

By The Students Of The  
 Gary and Jerri-Ann High Tech High  
 Supported By The  
 Unified Port Of San Diego

# San Diego Bay Calendar 2007

Marine Resource Utilization Study



H 295  
 San Diego Bay Calendar  
 R. Berger Archive  
 High Tech High HS



San Diego Bay has a rich history of utilizing its marine resources in a variety of applications. This calendar represents an introduction to the work done by the students of High Tech High who have produced a book and documentary addressing the harvesting and domestication of marine life in the San Diego Bay.

The themes included are:

- Hunting & Foraging
- Bio Processing & Extraction
- Military
- Reseeding & Domestication



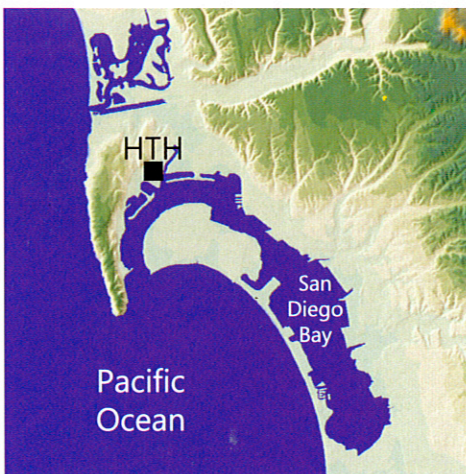
This work was made possible thanks to numerous experts and users of the Bay who volunteered their time for interviews. The information and ideas provided by these collaborators helped produce this project for the San Diego Community and those who visit San Diego Bay.



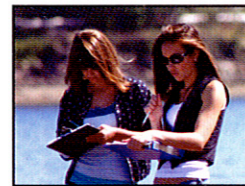
# Introduction

Over the course of the last four years, High Tech High's innovative and sustained approach to environmental education and conservation – the "Integrated Urban Ecology Study of San Diego Bay" has introduced 240 high school juniors to original research in ecological assessment and engagement through writing and reflection regarding their urban ecology. From these studies and reflections, three books were published which focused on the issues that reflect the region's most pressing environmental priorities, including those that the students themselves have identified as most meaningful and pressing to their generation. The books were written, photographed and designed by students and have since informed, inspired and achieved importance with local residents, marine scientists, conservation advocates and policymakers alike. This calendar represents an introduction to the third book in the series "San Diego Bay: A story of exploitation and restoration" which is being published by California Sea Grant (ISBN 1-888691-17-4).

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If only the rest of America were as interested, informed, and dedicated as your students, this country could readily solve its environmental problems.  
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Map of the San Diego Bay



High Tech High is located in the ongoing redevelopment of Liberty Station, the former Naval Training Center in San Diego, within 200 meters of San Diego Bay. The school's proximity to the Bay affords easy contact with several wetland and armored bay habitats. As the City's redevelopment efforts continue, the students' study of the complexity and fragility of urban-bay ecosystems contribute to the City's ongoing discussion and decisions. Using this unique setting as a field laboratory, student understanding of the interconnection between human activities (eg. fishing, boating and military exercises) and local marine life provides decision makers with invaluable perspectives, recommendations and original research.



Calendar edited and designed by Dana and Peter  
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# Waterfowl Hunting



