

COMMANDER'S CORNER

District celebrates big 150; Surveyor makes its return

By Lt. Col. John C. Morrow
San Francisco District Commander

Surveyor. It's been a while since our last issue, a little over three years to be precise, but I'm glad that we're back to putting out a magazine devoted to showcasing the projects, people and events that make our district one of the most unique within the Corps.

It occurred to me that this seemed like an opportune time to bring the magazine back given that we recently marked the 150th anniversary of the establishment of the San Francisco District, and in this issue, you'll find an article that takes a look at just how much of the Bay Area has been shaped by the Corps' footprint over the decades.

Consider, if you will, how much of San Francisco and its surroundings have been touched over the past 150 years by the presence of the U.S. Army Corps of Engineers. From paving the way for the construction of the Golden Gate Bridge to the massive recovery from an earthquake that nearly destroyed the city, San Francisco might have evolved very



differently had the Corps not played a key engineering role in the city's development and preservation.

The relaunch of The Surveyor blends past with present, and this edition highlights some of the on-going projects, people and accomplishments that contribute to the environment and quality of life in the Bay Area and beyond.

You'll see that a project overseen by district fish biologist Ben White up at

Lake Sonoma has helped save a species of salmon from extinction, a fish whose numbers by some estimates had been down to the single digits. In fact, we've had so much success in restoring the salmon population in the Russian River watershed that we're becoming the model for saving salmon across the state.

Another success is unfolding just up the road in Marin County, where the San Francisco District is transforming the former Army airfield at Hamilton into an established wetlands habitat suitable for wildlife and migratory birds, including an expansive public access trail, all while serving as a buffer against what many are warning will be a rising Bay associated with sea level rise.

Finally, take a trip to the Bay Model in Sausalito and read about Chris Gallagher, park manager at the visitor's center, who is celebrating three decades of service at one of the Corps' most high profile attractions.

There's always more to talk about, and we're just getting started in 2017. I look forward to highlighting the district's continued success in upcoming issues of The Surveyor. I'm glad we're back!

SPNSURVEYOR

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SPN assists with removing historic riverboat



Three months after capsizing, the remains of the riverboat "The Spirit of Sacramento" were pulled from the depths of Sausalito Harbor Dec. 13, 2016. The 87-foot paddle wheel boat capsized on the Sacramento River near Bethel Island in September and was hauled to Sausalito where it later sank. Personnel from the San Francisco District and the U.S. Coast Guard were on hand as the vessel, estimated to weigh as much as 150 tons, was brought to the surface and then hauled ashore by Parker Diving Service. It will now be taken to a scrap yard. (Photo by Nick Simeone)

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On the cover



[Top Left] A construction worker directs two excavator operators in the demolition of Pier 36 in San Francisco. The project was completed by the Corps in 2012. (Photo by Ryan McClymont) [Top Right] The Corps of Engineers' power shovel works near the Richmond Inner Harbor in 1923. (Photo and excerpt from 'Engineers at the Golden Gate')

[Bottom Left] The Oakland Long Wharf served ocean-going, as well as coastal shipping until 1918. After 1882, however, the wharf was utilized for freight exclusively, while passengers were landed at the new Oakland Pier. (Photo and excerpt from 'Engineers at the Golden Gate') [Bottom Right] The M/V John A. B. Dillard, Jr., an 86-foot catamaran-hull vessel, was christened into the San Francisco District fleet in 2010. (Photo courtesy of Kvichak Marine Industries)

