

# **Friends of Eel Fall Chinook Monitoring Project**

**Report #8**

**Are There Chinook in the Eel Estuary and What Is  
The Condition of Habitat?**

**October 20, 2010**



Previous dive surveys of the lower Eel River established that there were hundreds of early fall Chinook salmon there in early October 2010. How many more salmon might be holding in tide water? Eli Sanderson of the Bear River Rancheria (lower left) and I hired guide Bruce Slocum (top) to help answer that question.

Lower Eel River habitat conditions are impaired due to algae blooms where the early run fall Chinook hold. What would habitat conditions be like in the estuary? Is there cover and suitable water quality for holding adult fall Chinook?

Bruce knew where the salmon were and explained the estuary's history and how it constantly changes. The Bear River Tribe may be conducting a lower river and estuary water quality study, so Bruce also pointed out previous monitoring locations.



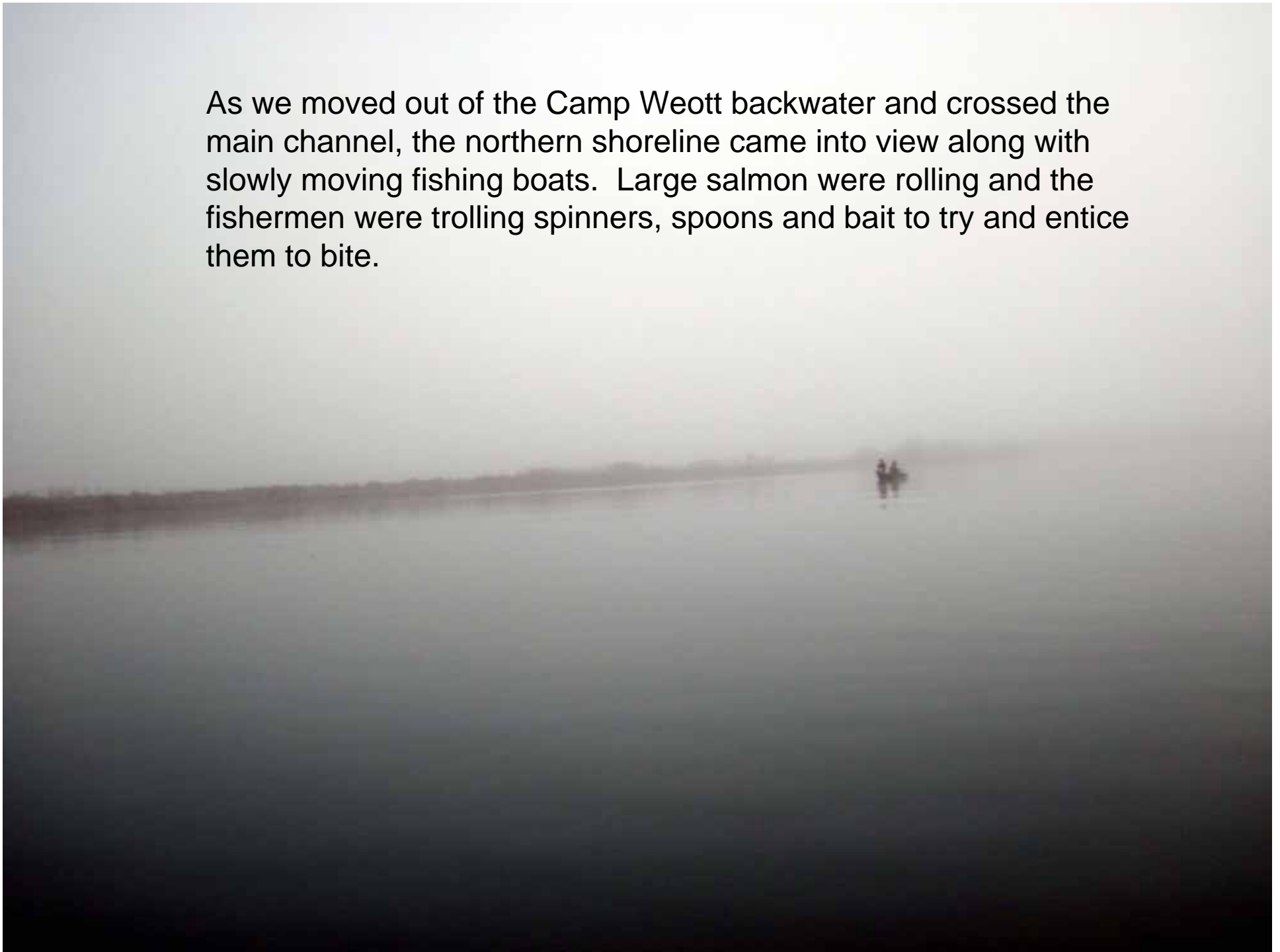
-- Tour Route





**The fog was low and visibility limited as we embarked with Bruce. Our first point of interest was old pilings that once supported the dock of Camp Weott. The shoreline on which the camp stood has shifted southward, just the first indication of the constantly shifting nature of the estuary.**

As we moved out of the Camp Weott backwater and crossed the main channel, the northern shoreline came into view along with slowly moving fishing boats. Large salmon were rolling and the fishermen were trolling spinners, spoons and bait to try and entice them to bite.



This photo was taken looking upstream towards Cock Robin Island Bridge and the island shore and riparian vegetation is visible at right.





As we approached the Cock Robin Island Bridge it became apparent that one boat was hooked up to a large Chinook salmon.



We pulled over to watch the fisherman play the fish and every time the fish rolled the water was roiled in a circle 4-5 feet across. This means the fish was very large, maybe in the 30-40 pound category. We watched for 10 minutes, but the fish wasn't landed and we then proceeded further up the estuary.



