

Manta Naturalist Course

Instructional Design Project



Manta Naturalist Designer

Wendy Laros

- Masters candidate
 - Learning Design and Technology
 - University of Hawaii, Manoa
- Jacks' Diving Locker – Kona, Hawaii
 - Director of Education
 - PADI Scuba Instructor
- Manta Pacific Research Foundation
 - Co-founder of the organization
 - Education Committee Chair



Manta Naturalist Instructional Design

What are Manta Rays?





A Question for YOU . . .

**Do manta rays have
tail stingers like stingrays?**

Please answer using the polling
feature in Blackboard Collaborate:

a. YES

b. NO

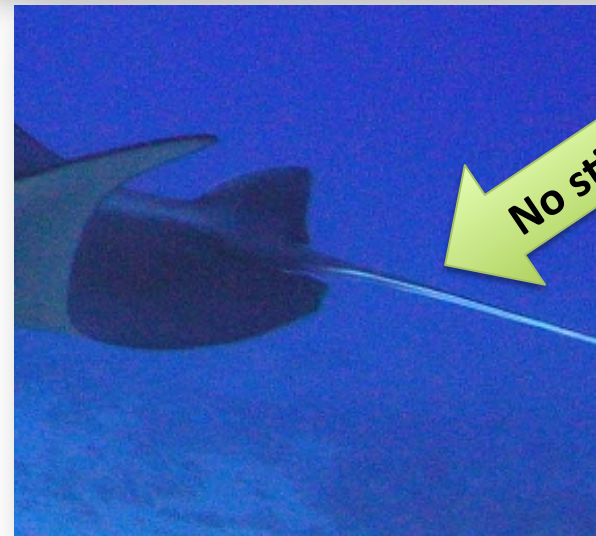
Answer

NO. Manta rays do NOT have tail stingers like stingrays.

Stingray versus Manta Ray

- For defense, stingrays have a tail stinger or barb.
- Manta rays do **NOT** have tail stingers.

Hawaiian stingray



Manta ray

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Instructional Design Project

Need for Instruction

Design

Development

Implementation

Lessons Learned



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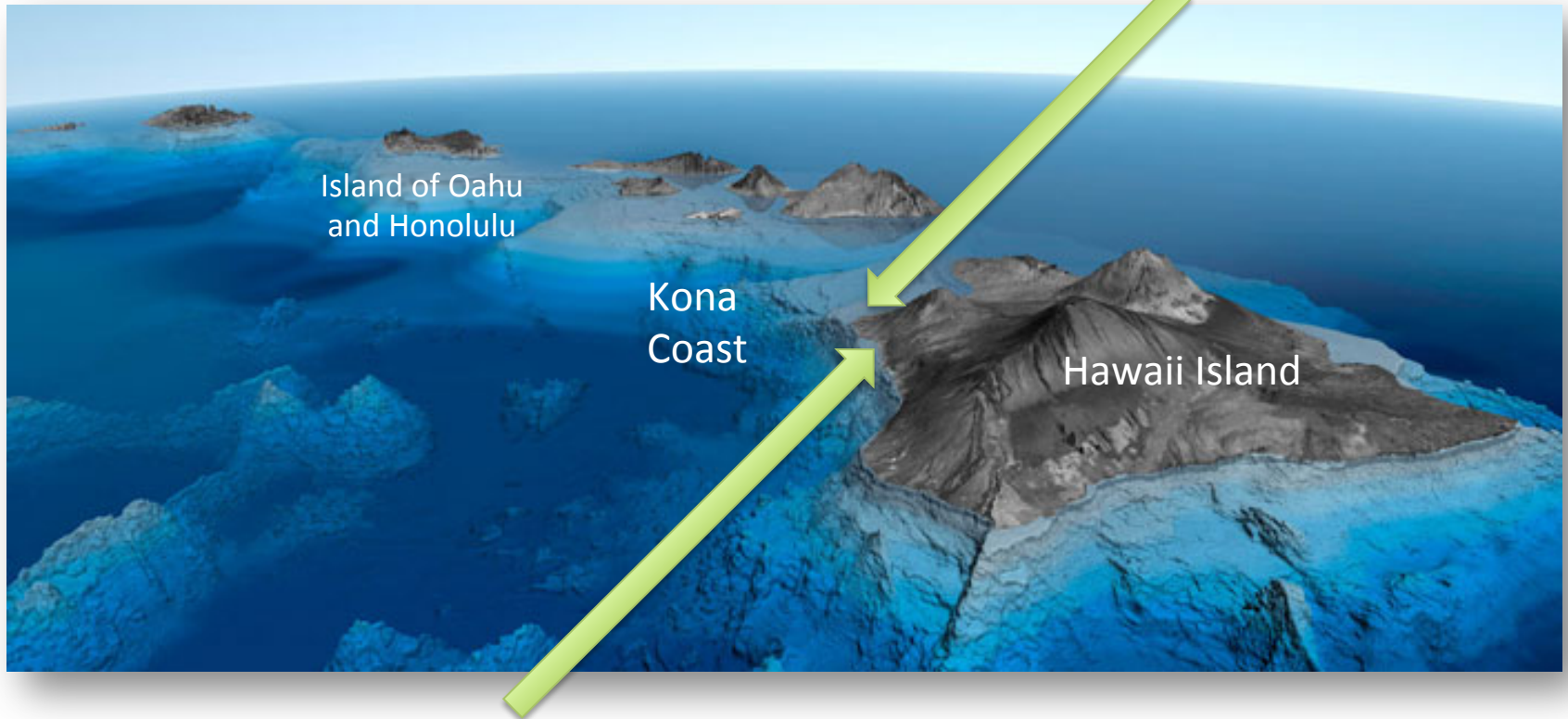
Manta tourism generates \$140 million worldwide.

The Global Economic Impact of Manta Ray Watching. O'Malley, Lee-Brooks, Mead (2013).