District News

SPN welcomes new deputy commander



By Nick Simeone SPN Public Affairs

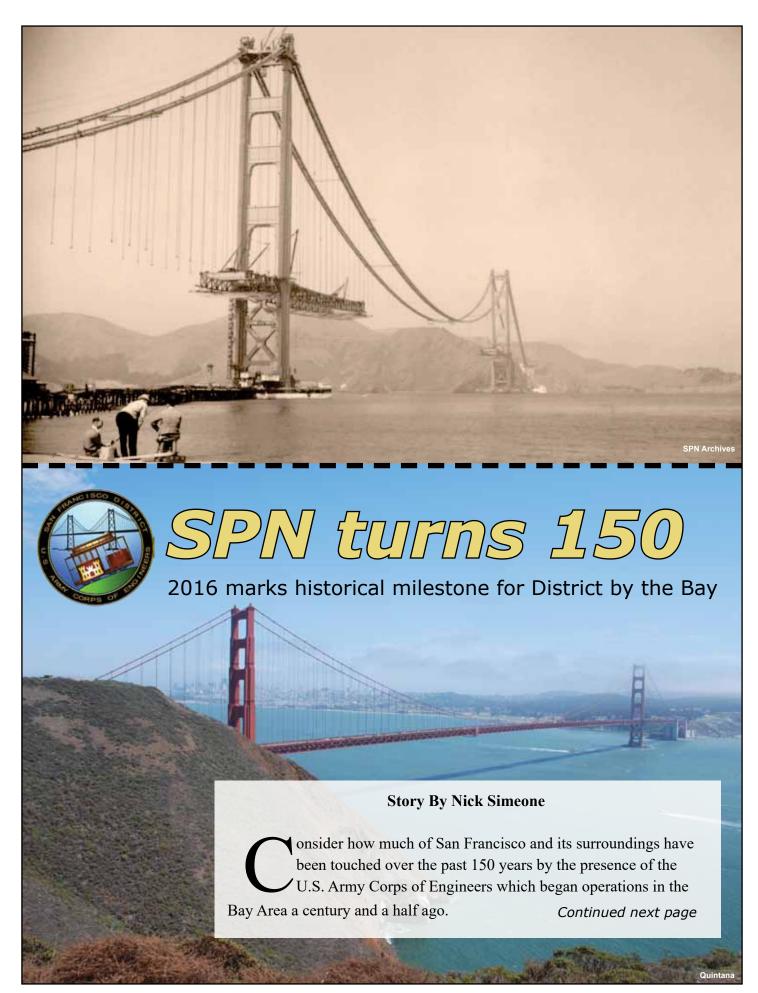
Just a few months ago, Deputy San Francisco District Commander Maj. Kevin M. McCormick was in Afghanistan training Afghan soldiers and police. Now a world away, his experience with diverse cultures – including three deployments to Iraq – is in some ways helping him transition to an activist city not always welcoming to the military, as recent demonstrations over the Dakota Access Pipeline outside the district's headquarters have shown.

"You wouldn't see these kinds of protests that we've seen here over the Dakota pipeline in Missouri," said McCormick, who was born in Concord, Calif. and earned a Master's Degree in Engineering Management from the Missouri University of Science and Technology after graduating from Purdue. "I led a small, 18 soldier multi-national team with Romanians and Americans. We built a course from the ground up to train Afghan mid-level leaders," recalls McCormick who assumed deputy command of the district in October.

In fact, one key lesson he says he took away from his multiple deployments is an ability to adjust quickly to any given situation, a skill that will no doubt help him navigate the

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150 yrs continued ...

From paving the way for the construction of the Golden Gate Bridge to the massive recovery from an earthquake that nearly destroyed the city, San Francisco might have evolved very differently had the Corps not played a key engineering role in the city's development and preservation.

One hundred fifty years on, it's difficult to rank the Corps' greatest contribution to the City by the Bay, but certain landmarks do stand out. Glance in any direction from your favorite vantage point and on display are examples of how the Corps has changed not only the landscape but the lives of its residents: from helping to guide the

Water affects everything we do in California.

Sahrye Cohen Regulatory Manager

construction of the two iconic bridges linking the city with its northern and eastern flanks, to the creation of Treasure Island in the middle of the bay, to numerous fortifications made over the years to Angel Island and the rock known as Alcatraz. "It is simply breathtaking when you look at the countless number of projects that have literally shaped this entire region," said Lt. Col. John Morrow, the San Francisco District commander. Even before California was

The M/V Raccoon, one of the San Francisco District's two debris removal vessels, ensures that San Francisco Bay federal navigation channels are clear of debris that could obstruct maritime traffic.

admitted to the Union, the Corps was surveying sights of significance and since the district's establishment in 1866, the Corps has played a role in the development of nearly ev-



strategic ery fort and harthroughbor out the region.

