

Killer Whale Recovery

High school: Government, Policy, and Management

Lesson 4: Facebook stakeholder's profile

	Subject Area(s): Government, policy, management, stakeholders	Duration: one 50 minute period
Materials:	Key words: National Marine Fisheries Service (NMFS) also known as NOAA Fisheries, Department of Fisheries and Oceans (DFO), conflict resolution, stakeholders, anthropogenic noise, necropsy, stranding network, and hydrophones	
State Standards: WA, OR, and ID	WA: EALR 3, 9-12 APPC (choose best solution involves comparing alternatives) EALR 4, 9-11 LS2C (population growth limited by resources, size of environment, competition/predators) Social Studies EALR 1.2.3 (evaluates impacts of various forms of gov't on people) Social Studies EALR 3.2.1 (evaluates human impacts on the environment) Social Studies EALR 5.11 (analyzes consequences of an issue) OR: SS.HS.SA.04 (analyze an event, issue, problem from varied or opposed perspectives) ID: SS.9-12.E.3.2.1 (define scarcity and explain its implications in decision making)	
Focus Questions:	Now that you know the biological criteria for delisting, what actions or measures can be done to eliminate, slow down, or address the issues? And who is involved in this recovery action? What role does science, management, and community play in decision making? What economic value do killer whales provide business owners in the PNW?	
Learning Objectives:	At the end of this lesson students will be able to: <ul style="list-style-type: none"> • Construct understanding of conflict resolution in problem solving • Use scientific evidence and multiple perspectives to help make informed decisions and recommendations • Evaluate stakeholder's opinions and apply how public opinion matters to managers 	
Engage and Encounter	Quick write on the stakeholders involved in killer whale recovery	
Explore and Investigate	Introduce the stakeholder's mock Facebook page and emphasize that this activity is intended to highlight issues, beliefs, and values that different stakeholders might have in regards to the Southern Resident killer whale population.	
Reflect and Explain	Students should be prepared to know their stakeholder and what role they play in SRKW recovery. Formulate a list of question that might be addressed to NOAA representative in lesson 5	
Apply and Extend	Compare Canada's SARA with our ESA Recovery Plan, are they aligned? Investigate organizations, academic programs, internships to further their knowledge and interest.	
Background for teacher	Due to the fact that killer whales are top predators in this marine ecosystem; this important sentinel species reflects the ocean's health. Ecosystem management addresses the target species, but also on habitat, prey, human impacts. Understanding who makes the decisions and how one gets involved is vital to establishing interconnections between humans and the environment. Resource Management in regards to how endangered species are monitored and protected are important points for the community to be aware of and potentially opportunities for stewardship actions. Understanding human impacts and problem solving with diverse constituent groups can be difficult for students if they don't research what factors influence their beliefs and values. Allowing students to familiarize themselves with killer whale recovery strategies will help them analyze and evaluate the different stakeholders in this lesson.	
Contact NOAA	For a guest speaker in lesson 5 email: nwr.education@noaa.gov	

Lesson 4 Procedures

SRKW Facebook stakeholder's profile: Government, Policy, Management

I. Anticipatory Set (10 minutes)

- A. **Quick write:** Have the students do a brainstorming strategy known as a quick write to generate **“Who is at the table?”** or **“Who are the stakeholders involved in killer whale recovery?”** This might be done in a notebook or on scratch paper; a quick write challenges students to write down their ideas that first pop into their minds. Have them generate details, topics, or tap into past experiences and not focus on spelling, punctuation, or grammar. Give the students 1.5 minutes only. Topics: fishermen, whale watch boats, kayakers, biologists, managers, Federal, State, International representatives, anyone who profits from the season influx of killer whale sightings into their community (like hotels, restaurants, etc.)
- B. Once done, ask the students to share their lists with a neighbor. Encourage them to develop their list (add new ones, add specificity, etc.) Share one or two groups with the whole class.
- C. What economic value do killer whales provide business owners in the PNW?

II. Direct Instruction: (40 minutes)

- A. **Part one:** Introduce the Facebook profile page of one of the stakeholders. Tell the students that you want to get all of the stakeholders together to discuss what policy or management strategies need to be prioritized. Ask them to imagine what these people would be like? Who would lead? What is the hierarchy in the management system and who would be present?
- B. Have the students research their assigned stakeholder (use internet if possible), each one is based off a real person. Encourage the students to figure out their role in killer whale recovery. Then start filling in a “mock” Facebook page focusing on what that person does and their opinion on the threats. (25 minutes up to this point)
- C. **Part two:** Next have them mingle and discover who else is at the table. Have the students find 4 “stakeholder friends” or colleague who might have similar professions or similar beliefs. Continue to emphasize how these professions are connected to recovery efforts. (10 minutes)
- D. Another tip, encourage them to write fictional name AND profession (will help in lesson 5)
- E. **Part three:** Tell students a little about lesson 5. The students will be in groups of three; a manager who will be in charge and then a scientist and a stakeholder. The manager will listen to both members of their group and will ultimately take that information and come up with recovery actions according to the theme they were assigned, like salmon.
- F. Also encourage the students to generate a list of questions they might want to ask the NOAA representative for tomorrow. (5 minutes)

