

INTERPRETATION IS MORE THAN JUST “FLUFF”

Karla Zeutenhorst

Park Ranger

Gavins Point Project / Lewis and Clark Visitor Center

NRM Workshop – April 18, 2017



Anglers & Boaters Help Slow the Spread of Zebra Mussels at Lewis & Clark Lake



These mussel invaders can completely clog pipes and water intakes and their sharp shells can make boaters dangerous for bare feet. They are filter feeders and may also compete with forage fish and small game fish for food.

Each female mussel can produce over 1 million offspring per year. Mussel larvae, called veligers, can survive in trace amounts of water in a boat for up to 30 days.



Reproducing colonies of Zebra Mussels have been found throughout Lewis & Clark Lake and the Missouri River below Gavins Point Dam. Without your help they may quickly spread to new waters in South Dakota and Nebraska.







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United States District Court
Violation Notice

Violation Number 6580976	Officer Name (Print)	Officer No.
YOU ARE CHARGED WITH THE FOLLOWING VIOLATION		
Date and Time of Offense (mm/dd/yyyy)	Offense Charged: <input type="checkbox"/> CFR <input type="checkbox"/> USC <input type="checkbox"/> State Code	
Place of Offense		
Offense Description: (Actual Basis for Charge)		

6580976

DEFENDANT INFORMATION		Phone: () - () - ()
Last Name	First Name	MI
Street Address		
City	State Code	Date of Birth (mm/dd/yyyy)
Driver's License No.	CDS, D, DL, BUS, etc.	Expiry No.
<input type="checkbox"/> Adult <input type="checkbox"/> Juvenile	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	Height
Weight		
VEHICLE VIN		
Tag No.	State	Year Make/Model MAKE IS

<input type="checkbox"/> IF BOX A IS CHECKED, YOU MUST APPEAR IN COURT. SEE INSTRUCTIONS (on back of yellow card).	<input type="checkbox"/> IF BOX B IS CHECKED, YOU MUST PAY AMOUNT INDICATED BELOW OR APPEAR IN COURT. SEE INSTRUCTIONS (on back of yellow card).
	\$ _____ Forfeiture Amount + \$30 Processing Fee \$ _____ Total Collateral Due

PAY THIS AMOUNT →

YOUR COURT DATE

(If no court appearance date is shown, you will be notified of your appearance date by mail.)

Court Address	Date (mm/dd/yyyy)
	Time (h:m:am)

My signature signifies that I have received a copy of this violation notice. It is not an admission of guilt. I promise to appear for the hearing at the time and place instructed or pay the total collateral due.

X Defendant Signature _____
(Rev. 03/2015) Original - CVB Copy



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there
is **no**
poop
fairy!



Please clean up after your pet

- Dog waste does not biodegrade like wild animal waste; it sticks around a long time.
- It contains harmful bacteria, pollutes groundwater and smells disgusting.
- Help keep parks and trails free of poop by picking up your pet's waste and disposing of it properly.



SANTA CLARA
COUNTY PARKS

County ordinance requires cleanup of pet waste (Sec. B14-34.1(C))



G STRONG®

What is Interpretation

- The Corps defines interpretation as:

Communication and education processes provided to internal and external audiences, which support the accomplishment of Corps missions, tell the Corps story, and reveal the meaning of, and relationships between natural, cultural, and created environments and features.



Isn't Interp Just “Fluff”?

- Outreach and problem solving
- Building partnerships out of our relationships with the public
- Positive community relations



Value of our Programs

- People don't know the value of what we do
- This includes people in the Corps or at our own projects



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Value of our Programs

- Protection of life and property
- Economic
- Social
- Quality of Life
- Intangible



Value of our Programs

- Before our communities will embrace the values of our program
- They must be aware of us as an agency
- They won't if we don't communicate with them



Interpretive Goals

Thanks to Brian Westfall letting me use parts of his Interpretive Services presentation.



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Interpretive Goals

- To achieve management objectives using interpretive techniques
- To provide environmental education to foster stewardship of natural, cultural and created environments



Interpretive Goals

- To incorporate Corps civil works and military missions into interpretive programming
- To improve visitor and employee safety using interpretive techniques



Interpretive Goals

- To use environmental education, partnerships, career development, recruitment and special programs and events to encourage students to pursue careers in math and science.



