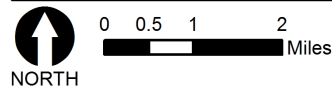
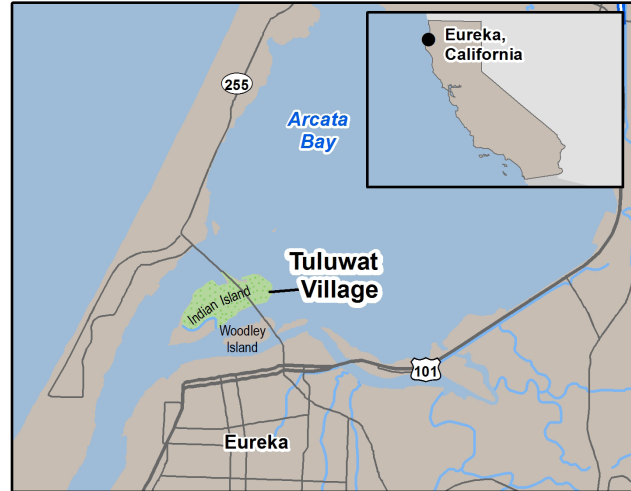


Introduction

Indian Island is the spiritual center of the universe for the Wiyot Tribe. The island is located on Humboldt Bay, within Eureka's city limits, in Northern California. For thousands of years, the tribe served as stewards of the island, performing an annual World Renewal Ceremony at the Tuluwat Village site. Millennia of harmony ended in 1860 when a small group of white settlers interrupted the ceremony and murdered nearly 100 women, children and elders; this began a period of near extinction for the Wiyot Tribe. For nearly 120 years, a shipyard operated at the site. Today, the area has been returned to the Wiyot Tribe and the World Renewal Ceremony has been restored. This case study tells the remarkable story of a tribe that persisted against all odds to recover from an unimaginable tragedy, preserve their culture, reclaim their land and clean up over a century of contamination.

The path of returning to Indian Island was a long one for the Wiyot Tribe. With limited resources, the tribe faced the challenge of not only acquiring the site property, but also leading cleanup at a culturally sensitive and remote location. Tribal leaders worked creatively to leverage resources and forge partnerships with individuals, area businesses, local government and organizations as well as state, regional and national partners. Employing creative cleanup methods and new technologies, the tribe balanced the preservation of archeological artifacts and protection of human remains with the need to address the contamination.

Today, Tuluwat Village and the ancient shell midden at the site have been cleaned up and preserved. It is once again safe for tribal citizens to visit the site and resume their ceremonies. The area is a national historic landmark and serves as a place for the tribe to share their stories and history and impart important lessons on environmental stewardship. "It had been a dream of mine to restore the land to the tribe. When I first set foot on the site after Tuluwat Village had been cleaned up, it was the most incredible feeling," said former Wiyot Tribal Chairwoman



The site is located on Indian Island between Humboldt Bay and Arcata Bay. It is a national historic landmark.

Cheryl Seidner. "I had been working on this project for most of my life, and wow – it was just amazing." The sacred site also contributes to the overall environmental health of Humboldt Bay and nearby fisheries.

This case study explores the tools and partnerships that have led to successful cleanup and transformation at the Tuluwat Village site. The following pages trace the evolution of land acquisition, cleanup and reuse efforts, highlighting the tribe's leadership, project partnerships, and coordination of remedy and restoration considerations. The case study provides information and lessons learned for parties interested in Superfund site restoration, municipal land acquisition, tribal land stewardship, cultural preservation and culture-based land revitalization.



The Wiyot Tribe returns to the Tuluwat Village site, ending a period of mourning and embarking on a new path of environmental conservation, cultural preservation and spiritual renewal.



Early photo of the shipyard, circa 1950.

Site History, Contamination and Remediation

The Tuluwat Village site was once a dry dock and boat repair yard on the northeastern point of Indian Island. In 1870, Robert Gunther leased the site to the Duff Drydock Company, which opened a boat repair and maintenance facility. Over time, it became the oldest shipyard in continuous operation in California. Structures built at the site included a large metal building, a chicken coop, a water tower, a fishing and hunting shack, a hazardous waste shed, a caretaker shed, and two caretaker residences. Other infrastructure on site included a diesel generator, metal rails and a bulkhead for temporary docking.

Owners operating the facility for over a century used a variety of methods to repair and service boats. Ships were pulled ashore on steel way-runner rails and a variety of chemical wood preservatives and paints were applied. Hazardous materials used at the site included paints, solvents, metals, petroleum products and other chemicals related to ship maintenance and repair. Improper materials handling and waste disposal practices resulted in extensive contamination of groundwater and soil as well as intertidal and subtidal habitat in the harbor.

The boat repair yard closed down in 1990. After the site remained vacant for a decade, the Wiyot Tribe purchased the 1.5-acre area from property owner Fred Kay in 2000. For over 140 years, the Wiyot people had not been able to hold their dances, ceremonies and traditional gatherings at Tuluwat Village. Upon their return, they found a highly contaminated site. An EPA team led a targeted brownfields assessment, installing six groundwater wells and collecting 30 soil borings. Concentrations of pentachlorophenol (PCP), dioxins and furans were present at hazardous levels in soil, groundwater and surface water. Arsenic, copper, lead and zinc were present above regulatory limits. The boat repair yard was a major source of contamination for Humboldt Bay.

The site's location and history posed unique cleanup challenges. There was no direct road access or functional dock facilities. Tidal fluctuations limited boat and pedestrian access opportunities. There was no electricity or municipal water supply to the site. The site's cultural significance and the presence of human remains meant that use of invasive machinery would need to be minimized.

