

2014-15

# Emptying the World's Aquarium

Pulse Curriculum



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## Witness to Emptying the World's Aquarium

### Program Overview

The world's oceans and seas contain nearly 80 percent of life on Earth and the biodiversity is unparalleled anywhere else in the world. The Sea of Cortez was once one of the most abundant and diverse sources of sea life but is now slowly being emptied of life by fishermen. Oceans are also a source of livelihood for both fishermen and communities that depend on the oceans for resources. Talk to science writer [Erik Vance](#)<sup>1</sup> to learn what the depletion of these natural resources means for the environment and the people that rely on the ocean for their livelihood. How can we, as youth, sustain the future of the world's ocean through our actions today?

### Using the Curriculum

Your Educator Handbook is to help you implement this specific Pulse program in your classroom. Educator Guide pages are marked by a **green bar along the border** of the left side of the page. There are also several pages included for your students to complete. **Print out and provide to your students** pages 4, 6, 7, 8, 9, 11.

The curriculum follows a **LEARN-ACT-REFLECT** structure:

#### LEARN

*To give students background information on the program's topic, via a hands-on, engaging activity.*

#### ACT

*To put the knowledge and skills gained in the LEARN activity into action. ACT encourages students to work together to identify a problem in their community and create a solution.*

#### REFLECT

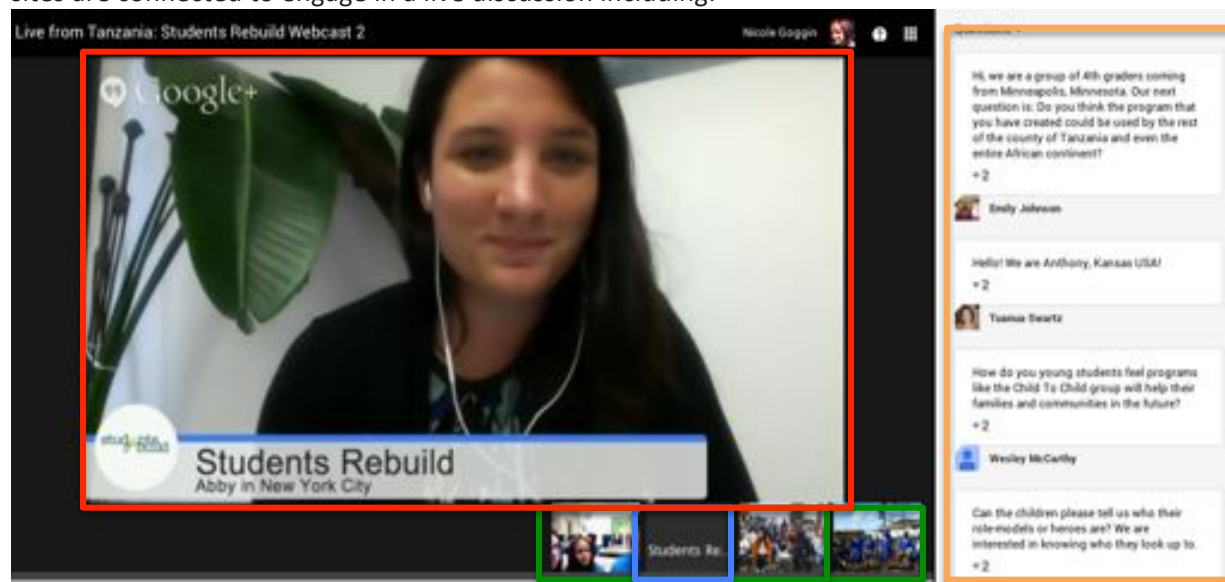
*After the broadcast, debrief and reflect with your class, and continue the conversations with your partners through the Google+ event page.*

Activity Overview- Emptying the World's Aquarium			
	Activity	Estimated Time	Checklist(✓)
LEARN	Understanding Overfishing through Media	40 minutes	
ACT	Sustainability: Consuming Seafood ✓ <i>Post Sustainability Recommendation on G+</i>	60 minutes	
	Hangout on Air ✓ <i>Prepare outline with class</i>	30 minutes prep (30-minute dial-in) 60 minute Hangout	
REFLECT	Reflect & Connect ✓ <i>Post on G+</i>	15 minutes	

<sup>1</sup> "Mexico: Emptying the World's Aquarium." *Pulitzer Center on Crisis Reporting*. <http://pulitzercenter.org/projects/sea-of-cortez-aquaculture-ocean-fish-farming-global-market>

## Google Hangout on Air

This program culminates in a live broadcast event. Using the Google Hangout on Air platform, multiple sites are connected to engage in a live discussion including:



### On-Air Sites

- **Global Nomads Group Facilitator**
- **Guest speaker:** chosen based on their expertise or experience with program topic
- **Ambassador Schools:** 3-4 schools selected through the GNG application process, whose students are active in the live dialogue

### Google+ Event Page<sup>2</sup>

Get the conversation started on the [Google+ Event Page](#). This is a space for all Pulse participants to get to know each other, post curriculum activities, and post questions before and after your Pulse session. This is also where you can watch the live broadcast.