HEADQUARTERS



US Army Corps of Engineers

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ABOUT

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MISSIONS

LOCATIONS

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MEDIA

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[View on dvidshub.net](#)

The U.S. Army Corps of Engineers recognizes the critical role that Science, Technology, Engineering and Mathematics (STEM) education plays in enabling the U.S. to remain the economic and technological leaders of the global marketplace, and enabling the Department of Defense and Army in the security of our Nation.

Useful Links

[Career Fairs](#)

[STEM Brochure](#)

[STEM Internships](#)

[USACE STEM ED Program](#)

<http://www.usace.army.mil/STEM>



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How do I Support a STEM Awareness Program?

- Identify a school or desired STEM Awareness Program site (location/region) where you would like the program to take place
- Determine the type of STEM Awareness Program desired and period of performance for program
- Contact the USACE Sacramento District (SPK) Contracting POC – who issues the call
- Issue MIPR after call is negotiated (See MIPR SOP)
- SPK issues a call upon receipt of funding (See BPA SOP)
- BPA cost per "Call" (Plus per diem based on JTR)
 - STEM Awareness Program - \$17,000
 - STEM Community Events/Fairs - \$13,700
 - Science Fair (one day, 100 Students) - \$12,300
- GMI8 coordinates the STEM Awareness Program and includes federal agency
- GMI8 conducts your STEM Awareness Program

Timeline

- Timing is key – There are approximately 27 weeks between September and June that are optimal for programming during the academic school year
- If a relationship needs to be established with a school, an event could take up to three months to coordinate
- Coordinating a STEM Awareness Program can be quicker with schools that have already benefited from a previous program
- School and federal agency schedules must be coordinated when planning a STEM Awareness Program



USACE Contracting Contact Information

Angela Hermanson

Contracting POC
USACE Sacramento District
1325 J Street
Sacramento, CA 95814-2922
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Blanca Roberts

Program Manager POC
USACE Headquarters
441 G Street, NW
Washington, DC 20314-1000
Tel: 202-761-8668
E-mail: blanca.o.roberts@usace.army.mil



National STEM Awareness Program

Promoting Awareness of Opportunities in Science, Technology, Engineering and Math (STEM) among Underrepresented Students

Blanket Purchase Agreement (BPA) available for all Federal Agencies Managed by the U.S. Army Corps of Engineers

Interpretive Goals

- To enhance visitor's experience and enjoyment by anticipating their needs providing interpretive resources to meet those needs



Where Do We Start?



