our second annual video contest for all high school students in Solano County. Cash awards are split between students who create the winning video with the high school they attend. The winning videos are then used as public service announcements and as educational outreach materials. To view past winning videos, go to [www.solanosaveswater.org](http://www.solanosaveswater.org) or [www.sidwater.org](http://www.sidwater.org). Contest rules and entry information are posted on these same websites. Contact: [uheffernon@pacbell.net](mailto:uheffernon@pacbell.net). Entries may be submitted at any time during the school year with an entry deadline of May 1, 2012.



Julienne Davidson, 6th Grade  
 Grange Middle School, Brenda Rough

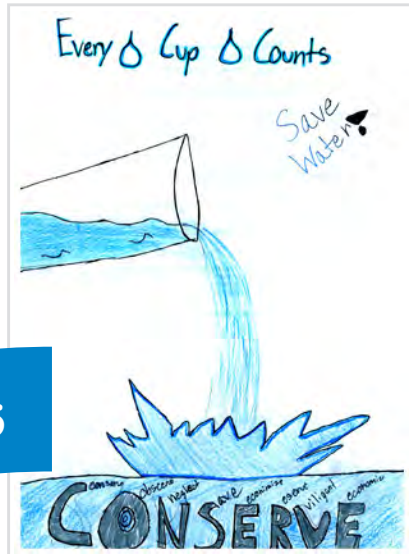


Taylor Carey, 6th Grade  
 Grange Middle School, Lori Bader

# FREE WATER EDUCATION PROGRAMS & MORE

## SUISUN MARSH WATERSHED EDUCATION PROGRAM

6th and 7th grade students in Solano County have the opportunity to take part in the Suisun Marsh Education Program funded by Solano County Water Agency and SB70 grants – Community Collaborative and Workforce Innovation Partnerships, funded by the California Community Colleges Chancellors Office. The program is built around a full-day field trip to Rush Ranch Nature Center, where students rotate through three hands-on learning stations covering the marsh's soil, water, and plants. After lunch, students take a nature hike, finding a perfect spot to write poetry about their experiences in marsh. Environmental educators from Solano and Suisun RCD lead three pre-field trip classroom lessons to help students prepare for the field trip, guide the experience at the marsh, and then lead the post-field trip recap and marine debris lesson. The concepts in all programs are directly linked to the California State Science Content Standards and offer local children a concrete, experiential introduction to their watershed and the creatures that inhabit it. Contact directly: Marianne Butler with Solano Resource Conservation District; [Marianne.Butler@solanorcd.org](mailto:Marianne.Butler@solanorcd.org); 707.301.5778; [www.solanorcd.org](http://www.solanorcd.org),



Ade Hutchinson, 6th Grade  
Grange Middle School, Lori Bader



Tahoe Bautista, 9th Grade  
Armijo High School, Ms. Cupid



Jocelyn Mason, 11th Grade  
Armijo High School, Ms. Stewart

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## LINKS TO MORE RESOURCES

### AN EYE ON CLIMATE CHANGE

[www.usanpn.org](http://www.usanpn.org)

### AQUAFORNIA - [aquaforia.com](http://aquaforia.com)

### Bay Area Consortium of Water & Wastewater Education

[www.bacwwe.org](http://www.bacwwe.org)

### BEFORE YOU HARVEST- CONSERVE

[www.harvesth2o.com/BeforeHarvest.shtml](http://www.harvesth2o.com/BeforeHarvest.shtml)

### CA Department Of Water Resources

[www.dwr.water.ca.gov](http://www.dwr.water.ca.gov) and [www.water.ca.gov](http://www.water.ca.gov)

### CALIFORNIA COOPERATIVE SNOW SURVEYS

<http://cdec.water.ca.gov/snow>

### CALIFORNIA DROUGHT WEBSITE

[www.water.ca.gov/drought](http://www.water.ca.gov/drought)

### CALIFORNIA Education and the Environmental Initiative (EEI)

[www.caepa.ca.gov/education/eei/Curriculum/](http://www.caepa.ca.gov/education/eei/Curriculum/)

