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Coming to Know about Sacrifice Zones and Eco-Activism: Teaching and Learning about Climate Change

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Abstract

This paper shares curricular tools to engage in inquiry around issues related to environmental justice for upper elementary and middle grades students. Focusing on developing background knowledge and critical reading practices, the unit offers approaches to fiction and non-fiction online sources that promote an inquiry stance based in empathy and exploration. In addition to developing critical stances and questions to explore sacrifice zones and eco-activism, this paper shares many resources (texts and scaffolded tools) for praxical application in classrooms.

Keywords: Activism, critical literacy, literature, praxis, new literacies

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In *This Changes Everything: Capitalism vs. the Climate* (2014), Naomi Klein contends that the central problem of climate change is a capitalist economic model that drives widening inequalities and fosters escalating environmental devastation. The documentary film with the same title, directed by Avi Lewis (2015) and narrated by Klein, weaves together stories of people living in areas most affected by environmental degradation. These areas, called "sacrifice zones" (Lerner, 2010), are mostly populated by poor, minority residents and are located near oil refineries (such as the Alberta Tar Sands), places where fracking threatens drinking water, communities near coal-based plants, or reservations or places populated by high numbers of indigenous peoples. While texts about people's experiences within sacrifice zones chronicle hardships endured living in these areas, their stories are also imbued with resilience, struggle, and solidarity as people in communities and through different coalitions work to transform these conditions.

Here we sketch out a set of approaches to reading, inquiry, and discussion that focuses on sacrifice zones. We build on and integrate components of two previous classroom units of study with a fifth-grade classroom in a rural, Midwestern, White-majority, high-poverty context. The first unit focused on the current refugee crisis in North Africa and the Middle East. This unit began with a read aloud of an adolescent book, *Fish,* by L.S. Matthews (2003), moved to critical reading of websites based on student desire to help refugees, and culminated in a shared writing project aimed at soliciting donations from families and friends to support refugee children in their transition to living in the United States. The second unit took the form of student-directed book clubs around a text set focused on environmental issues, ranging from animal rights to

Hurricane Katrina to eco- (or environmental) activism and across genres—from dystopian climate fiction to fantasy to realistic fiction. One group read the realistic fiction book *Flush* by Carl Hiaasen (2005) about a family of eco-activists. With an emphasis on the effects of poverty and global migration, access to privileged landscapes, and children's agency in connection to corporate sponsored eco-crime and, via activism, the two units provide a useful foundation for inquiry into sacrifice zones and eco-activism using both fiction and online nonfiction texts.

Subject Level, Goals, & Objectives

For the purposes of this set of resources, we recommend approaching the issues of sacrifice zones and eco-activism with upper elementary and middle grades students in the global "North," Because these specific topics might not be familiar territory in many schools, this unit focuses on building core background knowledge through an emphasis on: (1) fiction reading and (2) online nonfiction reading. One of our primary goals is for students to understand that outside interests (such as, powerful oil, gas, and coal companies or other vested interests) create sacrifice zones and directly harm both people and planet. The unit is intended to foster a sense of urgency related to environmental degradation in the US The local realities of climate change—e.g., oil spills, water and air pollution—that children face today must be met with not only their attention to these challenges, but also with a means by which to empathize, evaluate, and act on the behalf of themselves and others. Thus, these resources and suggested approaches provide opportunities for children to explore what it means to live in and near sacrifice zones and how their own actions can work to improve conditions for themselves and others.