According to Corps history, even the world famous

Golden Gate Bridge took its name from a term first coined by Army engineer Capt. John Fremont, who in the 1800's, used it to refer to the mouth of the San Francisco Bay, predicting that the "wealth of the world" would flow through it.

In the time since, the San Francisco District has not only responded to national emergencies but has taken on hundreds of public works projects -- from disaster risk reduction, dredging that has kept sea lanes in the Bay along with federal ports and shipping channels open, to protecting the environment and endangered species -- all helping to improve the quality of life for millions of people from the district's northern boundary in southern Oregon to just south of Salinas.

Today, the district is adapting to the challenges of the future including the perennial problem of water and how to manage it. "Water affects ev-



erything we do in California," vation during the parched, dry

said district regulator Sahrye Cohen, and over the past century, through drought and deluge, the Corps has been active in flood mitigation during the rainy season and water conser-



Lake Sonoma, a reservoir created by Warm Springs Dam, is a park managed by the Corps that draws thousands of outdoorsmen every year while also providing water for hundreds of thousands of nearby residents.

Continued next page

Significant Dates in San Francisco District History

1860 1863 1866	Construction of strategic coastal fortifications in San Francisco Bay began Port of San Francisco established District established as Major R.S. Williamson designated "officer in charge"	Construction of Treasure Island completed through placement of dredged material from in-bay shoaling (29 million CY total of material)
	for all river and harbor maintenance along Pacific Coast.	Debris removal mission began following seaplane accident involving Admiral Chester Nimitz.
1874 1879	Dredging began in Oakland Harbor Topographic engineers prepared maps of Western U.S.	Bay Model constructed to study the Reber Plan or filling 1957
1889 1898	District completed harbor improvements in San Francisco, Napa, Petaluma, Redwood City, San Pablo Bay, et al. Oakland Harbor 19-ft deepening project completed	in portions of SF Bay. District completes report "The Future Development of San Francisco Bay 1960-2020," which gave rise to found of San Standard San
1906	The Great San Francisco Earthquake destroys 80% of city and kills over 3000 people. Army engineers construct temporary homes as part of response	Bay Conservation and Development Commission (1965). Coyote Valley Dam (Lake Mendocino) constructed on East Fork of Russian River.
		Warm Springs Dam (Lake Sonoma) and Fish Hatchery constructed on Dry Creek of Russian River. 1983
1907	District split into two districts (2 nd officially redesignated as Sacramento District in 1929)	Loma-Prieta Earthquake 1989 Long Term Management
1936	San Francisco-Oakland Bay Bridge completed	Strategy (LTMS) for Beneficial Reuse of Dredged Material implemented.
1937	Golden Gate Bridge completed	Oakland Harbor 50-ft deepening project completed with over 6 million CY of material going to Hamilton (Airfield) Wetlands Restoration Project

150 yrs continued ...

summers. Lake Mendocino, created from the construction of Coyote Valley Dam in 1959, was the first major Corps project in the Russian River basin, borne out of the need to reduce the risk of a repeat of flooding

It is breathtaking when you look at the number of projects that have shaped this entire region.

Lt. Col. John Morrow District Commander

that struck during the 1930's. Then came completion of Warm Springs Dam that yielded Lake Sonoma in 1983. Both dams provide water to more



Courtesy of San Francisco Travel

The iconic Bay Bridge, connecting the city of San Francisco to cities in the East Bay and beyond, and Yerba Buena Island. In the background is Treasure Island, a section of land created by the Corps in the 1930's.

