EPA Bristol Bay Watershed Assessment

Presentation to:

Assistant Secretary of the Army – Civil Works

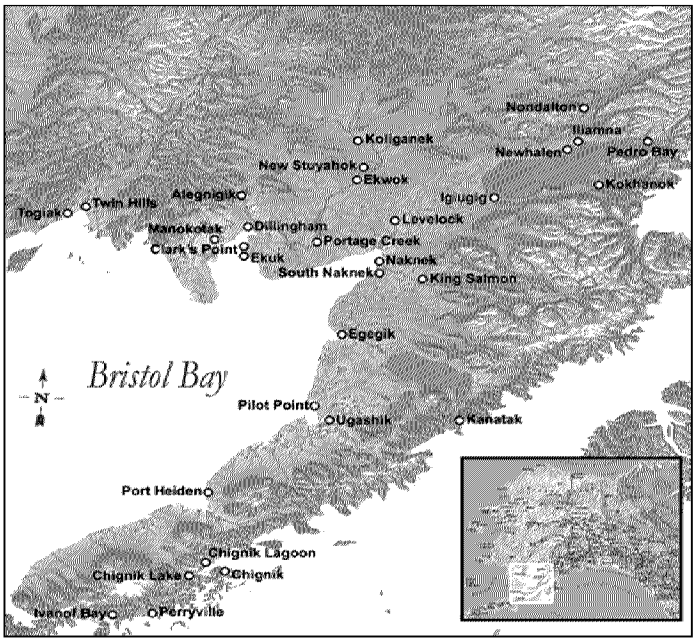
March 5, 2012

Photo courtesy of Thomas P. Quinn, U

gto

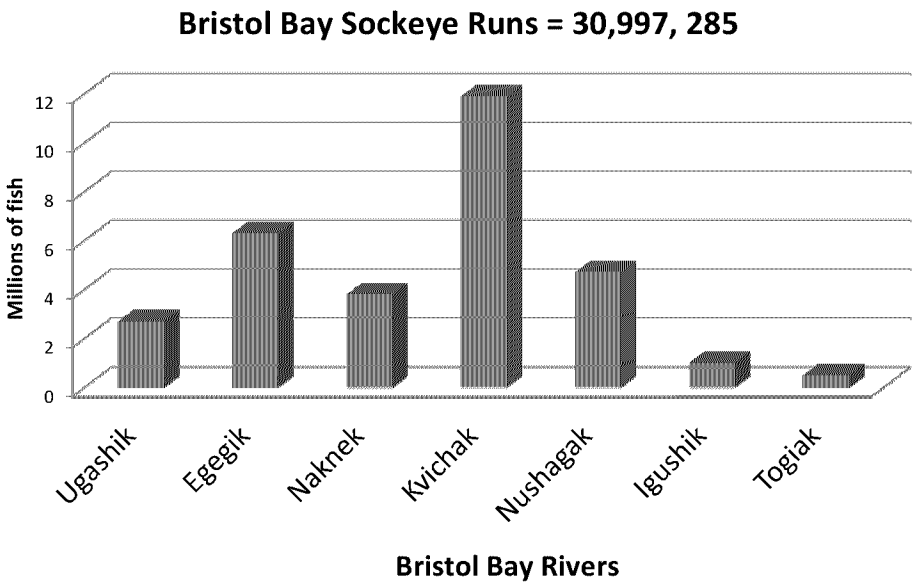
Overview

- Bristol Bay salmon fishery
- What are the potential threats?
- Why is EPA involved?
- What is EPA doing?
- Status of EPA's effort
- Schedule for completion



