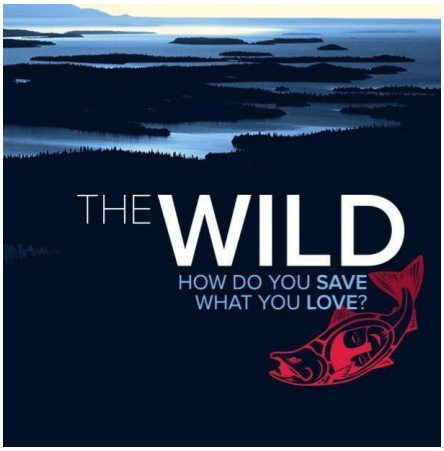


Curriculum for Grades 6-12

Adapted for teachers to use in online instruction

About

Bristol Bay, Alaska is the *last* fully-intact wild salmon system left on Earth. It is also home to the worlds' last functioning salmon culture. The Yupik, Dena'ina, and Alutiiq Peoples have thrived here since time immemorial because of Bristol Bay's abundance of wild salmon. Today, half the world's supply of sockeye salmon comes from Bristol Bay. It supports more than 14,000 American jobs a year and contributes over 1.5 billion dollars to our economy – year after year. In the last five years, Bristol Bay's wild, sustainable sockeye salmon runs have yielded over 250 million sockeye salmon returning to their pristine birth-houses. 2020 is expected to see over 50 million salmon return again to sustain new life for themselves, us, and 137 other species.

If built, the proposed Pebble Mine will be one of the world's largest open-pit gold and copper mines - and will be located directly in the headwaters of Bristol Bay's primary salmon watersheds. Businesses and consumers who depend on access to salmon would be jeopardized.

The Wild director, Mark Titus, grew up fishing for salmon. He worked in the Bristol Bay salmon industry for years and has many close friends and family who still fish in the Bay. To him, this issue is personal.

The documentary film, *The Wild,* and the accompanying curriculum provide an exceptional opportunity for you and your students to engage in a real-life struggle to save the last fully-intact wild salmon system left on Earth. The film introduces students to stunning visuals of the pristine wilderness that is the Bristol Bay watershed and to those who survive and thrive on the bounty of this salmon run. They also learn of the very real and immediate threat to this unique place, delving deeply into the issues and perspectives of a variety of stakeholders. By taking action, students can play a vital role in preserving this rare and valuable resource, as well as the lives of those who depend on the return of this healthy salmon run.

Note: *This version has been adapted for teachers and facilitators of instruction for students at home or various types of online instruction. The unit is designed for use with a class of students, working in groups of 4 or more. Please adapt to your specific needs.*

Table of Contents

Lesson 5: The Issues from Stakeholder Perspectives

Time frame: About 60-120 minutes

Objectives:
1) To understand the complex issues in the movement to protect the Bristol Bay watershed from the perspective of various stakeholders.
2) To take on the perspective of a particular stakeholder group in preparation for a panel discussion.

Lesson 6: Stakeholder Presentations and Discussion

Time frame: About 60 minutes

Objectives:
1) To apply the information gained about the movement to protect the Bristol Bay watershed in a panel discussion that involves various stakeholder groups involved in the issue.
2) To be able to discuss the complex issues involved in the protection of the Bristol Bay watershed with classmates in a manner that is fact-based and respectful.

Lesson 7: Taking Action – How do you save what you love?

Time frame: About 120 minutes; can be easily split into smaller time blocks

Objectives:
1) To have students reflect again on a place or places where they feel a deep connection.
2) To have students take action on ways they can save a place or places where they feel a deep connection.
3) To have students take action on ways they can influence the permit process on the Pebble Mine
4) To have students join a larger community of people committed to saving Bristol Bay

Getting Started

Documentary films

1) *The Wild* - It is recommended that you preview the film prior to using it with your student to provide you with information and context prior to beginning instruction. It is 64 minutes in length. To access the film for free, click on this link.

NOTE: Please plan your instruction so that your rental period won't run out before you finish the unit, in case you want to refer back to the film along the way. Combining lessons may make that more efficient.

2) *The Breach* is director Mark Titus' award-winning 2014 documentary film that provides additional context before viewing *The Wild*. It focuses on the loss of salmon in Alaska and the convoluted pressures from various sources that threaten the future of wild salmon. You may chose to show this film to your student prior to beginning this unit. It is 90 minutes in length.

You can access *The Breach* film for free here:

Prior knowledge

Students should have some background about watersheds prior to beginning this unit. These resources can be helpful in providing some foundational knowledge on watersheds:

1) Short and simple video on "What is a Watershed?"
https://vimeo.com/94478212

2) More comprehensive reading from "How Stuff Works". Read Pages 1-4
https://science.howstuffworks.com/environmental/conservation/issues/watershed.htm

3) Locate and view the watershed in your area:
https://water.usgs.gov/wsc/map_index.html

Suggestion for creating an online unit plan for your students

A teacher has created on online unit for their students in Common Curriculum. A pdf and extras of his unit plan is included for you on the web page here. Cost is minimum $2 or whatever you'd like to pay. If you can't afford this, code for free purchase is TEACHER FREE.
https://evaswildstories.vhx.tv/checkout/the-wild-teacher-education-kit/purchase
Online resources

Helpful article comparing various options: this article explains options for online connections. Some are free, some are by subscription: https://www.newsweek.com/video-calling-applications-download-use-zoom-houseparty-coronavirus-covid19-1493993

Zoom tips for teachers – created by teachers!
https://docs.google.com/presentation/d/1m_t-8-BjCHCeeA89eijagCNwgQuQSGCJDUiZxJ0Nr70/mobilepresent?fbclid=IwAR2C7Zv-tWTNZQTS36MPlzB5fDa4h1iP6p8Q2aENr-YoJ4iwEPS1rwFNP5Q - slide=id.p

Free to use

Google Classroom:
Educators can create classes, distribute assignments, send feedback, and see everything in one place. Classroom also seamlessly integrates with other Google tools like Google Docs and Drive. https://support.google.com/edu/classroom/answer/6020279?hl=en&authuser=0

Google Groups: allows you to create and participate in online forums and email-based groups with a rich experience for community conversations. Organize with favorites and folders, choose to follow along via email, and quickly find unread posts.
https://support.google.com/a/users/answer/9282667?hl=en

Skype: a telecommunications application that specializes in providing video chat and voice calls between computers, tablets, and mobile devices over the Internet. Skype also provides instant messaging services. Users may transmit text, video, audio and images. Skype allows video conference calls suitable for online instruction. https://www.wikihow.com/Skype

Facetime: Note: this program must be used with Apple products like iPhones and Mac computers. https://www.wikihow.com/Use-FaceTime

Online 'mechanics'

Prior to starting the unit, make sure you and your students know the following aspects of online learning:

For you:
- how to assign students to chat groups
- how to use the chat box
- how to share your screen
- how to mute the whole class
- find a location to post documents where your students can access them

For your students:
- how to raise their hand
- how to upload their comments or ideas to a class list
- how to unmute themselves when they want to speak
- where to find documents
- how they will signal you when their chat groups have questions or are finished with their tasks

Lesson 1 – *The Wild*: how do you save what you love?

Objectives

1) To have students reflect on a place where they feel a deep connection.

2) To introduce students to key people from the film *The Wild* who have a stake in saving Bristol Bay and its watershed.

Time Frame

- about 60 minutes if you split the film into two parts
- about 100 minutes if you show the film in its entirety.

What You Need

For the class:

❑ 1 link to the documentary *The Wild*. To access the film, click on this link.

For each group of 4 students:

❑ 1 set of 4 quotes from the document, "Featured Speakers From the Film, *The Wild*" found in the Teacher Test Kit folder at this link.