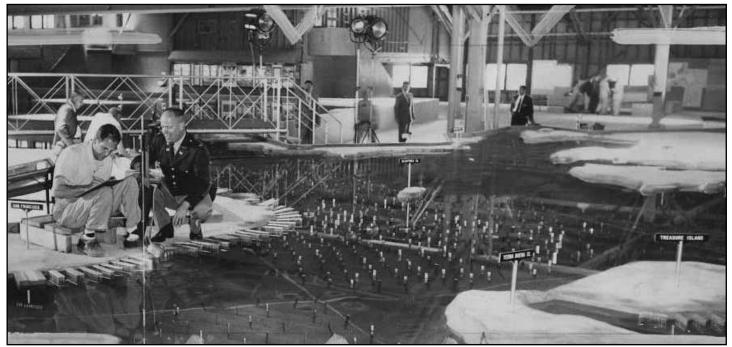
than 600,000 people while also offering outdoor recreation to hundreds of thousands of visitors to the region every year.

But 150 years ago, no one could have imagined the new water threat posed to the region triggered by climate change and rising sea levels. To address that, engineers and hydrologists in the San Francisco District are working with partners on what

amounts to the largest estuary restoration project in the Western United States, one that would create several thousand acres of tidal wetlands to help protect the heart of Silicon Valley, "one of the nation's most vital economic areas," as Commander Morrow put it, from predictions of sea levels rising by as much as three feet over the next half century.

It's just one of many proj-

ects designed to solve what Lt. Gen. Todd T. Semonite, the Corps' commanding general and chief engineer, recently described as some of "the nation's most complex engineering challenges." Over the next 150 years, the scope of the Corps' work will continue to evolve based on the engineering needs and the still unknown threats facing the nation.



SPN Archives

Park manager celebrates 3 decades of service

By Nick SimeoneDistrict Public Affairs Office

ay Model Park Manager Chris Gallagher can't imagine doing anything else within the U.S. Army Corps of Engineers than working at the site that draws



Gallaghe

thousands of visitors from around the world to see its hydrologic model of the Bay. She's worked there

for 30 years and has made such an impression on the surrounding community that it's hard for her to go unrecognized when she's off duty. "People see me all the time and say 'Oh, you're Chris from the Bay Model." She has found that wearing her uniform is a good public relations tool, and people identify her by it.

Gallagher is marking three decades of employment with the Corps' San Francisco District; her dream having been to become a park ranger after moving west following a child-hood spent in Baltimore. When she was hired as a GS-5 ranger at the Bay Model in 1986, "I



Beach

In its heyday, scientists used the hydraulic Bay Model to evaluate circulation and Bay tides to assist with navigation. Now as a museum, it draws thousands of tourists and serves to educate visitors about the Bay.

I really like being able to go out and tell the Corps' story.

> Chris Gallagher Bay Model Park Manager

knew nothing about the Corps of Engineers except the widely held perception that they build dams," said Gallagher. "I remember coming here on a field trip in college and thinking this must be the most boring place in the world to work."

Three decades later and still donning the park ranger uniform, it's been anything but. To have been integral to promoting one of Corps' most high profile attractions in the Bay Area has been a great source of pride. That's especially true given how much of an influence the Bay Model – with its location in touristy Sausalito

and serving as a community center of sorts for locals -- has had on the public's perception, for better or worse, of what the Corps does. "Because of where the model is located, it's pretty high profile. I really like working with the community and being able to go out and tell the Corps' story."

Her role can range on a daily basis from serving as tour guide to school groups as well as to the famous, to helping decide how millions of federal dollars are spent on upgrades at the site, including how an influx of stimulus money in 2010 was allocated. No day over the past 30 years has ever been the same, which keeps the job interesting, along with, she says, never growing tired the stunning workplace views. "This has been a unique experience and it's not a bad place to come to work."

Gallagher often refers to the Bay Model as her "baby" and is proud to be part of what it has become.

For more about the Bay Model Visitor's Center in Sausalito, visit www.spn.army.mil/ baymodel and click on "The Bay Model Journey."

