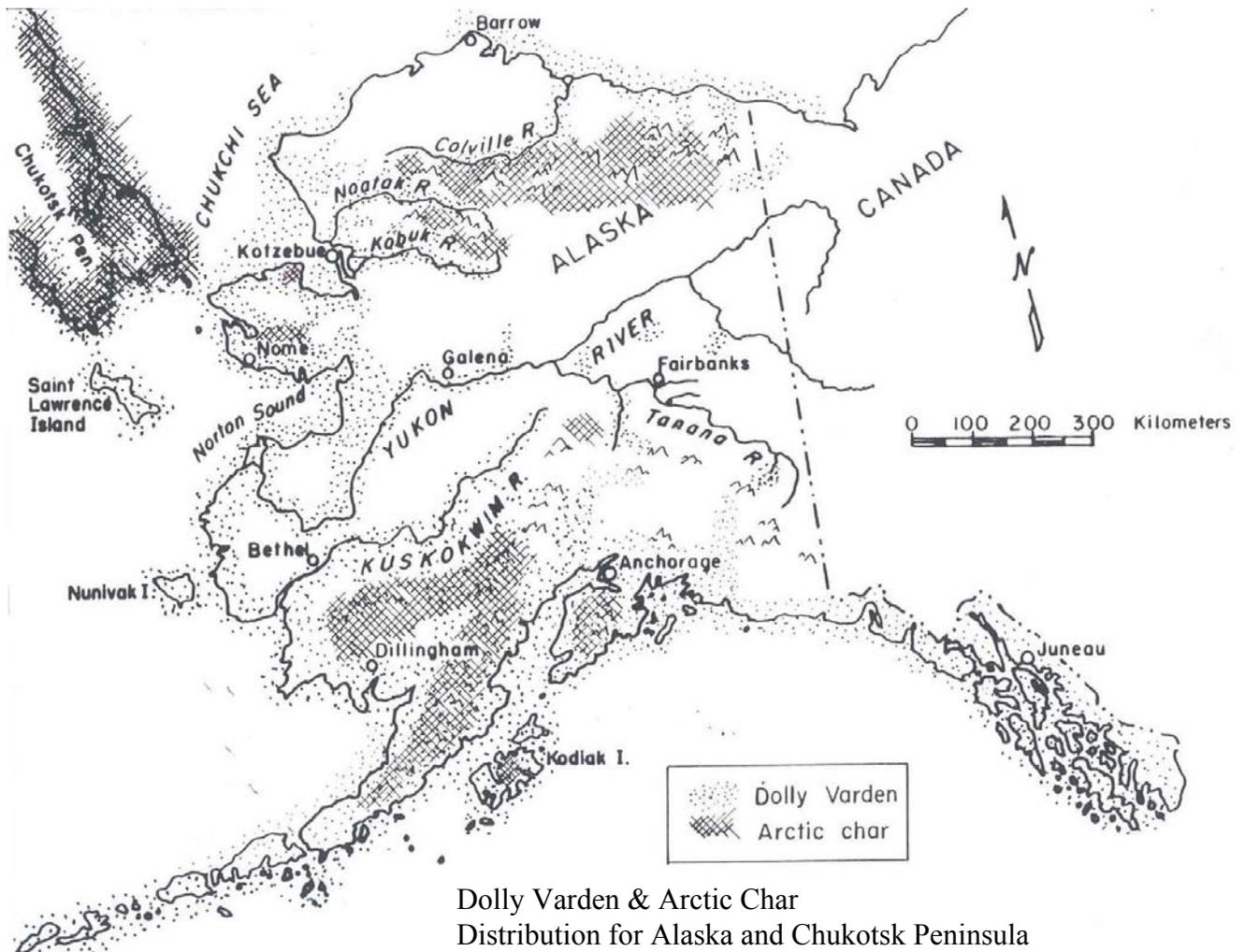


# Dolly Varden & Arctic Char in Northern Alaska



## What is a char?

Char are members of the family Salmonidae and the genus *Salvelinus*.