Table 1

Guiding Questions, Goals, & Objectives

Core Components	Key Literacy Engagements	Objectives	Guiding Questions for All Texts	Goals for All Texts
Fiction Reading	*Flush* by Carl Hiaasen • Read Aloud • Discussion • Drama	• Respond to the story of a sacrifice zone through discussion • Identify causes of sacrifice zones and experiences of characters experiencing one • Interrogate multiple perspectives from the sacrifice zones through drama	• What is a sacrifice zone? • How do people behave toward each other and the planet? • What do we learn about sacrifice zones across a range of sources (e.g., fiction and non-fiction)? • What does it take to become an eco-activist?	• Enjoy read-aloud of novel • Develop shared language of the issue • Understand that outside interests (such as, powerful oil, gas, and coal companies) create sacrifice zones • Develop empathy perspectives for people living in sacrifice zones in the US • Develop understanding by reading across a range of resources (literature, non-fiction, web-based)
Online Nonfiction Reading	• Listening • Viewing • Online reading • Response to guiding questions • Discussion	• Develop criteria for identifying sacrifice zones in US contexts • Identify different experiences of people living in sacrifice zones • Evaluate responses by and hearing voices of people living in sacrifice zones		

Building Background Knowledge

Building background knowledge allows students to develop shared language around the concepts of sacrifice zones and eco-activism and to promote empathic perspectives for people living in sacrifice zones and working as eco-activists. There is a range of ways to bolster background knowledge. We outline two approaches here with an emphasis on using fiction and non-fiction. First, however, we offer some concrete examples of sacrifice zones and a working (but always adaptable) definition: a sacrifice zone is an area or group of people who are sacrificed to outside economic or environmental interests.

Some ways to build understanding with students include a close word study: Examine the word sacrifice. Ask students to draw, storyboard, or act out what the word sacrifice means to them. Look up the word in the dictionary. Ask students to interview friends and family about the word sacrifice.

Teachers can also appeal to a real-life example. One example of a sacrifice zone is mountaintop removal in West Virginia. With students, a Google image search of West Virginia mountaintop removal will provide images that can help students see the physical impact of mountaintop removal. In *A People's Curriculum for Earth* (Bigelow & Swinehart, 2014), teachers can find a discussion about the impacts of mountaintop removal on communities in West Virginia to share with students. Students can also expand their search beyond images to explore the companies who are driving mountaintop removal and legislation about it at the state and national level. Good questions to consider here are: *who benefits from the removal of these mountaintops (for example, companies, people far away, people who live nearby)? Who is harmed? What is the long-term outcome on people and planet?*

Fiction

Fictionalized accounts of sacrifice zones offer an engaging start to building background knowledge and developing empathy. In particular, fiction allows students to explore identities and potential responses to inequitable treatment of land and people (Hammer, 2010). We recommend the realistic fiction book *Flush,* by Carl Hiaasen (2010), because it is set in the US and centers on the challenges of activism in the context of a sacrifice zone. One part adventure story, one part mystery, and one part family drama, it tells the story of child eco-activists in the Florida Keys who fight back against damaging economic interests in their community. Their lives as eco-activists are complicated by local bullies and family problems, demonstrating the complexity of being a child and an activist. In addition to reading about characters like themselves, students will also encounter characters and systems of power, such as laws that privilege the wealthy and tourists, which create and maintain sacrifice zones (e.g. beaches, watersheds, and people who make their living on the water). This funny and exciting book will help students grapple with why people take action to help both people and environment.

Here are three recommended reading practices and activities to build background knowledge and empathy with *Flush.* We see the first two—read aloud and discussion—happening in tandem. The process drama is an ideal follow-up activity. We also include a suggested timeline for these activities.

Read aloud. Rather than do a traditional novel study or close reading of the book, we suggest a whole class read aloud. Read the book daily to your class. Stop often to laugh together at the funny parts, discuss shocking moments, explore the systemic inequities, and debate the character's actions.

