

Institute for Fisheries Research

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"RAINBOW" AND "STEELHEAD" TROUT

One of the questions most often asked us is "what is the difference between the "rainbow" and the "steelhead" trout. Since this question has now been encountered in litigation, this report is now prepared. The case in question is one being handled by John E. Campbell, Prosecuting Attorney of Manistee, who has asked the Department of Conservation for "a complete description of each of these two species, so that I may distinguish them and intelligently present the distinguishing marks to the jury." The question is referred to the Institute for Fisheries Research for answer.

Stated briefly, the answer is that there is no real difference between "rainbow" and "steelhead." For an interpretation of these names, we must consider the fish in their native haunts (in West Coast waters), from which the names have also been imported.

On the West Coast, a "rainbow" trout which goes to sea becomes a "steelhead," and the progeny of the "steelhead" become "rainbows" in the stream, until they migrate again to the sea, where they become transformed into steelheads once more. If through a barrier or other cause the trout lives its whole mature life in a stream, it remains a "rainbow" throughout its existence. But this progeny may return to sea and become "steelheads." So, as these names are ordinarily used, there is no real difference between a "rainbow" and a

"steelhead," because one individual fish may be both at different stages in its life.

In Michigan waters, the same difference holds, though the contrast between the stream "rainbow" and the Great Lakes "steelhead" is not nearly so striking as between a rainbow grown in a West Coast stream and a sea-developed "steelhead." But in Michigan also, the difference is due to the direct affect of the invironment on the individual, rather than on any inherent difference in the fish.

While there is no real difference between the "rainbow" and the "steelhead" as such, there are apparently several kinds or races of rainbow (steelhead) trout. The rainbow first sent east were the McCloud River rainbow, from the glacial stream running south from Mt. Shasta in California. This is a form with very small scales, ususally in more than 135 rows from head to tail fin. It has now been replaced in Michigan by the coastwise rainbow (or steelhead) trout which has larger scales, usually in fewer than 135 rows. This is the form which is now abundant in Lake Michigan, and which is the source of the eggs which are being hatched to maintain the stock elsewhere in Michigan.

Some prefer to retain the name "rainbow trout" for the McCloud River race, but there is no basis for this arbitrary action. Both on the West Coast or in the East, the people call any trout of the rainbow-steelhead group a "rainbow," when it is domiciled in fresh-water streams. Furthermore, the name "rainbow" was derived from the scientific name salmo irideus, which was based on the coastwise form.

We have been unable to find any certain evidence that the McCloud rain-

bow is holding out anywhere in Michigan. It is apparently almost, if not entirely, replaced by or at least crossed with the coarser-scaled type, which certainly becomes a "steelhead" when it lives under appropriate conditions.

There may be differences between individuals of the rainbow-steelhead group in Michigan, but we can find no evidence whatever to warrant the division of this group into "rainbows" and "steelheads."

Our opinion therefore is that any Michigan law on "rainbow" trout will apply also to "steelhead" trout, for the two are virtually synonymous.

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