

***Rangia* Clam Investigation in the Upper San Antonio Bay System**

Presented at:

**Guadalupe, San Antonio, Mission, and Aransas Rivers and
Mission, Copano, Aransas, and San Antonio Bays Basin and
Bay Area
Stakeholder Committee**

May 22, 2015



Presented by:

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Rangia clam



Oyster



Rangia clams

- Identified as good bio-indicators of freshwater inflows
- Adults are relatively sessile
- Live within a narrow range of salinities (<18ppt) and spawn over refined range (2 to 10 ppt)
- Literature and Experience indicates they occur within upper San Antonio Bay system



Objectives

- Identify the location and extent of *rangia* within the upper San Antonio Bay system
- Collect *rangia* for subsequent growth increment analysis

Stakeholder Workshop

- August 2014 small subset of stakeholders met in Seadrift to solicit information on:
 - Presence of *rangia* in San Antonio Bay (historic & current)
 - Identify current locations of *rangia*



Survey Area

Identified two locations:

- **Mission Lake (1,636 ac)**
- **Upper Guadalupe Bay (669 ac)**

Total of 2,305 acres of survey area

Project Location



Survey Area

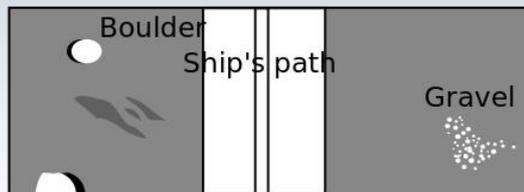
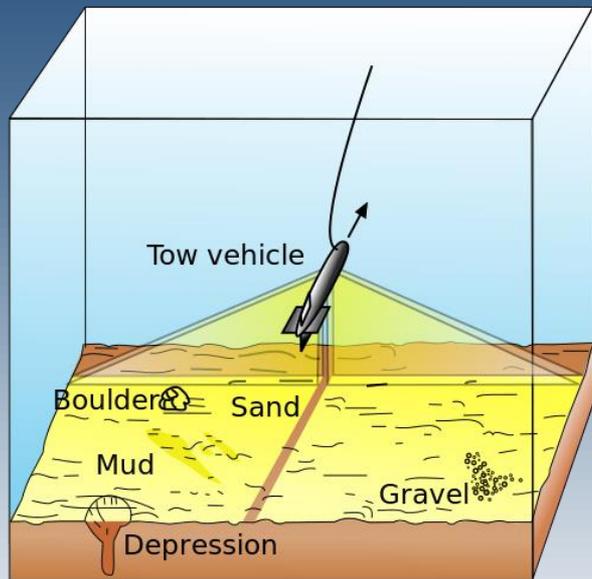


Remote Sensing Survey

Conduct a marine remote sensing survey to determine the location and extent of rangia within the upper San Antonio Bay system

- **Side-scan sonar**
- **Bathymetry**
- **Ground-truthing**
- **Biological collection**

