Dr. Robert Behnke
Department of Fishery and Wildlife Biology
Colorado State University
Fort Collins, CO 80523

December 28, 1993

Dear Bob:

I have recently come across an article in a fishing magazine that grabbed my attention regarding the char that inhabit the Tree River in the central Canadian Arctic. I had only seen one photograph of a large specimen in silhouette from this river. Based on it and the fact that there is no lake available to these fish, I suspected that these fish may actually be *S. malma* and not *S. alpinus*. Based on the enclosed color copy of a photo from this article, assuming that the fish is indeed from the Tree River, I would have little doubt that this is a typical northern form Dolly Varden as occur commonly in western Alaska and eastern Russia.

I have raised this question to Jim Reist in the past and he too believes that these fish may be *malma*, however he has not had the means to mount an expedition to this river in order to collect specimens for genetic or other analyses.

Have a look and let me know what you think.

I've also enclosed a copy of a photo of a male Dolly Varden in spawning condition from the Kenai River. I did not have the opportunity to examine this fish or any others from the Kenai, however, the striking thing about this fish is the white leading edges on the dorsal fin and the upper lobe of the tail. I have never seen another *malma* with these features. They may be an adaptation to spawning in the turbid waters of the Kenai, or may be common southcentral Alaskan Dolly Varden, although the folks who work on char farther south on the Kenai Peninsula have not noticed this feature.

I spent two weeks on the Chukotsk Peninsula with Pavel Goodkov in September. Pavel works with Chereshnev in Magadan. We tagged some *malma* in the Kurupka River and caught many *S. taranetzi* from the Ioniveem River, including some fish in spawning condition from lakes connected to the river.

These were the first anadromous alpinoid type char that I have knowingly had my hands on and it was very interesting. I am convinced that we have some anadromous Arctic char in Alaska and that they are mainly distributed in southwestern Alaska and Bristol Bay where there are many suitable lakes with access to the sea. The major underlying common factor in the distribution of *alpinus* and northern *malma* appears to

be the association of *malma* with rivers for both spawning and overwintering and the association of *alpinus* with lakes. I was even able to get some samples out of Russia after much grovelling before some very official customs agents.

To date I have had four tags returned from Russia. Two which you know about, and two from Mechigmenan Bay, one of which was tagged in the Wulik River in 1988 and one which was tagged in the Nome River in 1991.

We also recently found some *alpinus* in cirque lakes in the Kigluaik Mountains just north of Nome, and plan to do some work in Salmon Lake (north of Nome) next summer to determine whether *alpinus* or lake trout are present.

That's about all for now, best wishes for 1994.

Sincerely,

Fred DeCicco

Fred DeCicco
ADF&G Sport Fish Division
1300 College Rd.
Fairbanks, AK 99701

Char of the Mighty Tree(-less) River

The Northwest Territories is part of the mythology of Canada, the place people picture when they think of the Great White North. It's bigger than Alaska, Texas, California, and New Mexico combined, but only 54,000 people live there. From January to July, the temperature swings a hundred and forty degrees. In settlements like Coppermine, dogsleds and snowmobiles sit around in front yards for the few months they're not used. At isolated outposts, ketchup costs $6 a bottle and a normal bag of flour $23.25. Herds of shaggy, prehistoric-looking musk oxen roam across the tundra, which is frozen only inches below the surface even in the summer.

It's the kind of place where you would expect to find the Tree River (but with a different name—there isn't a tree around for 150 miles). Cold, blue, and powerful, the Tree River roars over granite sheets crumpled by Pleistocene glaciers, emptying into Coronation Gulf on the Arctic Ocean. And every year the biggest Arctic char in the world battle its currents to spawn in its barren, stony shallows.

A lot of fly fishers think big whitewater rivers like the Tree are unfishable with a fly rod. But with the appropriate lines, leaders, flies, and techniques it's not only possible, it's also productive.