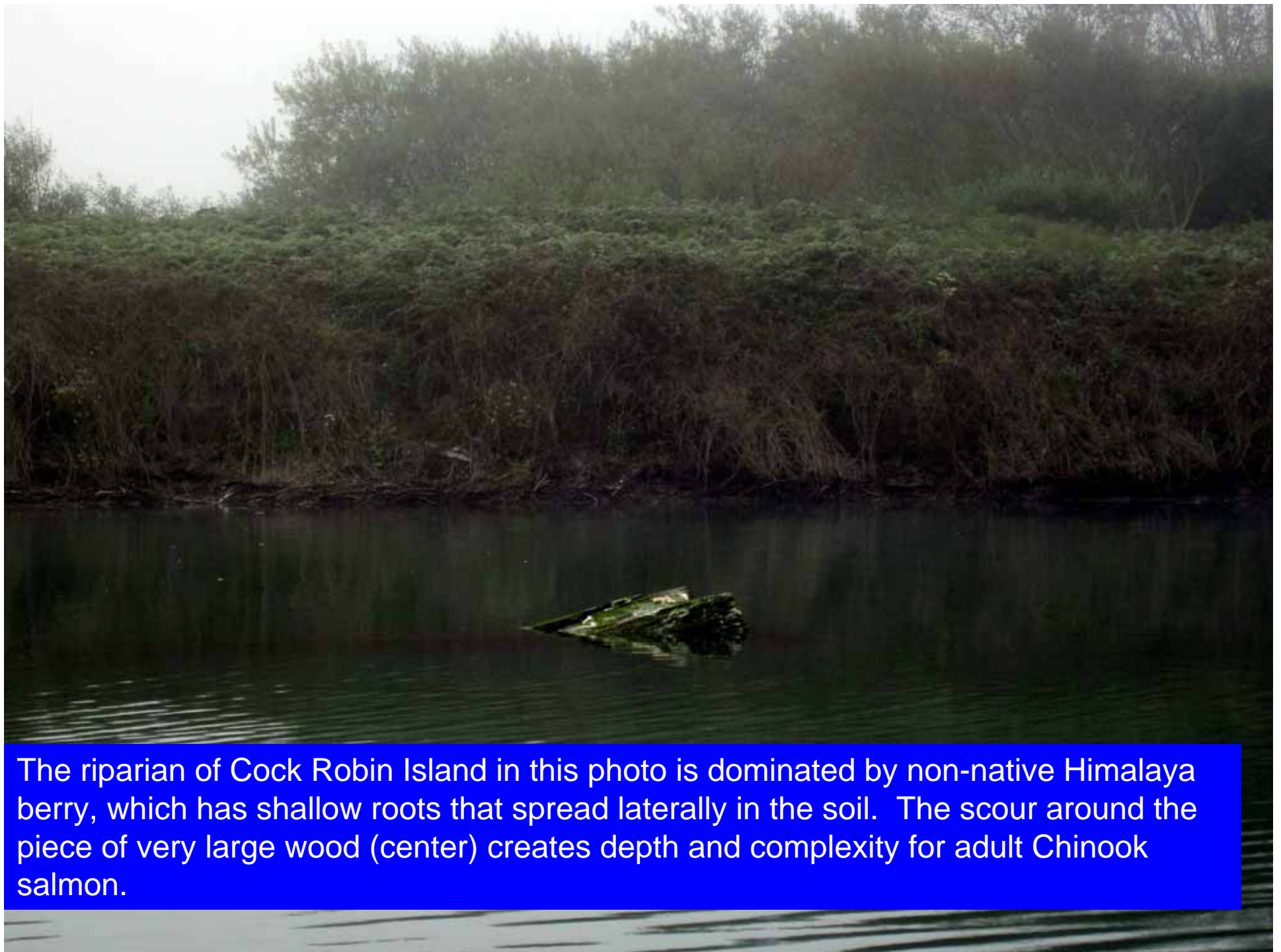
This photo of the Cock Robin Island Bridge looking downstream shows that the island side foundation (at left) is being protected by large boulders or rip rap. This causes scour forces in the channel here that help maintain depth.

When asked whether more trees should be planted to stabilize banks with raw soil, Bruce explained that salt water intrusion limits success of riparian restoration and bioengineering in the estuary. As tree roots penetrate deeper into island or near shore estuarine soils, they come in contact with salt because of tidal influence that sucks sea water in.

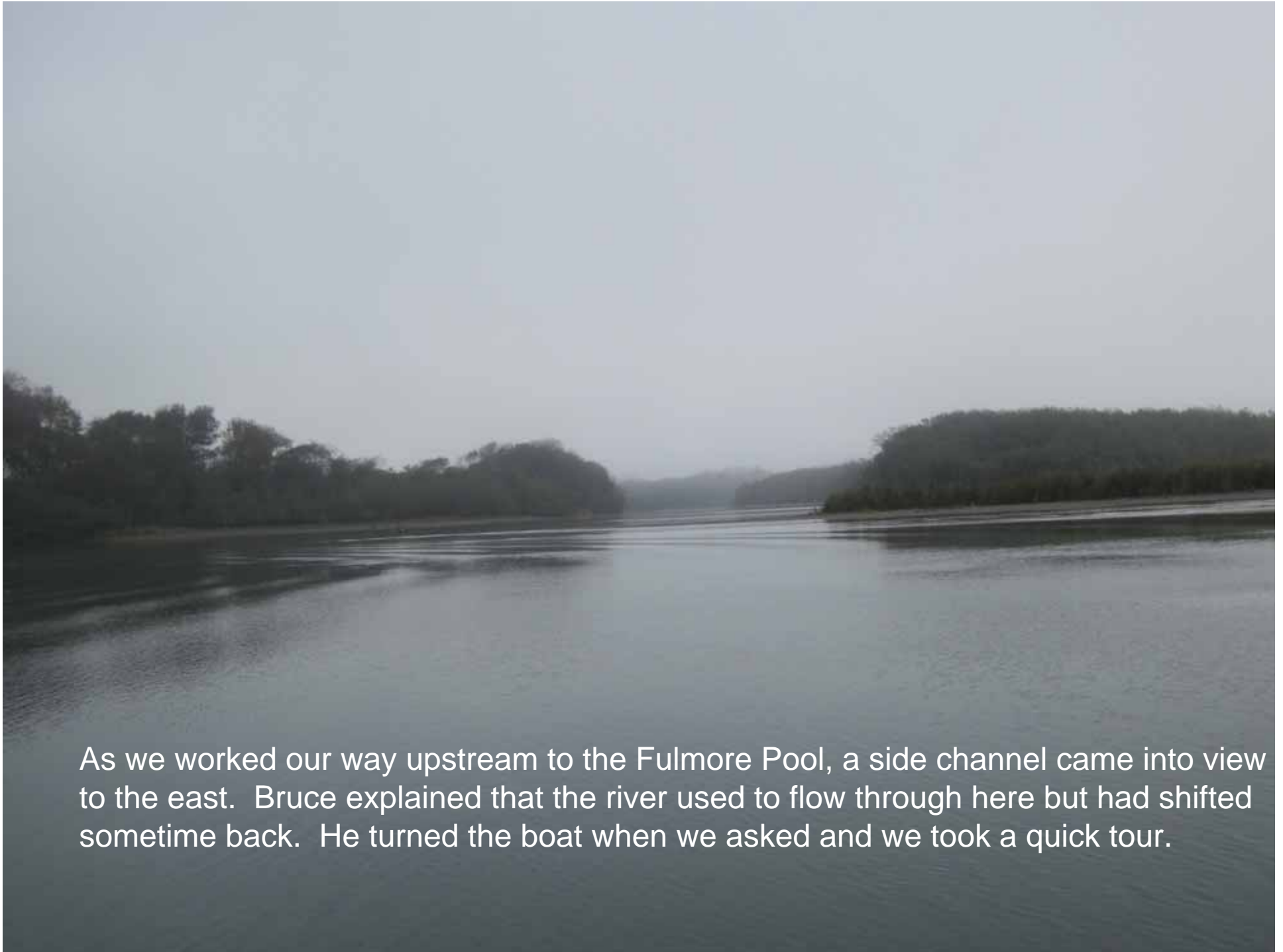


This riparian view is of the north side of the main estuary channel above the Cock Robin Island Bridge. Alders here are growing in soil above salt influence, but old dead trees in the water probably succumbed from salt exposure. The dead falls help increase habitat complexity for fish here.



