



BIRCH AQUARIUM

A T S C R I P P S

Scripps Institution of Oceanography
University of California, San Diego

REC
JL
Environ

Eileen Maher
Assistant Director, Environmental Services
Port of San Diego
P.O. Box 120488
San Diego, CA 92112-0488

May 31, 2009

Dear Eileen,

The Birch Aquarium is making steady progress toward completion of the San Diego Bay exhibit funded by the Port of San Diego (reference Document Number 53246). Since our last report, we hired Bowman Design Group in Signal Hill, California to design, fabricate, and install the non-living components of the exhibit. Documents showing final designs, including the storyboard for the information architecture and functionality of the touch screen interactive, are enclosed for reference. I have also included the production timeline from Bowman. The timeline indicates key points for final review of exhibit elements, especially text, that will occur over an approximate six-week period. I am planning to send the exhibit text and imagery to you for review and hope someone will be available to do so during the scheduled review periods.

The exhibit also includes two adjacent aquarium tanks, which are currently being renovated to showcase Bay habitat and wildlife. Our aquarists have already procured the necessary habitat elements and most of the specimens needed for the living displays, which are critical to communicating the idea that San Diego Bay is an important natural resource and essential ecosystem. Please note that while the transition of these tanks to representations of Bay habitats will be completed by the end of June, the accompanying physical and interactive components as shown in the enclosed final design illustration are currently scheduled to open in late August (see enclosed timeline).

The execution of what has evolved into an ambitious exhibit plan was made possible by the tremendous assistance of Port Assistant Environmental Specialist Phil Gibbons in acquiring the data sets that serve as the basis for the digital interactive. I also greatly appreciate your help, as well as that of Port Photojournalist Dale Frost, in providing imagery for the exhibit.

It is anticipated that the new San Diego Bay exhibit at Birch Aquarium will increase our visitors' awareness of the value of San Diego's "Big Bay" and its resources both to

INTERACTIVE TOUCHSCREEN PLAN

MONITOR SPECS

Model: 2230
 Form Factor: Open Frame
 Enclosure color: Black
 Diagonal size: 42.0"
 Aspect ratio: 16:9

Useful screen area
 Horizontal: 27.5" (698 mm)
 Vertical: 15.4" (392 mm)

Monitor dimensions
 Width: 30.9" (784 mm)
 Height: 18.7" (474 mm)
 Depth: 4.3" (110 mm)

Native (optimal) resolution
 1366 x 768 at 60 Hz

Other supported resolutions
 1680 x 1050 at 60 Hz
 1600 x 1200 at 60 Hz
 1440 x 900 at 60 Hz
 1366 x 768 at 60 Hz
 1366 x 768 at 60 Hz
 1280 x 800 at 60 Hz
 1280 x 800 at 60 Hz
 1280 x 800 at 60 Hz
 1024 x 768 at 60 Hz
 800 x 600 at 50 or 60 Hz
 640 x 480 at 60 Hz

Colors: 16.7 million

Brightness (typical)
 LCD panel: 500 nits

Acoustic Pulse Recognition: 450 mHz
 Intelli-Touch: 450 mHz

Response time total (typical)
 8 msec

Viewing angle (typical)
 Horizontal: 89° or 178° total
 Vertical: 89° or 178° total