The family Salmonidae includes all the salmonid fishes:



Genus: *Oncorhynchus*  
rainbow trout, Pacific salmon,  
cutthroat trout



Genus: *Coregonus*  
whitefish



Genus: *Thymallus*  
grayling

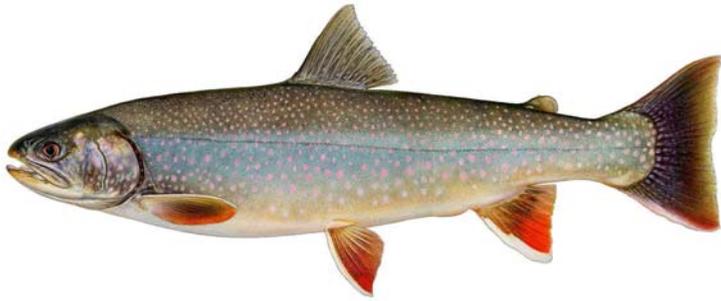


Genus: *Salmo*  
brown trout, Atlantic salmon



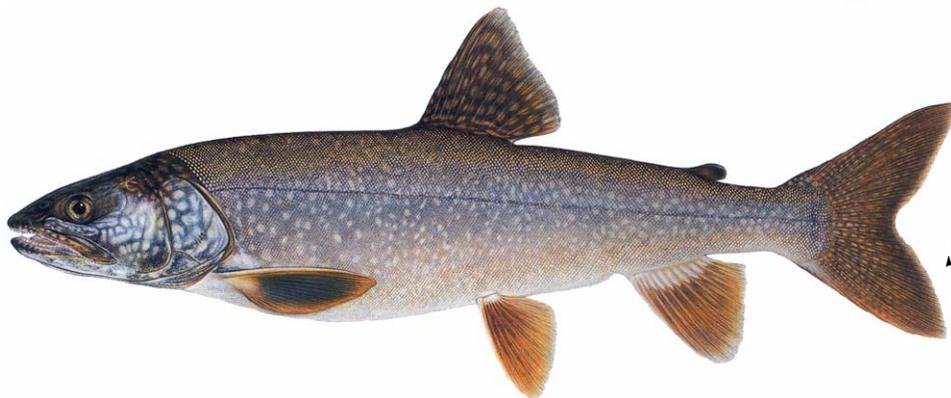
Genus: *Salvelinus*  
Dolly Varden, Arctic char,  
lake trout, bull trout,  
brook trout

## In Alaska, species of char include:



**Dolly Varden**  
*Salvelinus malma*

**Arctic Char**  
*Salvelinus alpinus*



**Lake Trout**  
*Salvelinus namaycush*

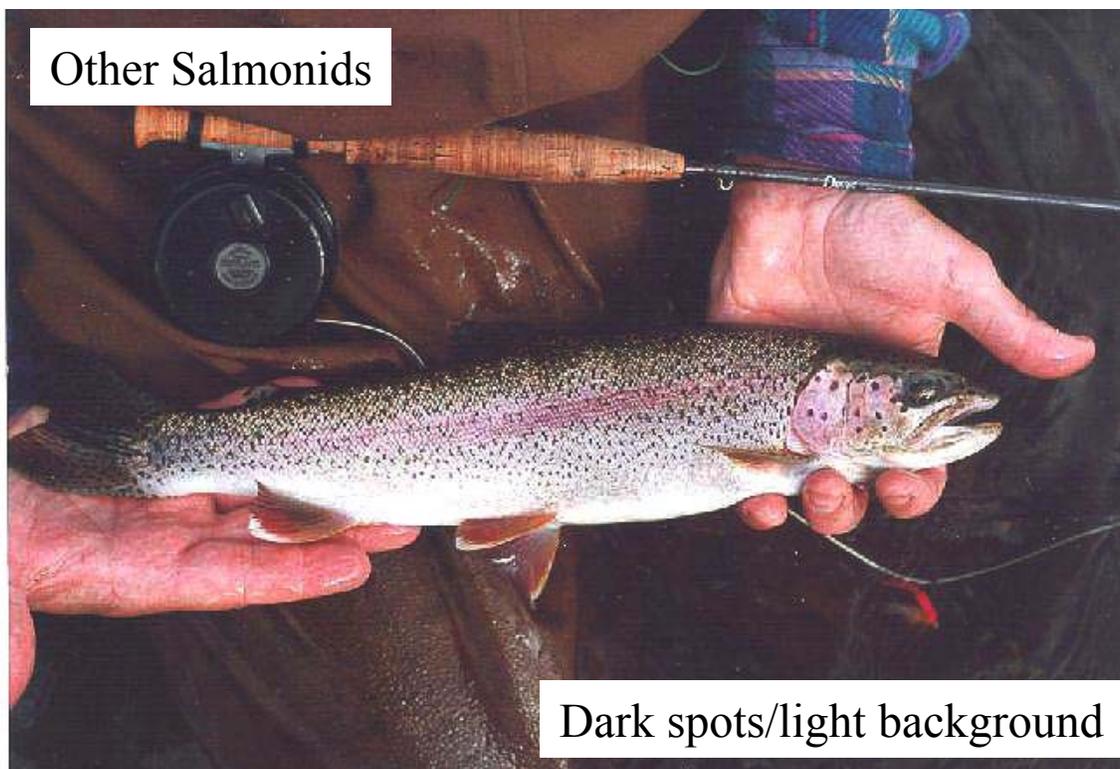
**Bull Trout**  
*Salvelinus confluentus*



**Brook Trout**  
*Salvelinus fontinalis*  
(introduced in Southeast Alaska)

## How is a char different from any other salmonid?

Char are distinguished from other salmonid fishes by having light spots on a dark background and by the lack of teeth on the shaft of the vomer (upper palate).