The Kona Coast – Manta Sites

Keahole Point – Makako Bay



Island of Oahu
and Honolulu

Kona
Coast

Hawaii Island

Keauhou Bay – Sheraton Kona

Original Manta Site - Keauhou

Keauhou Bay – Sheraton Kona



Second Manta Site - Keahole



Boats

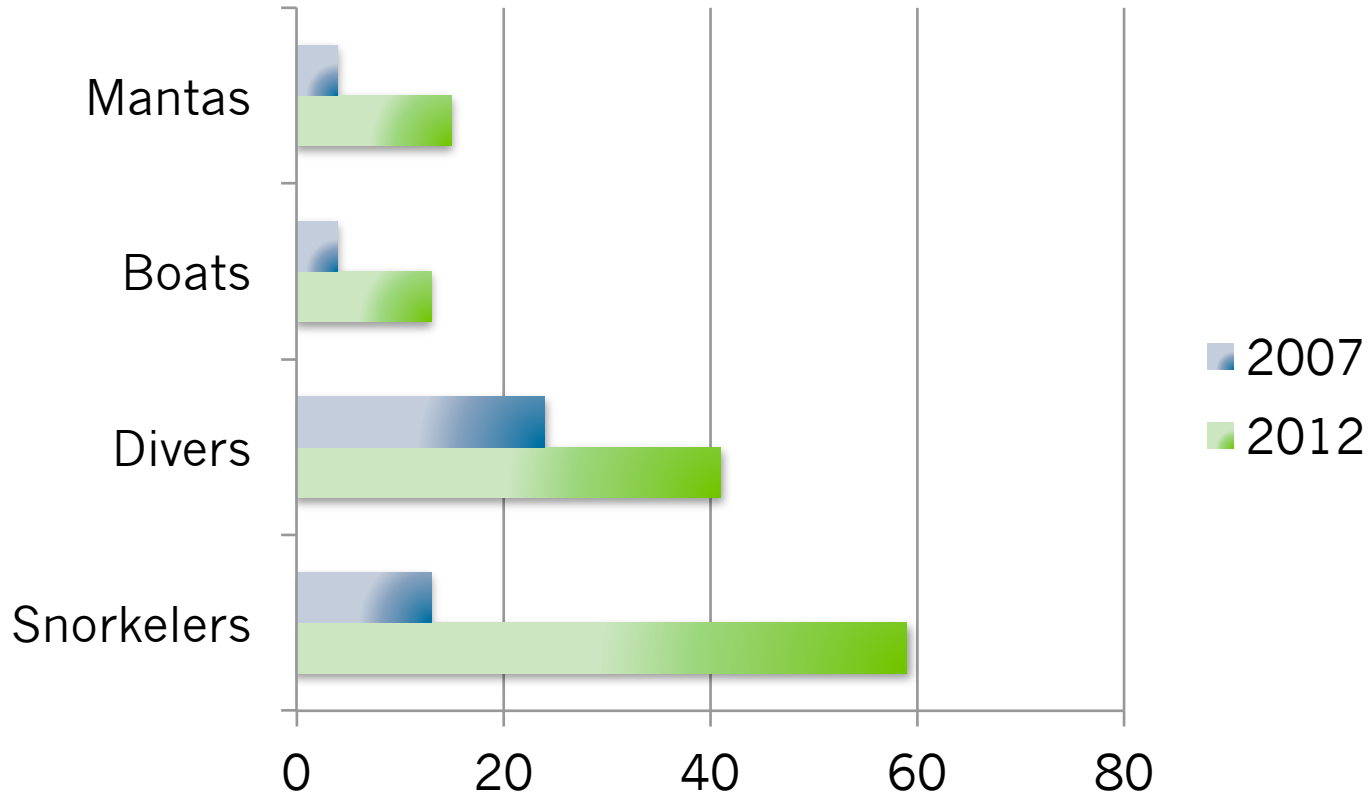
People and Mantas

Manta ray watching in Kona, Hawaii conducted at night.
Underwater light attracts plankton – the food of mantas.



Bo Pardau

Increases Across the Board



Data based on Manta Pacific Research Foundation Nightly Manta Reports in the summer months June, July, August of 2007 and 2012.

Snorkelers at Manta Site



Snorkelers

Manta Ray

Manta Tour Operator Standards

- Best practices for industry
- Drafted by operators
- Safety of mantas, environment, and people
- Educate those involved

Manta Tour Operator Standards

- Best practices for industry
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- **Educate those involved**



INSPIRATION!

Photo by Bo Pardau



Manta Naturalist Course

for Manta Tour Guides and Operators

Manta Naturalist Course

Partnerships

Hawaii Community College (HCC) Office of Continuing Education and Training (OCET)

- Course administration
- Learning Management System (Laulima)

State of Hawaii - Workforce Development

- Employer Training Funds (ETF)

Manta Pacific Research Foundation

- Subject Matter Expert (SME)
- Student materials

Jack's Diving Locker

- Planning process
- Venue for face-to-face sessions



UNIVERSITY of HAWAII®
HAWAII
COMMUNITY COLLEGE



Target Audience

- **30+ manta tour operators**
- **250 guides in the industry**
- **Ages 18 –65**
- **Professional development**

Goals of Course

- Expand the student's knowledge of manta rays.



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- Create awareness of manta ray research and conservation.

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- Expand the student's knowledge of manta rays.
- Create awareness of manta ray research and conservation.
- Familiarize students with the Manta Tour Operator Standards.
- Prepare and deliver a Manta Naturalist Presentation with accurate manta information to guests on manta tours.

Course Overview

- **MODULE ONE: All About Manta Rays**
 - General description and scientific classification
 - Anatomy
 - Life Cycle and Behaviors

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- **MODULE TWO: Research and Conservation**
 - Identification, tracking, measurement and more
 - Manta protection in the State of Hawaii
 - Global manta update – trade protection

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 - Identification, tracking, measurement and more
 - Manta protection in the State of Hawaii
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- **MODULE THREE: Manta Ray Tourism**
 - Manta tourism locally and globally
 - Manta Tour Operator Standards
 - Manta Naturalist Presentation

Purpose of this Project

The purpose of this instructional design project is to develop and evaluate the first module in a naturalist course for manta tour guides that is offered through the community college in Kona, Hawaii.

Manta Naturalist Course

Instructional Design Project

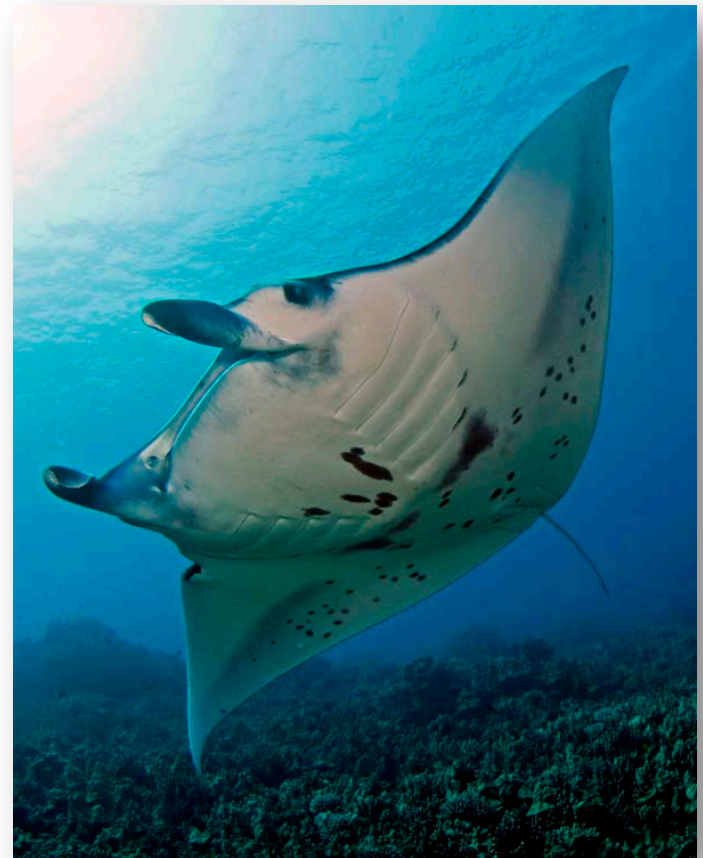
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Manta Naturalist Course