The tribe worked with EPA and other project partners on a cleanup that would respect the site's history and cultural importance. It included building demolition and asbestos mitigation by EPA and the removal of garbage, metal, treated lumber, paints and chemical materials. A large diesel winch used to haul boats out of the water was taken to a museum. Treated way-runner rails used for sliding boats were removed. Soil excavation was kept to a minimum. All excavated soil was hand-screened for cultural artifacts and human remains by archaeologists trained in hazardous waste operations. A sheet-pile wall was installed to prevent contaminant migration into Humboldt Bay and to protect the shell midden from erosion. In-place chemical oxidation treatment was applied to treat PCPs,



Specially-trained archaeologists assisting with soil removal at the site.

dioxins and furans remaining in soil at the site. EPA placed a permeable cap of geotextile liner topped with 2,500 tons of imported fill material, including rock, sand, soil and oyster shells, on top of these areas.

Throughout these activities, the Wiyot Tribe worked with consultants from SHN Engineers and Geologists to determine innovative strategies for cleanup. Local project partners such as the Coast Seafoods Company and Captain Leroy Zerlang of the M/V Madaket helped the tribe implement cleanup plans. The selected remedy enabled the tribe to minimize disturbance of the sacred site, protecting the shell midden and burial grounds, while also ensuring that the site met cleanup levels necessary for ceremonial uses. “The challenge was to clean up the site to levels that would allow for people to dance barefoot, for meals to be shared, for children to come and play,” said consulting engineer Mike Foget. “We had to work really closely with the Wiyot Tribe and make sure the cleanup methods were acceptable. It was their land and contains their ancestors. They had to be the ones to give us that permission.”

Shell Midden – An Historic Treasure

A midden is a mound or deposit containing shells, bones or other artifacts that indicate a human settlement. Shell middens are commonly found on coastlines or salt water flats and date to the Late Archaic and Late Mesolithic periods (about 4,000 to 10,000 years ago) when people were still hunter-gatherers but also began settling in specific areas.

A 6-acre, 14-foot-deep shell midden covers the entire 1.5-acre Tuluwat Village site. The shell midden is believed to be over 1,000 years old and contains remnants of Wiyot daily life, including meals, tools and ceremonial items as well as many burial sites. In 1964, the U.S. Department of the Interior designated the shell midden as a National Historic Landmark.



An 1851 Humboldt map shows two shell middens on Indian Island – one at the Tuluwat Village site, known as the “upper mound” and the other on land near a mansion owned by Robert Gunther.



The shell midden’s size and location presented cleanup challenges.

Project History

1996 – 2000:

Restoring the Tuluwat Village Site to the Wiyot Tribe

The Wiyot people have been seeking a return to Indian Island for generations. Most recently, efforts in the 1970s focused on returning Indian Island to the Wiyot Tribe and establishing a cultural center and a museum. In the early 1990s, Wiyot tribal citizens renewed efforts to resurrect their lost heritage and repatriate Indian Island. In 1992, a candlelight vigil was held on the anniversary of the 1860 massacre; it later became an annual community event.

Wiyot Tribal Chairwoman Cheryl Seidner had dreamed of the return to Tuluwat Village since she was a young girl. In 1996, she raised the idea at a tribal council meeting. “It was really daunting, asking the tribal council if we could purchase the 1.5-acre site,” she recalled. “But they said, ‘go for it!’ Then the tough work of finding the funding began.”

The tribe established a Wiyot Sacred Sites Fund to acquire parts of Indian Island as they became available. Fundraising consisted of grassroots efforts such as hosting tables at local events, benefit concerts, merchandise sales, and spaghetti and taco fundraisers. Momentum grew – area schools hosted pie bake sales and churches sent donations. Several major donors contributed and matched funds. Other tribes donated thousands of dollars. Former Tribal Administrator Maura Eastman was surprised by the level of interest and the number of people who participated in the efforts. “We would talk to people and share what we were trying to do and everyone was so supportive,” she said. “The support just grew and people were behind us. That made all the difference.”

The city of Eureka was also supportive, offering assistance to the tribe throughout the property acquisition process. The tribe was able to raise the \$106,000 necessary to purchase the Tuluwat Village property from property owner Fred Kay in 2000. To the tribe, the land was priceless. “The cultural significance of the site outweighed any potential liability. It was not negotiable,” noted Maura Eastman. “Indian Island is the center of the Wiyot universe. It’s like saying you don’t want to buy the Vatican because the buildings are old.”

Once the sale went through, the Wiyot Tribe legally owned the site. Now, the long road of environmental cleanup and site restoration could begin. With faith and determination, the tribe began working with partners on innovative ways to address site conditions.

2000 – 2014

Building Partnerships

Following the tribe’s acquisition of the site, cleanup began as a volunteer effort led by the tribe’s Natural Resources Department. The tribe reached out to community members for assistance while also looking at grants and support services available from local, state and federal agencies. With help from the California Conservation Corps, the Sierra Service Project and the Tribal Conservation Corps, volunteers began removing scrap metal debris and protecting the site from erosion. The tribe coordinated cleanup parties and worked with local recyclers and the waste management authority to dispose of the debris.

The tribe also reached out to local businesses. For Greg Dale, Southwest Operations Manager for Coast Seafoods, helping at the site was common sense. “We’re shellfish farmers in the bay. The Tuluwat Village site is right next door to our oyster farm. The

Jerry James and a Family of Survivors

Few people survived the Massacre of 1860. One young boy, Jerry James, was found alive in his dead mother’s arms. One hundred and forty years later, his descendants would play an instrumental role in purchasing the Tuluwat Village site and returning it to the Wiyot Tribe.



boatyard was a mess and presented a water quality hazard for the bay. No responsible party was going to clean it up, but cleaning it up would benefit everyone in the bay,” he said. “The tribe asked us to help protect the midden pile from eroding. We had the oyster shells plus the equipment. We protected the midden for a year and a half until the permanent sheet pile was in place.”

