

Paula Priour
Austin, Texas

Marine Conservation Course, winter term 2019

Integrating Steinbeck, Ricketts and The Log From the Sea of Cortez into the Marine Conservation Curriculum

And if we seem a small factor in a huge pattern, nevertheless it is of relative importance. We take a tiny colony of soft corals from a rock in a little water world. And that isn't terribly important to the tide pool. Fifty miles away the Japanese shrimp boat are dredging with overlapping scoops, bringing up tons of shrimps, rapidly destroying the species so that it may never come back, and with the species, destroying the ecological balance of the whole region. That isn't very important in the world. And thousands of miles away the great bombs are falling and the stars are not moved thereby. None of it is important or all of it is. (The Log from the Sea of Cortez, 3)

The most important thing about each species is the suite it finds itself in. [William Gilly, professor of Marine Biology, Stanford University]

Purpose:

The science curriculum for the Galveston Marine Conservation course is missing a writing and literature component. This project introduces John Steinbeck and Ed Ricketts, their collaborative project The Log from the Sea of Cortez, and the resulting structure of their research concepts. Student activities and outcomes include research, journaling, fieldwork, and game activities.

Introduction: Classroom activities for the week prior to the Galveston trip.

I. Introduction to Ed Ricketts, John Steinbeck, collaboration & The Log from the Sea of Cortez (Appendix A: ppt lecture)

- Brief bios
- Importance of Ricketts to the modern ecology movement
- Importance of Steinbeck to modern literary canon
- Log from the Sea of Cortez

II. Ricketts/Steinbeck hierarchy – the 4 levels from Between Pacific Tides (Also from Appendix A: ppt lecture)

1. Superficial – quantitative, based on location
2. Loose aggregation of several species; how/why do they band together?
3. Natural history – how does the species occur and why? What life cycle?
4. Feeding-habitat-niche – what is the community-formation evolution, based on environment, occurring wherever the same conditions exist?

III. The human connection - *Who would see a replica of man's social structure has only to examine the abundant and various life of the tide pools, where miniature communal societies wage dubious battle against equally potent societies.....* (Ricketts) Introduction to forming biological parallels, from the binder of readings.

IV: Introduction to Tidepooling *The tidepool has been called the world under a rock.* (The Sea of Cortez, p. 33) [Appendix B: Use Craig Strang's presentation on tidepool collecting procedures. Materials: magnifying glasses, cards, pencils, collecting cups with lids]

Readings/Resources: Prepare a binder to include these readings, along with the course syllabus, materials lists and packing instructions for the trip.

- Octopi and the tide pool, Cannery Row, p. 27, 100
- The gopher chapter, Cannery Row, p. 177
- The turtle chapter from The Grapes of Wrath, Chapter 3. pp. 19-21
- Understanding Biological Parallels, from Log from the Sea of Cortez, pp. 79-80, 178-179)
- Sally Lightfoot crabs from Log from the Sea of Cortez, pp. 52-54
- Biological Parallels, Chapter 23 from Log from the Sea of Cortez (pp. 187-188)
- Aldo Leopold, "Think Like a Mountain"
- Elizabeth Bishop, "The Fish"
- Robinson Jeffers, "Hurt Hawks"
- How Wolves Changed Rivers <https://blog.nationalgeographic.org/2014/02/16/this-will-shatter-your-view-of-apex-predators-how-wolves-change-rivers/>

Journals and Presentations: Biological Parallels

- **Writing a narrative description:** Collect a natural object from beach or tidepool. Create a narrative description of the object, including at least one process description (feeding, breeding, molting, migrating, etc.) Use the readings as models (turtle, gopher, octopi, etc.)
[First do this as a practice activity on Reimers/West Cave field trip before leaving for Galveston. Do at least once in Galveston, possibly once on the beach at Matagorda and once in a tidepool setting.]
- **Presentation:** Collect an object from beach or tidepool. Present it to the class, creating a biological parallel between your collected species and human behavior. [First do this activity on Reimers/West Cave field trip as practice before leaving for Galveston.] This activity is different from the one above because it is an oral informal presentation, more spontaneous and casual.
- **Writing and presentation:** Create a narrative/description of some man-made object they find misplaced in the natural setting. Narrative should include history: what was the object's original purpose? How was the object made, then used, then discarded, then found? In other words, how did the object get to the location where you picked it up? What damage, if any, does this object do to the natural environment, both in its manufacture and in its disposal? How long will it take to break down?

Activities:

Tide Pool & Beach Search

Journaling

Presentations

Games

Games: [evening activities] Create cards for marine animals, using Gilly's Marine Lotto cards. On the back of each card is pertinent information about [life cycle, preferred environment, predators, prey, commensal relationships, feeding, habitat, niche..... etc.

Marine Lotto: Just play lotto.

Aquarium game: Each student is randomly dealt a persona. [2 possible games: one secret identities, one revealed identities] Students are put into an "aquarium" (moderated natural environment) and behave in accordance with their personae. Especially important are their behaviors and interactions with each other's personae. Moderator acts independently to manipulate environment (increasing or decreasing temperature or salinity, changing environmental elements such as weather, introducing human development, injecting toxins, introducing predators) to which students must react in ways their personae would. (A group of students should be assigned to be anchovies or sardines that react tightly in schools.)

Food chain: Deal out personae. Split into groups of 5. According to their personae, students organize themselves as fast as possible to form an accurate food chain. They have to explain the chain as a group, possibly a speed competition.

Commensal chain: Deal out personae. According to their personae, form commensal bonds. Leave no one out. [Organize by deep ocean, tide pools, lower shore, upper shore, rocky shore, sandy beach, estuarial] Explain those conditions that form their commensal bonds.

Appendices

Appendix A: ppt lecture Steinbeck & Ricketts Holistic Worldview 2018

Appendix B: pdf Loteria Master