Contrast ratio (typical)
 1500:1

Input video format
 Analog: VGA, DVI video
 S-ATA: models without DVI

Input video signal connector
 Mini D-Sub 15-pin/VGA type, DVI-D connector

Input frequency
 Horizontal: 50-75 kHz
 Vertical: 48-64 Hz

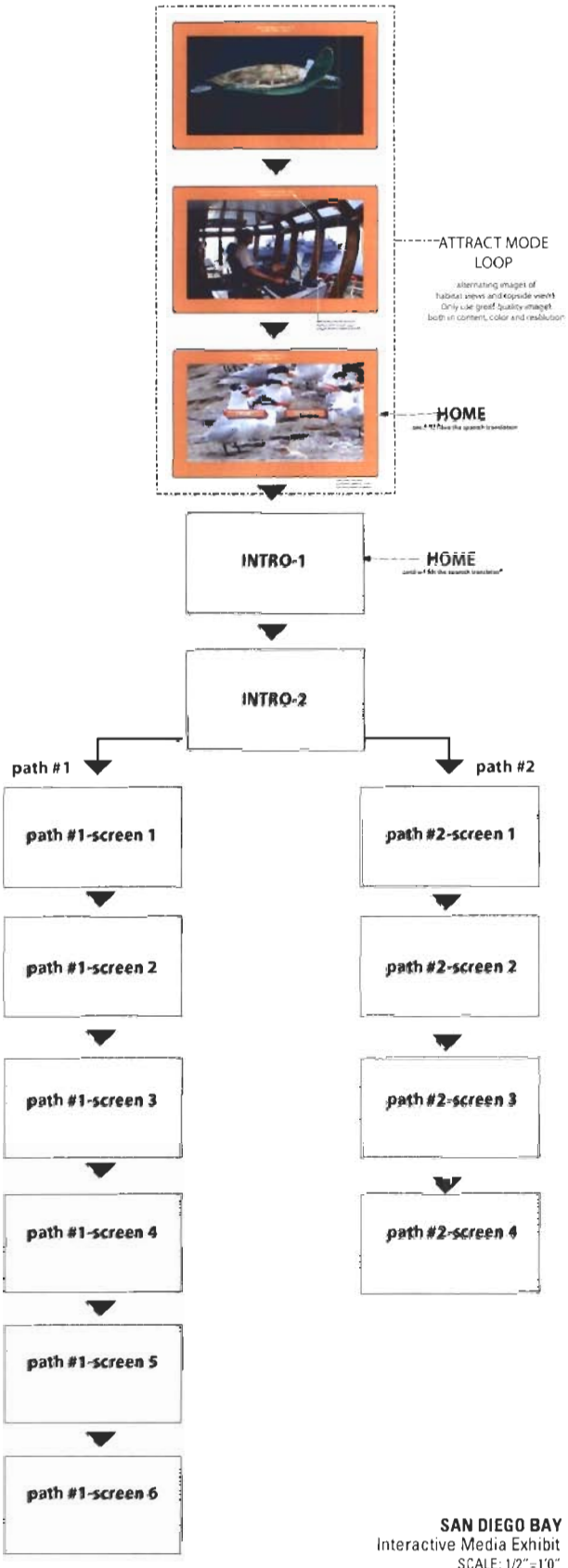
Power supply Internal AC
 Input voltage: AC: 100-240VAC, 50/60 Hz
 Power consumption (typical): 1.65 W

Temperature Operating
 0°C to 40°C (32°F to 104°F)

Storage: -30°C to 60°C (-4°F to 140°F)
 Humidity (non-condensing)
 Operating: 20%-80%
 Storage: 10%-90%
 Weight Actual: 38.1 lb (17.3 kg)
 Shipping: 47.8 lb (21.6 kg)
 Shipping box dimensions
 20" x 14" x 4"
 38.5" (980 mm) x 28.5" (729 mm)
 x 11.3" (289 mm)
 Warranty: 3 years
 Backlight lamp life (typical)
 50,000 hours to half brightness
 90,000 hours demonstrated
 Agency approvals: Australia C-Tick, China CCC, Japan VCCI, Korea KC, Korea MIC, Taiwan BSMI, Argentina S-mark, UL, CE, FCC, Mexico NOM, CL, Russia PC-T, China RoHS, WEEE, RoHS

On-screen display: OSD
 Controls: Back, menu, up, down, select
 Settings: automatic adjustment, contrast, brightness, H/V position, clock, phase, color, temperature, input video select, OSD H/V position, OSD timeout, recall color, recall default, sharpness, display information
 Languages: English, French, Italian, German, Spanish, Japanese, Traditional Chinese, Simplified Chinese
 Lockouts: power, user controls
 Mounting options: 100 mm VESA mount
 Mounting brackets included
 Other Features:
 Touchscreen sealed to bezel
 Touchscreen sealed to LED

TWO-PATH INTERACTIVE



TWO-PATH INTERACTIVE



---ATTRACT MODE
LOOP

alternating images of
habitat views and topside views.
Only use great quality images
both in content, color and resolution

---**HOME**
once we have the spanish translation

A Living View Of The Bay

The San Diego Bay is alive as a vibrant regional economy, but also as a diverse array of marine habitats and wildlife striving to coexist with human impacts. Since the Bay ecosystem connects back to humans in many ways, the health of the Bay is important to both people and wildlife. Maintaining the health of the natural environment in the face of human impacts is an important goal that requires a delicate balancing act.

Here you can explore...

Two Views of the Bay

Explore the many habitats and human uses on the bay.

From the Watershed to the Bay

See how the San Diego Bay becomes the final destination for everything we do on land.

Scripps Research

See how we contribute to a better understanding of the Bay's natural environment plus natural and human impacts.