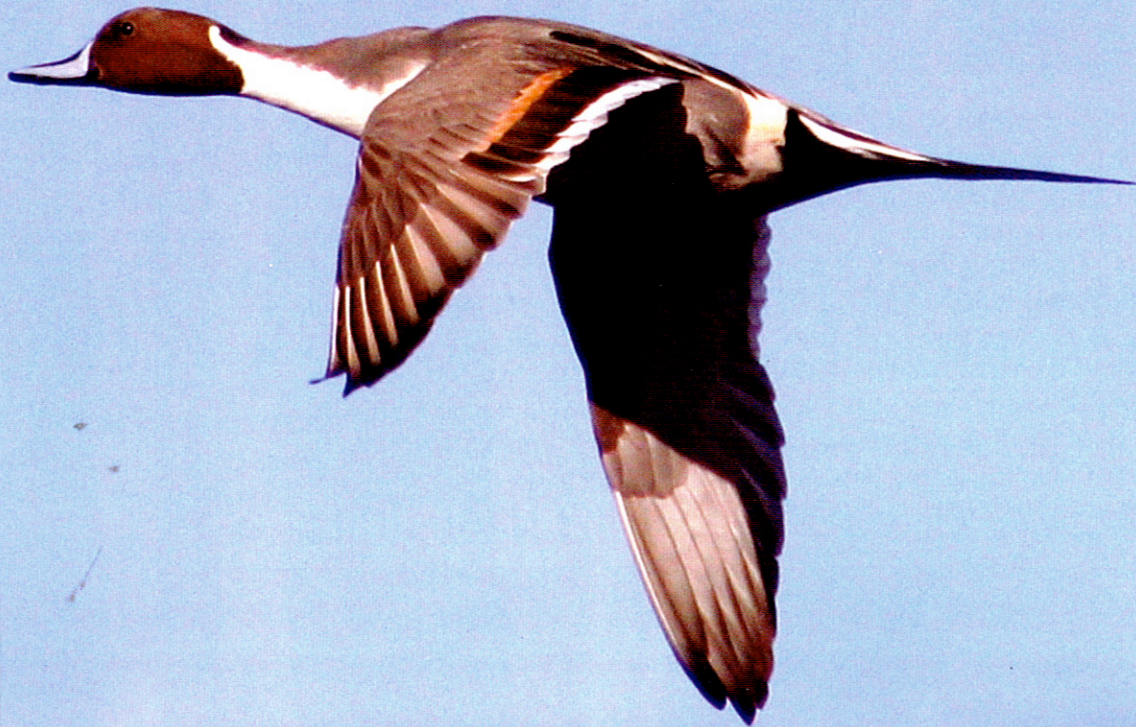
Buffleheads



Black Brants



Shoveler

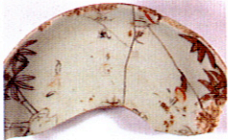


## January

**HISTORY:** The annual migration of waterfowl along the Pacific Flyway once attracted countless duck hunters to the San Diego Bay and local wetlands. At one point in time, ducks were so abundant in the Mission Bay area of San Diego that it was widely known as "Duckville."

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Sunrise 6:51 Sunset 4:54	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17 Martin Luther King's Birthday	18	19	20
21	22	23	24	25	26	27
28	29	30	31	<p><b>BIOLOGY:</b> The species of waterfowl that temporarily live in and around San Diego Bay commonly include Pacific black brant, surf scoter and buffhead. Migrating waterfowl inhabit the Bay annually from October through January.</p>		

# Chinese Fisherman



Coconut grove style plate



Rim of a soy sauce dispenser



Bamboo style bowl



## February

**HISTORY:** During the 1850s, the Chinese fishermen were among the earliest settlers along the San Diego Bay. Tragically, in 1882 the Chinese junks were declared foreign vessels and banned from American waters, later the sea fishermen were implicated as the reason behind the decreasing number of large fish in the Bay.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Sunrise 6:44 Sunset 5:21	2	3
4	5	6	7	8	9	10
11	12	13	14 St. Valentine's Day	15	16	17
18	19 President's Day	20	21	22	23	24
25	26	27 John Steinbeck Born 1902	28	<p><b>BIOLOGY:</b> The Chinese fishermen of San Diego Bay harvested a variety of marine species. The focus of their collection was primarily pelagic fish and abalone.</p>		

# White Seabass



Hatchery fish



Released to the Bay



Broodstock fish



## March

**HISTORY:** Overfishing of white seabass, spurred on by continually improving fishing technology, caused a drastic drop in the white seabass population during the 1950s. Restoration efforts by Hubbs-Sea World Research Institute, Port of San Diego and the San Diego Oceans Foundation are acting to repopulate the Bay and adjacent coast with white seabass.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Sunrise 6:17 Sunset 5:46	2	3
4	5	6	7	8	9	10
11 Daylight savings time begins	12	13	14	15	16	17 St. Patrick's Day
18	19	20	21 Vernal Equinox	22	23	24
25	26	27	28	29	30	31

**BIOLOGY:** The white seabass, *Atractoscion nobilis*, is a member of the croaker family and is considered one of the "noble" fishes due to their size and difficulty to capture. They are known as a top predator in the kelp beds and can grow to five feet in length and come to weigh eighty pounds.