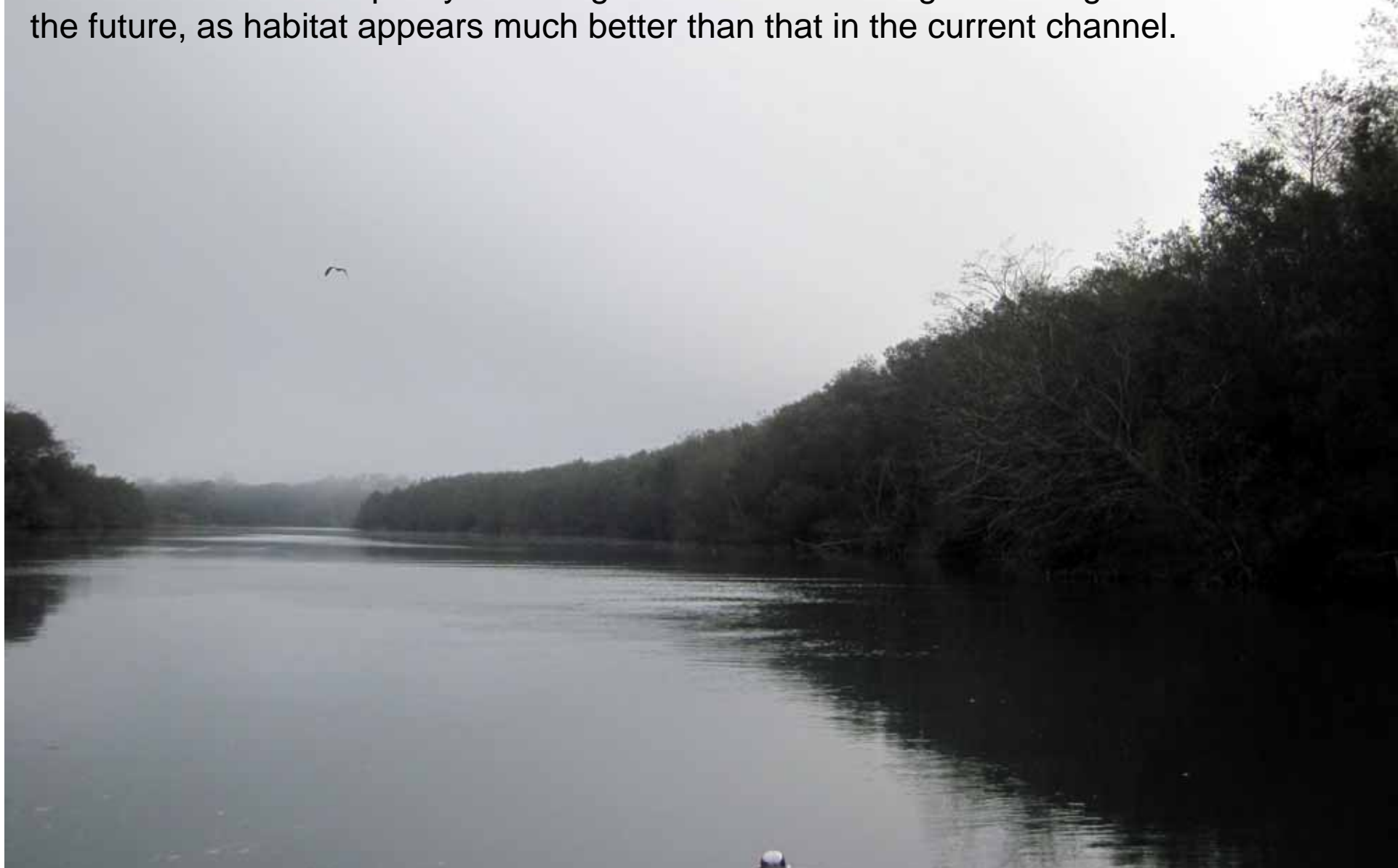


The riparian of Cock Robin Island in this photo is dominated by non-native Himalaya berry, which has shallow roots that spread laterally in the soil. The scour around the piece of very large wood (center) creates depth and complexity for adult Chinook salmon.



As we worked our way upstream to the Fulmore Pool, a side channel came into view to the east. Bruce explained that the river used to flow through here but had shifted sometime back. He turned the boat when we asked and we took a quick tour.

The side channel appeared to have retained deep water, good riparian conditions and some large wood. Adult Chinook could hold here, but the lack of current could hamper circulation and water quality. Routing the river back through here might be considered in the future, as habitat appears much better than that in the current channel.