Discussion. Read aloud has the potential to prompt rich discussion, so we suggest posing questions to promote discussion during and after each reading. Focus attention on deliberating the morality of character actions and identifying characteristics of sacrifice zones in the text. If your school and students have access, consider moving some discussion online. We also recommend keeping a running list or web of ways your class is making sense of and defining the idea of sacrifice zones and of eco-activism based on your reading and discussion. Here are a few suggested discussion prompts:

- *A focus on Noah and Abbey's choices*: Why does Noah decide to help his dad? Why would Abbey try to get video footage on her own? What made using the dye in the toilets such a good way to "catch" Dusty? Would you make these same choices? Are these "good" or "moral" choices to make?
- *A focus on the locale*: What makes where Noah and Abbey live so special to them? What is important about this place? How do people live and work here? How does the casino on the Coral Queen fit into the local community? What do you think needs to be changed about where Noah and Abbey live to make it a better place to live?
- *A focus on debate and morality*: Is sinking the Coral Queen an acceptable response to Dusty polluting? Is Noah and Abbey's dad right to stay in jail? Should Lice have skipped town? Should Shelley go back to work for Dusty on the Coral Queen? Is a monetary fine enough of a punishment for pollution? Should Grandpa have blown up the boat?
- *Timeline for read aloud and discussion*: two weeks. The novel is 21 relatively short chapters; thus reading two chapters or more a day will make for a quick and focused collective reading. Teachers should read more slowly or quickly as befits their own students and curricular needs.

Process Drama. Help students develop empathy for fictional characters by asking them to "step into a character's shoes" and consider *why* characters might behave the way they do. This helps develop activist orientations by also interrogating systems of power (Lewison, Leland, & Harste, 2014).

One quick and easy way to do this is during reading. Pause and ask students to demonstrate an emotional response to a scene in the book (Prompt: "Stand up and show me with your face and body how Noah is feeling right now"). Another idea is to have students step into the role of different characters and have an impromptu conversation with one another. Another helpful way of jumping into process drama is to use fishbowl techniques with outgoing and confident students to model what 'jumping into character's skins' can look like for more timid students.

Here are a few specific and involved examples of when to use process drama with *Flush*. These are only suggestions! Any moment in the book that seems to spark a great deal of discussion or questions on the part of students is a great place to do process drama.

- In Chapter 4, a reporter interviews Noah about his dad sinking the *Coral Queen* and other actions he has taken (such as fighting with customers, etc.). Have students re-enact this interview with one student acting as the reporter and one student acting as Noah. Then ask students to have the reporter "interview" other people in the book about the sinking: Abbey, Mom, Lice, Shelly, Dusty, and so on, with students stepping into those roles. Finally, come together as a whole group to discuss how they enacted these different people characterizing the sinking and Noah's dad's choices.
- On page 90, Noah and Shelly are debating whether she should go back to work at the *Coral Queen* after Lice has gone missing. Ask students to get in pairs and step into the

character's shoes to debate this decision. Support students in this by asking them to first think about why Noah and Shelly might think this was a good or a bad idea. Consider questions of her safety, her financial stability, the likelihood she would be helpful in proving Dusty is polluting, and who would benefit the most from her decision.

- At the end of the book, the *Coral Queen* has been blown up (likely by Grandpa). Ask students to imagine a conversation between Grandpa, Dusty Muleman, Noah, and a member of the Coast Guard. How would each respond to this final major action in the book? What stance would each take on blowing up the *Coral Queen*? What does each character think is the future of the island, the marina, and the beach?

Timeline for process drama. This technique can be used as you have time following a read aloud. We recommend 20-25 minutes for the whole activity including introducing the scenario, allowing students time to act with one another, and debriefing through a written reflection or whole group discussion.

Online Nonfiction

Reading online sources provides students examples of real life sacrifice zones and activists' situated experiences and motivations. Reading a set of online resources with guiding questions will help students explore and evaluate the choices that children and adults make as eco-activists in response to a range of complicated problems in the world.

Choosing a range of online resources helps students evaluate the types of texts that are available to them every day as they use the Internet. Here we share resources that highlight the impacts on and actions of people living in sacrifice zones with a range of "reading" options (listening, reading, and/or viewing). These sources also address several intersections of

inequality found in sacrifice zones—socioeconomic status, race, ethnicity, language, gender, sexual orientation, and age—and highlight the work of child and youth activists.

