

Mickey Agha 02:25 PM – answered live

Excellent talk Jonathan, have you explored the potential effects of sea level rise and how that might interact with the effects of glacier retreat? I would suspect we might be looking at habitat squeeze in some coastal areas.

John Field 02:26 PM – answered live

Jonathan mentioned pro-active management to address salmon habitat changes in coming years. What does this look like?

Gary Morishima 02:34 PM – answered live

Jonathan, Glacial melt will affect more than spatial availability of habitat. Have any projections been made regarding how the changes in temperature and flow patterns might affect food webs, abundance, productivity, and availability of different species and stocks of salmon? Under environmental change, the migratory range and timing will differentially affect salmon stocks.

Gary Morishima 02:44 PM – answered live

Monitoring of disease or parasites with range expansion?

Brittany Jenewein 02:44 PM – answered live

Recognizing it's early days in our understanding of glacial retreat, wondering if the panelists have thoughts on any of these questions: How do salmon populate these new habitats, given they're "supposed" to return to their natal streams? Is it an extreme form of straying? If so, are certain species and/or populations more likely to effectively find and populate new habitats?

John Lamont 02:45 PM

Is the Colville River spawning more Chinook Salmon?

Karen Dunmall responded

The focus of our research is the Canadian Arctic. As such, I cannot comment on the status of Chinook salmon in the Colville River.

John Lamont 02:46 PM

Not sure who I can direct this question to, how is the release of hatchery salmon effecting the wildstock?

Jon Moore responded

Hatcheries are a widespread approach to try to increase the production of salmon or rebuild struggling populations. There are now a diverse array of hatcheries with diverse goals, ranging from small-scale community hatcheries to major production hatcheries that release millions of young salmon into the ocean every year. Hatcheries can sometimes provide fishing opportunities in cases where habitat is limited or degraded and can be venues for connecting salmon and society. However, there is now a powerful body of evidence about the different ways that hatcheries cause harm and risks to wild salmon populations.

At local scales, hatcheries can have negative impacts on wild populations, such as by spawning with wild fish, introducing maladaptations, and eroding local adaptations (reviewed by Naish et al. 2007). Hatcheries can also increase risks of overfishing wild stocks, unless risks are mitigated such as via mark-selective fisheries. At the ocean scale, large-scale production of hatchery fish has contributed to salmon exceeding the ocean's carrying capacity, leading to competition and decreased sizes, returns, and older ages of wild stocks.

Paul McCollum 02:48 PM – answered live

Potentially on the flip side of concerns for char, Dolly Varden and Char are very aggressive feeders and in south central Alaska to Southeast AK, Dolly Varden and Char are know as sea wolves and predate heavily on salmon fry. Just wondering of salmon could increase char numbers given more feed.

Urs Thomas 02:50 PM – answered live

I guess you samle (DNA) and analyze all salmon you receive. Is there a clear trend showing were most salmon come from like Alaska, Canada or other countries?

Urs

Andrew Piston 02:50 PM

Do you think the presence of pink salmon in eastern Arctic Canada is related to the massive increase in pink salmon in European waters around the same time (apparently quite a few as far west as Greenland), or colonization from Alaska and northern BC?

Karen Dunmall responded

I had the same question, along with some of my collaborators. Alaska Department of Fish and Game is leading some genetic analyses to try to address this question by exploring the regional origins of pink salmon caught across the Arctic (including North American and European Arctic). I have no results yet but they have submitted an abstract for a talk about this at the International Year of the Salmon Symposium to take place in October 2022 and may discuss some preliminary findings at that time.

Steve Latham 02:52 PM – answered live

Has DNA work revealed the source populations for these unusual salmon visitors?

Rich Brenner 02:52 PM – answered live

For Karen: are the recent records of sockeye salmon harvests in the high arctic from freshwater systems or the marine environment (or both)?

Alex Parker 03:02 PM – answered live

Hi Karen. Has there been genetics to determine the origin of these salmon, and if so, what populations or areas are these migrants coming from?

John Field 03:06 PM – answered live

Does DFO have a statutory obligation to manage Arctic salmon as a sustainable fishery going forward?
Or is this regarded as an invasive?

John Lamont 03:08 PM

Are the Arctic Cisco spawning in the MacKensie and rearing in the Colville?

Karen Dunmall 03:19 PM

Yes

Paul McCollum 03:15 PM

chum are well established in arctic Alaska and Russia

John Lamont 03:15 PM

What is the correct FaceBook site for Arctic Salmon?

Karen Dunmall 03:19 PM

www.facebook.com/arcticsalmon

Paul McCollum 03:18 PM

also, it seems if more that a couple dozen chum in a river up there, may suggest some are successfully spawning. Strays might just be a handful of adults

Urs Thomas 03:19 PM

Whats the timing Sockeye show up?

Karen Dunmall 03:27 PM

They are showing up in the fall, starting in September and are harvested through the end of November

Anonymous Attendee 03:19 PM

Hi Karen. Are otoliths from Pacific salmon being analyzed for hatchery thermal marks?

Karen Dunmall 03:25 PM

We are collecting otoliths but they are not analyzed (yet) to look for hatchery marks.

John Lamont 03:24 PM

Is there concern for Ichthyophonous in any of the fish species in the Arctic?

Karen Dunmall responded

While there is not really a specific concern regarding Ichthyophonous, there is more of a general concern that northward distributing species may be vectors for pathogen transport to the Arctic. As such, we have just started a project to assess pathogens in key Arctic species in the Canadian Arctic, including some fishes, as well as in vagrant salmon caught in the western Canadian Arctic.

This will provide a baseline assessment of pathogens in Arctic species as well as an understanding of pathogens present in vagrants in the Arctic. This is a large and ambitious study, and results are expected in a few years.