For each student:

❑ Science notebook

❑ 1 quote from a Featured Speaker from the film

Note: *There are a total of 10 Featured Speakers. Divide the quotes from the speakers among your students so that each speaker is represented at least once.*

Preparation

The Day Before Class

1. If possible, preview *The Wild* prior to using it with your student to provide you with information and context prior to beginning instruction. It is 64 minutes in length. To access the film, click on this link.

2. Create a way to present these guiding questions to the class as they begin the unit:
    - Think of a natural place that you feel connected to.
    - Have you been there recently?
    - Has it changed since you first made your connection? If so, how? If not, why not?
    - What is the future for this place you are connected to?

3. Post this quote so students can have it to reflect on through the entire unit:
"Everything is connected by water. Sea to cloud → cloud to rain → rain to river → river to sea. When you touch water in one place, you're touching it everywhere."

4. Divide up quotes from the “Featured Speakers from the film, *The Wild”* found at the end of this Lesson. There are 10 Featured Speakers. Divide the 10 speakers between your students so each student has one quote. Divide the quotes from the speakers among your students so that each speaker is represented at least once.

Students will work in groups to share information about key people in the film to instill curiosity about what’s to come. Quotes from the film will go along with the name and occupation. These are the Featured Speakers:

Tom Colicchio – chef
Adrian Grenier – actor
Zaria Forman - artist
David Chambers - scientist
Rick Halford - former Alaska state Senator,1982-2002
Alannah Hurley - Yupik subsistence fisherwoman
Steve Kurian – salmon boat captain and drift netter
Avery McCammon - student
Tom Collier – CEO, Pebble Limited Partnership
John Shivley – Chairman of the Board, Pebble Limited Partnership

Begin the Lesson

1. Post the guiding questions for your students to answer. Have them think for a bit, then write their answers in their notebooks.

- Think of a natural place that you feel connected to.
- Have you been there recently?
- Has it changed since you first made your connection? If so, how? If not, why not?
- What is the future for this place you are connected to?

2. Have students signal you when they have finished writing. Put them in pre-assigned chat rooms for this next part. In their chat rooms, have them take turns sharing anything they feel comfortable telling their group. Give students a few minutes to add any notes to their answers after hearing perspectives of others.

3. Bring students back fro their chat groups. Allow any students to share some of their answers with the class.

3. Reveal the quote about water:
“Everything is connected by water. Sea to cloud → cloud to rain → rain to river → river to sea. When you touch water in one place, you’re touching it everywhere.”

In their notebooks, ask students to copy this quote, then have them write any impressions or thoughts they have. Ask if anyone would like to share their thoughts with the class. Take a few comments. Students will have the opportunity to reflect on this quote throughout the unit.

Meet the Featured Speakers from *The Wild*

1. Explain that they are now going to ‘meet’ ten people who were interviewed in the documentary film, *The Wild.* Each of these people are concerned about a mine being built upstream from the last wild salmon run in the world in Bristol Bay, Alaska. Ask if any students have heard of the Pebble Mine. Take a show of hands, but do not discuss the issue at this time.

2. Tell students that they have been assigned a quote. They will now read or re-read their quote and highlight what they find interesting and want to share with the rest of the group. They also need to answer the question, “If I met this person, what would I ask them?”

3. Send them into their chat groups. Once there, students will share what they think is the most important or interesting part about this person and their quote, and what questions they would want to ask if they could meet this person.

5. Allow 5 minutes or so for chat room discussions, then hold a class discussion. Post the name of each featured speaker on your screen and have the class share what they thought was the most important or interesting thing they learned from reading the quote. Ask for questions your students would ask of the Featured Speakers if they could meet them.

6. Have students send you their quotes and questions, then save their quotes to be used in the next lesson.

Show Part I of the Documentary, *The Wild*

1. Show the first part of the documentary, *The Wild*. You may want to have students jot down questions while they watch the film. Depending on your schedule, a recommended stop time is at 22:42 where the director says, “Somewhere inside me, a small spark of strength is starting to flicker just by being around these salmon people. Their love for these beings feeds my own”.

2. While the film is showing, record the comments students made about each Featured Speaker to use in Lessons 2 and 5.

3. Spend a few minutes to debrief the first part of the film. Ask students to jot down their first impressions in their notebooks. What impacted them the most? What do they want to know now?

4. Ask if any Featured Speakers stand out at this point.

Offline homework: Have students describe how one of the Featured Speakers is connected to a place. What is the connection? Would you feel the same way? Why or why not?

Lesson 1 - *The Wild*: how do you save what you love?

Student Handout: Featured Speakers from the Film, *The Wild*

Adrian Grenier – HBO Entourage actor; leader of the movement to end plastic pollution

"I think it's important to find something that you can focus on, something that is achievable. Something that you can touch and taste and see as becoming a reality. Make one friend to do this work with because you'll hold each other accountable. You can synthesize ideas, and you can also share in the successes and have fun. Don't do it alone. You don't have to carry the weight of the world on your shoulders".

Zaria Forman – award-winning fine artist who documents climate change through her pastel drawings

"It's very important for me to focus on the positive and that's why I depict the beauty as opposed to the devastation. When I make my drawings, I'm trying to create these huge images overflowing with detail that draw people in and inspire them. Instead of when you're bombarded with terrifying news – there's all kinds of terrifying news that you can find out there about climate change – but that to me is just paralyzing because it's such a massive issue. It's like 'where do I begin?'. I don't even know. Focusing on the positive is empowering. That's what I'm trying to do with my work. To celebrate these landscapes that are still here and to inspire people to want to do something to help protect them".

Tom Colicchio – Professional chef; head judge of the Bravo series, 'Top Chef'

"I think it's valuable to protect all of our wild places. We're running out of them. If we lose that, we're going to lose the connection to who we really are. Finding a place like Bristol Bay that is a truly wild place, that is sustainable unto itself, the question is, 'Why mess with it?" I think as chefs, we can make a choice. For me, the choice I make is to try to use the Sockeye Salmon that's coming out of Bristol Bay. If you think about what we've evolved from, we didn't evolve from cities. We evolved as a species from wild places. We need to keep some places out there where we can truly find our wild selves in nature. And that's what's really important".

David Chambers, Ph.D – Scientist specializing in large scale copper mining in aqueous areas

"They talk about making this a small mine. A 'small' mine is over a billion ton development. The small mine they are proposing is still larger than what the EPA found would be acceptable in its 2014 watershed assessment. Typically what a mining company does when it has a large ore body is they will only start out with a mine that they can justify as being economically developable to their shareholders. They aren't really ready, in almost every case, to go through to a final development size anyway. … In reality, a proposal like this is just Step One. … Once a mine goes in, for all practical purposes, you're not going to stop it. The damage has been done. To even imply that it's going to be a small mine and is going to remain that, doesn't pass the laugh test. We have the wrong kind of mine going into the wrong environment and we have an existing resource (the salmon) that's not only very productive but very sensitive. It's not a good bet".

Steve Kurian – Bristol Bay fisherman; skipper of the Ava Jane; drift netter

"You come up here and fish and you know that this is being taken care of and you're not overfishing the Sock (sockeye salmon). We've learned from what happened on the East Coast and in Europe with other fisheries and how they've been managed so it's great to see the biologists at work up here. They really run the show. The whole fleet will stand down – 500 boats – will sit for days so that we can keep this run sustainable. After being here 14 years and seeing these fish return in the numbers that they do, it just fascinates me. There's a super big place in my heart for these critters and it's just epic. And I just want to participate in this fishery".