Site Partnerships

Many local, state and national organizations and agencies have played important roles in the site’s successful cleanup and reuse.

- California Conservation Corps
- California Cultural and Historical Endowment
- California Integrated Waste Management Board
- California State Coastal Conservancy
- Center for Creative Land Recycling
- Church of the Epiphany
- City of Eureka
- Coast Seafoods Company
- Headwaters Fund
- Humboldt Area Foundation
- Humboldt Bay Harbor Recreation and Conservation District
- Humboldt County Economic Development Division
- Local businesses
- McLean Fund
- M/V Madaket
- NOAA’s Community-Based Marine Removal Program
- North Coast Regional Water Quality Control Board
- SHN Engineers and Geologists
- Sea Grant
- Seventh Generation Fund
- Sierra Service Project
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- U.S. National Park Service
- Wiyot Tribe Sacred Sites Fund



A Wiyot woman prepares baskets near Mad River, just north of Indian Island, in the late nineteenth century.



Eureka Mayor Peter La Vallee and Wiyot Tribal Chairwoman Cheryl Seidner signing papers transferring 40+ acres of Indian Island to the tribe in 2004. The ceremony included symbolic gifts – a clay pot filled with earth from the island, smoked salmon, shell necklaces and medicine bags – shared between tribe leaders and members of Eureka City Council.

Site Land Transfers

2004

In 2004, the Eureka City Council made an unprecedented decision to return city-owned land next to the Tuluwat Village site to the Wiyot Tribe. In total, over 40 acres of land, including the remaining 4.5 acres of shell midden, were gifted to the tribe. A phone call between Wiyot Tribal Chairwoman Cheryl Seidner and Eureka Mayor Peter Le Vallee set the transfer in motion. Nine months later, the process was complete.

Mayor Peter La Vallee:

“Following discussion, city council decided unanimously to return the land to the tribe. The ceremony for the transfer was held on the Eureka waterfront. It was an emotional and powerful experience for all in attendance. The island is very beautiful, it is a treasure for our community and sacred ground for the tribe. Returning the land was one of my proudest moments as mayor. After the transfer we received a lot of media attention. Someone told us that this was a first, for a municipality to voluntarily transfer land back to a tribe. At the time, we didn’t know we were setting a precedent. We just knew it was the right thing to do.”

Tribal Administrator Maura Eastman:

“When the city decided to transfer the additional acreage, it happened so quickly because people believed in it and saw what the tribe had been accomplishing with the cleanup. They were behind the idea of giving back the property and setting an example of returning land to a tribe voluntarily.”

2015

In 2015, the Eureka City Council voted unanimously to transfer the remaining city-owned portion of Indian Island to the tribe. In 2017, the council reaffirmed its commitment to the land transfer process. Wiyot tribal citizens are eagerly awaiting the transfer. This portion of the island covers more than 202 acres. It hosts century-old cypress trees and includes another shell midden from the Wiyot village called Ethpidol.

The remaining 10 percent of the island is privately owned; several homes are located there. The tribe would welcome the opportunity to purchase or receive any private land on the island as it becomes available. In the meantime, the tribe does not want to make their neighbors feel unwelcome. “We would love to have our neighbors on the island as long as they would like to be there. We understand the feeling of being at home on the island and we also know what it feels like to not be wanted, and to have our land taken away,” said Cheryl Seidner. “That is not what we are all about – we are about trying to work well with our neighbors. We are a friendly and welcoming tribe.”



A slough encroaches on Indian Island cypress trees.



The city of Eureka continues to work on transferring the remaining portion of city-owned land to the Wiyot Tribe.



Egrets and Great Blue Herons sharing a roost in cypress trees on Indian Island.

Leveraging Resources

The tribe's outreach efforts quickly paid off. In 2001, EPA provided a \$200,000 Targeted Brownfields Assessment (TBA) grant. The grant funded the compilation of historical information and prioritization of areas of environmental concern and contamination. The tribe worked hard to secure additional grants to address the areas identified in the TBA. The California Integrated Waste Management Board provided \$80,000 for the removal of hazardous materials from the site. In 2006, invasive plant species were removed from the shoreline to allow native eel grass to thrive. The tribe took cuttings from native willows on neighboring Daby Island to plant trees and form a natural windbreak.

The next challenge was addressing the site's soil contamination. The tribe engaged technical consultants to focus on this and other cleanup challenges. "In a typical situation, you could just haul the contamination away," noted environmental consultant Mike Wilson. "But in this case, we were on an island and the material itself was sacred, included human remains, and was part of a national historic landmark. We focused on defining the midden as a structure – as a historic, sacred and physical treasure created by people over thousands of years – to help protect the area."

While selecting an effective, culturally appropriate remedy was challenging, the project's team eventually identified a way forward. "The breakthrough was the idea that we could remove some of the contamination by hand, in a culturally appropriate way, and treat remaining areas in place and then cap them," recalled consulting engineer Mike Foget. The consultants worked closely with the tribe to make sure remedy options were acceptable. Ultimately, crews hand removed 23 cubic yards of soil weighing 26 tons. Soil was passed through a screen by cultural monitors and then hauled by bucket load to 55-gallon drums. Each drum was weighed, loaded on a barge and then sent by truck to a disposal facility. In situ treatment of remaining soil and capping would follow to complete the remedy.

Making Cleanup Progress

By the fall of 2009, most excavation activities had finished. An Environmental Impact Report (EIR) detailing the steps necessary to finish the cleanup had been approved by the city of Eureka. However, it was still not safe to hold ceremonies at the site and access to the area remained limited without a functional dock or bulkhead. The tribe decided to prioritize a permanent solution to prevent shoreline contamination and erosion and provide access to the site. Partnering with the California Cultural and Historic Endowment led to a \$310,000 grant for creosote removal, sheet pile installation and bulkhead reconstruction.