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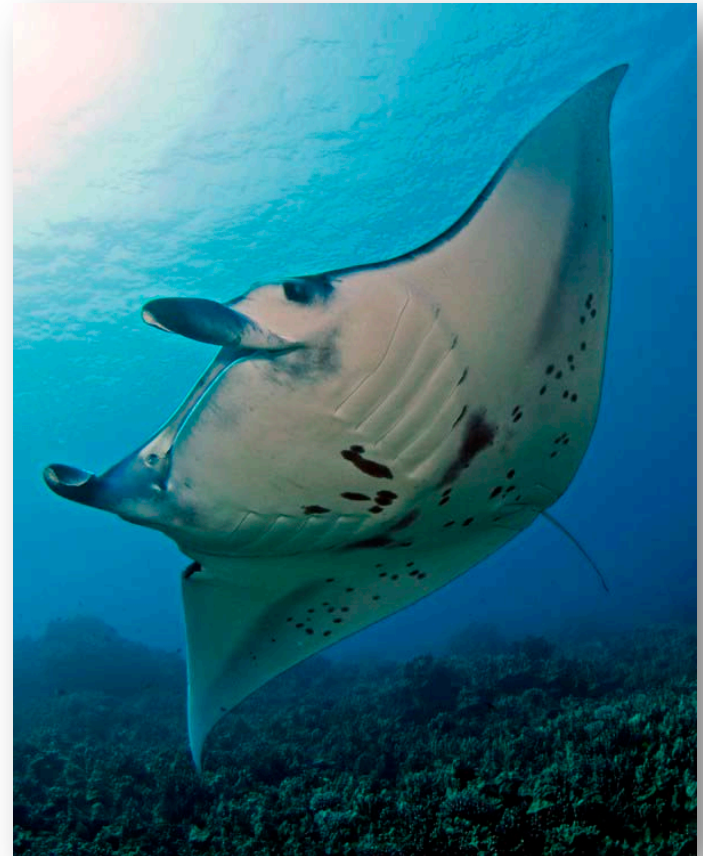
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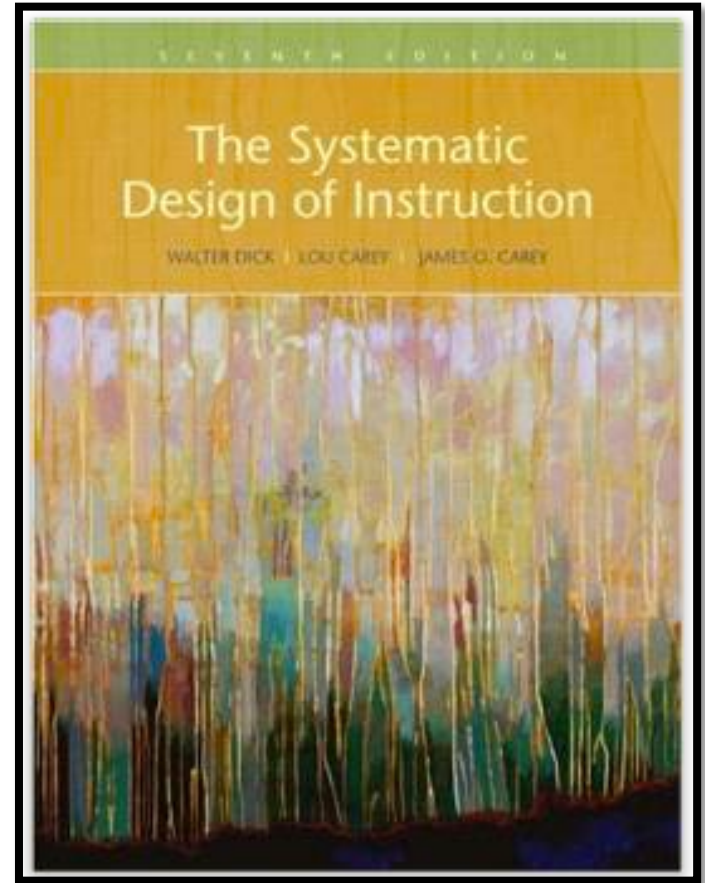
Implementation

Lessons Learned



Course Framework

- Dick, Carey, & Carey (2009)
- Instructional strategy:
 - 1) Pre-instructional activities
 - 2) Content presentation
 - 3) Learner participation
 - 4) Assessment
 - 5) Follow-through activities



Keller's ARCS

- **ATTENTION**
- **RELEVANCY**
- **CONFIDENCE**
- **SATISFACTION**



ARCS - Gain Attention

What is your involvement with manta tours?

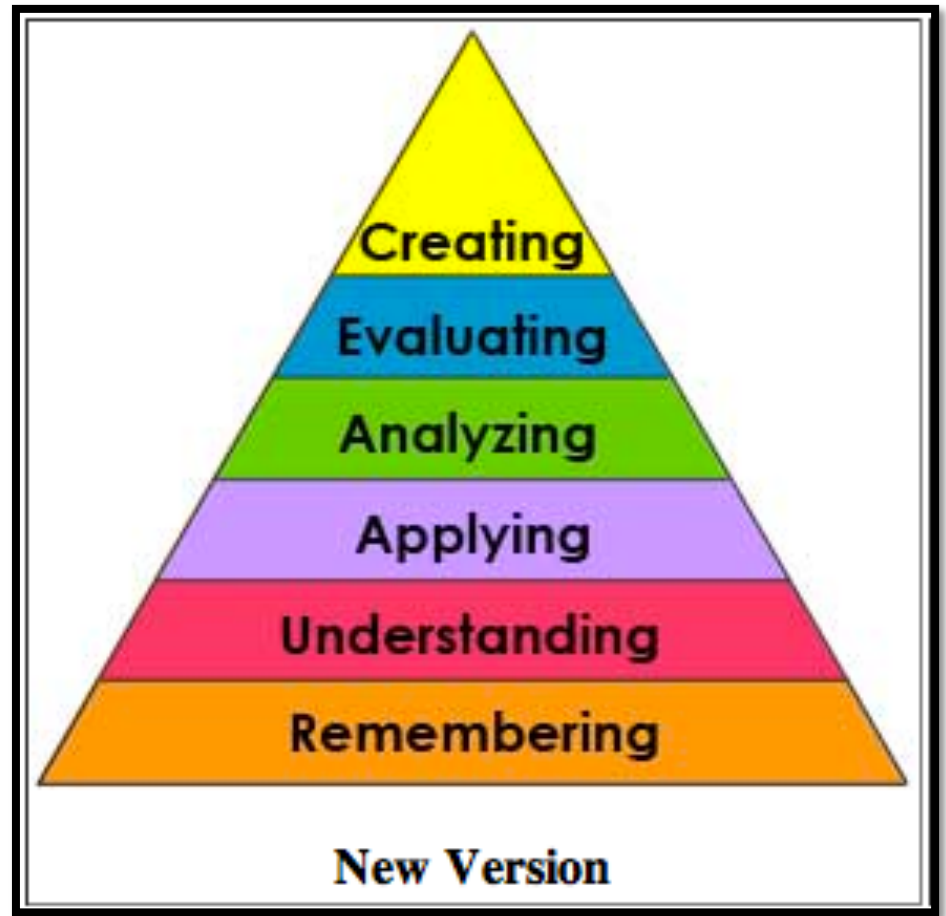
*Describe a special manta moment
that you've experienced.*

Do you have a favorite manta ray?



Objectives – Bloom's Taxonomy

- **Module One**
- **Remembering**
- **Action Verbs:**
 - Define
 - Describe
 - Identify
 - Name
 - State
 - Recall



Manta Naturalist Instructional Design Project

Objectives and Alignment

Objective: Describe the purpose of cephalic fins.

Test Question: What is the purpose of the cephalic fins?

