

NOTES FROM INTERVIEW WITH TED COONEY,
INTERVIEW IN HIS OFFICE, TUESDAY, NOVEMBER 1, 10:45 a.m.

"We're seeing a general warming in response to the El Nino condition that is presently worldwide. We're not exactly sure what the physical connection is between the low latitude tropical waters and what is going on in the Gulf of Alaska, but temperature data, particularly this last year, shows that the water is warming, at least down to the 200 meter depth by maybe a degree or a degree and a half."

this is a significant warming

"We find in Prince William Sound and more specifically in the water adjacent to Columbia Galcier in zooplankton tows, one small copopod (sp) that is an indicator of subtropical water."

"We think that it works this way. Starting in the Coastal waters of British Columbia, we have a current associated with fresh water runoff which is urged along by wind stress, that has been described as the Alaska Coastal Current. The scientific literature indicates, that more often than not, an intrusion of equatorial (sp) Pacific water apparently coming from the California undercurrent is present in the British Columbia coastal area almost every year. Perhaps this year with the El Nino warming the tropical waters and general warming along the coast, this intrusion has been a bit larger than we would normally see. At any rate, I suspect, that because of this coastal current that weaves its way along the entire coast of the Gulf of Alaska, starting down along the coast in the British Columbian waters has a coherent flow along, some of which actually goes into the Prince William Sound and circulates around before going back out. This provides a conveyor belt to perhaps move some of these subtropical indicator species far to the north. And it looks like the one little copopod that we find is probably the hardiest of the bunch."

1500 nautical miles
also found near Yakutat

"medium-sized, kind of rice grained-sized copopod, and we find it quite commonly in those kind of samples. We've been looking in zooplankton samples in the Gulf of Alaska since 1974, and we've recorded just one specimen of that zooplankton before. Now, this year it seems kind of common, particularly in the surface water samples from 50 meters to the surface."

it is appearing in every sample, and is one of the more common species in the samples.

"This doesn't mean that we have El Nino occurring off the Gulf of Alaska. I think that it just means that, at least a little further to the south, a larger proportion of tropical water invaded the shelf area and these little copopod, which we suspect aren't able to reproduce in the colder waters, many more of them got associated with the coastal current than has ever been the case before. More have survived a little further to the north."

has ridden the coastal current to Alaskan water

"I suspect that if we were to sample south of Kodiak or south of the Aleutian chain, we also find this organism riding along."

"Oceanographically, I think, this little indicator species is a nice tie to provide some continuity between the physical oceanography in the flow field together with the biology. We customarily sit and draw little arrows on map and charts of the Gulf of Alaska and believe that we have a coastal current that's continuous from the coast of British Columbia along the coast. This seems to suggest that it actually does occur and that the current can carry populations that originate much further south."

"I think that it gives substantial credence to this coastal current."

the co

popod is normally found off the coast of Californ

ia and further south.

In the regular habitat, it is relatively deep (220+ meters) than here.

a Californian undercurrent that intrudes into the freshwater flow near BC

"The little animals are pretty much committed to where the currents go. They are able to migrate vertically in the water.... It has no ability to swim against the current."

probably being fed on various fish that normally feed on zooplankton

"If one looks at the actual return runs vs. what the state agencies predicted will come back, one sees a relationship between warmer years and more fish returning than predicted. If that turns out to be the case, our warmer water conditions this year should favor the survival of at least pink salmon using the coastal zone this year. So that returns next year we would guess would be above those actually predicted. The story seems to be that during warmer water years the fish seem to grow more rapidly and grow through the smaller more vulnerable stages more quickly. Perhaps the food source respond the the warmer temperatures creating more food."

during colder years the return rates tend to be below predictions.

would suspect that warmer years would favor growth of halibut and crustaceans.