Pacific Ocean

SAN DIEGO



TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY

INTRO-1

INTRO-1 :

- "HOME" button is selected
- Intro text frames overarching messages/purpose of interactive

A Living View Of The Bay

Scriptps Research

Copper Sediments Research

SD Bay is an important natural resource, both for people and for wildlife. It not only supports a vibrant regional economy, but also a diverse array of marine habitats and wildlife striving to coexist with human impacts. Since the Bay ecosystem connects back to humans in many ways, the health of the Bay is important to both people and wildlife. Maintaining the health of the natural environment in the face of human impacts is an important goal that requires a delicate balancing act.

SD Bay is an important natural resource, both for people and for wildlife. It not only supports a vibrant regional economy, but also a diverse array of marine habitats and wildlife striving to coexist with human impacts. Since the Bay ecosystem connects back to humans in many ways, the health of the Bay is important to both people and wildlife. Maintaining the health of the natural environment in the face of human impacts, SD Bay is an important natural resource, both for people and for wildlife. It not only supports a vibrant regional economy, but also a diverse array of marine habitats and wildlife striving to coexist with human impacts.

Close Window

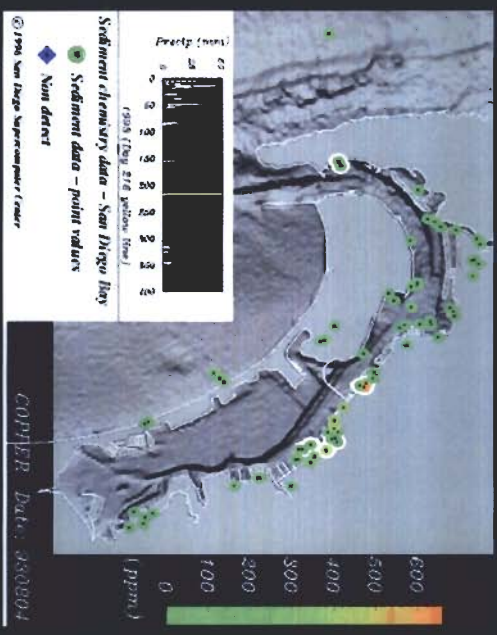


Photo by Simon Logee
SD Bay is an important natural resource, both for people and for wildlife. It not only supports a vibrant regional economy, but also a diverse array of marine habitats and wildlife striving to coexist with human impacts. Since the Bay ecosystem connects back to humans in many ways, the health of the Bay is important to both people and wildlife.

Previous Story

Next Story

INTRO-2

INTRO-2:

- WHEN SCRIPTPS BUTTONS SELECTED:
 - 1) Background image goes darker
 - 2) pop-up window grows out of button
 - 3) pop-up window has dedicated areas for:
 - intro text (100-120 words)
 - large theme image (slideshow) with photo credit and captions as needed
 - "Previous" & "Next" story buttons ("Previous" is dim on first story and "Next" dimmed on last "lose window" function)

HABITATS

ECOSYSTEM VIEW

Elgrass

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (IkeDonald et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,533 birds including 312,000 shorebirds. It is estimated that the salt ponds are used by 522,533 birds.



Photo by Jim Hesterfeld

- Sandy Beach
- Intertidal Flats
- Elgrass
- Deep Subtidal
- Soft Bottom/Shallow
- Salt Marsh
- Salt Works Ponds
- Artificial Reefs
- Protected Areas
- Endangered Species
- ALL HABITATS



HUMAN USES

TOPSIDE VIEW

Industrial

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (IkeDonald et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,533 birds including 312,000 shorebirds. It is estimated that the salt ponds are used by 522,533 birds including 312,000 shorebirds.



Photo by Jim Hesterfeld

- Industrial
- Navigation
- Marina
- Marine Terminal
- Military
- Recreation
- Waterfront
- Warehouses
- Open Space/Preserves
- Parks
- Recreation/Shopping
- ALL HUMAN USES

TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY

Path 1-2

PATH#1-Screen#2:

*"Elgrass" button from HABITATS and "Industrial" button from HUMAN USE category are selected. Photos (4" X 4") with photo credits and sample text for each is shown (10-120 words).
 *Map scale (upper right) shown in miles and km.
 Landmarks button allows visitor to show significant landmarks at any point in Path#1

HABITATS

ECOSYSTEM VIEW

Endangered Species

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California Brown Pelican
Photo by Jim Hesterfeld

- Sandy Beach
- Intertidal Flats
- Felgrass
- Deep Subtidal
- Soft Bottom/Shallow
- ALL HABITATS
- Salt Marsh
- Salt Works Ponds
- Artificial Reefs
- Protected Areas
- ENDANGERED SPECIES

TWO VIEWS OF THE BAY



HUMAN USES

TOPSIDE VIEW

Industrial

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (MacDonald et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California Coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 64,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds.