In turn, working on access enhancements at a contaminated site in a sensitive coastal environment required that the tribe



Invasive plant removal in 2006 allowed for the restoration of eel grass, contributing to the overall health of the bay.



View of the north side of the shell midden.

“Using brownfield grants, emergency response funds and local partners, the Wiyot Tribe cast a wide net and leveraged opportunities. We hope that this story may give other tribes some ideas and open up possibilities.”

– Rusty Harris-Bishop, EPA Region 9

master a complex web of local, state and federal permitting requirements. For example, the tribe had to repair the existing, dilapidated bulkhead on site rather than replace it. Repair required the transport of 70 cubic yards of concrete to an island without vehicular access. To meet this challenge, crews sent concrete from pumper trucks located at the nearest highway through a quarter mile of hose to an additional pump on a barge that delivered the concrete to the site.

Throughout these efforts, the tribe remained flexible and creative as new challenges emerged. According to Tim Nelson, the Wiyot Tribe's Natural Resources Director, "you can have a great plan, but you have to remain open for adaptive management of a project, especially when it comes to permitting. You accept change. It could be the tides, weather or what you might find while uncovering the extent of contamination. We had a 'make do, can do' strategy. You get to a point where an agency would say 'you have to do it this way' and you had to make it work. We never gave up and we did everything by the book. We feel very proud of that, that we did things the right way."

In the meantime, innovative approaches continued to guide remaining cleanup activities. The project's technical consultants identified a new chemical oxidation treatment called cool-ox™ for remaining soil contamination. The treatment would break down contaminants but not degrade shell fragments, bones or sensitive cultural artifacts in the midden. A \$200,000 brownfields grant from EPA via Humboldt County's Economic Development Division funded the treatment.

Networking Leads to Completion of Site Cleanup

The final step in the cleanup process was capping treated soil and placing clean fill on top of the cap. This step would ensure the site was safe for use, allowing the Wiyot Tribe to resume its World Renewal Ceremony. Capping the site was the most expensive part of the cleanup process. The tribe had all plans and permits in place, and all excavation and prep work was complete. However, it lacked funding for the cap. Grant applications for the project were unsuccessful.

In the end, it was a fortuitous meeting that made a vital difference. As Stephen Kullmann, the tribe's former Natural Resources Director, explained, "I attended an EPA tribal conference. During a breakout session, I heard EPA Emergency Response Section Chief Harry Allen talking about cleaning up a boatyard. I said to him, 'we have a boatyard you can clean up.' The rest is history. EPA moved remarkably quickly." Within a month, EPA staff had visited the site. Within nine months, capping was complete. EPA brought in contractors, but also relied on many local people, working around the clock. "Everybody was ready to go and excited about this project. When I connected with EPA, it all just clicked and everything fell into place," Kullmann recalled. "It was a great example of committed people at a government agency getting things done."

Site Permitting Requirements

In total, the Wiyot Tribe obtained over a dozen permits during site cleanup and restoration activities.

- City of Eureka (lead EIR agency)
 - Building, Demolition and Grading Permits
 - Conditional Use Permit
- California Coastal Commission (Coastal Development Permit)
- Humboldt Bay Harbor, Recreation and Conservation District
- CalTrans (Encroachment Permit)
- California Regional Air Quality District (Burn Permit)
- California Regional Water Quality Board
 - Water Quality Certification
 - Waste Discharge Permit
- U.S. Army Corp of Engineers (CWA Sec. 404 Permit)
- Wiyot Tribe Historic Preservation Office
- California Department of Fish and Game
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency



Due to tidal limitations, EPA worked around the clock to cap the site.

"When it came time to cap the site, it was like an EPA SWAT team came in. Luckily, we had already dug out the acute material and obtained all of the permits. EPA was able to cap the site quickly, which brought the site to a safe level of exposure and marked the end of the cleanup. It was amazing."

– Mike Foget, consulting engineer

With the bulkhead in place, crews brought in heavy machinery and fill soil to the site. After capping and placement of clean fill, the area was hydroseeded with native grasses. EPA also abated asbestos at the former caretaker residence and demolished the structure. The U.S. Coast Guard provided safety monitoring during project activities and funded removal of the remaining marine debris through a grant to the Humboldt Bay Harbor District and the National Oceanic and Atmospheric Administration. Finally, volunteers repaired and repainted the Butler Building, a large metal shed that was the only structure remaining on site. It now stores machinery and equipment for site maintenance.



Tim Nelson removes graffiti from the Butler Building.

World Renewal Ceremony

Historically, hundreds of Wiyot people from scattered villages across the Humboldt Bay area would gather at Tuluwat Village every spring for a massive celebration and ritual of cosmic renewal, asking the creator's blessings for all people and the land for the coming year. The World Renewal Ceremony traditionally lasted eight to 10 days.

While exact ceremony practices were lost in 1860, tribal elders are committed to restoring this sacred tradition using cultural memory and the knowledge of neighboring tribes. After a 154-year interruption, the tribe began to dance again. Before the ceremony, participants fast and pray to ready themselves in mind, body and spirit. Ceremonial regalia is made from shells, buckskin, feathers, beads and pine nuts. The ceremony includes singing and dancing. The goal of the ceremony is to renew the world and restore balance.



