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Global Employee eMagazine

Chevron

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October 2012


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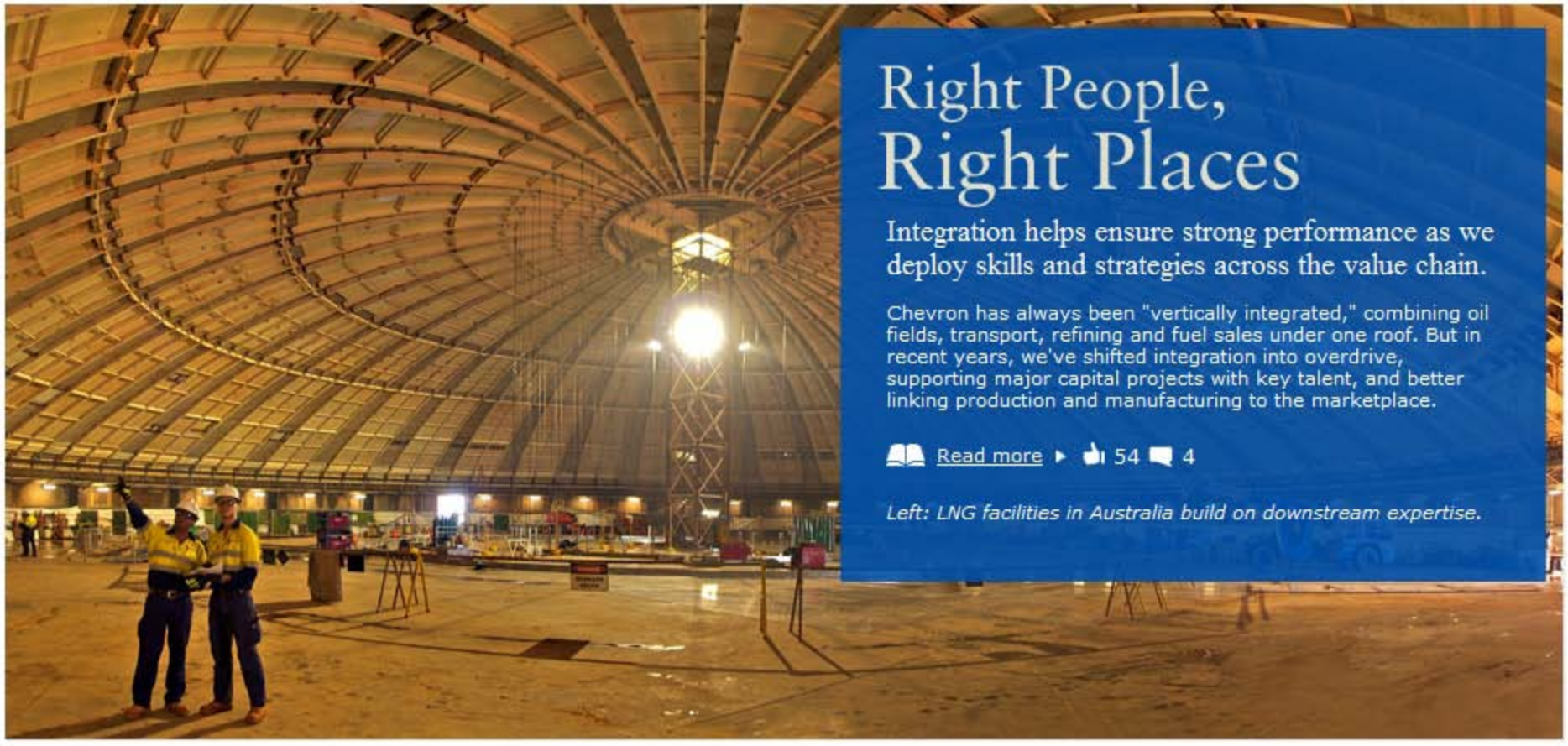

# Right People, Right Places

## Integration helps ensure strong performance as we deploy skills and strategies across the value chain.

Chevron has always been "vertically integrated," combining oil fields, transport, refining and fuel sales under one roof. But in recent years, we've shifted integration into overdrive, supporting major capital projects with key talent, and better linking production and manufacturing to the marketplace.