- Industrial
- Marine Terminal
- Shipping
- Recreation
- ALL HUMAN USES
- Marine Terminal
- Salt Works Ponds
- Deep Space Port/Reefs
- Parks
- Recreation
- Marine Terminal

HOME

FROM THE WATERSHED TO THE BAY

Path 1-3

- NOTE:**
- 1) Icons that appear on map will change as more info is received from client.
 - 2) Though the species has yet to be identified, one of the nine species listed is actually "threatened" NOT endangered. That species' name (as it appears under the photo in yellow) will have "threatened" in parentheses after the name.

PATH#1-Screen#3:

- "Endangered Species" button is selected
- A Photo slide-show of nine endangered species loops in a band below each photo is the species name and photo credit
- Map includes "Species" box stays "if possible"
- approximately 90-100 words shown in text area

HABITATS

ECOSYSTEM VIEW

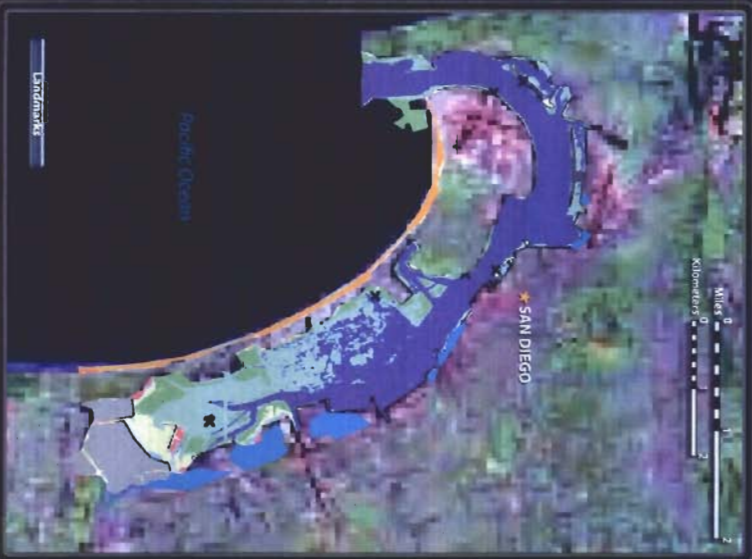
An Integrated Web Of Habitats

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (MacDonald et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 70,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995).

The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 70,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995).

- Sandy Beach
- Intertidal Flats
- Eelgrass
- Deep Subtidal
- Soft Bottom/Shallow
- Salt Marsh
- Salt Works/Ponds
- Artificial Creeks
- Protected Areas
- Endangered Species

TWO VIEWS OF THE BAY



HOME

FROM THE WATERSHED TO THE BAY

HUMAN USES

TOPSIDE VIEW

Industrial



In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (MacDonald et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 70,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds.

- Industrial
- Residential
- Military
- Recreation
- Agriculture
- Transportation
- Energy
- Manufacturing
- Other

Path 1-4

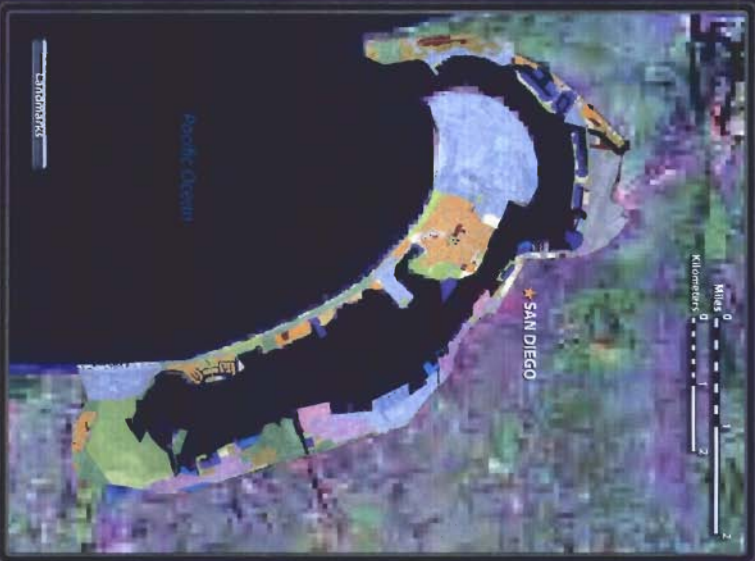
PATH#1-Screen#4 :

- ALL HABITATS' button is selected.
- Color dots appear on each button as the key to each habitat in the "ALL ON" mode.
- Text describes the web of habitats that make up the bay (16pt. @ 120-130 words).
- Map includes all habitats.
- NOTE: "ALL ON" is only shown for one side at a time. If you select "ALL HUMAN USES" then the "ALL HABITATS" button turns off.