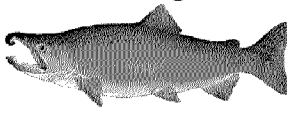
Sockeye Salmon Fishery

Average run 1956 -2010

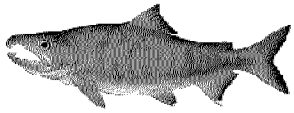


Sockeye

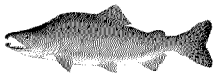
King



Coho



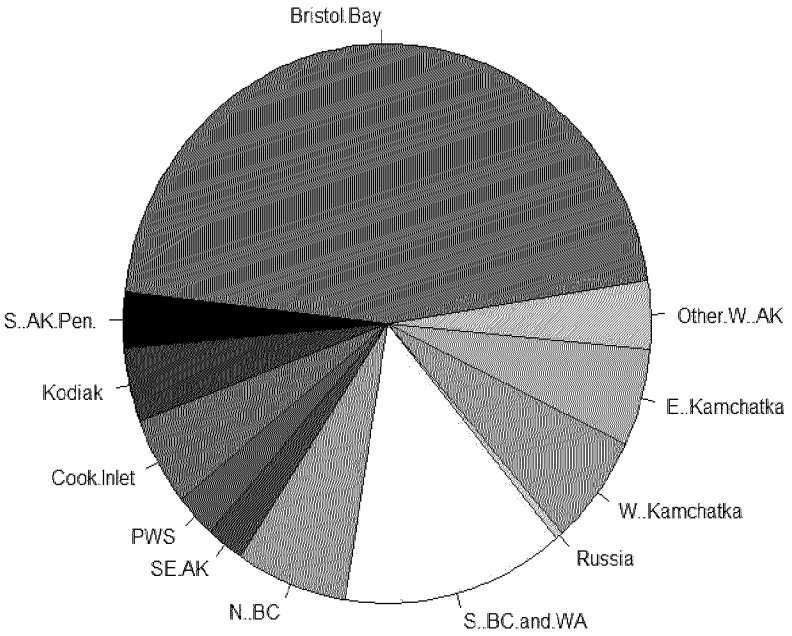
Chum



Pink

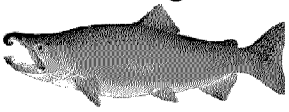
Sockeye Salmon Fishery

Bristol Bay produces almost half of the world's sockeye salmon

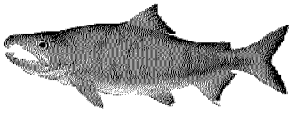


Sockeye

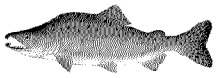
King



Coho



Chum



Pink

Value of Bristol Bay Fishery

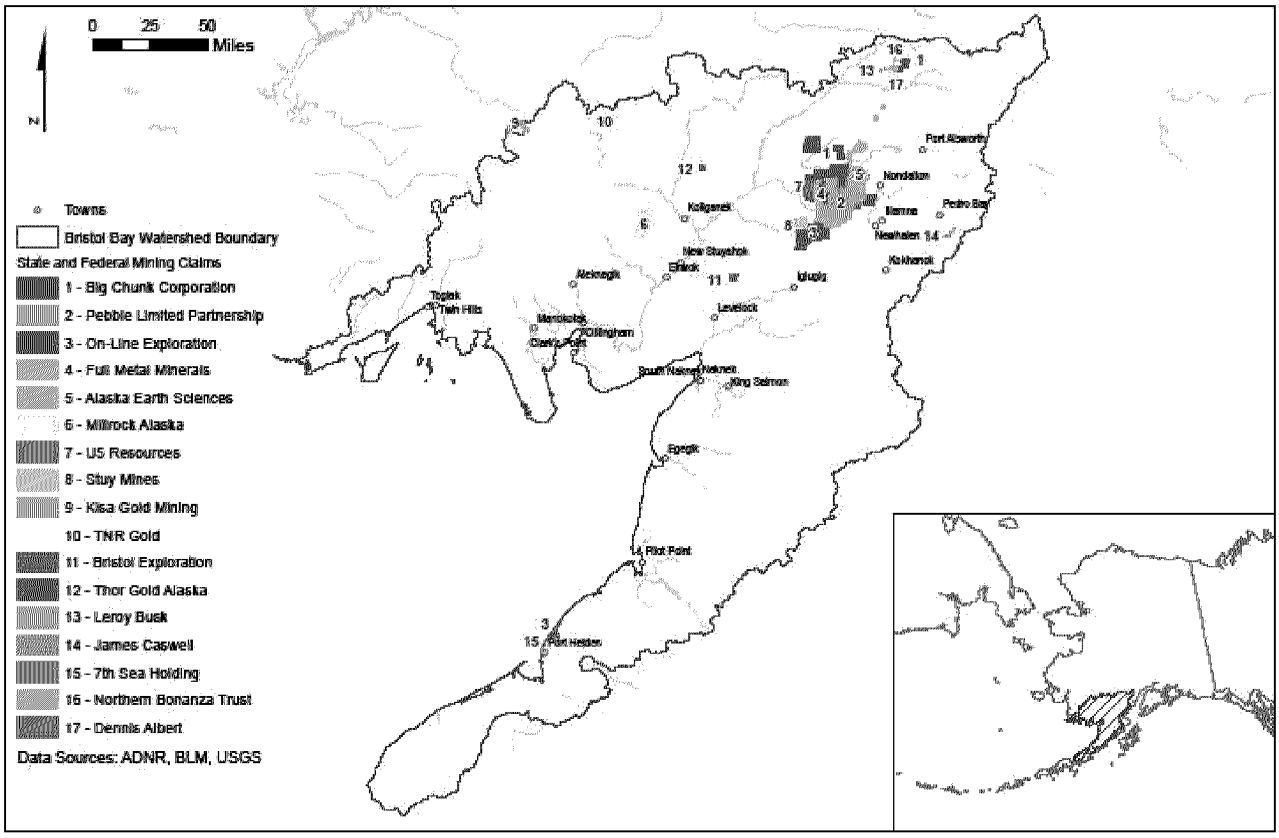
- >$500 M –2010 sockeye salmon commercial catch:
  - $148.7 M for harvest (paid to fishermen)
  - –$369.8 M for production (paid to processors)

- Annually employs over 11,000 people
  - –In 2009, 6,798 employed in salmon fishing and 4,52 2 in fish processing
- In 2009, 50 million spent in AK by nonresidents for purpose of sport fishing in Bristol Bay (12,500 trips)
- Bristol Bay is ancestral home for 31 Alaska Native Tribes –still provides the same level of ecosystem services it has for over 4,000 years.
  - –Subsistence fishing and hunting continues to provi de native people with up to 80% of their protein, in some cases surpassing 300 pounds of food per person annually.
  - –Salmon account for 52% of the subsistence harvest in Bristol Bay (31% of the harvest is from mammals and 10% is from non-salmon fish).

Proposed Pebble Mine

- Large deposit (10 Billion T) of copper, gold, and molybdenum with value of $300-500+ Billion
  - Very low grade: 0.38%-0.46% of copper, 0.011 ounces/ton gold, and 182-234 ppmmolybdenum
  - Generate vast amounts of overburden, waste rock and tailings
- Deposit accessible by both open pit and underground mining
- Open pit mine: 4,000 feet deep X 17,000 feet wide (78 year scenario)
- At least 2 tailings ponds totaling 10 square miles, and storing 2.5 billion tons of waste (25 year scenario)
- Potentially 9 miles of dams, highest being 740 ft.
- 86 mile road/pipeline(4) corridor to new deep water port in Cook Inlet

Mine Claims in the Bristol Bay Watershed



Map X. Mining Claims in the Bristol Bay Watershed. Active state and federal mining claims are shown by applicant name. Applicant names are sorted in decreasing order by size of claim blocks under lease.