Rick Halford - former state Senator in Alaska, 1982-2002; veteran bush pilot

"I don't think I ever ran for office without the support of the Alaska mining industry and I believed, as I do today, that good mines are a major part of Alaska's economy. If you're talking about small mines in mining areas – Fairbanks, the

interior – where the alternative resources are already destroyed or the alternative resources are of very low value, there's lots of places for mines. But this is a different kind of a question. I had no idea what a massive sulfide huge open pit mine could be until we started looking at the specifics of this deposit. The greatest enemy of this mine isn't politics, it isn't environmentalism, it isn't even economics. It's gravity. The bottom line is that the hole is gonna be a huge drain of the waters of a very wet area. … These places have been eliminated from the Earth time after time after time. This is the last one left that is a complete ecosystem with five species of salmon and its dependent cultures and all the industries around it. It's not worth the risk – it's not worth it in the short term or in the long term. What you end up with is a wealthy company far away in a 100-year cycle. … We don't have the right to do that to future generations".

Alannah Hurley - Yupik subsistence fisherwoman; gill netter

"Do we love salmon? I don't know if love is a strong enough word. It's who we are. It is who our people have been and who our people will continue to be. … Some things do not have a price tag. Some things are not for sale. If the fortitude of my ancestors tells me anything, it's that we draw strength from who we are as indigenous people. We draw strength from this amazing place that the Creator has given us. So I think, myself, like many people from here, I just get super emotional because when I think about what my grandma went through or what her mom went through or their grandparents went through to make sure that their grandchildren's grandchildren would know what it meant to be Yupik. To make sure that we could continue to exist here. That's not something you could ever buy or replace".

Avery McCammon – student

"It's a hard issue because we need resources like copper for a lot of things that we use every day like our phones and our laptops. Things that people would not be willing to live without. And so it's hard because the mines WILL be built. But it depends on WHERE they will be built. Our hope is not preventing mines but trying to alleviate their consequences and do the most damage control possible. The more people are informed about an issue, the more people are going to want to fight for that issue. It makes me want to work harder now that I know that the threat is even more real. They're even closer to building the mine".

Tom Collier – CEO, Pebble Limited Partnership (the company that will build the Pebble Mine)

"We spent 750 million dollars to take it into permitting and all of a sudden, the EPA says they won't let us take it into permitting. Now this administration has changed that policy. The statute says that if we get a permit, the EPA at that point can decide if they wish to veto this project. I don't think it will, if we get a permit. … You wouldn't spend $750,000,000 getting ready to go into permitting if you didn't have a high level of confidence that your science was adequate to come out of the permitting process with a project that could be built. You'd be an idiot to do that".

John Shively – Chairman of the Board, Pebble Limited Partnership (the company that will build the Pebble Mine)

"Rural Alaska, where I have spent a lot of my career, has huge problems. One of those problems is lack of economic opportunity. There's a very high cost of living in rural Alaska because there is no ground transportation for most villages. I don't see anybody in the opposition that has an alternative. We're looking at somewhere between 800 and 1,000 jobs. The average job in the mining industry pays between $90,000 and $100,000 per year. It's got to make sense for local people. If all we do is bring in a bunch of outside people, which used to be the old model, but it's gotta have benefits, and the big benefit is the jobs".

Lesson 2 – Saving Bristol Bay: understanding different perspectives

Objectives

1) To gain a broader understanding of the complex issues around saving Bristol Bay and the Pebble Mine by watching the second half of the documentary film, *The Wild*.

2) To gain deeper understanding of the issues various stakeholders faced in the film by reflecting on quotes, discussion questions, and writing prompts.

Time Frame

About 20-60 minutes, depending on whether you showed the entire film in Lesson 1 or broke it into two parts

What You Need

For the class:

❑ 1 link to the documentary *The Wild*

For each group of 4 students:

❑ 1 set of 4 quotes from the document, "Featured Speakers From the Film, *The Wild*" found in the Teacher Test Kit folder at this link.

For each student:

❑ Science notebook

❑ 1 quote from a Featured Speaker from the film; students use the same speaker and quote they used in Lesson 1

Preparation

1. Have the quotes from the Featured Speakers ready to hand out to the students. They will use the same person/quote they used in Lesson 1.

2. Decide how you will capture additional student comments about the Featured Speakers in a digital format that can be projected to the class.

Begin the Lesson

Debrief the homework

1. Ask students to review their homework. While they review, assign the to chat rooms. Once they are in their chat rooms, have students describe how one of the Featured Speakers is connected to a place. What is the connection? Would you feel the same way as the speaker? Why or why not?

2. Reconvene your students. Ask if any students would like to share comments from their table discussions.

3. Have students go back to their notes from Lesson 1 where they answered these questions:

- Think of a natural place that you feel connected to.
- Have you been there recently?
- Has it changed since you first made your connection? If so, how? If not, why not?
- What is the future for this place you are connected to?

Allow them to add any more thoughts to their answers.

Watch Part II of the film *The Wild*

Watch Part II of the film from 22:42 to end. (37 more minutes). Allow students to have the film paused if they want to jot down notes.

Debrief the film

1. Have students write their thoughts about the film in their notebooks. Ask for any strong impressions. Which stakeholders in the film impressed them the most and why?

2. The director, Mark Titus, mentions that one of the first things he discovered in his recovery from alcohol addiction is that the disease is fed by isolation. He says there is an antidote – community. Have students reflect on how Mark's discovery might influence those who try to save a place they love. Have them jot some ideas in their notebooks, then put them in chat rooms for small group discussion. Once you have reconvened the class, ask if anyone wants to share some of the discussion from their group.

3. Have students who read the same Featured Speaker quote meet in small groups. Have them discuss that person's perspective in the film. Ensure that each student in the group gets to speak.
- How do they feel about that person now?
- What questions would they ask them today?
After their group discussions, have students write their thoughts in their notebooks.

4. Share the list of the Featured Speakers from Lesson 1. Have students share any additional information they want to add to the list.

5. Remind students to save the quotes from the Featured Speakers to use in Lesson 5.

Lesson 3 – Analyzing Complex Questions and Issues

Objectives

1) To gain a broader understanding of the issues around saving Bristol Bay and the Pebble Mine by grappling with complex discussion questions.

2) To see the issues brought forth in the film through the eyes of fellow classmates.

Time Frame
About 60 minutes

What You Need

For the class:
❑ a way to project a list of key issues that will be created by the class

For each group of 4 students:

❑ 1 discussion question from the document, “Complex Questions and Issues” found at the end of this lesson

For each student:

❑ Science notebook

Preparation

1. Look over the “Complex Questions and Issues” found at the end of this lesson. There are 7 questions. Feel free to add or delete questions as appropriate for your students.

2. Assign students to chat groups and choose a question for each group, or allow students to choose a question that interests them and put them into groups that way.

3. Decide how you will create a student-generated list of the key issues in the movement to protect Bristol Bay so that the class can see it. This will be added to and revised as the unit goes on, so a digital option might be best.

Begin the Lesson

Reflecting on the connection to water

1. Refer to the quote about water:
“Everything is connected by water. Sea to cloud → cloud to rain → rain to river → river to sea. When you touch water in one place, you’re touching it everywhere.”

2. Have students add any thoughts they have to this entry in their notebooks.

3. After a few minutes, ask if anyone would like to share some additional thoughts on this quote.

Diving deeper with complex questions and issues

1. Divide the class into chat rooms based on assigned questions for each group, or by students selecting the question that interests them most.

2. While in their groups, have the students take time to write thorough answers to the question in their notebooks. Set an allotted time to answer the question working individually, at least 5 minutes or longer.

3. Signal to the groups that once they have answered the question on their own, they will share their answers with their group. Encourage them to add information to their notes as each student speaks. You may want to structure the discussion where each student gets to speak without comments from other students. It is a listening opportunity first. Once each

student has shared their thoughts with the group, they may have a discussion at their table. Reinforce that all ideas are valid and thoughtful discourse is important. At the end of their discussion, they should decide as a group on the two most important discussion items that came up.

Class Discussion

1. Reconvene the class. Ask each group to share the two most important discussion items that came up in their group. You may have them then choose a presenter who will share this with the class, or moderate any way you like.

