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
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.
• For defense, stingrays have a tail stinger or barb.

• Manta rays do NOT have tail stingers.
Manta Naturalist Course
Instructional Design Project

- Need for Instruction
- Design
- Development
- Implementation
- Lessons Learned
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Manta tourism generates $140 million worldwide.
The Kona Coast – Manta Sites

- Keahole Point – Makako Bay
- Keauhou Bay – Sheraton Kona
- Island of Oahu and Honolulu
- Kona Coast
- Hawaii Island
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.
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
Manta Tour Operator Standards

- Best practices for industry
- Drafted by operators
- Safety of mantas, environment, and people
- Educate those involved
Manta Naturalist Instructional Design Project

Manta Tour Operator Standards

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INSPIRATION!
Manta Naturalist Course for Manta Tour Guides and Operators
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
Manta Naturalist Course

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.
Manta Naturalist Course

Goals of Course

• Expand the student’s knowledge of manta rays.

• Create awareness of manta ray research and conservation.
Manta Naturalist Course

Goals of Course

- Expand the student’s knowledge of manta rays.
- Create awareness of manta ray research and conservation.
- Familiarize students with the Manta Tour Operator Standards.
Manta Naturalist Course

Goals of Course

• 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.
Manta Naturalist Course

Course Overview

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

Course Overview

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

• MODULE TWO: Research and Conservation
  - Identification, tracking, measurement and more
  - Manta protection in the State of Hawaii
  - Global manta update – trade protection
• MODULE ONE: All About Manta Rays
  - General description and scientific classification
  - Anatomy
  - Life Cycle and Behaviors

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

• MODULE THREE: Manta Ray Tourism
  - Manta tourism locally and globally
  - Manta Tour Operator Standards
  - Manta Naturalist Presentation
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.
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Course Framework

• Dick, Carey, & Carey (2009)

• Instructional strategy:
  1) Pre-instructional activities
  2) Content presentation
  3) Learner participation
  4) Assessment
  5) Follow-through activities
Manta Naturalist Instructional Design Project

Keller’s ARCS

- ATTENTION
- RELEVANCY
- CONFIDENCE
- SATISFACTION
Manta Naturalist Instructional Design Project

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
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
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
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d. To dig on the ocean floor for food
Manta Naturalist Instructional Design Project

Visual Design – Original Artwork

Tool: Adobe Illustrator
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Visual Design – Course Materials

White Space Is Not Your Enemy
Hagen & Golombisky, 2013

Focal point, colors, artwork
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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
Manta Naturalist Course
for Manta Tour Guides and Operators

START HERE
SYLLABUS
SCHEDULE

Web site builder – Wix
www.mantanaturalist.com
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.

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

**Web Site – Links to Resources**

www.mantanaturalist.com

www.mantapacific.org

[Link to the Brain Study by Dr. Csilla Ari]
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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8 Students
5 different companies represented
All came together as planned
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*
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Lessons learned – Browser Differences

**Head**
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**Safari**
*Works*

**Chrome**

**Firefox**
*Doesn’t work*
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
“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
What’s Next

Dolphin Naturalist Course
for Dolphin Tour Guides and Operators
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?