



# The need & opportunity for Unmanned Aerial Systems professionalization in the CSU

Sean Anderson

Environmental Science and Resource Management Program  
*California State University Channel Islands*

How do we engage a  
more diverse  
community with RPS?

# CSUCI Survey of Public Opinion of Coastal Resources

conducted by ESRM 462 undergraduates each Sept-Oct

Opinion Poll

... Pull as part of our class at California State University, Long Beach. It will be used to gauge public opinion on coastal resources. The survey is anonymous and will be used to inform the class. If you have any questions or are interested in our research, please contact Sean Anderson: (805) 437-8944 or Sean.Anderson@csulb.edu.

1. Do you know of any "wetlands" (marshes, bays, swamps, etc.) within 10 miles of your home?

☒ Yes

2. If you do, please name up to three of these wetlands:

MUGU LAGOON

ORIOND BEACH

3. Which phrase best describes "ecology"?

☒ environmentalism

☐ the study of plants and animals in their environment

☐ other ( )

☐ don't know / unsure

4. Have you ever heard of "habitat restoration" or "ecological restoration," the attempt to return damaged natural areas to their original state?

☒ Yes

☐ No

5. If you have, name up to three ecological restoration projects:

☒ avoid the story

☐ not care about the story

☐ want to hear or read the story

☐ other ( )

☐ don't know / unsure

6. If you came across a news story about ecological restoration, you would:

☒ agree

☐ disagree

☐ don't know / unsure

Climate Change is a major problem:

☒ agree

☐ disagree

☐ don't know / unsure



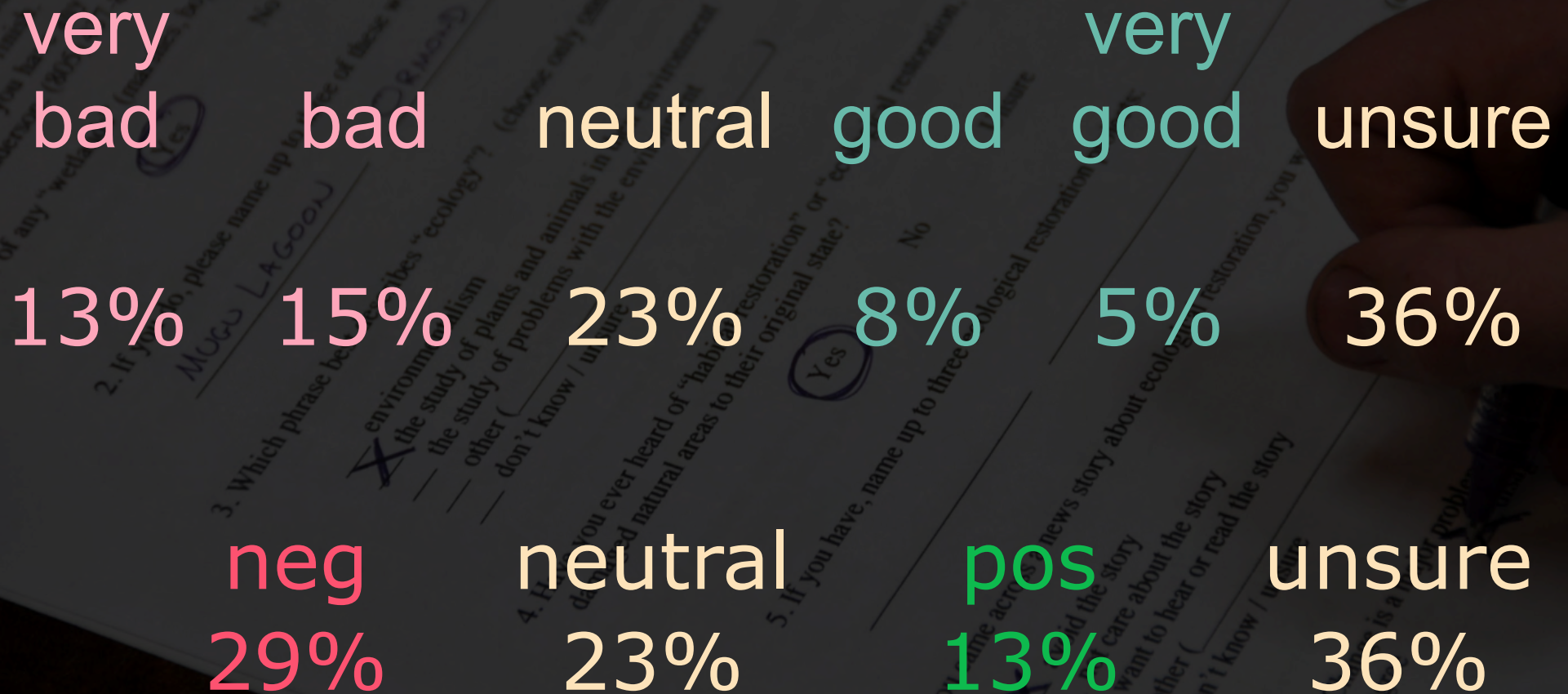
# CSUCI Survey of Public Opinion of Coastal Resources

conducted by ESRM 462 undergraduates each Sept-Oct

The potential use of small, private  
aerial drones in coastal CA would  
be:

# Drone Perception

>1,300 people in SB, Ventura & LA Counties, Sept 2014





# true concern





## CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS ADMINISTRATIVE POLICY MANUAL

### Academic Affairs

Approved By: Richard R. Rush  
President

Policy Number: AA.01.005

Effective Date: 11/4/13

Page 1 of 4

### Policy on Use of Unmanned Aerial Systems

#### PURPOSE:

To provide guidance concerning the appropriate operation of and uses for unmanned aerial systems related to academic endeavors at California State University Channel Islands (CI).