### CALIFORNIA WATER RESOURCES

<http://ca.water.usgs.gov>

### Career Paths for Water Protection

[www.h2oportunity.net](http://www.h2oportunity.net)

### City of Dixon -

[www.ci.dixon.ca.us/publicworks/index.html](http://www.ci.dixon.ca.us/publicworks/index.html)

### \*City of Fairfield

[www.ci.fairfield.ca.us/publicworks.htm](http://www.ci.fairfield.ca.us/publicworks.htm)

### \*City of Vacaville - [www.ci.vacaville.ca.us/departments/public\\_works/](http://www.ci.vacaville.ca.us/departments/public_works/)

### CLIMATE CLUES IN SPRING WILDFLOWERS

[www.budburst.org](http://www.budburst.org)

### \*CREEC Network and Resource Directory

[www.creec.org](http://www.creec.org)

### Education and the Environment Initiative

[www.calepa.ca.gov/education/eei/](http://www.calepa.ca.gov/education/eei/)

### \*Fairfield Suisun Sewer District

[www.fssd.com](http://www.fssd.com)

### H2O, WHERE DID YOU GO?

[www.showsthatteach.com](http://www.showsthatteach.com)

### CREEC Network and Resource Directory

[www.creec.org](http://www.creec.org)

### Solano Community College

[www.solano.edu](http://www.solano.edu)

### \*Solano County Water Agency (SCWA)

[www.solanosaveswater.org](http://www.solanosaveswater.org)

### \*Solano Irrigation District (SID)

[www.sidwater.org/water\\_quality](http://www.sidwater.org/water_quality)

### Solano Natural Resource Conservation District (SNRCD)

[www.solanorcd.org/educationnew.htm](http://www.solanorcd.org/educationnew.htm)

### \*Suisun City [www.suisun.com/PublicWorks.html](http://www.suisun.com/PublicWorks.html)

### The California Regional Environmental Education Community (CREC)

### WATER & MYTHOLOGY

[webworld.unesco.org/water/wwd2006/world\\_views/water\\_mythology.shtml](http://webworld.unesco.org/water/wwd2006/world_views/water_mythology.shtml)

### WATER AND OUR HERITAGE

[webworld.unesco.org/water/wwd2006/water\\_heritage/water\\_social\\_lives.shtml](http://webworld.unesco.org/water/wwd2006/water_heritage/water_social_lives.shtml)

### WATER AND WORLD VIEWS

[webworld.unesco.org/water/wwd2006/world\\_views/water\\_language.shtml#top](http://webworld.unesco.org/water/wwd2006/world_views/water_language.shtml#top)

### Water Education Foundation

[www.watereducation.org/](http://www.watereducation.org/)

### WATER USE CALCULATOR

[www.waterbudgets.com/ConserVision/CUWCC/DataInput.htm](http://www.waterbudgets.com/ConserVision/CUWCC/DataInput.htm)

\*Links to the electronic version of this SWEP Brochure on these sites.

# TO ORDER, COMPLETELY fill out the information at the bottom of this page.

**NOTE: one form for EACH teacher. Detach order page, fold, stamp and mail or FAX to 1.530.661.7149 immediately while materials and programs are still available.**

To schedule in-class programs, assemblies, field trips and/or workshops, be sure to contact the person noted to make your request as early as possible in the school year for the best chance of participating. For additional information, contact: Ursula Heffernon, School Water Education Program (SWEP) Consultant; Tele/Fax: 530.661.7149 or [uheffernon@pacbell.net](mailto:uheffernon@pacbell.net)

## PLEASE INDICATE WHICH RESOURCE ITEMS YOU WOULD LIKE TO BORROW (page 2)

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## TEACHER CURRICULUM PACKETS (page 3) One per teacher for grade level taught:

- Waves, Wetlands and Watersheds **6-8**
- Water Precious Water **6-12**
- Hands-On Water Activities **6-12**
- Conserve Water Educator's Guide **6-12**
- Groundwater Education **7-10**
- California Water Problems **9-12**
- Project Water Science **9-12**