- a. To stab at intended prey
- b. Funnel food and water into the manta's mouth
- c. Courtship display
- d. To dig on the ocean floor for food



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Objectives and Alignment

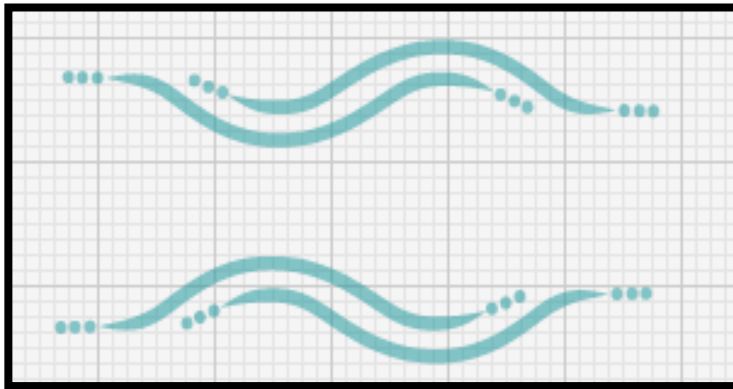
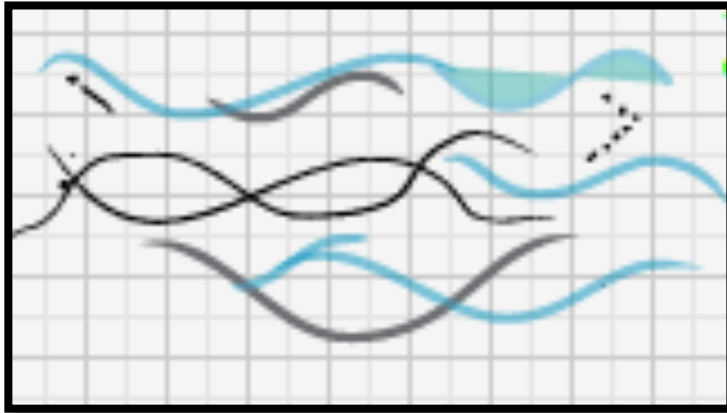
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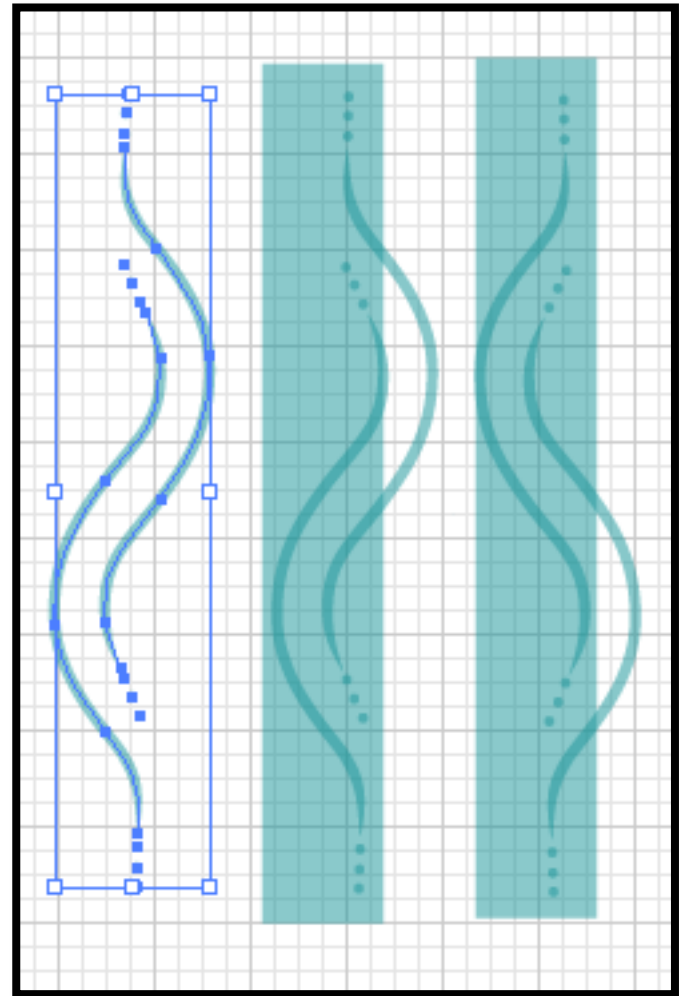
- a. To stab at intended prey
- b. Funnel food and water into the manta's mouth
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Visual Design – Original Artwork



Tool: Adobe Illustrator



Manta Naturalist Instructional Design Project

Visual Design – Course Materials



White Space Is Not Your Enemy
Hagen & Golombisky, 2013

Photo by G. P. P. P.

Manta Naturalist Course

for Manta Tour Guides and Operators

Tuition: \$95

Two Class Sessions:
February 17 & 24, 2015
Tuesdays 9 a.m. to 12 noon

Location:
Jack's Diving Locker
Coconut Grove Marketplace

Online:
Three Modules - 6 hours

Registration:
Hawaii Community College -
Office of Continuing
Education and Training
(808) 934-2700
ocethawc@hawaii.edu
Course Code: HOSP1001

Instructor: Wendy Laros
laros@hawaii.edu

This course is designed for manta tour guides and operators in the marine tourism industry on the Kona Coast of the island of Hawaii. The course will include online learning and two face-to-face class sessions.

The goals of the Manta Naturalist course are to expand the student's basic knowledge of manta rays, create awareness about manta ray research and conservation, and to familiarize students with the Manta Tour Operator Standards.

Students will develop and deliver an interpretive educational briefing about manta rays. Ultimately, students will use this naturalist presentation with their guests to educate those who enjoy the experience.

Guest Speaker: Keller Laros
Manta Pacific Research Foundation

Focal point, colors, artwork

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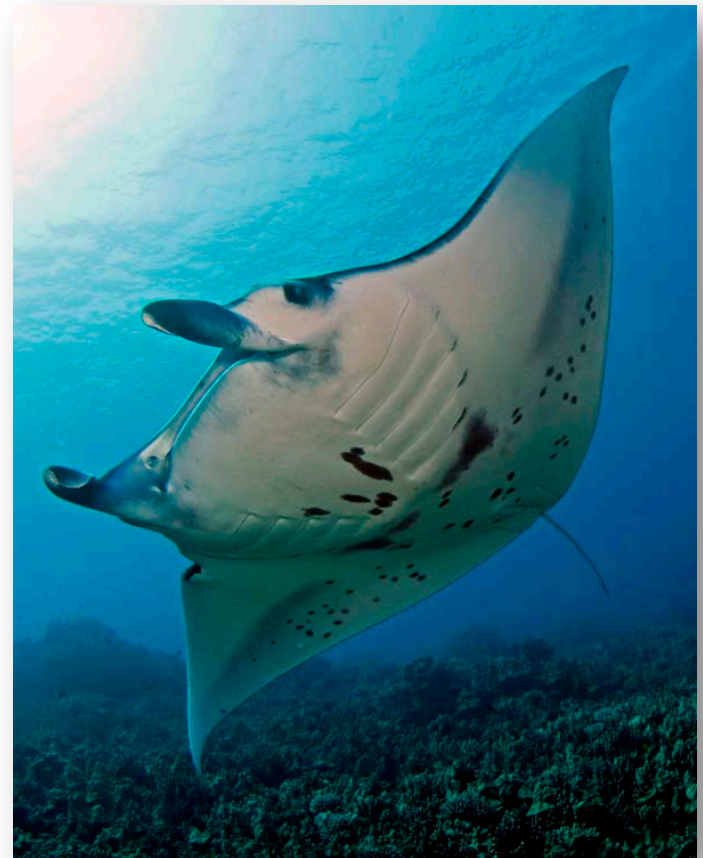
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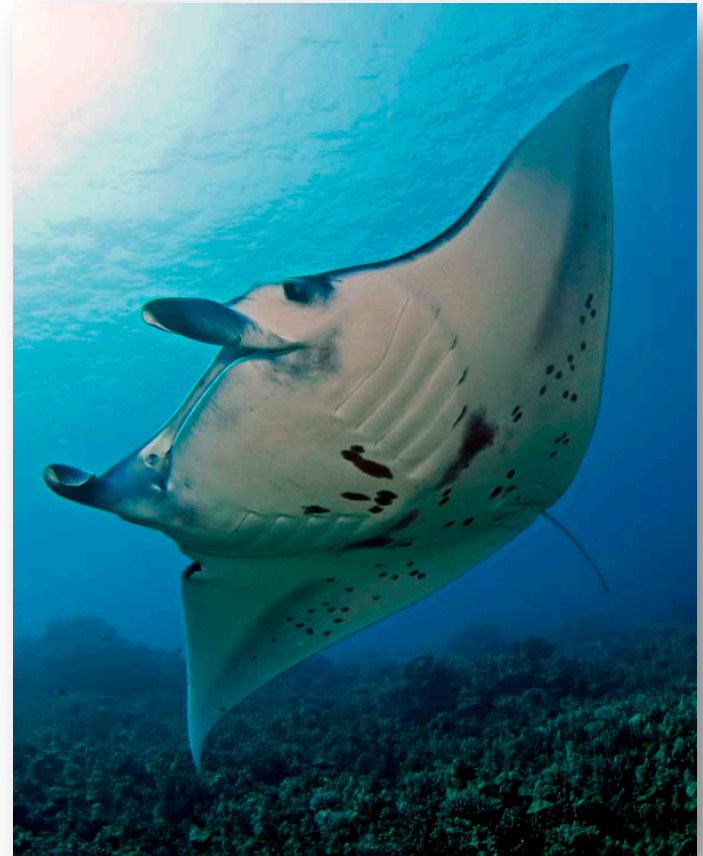
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Course Layout - Blended