# Kelp to Gunpowder



Chief chemist, 1918  
Dr. C.M. Sherwood



Bird refuge



American kestrel



## April

**HISTORY:** During its 76 years in San Diego, Kelco, later known as ISP Alginates was an important asset to the city's economy. However, the companies' move to Scotland in 2006 for financial reasons, will likely have an impact on kelp forests and the local economy.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise 5:37 Sunset 6:09	2	3 Jane Goodall Born 1934	4	5	6	7
8 Easter	9	10	11	12	13	14
15	16	17	18	19	20 Mexican Flag Raised over Presidio, 1822	21 John Muir Born 1838
22	23 Earth Day	24	25	26 John James Audubon Born 1785	27	28
29	30	<p><b>BIOLOGY:</b> The giant kelp <i>Macrocystis pyrifera</i> was exploited for gunpowder production due to its abundance of potassium salts. The former factory is now a thriving salt marsh refuge for many native plants and animals supported by Chula Vista Nature Center.</p>				

# Bay Mussels



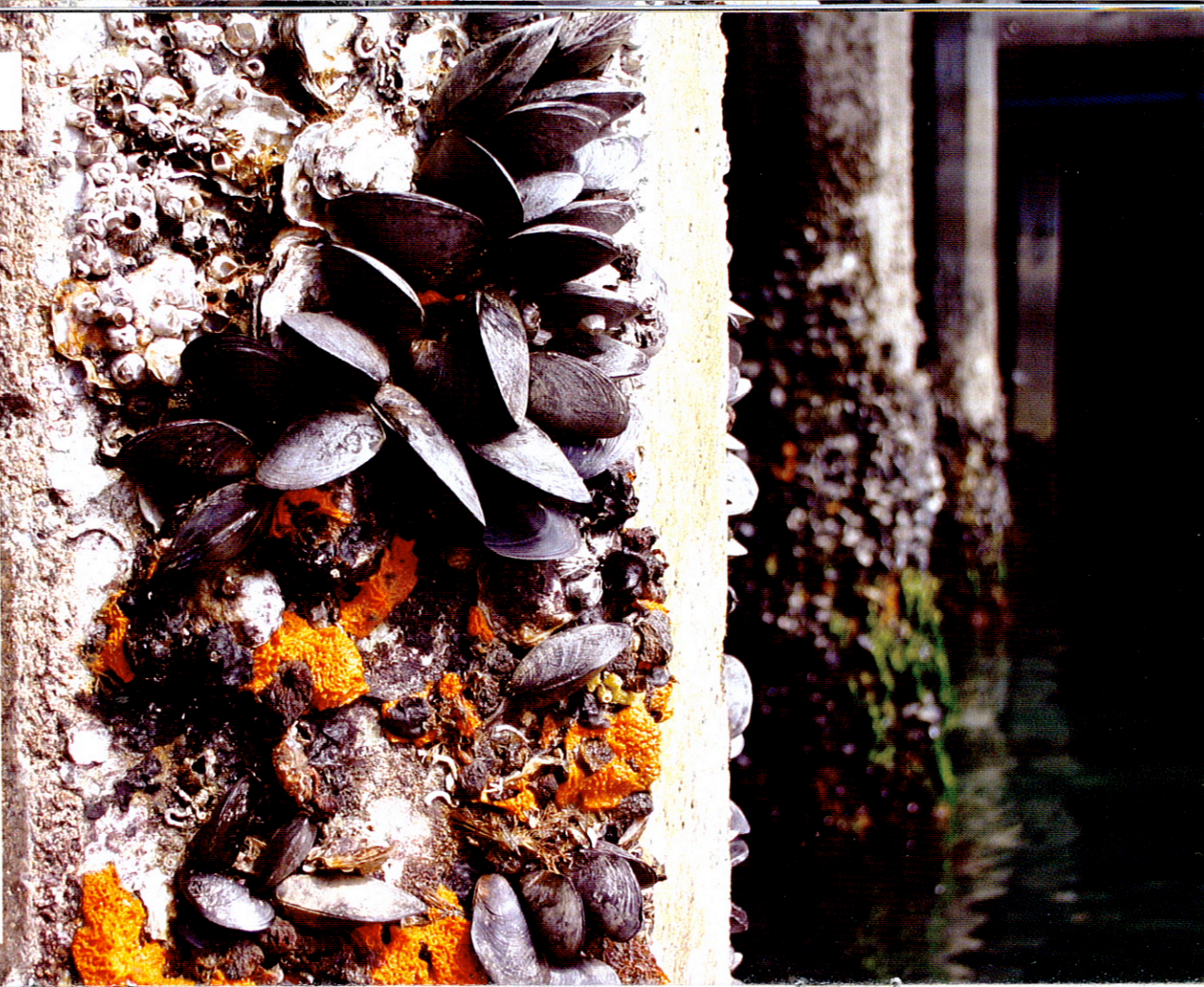
Substrate for others



Tidal influence



Mussel rack



## May

**HISTORY:** High Tech High studies have demonstrated that there are locations along San Diego Bay that hold great potential for mussel farming. Although current water quality is too poor to allow farming in the Bay for commercial purposes, ongoing efforts to clean up the productive body of water continues. Someday it may be possible to establish productive mussel aquaculture.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Sunrise 6:02 Sunset 7:30	2	3	4	5
6	7	8	9	10	11	12
13 Mother's Day	14 Ed Ricketts Born 1897	15	16	17	18	19
20	21	22 UN Day of Biodiversity	23	24	25	26
27 Rachel Carson Born 1907	28 Memorial Day	29	30	31		