IV. Assessment:

- A. Participation in class
- B. Worksheet provided: SRKW Facebook Page

V. Apply/Extend:

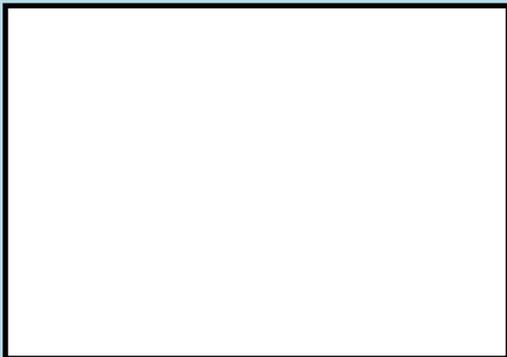
- A. Compare Canada's Species at Risk Act (SARA) with our ESA Recovery Plan to see the similarities and differences in management strategies.
<http://www.nwr.noaa.gov/Marine-Mammals/Whales-Dolphins-Porpoise/Killer-Whales/ESA-Status/upload/SRKW-Recov-Plan.pdf>
http://www.sararegistry.gc.ca/default_e.cfm
- B. Learn more about places, organizations, or academic programs/internships to further their knowledge base and interest.



Stakeholders in Killer Whale Recovery

The Southern Resident killer whales reside in international waters, so it is paramount that the recovery efforts of this population be aligned and cooperative.

Management	Science	Community	L5
1. Canadian Department of Fisheries and Oceans manager who listed the SRKW under the Species at Risk Act (SARA).	2. NOAA scientist studying prey of killer whales (scat/poop, scales, or prey specifically)	3. Salmon sports fisherman	A
4. NOAA Fisheries manager and marine mammal specialist in charge of listing the SRKW under the Endangered Species Act(ESA)	5. Department of Fisheries and Oceans scientist studying toxins in blubber/tissue samples	6. A young college student who is allergic to fragrances and most household chemical products	B
7. The coordinator for Soundwatch (an on-the-water education program) enforcing "Be Whale Wise" guidelines	8. Scientist using underwater hydrophones to passively monitor acoustic activity or presence of whales.	9. Owner of a kayak company on San Juan Island	C
10. A San Juan Island Marine Resource Committee member who wants to increase killer whale protection	11. Canadian biologist using suction cup tags: Time, Depth Recorders (TDRs) to monitor dive profiles	12. Oil Tanker captain that navigates through Haro Strait and often sees the whales in the summer	D
13. Washington Department of Fish and Wildlife-manager who wrote the state regulations/status report	14. Biologist from the Washington Department of Fish and Wildlife who gave recommendations on the Recovery Plan	15. Seattle Aquarium worker educating patrons on top predators and sentinel species and what they can do to help	E
16. NOAA's Salmon Recovery Manager specializing in hatchery fish	17. NOAA's Northwest Fisheries Science Center, salmon biologist working on hydropower and salmon habitat	18. Salmon commercial fisherman	F
19. Elected official allocating money to research on southern resident killer whales	20. Canadian researcher studying genetic relations	21. A metropolitan Port Supervisor who wants super fund sites in the Puget Sound Addressed	G
22. NOAA or State law enforcement officer on the water monitoring vessel interactions	23. U.W. graduate student studying acoustics and impacts from anthropogenic noise on SRKW	24. Concerned citizen about the Navy's use of sonar in the habitat and range of an endangered species	H
25. Canadian Department of Fisheries and Ocean manager who agreed to work with the US to relocate Springer, A73 to her native waters	26. Sea World's Veterinarian who monitored Springer's vitals (blood, blow hole culture for bacteria and ketones, urine and fecal samples for parasites	27. A child who read about Springer, A73, and has adopted a southern resident killer whale	I
28. Puget Sound Partnership member defining action items to address	29. Center for Whale Research scientist photographing whales for population census	30. Whale Museum educating its patrons on killer whale issues, research, and stewardship actions	J
31. NOAA's stranding network coordinator setting priorities to responses this upcoming year	32. NOAA's Alaska Fisheries Science Center scientist studying the tissues, blubber, and immune system from a necropsy case	33. Land-based naturalist educating guests at a State Park about the individuals in this population	K
34. EPA official in charge of ocean and human health issues	35. Veterinarian from Wildlife Health Center studying potential infectious disease threats on resident orcas	36. Member of a Non-governmental organization interested in killer whale recovery and Puget Sound Conservation	L
**L5= You will use these letters in lesson 5 with NOAA representative			



Information

My Name:

Location:

My occupation:

Which theme on the matrix most applies to your profession?

Friends

My Wall

6 connections I have to role of killer whale recovery

What part of the Action Plan can I do...