

Biology 3N: Views of our Changing Seas – Literature and Science (Working Syllabus for Winter 2018)

Instructor: William F. Gilly, Biology Department, Hopkins Marine Station

Guests:

Gavin Jones, English Dept., Stanford

Susan Shillinglaw, English Dept., San Jose State Univ. and National Steinbeck Center

Location: Sapp Center for Science Teaching and Learning (Old Chemistry), Room 104
Thursday 3:00 – 5:50 pm

This seminar will examine issues concerning today's oceans through scientific, literary and historical lenses. We will focus on the Gulf of California, and our core text will be "The Log" portion of *Sea of Cortez: A Leisurely Journal of Travel and Research* (1940) by John Steinbeck and Ed Ricketts. This book is more than a travelogue or scientific report – it is an informal treatise on the holistic thinking that is necessary to unravel complex problems, including ones that Steinbeck addressed in *The Grapes of Wrath* and other novels. Thus, we will work through The Log slowly and purposefully and supplement it with relevant readings from historical and contemporary works as well as the poetry of Robinson Jeffers, a contemporary of Ricketts and Steinbeck who also lived on the Monterey Peninsula.

Before the course:

Obtain a copy of *The Log from the Sea of Cortez* (1951), Penguin Twentieth-Century Classics edition. If everyone has the same edition, it will greatly facilitate in-class discussions: <https://www.amazon.com/The-Log-Cortez-Penguin-Classics/dp/0140187448>.

You will also need a copy of John Steinbeck's *Cannery Row*: <https://www.amazon.com/Cannery-Row-Classic-20th-Century-Penguin/dp/0140187375>

For the first class please read:

"About Ed Ricketts" Appendix, *The Log from the Sea of Cortez* (1951)

Brusca RC (2017) "A Brief History of Discovery in the Gulf of California." This has been posted on Canvas. It gives a good overview of the Gulf of California.

During the course:

Weekly readings are indicated below. Additional short pieces may be added as we go along. All materials, with the exception of *The Log from the Sea of Cortez* will be posted on Canvas. We will discuss this material as a group each week.

Special Topics: Weekly in-class presentations on contemporary and historical issues will be made by individuals or teams as desired. Syllabus material is meant to be read by all seminar participants; topic teams should research additional materials to present an oral report and lead a discussion (30-45 min). You can work discussion of the assigned materials into the oral report – structure your report to stimulate discussion. We can change a suggested topic to one of your choosing if you are passionate about a particular subject.

Required Field Trip (Feb 24,25): We will travel to Monterey on Saturday morning and go to sea on a whale-watching vessel followed by an afternoon visit to Robinson Jeffers' Tor House in Carmel. On Sunday we'll visit Point Lobos State Natural Reserve in the morning and then explore the rocky intertidal at Hopkins Marine Station and Ed Ricketts' lab on Cannery Row in the afternoon. If it is impossible for you to attend this field trip, an alternative activity will have to be individually arranged.

Weekly Schedule

Week 1 (1/11) Ed Ricketts, John Steinbeck, Joseph Campbell and Robinson Jeffers -- Holistic Worldview

Steinbeck, J (1948) Foreword to *Between Pacific Tides*, 2nd ed., p. v-vi.

Campbell, J (1949) *The Hero with a Thousand Faces*, Prologue, 3. "The Hero and the God," and Chapter 1, "Departure: 1. The Call to Adventure."

Jeffers, R (1925) "Science" and (1948) Preface to *The Double-Axe and Other Poems*, p. vii-viii

Week 2 (1/18) Preparation and Departure

The Log from the Sea of Cortez: Introduction – Chapter 5.

Jeffers, R (1924) "Continent's End"

Special Topic: Emergence

Abbott, HP (2008) Narrative and Emergent Behavior. *Poetics Today* 29: 227-244

Mitchell, M (2009) *Complexity: A Guided Tour*, Chapters 1-2

Gordon, D (2016) Collective Wisdom of Ants. *Sci. Am.* 314: 44-47

Week 3 (1/25) Discovery

Log from the Sea of Cortez: Chapters 6-9.

