

Trophy Bull Trout Prowl Lake Billy Chinook

Don Ratliff, Madras, OR



Rick Arnold and friend Steve Kelly show off a trophy bull trout at beautiful Lake Billy Chinook. Fish of this caliber could be much more abundant in the future.

“You caught - How many bull trout?” I asked again, not believing what I was hearing.

“Forty-Something” came the reply. “Most of them were between 14 and 20 inches; but we did catch a couple that were 8 to 10 pounds!”

I was talking on the phone to Jeff Wieland of Bend last April. Jeff is a guide for Fly and Field Outfitters, but he was describing an off-work trip he'd had with a couple of friends the previous day. I had gone out with Jeff a few weeks earlier to learn more about fly-fishing for big bull trout at Lake Billy Chinook. Since then, we had kept in touch, updating each other on reservoir conditions and the successes with different techniques. Experience has taught both of us that spring bull trout fishing can be tricky, with success varying considerably with water temperature and other variables such as light intensity and wind. I have been fishing for bull trout in Lake Billy Chinook since I started studying with them in 1985, but never before had much success fly fishing for them in the reservoir.

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“And Don, Thanks for the tip about fishing late” he added; “We caught several good fish in the fading light. You may be right, bigger fish seemed to move into the shallows just before dark.”

I was still thinking of their catching more than 40. One boat landing over forty bull trout from the reservoir proper in one day; whether fly fishing or casting or trolling plugs, was unheard of - until 2011. Jeff does have the perfect boat for fly-fishing. Custom built with two fishing platforms and lots of flat floor with no sharp edges to catch the zinging fly line as it uncoils from the floor and rips out through the guides. However, the thought of all the long casts; and all the fast stripping to keep the big flies off the bottom and give them life – and then fighting that many bull trout - made my forearms hurt.

Fishing with Jeff worked out well for both of us. He really wants to understand bull trout. I really want to catch more of them on a fly. So while Jeff asked a lot of questions, kind of refreshing for a guide, I learned that the sink-tip - that worked ok in the river - did not get the fly deep enough in the reservoir. Although I'm sworn to secrecy on specifics, Jeff's methods involve fast-sinking lines, long casts, big flies, and really fast stripping. It works great, but also makes me tired. Some of that's just making 500+ casts a day; however, part of that is my own fault. I use a 10-ft, 8-wt Loomis - a larger, heavier rod than Jeff, who prefers light-weight, fast action 9'6", 7-weights, Sage 691s and 790s.

I use heavier gear than is needed for the “mere” 10-pounders because one day I

plan to hook and catch a 25-pounder - and I learned the hard way that to actually catch a bull trout this big you better be serious about it. Early on, while fishing alone, I once hooked a world-record class bull trout with my light spinning rod and 8-lb line. I can only guess how big it was because I couldn't even get my skiff turned around to chase him before he completely spooled me. I'll always remember that terrible feeling; sitting alone in my little boat with no line left on my reel, bewildered and disappointed. I had just hooked the fish of a life-time - and had not a prayer of even seeing him.

I live near Madras, Oregon and work for Portland General Electric (PGE) as a fish biologist at their Pelton Round Butte Hydroelectric Project. Round Butte Dam was constructed in the mid 1960s on the Deschutes River west of Madras, creating Lake Billy Chinook. Located in the canyons of the Deschutes, Crooked and lower Metolius rivers, it has steep canyon walls for most of the 60 miles of shoreline. During the mid 1980s, in cooperation with biologists from the Oregon Department of Fish and Wildlife (ODFW) and the Warm Springs Tribes, we at PGE began working to enhance a salmonid predator to utilize the overly-abundant kokanee population. The thought was that if we could increase the population of a larger predator species, they could consume the excess kokanee, and possibly provide a secondary fishery for large, trophy-sized fish. We evaluated brown trout, land-locked Chinook, and bull trout, the native char species.