**BIOLOGY:** The Bay mussel (*Mytilus galloprovincialis*) is one of the most populous animals that live in and around San Diego Bay. These filter-feeding bivalves grow in large clumps attached to rocks, docks, pilings, floats, and gravel are an accustomed sight along the San Diego waterfront.

# Navy Sea Lions



Sea lion pens



Training dummy



Sea lion feeding



## June

**HISTORY:** Currently, there are about 30 sea lions working in the Navy Marine Mammal Program, trained to locate inanimate objects and carry out force protection, measures used to reduce the risk of potential harm to the Navy's security forces.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 Sunrise 5:42 Sunset 7:52	2
3	4	5 World Environment Day	6	7	8	9
10	11 Jacque-Yves Cousteau Born 1910	12	13	14	15	16
17	18	19	20	21 International Surfing Day Summer Solstice	22	23
24	25	26	27	28	29	30

**BIOLOGY:** Sea lions are used in the NMMP because they are friendly, easy to work with, can dive to great depths, and have superior low-light vision. The sea lions that work with the Navy continually amaze their handlers with their intelligence and diligence.



# Navy Dolphins



Ready to perform



Home of NMMP



Positive feedback



## July

**HISTORY:** After successful missions in the Vietnam War, the Cold War, and the Iraqi War, the Atlantic and Pacific bottlenosed dolphins of the Navy Marine Mammal Program have become an indispensable part of the Navy.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise 5:44 Sunset 8:01	2	3	4 Independence Day	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

**BIOLOGY:** Utilizing their natural sonar and deep-diving physiology, the dolphins work collaboratively with their trainers to save the lives of American military personnel during warfare.