Timeline of Events

<i>Pre-1850</i>	Tribal ceremonies conducted at the site and shells deposited at the midden for over 1,000 years.
<i>1850</i>	About 3,000 Wiyot people live in 20 villages across the Humboldt Bay area.
<i>1858</i>	First recorded white settler arrives on Indian Island.
<i>1860</i>	Robert Gunther assumes ownership of the island.
<i>1860</i>	Nearly 100 women, children and elders massacred at the site during the tribe's World Renewal Ceremony.
<i>1860</i>	Dikes built on Indian Island to drain the salt marsh for agriculture and grazing. Lumber mills established on the island. Period of near extinction begins for the Wiyot Tribe.
<i>1870</i>	Dry dock boat repair yard opens on the Tuluwat Village site.
<i>1910</i>	Only 100 full-blooded Wiyot people remain alive.
<i>1924</i>	Robert Gunther transfers ownership of Indian Island to Ida B. Gates.
<i>1960</i>	City of Eureka acquires part of Indian Island.
<i>1964</i>	Shell midden on Tuluwat Village site designated as National Historic Landmark by the U.S. Department of the Interior.
<i>1976</i>	Individual Wiyot citizens receive federal recognition from the U.S. government.
<i>1981</i>	Wiyot Tribe wins lawsuit with the U.S. government; Wiyot tribal status is reinstated.
<i>1990</i>	Boat repair yard closes at Tuluwat Village Site.
<i>1992</i>	Tribe begins holding annual vigil on Woodley Island for the 1860 massacre.
<i>1996</i>	Tribal acquisition of the Tuluwat Village site is proposed at a Wiyot Tribal Council meeting.
<i>2000</i>	The Wiyot Tribe purchases 1.5-acres of the Tuluwat Village site consisting of a contaminated and developed areas from previous dry dock boat repair facility. Volunteer cleanup efforts begin.
<i>2002</i>	Plantings for erosion control underway.
<i>2004</i>	City of Eureka gives over 40 acres of land next to Tuluwat Village site to the Wiyot Tribe. These areas include burial grounds and shell midden.
<i>2004</i>	EPA awards the tribe a \$200,000 TBA brownfields grant. Six groundwater wells installed and 30 soil bearings collected.
<i>2006</i>	Wiyot Tribe holds first ceremony (coming of age) in over 140 years. Removal of invasive plant species and planting of native willows at the site. Sheet pile installation prevents contaminated runoff and shell midden erosion.
<i>2007</i>	Tuluwat Restoration Project EIR approved by the city of Eureka.
<i>2009</i>	Contaminated soil removed by hand.
<i>2011</i>	Bulkhead construction and in-situ chemical oxidation of contaminated soil.
<i>2013</i>	EPA provides \$552,000 in direct cleanup funding. EPA installs cap, demolishes caretaker shed and performs asbestos abatement. Cap is hydroseeded with native species.
<i>2014</i>	Cleanup finishes. Mourning period for the Wiyot Tribe ends. First World Renewal Ceremony held at the Tuluwat Village site in 154 years.
<i>2016</i>	Water quality monitoring station upgraded to provide real-time data.
<i>2017</i>	City of Eureka reaffirms its commitment to transfer all remaining city-owned land on Indian Island to the Wiyot Tribe.
<i>2017</i>	EPA selects Wiyot Tribe for its Excellence in Site Reuse award.
<i>TODAY</i>	There are a total of 620 enrolled Wiyot tribal citizens.

The Tuluwat Village Site: The Story in Pictures

Pre-Cleanup



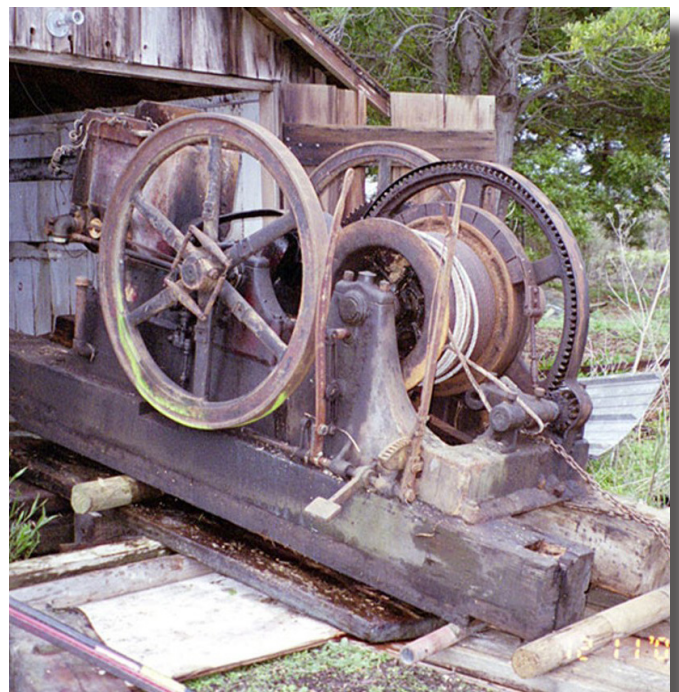
Aerial view of the site in 1940.



A boat at the dry dock shipyard on site, circa 1970.



Site conditions in 2000, when the Wiyot Tribe acquired the Tuluwat Island property.



Hazardous waste shed and winch equipment at the site before cleanup.

During Cleanup



Volunteers removing scrap metal from the site.



Workers using oyster shells for erosion control.



Each barrel of contaminated soil was filled and weighed by hand.



Sheet pile installation and bulkhead repair activities in 2011.



EPA strike team installing cap and placing clean fill at the site.

After Cleanup



Cheryl Seidner leading the final vigil on Woodley Island in 2014.



Wiyot tribal citizens making dance feathers and shell regalia for the World Renewal Ceremony.



Wiyot tribal citizens traveling from Indian Island for the land transfer ceremony in 2004.



Water-quality monitoring station provides real-time data to interested parties, including oyster growers.