It did not take long to realize that we didn't know much about bull trout, but

that they had tremendous potential. We started tagging bull trout to evaluate their movements, growth rates, and harvest rates. Their growth was staggering. Eighteen-inch bull trout weighing between 2 and 3 pounds when tagged - weighed in a year later at a whopping 7 pounds and were 24-inches long! The word on growth rates got out quickly. Locals that had never released a fish in their life were releasing smaller “Dollies” so they could grow up and turn into real fish! (We now know that what we used to call Dolly Varden in Oregon are really bull trout).



The author and dog Buzz with an 8-pound bull trout at Lake Billy Chinook. Don started harvesting legal-sized bull trout in 2006 when it became apparent that kokanee numbers were declining from too much predation.

Tagging also showed that the non-discriminate trout fishery at the time was harvesting most bull trout at less than 15 inches. Regulations were proposed and enacted by ODFW that greatly increased their protection. These included closing the Metolius River and spawning

tributaries to harvest in the 80s, and reducing the daily limit in Lake Billy Chinook to only one bull trout in the early 90s.

After initial success enhancing bull trout at Lake Billy Chinook, we learned that no bull trout had been observed for a number of years in many locations including the Santiam, Clackamas, and upper Deschutes rivers. After a several year effort assembling information on bull trout populations in Oregon, a paper was published on the status of bull trout in different watersheds. Environmental groups in Montana used this and similar information from other western states to support a petition to list bull trout under the federal Endangered Species Act. Just before being listed in 1998 as a “threatened species”, ODFW added a 24-inch minimum size limit at Lake Billy Chinook to allow most bull trout to spawn once prior to reaching legal size. Since they were going to be a threatened species but subject to limited harvest at Lake Billy Chinook under the ESA rules adopted at listing, fish managers wanted to be certain the number of spawners remained high. This was a good, timely regulation in 1998, but now that we know more about bull trout and their prey, it handicaps management as the ESA will allow regulation changes that increase protection, but not those that decrease protection.

High Juvenile Recruitment into Lake Billy Chinook

One of the things we have learned is just how productive the spawning and juvenile rearing habitat is for bull trout in Metolius Basin streams. The high volume of very cold spring water is perfect for them as they evolved during the last glacial period and can live in

colder water than other salmonids. The downstream-migrant fish trap located on the lower Metolius River at Monty Campground has documented that juvenile bull trout enter Lake Billy Chinook each month of the year. Consistent trap operation during spring has allowed biologists to estimate that since 2005, an average of about 6,000 1 and 2-year old juveniles, or roughly about 1.5 juveniles per surface acre for the entire 4,000-acre reservoir, have recruited **annually** to Lake Billy Chinook **just during March and April**. This is likely less than one-third of the total annual recruitment. This is a much denser seeding of a long-lived salmonid predator than the fisheries literature advises for kokanee lakes. Kokanee are especially vulnerable to predation because they live in open water and are a schooling species; which makes them relatively easy to find even at low population abundance. The Metolius River-Lake Billy Chinook complex is one of the few ecosystems in the West where the bull trout population is **not** limited by the number of young bull trout entering the downstream rearing habitat.

Trophy Potential

The current state record is a 23-pound, 2-oz monster caught by Don Yow at Lake Billy Chinook back in 1989. I caught a 20-pound plus fish from the reservoir a few years later. It was during the early 1990s when we were tagging as many bull trout as possible. In those days I tagged and released all bull trout I caught, both with traps and nets during work hours, and while fishing after work. I took a fellow PGE employee from Portland, Don Slaybaugh, fishing that evening in late March of 1993 to show him the reservoir and maybe a bull



Don Yow and his state record bull trout, a 23-pound, 2-oz monster caught at Lake Billy Chinook in March of 1989.

trout. Early in the evening Don caught a fish about 20 inches, and we weighed, measured, tagged, and released him. As the sun set behind Mt. Jefferson, we were trolling plugs down the Metolius Arm when the big fish took my Rapala. I'll never forget it. Unlike most large bull trout that pull hard and deep after being hooked, this fish came to the surface - not jumping but thrashing - like a shark - throwing water 30 feet in the air backlit by the sunset! It fought so hard and long it was completely dark before I got him to the boat, and then only half of him fit in the net. Slaybaugh pinned him while I tried to get his measurements. But he was much longer than my measuring board and maxed out the scale. I had a camera but no flash. I took a blurry photo by flashlight of my hand on his tail - then tagged and released him. At the time I was sure glad I had a witness, but longed

to know how big the fish really was and hoped I would see him again.