- **Face-to-Face**
 - 1st class
 - Instructor presentations
 - 2nd class
 - Student presentations
- **Online**
 - Web site
 - Learning Management System

Manta Naturalist Course

Module One: All About Manta Rays



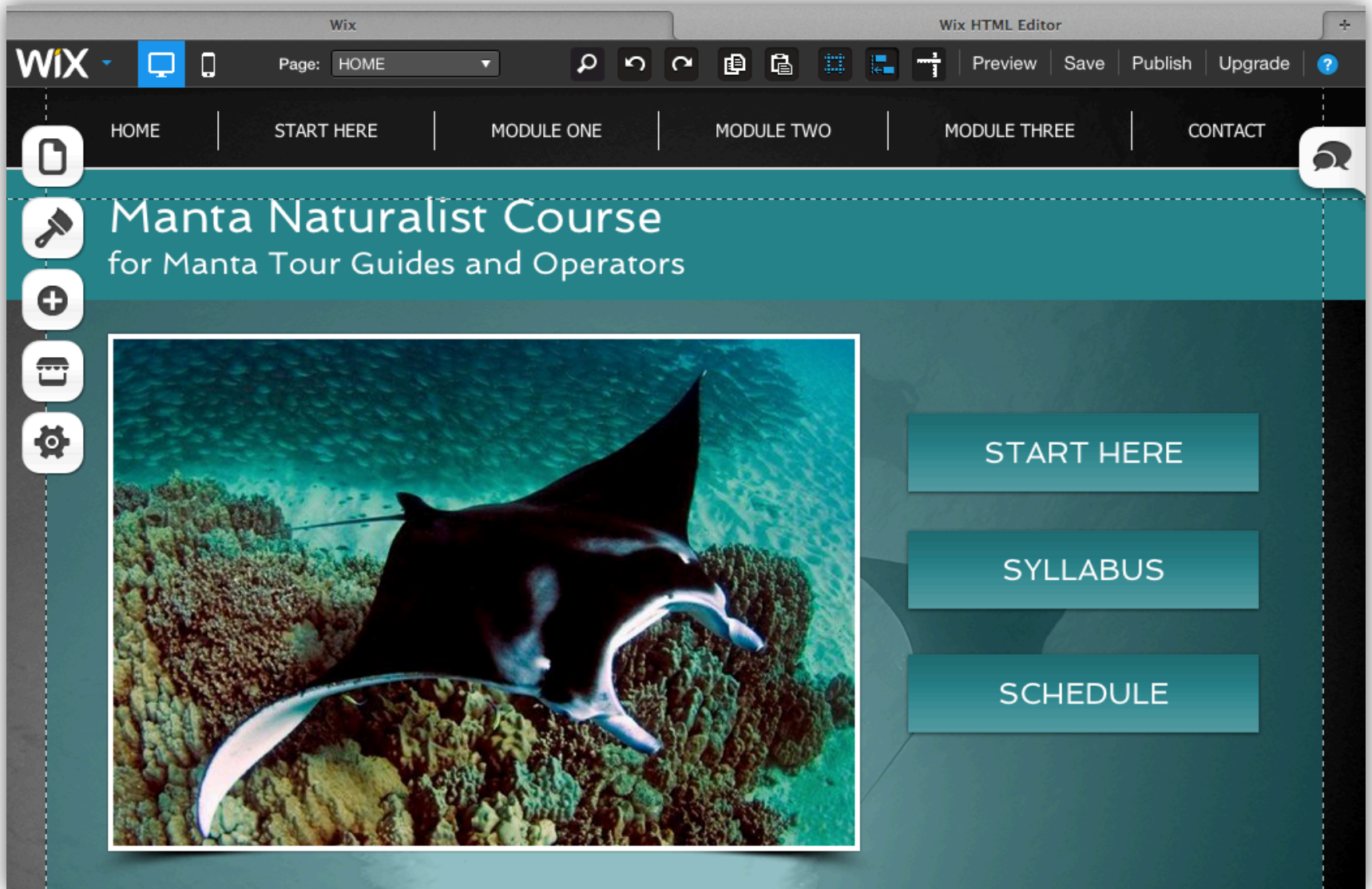
Lesson 1: General Description & Scientific Classification



Instructor Presentation

Microsoft Power Point





Web site builder – Wix
www.mantanaturalist.com



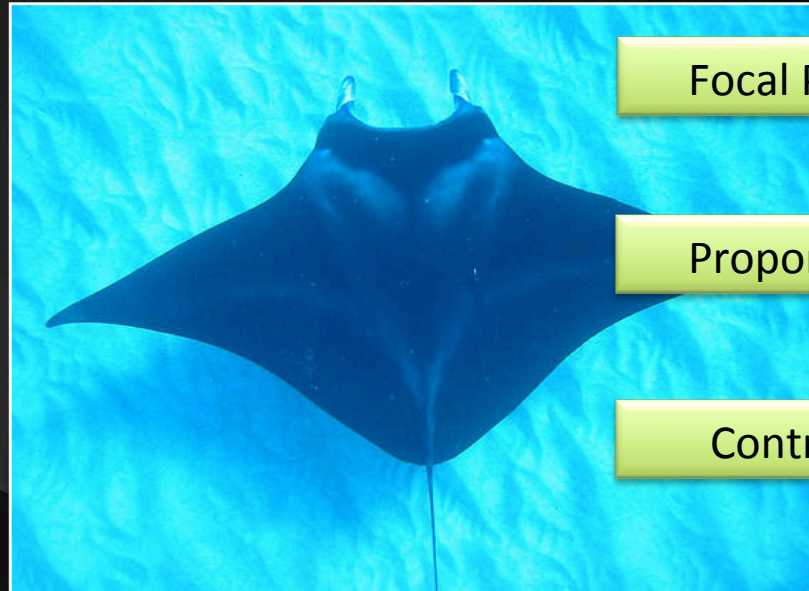
Visual Design Elements with Web Site

MODULE ONE: All About Mantas

LESSON 1: General Description and Scientific Classification

By the end of this lesson, you
should be able to:

- Give a general description of a manta ray that includes:
 - Distribution
 - Size and shape
 - Origin of name
- Name the scientific term for cartilaginous fishes.
- State one important difference between stingrays and manta rays.
- Identify the common characteristic of devil rays.
- Name the two species of manta rays.