### Online Audience

- **Participant Schools:** an unlimited number of schools around the world who view the broadcast, and chat in questions during the event

<sup>2</sup> <https://plus.google.com/events/cdo5mc4unrn8dgc1678avt5tg8o>

## Understanding Overfishing Through Media

<b>TIME:</b>	40 minutes
<b>MATERIALS:</b>	Pencil/pen, access to internet and projector to view video: <a href="https://vimeo.com/61661665">https://vimeo.com/61661665</a>
<b>OVERVIEW:</b>	This activity prompts students to consider how we receive and interpret our sources of information. Students will critically examine media by analyzing images and writing captions before and after learning about the relevant issue, overfishing.

### LESSON PLAN ACTIVITIES:

#### 1. Brainstorm (5 minutes)

Students brainstorm the resources they use to gather information. Ask students: Does the source tell the “whole” story? What other perspectives might exist?

#### 2. Analyze Media Images and Create Captions (10 minutes)

Split students into small groups to analyze the images on the next page using the guiding questions:

- What do you see in the image? What “story” does it tell?
- What is not shown in the image that might be important in understanding the story?

Have each group write a caption for each image, as if it were going to be published in a newspaper.

#### 3. Watch Video as Introduction to Overfishing (10 minutes)

As a class, watch the video “After the Fish are Gone.” Use the following guiding questions for students to consider while watching the video:

- What are changes fishermen are seeing in the ocean?
- How are the changes impacting the fishermen and their community?

#### 4. Reanalyze Media Images and Create Relevant Captions (5 minutes)

In groups, have students re-write captions using knowledge of overfishing gained from the video.

#### 5. Group Discussion (10 minutes)

Have small groups share both sets of captions they created with the class. Then, share the real captions with the group:

**Image 1:** “Tadi, a Bajau fisherman, spears an octopus in the south Sulawesi region of Indonesia. His village depends so thoroughly on troubled coral reefs that climate change and ocean acidification eventually could make it challenging to find food”<sup>3</sup>

**Image 2:** “Fishermen sort the mornings catch on an industrial trawler in Guaymas, Sonora. Early in the season, there is plenty of shrimp (brown) but as the season wears on most of it will be bycatch (white)”<sup>4</sup>

Discuss the similarities and differences, using the guiding questions:

- Why are our captions different? What does this tell us about how people view information?
- What does this tell you about how current events and science can be understood through the media?

<sup>3</sup> Steve Ringman. “Sea Change” Wins ONA 2014 Award for Explanatory Reporting.” *Pulitzer Center on Crisis Reporting*, <http://pulitzercenter.org/blog/ona-online-journalism-award-explanatory-reporting-climate-sea-change-seattle-times>

<sup>4</sup> Dominic Bracco II. “In the Sea of Cortez, Fighting for Scraps.” *Pulitzer Center on Crisis Reporting*. 28 July 2013. <http://pulitzercenter.org/reporting/north-america-sea-of-cortez-aquaculture-fish-fishermen-culture-fishing-labor-skiffs-pangas-commerical-boats-shrimp-unregulated-sardines-turtles-dolphins-sharks-clams>

## LEARN

### Understanding Overfishing Through Media

In our globalized world, we get information from many sources – print and online media, friends, families, social media, and more. However, they don't always tell us the full story. In this exercise, we'll look at images from the news, and how they can be interpreted from different perspectives.

Use the questions below to analyze these photos. For each image, write a caption that tells the story, as if they were going to be published in a newspaper, magazine, or online. After you watch the video, write a second caption based on the new information you know.

What do I see in the image? What "story" does it tell?

What is not shown in the image that might be important in understanding the story?



Write TWO captions, telling different stories about the image:

1.

2.

What do I see in the image? What "story" does it tell?

What is not shown in the image that might be important in understanding the story?




Write TWO captions, telling different stories about the image:

1.

2.



