



Dillon Reservoir

FISH SURVEY AND MANAGEMENT DATA

Jon Ewert - Aquatic Biologist (Hot Sulphur Springs)

General Information: Dillon Reservoir, a 3,000- acre storage reservoir, is owned and operated by the Denver Water Board. Located adjacent to I-70, this is one of the most easily accessible mountain reservoirs in the state. It provides good fishing for rainbow and brown trout, and kokanee salmon, and arctic char. Boats need to pass an Aquatic Nuisance Species inspection prior to launch. To expedite this process, be sure your boat is clean, drained and dry when you arrive. In the winter, no motorized vehicles are allowed on the ice.

Location: Summit County, CO.

Recreational Management: Recreational use is managed by a combination of Denver Water, Summit County, the US Forest Service, and the towns of Dillon and Frisco. For more information see: <http://www.denverwater.org/recreation/dillon.html>

Amenities and General Info.

- Boat Ramps/Marinas (2)
- Picnic Areas
- Camping

Regulations

- Standard harvest regulations for trout (4 fish daily bag/8 fish in possession) and kokanee salmon (10 fish).
- **NEW IN 2015:** All arctic char less than 20" in length must be immediately returned to the water. Bag and possession limit for arctic char is one fish over 20" in length.

Arctic Char ID

Arctic char are similar in appearance to lake trout and brook trout, our other Colorado char species. However, some of the differences are that arctic char have a relatively small mouth (particularly compared to lake trout), their body shape is slender, they do not have the "halos" around the spots on their body that brook trout have, and they have no markings on the dorsal fin.

Previous Stocking

2014		
Species	Size	Number
Rainbow	10"	18,157
Rainbow	4"	358,586
Arctic char	4"	32,770

2013		
Species	Size	Number
Rainbow	10"	20,036
Rainbow	4"	233,418
Arctic char	4"	21,321

2012		
Species	Size	Number
Rainbow	10"	31,149
Rainbow	4"	169,916
Arctic char	4.2"	16,683

2011		
Species	Size	Number
Rainbow	10"	23,276
Rainbow	4"	333,621
Arctic char	3.4"	16,857

Sportfishing Notes

Arctic char

- Dillon Reservoir is the only water body in the lower 48 states outside Maine in which arctic char can be caught. Fishing for this species has greatly improved over the past few years as the stocked fish have established and successfully reproduced. Anglers have been most successful during ice fishing season, using various small jigs in less than 60 feet of water. Some summer catches have also been reported.

Brown trout

- Dillon is home to a high density of brown trout, which are naturally self-sustaining and not stocked. Fish as large as nine pounds have been captured in CPW netting surveys. Crank baits and other large lures fished around rocky points and other structure at ice-out, during summer evenings, and in the fall can be productive.