Focal Point

Proportion

Contrast

General Description

Manta rays are large sea animals that live in tropical, sub-tropical, and temperate waters worldwide. Their side

One-third

Two-thirds

Web Site – Links to Resources

www.mantanaturalist.com

Head


In rays, the head is fused to the enlarged pectoral fins. In research conducted by Dr. Csilla Ari (2011) the brains of thirteen *Mobula japonica*, two *Mobula thurstoni*, and one *Manta birostris* were compared. The methodology used was called encephalization quotient (EQ) and expresses a ratio of actual brain size to expected brain size for an animal of a given mass. The results of the study suggest that *Manta birostris* has highest brain weight among all fish.

MANTA BRAIN STUDY

Link to the
Brain Study by
Dr. Csilla Ari

www.mantapacific.org








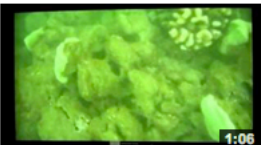
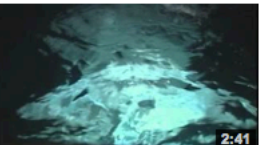

YouTube 

1 subscriber 173 views Video Manager View as public

Wendy Laros

Home **Videos** Playlists Channels About

Uploads Date added (newest - oldest)

 <p>Mantas Cleaned No views • 6 days ago</p>	 <p>Laros - Mana Entanglement 3 views • 6 days ago</p>	 <p>Laros - PEW and CITES 3 views • 6 days ago</p>	 <p>Laros - CITES 2013 update 3 views • 6 days ago</p>
 <p>Laros - CITES Ecuador Delagation 3 views • 6 days ago</p>	 <p>Laros - Mark Deakos and Olawalu Reef 2 views • 6 days ago</p>	 <p>KHON 2004 3 views • 6 days ago</p>	 <p>Laros - Manta Ray Night Dive 4 views • 1 week ago</p>

Media Library - YouTube
www.youtube.com



Online Tools – YouTube Videos

- 20 videos on web site
- Original videos
- Laros Productions



www.mantanaturalist.com

Learning Management System – Laulima



<https://laulima.hawaii.edu/portal>

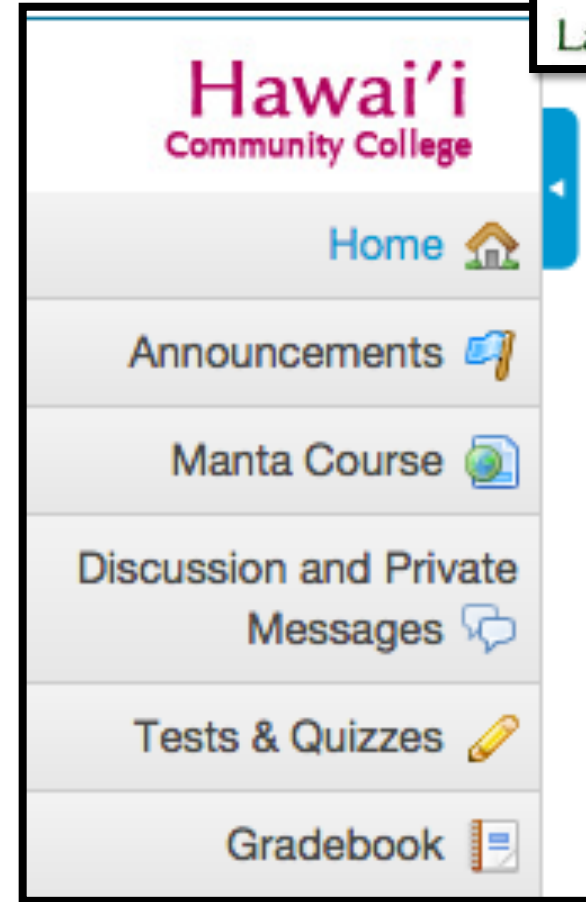
Directions →

Embedded web site →

Activity →

Assessments →

Grades →



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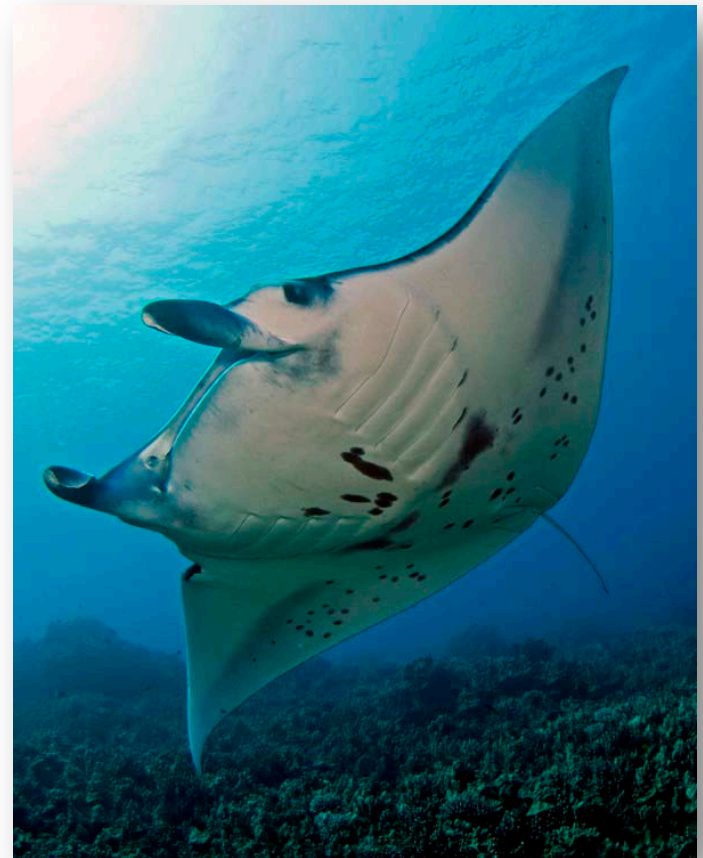
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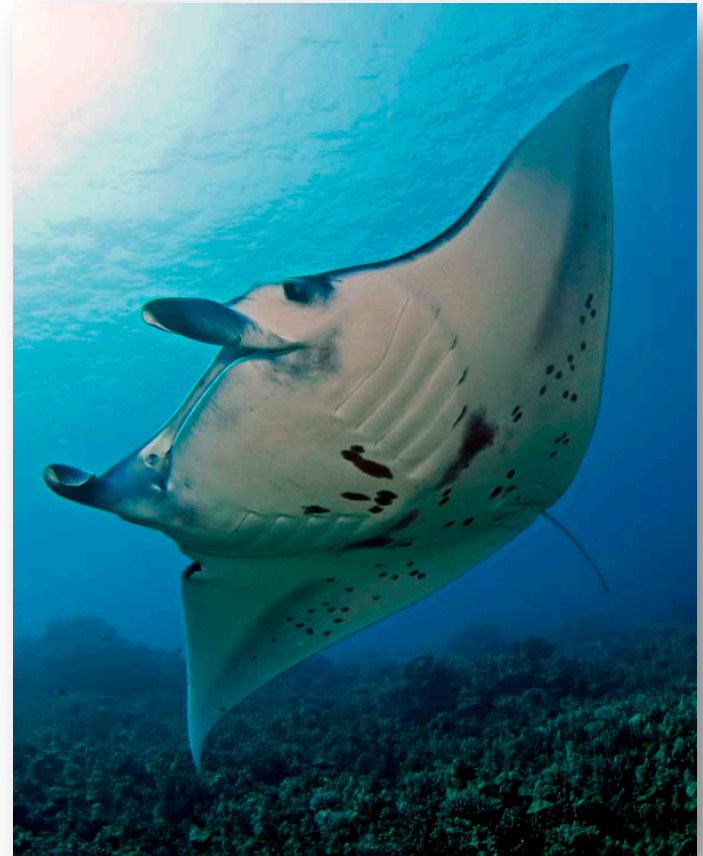
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Course Implementation