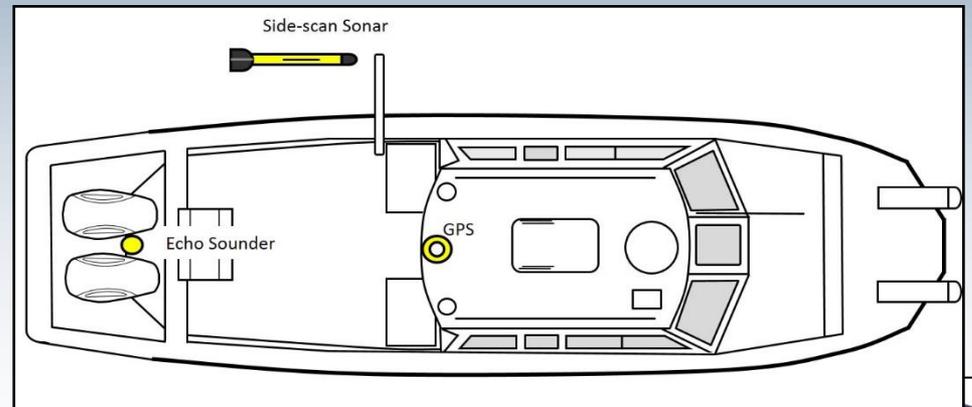
Side-scan Sonar



Acoustic soundings are recorded continuously from both sides of towfish

Hard substrate appears in contrast to soft substrate

Sonar data is compiled into geo-rectified mosaic image



Remote Sensing Survey Equipment

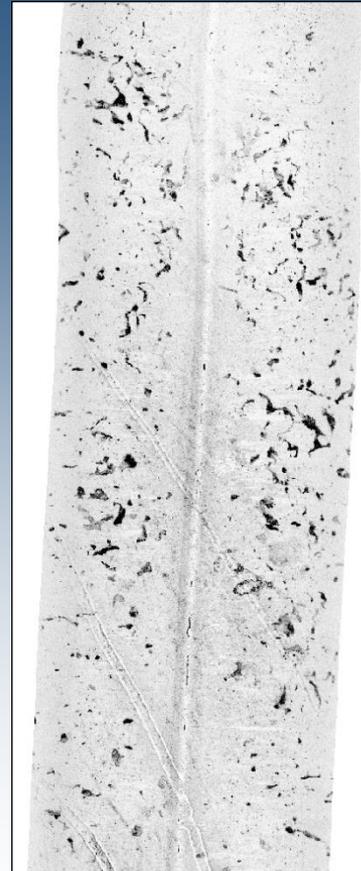


Side-scan Sonar Data Examples

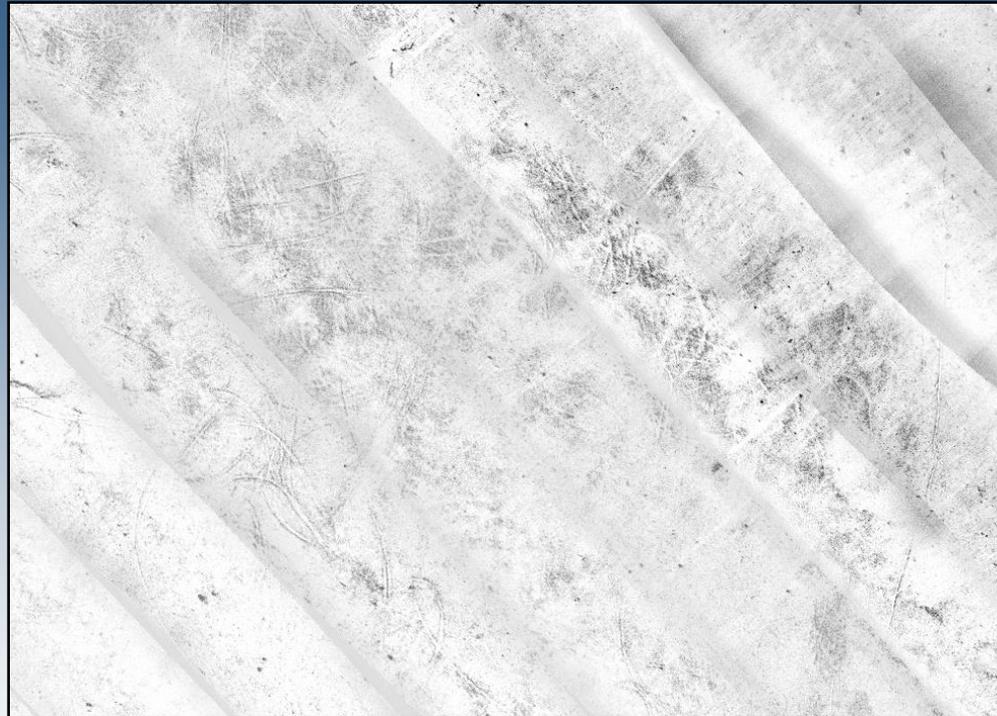
OYSTER REEF



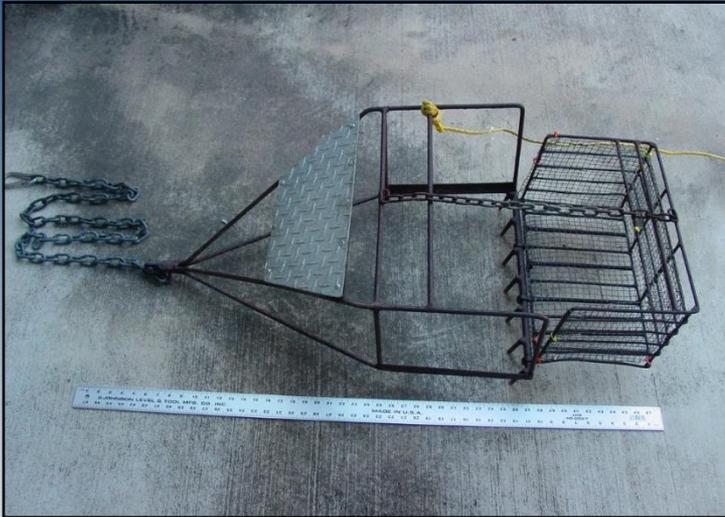
RANGIA BED