## Sustainability: Consuming Seafood

<b>TIME:</b>	Approximately 60 minutes in class and 30 minutes additional preparation outside class
<b>MATERIALS:</b>	Computer with internet for each group of students with access to “Monterey Bay Aquarium: Seafood Watch List” You can download the APP ( <a href="http://www.seafoodwatch.org/seafood-recommendations/our-app">http://www.seafoodwatch.org/seafood-recommendations/our-app</a> ) or print the guide at <a href="http://www.seafoodwatch.org/">http://www.seafoodwatch.org/</a>
<b>OVERVIEW:</b>	Students assess personal and community seafood consumption to determine environmental sustainability and oceanic impact.
	Students post their Recommendation on the Google Event Page ( <a href="https://plus.google.com/events/cdo5mc4unrn8dgcl678avt5tg8o">https://plus.google.com/events/cdo5mc4unrn8dgcl678avt5tg8o</a> ) prior to broadcast!

### LESSON PLAN INSTRUCTIONS:

#### 1. Brainstorm (5 minutes)

As a class, have students brainstorm what they already know about the seafood they regularly buy at the local supermarkets and restaurants:

- What kinds of seafood do you and your family typically buy/eat?
- Do you know where are they caught? How are they caught?
- Do you know if these types of fish are abundant in the ocean?
- Where is fish sold or served in our community? (ex: store, fish market, restaurant, cafeteria)
- Do you think it is your responsibility to be an informed consumer?

#### 2. Making it Local (10 minutes, might need additional time outside of class)

Divide the class into small groups. In their groups, have students research or interview one local restaurant/market/lunchroom that sells fish in order to answer the following questions:

- What are the top five types of fish sold at this location?
- Where do the fish come from?

#### 3. Environmental Impact of Seafood (20 minutes)

Have groups pick at least 3 different types of fish sold at their chosen restaurant/market to further research on the “Seafood Watch<sup>5</sup>” website. Instruct students to explore specifically the tabs “Seafood Recommendations,” and the “Fishing and Farming” tab under “Ocean Issues” to fill out their table.

#### 4. Group Discussion: (10 minutes) As a class, reflect on this activity in a group discussion.

- What are the most environmentally responsible ways of fishing and farming seafood?
- How can stores and restaurants be more environmentally responsible about the types of fish they sell? What are your recommendations for these businesses?
- What personal choices can I make to be an environmentally responsible seafood consumer?


#### 5. Make a Sustainable Seafood Recommendation (5 minutes)

As a class or in groups, instruct students to come up with at least one recommendation for their chosen restaurant/supermarket in order to sell more sustainable options of fish and one for their household for purchasing or eating fish. *Ex. The QuickMart should ensure Coho Salmon they carry is from the U.S. and farmed in tank systems, not farmed in net pens, to ensure high amounts of antibiotics aren’t used and won’t affect the people that eat them and other fish populations.*

<sup>5</sup> “Seafood Watch.” Monterey Bay Aquarium. <http://www.seafoodwatch.org/>

### Sustainability: Consuming Seafood

After interviewing a local market or restaurant to find out what fish is sold at a chosen local market or restaurant, use the Monterey Bay Aquarium's website, "Seafood Watch" to continue your research. Be sure to check out the "Seafood Recommendations," and the "Fishing and Farming" tab under "Ocean Issues" to complete your table.

Name of the Fish	Is it a "Best Choice," "Good Alternative," or fish to "Avoid"?	What fishing or farming method is used to catch this fish?	Is this method environmentally responsible? Why or why not?
<b>Example:</b> <b>Atlantic Salmon</b> 	<i>Good choice</i>	<i>Farmed in recirculating aquaculture systems</i>	<i>It is environmentally responsible since it addresses environmental concerns such as wastewater treatment and it minimizes pollution beyond the farms.</i>
1.			
2.			
3.			



## *Emptying the World's Aquarium Guest Speaker: Erik Vance*<sup>6</sup>

Erik Vance is a native Bay Area writer replanted in Mexico as a non-native species. Before becoming a writer he was, at turns, a biologist, a rock-climbing guide, an environmental consultant, and an environmental educator.

His work focuses on the human element of science – the people who do it, those who benefit from it, and those who do not. He has written for *The New York Times*, *Nature*, *Scientific American*, *Harper's*, *National Geographic*, and a number of other local and national outlets.



He is currently working on his first book, under contract with National Geographic Press about how the mind and body continually twist and shape our realities.

### **Preparing for the Hangout on Air!**

With your class, prepare two questions for the guest speaker (or peers during the live event), about overfishing and its impact on fishermen, communities and/or the environment.


Questions for Guest Speaker:
1.
2.