## What is in a fish's name?

Within the scientific community, the first person to formally describe a fish earns the right to name the fish.

No one has ever seen  
a fish like you before!  
You are gray & purple  
& have large lips.  
You have 3 rays in your  
dorsal fin and you  
lack anal & ventral fins  
I will name you,  
*Finus missingus*.



That fish and others like it from the same location become the “type specimen” to which scientists compare similar fish from other locations to determine if they are the same species or a different species.



On my last expedition, I found  
a fish that was gray & purple,  
had large lips, 3 dorsal fin rays,  
and lacked anal & ventral fins.  
It must have been  
*Finus missingus*.

## Who named Arctic char & Dolly Varden?

In 1758, **Carlolus Linnaeus**, a Swedish naturalist, was the first to describe Arctic char from an alpine lake in northern Swedish Lapland.

Linnaeus named the fish *Salvelinus alpinus*, or alpine char.

The common name for this species is **Arctic char**.

All other fish that are similar to this “type specimen” are also called Arctic char.



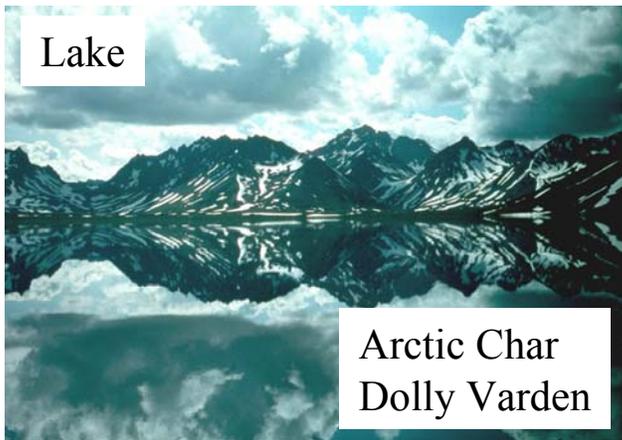
Dolly Varden, *Salvelinus malma*, was first described from Kamchatka in the Russian Far East by **Johann Walbaum** in 1792. Since then, the char from this area have been the “type specimen” for this species.

The common name, **Dolly Varden**, originated in western North America in 1872 when colorful spawning char from the upper McCloud River in Northern California were declared to be “regular Dolly Varden,” after a Charles Dickens character in the novel *Barnaby Rudge*, known for her rosy complexion and colorful costume.