These resources (or other sources teachers find on their own) can be read in ways that best fit classroom and student needs. We recommend using a graphic organizer in guiding students to identify sacrifice zones and exploring the actions and motivations of eco-activists (see one example in Appendix A and a model of how this might look below). There are many ways for students to engage in online reading. Here are two possible grouping approaches that can be helpful:

- Whole group reading/viewing/listening: as a whole class, gather around the SmartBoard or with iPads, computers, or cell phones. Doing so will allow for a shared experience in responding to the organizer, thinking aloud, or prompting discussion of the questions in the organizer in addition to inviting written response. This is especially helpful for video or audio or as a start to reading (or introducing the website and specific features of the online source) before releasing into smaller groups or pairs.
- In pairs or groups of three, students can dive into sources and use the graphic organizer in the appendix to answer questions about each source together. Prompting students to note questions that come up for them as they read can also help support engaging in complex online reading. Debriefing about the questions they came up with while reading as a whole group can help teachers with making choices about how to read future sources.

Here is a list of suggested sources. We have provided the primary mode of engagement with each online source (reading, viewing, listening), a brief description of the content, URL link, as well as a brief qualitative explanation about complexity within each source.

For upper elementary & middle school students:

- Website (reading): Story of Chicago student-activists who took action to demand cleaner air in the high poverty, primarily Hispanic neighborhood of Pilsen (http://www.peoplesworld.org/tired-of-pollution-chicago-students-demand-clean-air/[1]). Complexity comes from the length of the text that is uninterrupted by images or hyperlinks. There is also some vocabulary that may be challenging for young readers.
- Video (viewing): Video from MSNBC by kids who have filed suit against the federal government claiming the use of fossil fuels is harming their futures (http://www.msnbc.com/msnbc/watch/kids-sue-president-obama-over-climate-change-5029909158092). Complexity comes from a dynamic webpage with numerous hyperlinks and videos.
- Video (viewing): Video from YouTube of a TedXTalk by youth environmental activist, Xiuhtezcatl Martinez, about the global crisis and possible actions. Includes a rap song with his brother (https://www.youtube.com/watch?v=o2V2yVkedtM[3]). Complexity comes from following lyrics within a performance of rap in addition to some specific contextual references.
- Photo essay (visual analysis/reading): *The Guardian* interactive photo essay, which includes clickable photos that show immediately after Hurricane Katrina and current images of the same places (http://www.theguardian.com/cities/2015/aug/13/after-katrina-new-orleans-then-and-now-interactive-photographs[4]). Complexity comes from the history and background knowledge about Hurricane Katrina necessary to contextualize images.