Behavioral Objectives



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Brainstorming



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Cost to Visitor Ratio



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Bring it to the Boss



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Examples



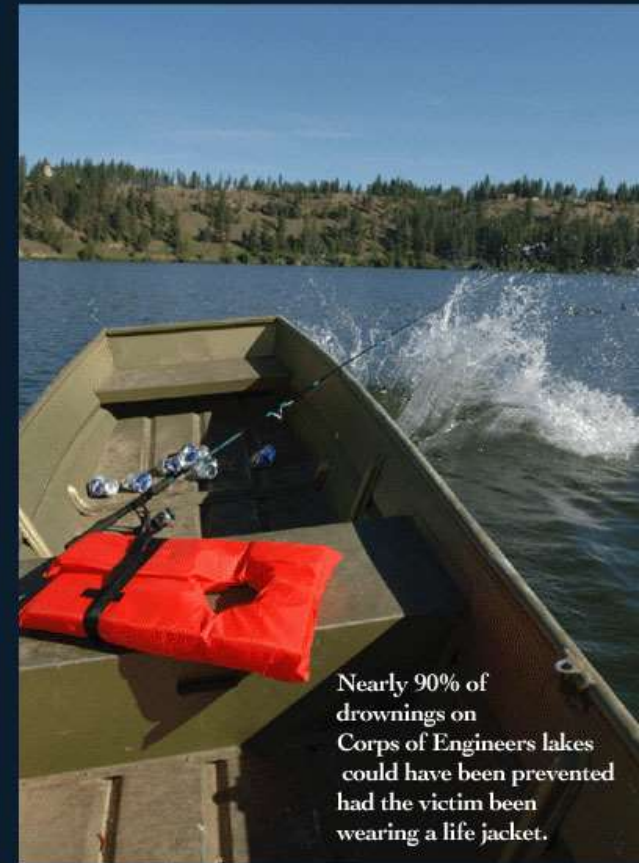
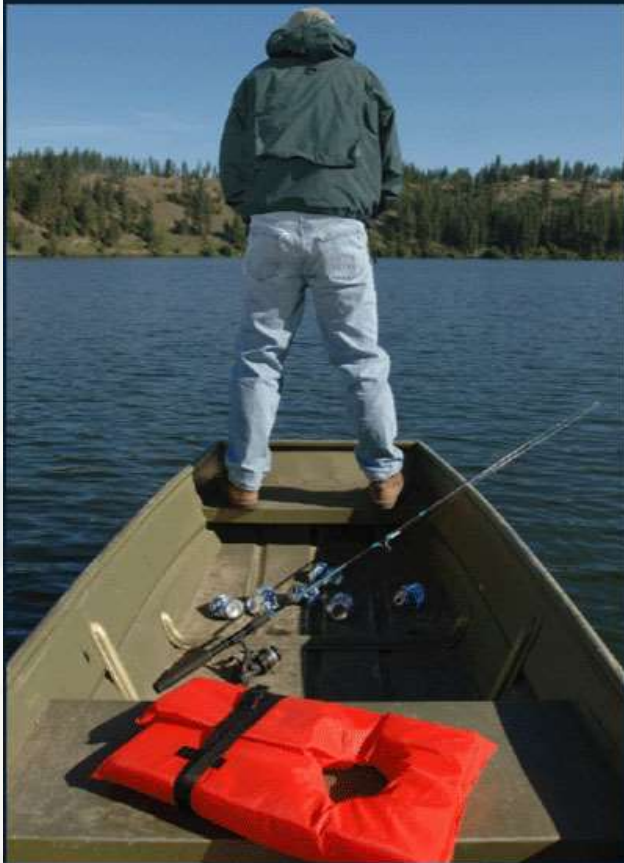
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Printables



WOW! What an embarrassing way to go.

Don't let a fall overboard put you under.



Nearly 90% of drownings on Corps of Engineers lakes could have been prevented had the victim been wearing a life jacket.



US Army Corps
of Engineers®

Be safe. WEAR a life jacket.

<http://watersafety.usace.army.mil/>

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US Army Corps
of Engineers
Portland District

Anglers - Leave No Trace

Know Before You Go

Know the regulations and special concerns for the area you'll visit. Recreation hours vary seasonally. Be prepared! Bring supplies for extreme weather, hazards, boating and emergencies.

Pack It In, Pack It Out!

Take all trash and food with you when you leave- there are no garbage services in this area! Inspect your area for any trash or spilled foods.

Leave It As You Find It

Walk or bike on designated trails only. Use only authorized fishing access trails. Leave rocks, plants and other objects of interest as you find them. Avoid introducing or transporting non-native species.

Be Careful with Fire

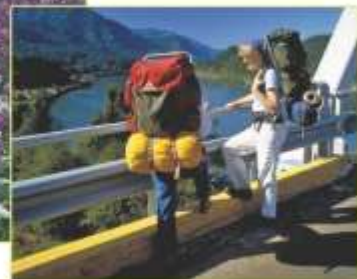
Fires are allowed in grills only- no open fire pits! Don't bring firewood from other areas as it can harbor tree killing insects and diseases. Many states regulate the movement of untreated firewood.

Keep Wildlife Wild

Observe wildlife from a distance and never approach, feed or follow them. Human food is unhealthy for all wildlife and feeding them starts bad habits.

Share Our Trails and Manage Your Pet

Keep your pet under control to protect it, other visitors and wildlife. Listen to nature. You will see more wildlife if you are quiet and remember, other visitors are there to enjoy the outdoors too!









Zebra and Quagga Mussel Sightings Distribution

Dreissena polymorpha and *D. rostriformis bugensis*



Map produced by the U.S. Geological Survey
Nonindigenous Aquatic Species Database, February 27, 2017.