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AROUND THE DISTRICT

Lake Sonoma joins nationwide bald eagle survey

By Brandon BeachDistrict Public Affairs Office

I.S. Army Corps of Engineers officials conducted their annual midwinter bald eagle survey at Lake Sonoma, Calif., Jan. 12. This year, officials tallied four bald eagles and seven golden eagles residing along the lake's shoreline.

"This is by far the highest number of eagles we've counted at the lake during the survey," said Wade Eakle, an ecologist with the USACE South Pacific Division, who worked with Joe Lishka, a USACE San Francisco District park ranger, in completing the eagle count.

Data from the survey is collected by SPD during a two-week window in January and used for statistical trend analysis of eagle populations in the lower 48 states. Various wild-life agencies and other private observers also participate in the midwinter count. The 25-year (1986-2010) analysis was recently published in 2015.

The survey was first held in

1979 by the National Wildlife Federation. Back then, bald eagles were in a fight to stay alive.

"At the time, we had just a few 100 bald eagles nesting in the lower 48 states," said Eakle.

Wildlife experts estimate that up to 9,800 nesting pairs of bald eagles live in the continen-

This is the highest number of eagles we've counted.

Wade Eakle SPD Ecologist

tal U.S. today.

At Lake Sonoma, park rangers are aware of one nesting pair of adult eagles that have been residents of the 2,700-acre lake since at least 2001, the year they were first discovered.

"They are here year-round," said Lishka. "They alternate between two nesting sites. It's typical for eagles to have more than one nest."

Other eagles migrate sea-

sonally to Lake Sonoma, some traveling as far as the northwestermost province of Canada.

With plentiful food options like fish and small mammals, Lake Sonoma and its surrounding forest areas provide "important habitat for eagles," said Eakle. "With its lakes and parks, [USACE] has always played a key role in the recovery and conservation of bald eagles across the U.S."

The eagle was declared an endangered species in



Wade Eakle, below, an ecologist with the Corps' South Pacific Division, scans the shoreline at Lake Sonoma Jan. 12 for bald eagles.



A peregrine falcon is spotted perched on a tree branch along the shore of Lake Sonoma Jan. 12.



1967. In 1995, it was reclassified to the less-severe "threatened" list as its numbers began to rebound, and, in 2007, it was completely delisted.

"Eagles have recovered,"

said Eakle. "It's important now to monitor their population post de-listing to make sure they don't start declining back towards extinction like they did 40 years ago."





Coast Guard K9 unit trains with Dillard crew

The U.S. Coast Guard's bomb-detecting canines braved vertigo when handlers put them to the test high above the San Francisco Bay, as part of an exercise to deploy from helicopters.

The training session was held on board the M/V John A. B. Dillard, Jr., a U.S. Army Corps of Engineers San Francisco District emergency operations vessel.

Each dog was equipped with protective eye and ear wear, as well as a custom-made harness for helicopter deployments of this type, said Maritime Law Enforcement Specialist 2 Christopher Hartman, trainer to Evy since 2008. Two other dogs successfully took part in the training, Feco and Rickey.

-- Reporting by Brandon Beach, SPN Public Affairs Office









Deputy continued ...

politically sensitive issues that he is likely to encounter here in the Bay Area. "Just how to be flexible and adaptable and being able to shift on a dime to get to the end state that we want."

McCormick was commissioned as an engineering officer in 2002. He found his way to the Corps after deciding

duty as an infantryman was not exactly where he saw his future, especially since he discovered he'd rather be blowing things up.

"I enlisted in the National Guard in 1997 as an infantryman and that's what I thought I wanted to be," said McCormick. "My favorite job as an infantryman was to be on the demolition team. Then I learned about the engineer corps and found out I could blow stuff up. That's for me."

But as deputy commander of the San Francisco District, instead of blowing things up, he will be working to create and improve, and says one of his chief priorities for 2017 will be streamlining the recruitment and hiring process to allow the district to bring on new employees much quicker.