Read more ▸ 54 4

*Left: LNG facilities in Australia build on downstream expertise.*

# Right People, Right Places



**Veteran Chevron downstreamer Andrew MacLean is enjoying a new challenge at upstream's Gorgon project. Click to Read More.**

From Angola to the Gulf of Mexico, Nigeria to Kazakhstan, integration defines Chevron today. Since 2002, we've redeployed about 400 employees from "downstream" refinery and related jobs to support our "upstream" oil- and gas-producing projects. For example, Amy Jewell and Rachel Rojo transferred from our Richmond Refinery to support air quality compliance in U.S. shale gas operations and deepwater construction in the Gulf of Mexico. Jeff Barker and Kris Godlewsky left long-time careers at our Pascagoula Refinery to help us build and prepare to operate the Angola Liquefied Natural Gas (ALNG) project. And Andrew MacLean is leveraging a quarter-century of refinery experience to help lay the foundation for safe operations at our Gorgon LNG project in Australia.

**Processing Paramount**

Upstream depends far more on refinery-like processing facilities like those at our heavy oil projects in Canada and Venezuela. So downstream members now sit on upstream personnel development committees -- and each year, downstream is hiring 20 technical professionals above internal needs to provide the ability to release resources to the upstream.

Indeed, downstream talent and capabilities today are "vital to our success," said Chuck Taylor, corporate vice president for Strategic Planning. In Kazakhstan, some 40 advisers from downstream are supporting a massive turnaround of Tengizchevroil's sour crude oil processing facilities. One leader called it "a great opportunity to emphasize the importance of integration."

Our Business Development (BD) organization often promotes Chevron not just as a great partner for new projects, but a company offering an "integrated value proposition," says Mike Koch, BD's general

# Right People, Right Places



manager for strategy. Said Chairman and CEO John Watson in 2011: "There has never been a time in the past 30 years when it has been more important to be an integrated company."

**Value Chain Focus**

The integration imperative has driven major, structural change as well. Recently, Downstream & Chemicals (DS&C) refocused its entire organization on optimizing and supporting the "value chain" — from resource extraction to markets — to make Chevron a top competitor.

"We know from experience that organizing our people – and the systems that support them – around our end-to-end value chains is the way to deliver the greatest value from our business to shareholders," said Dave Reeves, president of downstream Strategy,Technology and Commercial Integration (ST&CI). A 2011 report credited this proven "crude to customer" focus for some $350 million in savings and value – and a Value Chain Optimization (VCO) center of excellence now oversees 25 processes to help ensure top performance.

"Colleagues across the value chain are working in collaborative, multidisciplinary teams with a common goal to improve returns and grow earnings," said Wade Wallinger, the VCO center's general manager.

In particular, we've upped our game in matching our diverse crude oil streams with the technical capabilities of our refineries and the global market. DS&C's Strategy, Technology & Commercial Integration organization interfaces continuously with upstream to ensure we get maximum value from

**Supporting environmental compliance in our U.S. shale gas business is a good fit for Amy Jewell, reassigned from downstream. Click to Read More.**

# Right People, Right Places



**Former downstreamer Rachel Rojo is now helping oversee construction of facilities for upstream's deepwater Bigfoot project. Click to Read More.**

our crude oils whether we refine them or sell them.

"Of course, we've been integrating crude streams and refining for over 100 years," notes Rick Zalesky, head of Crude & Manufacturing Strategy. "But now we start considering this at the earliest stages of resource development."

## The Human Factor

Beyond integration's business and differentiation benefits, Taylor also sees Chevron building "enterprise organizational capability," with a strong core of employees, deeply familiar with our culture, who understand and help connect our business. As they add value, many also enjoy extraordinary career adventures.

Former Pascagoula employee Godlewsky, who brought deep experience in refinery operations to the ALNG project, is also leveraging his years of training-program leadership to mentor Angolan colleagues on safely running, maintaining and managing the project's huge processing facilities. Barker, a 27-year Pascagoula employee assigned to ALNG last year to help ensure quality construction, found that his downstream experience transfers well: "This is a land-based manufacturing facility which requires the consistent application of the same tenets and employee talents as a refinery," he says – and he'll be staying on as a facilities engineering team leader managing capital projects.

Integrating talent across boundaries brings company-wide payoffs as well, like the new, global

# Right People, Right Places



**Onsite training is provided to new Operations and Technical employees at the Angola LNG project, one of many Chevron facilities where a multidisciplinary approach is supporting safe, reliable operations.**

process safety standards created by a cross-functional team, recognized recently with a Chairman's Award. Anne O'Neal, process safety sponsor in Health, Environment and Safety, said the integrated approach helped Chevron advance toward world-class operational excellence "much more effectively and quickly than if we had done it separately."

**Single Collaborative Entity**

Where will our value chains take us next? Time will tell, but an integrated enterprise is clearly valued at the highest levels. Last year, Watson named corporate Vice President Joe Geagea as president of Gas and Midstream in part because of his "enterprise-wide experience." Geagea's career involved lengthy stints in both downstream and upstream. In his new capacity, he now oversees the dynamic space connecting them.