HABITATS

ECOSYSTEM VIEW

- Sandy Beach
- Intertidal Flats
- Edgrass
- Deep Subtidal
- Soft Bottom/Shallow
- Salt Marsh
- Salt Works Ponds
- Artificial Reeds
- Protected Areas
- Endangered Species
- ALL HABITATS



HUMAN USES

TOPSIDE VIEW

Many Human Uses of the Bay

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 70 acres of wetlands. It is estimated that the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (deCromart et al., 1990). The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to fly, feed and roost. In the event of the few large wetlands remaining in San Diego Bay, it is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 20,000 waterfowl and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 822,553 birds including 312,000 shorebirds.

The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to rest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California Coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 20,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 822,553 birds including 312,000 shorebirds.

- Industrial
- Military
- Recreation
- Water Treatment
- Wetlands
- Saltpans
- Superspreader Diseases
- Ponds
- Endangered Shorebirds
- ALL HUMAN USES

TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY

Path 1-5

PATH#1 - Screens#5 :

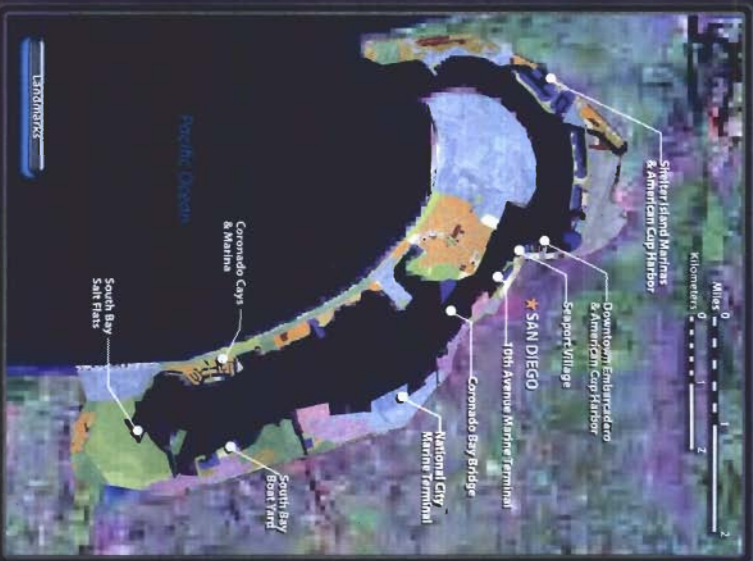
- "ALL HUMAN USES" button is selected
- Color dots appear on each button as the key to each human use in the "ALL ON" mode
- Text describes the many human uses that make up the bay (16pt, @ 120-130 words)
- Map includes all human uses areas
- NOTE: "ALL ON" is only shown for one side of a time. If you select "ALL HUMAN USES" then the "ALL HABITATS" button turns off

HABITATS

ECOSYSTEM VIEW

- Sandy Beach
- Intertidal Flats
- Eelgrass
- Deep Subtidal
- Soft Bottom/Shallow
- Salt Marsh
- Salt Works Ponds
- Artificial Reefs
- Protected Areas
- Endangered Species
- ALL HABITATS

TWO VIEWS OF THE BAY



HOME

FROM THE WATERSHED TO THE BAY

HUMAN USES

TOPSIDE VIEW

Many Human Uses of the Bay

In particular, is one of the most valuable and productive regions of San Diego Bay. South San Diego Bay contains 84 percent of San Diego's remaining 76 acres of wetlands. It is estimated the South Bay has approximately 200 acres of intertidal salt marsh and over 600 acres of intertidal sand and mudflats (MacDonald et al., 1990). The salt ponds of South Bay provide respectable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 702,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds.

The salt ponds of South Bay provide irreplaceable habitat for many bird species. Each year, these birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized southern California coast where large populations can gather. It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds, 702,000 waterfowl, and 64,000 seabirds (Friends of South Bay Wildlife, 1995). It is estimated that the salt ponds are used by 522,553 birds including 312,000 shorebirds.

- Industrial
- Maritime
- Marine Terminal
- Military
- Recreation
- Sanitation
- Salt Works
- Open Space Preserves
- Parks
- Water Supply
- ALL HUMAN USES

Path 1-6

PATH#1-Screen#6:
 *Landmarks button is selected
 dots with lines going to the names are shown
 on the map in places that make the names easy to read.
 Some names may need to be cut in the ocean area.