Some things in life just turn out right. The following September I was in the Metolius Basin, and stopped by to see the temporary bull-trout trap, newly-installed by ODFW and Tribal biologists on lower Jefferson Creek. Eric Schulz, then working for ODFW, was there to inventory and pass any bull trout caught. As I got out of the truck he said, "You're just in time, we have a really big bull trout in the trap, and he is tagged." Since I had done much of the tagging down in the reservoir and knew of only one "really-big" bull trout tagged, could it be? Sure enough, it was old number 376 blue. Eric measured him at 32.9 inches long, and an even 18 pounds.



Eric Schulz holds a 32.9-inch, 18-pound bull trout at the bull trout trap on Jefferson Creek in September 1993. Note the blue tag near his dorsal fin placed by the author 6 months earlier at the conclusion of an epic angling experience.

Most big bull trout ascend the Metolius in the late spring or early summer.

Living on reduced rations through the summer, they lose considerable weight prior to ascending their spawning tributary in September. Since he was built like a fat hog with fins when I caught and tagged him in the reservoir six months earlier, I am quite certain he was well over 20 pounds.

Apex Predator of the Ecosystem

A food habits study was conducted on bull trout in the Metolius River and Lake Billy Chinook in the late 1990s. It was determined that small bull trout mostly eat aquatic insects and all three tributary rivers produce literally tons of stone and May fly nymphs. Bull trout larger than about 12 inches mostly eat fish, including other bull trout, and routinely swallow fish up to half their own body length. The food habits study showed that in Lake Billy Chinook, kokanee are by far the most important prey species for medium and large bull trout. While fishing for bull trout, I have had much better luck on plugs and big streamers that imitate fish than imitations of insects.

Bull Trout and Kokanee in a Predator-Prey Cycle

The abundance of bull trout at Lake Billy Chinook has varied greatly over the last 25 years. ODFW biologists, with help from other biologists and volunteers, inventory adult bull trout by counting their spawning nests, or redds in the cold Metolius tributaries where they spawn in September and October. To convert redds to an adult estimate, a multiplier of 2.3 is used as this was the average number of adults counted passing upstream through the tributary traps in the early 1990s for each redd observed upstream. This index to the

number of adults climbed steadily with the increasingly protective regulations until 1999, and then tripled in the next 5 years to about 2,400(see graph below).

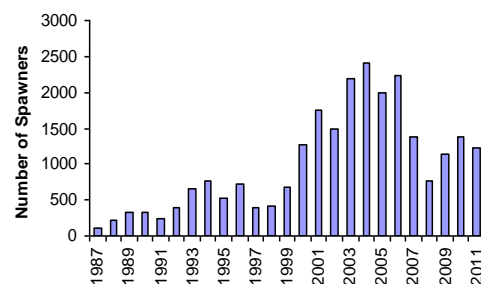


The food habits study conducted in the late 1990s showed that bull trout routinely eat prey fish including smaller bull trout up to 50% of their own body length. This 22-inch bull had just swallowed a 10-inch kokanee and still took the authors lure.

Two changes combined to allow the huge increase in adult bull trout from 1999 to 2004. The 24-inch minimum harvest size greatly reduced angler harvest starting in 1997, and kokanee numbers were very high in 1999 and 2000. With less harvest, more bull trout reached the size where they could feed on kokanee, and kokanee were very dense. Once subadult bull trout reach about 15 inches they are fairly resistant to being eaten by other bull trout as there are very few bull trout that reach 30 inches. Thus, as bull trout grew from 15 inches to when they could be harvested at 24 inches they suffered very low

mortality, greatly increasing the adult population size.