Geagea recently told employees that navigating complex value chains is essential in the gas and midstream business, and said, "Our success will increasingly depend on our ability to act decisively as a single collaborative entity." He called on everyone to be globally aware, think beyond their job descriptions and be open to new kinds of jobs. And he's convinced this enterprise mindset can reward us everywhere we work.

"Our continued focus on integration and the value chain will not only help drive top performance, it will set Chevron apart as a global enterprise and as a partner of choice."

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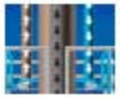
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Internal Pressure **4,000 psi**

Mudline Pressure **4,000 psi**

# Deepwater Breakthrough

## We've developed a new technology to operate safely and efficiently in the extraordinary work environment of deepwater drilling.

Already a front runner in developing ultra-high-pressure oil and gas fields in deep water, Chevron will soon make history again with dual gradient technology advanced under a key initiative. Dual gradient drilling, or "DGD," has the potential to significantly improve the safety and efficiency of our deepwater drilling operations. Here's how it works.

View Animation ▸ 112 12

*Left: DGD's seawater-powered mud-lift pump.*

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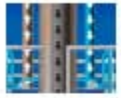
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# Deepwater Breakthrough



## Developing Energy Under Pressure

To keep energy flowing, Chevron must work continually and incident-free at the bottom of the world's deep oceans. Thanks to our leadership and investment in DGD technology, we will soon be executing our deepwater wells more like wells on land. To appreciate this breakthrough, consider one of the biggest challenges in this extraordinary work environment: Pressure. Pressure in the Earth's crust below and extreme pressure variations in the crushing weight of the overlying ocean.

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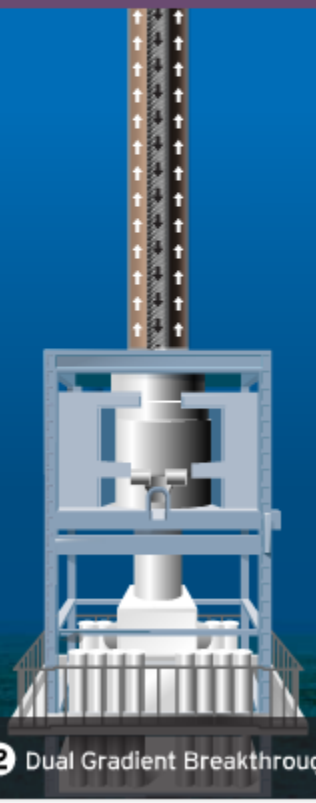
Internal Pressure 7,020 psi

Mudline Pressure 4,000 psi



## 1 Conventional Deepwater Drilling

Working through a blowout preventer at the sea bed, we drill deepwater wells within a steel riser tube extending from a drillship. Drilling mud is pumped down a rotating drill pipe to lubricate the drill bit and carry rock cuttings back up within the riser. But the mud's weight makes the riser's inside pressure nearly twice that of the deep ocean, and with even higher pressures typically found within deepwater oil and gas fields, extra steps, care, time and exceptionally capable equipment are essential.

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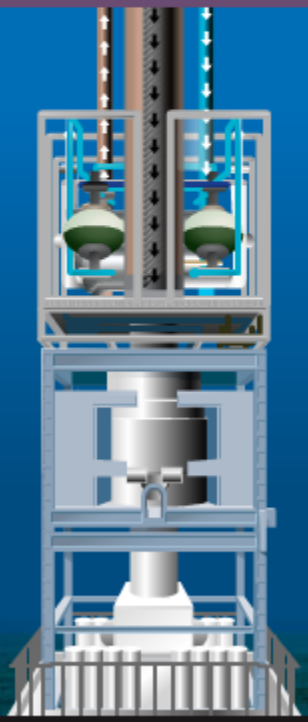

## 2 Dual Gradient Breakthrough

In DGD, mud still flows down inside the rotating drill pipe to the drill bit, but a seawater-powered mud-lift pump above the blowout preventer circulates mud and cuttings back to the drillship through a pipe outside the riser. We fill the riser with a seawater-like fluid, so riser pressure matches ocean pressure, simplifying the challenge of dealing with fluctuating pressures from the fields under the sea floor. It's like operating a drillship on the bottom, more like land drilling, where risers aren't needed.