# Tuna Fishing



The crew



Historic catch



Memorial



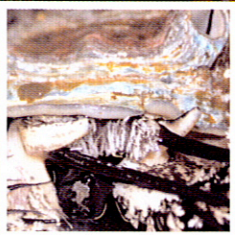
## August

**HISTORY:** Since the early 1900s, the tuna fishing industry has been extremely important to San Diego Bay. Originally, immigrants to San Diego fished in the Bay because it was a skill and technique that was brought with them from their own countries.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Sunrise 6:03 Sunset 7:47	2	3	4
5	6	7	8 International Day of Indigenous People	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30 Sylvia Earl Born 1935	31	

**BIOLOGY:** Members of the tuna family are champions among fish in their own right and are renowned across the globe for spectacular stamina and speed. The most commonly commercially caught and sold tuna species are: albacore, yellowfin, bluefin, bigeye, and skipjack.

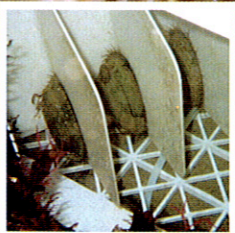
# Abalone



Abalone head



Abalone tanks



Outplanted abalone



## September

**HISTORY:** Over the centuries, abalone have played an important part in the diets of the peoples living along the coast of California. Due to overfishing the state of the local abalone population today is a cause of concern for many groups, the abalone may soon be a threatened species if restoration efforts are not supported.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 Sunrise 6:23 Sunset 7:13
2	3 Labor Day	4 Native American Day	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21 International Peace Day	22
23 Autumnal Equinox	24	25	26	27 Ron Berger Born 1954	28 Juan Cabrillo enters San Diego Bay, 1542	29
30						

**BIOLOGY:** Abalone are relatively slow moving mollusks that appear to be flattened snail-like creatures that can grow to nearly the size of a dinner plate. Red, green, pink, and black abalone are four common types of abalone which once were known to thrive in the waters around San Diego Bay.

# Kelp to Alginates



Giant kelp



Kelp cutter



Barrio Logan mural



## October

**HISTORY:** During its 76 years in San Diego, Kelco, later known as ISP Alginates was an important asset to the city's economy. The company's recent move to Scotland in 2006 for financial reasons, will likely have an impact on kelp forests and the local economy.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Sunrise 6:43 Sunset 6:33	2	3	4	5	6
7	8 Columbus Day	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31 Halloween	<p><b>BIOLOGY:</b> The "giant kelp," (<i>Macrocystis pyrifera</i>) that grows and thrives in the ocean depths along the coast of California and Baja California, Mexico is a key ingredient for many commercial products. Under ideal conditions it can grow two feet a day.</p>		

# The Saltworks



Salt crystals



Snowy plover



Least tern



# November

**HISTORY:** The South Bay Saltworks is located on the southern end of the Bay where it has been present for over 100 years, producing approximately 75,000 tons of salt annually. The current salt operation began in 1879, with the establishment of La Punta Salt Company.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Sunrise 6:06 Sunset 4:58	2	3
4 Daylight savings time ends Indian Revolt at Mission De Alcalá, 1775	5	6	7	8	9	10
11 Veteran's Day	12	13	14	15 Pt. Loma Lighthouse Illuminated, 1855	16	17
18	19	20	21	22 Thanksgiving	23	24
25	26	27	28	29	30	

**BIOLOGY:** A recently proposed plan to make a new refuge for the flora and fauna that reside in the San Diego Bay will nominally include part of the Salt Works, which is home to a great number of waterfowl species that benefit from or live in harmony with the salt in the area.



## Native Americans



Cabrillo landing



Metate



Shellfish diet

# December

**HISTORY:** The San Diego region has been home to Native Americans for thousands of years. Some of these early natives chose to settle near San Diego Bay and take advantage of the abundant and diverse marine life that existed in the Bay.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 Sunrise 6:33 Sunset 4:42
2	3	4	5 First Day of Hanukkah	6	7	8
9	10	11	12 Last Day of Hanukkah	13	14	15
16	17	18	19	20	21	22
23	24	25 Christmas	26	27	28	29
30	31					