In response to the increase in predation from the huge increase in bull trout, kokanee numbers declined dramatically after 2000. As kokanee numbers declined, small bull trout that had not reached the magic 15-inch size increasingly became prey for larger bull trout. In April of 2005, Rick Arnold, who owns Trophy Trout Guide Service, was making his Monster Bull Trout video. While out with him during part of the video shoot, he confided in me that he wasn't catching many bull trout less than 5 pounds and thought the population was top heavy. Sure enough, following the down-cycle of kokanee, the numbers of adult bull trout spawning in the Metolius Basin declined by more than two-thirds from 2006 to 2008 (see Graph). Rick quit guiding for trophy bull trout at Lake Billy Chinook in 2007.



This graph shows the estimated number of adult bull trout spawning in the monitored stream reaches of the Metolius Basin from 1987 through 2011. (Data courtesy of ODFW)

Cycle Repeating

As cycles do, history seems to be repeating itself. The 2009 spawning year class of kokanee was again huge. Riding this wave of abundant kokanee, the bull trout population has exploded. The creel surveyor, when checking angler's catches during the March-April

fishery, asks how many bull trout less than the 24-inch harvest limit are caught and released in addition to how many are caught that are larger than 24 inches (both harvested and released). The ratio of the number of sub-legal bull trout caught for each legal-sized bull trout caught during March and April each year is a good indication whether the bull trout population is expanding or contracting. In 2005, this ratio was only 1.1 to 1, and still only 2.0 to 1 in 2006. This low ratio indicates very low survival of young bull trout during the period of low kokanee abundance and a contracting bull trout population - confirmed by the declining adult spawner estimate in 2007 and 2008. In 2010, the most recent year for which data is available, this ratio had climbed to 19.9 sublegals to each legal bull trout caught - indicating that the population of bull trout in Lake Billy Chinook is increasing dramatically! *Angler survey data available courtesy ODFW at: <http://nrmp.dfw.state.or.us/crl/default.aspx?p=415>*

As noted in my April phone conversation with guide Jeff Wieland, when conditions were right this past March and April (2011), experienced anglers reported unbelievable bull trout catch rates. ***So, if you want to catch a nice bull trout, 2012 is the year. Fishing for bull trout should be spectacular during March, April and early May at Lake Billy Chinook.*** Be certain to check the angling regulations, and you will need a Warm Springs Tribal Permit if you fish the Metolius Arm.

A New State Record Coming?

With kokanee abundant again in the spring of 2011, bull trout were in very

good condition, with some resembling the shape of a football. At the new fish facility at Round Butte Dam, the PGE fish-passage crew caught, tagged, and released a huge, 19.8-pound 33-inch bull trout during May. As far as I know, this fish was not harvested during 2011. If she is finding enough to eat this winter, next spring (2012) she could easily surpass the current 23-pound, 2-ounce state record set back in 1989.



Brad Wymore, PGE Fish-passage technician, holds a 19.8-pound, 33-inch bull trout caught at the Round Butte Dam downstream fish facility in May 2011. This huge fish was tagged and released back into Lake Billy Chinook. If caught by an angler in 2012, this fish could be a new state record!

Great Bull Trout Fishing Won't Last Without Changes

There are currently so many bull trout that, as they grow larger, the kokanee population will not be able to support them. If the present cycle follows the same pattern as the last, as kokanee numbers decline, small bull trout will increasingly be consumed as prey. Adult bull trout, after spawning and returning to the reservoir, will again have trouble finding enough prey to regain their condition, and consequently many will perish. Bull trout will decline until predation pressure on the kokanee population subsides to the point that kokanee numbers can increase again - and then bull trout numbers can again

increase. The last predator-prey cycle took nine years to complete with kokanee very abundant in 2000, at a low point in 2005 and 2006, and very abundant again in 2009. If all goes well and the cycle repeats, kokanee will become very abundant again in about 2018 and big bull trout a year or two later. Alternatively, if all doesn't go well, the kokanee numbers could decline so low that the population can't recover naturally. Kokanee populations in several lakes in other western states collapsed when piscivorous lake trout became too abundant (for more info search "kokanee collapse Priest Lake, ID; Flathead Lake, MT: read *Western Lake Trout Woes*, Fisheries • vol 34 no 9 • Sept 2009).