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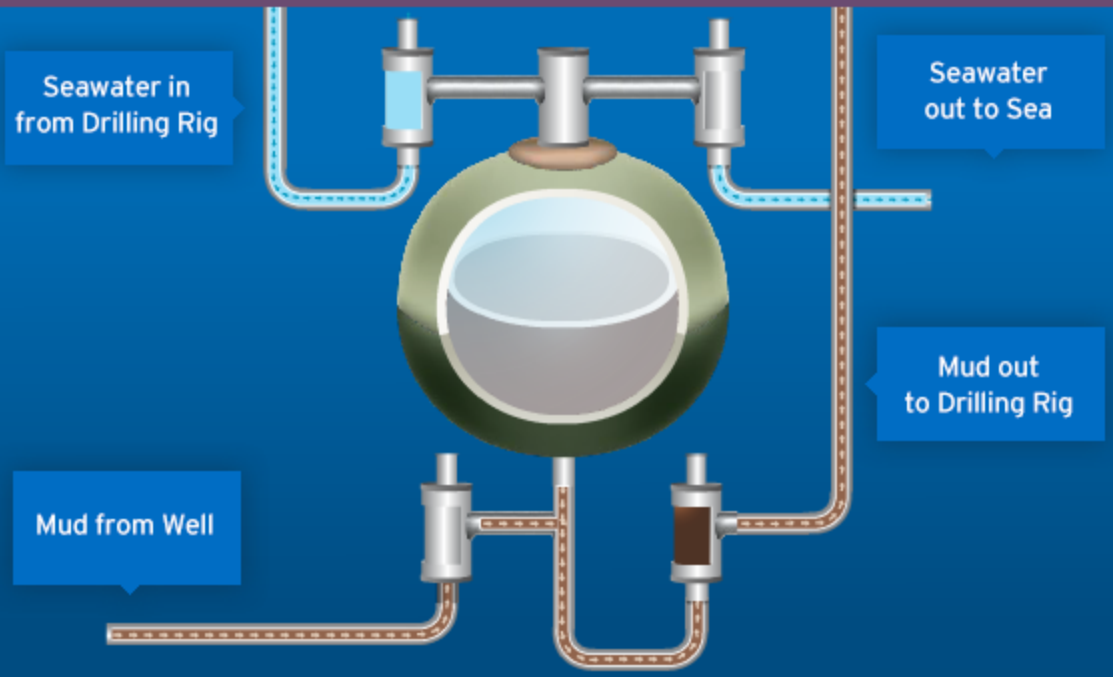
# Deepwater Breakthrough






## 3 Moving Mud with Seawater

The DGD ingenuity of recirculating mud up a pipe outside a riser is nearly matched by the design of the mud-lift pump. To make it work, the drillship sends seawater down a pipe to the pump, where it pulses over a diaphragm like a kid on a trampoline, pushing the mud back up its own pipe to the drillship. No need to loop the seawater back up – endless in supply, harmless to the environment, it's discharged back to the sea.

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# Deepwater Breakthrough



## 4 From Research to Reality

Chevron has steadily increased its DGD knowledge since the completion of a successful joint industry test of DGD in 2001, which led to the 2008 formation of a DGD project team. In 2010, we decided to develop full-scale capability. In May 2012, the world's first DGD drillship – *Pacific Santa Ana* – arrived in the Gulf of Mexico and will soon drill our first DGD well. In addition to the potential to improve safety and drilling performance, DGD wells can have fewer casing strings, with larger casings in the reservoirs to enhance flows of oil and gas.

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# 'Back to Nature'



Select a video to hear about wetlands restoration. ▸

Read the transcript

▸ Learn More About Wetlands

Four employees who are working to create wetlands talk about the benefits. Click below to hear them.

## Kathleen Thomas

Thomas was involved in our Lower Neches, Texas, wetlands project while working as an environmental consultant. In 2011, she joined our Environmental Management Company (EMC) as a project manager in the refining business unit. Runtime: 1:30

## Derek Eggert

Eggert earned his master's and doctorate at Clemson University, with a dissertation on constructed wetlands systems. An environmental scientist at our Energy Technology Company (ETC) since 2010, he has served as a technical consultant on the Section 7 Port Arthur, Texas, wetlands restoration. Runtime: 1:09

## Kim Breese

# 'Back to Nature'



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has served as a technical consultant on the Section 7 Port Arthur, Texas, wetlands restoration. Runtime: 1:09

## Kim Breese

Breese worked on the San Ardo, California, wetlands project while interning with ETC. She now works as an environmental specialist in Chevron Pipe Line Company. She was a 2006 graduate of Penn State University in environmental systems engineering. Runtime: 1:04

## Heather Dean

As an intern for EMC's upstream business unit in 2009, Dean worked on the Guadalupe, California, wetlands restoration project. She is currently a Health, Environment and Safety adviser on the Southern Africa business unit's Mafumeira Sul project in Angola. Runtime: 0:52

# Transcript

## Kathleen Thomas

My name is Kathleen Thomas, and I'm a project manager for the refining business unit within Chevron's Environmental Management Company. I was involved in the Lower Neches project as an environmental consultant to Chevron.