Size of Mining District

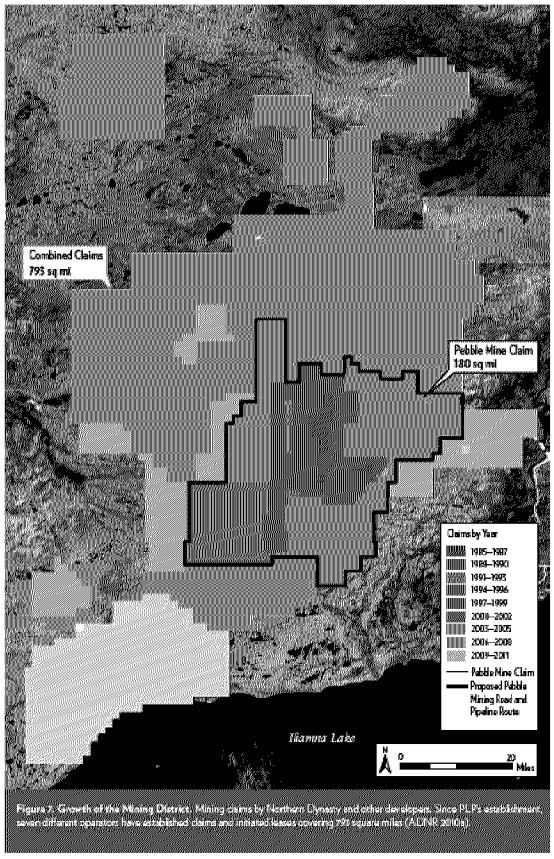
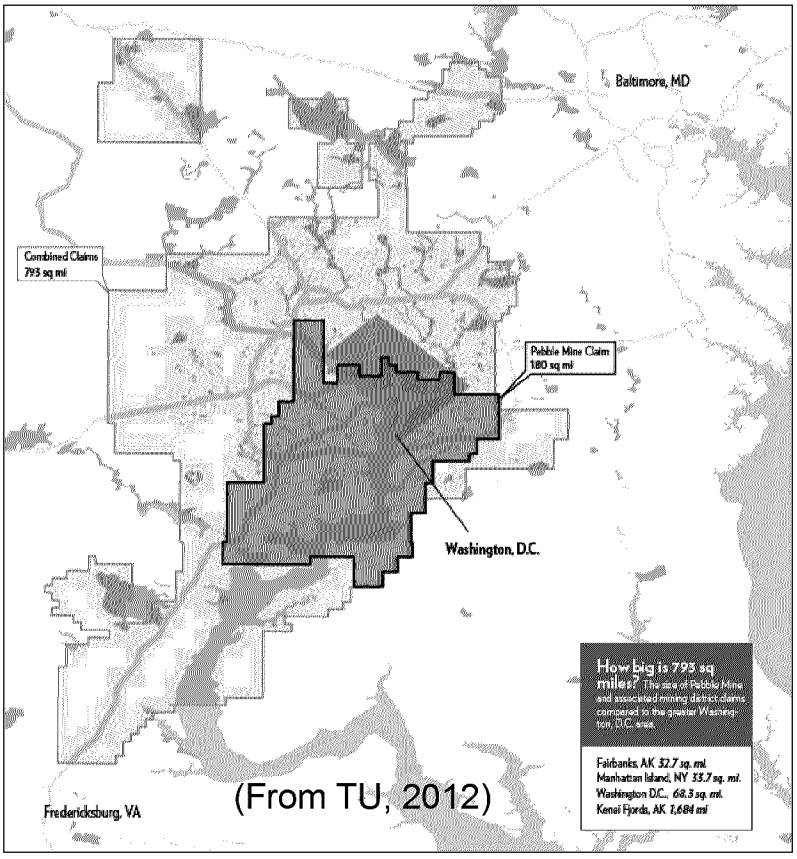


Figure 7. Growth of the Mining District. Mining claims by Northern Dynasty and other developers. Since PLP's establishment, seven different operators have established claims and mineral leases covering 795 square miles (ADNR 2010a).