- Zebra mussel occurrences
- Quagga mussel occurrences
- ▲ Zebra or Quagga mussel occurrences
- Both species occurrences
- Zebra/Quagga mussels eradicated
- Zebra/Quagga mussels failed



**US Army Corps
of Engineers** ®
Omaha District



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Anglers & Boaters

Help Slow the Spread of Zebra Mussels at Lewis & Clark Lake



These small invaders can completely clog pipes and water intakes and their sharp shells can make beaches dangerous for bare feet. They are filter feeders and may directly compete with forage fish and small game fish for food.

Each female mussel can produce over 1 million offspring per year. Mussel larvae, called veligers can survive in trace amounts of water in a boat for up to 30 days!



Reproducing colonies of Zebra Mussels have been found throughout Lewis & Clark Lake and the Missouri River below Gavins Point Dam. Without your help they may quickly spread to new waters in South Dakota and Nebraska.

How Can You Help?

- **Clean**

Remove all vegetation from water-related equipment after each use and regularly power wash your boat and trailer with hot water.

- **Drain**

Open or remove all drain plugs when your boat is not in the water.

- **Dry**

When possible, allow your boat to fully dry for at least five days.

- **Dispose**

Always place unused bait in the fish grinder and dump water from your bait bucket or livewell on dry ground before leaving your fishing area.

For more information visit:



or

www.neinvasives.com



US Army Corps
of Engineers



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Direct Contact

Public Programs / Outreach



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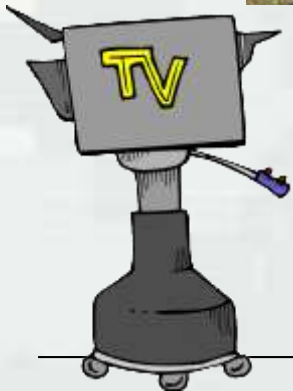


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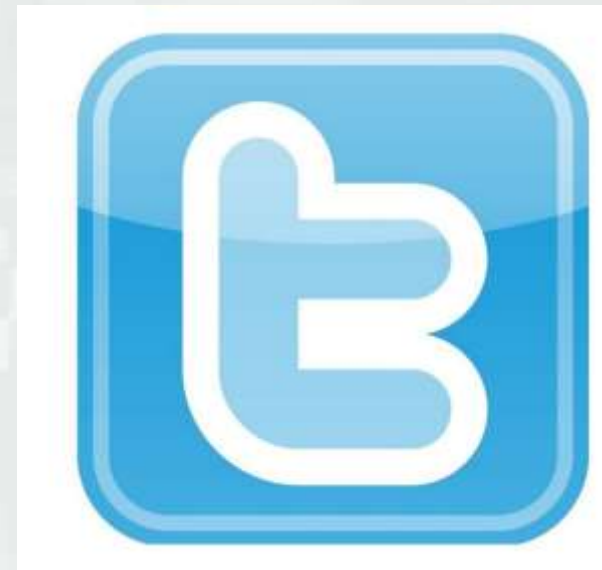
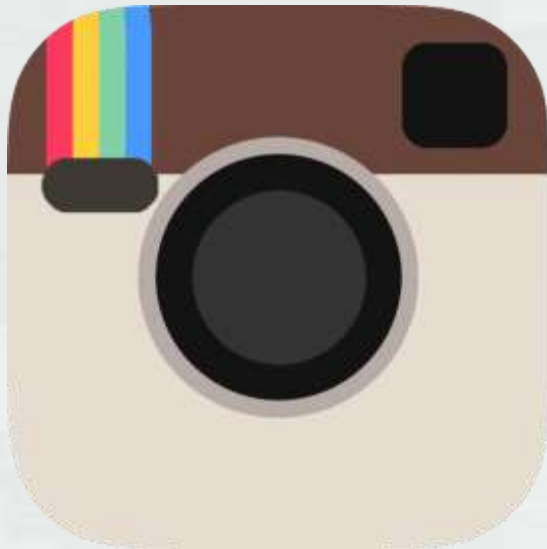


Media





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Coho Salmon Project



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Along with your help the following organizations are
working together to save the Coho:

US Army Corps of Engineers
Sonoma County Water Agency
National Marine Fisheries Service
California Department of Fish and Wildlife



11:42 / 12:12



Experiencing interruptions?