Wetlands are important to the environment for a variety of reasons. Mainly they're storm surge buffers, so they take the brunt of the storm, really acting as nature's sponge, collecting the water and then slowly allowing it to trickle out into the creeks and water around the wetlands. It also improves water quality, so it helps to remove sedimentation that's in the water – and pollutants. It's also habitat for fish and wildlife that live in the water.

We consider this wetland to be a success for both Chevron and the community mainly because for Chevron, we were able to give back to the community that we worked in. We stopped a destructive habitat process that was going on out here, and we redeveloped a marsh. And when Hurricane Ike came in, it was a real testament to how well our marsh was going to be able to sustain the impact that we have here on the Gulf. We had 15-to-20-foot storm surges that came in, bringing in salinity, really high salt waters. We had designed the marsh and planted it with a variety of plants that would survive both salt water and fresh water fluctuations.

And for the community, we've been able to see already the benefits that they've received from having this. It's been a win-win for everybody.

## Derek Eggert

My name is Derek Eggert. I work for ETC, the Energy Technology Company, at Chevron.

Wetlands fit into Chevron's business strategies because we pride ourselves on maintaining the environment. Within Chevron, we identify wetlands projects based on need and where we can provide the most impact to the community.

In the Section Seven Port Arthur restoration wetland effort, I help them identify communities of plant species that are going to provide the highest level of improvement in terms of quality of habitat.

In Section Seven, we can see a very noticeable change in the plant communities as well as the associated wildlife species – specifically, some of the wetland species such as the ducks and other migratory species that utilize these areas. We've also seen improvements in some of the soil invertebrate communities.

If we can look back 100 years at the site that we're doing restoration efforts at now, we can see that we're turning back the time and establishing the community that was once there. We're restoring it back to a higher quality of that past habitat.

## Kim Breese

My name is Kim Breese, and I'm an environmental specialist in Chevron Pipe Line. My involvement on the San Ardo site took place during my summer internship on the waste and remediation team in ETC where I was responsible for supervising and documenting the initial construction of the wetland for produced water treatment in San Ardo.

During my internship, I was extremely impressed by the rich OE culture and commitment to incident- and injury-free operations. Additionally, I was extremely impressed by the skills and knowledge of my coworkers on this project, and I knew this was a work environment that I definitely wanted to be a part of.

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This project really taught me the benefit of occasionally thinking outside the box when evaluating environmental technologies and remediation projects. As the current environmental stewardship process adviser for Chevron Pipe Line in evaluating our aspects and impacts and looking at different control options for implementing environmental improvement programs, this is definitely something I can incorporate into my current work.

## Heather Dean

My name is Heather Dean. I'm an HES adviser on the Mafumeira Sul Project, and I was involved in the Guadalupe site when I was an intern for EMC. I worked as an intern to conduct a performance evaluation on the biosparge remediation system. A biosparge actually injects air into the ground to increase microbial activity that promotes degradation of hydrocarbons. So my primary objective was to look at the past 10 years of data and see how it was operating, document my findings and then provide a recommendation on the future operation of the biosparge.

# 'Back to Nature'



has served as a technical consultant on the Section 7 Port Arthur, Texas, wetlands restoration. Runtime: 1:09

Kim Breese

▸ Learn More About Wetlands

close X

**Creating Thriving Ecosystems**

Chevron's expertise around the world in the development and restoration of wetland habitats provides environmental benefit by creating thriving ecosystems that promote biodiversity, help to maintain a favorable climate and provide flood control in some cases.

Our expertise enables us to construct wetlands for effluent water treatment at various company facilities. It also enables us to restore habitats that were affected by our prior operations, to create beneficial ecological reuses of surplus company properties and to generate environmental credits by restoring wetlands impaired by others. Our wetlands projects have often exceeded expectations, becoming productive and thriving habitats sooner than internal and external experts predicted.

Examples of the latter include the Lower Neches River Wildlife Management Area wetlands restoration project, in the vicinity of Chevron's former Port Arthur, Texas, refinery. And at the Guadalupe Dunes, a former oil field in California, we restored and created freshwater wetlands designed as habitat for the California red-legged frog.

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