## Life History Differences between Dolly Varden and Arctic Char in Northern Alaska

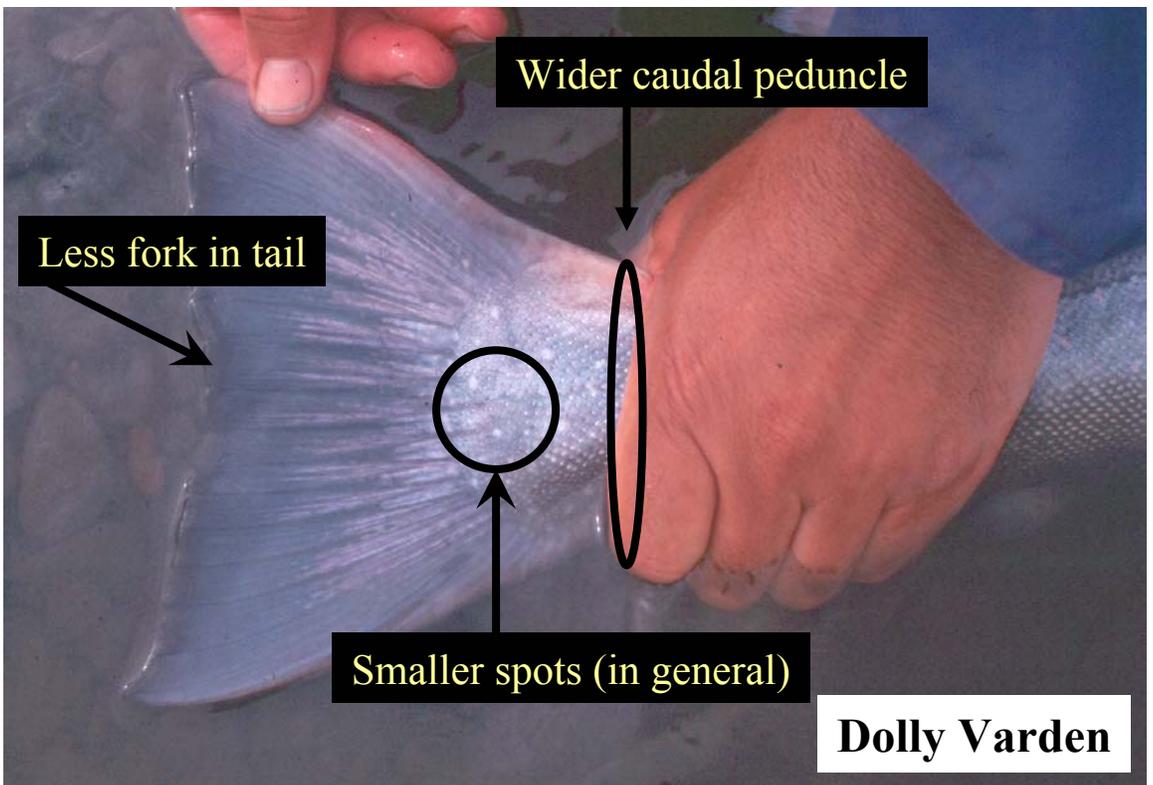
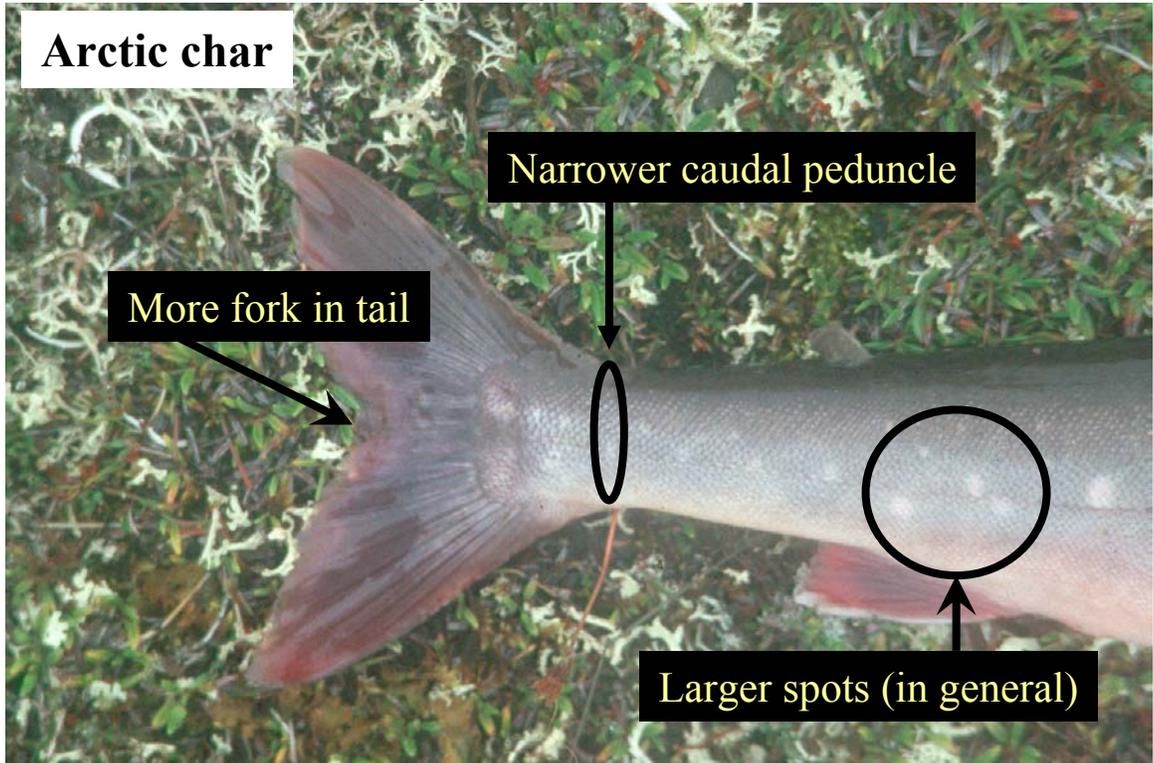
In northern Alaska, all known populations of Arctic char are lake resident (spend their entire lives in lakes). In northeastern and northcentral North America, northern Europe and Asia, some populations of Arctic char are lake resident, while other populations are anadromous (spawn in fresh water, but spend time feeding in salt water). In Alaska, Arctic char live in lakes of the Brooks Range, the Seward Peninsula, the Alaska Range, and the Kuskokwim Mountains. Arctic char in northern Alaska, spawn, overwinter and reside in lakes. Anadromous Arctic char in most **other areas** feed at sea, but spawn and overwinter in freshwater lakes.