WATERSHED

Activities on the Bay and throughout the watershed continue to take a toll on the system. The Port of San Diego is working to balance the many uses of the Bay to ensure economic, environmental, and human vitality.

San Diego Bay is the end of the line for runoff from a 470 sq. mile area. This drainage area called a watershed, begins more than 50 miles inland in the Laguna Mountains. The watershed supports more than 1.5 million people, plus an annual influx of tourists.

Rivers and creeks collect runoff from yards, pavement, businesses, farms, and natural areas throughout the watershed. They ultimately deposit their load in the waters of San Diego Bay, along with the discharge from more than 200 storm drains. [Note: This bit of text could go with storm drain layer on interactive.]

Due to historical actions and ongoing impacts of human activities, the Bay continues to be challenged by degraded water quality, sediment toxicity, and invasive species.

WATERSHED

STORM DRAINS

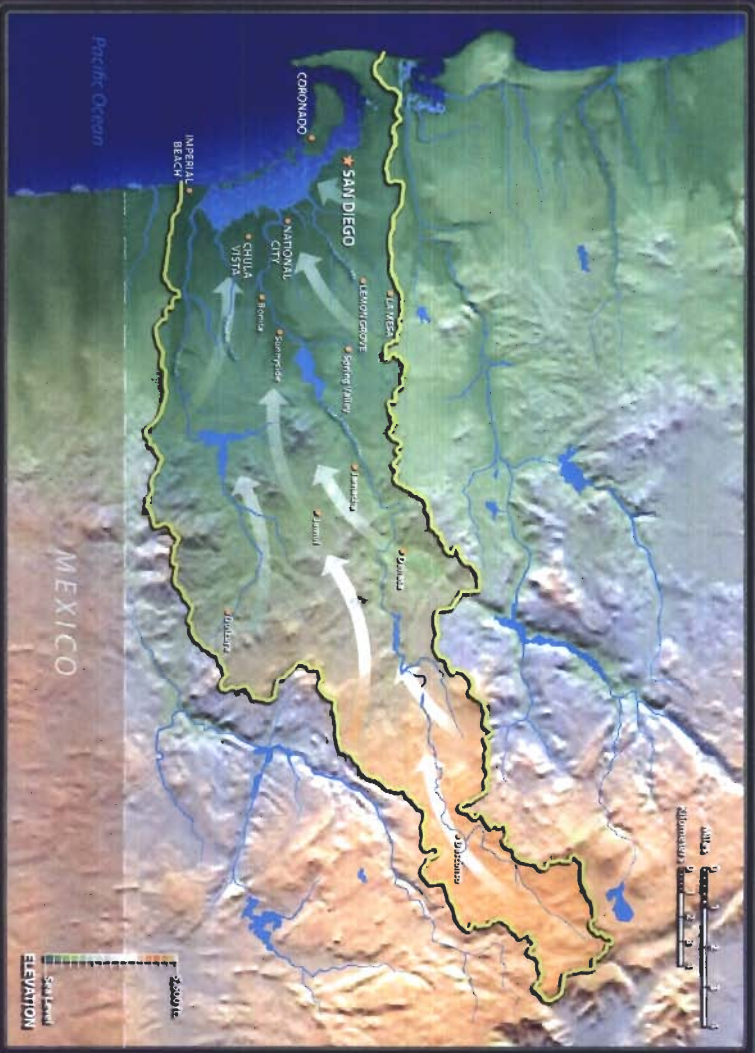
TIDAL FLOW

HOW CAN I HELP?

TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY



Path 2-1

PATH#2-Screen#1 :

- From The Watershed To The Bay* button and text is shown
- Map includes cities, some waterways, shaded area with border that establishes the boundaries of the watershed
- animated arrows showing general flow direction
- approximately 150 words shown in text area

Saving the Bay

Since cleaning up pollution has proven to be expensive and time-consuming, the goal is to prevent pollution in the first place. Whether you live in the San Diego Bay watershed or are just visiting, you can help protect the Bay. Here are a few ideas for keeping waste out of our waters:

- Reduce use of chemical pesticides and fertilizers in your yard.
- Put litter in its proper place.
- Pick up your pet's waste.
- Recycle styrofoam peanuts or seal tightly in a trash bag.
- Fix your vehicle's oil leaks promptly.

- WATERSHED
- STORM DRAINS
- TIDAL FLOW
- HOW CAN I HELP?



TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY

Path 2-2

PATH#2-Screen#2 :

-How Can I Help? button is selected and text is shown

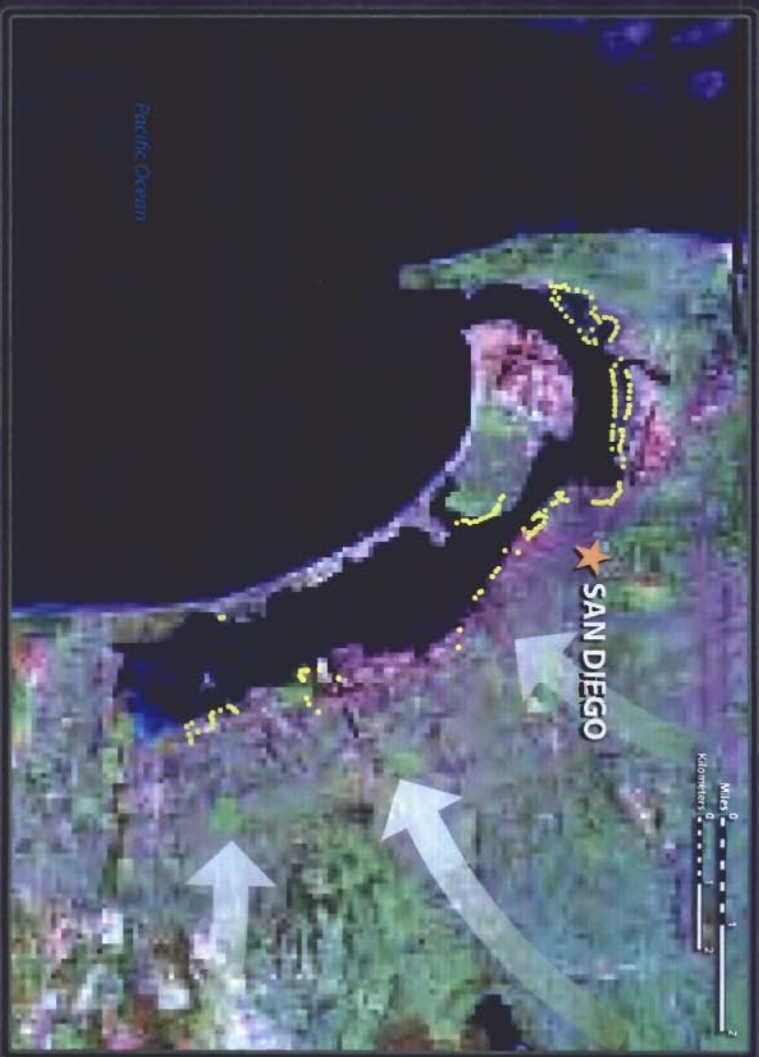
Storm Drains

When it rains or when water flows out of yards, it flows directly into storm drains. Many people think that everything that flows into a storm drain is treated at the Point Loma Sewage Treatment Plant, just like wastewater in the sewer system, but these two systems are not connected.

In recent years, sources of water pollution like industrial waters from factories have been greatly reduced. The majority of water pollution now occurs from cars leaking oil, pesticides, fertilizers, garden debris, pet waste, litter, automotive oils and metals, and residential car washing, which are washed down into the storm drains after rain.



- WATERSHED
- STORM DRAINS
- TIDAL FLOW
- HOW CAN'T HELP?



TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY

Path 2-3

PATH#2-Screen#3 :

- Storm Drains button is selected and text is shown (60 / 70 words)

Tidal Flushing

The lunar semidiurnal tide, with a period of 12.42 h, is the principal world tide, and its amplitude is controlled by local ocean bathymetry. Tides generate shelf and coastal currents that are important to transport of finer sediments. Velocities over the southern California shelf may reach 15-20 cm/s at times.

The tidal range determines the elevation of wave attack at the shoreline. Extreme tides influence inundation and flooding and are amplified by sea level changes associated with El Niño events. Tidal currents are the primary sediment transport force inside enclosed bays and harbors, and tidal flow through the entrances may be very fast.

Tidal flushing model - San Diego Bay, California
A simulation showing percent of initial tracer concentration forced by a 60 cm tidal amplitude.

Click here for the movie. Movie requires QuickTime.

Inspire and provide courtesy John Healy,
San Diego Supercomputer Center/UCSD

WATERSHED

STORM DRAINS

TIDAL FLOW

HOW CAN I HELP?