- 8 Students
- 5 different companies represented
- All came together as planned

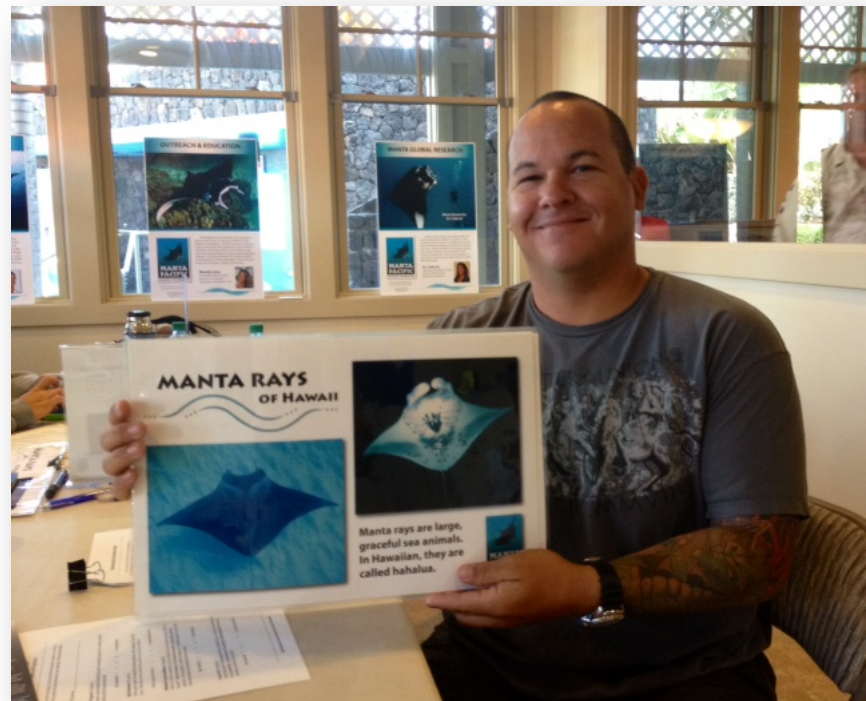


Follow Through Activity – Job Aid

Terminal Objective for Course:

Prepare and deliver a Manta Naturalist Presentation with **accurate manta information** presented to guests on manta tours.

- Manta Naturalist Flip Chart
- Job Aid for Manta Tours
- Information from Module One



Manta Tour Guide – Kona, Hawaii

Manta Naturalist Course

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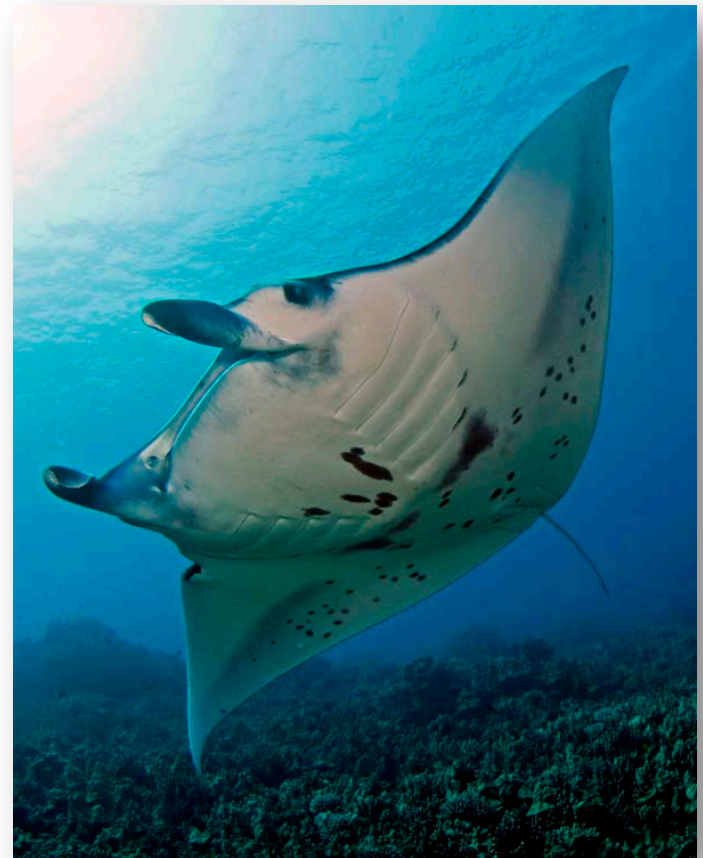
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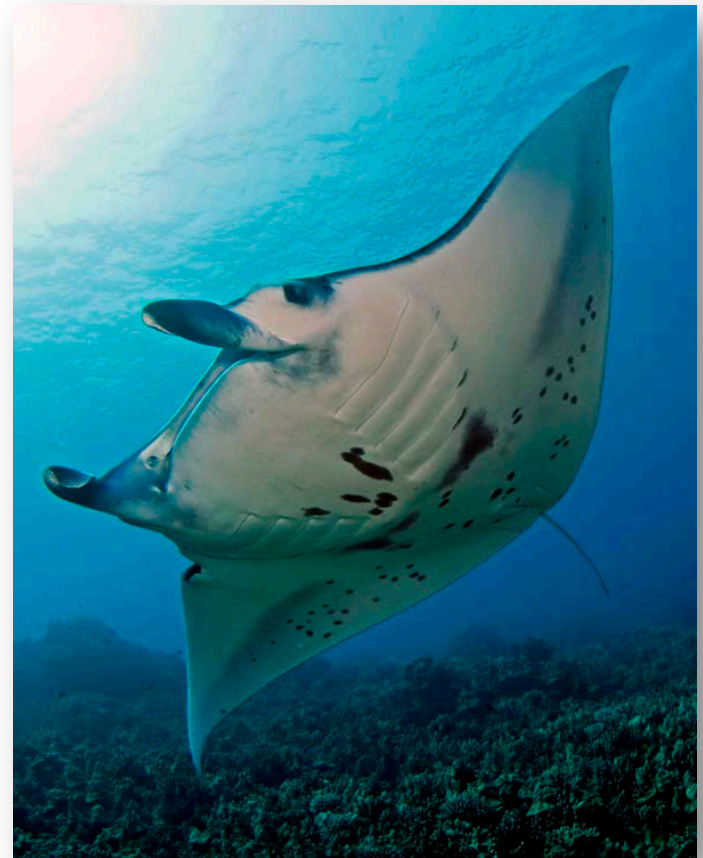
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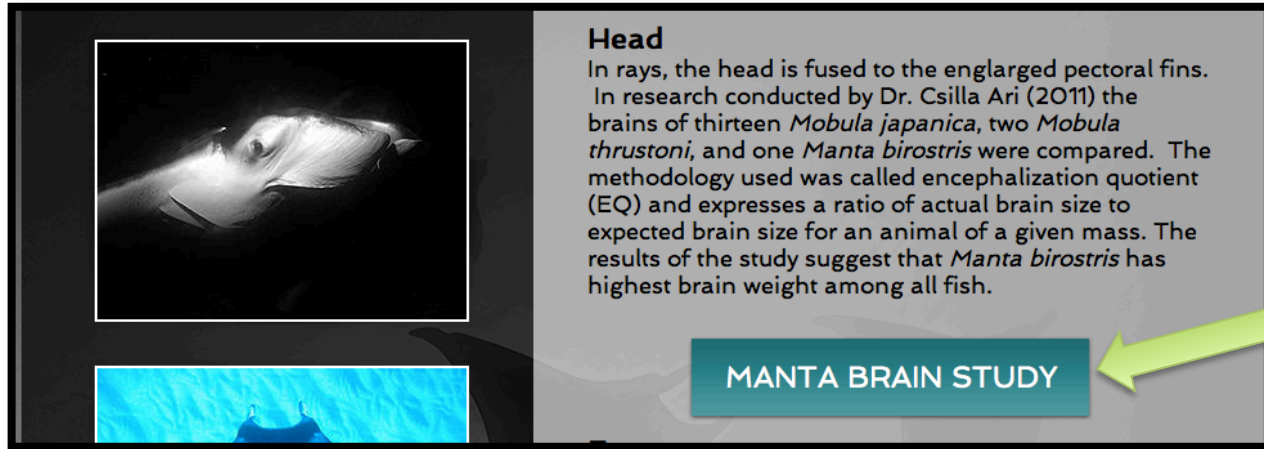
Development