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All photos by Beach

[Top] Rory Taylor, a fish biologist with the San Francisco District, checks a tray of Coho alevin at the Warm Springs Hatchery. [Above] A hatchery volunteer releases a handful of juvenile Coho into Palmer Creek, a tributary of the Russian River Watershed. [Right] Biologists tag a female Coho.

District works to revive Coho population

By Nick Simeone District Public Affairs Office

rifteen years ago, there were as few as 10 Coho salmon left in the entire Russian River watershed and the species was on the verge of extinction. Today, there are hundreds, and hundreds of thousands more are being produced. Don't thank Mother Nature for that, but rather a little-known program run by the San Francisco District of the U.S. Army Corps of Engineers and the California Department of Fish and Wildlife.

They have had what the Corps' lead biologist for the program can only describe as unprecedented success, so much so that the program has become the most successful in California for breeding Coho salmon in captivity.

"We're creating more offspring here than what is happen"We're creating more offspring here at the hatchery than what is happening in the wild."

Benjamin White

SPN Lead Biologist, Coho Recovery Program

ing out in the wild," said Ben White, who oversees the breeding and release of the Coho at the Don Clausen Fish Hatchery at Lake Sonoma in Geyserville, north of San Francisco. So successful has the effort been to bring back the Coho from being within a hair of extinction that it is drawing the attention of other conservation groups up and down the coast that want to find out what's making it work. "In terms of Coho salmon broodstock programs in California, we are essentially writing the book on how it is done," said White.

But the multi-year effort was not destined to succeed. Early attempts to restore the Coho, considered one of the most delicate and endangered of all salmon species in California, initially foundered when breeding by White and his four-member team at the hatchery didn't result in adult salmon returning in huge number to the Russian River watershed. Then, upon the advice of one of the world's leading salmon geneti-

cists, White and his colleagues changed tactics and began to mate Coho with a more hardy salmon brought in from nearby waterways. Now, the number of eggs females are producing is on par with their counterparts in the wild.

"We are creating a lot of offspring, close to 200,000 a year which is about as much as this facility can handle," said White. With salmon populations up and down the coast continuing to decline, "all these different agencies and watershed groups are starting to look to us to help them out."

A number of factors are contributing to the decline in Coho but chief among them has been more than four years of drought—as well as anything that affects the watershed such as dam construction and other development that causes sediment to

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Taking a historical walk through Hamilton

By Brandon Beach District Public Affairs Office

amilton Wetlands Restoration Area in Novato, Calif., has worn many faces over the last century. It's most recent guise was serving as a U.S. Army airfield -- built in the 1920'-s, home to many B-10 and B-12 bombers during World War II, headquarters to the postwar Air Defense Command, and later closed in 1973

Hamilton Airfield was cleaned up under the first round of Base Realignment and Closure, or BRAC, in 1988, and eventually acquired by the California Coastal Conservancy, with the goal of restoring the 988-acre property to its former wetland persona.

Well before anybody can remember, Hamilton consisted of a mosaic of "welldeveloped seasonal and tidal wetlands with San Ignacio, Pacheco and Novato creeks all flowing into this area," said Eric Jolliffe, an environmental planner with the U.S. Army Corps of Engineers San Francisco District, during a recent site visit, where he pointed out the many changes -- those seen and unseen. "There are these old hand-drawn maps that show this to be the case."

As we walked along Hamilton's new public access trail, Jolliffe recalled his career with the Corps' San Francisco District, which he joined in 1995, around the same time the District began its project partnership with the Coastal Conservancy at Hamilton.

"It was the project's connection with [SPN's] Oakland 50-Foot Deepening Project



that got things started," said Jolliffe. "Both terial at Hamilton for beneficial reuse, most were authorized in the same Water Resources Development Act."

One of the key components to restoring wetlands is dredged material, which serves as the foundation for building the kind of habitat conducive for growing plants and attracting wildlife, such as the California clapper rail and the salt marsh harvest mouse, both of which are on the endangered species list and call Hamilton home. It also significantly reduces the time it takes for marsh to develop by raising the site elevations.