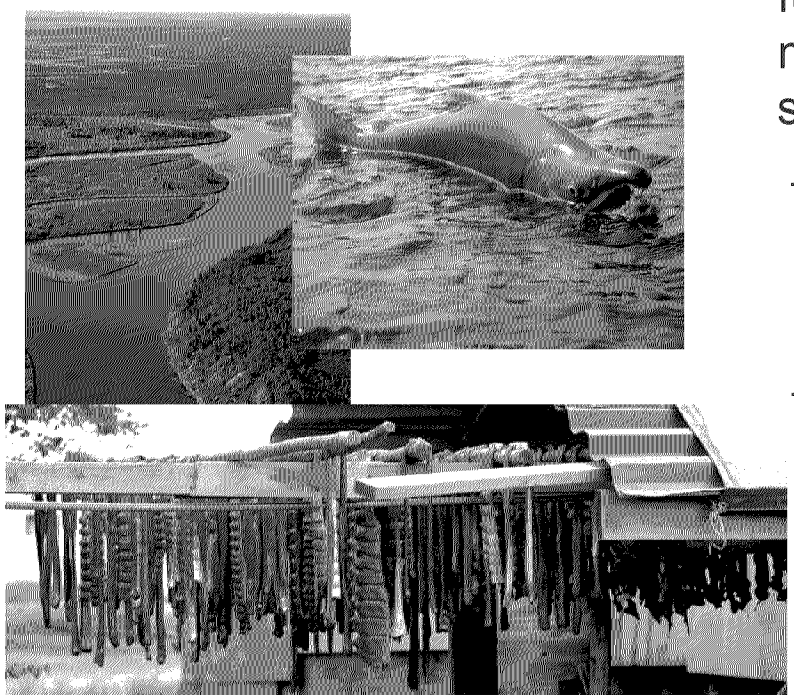
(From TU, 2012)

Why is EPA involved?

- Nine Bristol Bay Tribes, Bristol Bay Native Corpor ation, other tribal organizations and many groups and individuals, who were concerned about the proposed Pebble Mine, asked EPA to use our authority under Section 404(c)* of the Clean Water Act
- Two Bristol Bay Tribes, other tribal organizations , the Governor, and a few others including Pebble Limited Partnership asked us to let the standard NEPA/404 review process proceed
- After carefully considering all of the requests EP A decided to conduct a watershed assessment** to provide a **scientific** basis for any future decisions

**CWA Section 404(c) authorizes EPA to restrict, prohibit, deny, or withdraw the use of an area as a disposal site for dredged or fill material if the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.*
***CWA Sections 104(a) and (b) provide authority for such studies.*