2. After the presentations, have the class help you create a list of they key issues they see in the movement to protect the Bristol Bay watershed. You may chose to have students see the document as you record their comments, or record it in their notebooks.

Lesson 3 - *The Wild*: how do you save what you love?

Student Handout: Complex Questions and Issues

From the documentary film, *The Wild*

1. Can resource extraction (ex. mining, logging, and fracking) and healthy ecosystems co-exist?

2. What are the benefits and/or costs when you put people like Scott Pruitt (who has fought to dismantle EPA regulations) and Andrew Wheeler (a former coal lobbyist) in charge of the Environmental Protection Agency?

3. Discuss Indigenous People's connection to salmon. How is it similar or different from the connectedness of living things in the Bristol Bay ecosystem? What does it mean to say that salmon and wild places are sacred?

4. What does it mean to be "accountable for what happens on our watch"?

5. How do the various aspects of addiction fit into this film?
• to alcohol (addiction fed by isolation; solution = community)
• to resource extraction (gold/copper/oil/forestry)
• to money
• to screens; needing to upgrade phone all the time; needing the newest apps: ie. Snapchat/Instagram

6. How do we preserve the wild in ourselves and in our world?

7. What is the value of preserving a natural ecosystem like Bristol Bay? How do we measure the cost?

8. What is the cost involved in saving a place you love? Consider actual dollars, plus people's time, the cost to the environment and to future generations if it is lost. What is the value to be able to enjoy a place you love?

Lesson 4 – The History of Bristol Bay & the Pebble Mine

Objectives

1) To understand the historical background of the Bristol Bay watershed.

2) To create a graphic representation of the timeline of events and decisions that have affected the permitting process of the Pebble Mine.

3) For students to rank the decisions and events that have affected the protection of the Bristol Bay watershed as neutral, positive, or negative.

Time Frame

About 60-120 minutes), depending on the abilities of your students to graphically represent the timeline events, the degree of student interest, and your goals for the lesson.

What You Need

For each student:

- ❑ 1 copy of “The History of Bristol Bay & the Pebble Mine”
- ❑ 1 copy of “Fact Sheet”
- ❑ 1 copy of “Pebble Mine Operation”.

The documents above are found at the end of this lesson.

- ❑ Science notebook

Preparation

1. Provide a copy of the three student handouts for each student to access. The documents are found at the end of this lesson.

2. Be able to display the “Key Issues” list created in Lesson 3.

3. Decide how you will divide students into chat room groups. Create a way for them to signal you if they have questions or concerns.

4. Decide how you would like your students to create a timeline to graphically illustrate important events in the history of Bristol Bay and the Pebble Mine along with relevant facts. Be prepared to provide scaffolding to support the abilities of your students. Each chat group will create one timeline to share with the class. A digital representation that can be shared may be the most effective, but feel free to allow students to be creative as well as informative in their representations. Chat groups will also need to be able to revise their work in the next lessons.

5. Decide if you want students to work in groups as they see fit, or assign roles for students in each group. Roles could be:

- Graphic designer: creates the format used to list the events in the timeline.
- Researcher: looks up URLs provided in the timeline; makes summaries of the information
- In-depth Researcher: finds other pertinent information to add to the timeline

Begin the Lesson

Creating a timeline of events in the history of Bristol Bay

1. Ask students to look over their notes and put a star next to any information that they think is critical in the history of the movement to protect Bristol Bay. In their opinion, have them identify what events were neutral, what events were positive, and what events were negative for the protection of the Bristol Bay watershed.

2. Display the “Key Issues” list from Lesson 3. Ask if students want to add anything else to the list, or to revise anything currently on the list.

3. Direct students to the handout “Timeline of Events and Issues in Bristol Bay” so they each have a copy. Give them a few minutes to read over the events. Ask them to highlight anything they think is particularly important. They should note anything that is confusing or unclear to them.

4. Hold a short class discussion to clarify any of the events that students noted. Vocabulary and legal terms may be the most difficult. Suggest that students look up the definitions and share them when they get into chat room groups rather than having you define them.

5. Working alone first, have students assign a value to each event in the timeline as neutral, positive, or negative with respect to its relevance to the protection of the Bristol Bay watershed.

6. Put students into chat rooms. Task each group with creating their own timeline from the information given to them. It’s not an exhaustive list, but contains important events.

7. If you are going to assign roles for students, do that now. Roles could be:
    - Graphic designer: creates the format used to list the events in the timeline.
    - Researcher: looks up URLs provided in the timeline; makes summaries of the information
    - In-depth Researcher: finds other pertinent information to add to the timeline

8. Allow ample time for students to grapple with how they want to represent the information. Remind them you are there to provide support as needed.

NOTE: Depending on your schedule, you may choose to end the lesson here. You can assign additional documentation for offline work.

Sharing group timelines of events in the history of Bristol Bay

1. Once groups have finished their timelines, ask them to prepare to share them with the class. They can present their findings as a group, or select a representative to be their spokesperson. Ask them to identify the three most important issues or events on the timeline.

2. Have each group share their timelines with the class, including identifying their opinion of the three most important issues or events in their timeline. Allow for any questions from the class to clarify their presentation.

Adding data to the timeline of events in the history of Bristol Bay

1. Provide copies of the two additional handouts: “Fact Sheet” and “Pebble Mine Operation” for each student. You may want to suggest that they include a way to represent the relationship between the number of jobs created in both the salmon and mining industries, correlated to the income created by these industries.

2. Send students back to their chat rooms. Have them decide how they will add this information to their timeline, then add the data. Suggest that they create a format to add more information as the unit progresses.

3. If chat groups finish before others, have them add to the key issues they see in the movement to protect the Bristol Bay watershed.

4. Once groups are done, put them in order as to when they will share their representations of the additional data. They may choose a representative to speak, or speak as a whole group.

5. After each group has presented their timelines, have all groups reflect on their timelines and make any changes they want to at this time.

6. With this additional information, send students back to their chat rooms. Have them reflect on their ranking of events and issues on their timelines. They can revise their ranking system of neutral, positive, or negative impacts on the protection of the Bristol Bay watershed.

7. Bring the students back as a class. Share the “Key Issues in the Movement to Protect Bristol Bay”. Have the class assist you in adding to this list. Once you are finished, have them go back to their notebooks and add anything to their notes.

Offline Homework: Reflecting on the connection to water

1. For their homework, have students refer back to the quote about water:
“Everything is connected by water. Sea to cloud → cloud to rain → rain to river → river to sea. When you touch water in one place, you’re touching it everywhere.”

2. In their notebooks, have them reflect on what they learned from the timeline presentations and add any thoughts they have.

Lesson 4 - *The Wild*: how do you save what you love?

Student Handout: Timeline of Events

11,000 BC - Landbridge from Asia brought indigenous populations to Alaska who caught salmon as part of their diet.

1741 - Colonization of Alaska by Europeans begins when a Russian expedition led by Danish navigator Vitus Bering sighted the Alaskan mainland. Russian hunters were soon making excursions into Alaska, and the native Aleut population suffered greatly after being exposed to foreign diseases.

1799 - Aleksandr Baranov established the Russian American Company and was granted a monopoly over Alaska.[22]

1832 - Russian mining engineer discovers gold near Kuskokwim River[23]

1867 - Alaska was purchased from Russia. American prospectors come north to explore the new territory.[23] At that time, the Native Alaskan population totaled about 30,000.[24]

1896 - Gold was discovered in the Yukon Territory in Alaska. The idea of striking it rich led over 100,000 people from all walks of life to come to this rugged area.