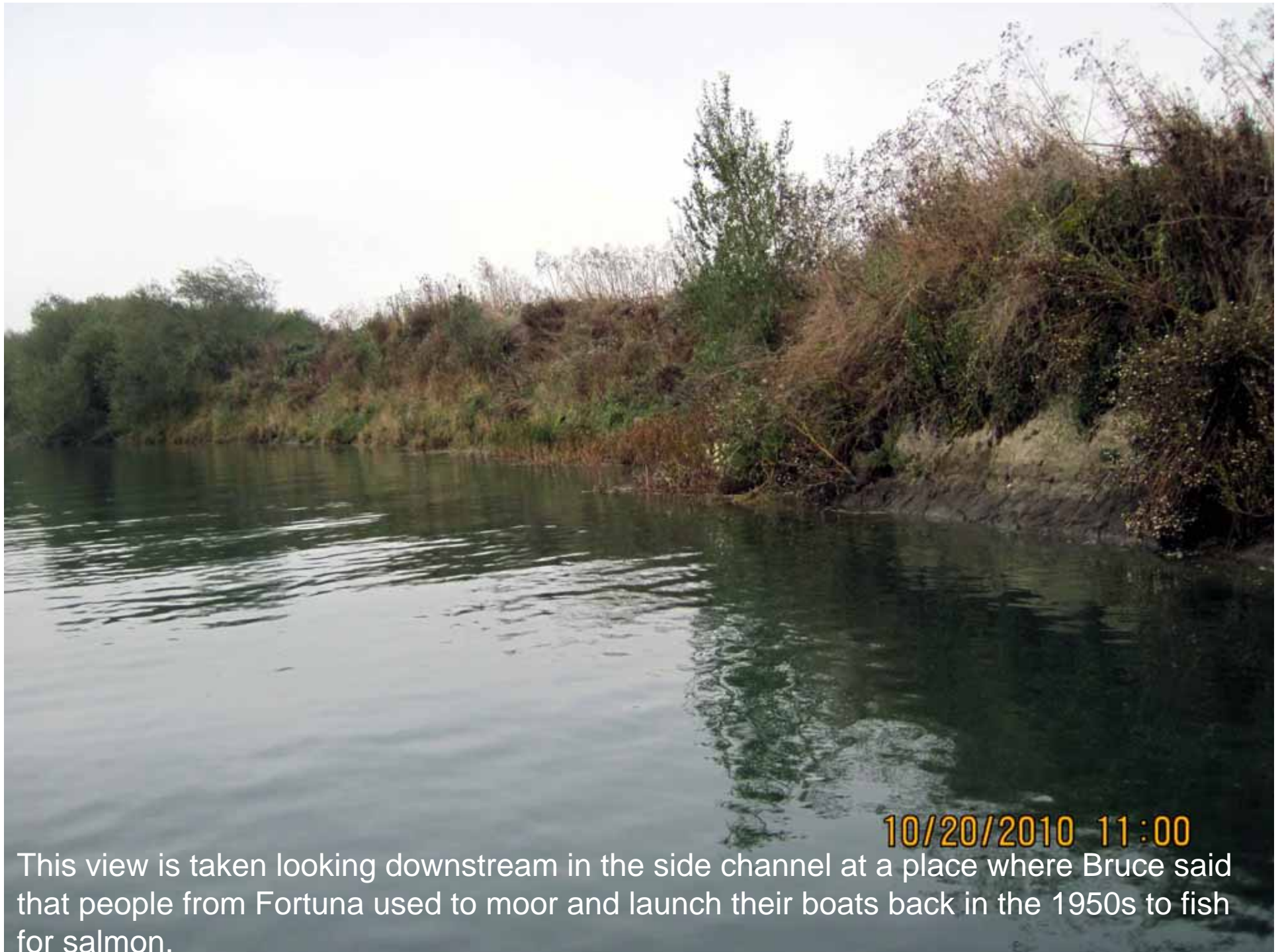
The mature riparian trees on the north bank of the side channel had a major black crown night heron rookery and the birds took flight as we boated upstream.



This photo taken further into the side channel shows a deep pool with complex adult Chinook holding habitat formed by large wood and overhanging riparian vegetation.

This view is taken looking upstream in the side channel from the highest point to which we traveled. A mass of sediment was deposited in the distance in this photo that has caused the channel to shift.