My guide on the Tree River, a young Inuk by the name of Charlie Kilikabioyak, wasn't so convinced. "Do you have spinning gear?" he asked.

"No," I said. I opened one of my fly boxes and showed him the garish creations I had fashioned the night before. He looked at them and grinned.

"Do you have a strong fly rod?" he asked, with a look that suggested ". . . because you're going to need one." As it turned out, my system handled the river and the char very well.

Lines

The Tree River and it's Class 5 brethren demand rods matched to 7, 8, or 9 weight lines. I used a fast-action 8 weight rod, with an 8 weight Ultra^2 Wet Tip V Steelhead Taper, or a 7 weight Wet Tip IV.

I used two different weights for the same rod because the lines are each suited to different water types. The Steelhead Taper has a 13-foot (high-density) sinking section instead of the usual 10-foot length of the Wet Tips. The extra-long, extra-fast sinking section makes this line better suited for heavy whitewater, where long casts are pointless. So, in the Steelhead Taper, I prefer the 8 weight because my casts are always under 30 feet and I need that weight to load the rod properly.

Keeping casts short in heavy water also extends the life of your line. Swirling currents can suck the floating section under water, wrapping it around rocks. Dislodging that mess can shred the line to the core, ruining its buoyancy. That's what you don't need. The whole advantage of the sinking tip is that you can watch and control the drift. And you need as much flotation as possible in the foamy water. The millions of large air bubbles decrease the density, and things that normally float are therefore in no big hurry to get to the surface. A manageable length of floating line,10 to 15 feet, can be mended and controlled to avoid mishaps in whitewater. (It's worth adding that the same advice about lines is applicable to a great many rivers of this kind in other regions.)

The Steelhead Taper was also ideal for fishing the, boiling re-circulating waves below the three falls on the lower Tree. The char would congregate in these chutes, staging before they made their attempt at higher ground. (Though the Tree River's source is Inulik Lake, 106 miles from the Ocean, the char are stopped only 7 miles from the mouth by the biggest of the three falls, a 21-foot cascade.)

I used the Wet Tip IV for water that was still fast, but shallower. Fast runs about 3 feet deep are perfect for this line. I also tend to cover more distance with the Wet Tip IV, so I prefer to have the 10-foot sinking section. It makes it a lot easier to pick the line up off the water. My casts are usually longer than 30 feet, so I pair a 7 weight line to my 8 weight rod.

Something to remember when fishing a long line in fast water is the effect it has on your fly. On a normal up-and-across cast, a huge belly will form very quickly in your line. In slow water, you can let the line bow, but not in fast water. It will swing far too fast. You have to mend the floating section of your line until the fly has drifted down and across, and then you can start the retrieve. Mending 40-foot casts in fast water would be impossible without a sinking-tip line.

One last word on lines. Take a back-up floating line, just in case. On the hottest day during my trip to the Tree, I came upon a rare opportunity. In the flat but strong water in front of where I stood, I discovered almost a dozen char on the river bottom. They were all 2- to 3-pound resident char, fish that hadn't yet seen the ocean. I wondered about the reason for their movement into shallow water until I saw a slate-gray mayfly sailing along on the current, basking in the Arctic sun.

One of the fish moved off the bottom, drifted back, and then smacked the fly with a loud pop. I had on a streamer at the time, and I tossed it in. I worked it within inches of the fish a few times, but the char ignored it. I changed spools, putting on a 7 weight floater that hadn't seen action during the whole trip. I rummaged through my fly box, looking for a match to the mayflies that were now hatching with some regularity. All I found was a size 14 Adams—too big and the wrong color, but I tied it on anyway. I put the fly down where the natural had drifted, and the same char came up and sucked it in. Arctic char on the dry fly! I continued to fool them, one after another. Being able to take advantage of the unexpected is worth the extra effort of wearing a heavy vest.