1959 - Alaska becomes the 49th state

1987 - Cominco Alaska Exploration (CAE) (which subsequently became Teck Resources) collected surface samples at the Pebble site

1988 - The first two exploration holes were drilled at the Pebble site

1989 - Twelve more drill holes, soil sampling, and geophysical surveys indicated that the Pebble West occurrence was part of a large copper porphyry system.[6]

2001 - Northern Dynasty Minerals, Ltd., a Canadian company, bought the property from Teck Cominco.
2002-2013 - Northern Dynasty Minerals began exploration in 2002, which continued through 2013.[7]

2005 - Northern Dynasty discovered the Pebble East deposit and acquired 100% ownership of the Pebble mining claims.[7]

2008 - Pebble was estimated to be the second-largest ore deposit of its type in the world in terms of the value of the contained metal.[3] Estimates have grown throughout the history of the project. April, 2013 – the EPA issued a draft assessment of the impact of proposed mining plans on the fisheries, wildlife and Alaska Native tribes in the region.[12]

January, 2014 - the final assessment was released. It questioned the future of salmon habitat should the mine be opened, but the agency did not use its authority to stop the mine.[13] Pebble Partnership CEO John Shively severely criticized the EPA assessment, saying it was unscientific and that it asked for the mine to be stopped before the permitting process had begun.[14] A few days after the release, U.S. Senator Mark Begich openly opposed the mine, breaking with the other members of the Alaska congressional delegation, U.S. Senator Lisa Murkowski and U.S. Representative Don Young.[15]

July 2014 - Scientists at the U.S. Environmental Protection Agency, whose Seattle branch spent three years examining the issue, conclude that the mine could cause "unacceptable adverse effects."[1]

May 2017 - the Pebble Partnership and the EPA jointly announced they had reached a settlement agreement to end the legal dispute between the two groups. The Agreement called for the EPA to withdraw the regulatory action while the Pebble Partnership agreed to terminate outstanding lawsuits brought against the EPA. [18] This agreement allows the Pebble Partnership to continue in the permit process to open the mine.

July 2017 - the EPA sought comments on a proposal to withdraw its objections to the Pebble Mine based on the 1974 Clean Water Act.[19]

February 2018 - The EPA changed plans to withdraw restrictions on the Pebble Mine on the basis of the Clean Water Act. The decision is not final and is open to further public comments.[20]

July 2019 - The EPA withdrew their preemptive proposed determination to restrict the use of the pebble deposit area as a disposal site.[21]

August 2019 - Alaska Gov. Mike Dunleavy lobbied President Trump, which resulted in the EPA withdrawing the agency's long-standing option to veto Pebble.[1]

Lesson 4 - *The Wild*: how do you save what you love?

Student Handout: Fact Sheet

From the documentary film, *The Wild*

Impact on Salmon

- Bristol Bay is home to the last remaining untouched wild salmon run containing 5 species of salmon with 50,000,000 salmon expected to return to spawn in 2020

- The Kvichak River has the single largest red salmon run in the world. The Kvichak drains from Lake Iliamna, which is downstream of the deposit.

- Commercial, sport and subsistence fishermen worry about the dams, fearing they could breach (fail) or water treatment could fail. If so, contaminants in Upper Talarik Creek could spew into Iliamna Lake and from there down the Kvichak River into the bay. Or toxins could enter the north and south forks of the Koktuli, flowing into the bay through two more rivers that are highly valued for salmon spawning.[1]

- 80% of Bristol Bay residents oppose the mine. These residents, conservationists and scientists fear that regardless of a catastrophic dam failure as described above, building the infrastructure for the Pebble Mine will open up all the mining claims in the region and permanently degrade or destroy these remaining pristine salmon runs completely.

Economics

Pebble Mine

- The mine could yield $1,000,000,000 (1 billion) in profits a year for the 20 years it is planned to be operating

- Northern Dynasty estimated that Pebble contains over $500 billion worth of recoverable metals at early 2010 prices.

- In the state of Alaska, mining returns approximately 1.5% of its profits to the state. This could amount to $7.5 billion in tax revenue over the course of the mine's operation.[10]

- The mine would provide a domestic resource of raw materials lowering the United States reliance on foreign sources.[11]

- Tom Collier, Pebble Partnership CEO, stands to receive a $12.5-million bonus if the Army Corps of Engineers issues a permit.[1]

Fishing Industry

- The Bristol Bay commercial fishery generates and $1.5 billion per year in revenue

- Bristol Bay's sportfishing industry accounts for another $70+ million in revenue to the region

Jobs

- The Bristol Bay commercial fishery generates 14,000+ jobs a year.

- Bristol Bay's sportfishing industry brings in 37,000 fishing trips to the region annually.

- Along with herring and other fisheries, salmon account for nearly 75% of local jobs.[5]

- The Pebble Mine will employ 2,000 people during construction and 850 once the mine is in operation.

Lesson 4 - The History of Bristol Bay & the Pebble Mine

Student Handout: Pebble Mine Operations

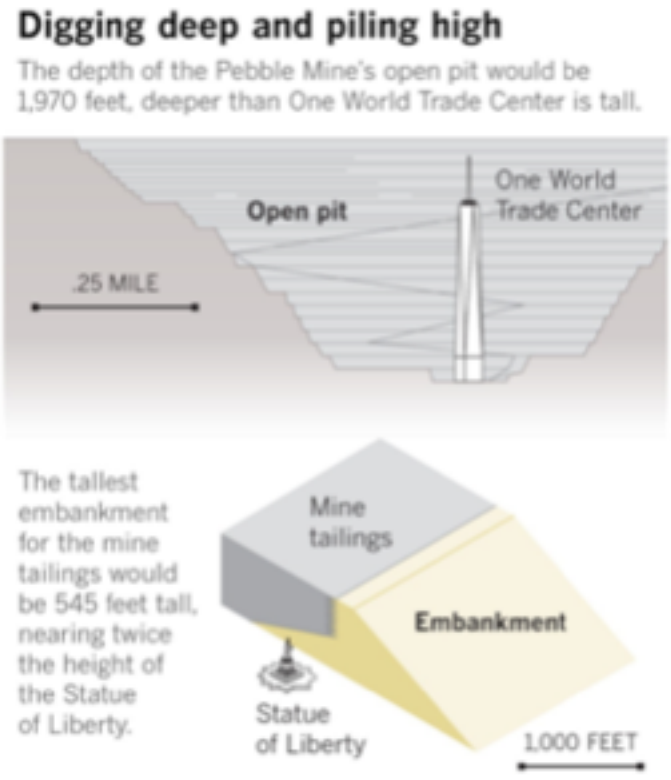
- the Pebble Mine area contains copper, gold, and molybdenum ore. The area known as Pebble West has minerals close to or on the surface. Pebble East deposits are deeply buried to a depth of 5,600 feet.

- Pebble is the largest known undeveloped copper ore body in the world, measured by the amount of ore.[8]

- Pebble holds mostly low-grade ore, requiring a large-scale operation to economically recover it[2]

- The Pebble Mine site lies 200 miles southwest of Anchorage. One hundred miles farther southwest is Bristol Bay

- the mine will be an open pit the size of 460 football fields.[1] The open pit might reach 2 miles (3.2 km) wide and several thousand feet deep. Mostof the rock removed from the pit would become waste, amounting to as much as 11 billion tons.[9] That material, along with allowed discharge chemicals, would be stored permanently in two artificial lakes behind embankment dams.