#### BACKGROUND:

Unmanned aerial systems offer great potential as tools for research and teaching. The use of UASs can offer students at CI valuable experience in a range of disciplines including Applied Physics, Computer Science, Environmental Science and Resource Management (ESRM), and Mathematics. In addition to experience associated with programming/flying UASs, students can benefit from the design, selection, and operation of sensors and from the post-processing and analyses of sensor data. Use of UASs can provide students and faculty access to relevant data from the region to enhance projects within existing courses (e.g. environmental monitoring, image processing, pattern recognition, electronics), enable undergraduate capstone and Master's thesis projects, and permit research to answer significant academic and practical questions.

#### POLICY:

##### Accountability:

Provost / Vice President for Academic Affairs

##### Applicability:

All faculty, staff and currently enrolled students at CSU Channel Islands

##### Definition(s):

COA – Certificate of Authorization

FAA – Federal Aviation Administration

UAS – Unmanned Aerial System

sUAS – small Unmanned Aerial System

##### Text:

This policy applies to fixed wing and rotor vehicles operated without a human pilot onboard, by CSU Channel Islands faculty, staff or students, in the course of scholarly or academic endeavors.

1. Unmanned Systems Board – The Unmanned Systems Board (Board) will be comprised of faculty and administration and operate in a manner similar to the Institutional Research Board

# confront issues directly

## CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS: AIR AND AQUATIC ROBOT RESEARCH

*CSUCI's unmanned systems research team blog*

### Menu

## More ROV modifications!

🕒 December 7, 2014

A hearty hello from the ROV team! We have some updates for you. All of our current ROVs are completed, the most recent, the trigger fish is functioning well, we will be epoxying the camera to waterproof it, and then all will be ready for quantitative ability testing.



# tools & opportunities for all





tools & opportunities for all





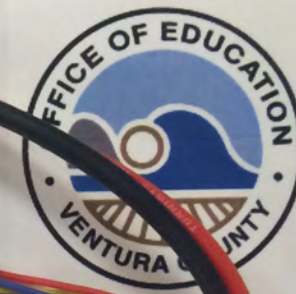
# professionalism



# Cook Islands “prep” ESRM 483







Pitot Tube



Current Sensor



Arm Switch



GPS and Compass



Telemetry Radio



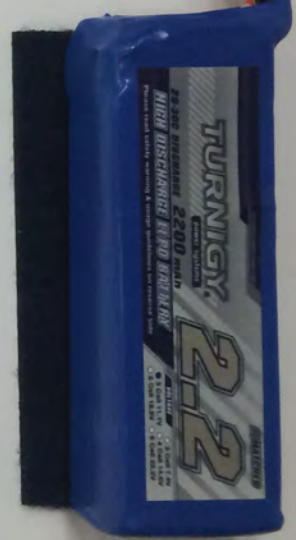
Flight Controller



Buzzer



Battery



# AAUS as model

HOME ABOUT NEWS & EVENTS JOIN STORE SCHOLARSHIPS MEMBERS RESOURCE LIBRARY

 **AAUS**  
American Academy  
of Underwater Sciences



SEARCH LOGIN

**Aqua Lung Recall** 1

Aqua Lung to Expand the SureLock II Rubber Handle Recall - Please see this [announcement](#) for more information. [more](#)



**2014 AAUS Foundation Scholars** 2

**2015 AAUS Symposium Dates** 3

**2014 AAUS Symposium Proceedings** 4

**QUICKLINKS**

- Membership - Join AAUS
- Donate to Foundation
- Scholarships
- Board Members & Committees
- Diving Standards

**Resource Library**



**2014 Organizational Members**



**Donate**

How do we engage a  
more diverse  
community with RPS?



# Stay in touch...

Sean Anderson  
ESRM Program  
CSU Channel Islands

(805) 732-2732  
[sean.anderson@csuci.edu](mailto:sean.anderson@csuci.edu)

<http://esrm.csuci.edu>

<http://faculty.csuci.edu/sean.anderson/>



## Current Projects

### Ecological Restoration

- [Ormond Beach Restoration](#)
- [Indicators of Coastal Salt Marsh Functioning](#)
- [Calleguas Creek and Riparian Restoration](#)
- [Woodlands Trail and Park Monitoring \(Louisiana\)](#)
- [Eastern Anatolian Wetland Restoration \(Turkey\)](#)

### Sustainable Fisheries

- [Coastal California Seafood Sustainability Survey](#)

### Non-native Invasive Species

- [New Zealand Mudsail Sentinel Monitoring](#)
- [Woodlands Trail and Park Monitoring \(Louisiana\)](#)
- [Seasonal Rhinitis and Invaded California Grasslands](#)

### Historical Ecology

- [California Mountain Lion Management](#)
- [Historic Oak Woodland Management](#)
- [Seasonal Rhinitis and Invaded California Grasslands](#)

### Habitat Fragmentation

- [Ventura County Road Kill Survey](#)

[Welcome](#) [Videos](#) [Podcasts](#) [Courses](#) **[Research](#)**

## Anderson Lab Research



## Research

Most of my formal training is in marine population biology, coastal ecology, and the management of coastal communities and their associated biological resources. Over the past few years my research has migrated shoreward and upland, shifting somewhat to emphasize the design, practice, and assessment of ecological restoration projects. While I have worked in a variety of subtidal, intertidal, and terrestrial systems, my current work emphasizes coastal systems (particularly coastal salt marsh and coastal river/riparian systems) and ways to improve their