TWO VIEWS OF THE BAY

HOME

FROM THE WATERSHED TO THE BAY



Path 2-4

PATH#2 Screen#4 :

- "Tidal flow" button is selected and text is shown (130 150 words)
- animated tidal flow "flushing" plays as loop
- color key for animation in upper left-hand corner

PROJECT TIMELINE
San Diego Bay Exhibit, Birch Aquarium at Scripps

Initial Client Input Received
April 3, 2009

CONCEPTUAL DESIGN PHASE

Conceptual Design Presentation
April 21

Final Design Approval Received
June 1

PRODUCTION PHASE

INTERACTIVE COMPONENTS

ENVIRONMENTAL COMPONENTS

All Images, Data and Text Due to DA **June 26**

June 9 Production Documents Complete

June 11 Production Turnover to K2

July 16 Art Production Complete

Birch Review 1 – Flow and Navigation **July 16**

Birch Review 2 – Final Content **July 31**

Birch FINAL APPROVAL **August 17**

August 18 In-Shop Review and Testing at K2

INSTALLATION PHASE

August 20 Delivery/Installation Start

Project Complete
August 21, 2009

A Deeper Look at San Diego Bay New touch screens in the Hall of Fishes highlight the ecosystem of San Diego Bay

New touch screen technology to be installed in May will provide aquarium visitors an opportunity to explore the natural resources and cultural uses of San Diego Bay, funded by the United Port of San Diego.

"San Diego Bay is a valuable natural resource, serving as both an economic engine for the region and an essential ecosystem for a diverse array of wildlife," said Dr. Nigella Hillgarth, executive director of Birch Aquarium. "The new displays will help our visitors learn more about human impacts on the Bay and the work of Scripps researchers who are helping the Port's managers assess its viability."

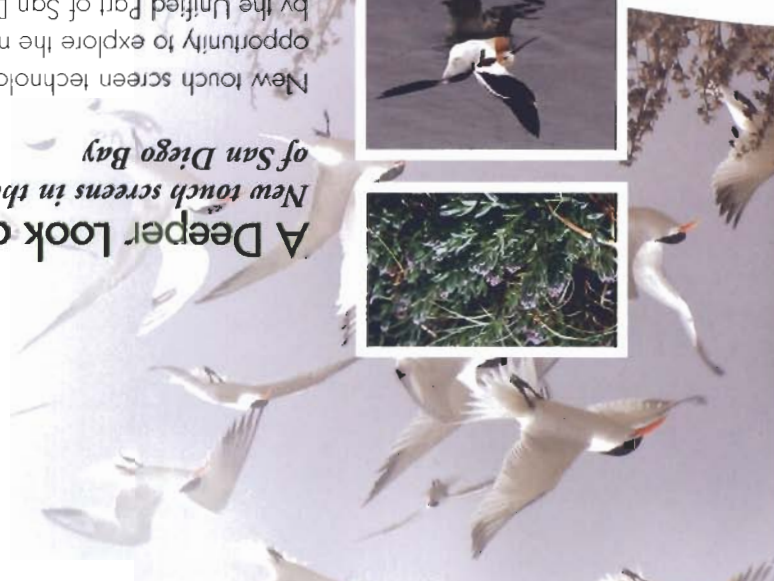
San Diego Bay is the cultural heartbeat of San Diego's waterfront. It stretches from Point Loma, along Harbor Drive, south to the shores of Imperial Beach. Its shores are lined with parks, beaches, public art displays, dining and shopping, maritime industries, and military bases. The Port of San Diego is working to balance the many uses of the Bay to ensure economic, environmental, and human vitality.

"The Big Bay" is also a watershed that begins more than 50 miles inland in the Laguna Mountains. As a natural drainage system, the Bay is the end of the line for creeks, rivers, and approximately 200 storm drains delivering urban and agricultural runoff from a 470-square mile area.

The goal of the new interactive display is to help visitors better understand the Bay's cultural and natural assets, as well as the impact of human activities on the health of the Bay ecosystem.

The Southern California coastal lagoon tank in the Hall of Fishes will undergo renovation to provide a glimpse of representative species of marine life living in the Bay.

FUN FACT:
Did You Know?
The Pacific seahorse, *Hippocampus ingens*, can be found in San Diego Bay, though sightings are rare.



BIRCH AQUARIUM AT SCRIPPS INSTITUTION OF OCEANOGRAPHY, UC SAN DIEGO

onboard

IN THIS ISSUE: NATURALIST-LED WHALE WATCHING, HALL OF FISHES NEW TOUCH SCREEN DISPLAYS, GREEN FLASH CONCERT SERIES — AND MORE



*The mission of
Birch Aquarium at
Scripps is to interpret
Scripps Institution
of Oceanography
research, to provide
ocean science education
and to promote
ocean conservation.*