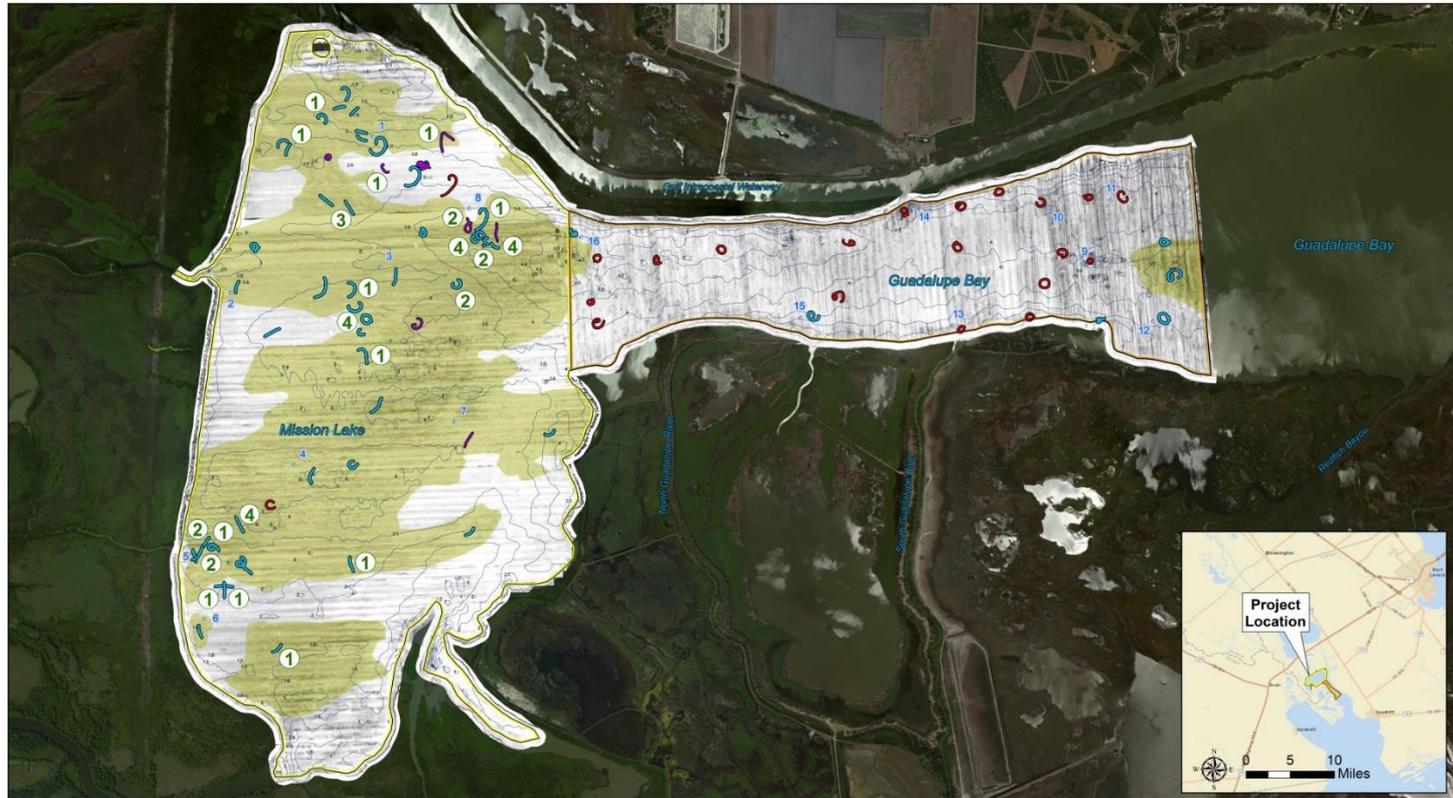
Side-scan Evidence of Rangia in Mission Lake



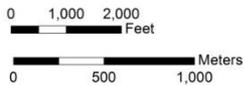
Physical Evidence of *Rangia*



Results



2014 San Antonio Bay Ranga Study



- Mission Lake (1,636 ac)
- Upper Guadalupe Bay (669 ac)
- Ranga Colony
- 0.5-ft Depth Contours
- * 2 Water Quality Point

- Dredge Tow Paths**
- Abundant Ranga Shell
- Few Ranga Shell
- No Ranga Shell
- 2 Number of Live Ranga

Prepared For:

SAN ANTONIO RIVER AUTHORITY

Prepared By:

BIO-WEST

2014 San Antonio Bay Ranga Study
Mission Lake and Guadalupe Bay
Calhoun County, Texas

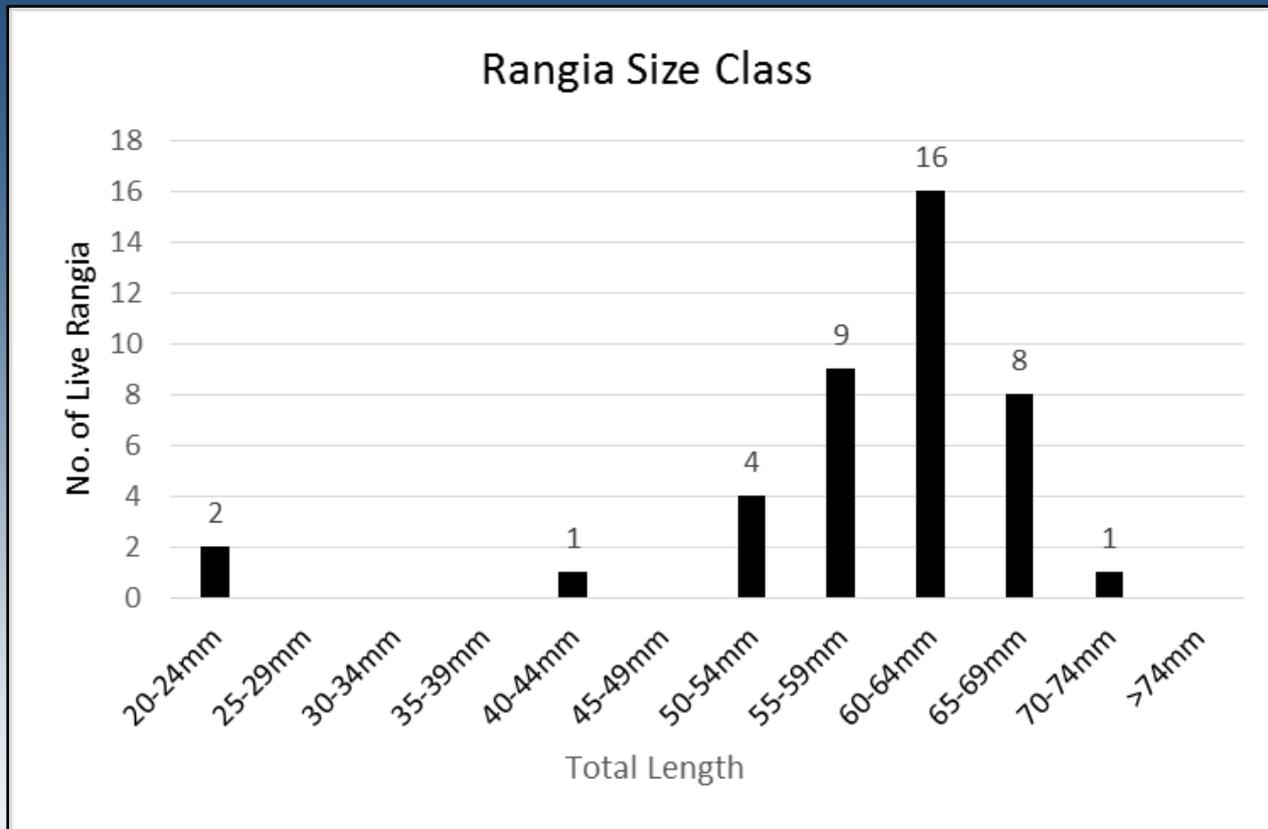
| | |
|---|---------------------|
| Source: ESRI World Imagery | Date: May 01, 2015 |
| Scale: 1 inch = 750 feet | Drawn By: D. Graves |
| File: P:\Projects\1750_SARA-SAB-Ranga_Study\Ranga_Samples.mxd | |



Results

| Date of Effort | Location | Number of Dredge Tows | Tows with Rangia Shell | Tows with Live Rangia | Total Number of Live Rangia |
|----------------|---------------|-----------------------|------------------------|-----------------------|-----------------------------|
| 9/18/2014 | Mission Lake | -- | -- | -- | 7 |
| 12/5/2014 | Mission Lake | 26 | 26 | 9 | 11 |
| 12/10/2014 | Guadalupe Bay | 25 | 6 | 0 | 0 |
| 12/10/2014 | Mission Lake | 4 | 4 | 1 | 1 |
| 12/23/2014 | Mission Lake | 25 | 23 | 10 | 22 |
| Totals | | 80 | 59 | 20 | 41 |

Results





Questions?