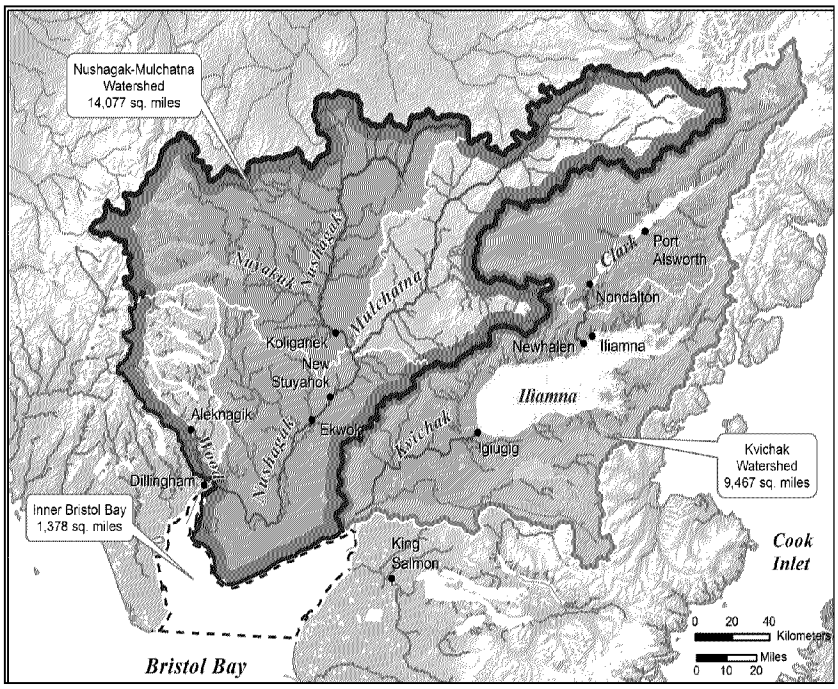
Purpose of the Assessment



- To examine how potential future large-scale mining may affect the Bristol Bay salmon fishery
  - Will help inform a decision on whether to initiate a 404(c) action at this time or take other actions
  - "… *significant loss of or damage to fisheries*.." (40 CFR 231.2)"

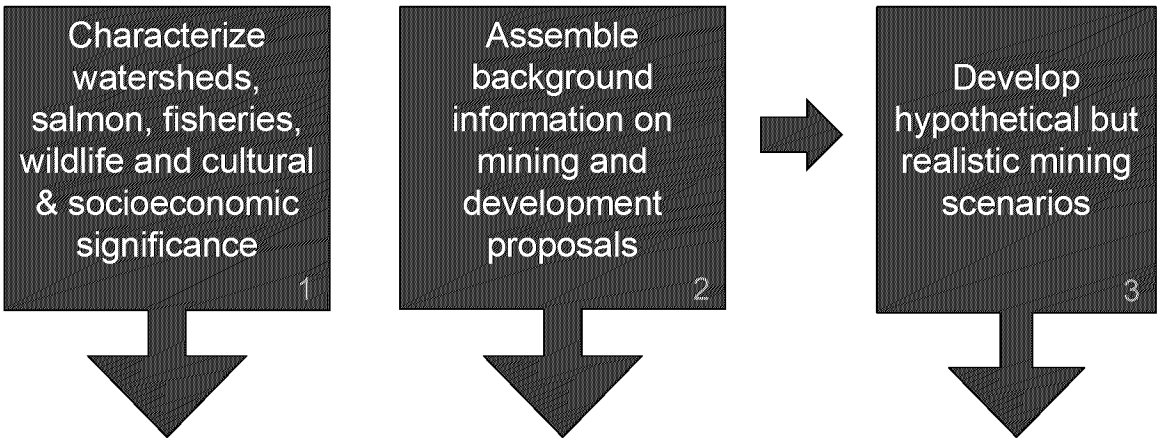
Scope of the Assessment

- Endpoints: Salmon fishery and associated impacts on wildlife, human health and welfare (including subsistence and recreation)
- Geographic scope: Nushagakand Kvichak Watersheds
- Temporal scope: Mining life-cycle (exploration, construction, mining operation, closure, and long-term maintenance)