*Rare species – Humboldt Bay owl's clover (*Castilleja ambigua*) and Point Reyes bird's-beak (*Cordylanthus maritimus*) – thriving at the site.*



Annual Earth Day cleanup efforts at Indian Island keep areas clean and provide opportunities for education as well as a community day out on the water.



The Tuluwat Village site today, as seen from the water and the air.



2014 – Present

Celebrating Tribal Culture, Looking to the Future

With the site's remedy in place, Tuluwat Village was now ready to receive visitors. On March 28, 2014, the Wiyot Tribe ended its period of mourning and hosted the first World Renewal Ceremony in 154 years.

With their culture nearly lost following the Massacre of 1860, tribal leaders consulted with elders and other local Yurok and Hupa tribes to restore ancestral knowledge and look to the future. A traditional Wiyot dress on loan from the Smithsonian Institution was used in ceremonial dances. Over a century old, apron-like and adorned with glass and shell beads and local seeds, the Grandmother Dress is one of the only surviving Wiyot ceremonial pieces. Though too fragile for use, a Wiyot medicine woman's headdress was provided on loan for display.

Tribal citizens fasted in preparation, practiced dances, and prepared to pray and sacrifice in honor of their ancestors and the renewal of the world. Knowing that the completion of the ceremony would differ in customs and traditions, Wiyot people took comfort in being able to attempt to return to old ways while also charting a path forward. "The world has changed, and the Wiyot changed with it," Cheryl Seidner noted. "We don't live in redwood slab houses anymore, but we still need our traditions. We still need something to hold on to. And when we gather on Indian Island, we are saying, 'we're still here, and we are putting the pieces of our culture together.'"

In addition to resuming traditional ceremonies, the tribe began planning for the future. With assistance from the California State Coastal Conservancy, an agency dedicated to protecting natural lands and waterways along California's coast, the tribe developed conceptual plans focused on new infrastructure to support ceremonies and gatherings, interpretive trails and marine access. Future facilities could also include a dance area, a circular gathering ring, a service kitchen, interpretive displays, sculpture areas, floating docks, a canoe landing area and trails.

Providing Bay-Wide Benefits

The tribe's restoration of the site is also providing broader bay-wide water quality benefits. In 2016, a water quality monitoring station originally installed offshore at the site in 2004 was upgraded. The station now delivers real-time data every 15 minutes to interested parties as part of the Central and Northern California Ocean Observing System (CeNCOOS). Subsurface sensors deliver observations of water salinity, conductivity, temperature, dissolved oxygen, turbidity, pH, depth and chlorophyll fluorescence. Wiyot Natural Resources staff visit the station every two weeks to maintain it. The station's chlorophyll probe provides data on phytoplankton availability to local oyster growers. Humboldt Bay produces 70 percent of the state's oysters. Once a major source of contamination in the bay, the site now contributes to the overall health of the area and provides vital information to producers.

Other successes include the removal of invasive dense-flowered cordgrass, allowing native-species at the site to thrive including rare, threatened and endangered species such as Humboldt Bay owl's clover and Point Reyes bird's-beak. Restoration of the area salt marsh has also improved conditions in the bay. Through Bureau of Indian Affairs grant funding, the tribe has treated large areas of salt marsh near the Tuluwat Village site to prevent the growth of invasive species and foster the growth of bay native species and local eel grass habitat. This habitat, vital for water quality, is protected by state and federal law under a "no net loss" policy.



Conceptual plans call for gathering areas, interpretive trail and supportive marine infrastructure at the site in the future.



Wiyot ceremonial dress on display at the Wiyot Heritage Center.

The compelling history of Tuluwat Village and the culture of the Wiyot Tribe has also started to attract visitors, supporting the area's economy. "In terms of tourism, the cleanup has really helped. It helped to transform a blighted area and it's great for the environment," said Leroy Zerlang, captain of the Madaket, the oldest passenger-carrying vessel in continuous service in the United States. "From what it was to what it is, the transformation has been amazing. On every boat trip, we share the history of the island, including the massacre and the story of the cleanup. We mention EPA on every trip. They did a phenomenal job, just amazing work. And it wasn't easy. EPA didn't cut corners – they did it right."

In 2017, in recognition of the Wiyot Tribe's leadership, innovation and collaborative partnership, EPA's Pacific Southwest Region selected the Tuluwat Village site for its Excellence in Site Reuse Award. This was the first reuse award to be given by the region and it was also the first EPA reuse award in the country to be given to a tribe. "EPA works hard to collaborate with tribes in a way that respects their governmental independence and cultural traditions," noted EPA's regional Superfund Reuse and Redevelopment Coordinator Gary Riley. "While EPA provided some funding and did some work at the Tuluwat Village site, the success of the project is due to the tenacity and hard work of the Wiyot Tribe."



Eelgrass forms the base of a highly productive marine environment. It has been growing rapidly near the site. Source: NOAA photo by Adam Obaza

"I get a feel-good smile when I see how the site looks today. It's such an amazing transformation."

- Chris Weden, EPA On-Scene Coordinator



Captain Leroy Zerlang and the Madaket leading an 8.5-mile tour of Humboldt Bay, including the Tuluwat Village site.

Before and After



A total of 220 linear feet of sheet pile at the site prevents erosion, protecting the shell midden and other cultural and environmental resources.



The site's bulkhead, before and after restoration.



Volunteers used recycled paint to transform the Butler building.

Lessons Learned

Wiyot representatives and project partners identified several major factors that have been essential to the project's success.