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Lessons learned – Browser Differences

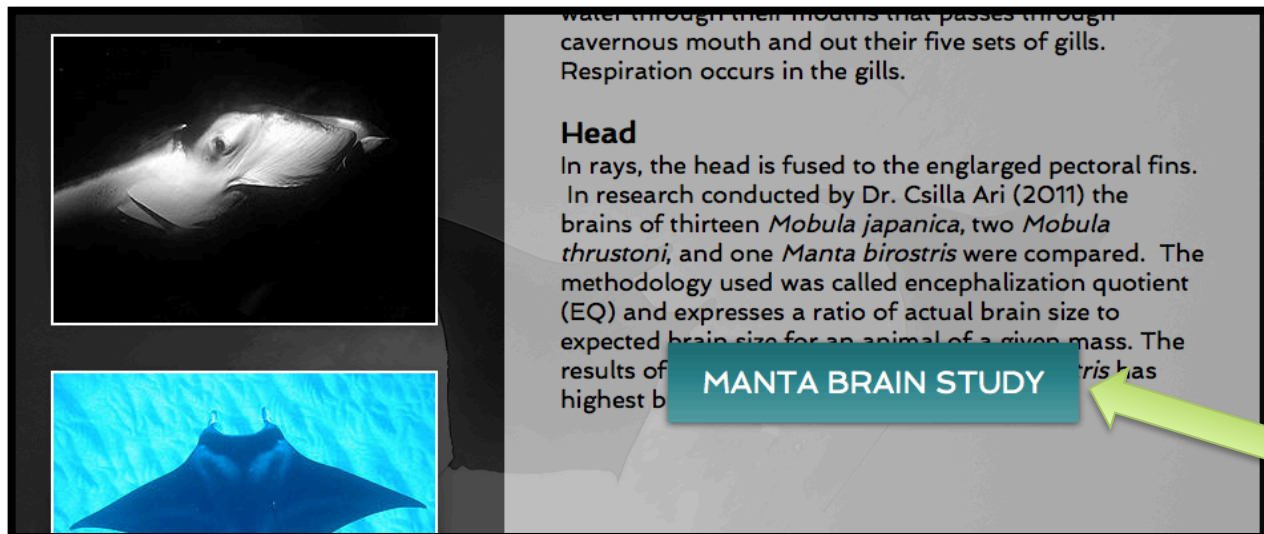


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MANTA BRAIN STUDY

Safari
Chrome

Works



water through their mouths that passes through cavernous mouth and out their five sets of gills. Respiration occurs in the gills.

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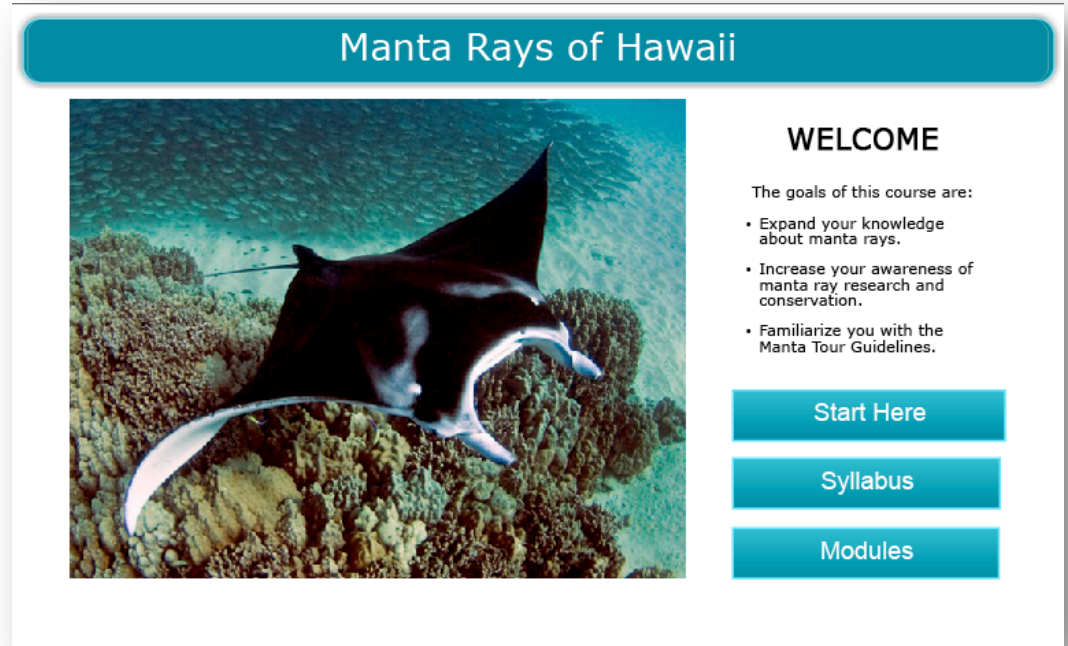
MANTA BRAIN STUDY

Firefox

Doesn't work

Lessons learned - Distractions

Adobe Captivate



Benefits

- One site for course, not two
- Use with future courses that are offered through our private company – not UH

Problems

- Steep learning curve
- Building hundreds of new pages
- Not as appealing visually
- No links to resources

Future of Manta Naturalist Course

State of Hawaii House Resolution 129 (2014)



"Urging the Department of Land and Natural Resources to adopt rules to manage manta ray sites."

http://www.capitol.hawaii.gov/session2014/bills/HR129_HD1_.htm

- Currently working with the State's Rule writer.
- Manta Naturalist Course or some version of it, may be used in future training.

Future of Manta Naturalist Course

Workforce Development in Kona, Hawaii

- **Marine Tourism Industry**
 - Naturalist Courses
 - Safety Training
 - Leadership Training
- **Partnerships**
 - Private Industry – Jack’s Diving Locker
 - Non-profit organization – Manta Pacific
 - New Community College – HCC Palamanui / OCET
 - State of Hawaii – Workforce Development Funds
 - State of Hawaii – Manta Site Management

Manta Naturalist Instructional Design Project

What's Next



Dolphin Naturalist Course
for Dolphin Tour Guides and Operators

Mahalo

Thank You to the following:

- TCC and all those people who made this conference possible
- Learning Design and Technology Department, UH Manoa
 - Dr. Menchaca, Dr. Ho, Dr. Fulford
 - Cohort and Critical Friends
- OCET– Hawaii Community College
- Manta Pacific Research Foundation
- Manta photographer – Bo Pardau
- Jack's Diving Locker

Special Thanks to my Family!



Laros Family – Kona, Hawaii



Any Questions?