*\*\*Don't forget to review the Hangout on Air outline, to prepare for the event!*

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<sup>6</sup><http://www.erikvance.com/bio/>

## Google Hangout on Air Outline: Emptying the World's Aquarium

<b>TIME:</b>	Day/Date: <i>March 24, 2015</i> Tech Dial-In Time (30 min. prior to start): ____:____ AM / PM Hangout on Air Start Time (60 minutes): ____:____ AM / PM
<b>MATERIALS:</b>	Google Hangout on Air Outline (p. 9-10), prepared with comments and questions
<b>OVERVIEW:</b>	<b>Get ready for your Pulse session with these two steps:</b> 1. Complete the LEARN and ACT activities with your class 2. Review the outline and prepare comments and questions.
	Post follow-up questions and comments to the Google+ Event Page!

### 1. Introduction and Greetings (7 minutes)

GNG facilitator welcomes all participants to the “*Witness to Emptying the World's Aquarium*” Pulse x Pulitzer Program.

All **Ambassador** Schools (*those participating live via video*) will introduce themselves on screen.

All **Participants** Schools will introduce themselves in the Q&A box to the right!

<b>Schools:</b> Have one student introduce him/herself and your group.
➤ Name:
➤ School Name and Location:
➤ One eye-opening fact that you learned about overfishing through the curriculum:

### 2. LEARN: Guest Speaker (10 minutes)

GNG facilitator provides a brief introduction of Erik Vance, and a brief overview of his relevant experience.

Using the information students have learned about overfishing through the curriculum and the role that youth can have in raising awareness of sustainable seafood consumption, record three thoughtful and reflective questions for our guest speaker. A GNG facilitator will guide a discussion between the guest speaker and the students, starting with a guiding question:

<b>Questions for Guest Speaker:</b>
1.
2.
3.

## HoA OUTLINE

### 3. Peer Discussion (30 minutes)

How does the future of fisheries and our oceans impact you and your community?

Questions may include:

- What have you learned about or experienced that motivates you to implement your sustainable seafood recommendation?
- Do you think the sustainable seafood recommendation would work in your schools and communities? Why or why not?
- Do people in your community rely on fishing for their food or for their livelihood? Do people in your community rely on hunting for their food or for their livelihood? Are hunting and fishing similar or different?

### 4. Action (10 minutes)

GNG and Erik Vance now challenge all students to put their sustainable seafood recommendations into action!

Students will discuss how they can implement their project in their community.


- How can we become responsible consumers of seafood?
- What role should youth play in creating a sustainable fishery?

### 5. Conclusion (3 minutes)

Thanks to all for participating! Don't forget to stay in touch in between using the online platform and to continue your involvement in GNG programs.

**Use this space to record any questions or thoughts that you didn't have time. Then ask them on the Google+ Event Page!**

## Reflect and Connect

<b>TIME:</b>	15 minutes post-Google Hangout on Air
<b>MATERIALS:</b>	Access to the internet –Pulse Google+ Event Page
<b>OVERVIEW:</b>	<div>            Post reflections on Google+:           <ul style="list-style-type: none"> <li>• Educators fill out IVC Feedback Form;</li> <li>• Students post to the <i>Pulse</i> Google+ Event Page.</li> </ul> </div>

### INSTRUCTIONS

#### 1. Connect: Students and Educators (15 minutes)

**Students:** Direct students to the student reflection worksheet and encourage them to share at least one final reflection or a question, on behalf of their class with the Google+ Event page: <https://plus.google.com/events/cdo5mc4unrn8dgcl678avt5tg8o>.



Ask students to share one of their reflections on the Google+ Event Page.

#### Ambassador School Educators:

Fill out the Pulse Feedback form at: <http://goo.gl/forms/NZsdElyA4l>

## REFLECT

### Reflect and Connect

Reflect on the questions below, then go to Google+ Event Page (<https://plus.google.com/events/cdo5mc4unrn8dgcl678avt5tg8o>) and post your thoughts!

What was the most interesting or surprising thing you learned about overfishing? How did it make you see this issue differently?

What questions do you still have for your peers? The guest speaker?

How is this issue relevant to your lives and your country/community? How do you plan to engage others on this topic at your school or in your community?

### Connect on Google+



Pick at least one reflection or question from your class to share in a Google+ Event Page post. Post and see what your partners are saying!

## Resources

*This section contains additional resources for students and educators.*

- **Monterey Bay Aquarium's Seafood Watch:** <http://www.seafoodwatch.org/-/m/sfw/pdf/guides/mba-seafoodwatch-national-guide.pdf?la=en>
- **National Marine Fisheries Service Regional Councils:** <http://www.nmfs.noaa.gov/>
- **Pulitzer Center on Crisis Reporting-** Mexico: Emptying the World's Aquarium  
<http://pulitzercenter.org/projects/sea-of-cortez-aquaculture-ocean-fish-farming-global-market>