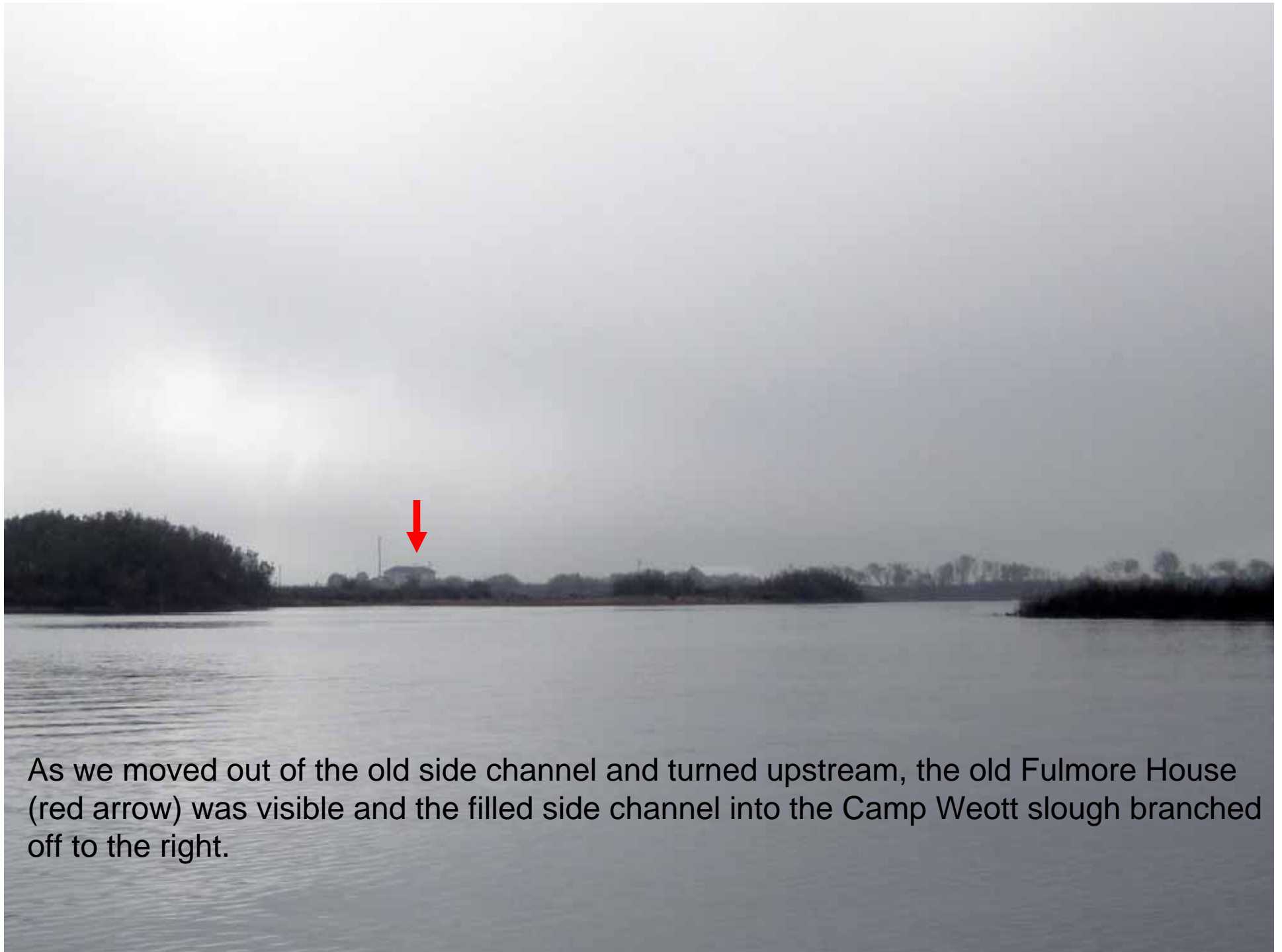


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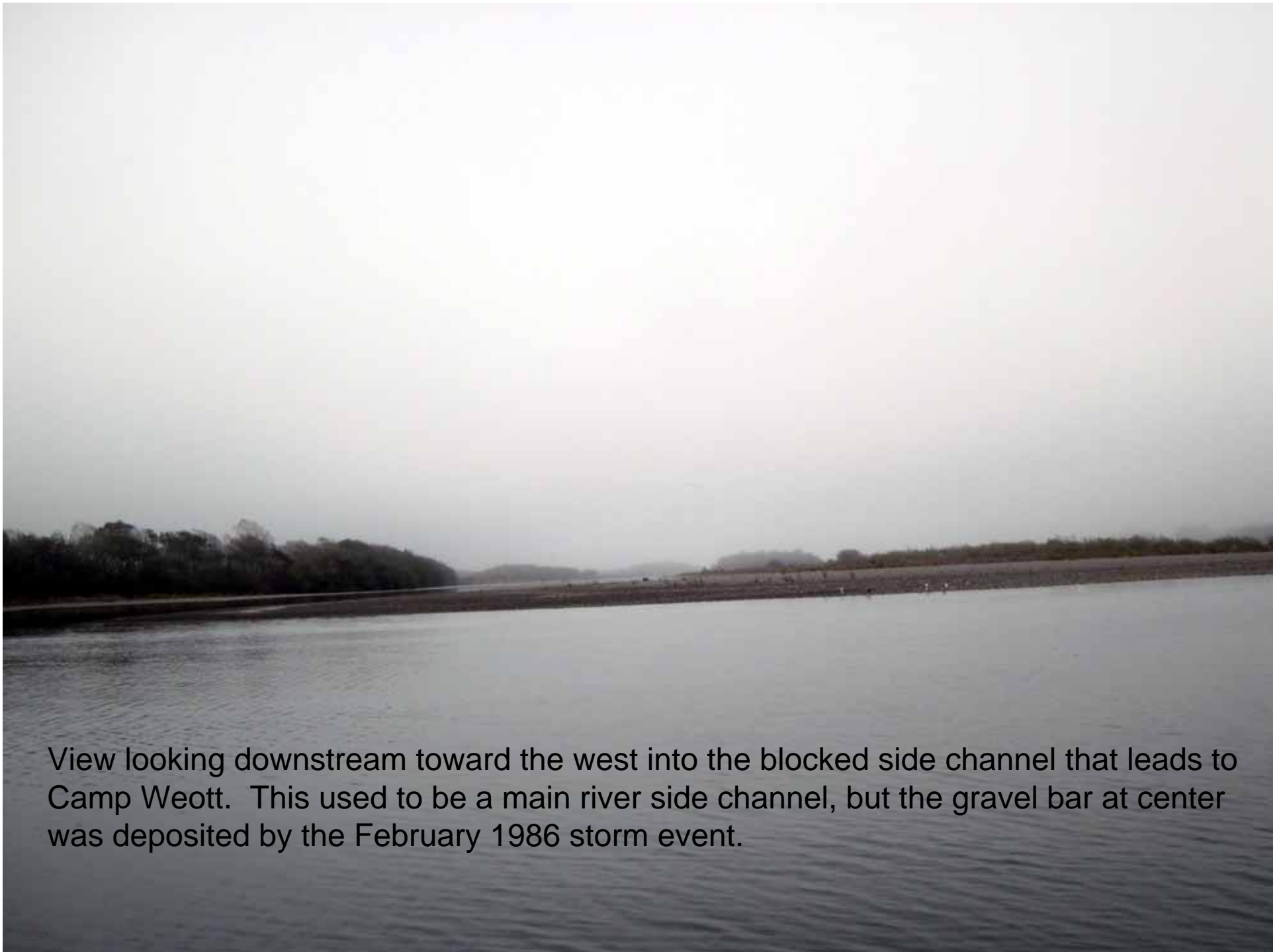
This view is taken looking downstream in the side channel at a place where Bruce said that people from Fortuna used to moor and launch their boats back in the 1950s to fish for salmon.



Bruce has fished the estuary since the 1950's and said that coastal cutthroat trout were plentiful when he was a boy. When steelhead fishing then, good sized cutthroat were often the consolation prize when the steelhead wouldn't bite. "I hope there are still some around," were his closing words on cutthroat. The filling of lower river tributaries like Williams and Francis creeks and Salt River is a major factor in this species' decline. Cutthroat also thrived in Strongs Creek, which is now urbanized and in other lower Eel River and Van Duzen River tributaries damaged by logging.



As we moved out of the old side channel and turned upstream, the old Fulmore House (red arrow) was visible and the filled side channel into the Camp Weott slough branched off to the right.



View looking downstream toward the west into the blocked side channel that leads to Camp Weott. This used to be a main river side channel, but the gravel bar at center was deposited by the February 1986 storm event.



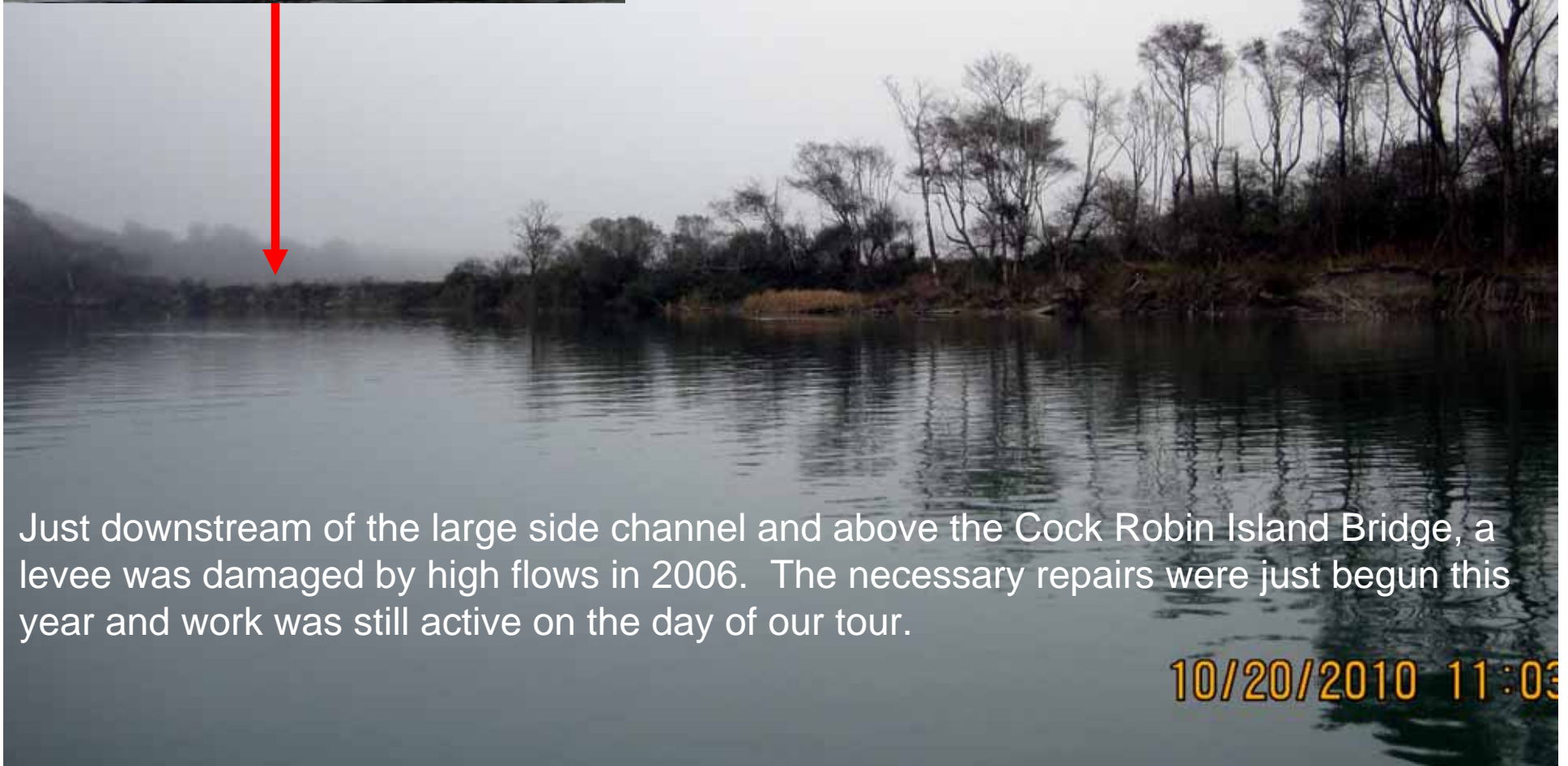
The Fulmore House sits adjacent to the estuary on Fulmore Road and marks the upper limit of legal fishing. The large riparian conifer that has toppled towards the water will likely provide good cover for fish if it washes in. The standing dead snag likely indicates that the trees roots reached salt water.