- Indian Island is a vital community asset and sacred site with priceless cultural value, striking views, extensive natural resources and historic significance.
- Tribal citizens and local partners were actively engaged from the outset of site acquisition and cleanup planning efforts, leading to the identification of resources and sustained community assistance.
- Federal and state agencies understood the site's cultural and historical significance. Mindfulness of the sacred nature of the site led to creative and thoughtful solutions and pioneering cleanup methods.
- The Wiyot Tribe remained flexible and open to new developments, adapting plans to reflect new discoveries and requirements while always keeping big-picture goals in focus.
- Local governments and agencies created partnerships built on respect for the Wiyot Tribe and the primacy of its decision making, and provided services that reflected the tribe's needs and priorities.
- The site's cleanup provided broad environmental benefits for Humboldt Bay as well as Tuluwat Village, leading to the engagement of additional partners and the availability of additional resources.
- The site's tragic history was an urgent, compelling story that needed to be told. Its importance helped raise the project's profile locally and nationally.
- Working to address past injustice had a profound effect on project partners. Engineers, consultants, crew members and the mayor describe involvement with the site's restoration as the pinnacle of their careers. Passion for the project led to a high level of commitment to successful project outcomes.
- The site's remote location posed unique challenges. Cleanup efforts were adapted for limited site access, making it necessary to "do what you can with what you have" and "think outside the box."
- Working across cultures and governments with a focus on future success built bridges and healed past wounds.

"A project like this reminds us that the things we do – we do them not just for money, but because it is the right thing to do. It gives you an unbelievably rewarding feeling. I worked on the Exxon Valdez spill and that was very important work, but I can honestly say that the cleanup at Tuluwat Village was the pinnacle of my career. I was honored to be a part of it."

– Mike Foget, consulting engineer

Bigger Picture

While these site-specific conditions created an ideal climate for successful reuse outcomes, a range of broader lessons learned can also help guide similar projects at contaminated lands across the country.

EPA works with tribes, communities, site owners and other stakeholders to support reuse outcomes that are compatible with site cleanups.

The Agency places a high priority on supporting the return of contaminated sites to productive and beneficial uses. As part of its ongoing effort to partner with tribes, EPA provided valuable support at key points in the project. Support from EPA included an initial Brownfields grant, a review of site cleanup plans in conjunction with Humboldt County, a time-critical removal action, asbestos removal and capping of the site. These EPA activities provided resources for plans initiated by the Wiyot Tribe in accordance with cultural and environmental tribal priorities.

While EPA provides tools and resources to support Superfund redevelopment, tribes, communities and public- and private-sector organizations make it happen.

EPA's mission is to protect public health and the environment. EPA relies on engaged tribes and community stakeholders to bring their land use goals and priorities to the table so that this information can be incorporated as part of the remedial process, linking cleanup and redevelopment. At Indian Island, tribal leaders tenaciously leveraged resources and opportunities at the local, state and national levels to achieve their goal. Through partnerships, collaboration and innovative thinking, the Wiyot Tribe was able to bring together an extensive support network to ensure project success.

Effective reuse planning projects are inclusive, information-based and focused on targeted outcomes.

Community-based reuse planning processes can be most effective when they engage diverse stakeholders, including tribes, are based on detailed site and community information, and lead to implementable strategies and next steps. “The tribe accepted help on multiple levels. The volunteer effort was incredible. We welcomed everyone with open arms. It built community and bridges. It connected people who otherwise would not know each other,” reflected Tribal Administrator Michelle Vassel.

Tribal governments can play a unique leadership role in reuse planning projects.

As the organizations responsible for their communities’ general welfare and cultural preservation, tribal governments are particularly well-positioned to host redevelopment projects, bringing together traditional ecological knowledge and stewardship with modern science and technology to foster positive site reuse outcomes. The ongoing repatriation of city-owned property on Indian Island has helped ensure the preservation of Wiyot culture and proper environmental stewardship of the island.

“Native tribes are not an entity of the past. They are modern proactive governments that are committed stewards of their environment and ancestral lands. The more we can do to empower tribes and facilitate partnerships, the better off we will all be,” noted Stephen Kullmann, the tribe’s former Natural Resources Director. “It was a great benefit for the Wiyot to regain lands that are their spiritual center. It was also a huge benefit to the Bay that the contamination was cleaned up. It was an amazing example of a coordinated effort focused on cleanup and cultural and environmental restoration. Look what happens when you can enable a tribe to work quickly. I’m always impressed with EPA’s ability to work with tribes and allow them to make decisions and move forward.”

Think long term.

It can take many years to remediate contamination that has accumulated over decades, or in this case, a century. These activities provide a time window for stakeholders to build partnerships and identify resources, coordinate with EPA and state agencies, and develop a strategy for returning a site to use while protecting future visitors. Returning to the Tuluwat Village site was a multi-generational dream for the Wiyot Tribe. Cleanup efforts took nearly 15 years; restoration efforts remain ongoing today. “When you have a dream – you can achieve it. Don’t get discouraged or lose faith when times are hard,” said Cheryl Seidner. “If what you want is for the betterment of the community, you can do it. You must persist and be patient for the long haul.”

EPA and Reuse: Lessons Learned

Since the inception of the Superfund program, EPA has been building on its expertise in conducting site characterization and remediation to ensure that contamination is not a barrier to the reuse of property. Today, consideration of future use is an integral part of EPA’s cleanup programs from initial site investigations and remedy selection through to the design, implementation, and operation and maintenance of a site’s remedy.

“For more than two decades, EPA has worked with diverse stakeholders to make sure reuse considerations are taken into account during the cleanup process,” reflected Melissa Friedland, EPA’s Superfund Program Manager for Redevelopment. “Superfund cleanups can be creative and flexible in allowing for future site uses, but that information needs to be plugged in early to be as effective as possible.”

EPA also works with site stakeholders to consider how future land use considerations can inform the implementation and long-term stewardship of site remedies as well as cleanup planning. At some sites, for example, reuse considerations can inform the future location of groundwater monitoring wells and other operation and maintenance equipment that might inadvertently hinder redevelopment efforts. At other sites, detailed site reuse plans have provided additional benefits that save time and reduce redevelopment costs. For example, future infrastructure corridors or building footers can be installed in coordination with site cleanup activities.