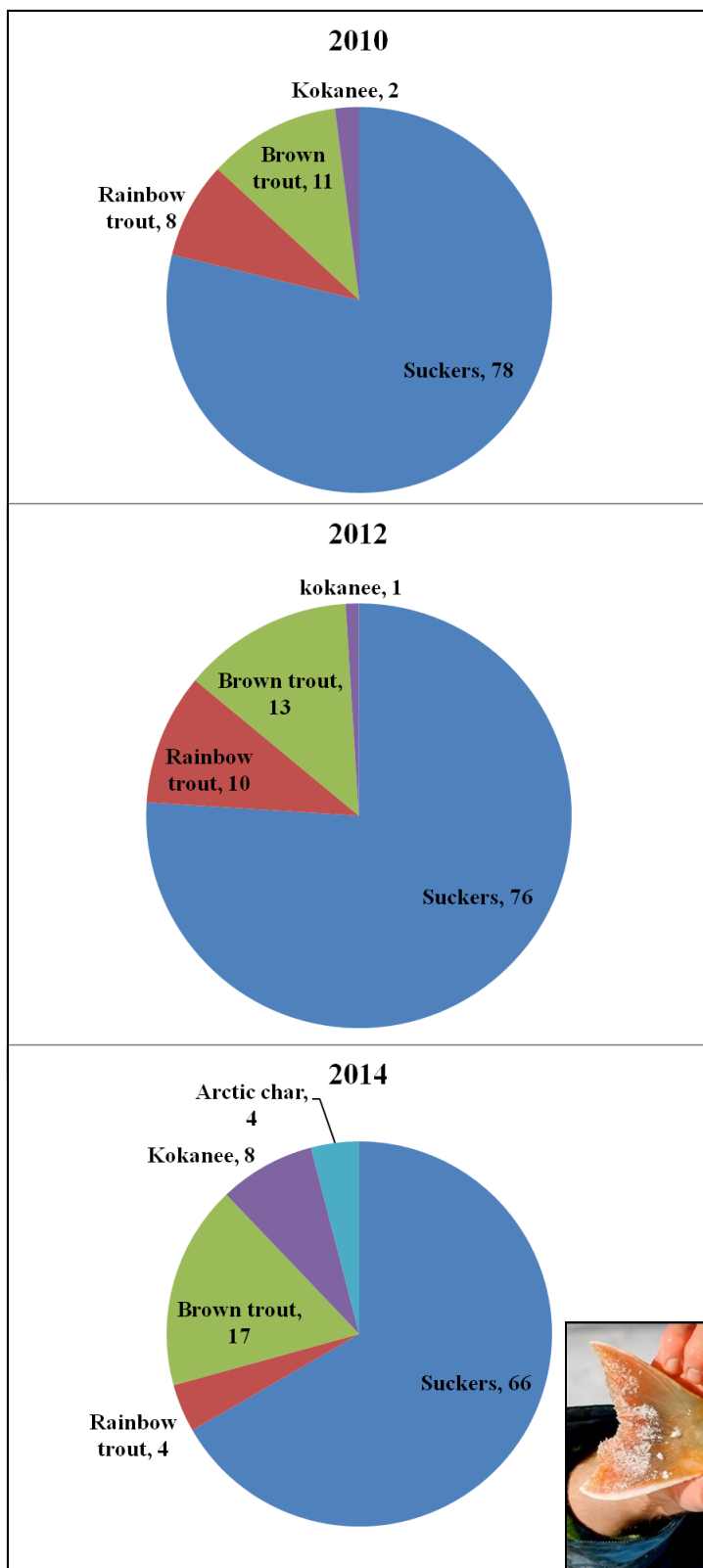
Kokanee salmon

- Kokanee are also self-sustaining in Dillon, and have not been stocked since 1978. Spawning has been documented in the Snake River inlet area, other locations in-lake, and in the Blue River upstream of the lake.

Dillon Reservoir Gillnet Survey Information

Jon Ewert, Aquatic Biologist

Gillnet Species Composition by Percent



Over the past decade we have conducted gillnet surveys every other year in Dillon Reservoir. We set six gillnets overnight in the same locations and as close to the same date as possible (during the third week of June) on each occasion. The species composition in the gillnet catch over the past three survey occasions is shown at left.

Arctic char have been stocked annually since 2008. The purpose of stocking this species in Dillon is that the reservoir is notoriously unproductive in terms of prey availability for sport fish. However, one of the few prey items that is in good supply is mysis shrimp. Arctic char have been found to be successful preying on mysis in cold, deep lakes that resemble Dillon elsewhere in the world.

Two char were caught in the gillnets in 2008 and 2010, none were caught in 2012, and 14 were caught in 2014. Perhaps more importantly than this increase, the 2014 survey captured char in all six nets, which are located in widespread locations in every part of the lake. The char caught in 2014 ranged from 8 to 18 inches in length. This information, combined with consistent reports of greater angling success, suggests that 2014 may have been a “turning point” year in the development of the arctic char fishery in Dillon.

CSU graduate student Devin Olsen completed a research project on the arctic char fishery in Dillon in 2014. Among other things, his study proved that a significant percentage of the char in Dillon are the product of wild reproduction in the lake, and that they are indeed preying upon the abundant mysis shrimp found in the reservoir.

One of the goals of stocking char in Dillon is to establish a self-sustaining population that does not need to be augmented with regular stocking. Because we have now observed natural reproduction taking place, in 2015 CPW is enacting a conservative harvest regulation on char in Dillon, allowing a daily bag limit 1 fish over 20” to be harvested. All char less than 20” must be released. This regulation will ensure that these fish will have 2-3 opportunities to spawn prior to being available to harvest.



A Dillon char in spawning colors. Photo by Devin Olsen.

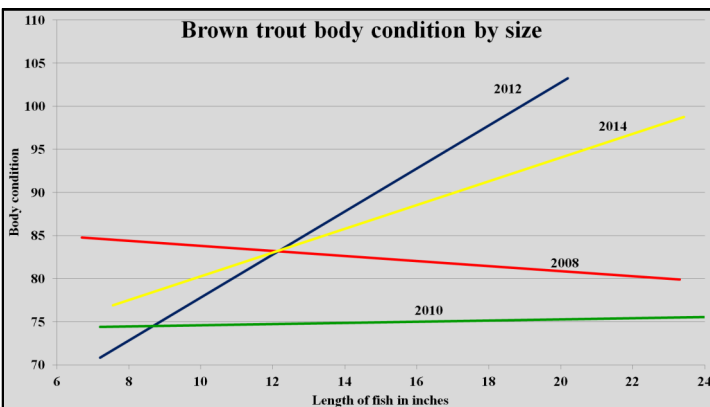
The size structure of brown trout captured in the gillnet surveys over the past three occasions is shown at right. In 2010 and the years prior, there appeared to be a growth barrier in Dillon at approximately 15". Fish larger than that size were relatively rare. This growth barrier seems to have been broken beginning in 2012. The total number of brown trout that were captured that were greater than 16" in the years shown at right were 7, 13, and 19.