Large wood embedded in the channel in the Fulmore Pool creates scour that maintains depth and also provides cover for adult Chinook salmon that would help them avoid seal predation.



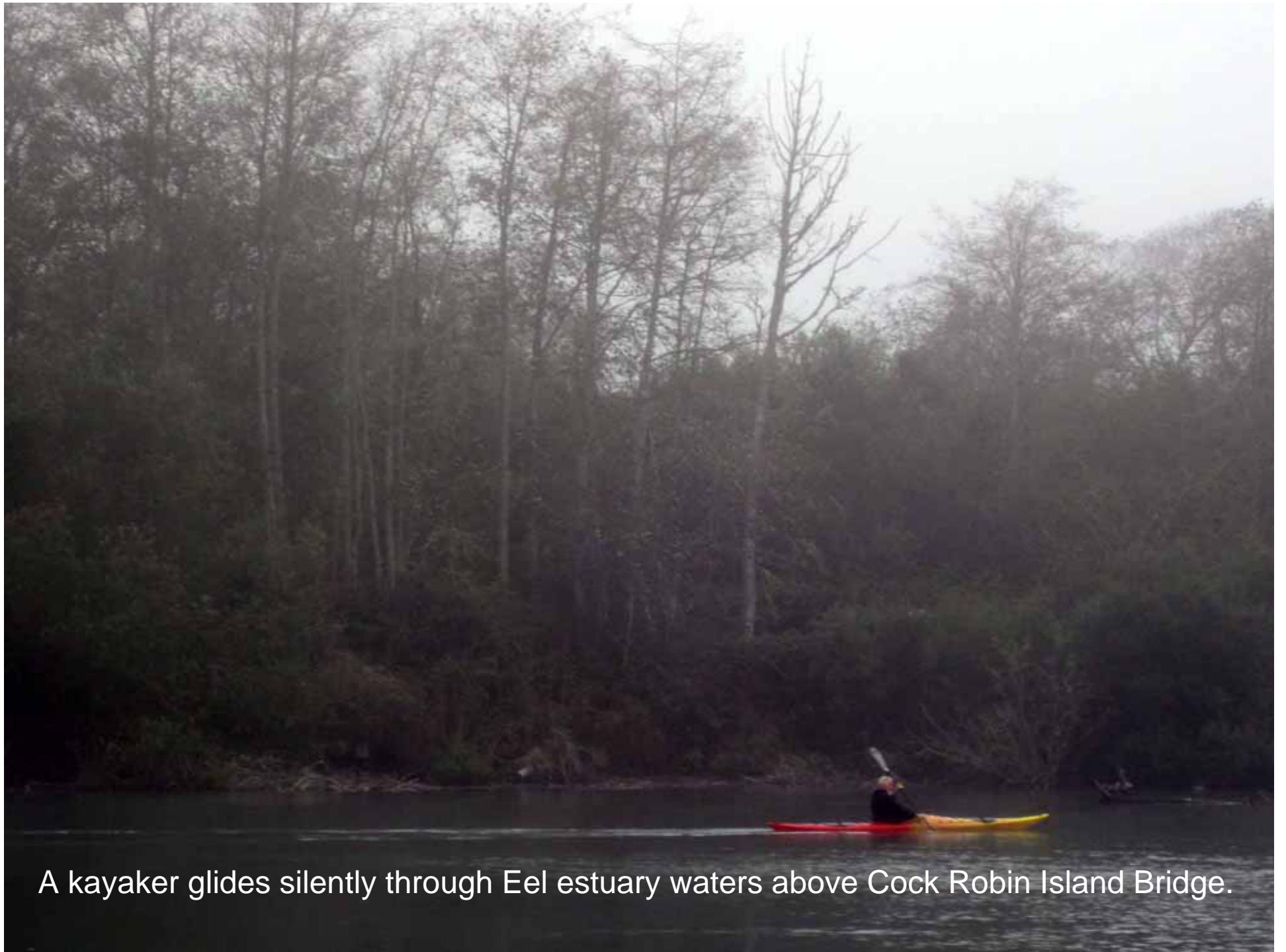


The bird life in the Eel River estuary is extraordinary, although the conditions for photographing them were less than optimal. Sea gulls at upper left were likely indicative of a salmon kill by a seal, according to Bruce. There is a resident cormorant population in the estuary and some took flight from a point bar as the boat passed (upper right). Below scoters take flight as we boat towards the mouth.



Just downstream of the large side channel and above the Cock Robin Island Bridge, a levee was damaged by high flows in 2006. The necessary repairs were just begun this year and work was still active on the day of our tour.

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A kayaker glides silently through Eel estuary waters above Cock Robin Island Bridge.

We headed towards the mouth of the river downstream past the Cock Robin Island Bridge and riparian trees on the islands and shoreline became more sparse as salt water influence increased.



The influence of the sea is evident from the foam on the water near Crab Park. Note absence of tree species due to salt water influence.