[Find out why](#)



Collaboration at its Best: Saving the Central Coast California Coho
Salmon



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You Can Help:

- Keep watershed clean
- Conserving water
- Pick up litter
- Keep pollutants out of storm drains
- Volunteer



11:22 / 12:12



Experiencing interruptions?

[Find out why](#)



Collaboration at its Best: Saving the Central Coast California Coho Salmon



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Displays / Exhibits





156 in (13")



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WELCOME TO LAKE SONOMA!

THE RUSSIAN RIVER WATERSHED PROVIDES

Water to Lake Sonoma. A healthy fish
population. The Russian River Watershed provides
a plentiful way of life for its residents
— a healthy way of people, fish and wildlife.

This beautiful region, however, has had its
share of challenges. To address problems like
excessive flooding and drought, and to provide
a guaranteed water supply for residents and
important fish like the tule perch and
steelhead trout, the US Army Corps of
Engineers constructed Warren Springs Dam.

In 1963, Lake Sonoma was created.

A MISSION OF STEWARDSHIP

Now, our shared region has been taken up by
a mission of stewardship — to take care of the
environment, just as the generations before
took care of the people.

In fact, between now and 2025, plans place Warren
Springs Dam and Sonoma's distant tributaries
located in the Lake Sonoma Area — the
Clydesdale, Little, and Klamath Rivers — under
the water in which present stewardship can
protecting this beautiful area for the future.

Walkout to Lake Superior. A highway for the Province gives skaters a perfect a peaceful way of 100 to 100 miles a wonderful view of people, fish, and wildlife.

This beautiful region, however, has had its share of challenges. To address problems like seasonal flooding and drought, and to provide a managed water supply for residents and important fish like the coho salmon and steelhead trout, the US Army Corps of Engineers constructed Warm Springs Dam.

In 1981, Lake Umbagog was listed

There, you learned agriculture from others in a manner of apprenticeship, to take care of the community, just as the entrepreneur takes care of the people.

In this edition, new Will stars play: North Springs, Texas and the Valley district habitats found in the Lake Houston Area - the "Cypress, Loblolly, and Driftwood" program - and the story in which several managers are pursuing this beautiful area for the future.

54 in
(4.5')

...DING STRONG®

38 in (3' 2")



The water captured by the U.S. Army Corps of Engineers in the Missouri River is used to generate hydropower. This clean, renewable energy source is used to power a variety of facilities, including the Corps' own operations. Hydropower is a key component of the Corps' mission to provide water for the people of the United States.

Hydropower Water Supply



The water captured by the U.S. Army Corps of Engineers in the Missouri River is used to generate hydropower. This clean, renewable energy source is used to power a variety of facilities, including the Corps' own operations. Hydropower is a key component of the Corps' mission to provide water for the people of the United States.



Since 1918, the Corps has been working to protect the people of the United States from the threat of flooding. The Corps has built a network of levees, floodwalls, and other flood control structures that have saved lives and property. The Corps continues to work to improve its flood control programs and to protect the people of the United States from the threat of flooding.

Flood Damage Reduction

Fish and Wildlife



The U.S. Army Corps of Engineers is committed to protecting the fish and wildlife resources of the Missouri River. The Corps has built a network of fish and wildlife refuges that provide habitat for a variety of species. The Corps continues to work to improve its fish and wildlife programs and to protect the resources of the Missouri River.



The U.S. Army Corps of Engineers is committed to providing a safe and efficient navigation system for the people of the United States. The Corps has built a network of locks and dams that provide a continuous waterway for navigation. The Corps continues to work to improve its navigation programs and to provide a safe and efficient navigation system for the people of the United States.

Navigation

Recreation



The U.S. Army Corps of Engineers is committed to providing a safe and efficient navigation system for the people of the United States. The Corps has built a network of locks and dams that provide a continuous waterway for navigation. The Corps continues to work to improve its navigation programs and to provide a safe and efficient navigation system for the people of the United States.



The U.S. Army Corps of Engineers is committed to providing a safe and efficient irrigation system for the people of the United States. The Corps has built a network of irrigation canals and ditches that provide water for a variety of crops. The Corps continues to work to improve its irrigation programs and to provide a safe and efficient irrigation system for the people of the United States.