One of the main reasons for this improvement in the brown trout fishery at Dillon is the resumption of rainbow fingerling stocking in 2011. Prior to 2011, no subcatchable rainbow trout had been stocked in Dillon since 2002, and the stocking history for the past three decades was sporadic. The 2011-2014 period has seen the most consistent annual stocking of rainbow trout fingerlings in Dillon since the 1970's.

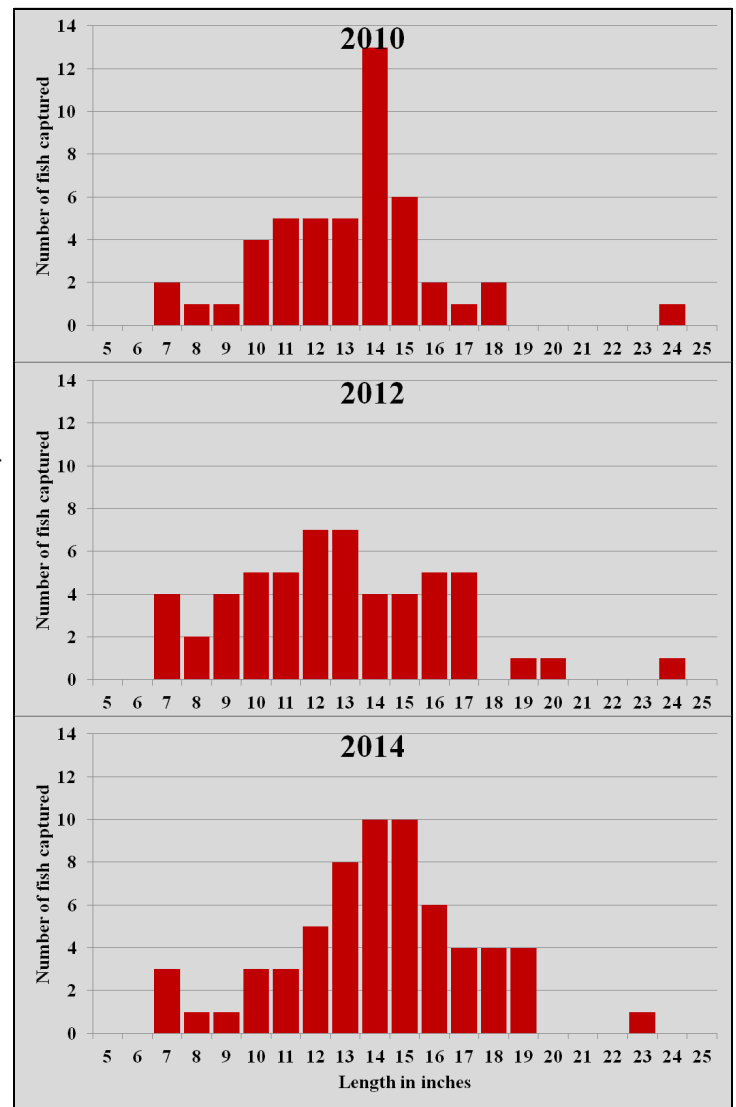
There are a few reasons that fingerling stocking of rainbows has resumed. First, CPW now has a different set of strains of rainbows than those that were being stocked in the 1970's. It is possible that one of our more recently developed strains may be more successful in Dillon. Also, due to general budget cuts over the past decade, it has become increasingly difficult to maintain a rainbow trout fishery with catchable stocking alone. The number of catchables it would take to sufficiently stock Dillon is larger than what is available. We also want to provide "cover" for the arctic char that are being stocked. Knowing the density of the brown trout population in the reservoir, we knew that if a relatively small number of arctic char were the only small fish to be introduced to the reservoir in many years, their chances of survival would be relatively poor.

The incidental benefit to this resumption of fingerling rainbow trout stocking has been a significant increase in the quality of the brown trout population. Ultimately, our hope is that the rainbows fill a gap in prey sizes available, and the largest brown trout will then be able to prey more effectively on the prolific white sucker population in the lake. Previously, the size structure of the sucker population has been too large for brown trout to be able to exploit them. That is now beginning to change with the increase in the number of browns larger than 16".

The figure below displays trends in brown trout body condition (or "plumpness") by size over the past four netting occasions. In 2008 and 2010, there was no positive relationship between fish length and body condition. In 2008, the fish actually lost body condition as they got larger. This is an indication that there is not sufficient prey available for the fish to switch to as they become larger. However, this relationship changed drastically in 2012 and 2014, when we saw a strong positive relationship between fish length and body condition. This suggests that prey availability now becomes better as the fish grow in size.



Brown trout size structure



The largest brown trout captured in the 2012 survey, 24" 9.3 lbs.