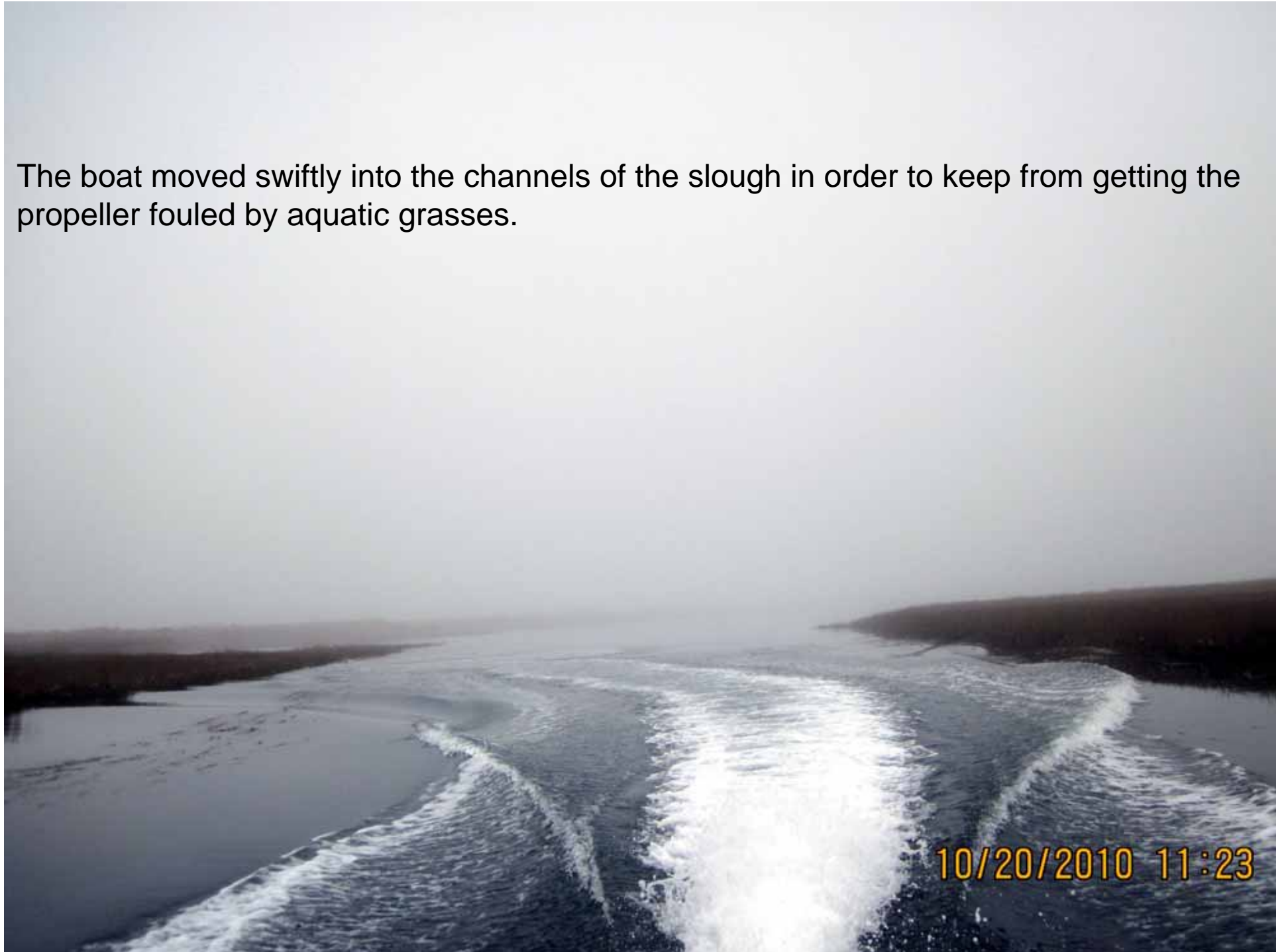


Seals bask at the mouth waiting for signs of salmon. Sea gulls that want to share in the banquet rose from the water at the ocean outlet as the boat passed.

Bruce turned his boat south into sloughs and the wide channel narrowed.



The boat moved swiftly into the channels of the slough in order to keep from getting the propeller fouled by aquatic grasses.



As we turned eastward into the sloughs, the channel narrowed further. Bruce noted that the grass species seen here on the margins of the channel is taking over and may fill in channels in the future.



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We came back into an open channel area near the convergence of the old Salt River. This photo was taken looking up a slough arm to the south that leads to the Russ Creek tide gate.

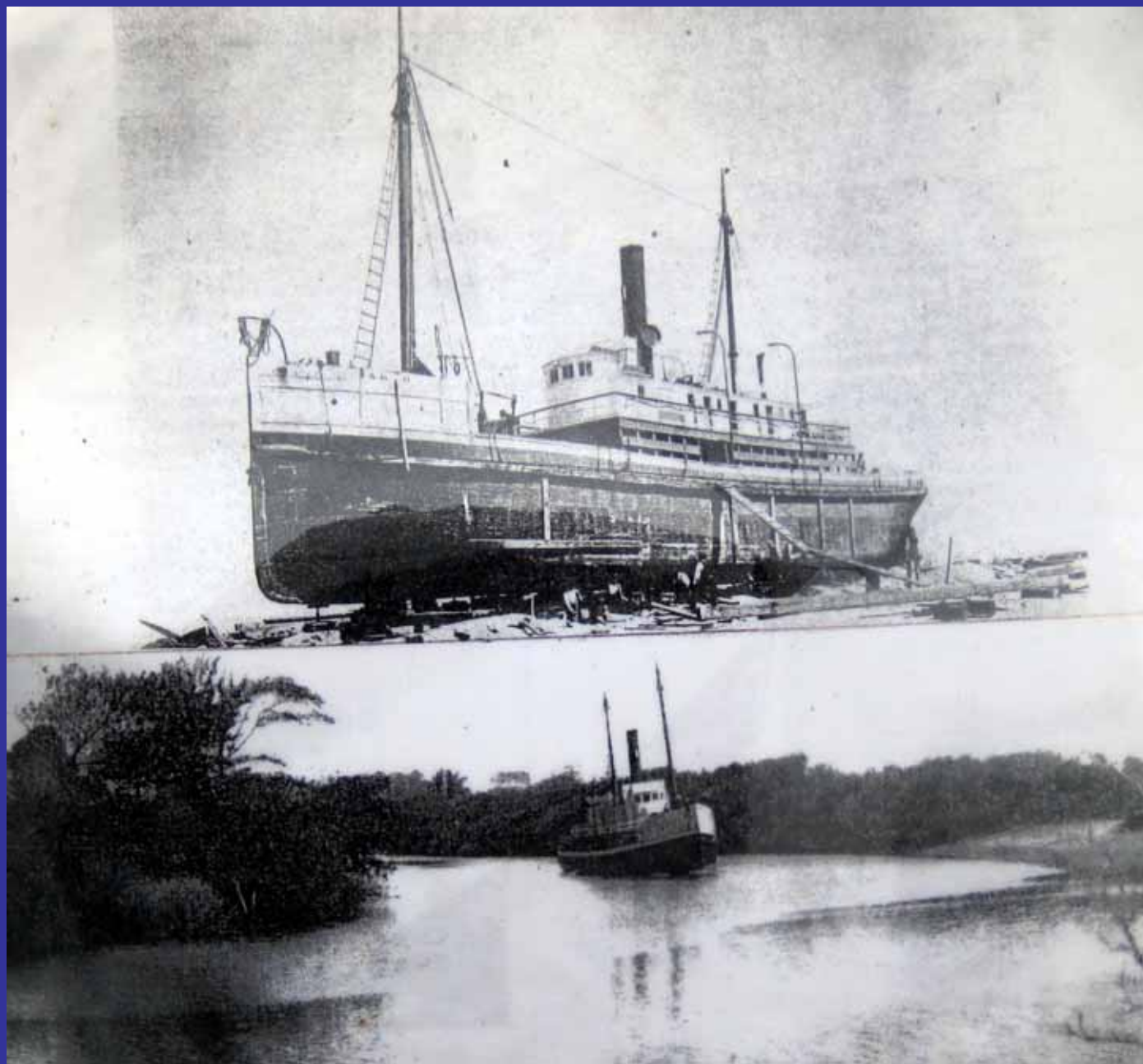


The straightened channel at right of center is the channel of the Salt River. There is a current, on-going project to reduce sediment and increase flood capacity from this point upstream.