Dolly Varden are a Pacific basin species. In northern Alaska they occur in lake resident, stream resident, and anadromous populations. Their distribution includes the entire coastline and most of the rivers in western Alaska and across the North Slope to and including, the Mackenzie River.

Their range may extend farther east in Canada. Recently, Dolly Varden have been described from the Coppermine and Tree rivers of the central Canadian Arctic. In northern Alaska, anadromous Dolly Varden spawn and overwinter in rivers. All known anadromous populations of char in northern Alaska are Dolly Varden.

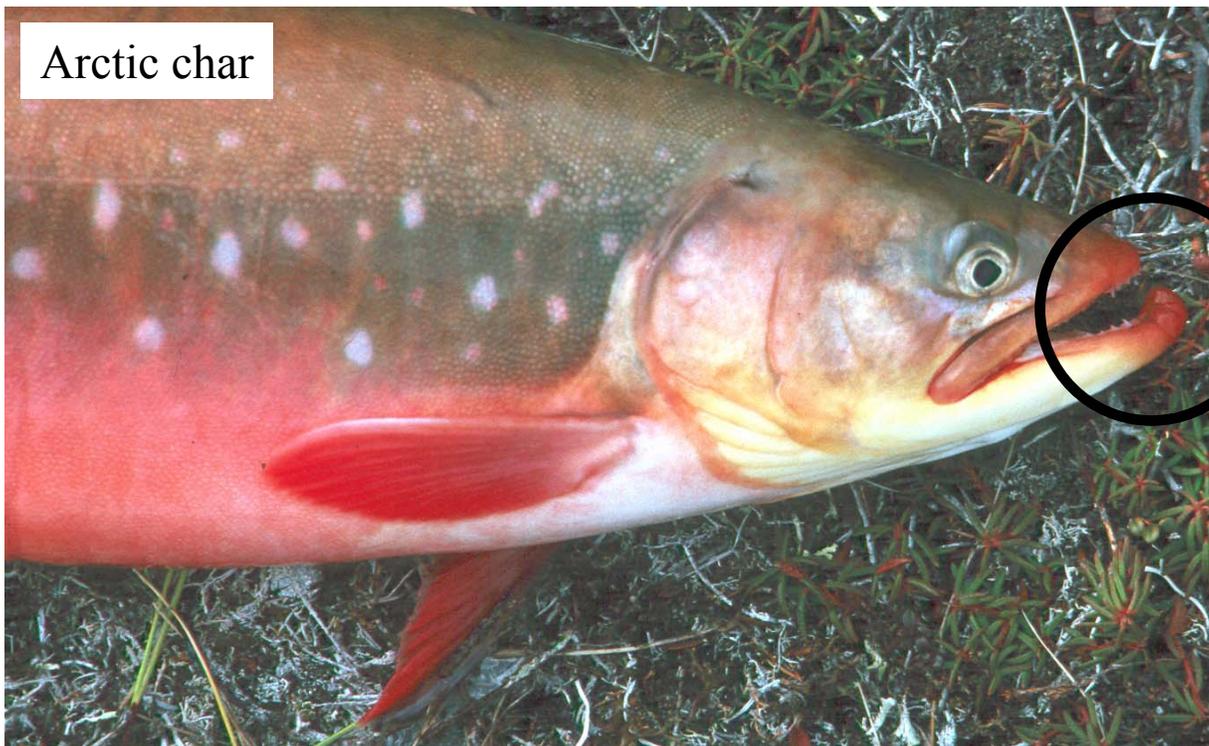
# Other Differences between Arctic Char and Dolly Varden of Alaska