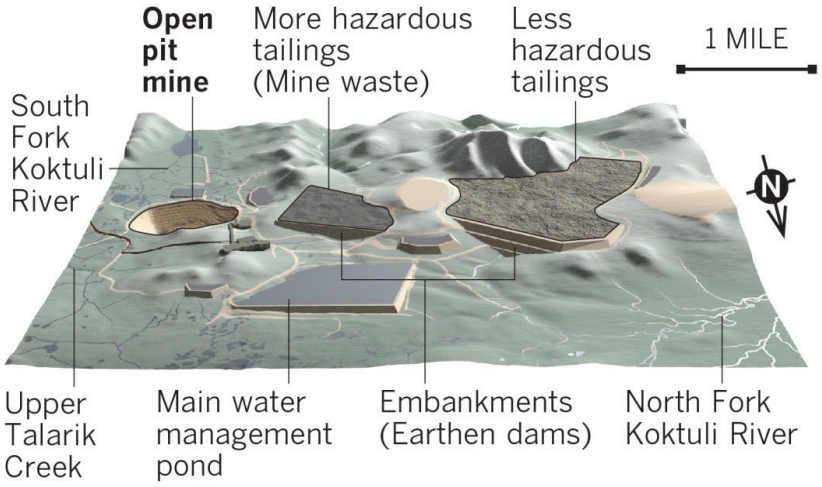
- The development would destroy more than 3,400 acres of wetlands and 81 miles of streams. It would straddle Upper Talarik Creek and the Koktuli River, Bristol Bay tributaries known nationally for trophy trout fishing and salmon spawning.[1]

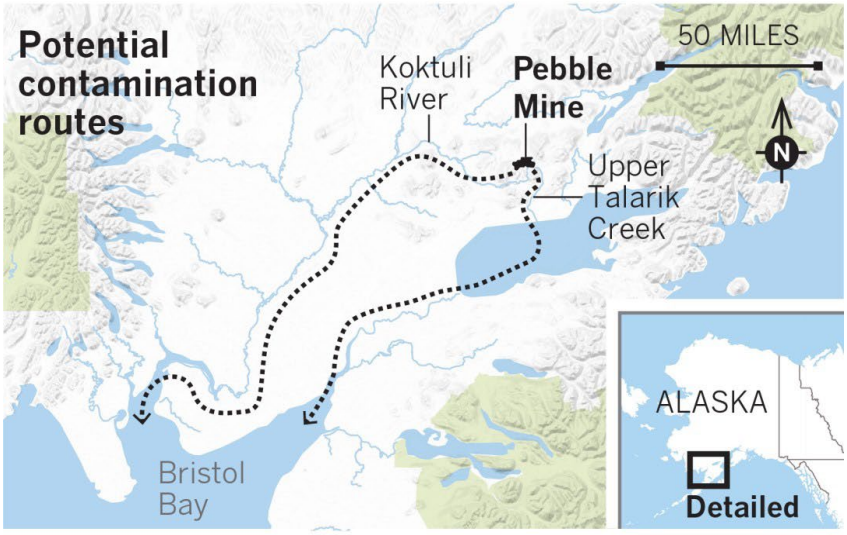
- Mineralized rock would be blasted in the pit, crushed, ground into sand, floated and concentrated, producing 180,000 tons of material a day. The challenge facing the company, in a place that averages more than 50 inches of rain a year, is how to ensure that contaminated water would never reach Bristol Bay.

- Northern Dynasty would submerge particularly hazardous mine tailings, piled across more than 1,000 acres, in water to prevent acid generation. This waste would be contained in liners behind earthen dams and ultimately dumped back into Pebble's open pit after mining ended.

The mine above the bay

Pebble Mine's tailings, or waste from ore processing, would cover more than 3,400 acres by tributaries that take two routes to Bristol Bay in Alaska, site of the world's largest sockeye salmon run.





Northern Dynasty Minerals, OpenStreetMap, Nextzen

Lesson 5 – The Issues From Stakeholder Perspectives

Objectives

1) To understand the complex issues in the movement to protect the Bristol Bay watershed from the perspective of various stakeholders.

2) To take on the perspective of a particular stakeholder group in preparation for a panel discussion.

Time Frame

About 60-120 minutes

What You Need

For the class:

❑ the quotes from the Featured Speakers along with student comments about each quote
❑ a link to the film *The Wild*

Optional:

❑ allow students to see the film *The Wild* a second time to get a better understanding of what their specific stakeholder group thinks and feels

For each group of 4 students:

❑ one quote from the Featured Speakers that fits with their stakeholder group

For each student:

❑ Science notebook

Preparation

1. Decide how you will divide students to conduct research on the stakeholder groups listed below. They may individually choose a group, or you can assign them.

- Food Industry
- Scientific Community
- Politicians
- Tribal Stakeholders
- Mine Owners
- Sport Fishing Industry
- Students
- Commercial Fishing Industry
- Citizens who love wild places like Bristol Bay

You may choose to provide the names of the people in the stakeholder groups or let the students find that information for themselves. A list is provided for you here:

• **Food Industry:** Tom Colicchio/Tom Douglas – chefs

• **Scientific Community:** Dr. David Chambers; Dr. Dan Schindler

• **Politicians:** Rick Halford - former Alaska state Senator,1982-2002, Alaska Governor Dunleavy, EPA heads Pruitt and Wheeler

• **Tribal Stakeholders:** Alannah Hurley - Yupik subsistence fisherwoman; Apay'uq Moore – artist

Informational video from a tribal perspective:
https://www.youtube.com/watch?v=y9K7Ecd14FM

• **Commercial Fishing Industry:** Steve Kurian – drift netter; boat captain; Amanda Wlaysewski – fish processor; Curt 'Ole' Olson; other fishermen/women

• **Sport Fishing Industry:** Nanci Morris Lyon and her daughter

• **Students:** Avery McCammon

• **Mine Owners:** Tom Collier – CEO, John Shivley - Chairman of the Board; Pebble Limited Partnership

• **Citizens Who Love Wild Places Like Bristol Bay:** Zariah Forman, Mark Harmon, Mark Titus, Adrian Grenier, Yvon Chouinard, Steve Gleason, Bella Hammond

2. Decide how you will share these guiding questions will all students as they research their stakeholder groups:

- What are the most important issues that this stakeholder group has regarding the protection of the Bristol Bay watershed and the permitting process for the Pebble Mine?
- What key events in the timeline have affected this stakeholder group?
- What actions are being taken by this group regarding the Pebble Mine?
- What suggestions do we have for actions this group can take next?

3. Decide how long the presentations will be. For example, if you have 9 stakeholder groups, the timing may go like this if you have a 60-minute class:

• Introduction to the presentations – 5 minutes
• Group presentations (9 groups X 3 minutes each) – 27 minutes
• Write new information in their notebooks after each presentation (9 X 2 mins.) – 18 minutes
• Group discussion – 10 minutes

To gain extra time, you may want to combine a group or two, or eliminate a stakeholder group. You may also choose to split the presentations and group discussions over a longer time period.

4. Gather the quotes from the Featured Speakers you saved from Lesson 2, along with student thoughts and questions for the speakers.

5. You may choose to set the stage for their stakeholder presentations by showing a clip from the film with the “Alaska Forum on the Environment” at timestamp 53:32 – 54:21. Explain that there are individuals in this presentation representing different stakeholders. When students are put in their stakeholder groups, all group members will have the opportunity to speak during their presentation, and during the Q&A session at the end.

Begin the Lesson

Reflect on their offline homework

1. Ask students to review what they wrote for homework about the quote on water. Have their views changed since their first ideas were written?

2. Ask if anyone would like to share what they are thinking at this point in the unit. Are they willing to share how their views have changed?

Conducting research on stakeholder perspectives

1. Tell students they are now going to take the historical information gathered in the past lesson to gain a deeper understanding of each of the stakeholder groups featured in the film. They will be using this information to give a presentation on the issues that face their group, taking on the role of the stakeholders. It will be followed by a group discussion where all of the members of the stakeholder group will be able to speak.

2. Give students a few minutes to go back to their notebooks and reflect on the Featured Speaker they learned about and add any additional information.

3. Share the list of the Featured Speakers from Lesson 2. Have students share any additional information they want to add to the class list.

4. Give them a few moments to add anything else to their notebooks.

5. Tell students they will now research the issues from the standpoint of a stakeholder group, not just from the standpoint of the individual Featured Speakers.