Irrigation

Water Quality



The U.S. Army Corps of Engineers is committed to providing a safe and efficient water supply for the people of the United States. The Corps has built a network of water supply facilities that provide water for a variety of uses. The Corps continues to work to improve its water supply programs and to provide a safe and efficient water supply for the people of the United States.

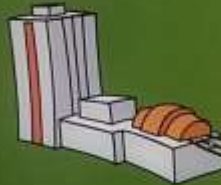
CORPS MISSIONS on the MISSOURI RIVER

- Hydropower
- Water Supply
- Flood Damage Reduction
- Fish and Wildlife
- Navigation
- Recreation
- Irrigation
- Water Quality

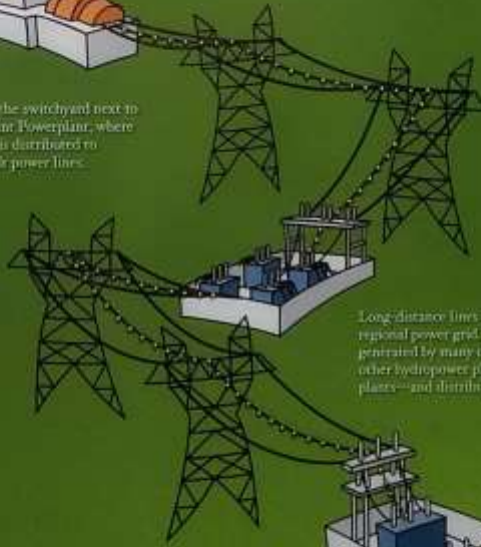
The U.S. Army Corps of Engineers is committed to providing a safe and efficient water supply for the people of the United States. The Corps has built a network of water supply facilities that provide water for a variety of uses. The Corps continues to work to improve its water supply programs and to provide a safe and efficient water supply for the people of the United States.

Where **DOES** the **POWER GO?**

Gavins Point Powerplant generates enough electricity for 30,000 households—but that does not mean 30,000 homes are hard-wired to the powerplant. Where does the power go?

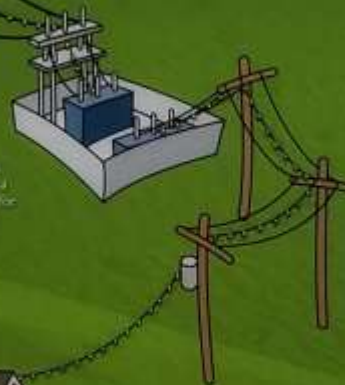


First stop: the switchyard next to Gavins Point Powerplant, where electricity is distributed to 115,000-volt power lines.



Long-distance lines carry the current to the regional power grid. The grid combines electricity generated by many different sources—including other hydropower plants, coal plants, and nuclear plants—and distributes it across a broad area.

Somewhere within the service area, the current is drawn off the grid at a local substation and stepped down for residential and commercial use.



Utility lines deliver the power to households.



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Wayside Signs

Plugging in to the Sun

This charging station converts sunlight into electricity. You can use this station to charge your electric car, hybrid bicycle, or cell phone while you visit the museum.



An Alternative to Gas Powered Cars

Electric vehicles (EVs) are powered by batteries instead of gasoline. EVs are much more energy efficient than their gas guzzling counterparts and produce zero tailpipe emissions. Instead of refueling at a gas station, EV owners simply plug their car into an outlet or charging station to recharge the battery.

Most EVs are practical for in-town driving because their batteries need recharging every 100-200 miles, which can take up to several hours. Despite these challenges, the future for EVs looks bright. Researchers are continually improving EV batteries to make them last longer and charge more efficiently.

EVs and hybrid bikes are energy efficient and do not pollute while being driven but they are not necessarily emission-free. In order to be 100% zero emission, the electricity used to charge the EV must be generated by wind, solar, hydro, or another non-fossil fuel based resource.



Zero pounds

Tailpipe CO₂ emissions produced by driving an electric vehicle.



19.4 pounds

Tailpipe CO₂ emissions from one gallon of gasoline.



520 gallons

Average amount of gasoline used by one car in the U.S. for one year.



1 hour

Time it takes for enough solar energy to hit the Earth's surface to power the world for an entire year.