Nushagakand KvichakRiver Watersheds

Assessment Approach

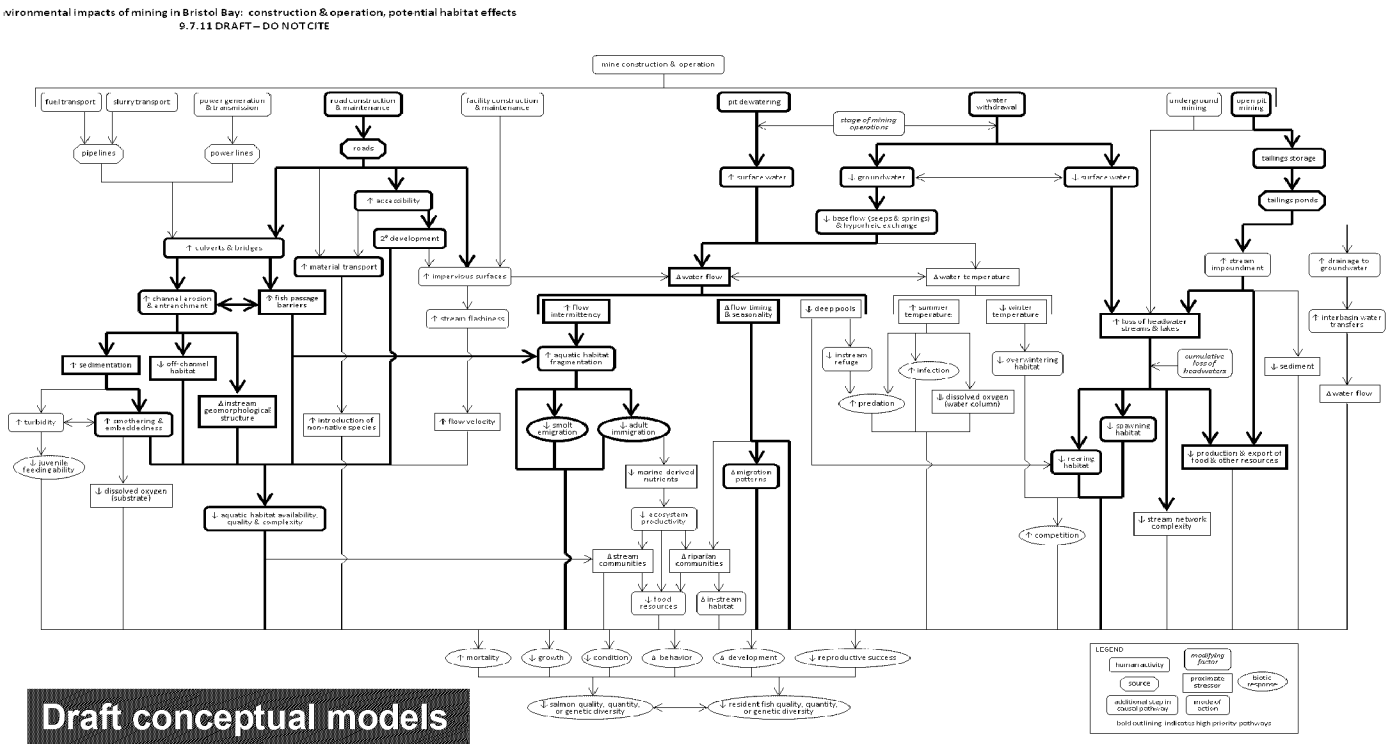


Developconceptual diagram of sources, stressors and endpoints 4

Conceptual Diagrams:

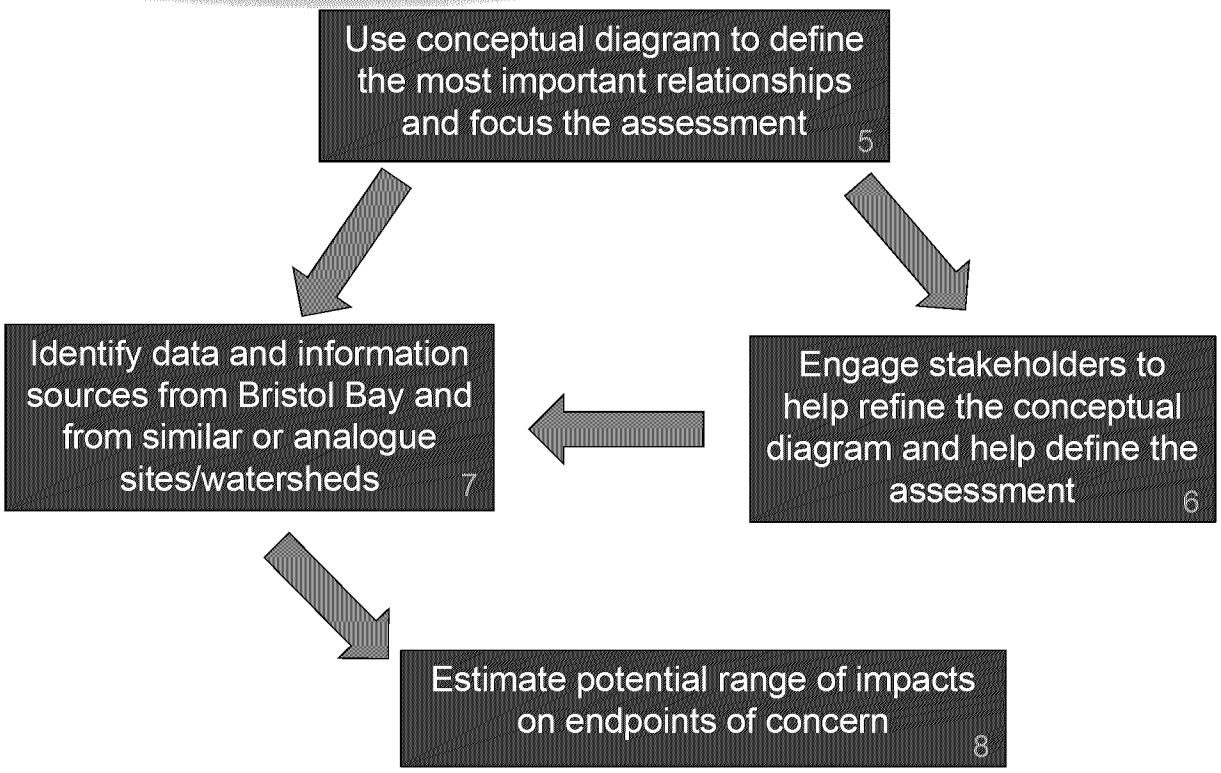
Mining Operations * Post-Mine Operation * Accidents and Natural Events