Lake Billy Chinook is now colder than during the last predator-prey cycle due to the new selective intake and surface withdrawal at Round Butte Dam that began operation in December 2009. Surface withdrawal has the effect of drawing off warmer, lighter water originating from the Crooked and Deschutes rivers, and filling the reservoir up from the bottom with denser frigid water from the Metolius. Lake Billy Chinook is now better habitat for both kokanee and bull trout, but the colder reservoir tilts the predator-prey interaction toward bull trout.

For Lake Billy Chinook to Become a Famous Bull Trout Trophy Fishery

To consistently grow exceptionally large bull trout, two conditions are necessary. First, large adult bull trout should be lightly harvested, if at all. These are fish that can continue growing and become trophies over 15 pounds - if not harvested. As long as the water is cold, adult bull trout can withstand catch-and-release angling better than most other

salmonids. It takes 7 to 9 years to grow a 15+ pound bull trout. If these fish were all released, the same 20-pound bull trout could be caught, photographed, and released several times during the spring – and still spawn in the Metolius during September. The second condition necessary to maintain a trophy bull trout population is a consistently-dense kokanee population. After spawning, adult bull trout returning to Lake Billy Chinook in November must have dense prey available to regain their condition and grow significantly before they spawn again. In 2005 and 2006, when kokanee numbers were very low, many under-nourished bull trout were caught. With abundant prey and protection from harvest, adult bull trout are capable of spawning several times, living to age 10 or longer, and growing to over 20 pounds!

The Future?

A team with the U.S. Fish and Wildlife Service is now working on final ESA recovery plans for bull trout in the western states including populations in the Deschutes Basin. At Lake Billy Chinook, the recovery plan needs to include flexibility for Warm Springs Tribal and ODFW Fish Managers to manage the bull trout population. Lake Billy Chinook is designated as ESA "critical foraging and over-wintering habitat" for Metolius bull trout. To protect the forage part of that critical habitat, a basic kokanee spawning population must be protected.

An example of where trophy trout and diverse fishery values are being maintained by keeping the prey base healthy is the Pyramid Lake fishery in Nevada for Lahontan cutthroat trout.



Steve Kelly of Bend holds a bull trout he caught from Lake Billy Chinook in March 2006 that was 31-inches long, but weighed only 10 pounds. In 2005 and 2006, the kokanee population was severely depressed from too much predation, leading to a severe downturn in bull trout numbers and angling success for both species.



The above photo shows what bull trout in Lake Billy Chinook can look like when kokanee are abundant.

The Pyramid Lake Paiute Tribe in cooperation with the U.S. Fish and Wildlife Service uses an innovative slot regulation to promote the harvest of a certain size class of trout while protecting larger sized age classes. This fishery is extremely valuable to both the Tribe that owns and manages it and to the plethora of anglers that participate. Objectives of the management include promoting the recreational and trophy fisheries, ensuring population targets are met for the big trout, and monitoring and protecting the baseline populations of key prey-fish species.

Bull trout in the Metolius River and Lake Billy Chinook have tremendous potential to provide a magnificent trophy fishery that would draw anglers from afar. And the neat thing is that controlling adult harvest while protecting the basic kokanee prey base would not only stabilize the bull trout population and enhance the fishery, but also supports the other fisheries objectives at Lake Billy Chinook. These include reviving the historically popular and productive kokanee fishery, and developing self-sustaining and harvestable populations of anadromous spring Chinook, summer steelhead, and sockeye salmon upstream of the hydroelectric project. Having healthy runs of salmon and steelhead would also help diversify the future prey base for bull trout. Here's to the future, and that 25-pound bull I'll be after!