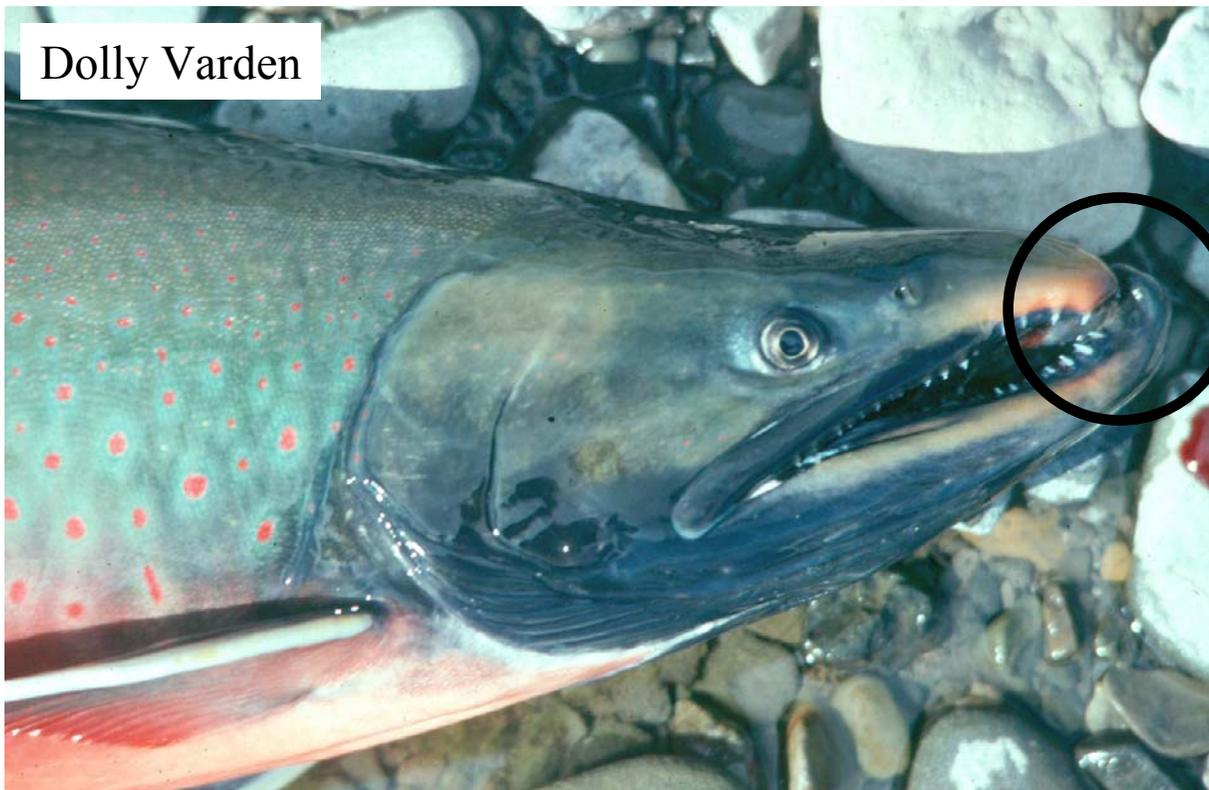
## Another Difference

Spawning male Arctic char develop a small kype (hook) on their lower jaw, while the kype of spawning male Dolly Varden is large.

Arctic char



Dolly Varden



## Spawning Colors

Spawning **Arctic char** are usually gold, orange, yellow or rose and only infrequently red.



Spawning **Dolly Varden** are usually red or pink on the lower abdomen with bright red spots.



## AT A GLANCE

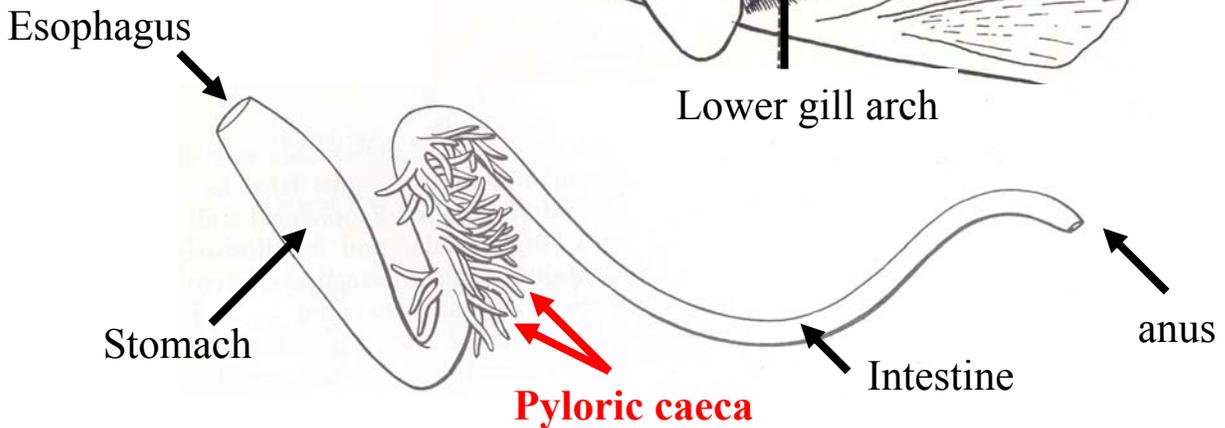
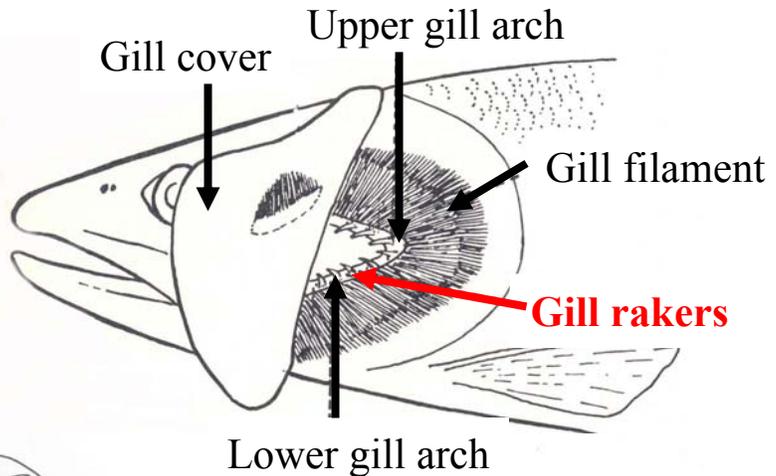
### Differences between Arctic Char & Dolly Varden of Northern Alaska