Around the middle of the 19th century, Hamilton was diked off to make way for farming and later an Army airfield. At a topographical level, the soils "get compacted, the water comes out of it and it subsides," said Jolliffe.

The District would go on to place approximately six million cubic yards of dredged maof it from the Oakland Harbor project, which deepened the nation's fifth largest port from a depth of minus-42 feet to -50 feet in 2009.

In April 2014, the District and the Conservancy celebrated a major milestone, by breaching the outer levee and opening up Hamilton for the first time in over a century to tidal action. Now bay tides flow in and out of the site unimpeded.

Today, Hamilton has come full circle, in a sense, with Mother Nature being re-engineered to reflect the past.

"We are never going to get the exact wetlands that were here before and that's not the goal in restoration," said Jolliffe. "What people try to do these days is restore the services that wetlands provide to wildlife and the public, and that's what we're doing here. I think with that we've done a pretty good job."

Coho continued ...

clog creeks "Agriculture is a big one. Anybody who is pulling water out of the creek." And that, for better or worse, includes much of the industry and livelihood of Sonoma, full of world famous vineyards and farms. That's good for the local economy but not so good for the fish. "Pot farmers, grape growers, all these land use practices that have had a major effect on the watershed and our landscape as a whole have had an effect on our Coho salmon population."

In addition to the endangered Coho, the region's steelhead trout are listed as threatened, a category less critical. "In order to delist or downgrade fish from being endangered to threatened - or from threatened to being taken off the list - you're talking about thousands of



[Top] Ben White, lead fish biologist for the district's Coho Salmon Recovery Program, peers through a microscope while at work at the Don Clausen Fish Hatchery at Lake Sonoma.

fish coming back to the watershed." While current numbers are far short of that, results so far this year, and it's still early, suggest the Corps' captive breeding of the Coho is slowly restoring the watershed's population. "Last year's estimate for total number of adult salmon coming back was 192. This year, the estimate is already 326.

There is still a long way to go toward restoring the Coho to the numbers they once were in the wild but one thing is certain: the Corps and its partners have prevented the fish from becoming extinct.

White notes the rains have been earlier and steadier, a good sign. "I have a feeling this year we're going to see a big increase in adult returns and if we can continue this with a normal weather pattern, I think we're going to see a real positive trend with these fish numbers."

Veterans tour SF Bay onboard SPN vessel

Story & photos by Larry Quintana District Public Affairs Office

group of 25 disabled veterans, family members, friends and caregivers boarded the M/V John A. B. Dillard, Jr., last summer for a tour of such Bay Area landmarks as the Golden Gate Bridge and Alcatraz concluding at AT&T Park for a Giants-Padres game. The veterans are residents at the Veterans Community Services Living and Resource Rehabilitation Center in Martinez, Calif.

The group included veterans from conflict including World War II, Korea, Vietnam, Iraq and Afghanistan. The oldest was 97-year-old Mickey Ganitch, a Pearl Harbor survivor (USS Pennsylvania), and the youngest was a 32-year-old Afghanistan veteran. The outing was organized by Michael Steinbaugh of the Department of California Disabled American Veterans.

"This is our fourth year of providing tickets to the Giants game on the Dillard, and we look forward to working with the great people at the Corps and the outstanding captain and crew," said Steinbaugh.

The group boarded the Dillard at the Bay Model dock for a trip across the Bay to the Marina Entrance at AT&T Park, passing under the Bay Bridge, cruising along the city waterfront and marinas to the ballpark.

"This is one of the most important jobs we do -- giving back to those veterans who gave so much," said Kixon Meyer, captain of the Dillard.

For more information on Veterans Affairs services in Northern California, visit www.northerncalifornia.va.gov.



A military veteran takes in the views of the San Francisco Bay Area while onboard the M/V John A. B., Dillard, Jr., a U.S. Army Corps of Engineers San Francisco District vessel. The annual outing with the Corps was organized by the Department of California Disabled American Veterans.