6. Break students into stakeholder groups, depending on your method of assigning groups or letting them chose.

7. Have them find quotes from the Featured Speakers that relate to the stakeholder group.

Optional: you may choose to show the film again so students can focus on their specific stakeholder group. If you do this, you may want to pause the film at various points so students can take notes.

8. In researching the issues faced by each stakeholder group, have them answer the following questions:

- What are the most important issues that this stakeholder group has regarding the protection of the Bristol Bay watershed and the permitting process for the Pebble Mine?
- What key events in the timeline have affected this stakeholder group?
- What actions are being taken by this group regarding the Pebble Mine?
- What suggestions do we have for actions this group can take next?

9. Students will choose who will present what portion of the stakeholder presentation. You may want to structure a way for all students to participate in some way, either as a presenter or as one who creates the presentation materials. They should notify you if they don't know how to share their screen so time is not wasted when it's time for their presentation.

10. Suggest that their presentations be limited to 3 minutes, or whatever your class time will allow in the next lesson. Following each presentation, there will be a few minutes for students to write additional information in their notebooks. A discussion with the entire class will follow the stakeholder presentations.

11. As time permits, provide time for students to share any insights they have gained about their stakeholder group. Allow students to add this information to their notebooks.

12. Give instructions so students can contact you if they have questions, or have the whole class work on their presentations in real time. If necessary, students can work on their group presentations for homework.

Lesson 6 – Stakeholder Presentations and Discussion

Objectives

1) To apply the information gained about the movement to protect the Bristol Bay watershed in a panel discussion that involves various stakeholder groups involved in the issue.

2) To be able to discuss the complex issues involved in the protection of the Bristol Bay watershed with classmates in a manner that is fact-based and respectful.

Time Frame

About 60 minutes

What You Need

For the class:

❑ an electronic platform conducive to panel presentations and class discussion
❑ the "Key Issues" list from Lesson 4

For each group of 4 students:

❑ Their answers to the following questions:
- What are the most important issues that this stakeholder group has regarding the protection of the Bristol Bay watershed and the permitting process for the Pebble Mine?
- What key events in the timeline have affected this stakeholder group?
- What actions are being taken by this group regarding the Pebble Mine?
- What suggestions do we have for actions this group can take next?

For each student:

❑ Science notebook to add information from the presentations

Preparation

1. Decide how you will set up an electronic platform for each panel presentation and follow-up discussion.

2. Decide if you want to collect all their presentations at the beginning or let each group share their presentations when they speak.

3. Be able to display the "Key Issues" list from Lesson 4 with the ability to update it after each presentation.

Begin the Lesson

Stakeholder presentations

1. Explain that students will participate in a panel presentation and discussion in a similar fashion to what they observed in the film during the clip of the “Alaska Forum on the Environment”.

2. Each stakeholder group will take turns presenting their information they collected to answer the following questions:

- What are the most important issues that this stakeholder group has regarding the protection of the Bristol Bay watershed and the permitting process for the Pebble Mine?
- What key events in the timeline have affected this stakeholder group?
- What actions are being taken by this group regarding the Pebble Mine?
- What suggestions do we have for actions this group can take next?

3. Decide what order the groups will go in so they can be prepared. Que up any A/V support you may need for each group, or let them share their materials when it is their turn to speak.

4. Remind the class that they will be respectful listeners to each presentation. They should jot down any information they want to save in their notebooks. There will be time for discussion at the end.

5. Invite each stakeholder group to present their perspectives on the issues. After each presentation, provide time for students to add more information to their notebooks. Then have them suggest additions to the “Key Issues” list you have made so far. Share this list during the stakeholder discussion that follows.

Stakeholder discussions

1. Explain that students will participate in a stakeholder discussion in a similar fashion to what they observed in the film during the clip of the “Alaska Forum on the Environment”, but in a virtual way. They will be respectful in their questions and answers, and rely on facts to support their claims. Be careful not to let all the groups gang up on the mine owners.

2. Begin by asking if there are any questions for specific stakeholder groups. Select a volunteer from that group to respond. Allow for additional members of that group to respond. You may want to limit their time so other groups can participate.

3. Continue in this fashion as long as time allows and student interest is high. You may choose to ask questions of specific groups yourself if students are having difficulty getting the discussion going.

4. Provide time at the end of the discussion for students to add information to their notebooks. They can also do this for homework.

Offline Homework: Reflecting on the connection to water

1. For their homework, have students refer back to the quote about water:
“Everything is connected by water. Sea to cloud → cloud to rain → rain to river → river to sea. When you touch water in one place, you’re touching it everywhere.”

2. In their notebooks, have them reflect on what they learned in this stakeholder discussion and add any thoughts they have.

Lesson 7 – Action Taking: how do you save what you love?

Objectives

1) To have students reflect again on a place or places where they feel a deep connection.

2) To have students take action on ways they can influence the permit process on the Pebble Mine.

3) To have students join a larger community of people committed to saving Bristol Bay.

4) To have students take action on ways they can save a place or places where they feel a deep connection.

Time Frame

About 120 minutes, which can be broken into smaller time blocks

What You Need

For the class:

❑ the "Key Issues" list from Lesson 6

❑ the "Call to Action" from Eva'sWild web page where you downloaded the film https://evaswildstories.vhx.tv/products/the-wild-teacher-s-kit

For each student:

❑ Timelines from Lesson 4

❑ Science notebook

Preparation

1. Be ready to share the questions that began the unit:
    - Think of a natural place that you feel connected to.
    - Have you been there recently?
    - Has it changed since you first made your connection? If so, how? If not, why not?
    - What is the future for this place you are connected to?

2. Decide how you will record student ideas on ways to save the Bristol Bay watershed from the Pebble Mine, so they can be shared with the class.

3. View the video of the song, “Listen What the Children Say – We Love Bristol Bay” and decide if it is something you think may be inspirational or helpful to get your students thinking about what they can do to save the Bristol Bay watershed from the Pebble Mine.
https://www.youtube.com/watch?v=EifRPTRZHwM

4. Download the pdf “School of Salmon – Call to Action”. There are four engaging ways your student(s) can get involved in a larger community of students around the country who are making a difference.

5. Be ready to share the video, *Why Salmon Matter* from the “Call to Action” pdf.

6. Decide how you will have students share their communications with their U.S. Senators and Representatives, and other stakeholders.

Begin the Lesson

Reflect on their homework

1. Ask students to review what they wrote for homework about the quote on water. Have their views changed since their first ideas were written?

2. Ask if anyone would like to share what they are thinking at this point in the unit. Are they willing to share how their views have changed?

Focusing actions on saving the Bristol Bay watershed

1. Ask students if they have some ideas of what could be done to help save the Bristol Bay watershed from the Pebble Mine. Have them write their ideas in their notebooks.

2. Ask for any students who want to share their ideas. Record them where the class can see the list.

3. Tell students that they will come up with ways they think they can make a difference in stopping the Pebble Mine. If you choose, show the video of the song, “Listen What the Children Say – We Love Bristol Bay”.
https://www.youtube.com/watch?v=EifRPTRZHwM

4. Refer back to the debrief of the film from Lesson 2. Remind students that the director, Mark Titus, mentions that one of the first things he discovered in his recovery from alcohol addiction is that the disease is fed by isolation. He says there is an antidote – community. Have students go back to what they wrote in their notebooks and decide if there are others they could connect with in the fight to save Bristol Bay. Break them into chat groups and have them discuss this with their group, then provide some ideas to add to the class list. Have

students look at their timeline and see if any other ideas come to mind. They can share their ideas with others in their group, with each student speaking while the others listen without making comments. Once each student has shared their ideas, have students work together to make one list of ideas for each chat group.

5. Bring the class back together. One at a time, have a spokesperson for each chat room share their list of ideas. They don't have to go into great detail at this time, just give enough information so the class gets the idea of the activity, project, or plan. Record their ideas on your screen so all can see. Save these ideas for later in the lesson.