Northern Alaskan ARCTIC CHAR	Northern Alaskan DOLLY VARDEN
Lake resident	Anadromous, lake or stream resident
Small kype in spawning males	Large kype in spawning males
Larger spots	Smaller spots
Deeply forked tail	Not much fork to the tail
Narrow caudal peduncle	Wide caudal peduncle
Spawn in lakes	Spawn in rivers
Gill rakers short and blunt	Gill rakers long and narrow
23 to 30 gill rakers	16 to 23 gill rakers
40 to 50 pyloric caeca	21 to 30 pyloric caeca

## Some internal differences between Arctic char & Dolly Varden:

Arctic char have more gill rakers (bony projections on the gill arches) and more pyloric caeca (finger-like projections on the stomach) than Dolly Varden.



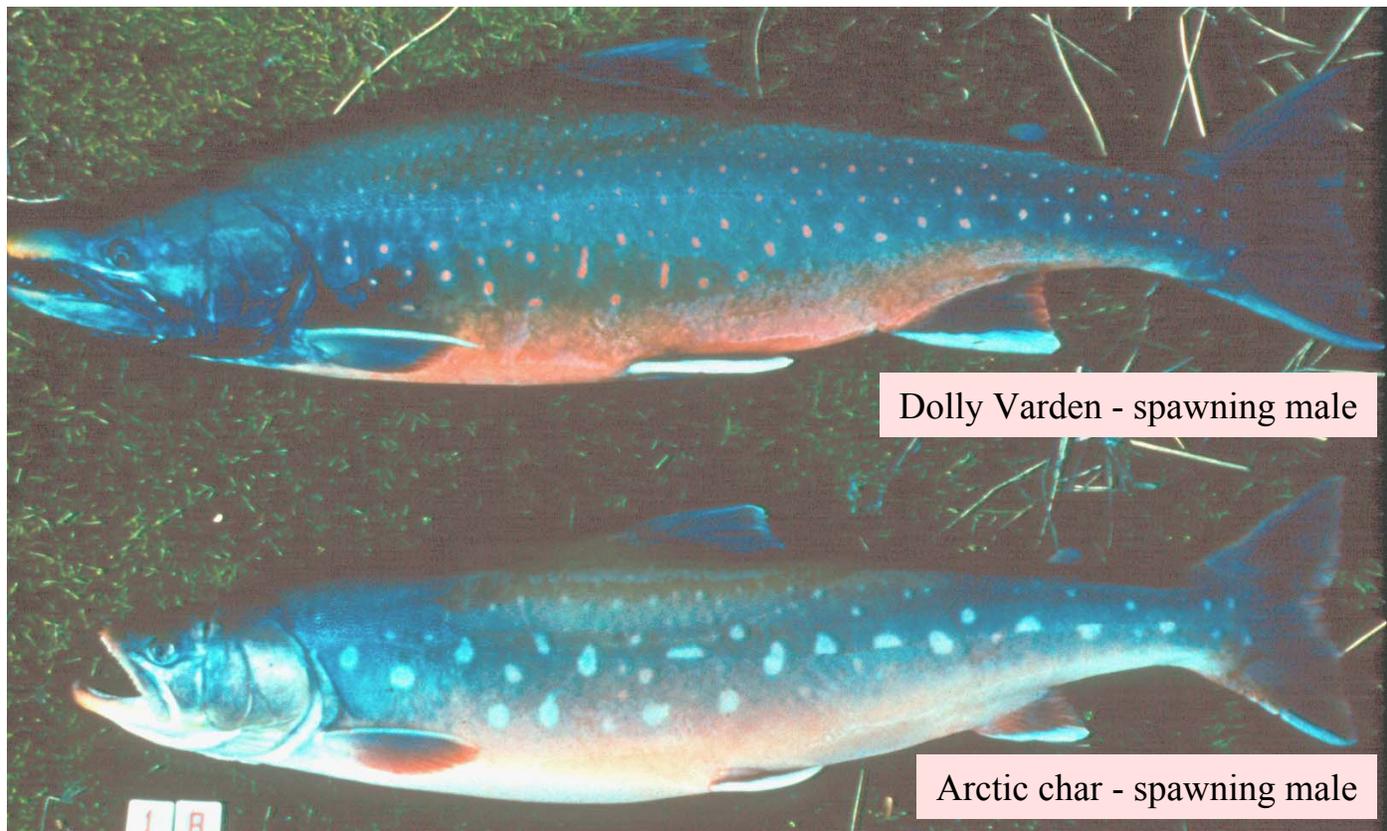
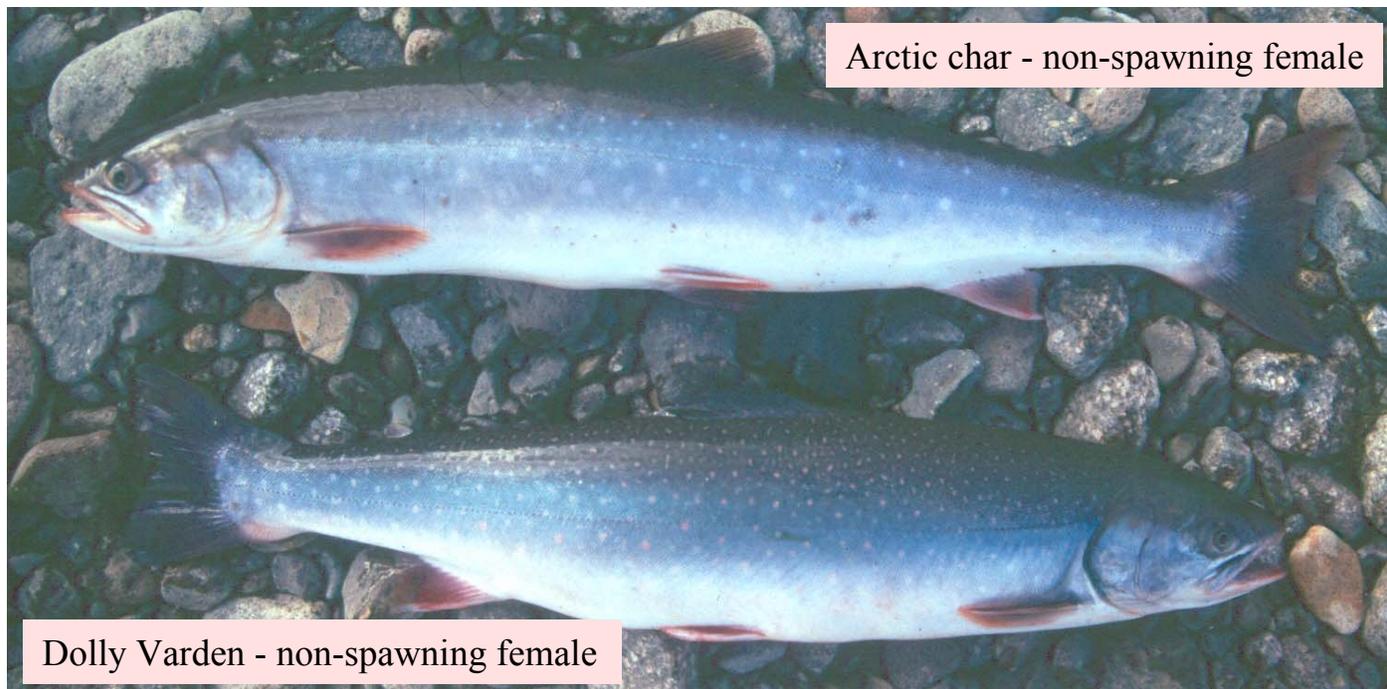
Gill rakers in Arctic char from Alaska are short and blunt and often bent at the end, while those in Dolly Varden are long and straight.





**Dolly Varden**







Arctic char