Jeffers (1932) "The Place for No Story"

Beebe, W (1938) *Zaca Venture*, Chapter 2, "With the Gray Friars"

Special Topic: Exploration and exploitation

Wagner, HR (1929) *Spanish Voyages to the Northwest Coast of America in the Sixteenth Century*, p. 1-14

Clavigero, FJ (1786) *The History of [Lower] California* by Don Francisco Javier Clavigero, S.J., translated and edited by SE Lake and AA Gray, Stanford Univ. Press, Book 1, Ch. 17-19, p. 84-95 and Book 2, Ch. 1-3.

del Barco, M (1770) *The Natural History of Baja California*, Ch. 10: "About Testaceans, p. 248-275

Week 4 (2/01) Searching, Finding and Warp

Log from the Sea of Cortez: Chapters 10-13

Jeffers, R (1948) Advice to Pilgrims

Bar, M (2009) The Proactive Brain: memory for predictions. *Phil Trans Roy Soc B* 364:1235-1243

Special Topic: Marine Protected Areas

Roberts, C (2007), *Unnatural History of the Sea*: Chapter 25

Hardin, G (1968), Tragedy of the Commons, *Science* 162:1243-1248

Ostrom et al. (1999) Revisiting the Commons: Local Lessons, Global Challenges, *Science* 284:278-282

Aburto-Oropeza et al (2011) Large recovery of fish biomass in a no-take marine reserve. *PLoS One* 6: e23601

Week 5 (2/08) Non-teleological Thinking (Susan Shillinglaw) followed by Group Dinner

Log from the Sea of Cortez, Chapter 14

Special Topic: Cannery Row

Week 6 (2/15) Gavin Jones

Steinbeck, J (1938) "The Snake," in *The Long Valley*

Week 7 (2/22) Exuberance

Log from the Sea of Cortez: Chapters 15-19

Jeffers, R (1951) "The Beauty of Things," (1928) "Tor House"

Beebe, W (1938) *Zaca Venture*, Chapter 5, "The Magic Banks"

Special Topic: Sea of Cortez: Aquarium of the World

Cannon, R (1966) *The Sea of Cortez*, "The Story of the Sea of Cortez" (p.8-17) and "Life and Movement of the Sea" (p.35-61).

Kira, G (1999) *The Unforgettable Sea of Cortez. Baja California's Golden Age 1947-1977. The Life and Writings of Ray Cannon*, "'Intelligent' Golden Grouper" (p. 93-195) and "Legends of the Vagabundos" p. 196-203

Grey, Z (1925) *Tales of Fishing in Virgin Seas*, Chapters 19-20

Field Trip – Sat-Sun Feb 24-25.

Week 8 (3/01) Changing Tides

Log from the Sea of Cortez: Chapters 20-25

Jeffers, R (1951) "Animals," (1947) "Orca"

Special Topic: Shifting baselines

Roberts, C. (2007) *Unnatural History of the Sea*: Chapter 18

Sáenz-Arroyo et al. (2006) The value of evidence about past abundance: marine fauna of the Gulf of California through the eyes of 16th to 19th century travelers. *Fish and Fisheries* 7:128-146.

Sagarin et al. (2008) Remembering the Gulf: changes to marine communities of the Sea of Cortez since the Steinbeck and Ricketts expedition of 1940. *Front Ecol Environ* 6: doi:10.1890/070067

Miranda GC (2012) A Fishing day, in *Memorias de un pescador. En el Golfo de California* (translated by S. Mahieux)

Week 9 (3/08) Beginning of the End

Log from the Sea of Cortez: Chapters 26-27

Jeffers, R (1937) "The Purse-Seine," (1922) Salmon Fishing

Special Topic: Trawling and More

Roberts, C (2007), *Unnatural History of the Sea*: Chapters 10-11

Cisneros-Mata (2012) The importance of fisheries in the Gulf of California and Ecosystem-based sustainable co-management for conservation, Chapter in *The Gulf of California: Biodiversity and Conservation*, Brusca (ed.), p. 119-134

Week 10 (3/15) Closing the Circle

Log from the Sea of Cortez: Chapters 28-29

Jeffers, R (1925) "Boats in a Fog", (1948) "The Eye," (1963) Birds and Fishes

Special Topic: Climate Connections

Welch, C (2015) Oceans Are Losing Oxygen—and Becoming More Hostile to Life. National Geographic, In Focus: <http://news.nationalgeographic.com/2015/03/150313-oceans-marine-life-climate-change-acidification-oxygen-fish/>

Velarde et al. (2015) Warm oceanographic anomalies and fishing pressure drive seabird nesting north. *Sci. Adv.* 2015 1: doi: 10.1126/sciadv.1400210

Welch, C (2016) The Blob that Cooked the Pacific. *National Geographic*, September 2016:

<http://www.nationalgeographic.com/magazine/2016/09/warm-water-pacific-coast-algae-nino/>

The Climate CIRCulator Editorial Staff (2015). CIRC (2015) Causes and Consequences of the Pacific Warm "Blob" <https://climateci>

<https://climatecirculatororg.wordpress.com/2015/05/19/causes-and-consequences-of-the->

pacific-warm-blob/rculatororg.wordpress.com/2015/05/19/causes-and-consequences-of-the-pacific-warm-blob/

Swain, D. (2017) New insights in to the Ridiculously Resilient Ridge and North American Winter dipole. *The California Weather Blog*, Dec. 4, 2017. <http://weatherwest.com/archives/5982>