Example: Conceptual Model



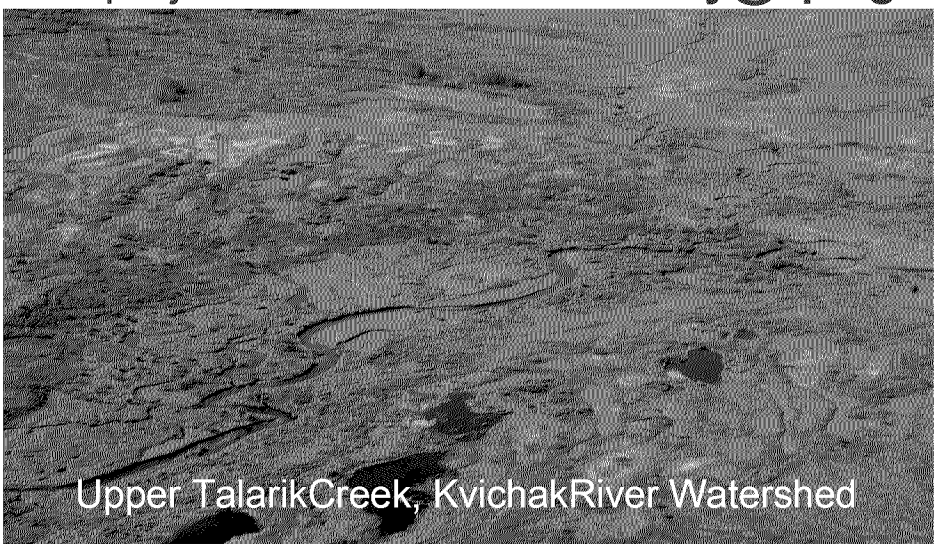
Draft conceptual models are available on the EPA Bristol Bay website

Assessment Approach



Schedule

February 2012 (2/24-3/16)	Public Input onScientific Peer Review Panel
March2012	PublicInput on Peer Review Charge
Late April 2012DraftWatershed Assessment Released for Pub lic and Peer Review	
May 2012	EPA Public Comment Meetings
August 2012Scientific Peer Review Panel Open Meeting	
November 2012Final WatershedAssessment	

For More Information

- www.epa.gov/region10/bristolbay
- Sign up for E-mail updates (listserv)
- E-mail the project team: **R10BristolBay@epa.gov**