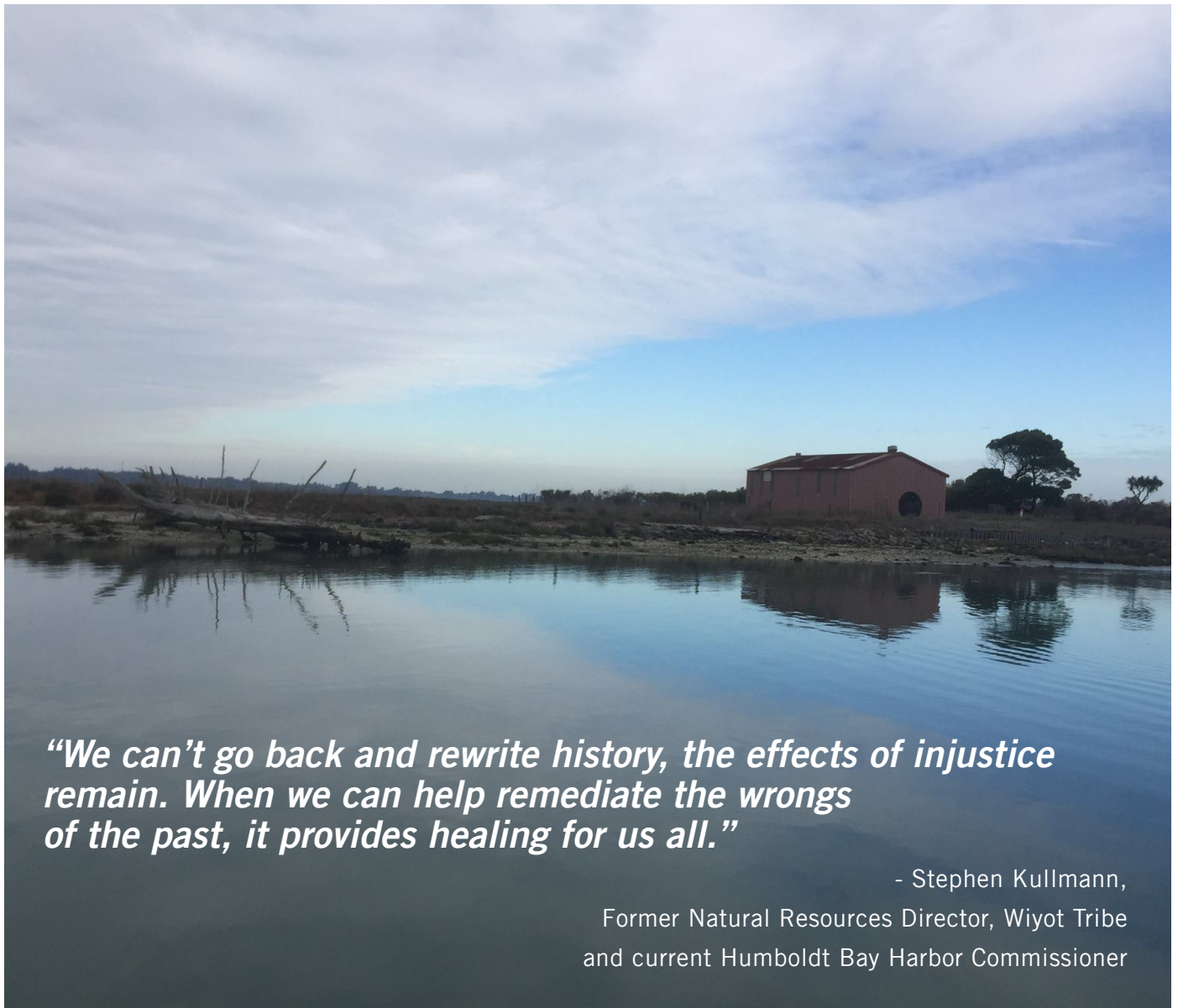
Wiyot dancers in ceremonial regalia.

Looking Forward

The cleanup, cultural celebration and environmental restoration of the Tuluwat Village site illustrates how tribal leadership, collaboration with EPA and diverse federal, state and local partners, and detailed, flexible planning can result in several major outcomes: the protection of public health and the environment, the preservation of historic and sacred community resources, innovative cleanups, and long-term partnerships.

In northern California, the Wiyot Tribe has led a complex project aided by support from local, state and federal partners.

The tribe's leadership has enabled a complex cleanup and restoration effort that brought together diverse partners, and resulted in an approach that can guide similar efforts on tribal lands across the United States. Best of all, the story is not over. The project has started a new chapter in the history of Indian Island. As Wiyot Elder Cheryl Seidner noted, "The story never ends. It evolves."



“We can’t go back and rewrite history, the effects of injustice remain. When we can help remediate the wrongs of the past, it provides healing for us all.”

- Stephen Kullmann,
Former Natural Resources Director, Wiyot Tribe
and current Humboldt Bay Harbor Commissioner

Environmental Stewardship and Cultural Preservation on California's Coast

THE TULUWAT VILLAGE SITE ON INDIAN ISLAND IN HUMBOLDT COUNTY, CALIFORNIA

Sources and Resources

Sources

Images for this case study are provided courtesy of the Wiyot Tribe, North Coast Journal/northcoastjournal.com, EPA Region 9, the Humboldt County Historical Society, NOAA, and SHN Engineers and Geologists.

Maps for this case study were created with data from Humboldt County GIS, Google Earth, Esri, DeLorme, AND, Tele Atlas, First American, UNEP-WCMC and USGS.

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