Keep those cards and letters coming!

1. Read aloud or post this passage from Mark Titus' latest newsletter for your students:

This is a frightening time. Uncertainty about our own health, our dear-ones' health, our personal freedoms and financial well-being feels ever-present outside our doors. It can take over our mind and make us sick, even without a virus infection – if we let it.

I have never lived through a time like this and don't personally know anyone else who has. I know I don't have a pre-programmed road map for any of this.

What I do know is I take comfort in wild salmon and the bigger picture they represent: that they will find a way for life to go on. And wild salmon will continue coming back to us - if we let them.

Which is why, despite my own malaise now, I can't take my eye off Bristol Bay's horizon. The Pebble Mine thrives in fear. It grows in silent darkness. And it is still rumbling on toward having a permit by the end of ***THIS SUMMER****.*

We, as Salmon People simply cannot allow this abomination to pass through our gates during this night. We cannot allow what we love to go down in the gloom of dark and silent streets. We can ***WIN THIS FIGHT*** *if we come together right now, even though physically separated, and unite our voices to* ***save what we love****. Bristol Bay does not have to fall, like every other salmon stronghold, on our watch.*

2. Have students jot some thoughts about the passage in their notebooks. After a few minutes, take any thoughts students want to share. Allow the discussion to go on as long as you like.

3. Let students know that a very effective way to voice your concerns is to contact stakeholders who are in the position of having influence on an issue you care about. At this time, the decision to approve the permit for the Pebble Mine is in the hands of President Trump. Given the current pandemic, we are recommending that students contact their U.S. Senators and Representatives, along with Senator Murkowski from Alaska. It is hoped that

students appealing to their local elected officials will put pressure on the President along with Senator Murkowski.

4. Provide these resources for students to find their Senators and Representatives:

To find your U.S. Senator and their contact information:
https://www.senate.gov/general/contact_information/senators_cfm.cfm

To find your U.S. Representative and their contact information:
https://www.house.gov/representatives/find-your-representative

Senator Lisa Murkowski of Alaska
522 Hart Senate Office Building Washington DC 20510
(202) 224-6665
Contact: www.murkowski.senate.gov/public/index.cfm/contact

5. Have students draft letters to mail, emails, tweets, Instagram, and Facebook posts. Direct phone calls are great options too. They can draw from their notebooks for factual information. Encourage them to be honest about their feelings, but also be respectful in their tone.

6. If possible, record the number and type of communication sent to elected officials and other stakeholders. A Survey Monkey will be emailed to you to record that information. This will be very helpful in knowing the scope of student communications around the country!

School of Salmon – fun and creative ways to engage students

1. Share the pdf "School of Salmon – Call to Action". Give students a few minutes to look over the ways they can get involved in a larger community of students around the country who are making a difference.

2. Share the short video on *Why Salmon Matter.* When it's over, have students write their impressions in their notebooks.

3. Have students look over the three ways they can take action to save Bristol Bay along with other students around the country. After a few minutes, have individual students share with you the ways they want to participate. You can require that they choose one of the three options, or all three. Tell students they will have time to work on these actions over the next few days.

Take part in the Instagram contest
Create an art project showing what it means to you to *save what you love*. Be creative! You can create anything: a drawing, a painting, a film, a sculpture. Just try and represent what you love most - it can be something wild, a place, a person, … *wild salmon!*

Post a video on our Facebook page

What would you like to say to our next President about saving what you love - and saving Bristol Bay!? Post a short video on our Facebook page!

Make a wild salmon recipe
Follow one of our recipes or come up with your own. We'd love to hear about your best ideas from your kitchen!

Action taking – how do you save what you love?

1. Share the questions that began the unit:
    - Think of a natural place that you feel connected to.
    - Have you been there recently?
    - Has it changed since you first made your connection? If so, how? If not, why not?
    - What is the future for this place you are connected to?

2. Have students find their answers in their notebooks. Ask them to add anything to what they originally wrote.

3. Ask students if any of their places are currently in danger of being destroyed or changed for the worse? Take a raise of hands. Allow a few students to share their thoughts.
4. Ask those students who raised their hands to think about what steps could be done to save the place they feel connected to. They can write their answers in their notebooks.

5. For those students who didn't raise their hands, they can either think of another place they know about that is in danger, or do some quick research to find a place that is in danger and come up with some ideas of what they could do to help.

6. Give students a set time to conduct some quick research and write in their ideas in their notebooks.

7. Break students into chat rooms. Give them the following instructions:
    a) once in their chat groups, they will share their ideas with their group, speaking one at a time
    b) they will record all ideas from the group in their notebooks
    c) these ideas will be listed as an activity, project, or plan (APP)
    d) in their groups, have students rank each idea using the following criteria. They can further define the parameters if you want. It is fine to leave them a bit vague for now.
    e) groups will add up the values they assigned to each of the four categories and assign a total number to each APP

- Student interest: Are we interested in doing this APP?
    1 - not really interested 2 - moderately interested 3 - we really like it

- **Viability:** What is the possibility that we can do this?
    1 - difficult 2 - not too difficult 3 - easy

- Cost: How much will it cost to implement the APP?

1 - high cost 2 - moderately expensive 3 - inexpensive or free

- Time: How long will it take to complete the APP?

1- a long time 2 - not too long 3 - we can do this quickly

- Effect on preserving a place we love: What effect will the APP have on saving this special place?

1- not much 2 - a moderate effect 3 - a big effect

8. When the groups are finished, or mostly finished, bring the class back together.

9. Return to the list generated earlier in the lesson on ways to save Bristol Bay. Using a raise of hands, rank the ideas for saving Bristol Bay in the same way they just ranked their own ideas for saving a place they love. Record their votes on the list and total the votes for each idea.

10. Resort the list, or create a new one, ranking the APPs by the highest number (15) to the lowest (5). Give the class a few minutes to evaluate the list. Ask if they have anything to add or clarify.

11. Have students upload their list of ideas from their chat room discussions on how to save places they love. Resort this list based on their rankings.

12. Conduct a class discussion about what APPs they would like to initiate. Be sure to assess which may rank high (easy to do, low cost, short timeline, and make a big impact), but not have much student interest, and put them lower on the list.

13. Once a short list of those APPs with the highest interest and most potential for success has been created, ask students to identify themselves as leaders or part of the support team for each APP. Provide guidance on realistic goals and numbers of APPs that can be taken on at once. Remind students that once they finish one project, they can always start another from the list, or come up with new ones they want to do.

14. Have students regroup in chat rooms based on the APPs they are interested in working on. Ask them to begin planning how they might address the APP: what resources they need, who they need to meet with, what obstacles they currently see, etc. Ask how they will measure the success of their project. Have them include that in their plan. They can design a timeline and insert items from the list they made. They need to decide how they will measure their success with this APP. What is the impact their APP will have on saving a place that is loved or special to them?

15. Make sure each student has a place to be involved. It's fine if one student wants to take on an APP by themselves. Answer questions, but try to provide as little guidance as possible so students can take responsibility for their ideas and APPs. The goal is not to succeed with ease, but to learn how to make realistic plans and evaluate as you go, including setbacks, bureaucratic obstacles, or unknown issues that may arise.

16. At this point, the projects will take on a life of their own. Students may want to start an action group, partner with a community group, or work on their own time out of school. Share your plans for scaffolding and support as the students begin planning their APPs so that engaged and excited students can move their ideas forward. This may require time outside of class as you move on to a new unit. Adult mentors, school advisors, or student leaders may need to be involved to support the students. Some may effectively address their ideas all on their own. Provide contact information for mentors, advisors, and student leaders that can serve as support for the students.

Extend the Lesson

1. Students may create a presentation of their findings and plans to share with other classrooms, community groups, etc. This could take the form of a panel discussion or a town hall meeting.