Once you shuck ‘em, don’t just chuck ‘em!
Leveraging New Orleanian’s love of oysters for coastal restoration.
CRCL and What We Do

• **Mission:** Drive bold, science-based action to rebuild Coastal Louisiana through outreach, restoration and advocacy.

• To accomplish that, we:
  – Restore habitat through volunteer plantings and oyster reef shoreline protection
  – Advocate for sound restoration and flood protection
  – Watchdog funding
  – Advance policy recommendations
  – Use scientific analysis
  – Partner with stakeholders across the coast
  – Engage communities living and working on the front lines
Healthy Oyster Reefs:
Environmental & Economic Benefits

• Act as a breakwater
  – Protect marshes from erosion
  – Reduce storm surge
  – Grow vertically to offset subsidence and rising seas
• Improve water quality
• Provide habitat for fish, crabs, and birds
• Provide a source of spat for new production
• Add new substrate into the system

• Louisiana produces approximately 1/3rd of the nation’s oysters (National Marine Fisheries Service 2015)
• $35 million in annual dockside sales (Stokes et al. 2014)
Why restore reefs?

- 85% of world’s oyster reefs lost in past 200 years (Beck et al. 2011)
- Effects of back-to-back disasters
  - Hurricanes Katrina and Rita, Deepwater Horizon oil spill
- Oyster shell deficit
  - deposited in landfills
  - shipped out of state
  - used to pave roads
  - ground into chicken feed
Oyster Shell Recycling Program Goal

- Build oyster reefs to protect eroding shorelines using shell that is otherwise going into landfills
  - Garner support for coastal restoration by:
    - Engaging volunteers in the coastal restoration process
    - Educating consumers about the importance of coastal sustainability
  - Pilot a process that can be continued and replicated
What challenges have we faced?

- Securing funding
- Restaurant uncertainty
- Recycling cost
- Curing/volunteer site distance
- Engineering in a marsh
- Reef installation cost
- Selecting a contractor
- Obtaining permits
- Deployment delays
- Managing multiple stakeholders
- Developing a scientific monitoring plan
Accomplishments

- Received $1M grant from Shell
- Launched in June 2014 as the first such program in Louisiana
- Became largest oyster shell recycling program in the nation
- Collected over 2,500 tons or 5 million pounds!
- Engaged 313 participants
- Installed our first oyster reef in November 2016
Media Attention

It's Alive! Artificial oyster reef provides shoreline protection in St. Bernard Parish
Updated: Monday, December 5th 2016, 3:29 pm CST
Written by: John Snell, Anchor

The Plaquemines GAZETTE
Buras home to nation’s largest oyster shell recycling program

Reconsider the Oyster
by Arielle Milkman

Coalition To Restore Coastal Louisiana
How did we accomplish this in 2.5 years?
1. Harvest
2. Restaurants
3. Collection
4. Curing
5. Volunteer Bagging
6. Reef Installation
26 Partner Restaurants in GNO Area
Partner Restaurants Involved

- Acme Oyster House (New Orleans and Metairie)
- Arnaud’s Restaurant
- Borgne
- Bourbon House
- Café B
- Cooter Brown’s Tavern
- Curious Oyster Bar (Dryades Public Market)
- Desire Oyster Bar at the Royal Sonesta
- Drago’s Seafood Restaurant (New Orleans and Metairie)
- Elysian Seafood (St. Roch Market)
- Felix’s Restaurant and Oyster Bar
- Frankie and Johnny’s
- Grand Isle Restaurant
- Le Bayou
- Lüke
- Mr. Ed’s Oyster Bar and Fish House (New Orleans and Metairie)
- Nicholls State University
- Pascal’s Manale
- Peche Seafood
- Pier 424 Seafood Market
- Red Fish Grill
- Remoulade
- The Royal House Oyster Bar
- Tracey’s Original Irish Channel Bar

Coalition To Restore Coastal Louisiana
How do we foster partner relationships?

- Individual meetings to work out needs
- Dedicated staff member to monitor program
- Quarterly reports
- Promotional options to choose from:
  - Public recognition on materials and media
  - Rack cards
  - Logo for use on menu
  - Window decal or other signage
  - Training to educate staff about the program
  - Participation in a promotional video
  - Name hyperlinked on CRCL website
  - Opportunities for free volunteer events
How is the shell collected?

- Phoenix Recycling contracted for collection and transport
  - Provide bins
  - Wash and return clean
- Restaurant pickup 5 days/week
- Transport to Buras 3-4 days/week
Coalition To Restore Coastal Louisiana

Shell collected for recycling

- Total Collected
- 20% to LDWF
- Available for Reef

- Project begins with 12 restaurants
- Project expands to 25 restaurants
- First volunteer event
- First reef installed

Graph shows the increase in shell collected over time, with milestones such as the project beginning, expanding to 25 restaurants, a first volunteer event, and the installation of the first reef.
Shell Curing at LDWF Site

Buras, LA

Remote setting facility

Coalition To Restore Coastal Louisiana
Volunteer Bagging Events

• 313 people engaged since Nov 2015
• 197 tons bagged as of June
• 18 volunteer events, including
  – Dickie Brennan’s Bourbon House
  – Shell
  – Coastal Environments, Inc.
  – Nicholl’s State Biology Department
  – RESTORE the Mississippi River Delta
  – Audubon Institute G.U.L.F.
Reef Restoration

- Partnership with TNC
- TNC has created over 4.5 miles of reefs along the LA coast since 2009
  - Grand Isle & Fifi Island
  - Vermilion Bay
  - Lake Fortuna
  - Lake Athanasio
  - Lake Eloi
The Nature Conservancy & Partners

- Comparative technologies by TNC
  - Reef BLK
  - Oyster Break
- Monitoring by Dr. Megan La Peyre
  - La Peyre et al. 2015, PeerJ – shoreline suitability maps
  - La Peyre et al. *in press*. Comparison of oyster populations, shoreline protection service and site characteristics at seven created fringing reefs in Louisiana: key parameters and responses to consider
Other artificial oyster reefs across the coast
CRCL & TNC’s Reef

Coalition To Restore Coastal Louisiana
Oyster Reef Facts

- 868 tons/1.7 million pounds of shell
- 434 Gabion baskets
- 0.5 miles/2,640 feet of shoreline protection
That’s nice, but how much does all of this cost?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Monthly Cost</th>
<th>Annual Cost</th>
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<tbody>
<tr>
<td>Shell Recycling</td>
<td>$48,000</td>
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<tr>
<td>Reef Construction</td>
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<td>$602,407</td>
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<td>Partner</td>
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<td>Project</td>
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<td>---------------</td>
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<td>Shell 2012</td>
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<td>CPRA 2013</td>
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<tr>
<td>NFWF 2015</td>
<td>$249,975</td>
<td>Reef Restoration</td>
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Lessons Learned

- Explore mutually beneficial relationships
  - Collaborations can provide a leg up and help convince funders
- Bidding processes help ensure fairness and the best deal
- Involve stakeholders early in the planning process if possible
- Never underestimate how long it takes to get a permit
- Respond to different promotional interests of restaurants
- Consider what it takes to achieve long-term sustainability
- Have a monitoring plan before you start
What is our strategy for the future?

1. Restaurant participation financially
2. Cost reduction
3. New/sustained funding sources
4. Monitor and learn from new reef, as well as others
5. Help expand shell recycling efforts
WHY DON'T OYSTERS GIVE TO CHARITY?

BECAUSE THEY'RE SHELLFISH!