Casts

The most effective cast for getting your fly down quickly is the "tuck" cast. It

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TO:

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Fort Collins, CO 80523

Dr. Robert Behnke
Dept. of Fishery and Wildlife Bio.
Fort Collins, Colorado 80523

Fred DeCicco
ADF&G Sport Fish
1300 College Rd.
Fairbanks, AK 99701

Dear Bob:

January 20, 1994

The fish in the picture accompanying the article about Tree River is in my opinion a male. I agree that in large males of northern DV there is a very pronounced kype (see enclosed photo of 895 mm FL male from the Noatak River drainage). But the fish with the article is not a very large fish, and it is not yet ready to spawn, although it is approaching spawning condition. Females, even large ones, do not have as long a head as the fish in the article. Have you counted gill rakers and pyloric caeca of char from the Tree River? I still feel that the fact that there is no accessible lake there is significant.

Is *S. taranetzi* different from central Canadian *S. alpinus*? As you know, Taranetz charr and *malma* coexist in several drainages in the Russian Far East, and *malma* occurs well to the west along the north coast of Russia where there is suitable habitat. Since *malma* are primarily fluvial fish, why would we not expect it to occur farther to the east in Canada where there is appropriate habitat?

On August 27, 1985, I was on the Middle Fork of the Goodnews River and sampled three charr which were caught about a half mile downstream from Kukatlim Lake. One was a typical Dolly Varden which had 22 gill rakers and 24 pyloric caeca. The other two were more yellowish in color, one had 24 GR and 59 PC, the other had 25 GR and 53 PC. I do not know if these fish were lake residents that had dropped into the river to feed, or if they were anadromous. Farther down the stream I caught another yellowish charr which looked like it might have been anadromous, although there is no way to know because it was released. It looked a lot like *S. taranetzi* which we caught in the Ioniveem River last September, but it is hard to remember in detail. I have also put out the word with folks who work in Bristol Bay, and hope to get some samples within a year or so.

I may have given you the wrong location of the last two tag Russian tag recoveries. They were taken near the mouth of the Margje River (a little south of Mechemengun Bay). Both were taken in July 1992. One had been marked in the Wulik River in the fall of 1988, the other in the Nome River in September 1991.

Best wishes,

Fred

Pass on my regards to George Schisler, a grad student who worked for us in Fairbanks during the last few summers.

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Long-Distance Movements of Anadromous Dolly Varden between Alaska and the U.S.S.R.

ALFRED L. DeCICCO[1]

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ABSTRACT. Two anadromous Dolly Varden, tagged in the Wulik River, Alaska, during September 1988, were recaptured in the Anadyr River, U.S.S.R., one in August 1989 and one in August 1990. Two additional tag recoveries were made south of the Bering Strait, one near Savoonga on St. Lawrence Island, Alaska, and one near Egavik in Norton Sound, Alaska. The greatest distance traveled was 1690 km. This is the first record of fish movement between freshwaters of Alaska and the U.S.S.R. and the longest documented movement of a Dolly Varden or Arctic char.

Key words: Dolly Varden, *Salvelinus malma*, movements, U.S.S.R., Alaska

RÉSUMÉ. Deux Dolly Varden potamotoques étiquetés dans la rivière Wulik en Alaska au cours du mois de septembre 1988 ont été recapturés dans le fleuve Anadyr, en Union soviétique, l'un en août 1989 et l'autre en août 1990. Deux autres captures de poissons étiquetés ont eu lieu au sud du détroit de Béring, l'une près de Savoonga sur l'île Saint Lawrence en Alaska et l'autre près d'Egavik dans Norton Sound en Alaska. La distance maximale parcourue était de 1690 km. Cela représente le premier cas documenté de migration de poissons entre les eaux douces de l'Alaska et de l'Union soviétique, ainsi que la migration documentée la plus longue d'un Dolly Varden ou omble chevalier.

Mots clés: Dolly Varden, *Salvelinus malma*, migration, Union soviétique, Alaska

Traduit pour le journal par Nésida Loyer.