OMSI Solar Charging Station

was made possible by the following partners:



SANYO

InSpec

The love for all living creatures
is the most noble human attribute.

Charles Darwin

Do Not Disturb
Oct. 1 - April 30
Home for Wintering Waterfowl



STRONG®

Kaloko-Honokōhau National Historical Park

National Park Service
U.S. Department of the Interior



Maliu Point Resource Area

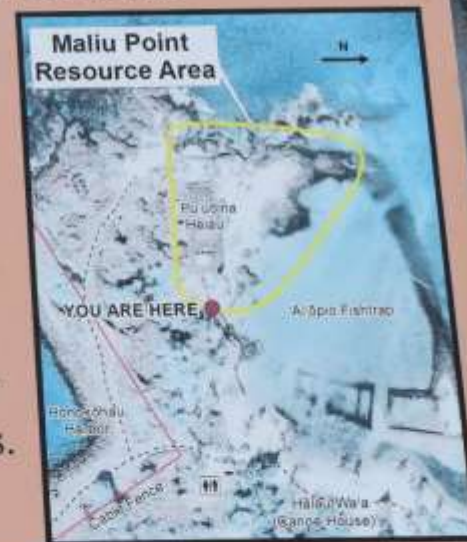
You are entering an area sacred to the Hawaiian people, a place deserving of our respect and protection. To protect important cultural resources, the following regulations apply in the Maliu Point Resource Area.

No sunbathing
(towels, beach chairs and beach mats are prohibited).

No throwing or tossing games.

No picnicking (coolers are prohibited).

No entry into areas marked with KAPU (sacred) signs.



Mālama i nā mea kahiko – care for the things of the past.
Once altered they are gone forever.

Local Salmon and You

Salmon are an important resident of our rivers and ocean. They are a vital food source and also add nutrients to the soil and ocean. Scientists know that if salmon are not healthy, it probably means that the rest of the ecosystem is in trouble.

Salmon lead more interesting lives than most! First born in freshwater rivers, they swim out to the salty ocean to grow during their early years. Then it's back to the river, traveling to the place they were born to mate and lay eggs. Throughout this journey, salmon need safe passage and cool, clean water to survive.

Salmon Lifecycle



Making Choices for Healthy Salmon

Salmon depend on us to take care of the rivers and ocean where they live and grow. Many of the problems that salmon face during their lives are a result of the personal choices that we make.

TRY THIS

Will the choices below help or harm salmon?

- Press a button and watch where the lights on the Salmon Lifecycle Interactive appear. The lights will glow at the part of the salmon lifecycle affected by this choice.
- If the choice helps salmon, blue lights will show. Yellow lights mean that the choice will harm salmon.

- ☐ Putting chemical fertilizer and pesticides on your lawn or garden.
- ☐ Volunteering to plant native plants near streams.
- ☐ Keeping motor oil and chemicals off the pavement and away from storm drains.

Salmon Struggles: Barriers to a Healthy Salmon Lifecycle

The salmon lifecycle is connected to human choices in many ways, but only as our personal choices affect salmon, but our agriculture, buildings, roads, and dams can also create challenges for salmon.

TRY THIS

How do these activities affect salmon?

- To see how salmon are affected, flip open the top doors.
- To see ways that you can help, flip open the doors underneath.



OMSI

Funding for this exhibit provided by NOAA Fisheries Service.



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COLD WATER CAN KILL

Hot weather doesn't mean the river water is warm. A life jacket can save you from the effects of cold water year-round.

Current Temperatures (F°)

Air
Temperature



Water
Temperature



**River water can remain
dangerously cold all year**



Cold Shock

The moment you fall in, the sudden cold can cause a gasp reflex, making you inhale water and drown quickly. Other cold shock responses include difficulty swimming and holding your breath, and dangerous heart rate and blood pressure leading to fainting or even heart attack.



Hypothermia

After a few minutes in cold water, a drop in core body temperature can lead to confusion, dizziness, or fainting, the effects of hypothermia. Wearing a life jacket can keep you warm and gives you time to catch your breath, stay afloat, and get help.



Tying it all Together

- Interpretation isn't all just “birds and bunny” programs
- It's a tool we can use to help us do our jobs
- A way to get the visitor to care about and protect our resources



Questions?



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