## TEACHER WORKSHOPS & OPPORTUNITIES (page 3)

- Project WET Teachers Workshops **All Grade Levels Nov 12, 2011 & Feb 11, 2012 in Solano County**
- COASTWEEKS Cleanup of local in-land water ways. Participation: **September 17–October 9, 2011**

## STUDENT WORKBOOKS (page 4) Indicate number of students taught:

- Salmonid Savers **6-8**
- Discovering Drought **6-10**
- California Water Works **6-10**  
 **English**  **Spanish**
- Conserve Water Student's Booklet **6-10**
- Discover Storm Water **6-12**
- Captain Hydro **6-12**  
 **English**  **Spanish**

## FREE STUDENT INCENTIVE ITEMS (page 4) List A: Check only 3 items per classroom

Erasers  Pencils  Rulers  Stickers



## List B: Check 1 to 5 items per classroom

- California's Amazing Delta Book Covers
- Student art bookmarks
- California Water Facts Booklet (for 6th grade only)
- F.O.G. Scrapers
- Parent/Student Water Conservation Survey Checklists

## MAPS AND POSTERS (page 4) Maximum of two per teacher:

- The Water Cycle Map **6-12**
- California Water Ways Poster Map **6-12**
- The Delta Map **6-12**
- How Does Groundwater Affect Your Water Supply Poster **6-12**
- How We Can Save Water At Home Poster **6-12**
- Our Water for Solano County Poster **6-12**

## CHECK AS MANY 2011-2012 OPPORTUNITIES YOU WOULD LIKE TO PARTICIPATE IN (pages 5-6):

- In-Class Water Conservation Presentations **All Grade Levels**
- Water Industry Career Opportunities Overview **MS-HS** 
- Faculty In-Service SWEP Presentations **FOR EDUCATORS**
- Conserve Water Bookmark Art Contest 2011-2012 April 1- May 15 (entry deadline), 2011 **K-12**
- High School Conserve Water Video Contest 2011-2012 September – May 1 (entry deadline), 2012 **9-12** 
- Suisun Marsh Field Trips **2-12: Nominal Fee**
- Project WET Teachers Workshops **All Grade Levels Saturdays, November 12, 2011 & February 11, 2012 in Solano County**
- COASTWEEKS Cleanup of local in-land water ways. Participation: **September 17–October 9, 2011**

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TEACHER'S FULL NAME: \_\_\_\_\_

Grade: \_\_\_\_\_ Number of Students: \_\_\_\_\_ School Name: \_\_\_\_\_

Email (**must provide**): \_\_\_\_\_

Telephone: \_\_\_\_\_

Best time to call: \_\_\_\_\_

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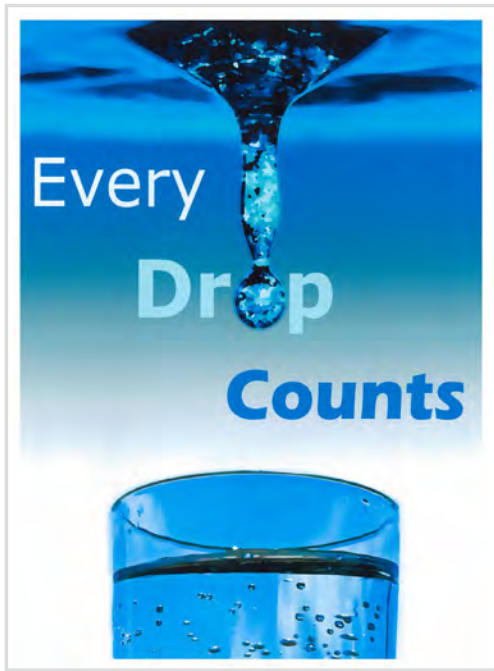
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POSTAGE

**Ursula Heffernon, SWEPC Consultant  
School Water Education Program  
1115 Silverado Drive  
Woodland, CA 95695**

Fold, Seal & Mail



*Santos Fernandez, 12th Grade  
Dixon High School, Mrs. Long*



*'Dre' Wright, 11th Grade  
Dixon High School, Mrs. Long*

**Printed on recycled paper**