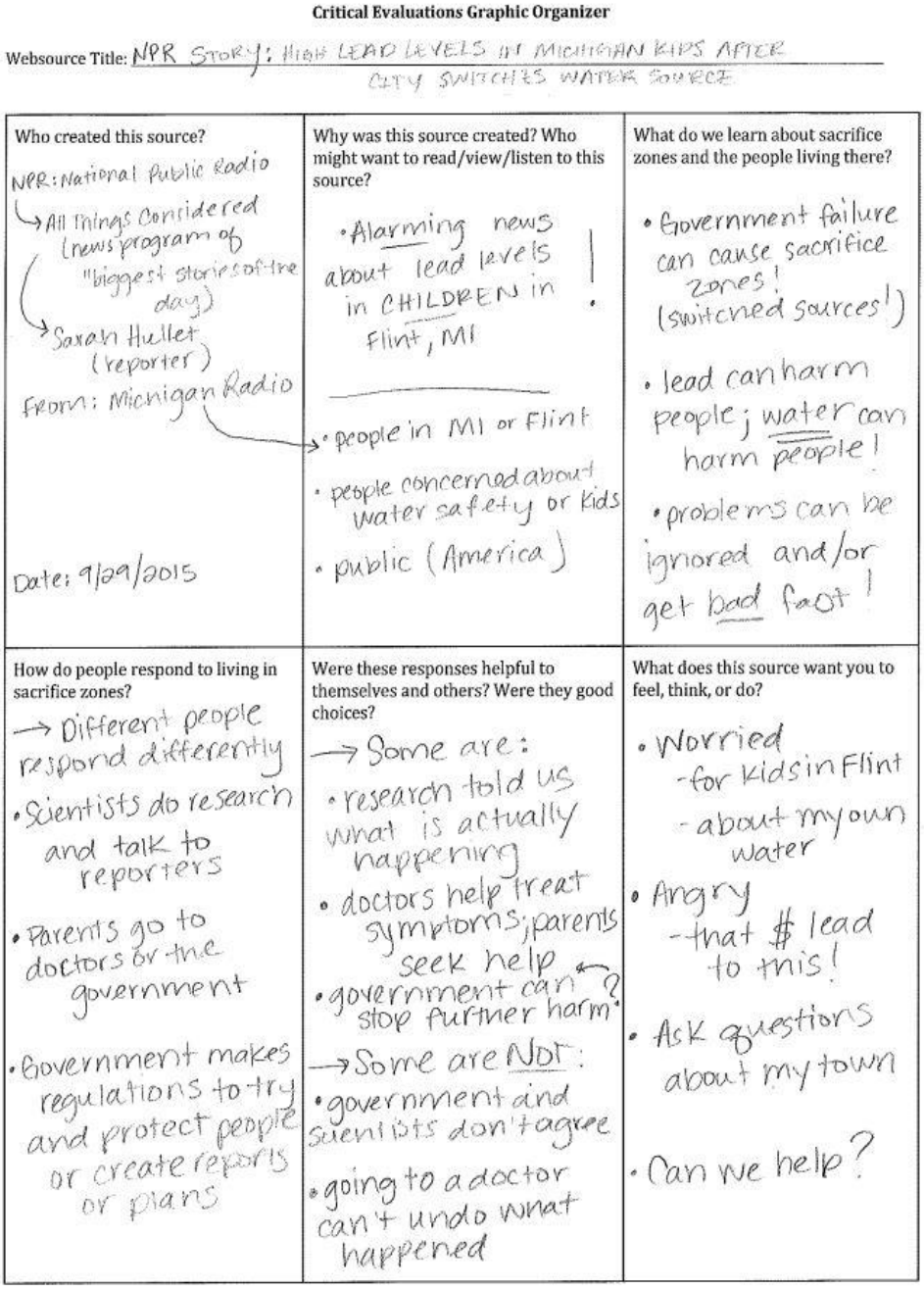
For middle school students:

- Radio (listening and/or reading): NPR story about recent lead poisoning of children in Flint, Michigan after the city made a cost-saving move to switch water sources

(http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source[5]). Complexity comes from the length of news story and from the specific science-based vocabulary and graphs.

- Interactive news site (reading & clicking): News story about air pollution in Indiana, includes interactive maps of the state's air pollution and the work of a photographer in documenting pollution (http://www.wthr.com/story/21051655/13-investigates-indianas-toxic-air-pollution-air-quality[6]). Complexity comes from length of the story and the large number of hyperlinks.

Here is a model example that can be used as a guide for students to then do similar work using the graphic organizer from Appendix A.



Critical Evaluations Graphic Organizer

Websource Title: NPR STORY: HIGH LEAD LEVELS IN MICHIGAN KIDS AFTER CITY SWITCHES WATER SOURCE

Who created this source?	Why was this source created? Who might want to read/view/listen to this source?	What do we learn about sacrifice zones and the people living there?
NPR: National Public Radio → All Things Considered (news program of "biggest stories of the day) → Saxon Hullet (reporter) From: Michigan Radio Date: 9/29/2015	• Alarming news about lead levels in CHILDREN in Flint, MI ! → • people in MI or Flint • people concerned about water safety or kids • public (America)	• Government failure can cause sacrifice zones! (switched sources!) • lead can harm people; water can harm people! • problems can be ignored and/or get bad fast!
How do people respond to living in sacrifice zones?	**Were these responses helpful to themselves and others? Were they good choices?**	**What does this source want you to feel, think, or do?**
→ Different people respond differently • Scientists do research and talk to reporters • Parents go to doctors or the government • Government makes regulations to try and protect people or create reports or plans	→ Some are: • research told us what is actually happening • doctors help treat symptoms; parents seek help • government can stop further harm? → Some are NOT: • government and scientists don't agree • going to a doctor can't undo what happened	• Worried - for kids in Flint - about my own water • Angry - that # lead to this! • Ask questions about my town • Can we help?