Движение По Большому Расстоянию Анадромных Малем (*Salvelinus malma*) Между Аляской и Советским Союзом

Две анадромные мальмы, мечены в реке Улик, Аляска в сентябре 1988 возвращены в реке Анадыре, СССР. Рыбы тоже еще раз пойманы к югу от Берингого пролива близко от Савунги на острове Святого Лаврентия (St. Lawrence Island) и близко от Эгавика в заливе Нортон, Аляска. Самое большое попутешествовавшое расстояние – 1690 км. Эта работа первая запись движения малем между Аляской и Советским Союзом, и самое большое зарегистрированное расстояние или для малем или для обыкновенных гольца.

Важнейшие слова: американский голец, *Salvelinus malma*, движение, Аляска

INTRODUCTION

Movement studies of Dolly Varden, *Salvelinus malma*, and the closely related Arctic char, *Salvelinus alpinus*, have been confined mainly to freshwater and nearshore areas (Armstrong, 1974; Griffiths *et al.*, 1975; Moore, 1975; Craig and McCart, 1976; Armstrong and Morrow, 1980; Craig and Haldorson, 1980; Johnson, 1980; Gyselman, 1984; Dempson and Green, 1985; Dempson and Kristofferson, 1987). Most available literature suggests that while anadromous char are at sea, they do not travel far offshore. Exceptions have been reported from Kodiak Island, Alaska, where a Dolly Varden tagged in the Buskin River was recaptured across Shelikof Strait in Dakavak Bay, a distance of 160 km (Sonnichsen *et al.*, unpubl. data) and from Kamchatka, where Dolly Varden were caught as far as 420 km offshore (Mishima, 1975).

Long-distance movements are less uncommon. Jensen and Berg (1977) reported the longest distance traveled by an Arctic char tagged in the Vardnes River, Norway, as 940 km. The fish was recaptured in the Tuloma River, U.S.S.R. Two other Arctic char were recaptured at distances of 500 and 400 km from the tagging location. Arctic char tagged at the outlet to Nauyuk Lake, Northwest Territories, Canada, have been recaptured at various locations in the Canadian archipelago (Gyselman, 1984) at distances of up to 500 km (Johnson, 1989). An Arctic char tagged in the Ekalluk River, N.W.T., in 1979 was recaptured three years later in Shepherd Bay, 550 km to the east, and the longest distance traveled by an Arctic char in northern Labordor was 250 km (Dempson and Kristofferson, 1987). In northwestern Alaska, a Dolly Varden tagged in a spawning area in the Noatak River system was recaptured at Point Hope one year later, a distance of 485 km (DeCicco, 1989a). On the Beaufort Sea coast of Alaska, Dolly Varden tagged in the Sagavanirktok River were recaptured up to 300 km away in Elson Lagoon, Alaska (Furniss, 1975). Another Dolly Varden tagged in the Lupine River, Alaska, was recaptured in the Firth River, Yukon, Canada, a distance of 350 km (Craig, 1977). The phenomenon of interdrainage exchange by Dolly Varden has also been observed in other Beaufort Sea drainages (Griffiths *et al.*, 1975; Craig and McCart, 1976). Dempson and Kristofferson (1987) reported the movement of Arctic char between river drainages in Cambridge Bay, N.W.T., and northern Labrador, Canada. Sexually mature Dolly Varden in northwestern Alaska commonly overwinter in non-natal rivers during years in which they have been to sea (DeCicco, 1985, 1989a).

This paper presents data on movements of anadromous Dolly Varden that are of much greater distance than previously known, are not coastal in nature and indicate the first documented movement of Dolly Varden between freshwaters of Alaska and the Soviet Union. These data suggest that mixing of Dolly Varden stocks may occur over a wide geographic area throughout the northern Bering and southern Chukchi seas.

[1]Alaska Department of Fish and Game, Sport Fish Division, 1300 College Road, Fairbanks, Alaska 99701, U.S.A.

ACF-WRU

♂ S. malma, Noatak River
August 1993

895 mm Fork length.

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