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Bruce took out old photos of the Salt River channel and the ships that used to ply the waters up to Port Kenyon.



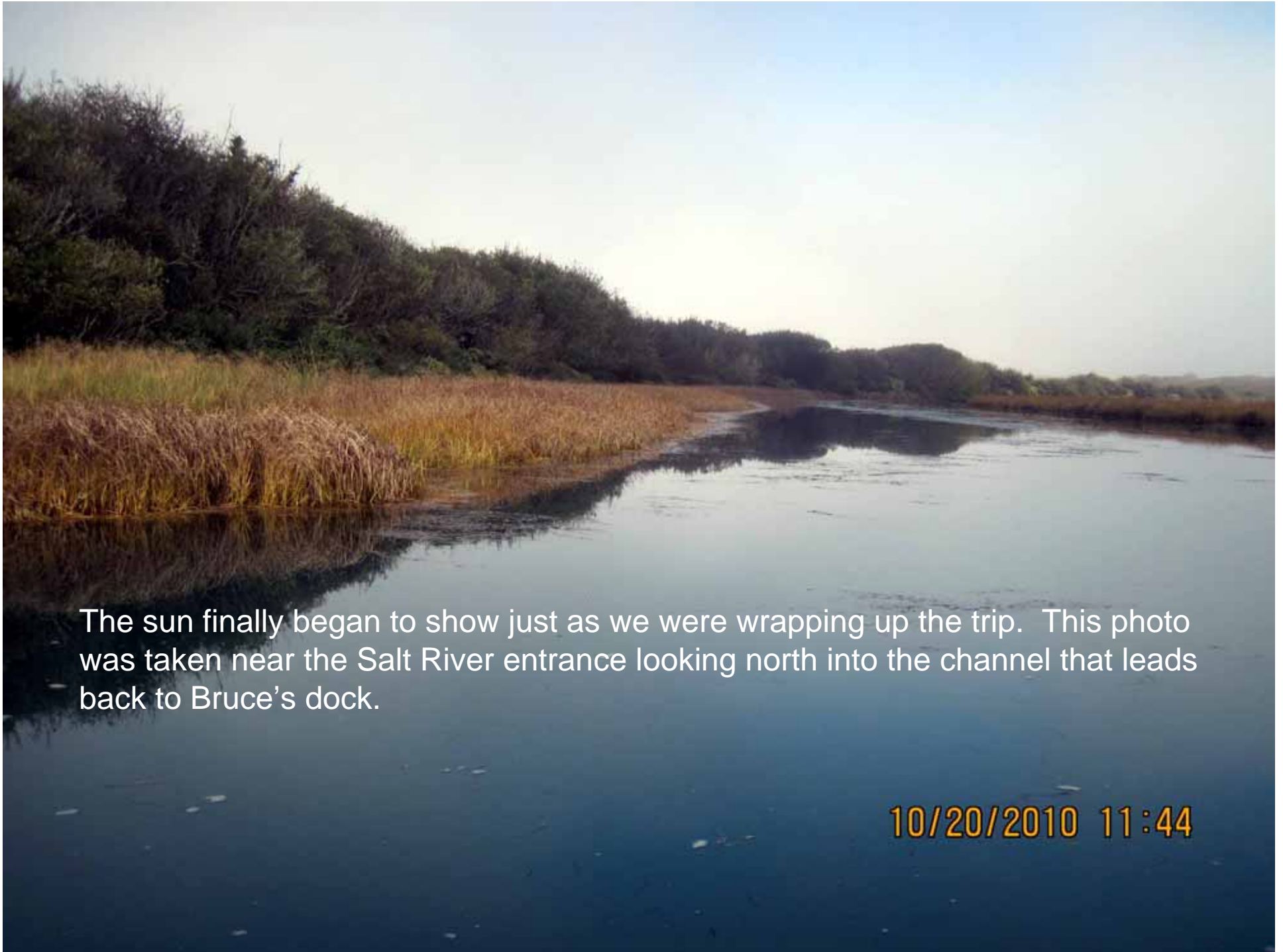
The Russ Creek tide gate keeps salt water from intruding into upstream pasture areas but lets freshwater pass downstream during rain events. This was the end of the line for the boat tour and we headed back towards Salt River and upstream to Bruce's launch at Camp Weott.



This photo was taken looking west towards the ocean at the Russ Creek tide gate at what was likely mud flats. Bruce talked about how diking in the estuary began in the 1880's and that shippers recognized potential problems with reducing flux, but were unsuccessful in challenging the practice. The tidal flats in this picture are covered with pickle weed and the non-native invasive species *Spartina*.



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The sun finally began to show just as we were wrapping up the trip. This photo was taken near the Salt River entrance looking north into the channel that leads back to Bruce's dock.

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Bruce planted this alder grove near his duck blind, but only some trees took. Smaller trees to the right were also planted but are growing much more slowly, likely due to salt.



Looking downstream towards the mouth in the main Camp Weott side channel within a quarter mile of Bruce's dock.

# What Did We Learn?

- Adult Chinook salmon were present in good numbers in the estuary on October 20, as indicated by the number of fish seen rolling and the fact that anglers were hooking them.
- Estuarine habitat conditions are variable, although there did seem to be good habitat available.
- Riparian planting and bioengineering projects have limited potential in the estuary because the salt water at depth in soil profiles kills trees as their roots extend down.
- Abandoned side channels may still offer refuge for holding adult Chinook salmon, but deflection back into some of these channels might be considered in the future to increase carrying capacity.
- The mouth of the Eel River estuary is at its furthest southern range in the last 40 years.
- Eel grass has colonized the Eel River estuary and productive beds are developing.
- Introduction of an aquatic species of grass seems to have the potential to choke slough channels and may ultimately fill them.
- Coastal cutthroat trout were abundant in the Eel River estuary and nearby creeks in the 1950s when Bruce Slocum was a boy but are now fairly rare.