Figure 1. Critical Evaluations Graphic Organizer Model

Timeline for Online Nonfiction Reading. Depending on classroom schedules and accessible technology, online nonfiction reading can occur concurrently with reading *Flush* or following the conclusion of the book. We suggest spending 1-2 days on each source and using a

system to track student questions or thoughts across the days (a large pad of paper, a graffiti board, an online discussion board, etc.). During each day with a source, classrooms can spend 25-35 minutes across introductions to the web source, reading, viewing, or listening, and then debriefing as a large group.

Assessments & Accommodations

The key goal of this unit is to develop background knowledge (shared language and empathy) based on reading across a variety of sources. To assess students on their understanding of sacrifice zones and empathy for people living within them, we suggest asking students to work individually or in pairs/small groups to identify additional texts (e.g. fiction: short story, poetry, novel; nonfiction: radio, video, website, article) about sacrifice zones. Students can share their source with classmates detailing the context of the sacrifice zone, impacts on people and environment, and the responses or activism by citizens. As a class, students can compare and contrast the differences in impacts of sacrifice zones on people (e.g. health, economy, labor) and environment (e.g. pollution to water or air, oil spill, deforestation) and responses or activism (e.g. protests, service, education).

Students learn and communicate in many different ways. Here are some ideas for meeting the needs of your students for whom English is not a first language or have disabilities or specialized educational plans.

- Supporting Reading
    - Provide copies of *Flush* and online resources for students to follow along or take home to read ahead. Use iPad or Kindle versions of text when needed or if possible.

    - Consider online web sources that meet individual student needs, e.g., sources that include transcripts or closed captioning with subtitles.
    - Provide necessary vocabulary ahead of time; create word walls or put a post-it of key vocabulary on students' desks.
- Supporting Response
    - Provide discussion prompts for students ahead of time and co-determine a comfortable time to share with classmates.
    - Allow artistic response: provide space (such as journals or digital places) to respond artistically through collage, drawing, painting, etc.
    - Consider adaptations to our suggested graphic organizers that meet specific needs: e.g., break down questions into multiple, simpler questions, provide lines or bullets indicating the correct length of response, provide larger spaces for students with fine motor skill needs or for those who might need to respond without words.

Possible Next Steps

We have sketched out some possible ideas to help younger learners engage with the topic of eco-activism and, more specifically, the issue of sacrifice zones. There is much room here for flexible interpretation of these ideas as teachers know what works best for their own students. We do think maintaining an inquiry stance and a commitment to pose and pursue questions is crucial to the process. We also believe that learning is often most powerful when it centers on local experiences, concerns, and possibilities. As a next step with this unit, for example, students can work individually, in pairs, or in small groups to identify, research, and engage "on-the-ground" with a local environmental problem or explore the most salient questions across readings (such as: what are child activists doing about environmental issues or what is the state

of our water here in town?). Children can compare their findings and efforts to what they learned reading fiction and non-fiction resources outlined above. Inquiry requires posing and pursuing important questions about the world around us. Our hope is that this set of approaches and texts can support classrooms of teachers and students in asking informed questions and generating sophisticated understandings about sacrifice zones and what can and might be done in response through different forms of eco-activism, always with an eye toward next steps and follow up within local contexts.

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Appendix

Critical Evaluations Graphic Organizer

Websource Title:
_____

Who created this source?	Why was this source created? Who might want to read/view/listen to this source?	What do we learn about sacrifice zones and the people living there?
How do people respond to living in sacrifice zones?	Were these responses helpful to themselves and others? Were they good choices?	What does this source want you to feel, think, or do?

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