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TIME TO FISH FOR TROUT

By

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There is perhaps no sport other than fishing that has associated with it such a multitude of superstitions, old wives' tales, and pure notions. Many of these are claimed to be founded on scientific facts, yet a search of reputable fishery literature fails to yield much concrete evidence either in favor or in contradiction of such claims. At the present time not a few persons are capitalizing on the well-known susceptibility of both fish and fishermen to lures and aids of various kinds. For the fisherman these include fishing calendars, fishing tables, barometers, thermometers and, looking a bit to the future, probably radar, sonar and Geiger counters.

The Pigeon River Trout Research Area was established in Michigan in 1949 as a Conservation Department installation. Its primary purpose was to obtain facts that were needed in the correct management of our natural resources associated with trout streams and lakes. Complete fishing records were made possible through a compulsory permit type of angling. Year-round field work supplementing the creel census made possible an adequate evaluation of what is

happening to the stocks of native trout and hatchery-reared trout in the stream. In order to provide answers to some other interesting questions concerning factors affecting fishing quality, observations of certain physical conditions have been maintained at the station. These include atmospheric pressure changes, air and water temperatures, and precipitation. A U.S.W.B. cooperative observer has been stationed at this locality for many years.

The following discussion of the influence of various factors on fishing is based on detailed records of over 7,000 fishing trips made during the seasons of 1949, 1950 and 1951. These are concerned entirely with fishing for the three species of stream trout found in Michigan: brook, brown and rainbow. No selection of individuals was made in issuing permits to the stream, and many states other than Michigan were represented by anglers. It is believed that the sample of angling represents an accurate cross-section of the trout fishing fraternity.

The basis for comparing fishing quality used in this study is the number of trout caught per hour per fishing trip. This type of computation enables one to apply statistical procedures to obtain estimates of the reliability of differences noted. These data have been transformed to the numbers of fish caught per hundred hours of angling for convenience in handling the figures. Another index of fishing quality used is the percent of successful fishing trips, a successful trip being one in which at least one fish is caught.

Both naturally spawned trout and hatchery-reared trout were caught by fishermen in the Pigeon River. Because of the marked effect of

planting legal-sized trout on the catch per hour (Figure 1) it has been very difficult to evaluate the effects of other factors on fishing when hatchery fish are included. However, the catch of wild fish in the stream is more constant throughout the season and this fact makes possible a determination of the effects of other physical factors on fishing quality.

The records of fishing have been tabulated according to days in which the atmospheric pressure was steady, rising, or falling; a steady day being one in which there was less than 0.1 inch pressure change in a 24-hour period. Fishing was slightly better when the barometer was rising, although the difference was so slight as to be unnoticeable to the angler (Figure 2).

Similar comparison of fishing quality was made according to the phase of the moon. The synodical period was divided into four phases with the odd days added to the full-moon and the new-moon phases. In this comparison a slight increase in fishing quality was noted when the moon was in the first quarter, although again this difference was too slight to be noticeable to the average angler (Figure 2).

Because of the early opening of Michigan's trout season (last Saturday in April), oftentimes there is still snow on the ground, and water temperatures are noticeably cool. The spring of 1950 was one of these abnormally cold openings, and fishing quality during this cold period was very poor. This observation prompted an analysis of the effect of water temperature on fishing quality over the range of temperatures normally found in a trout stream during the open season. Such an analysis indicated that fishing was best when the daily

Figure 1. The relationship between time of planting and catch per hour of hatchery trout planted in the Pigeon River and wild trout, season of 1950.

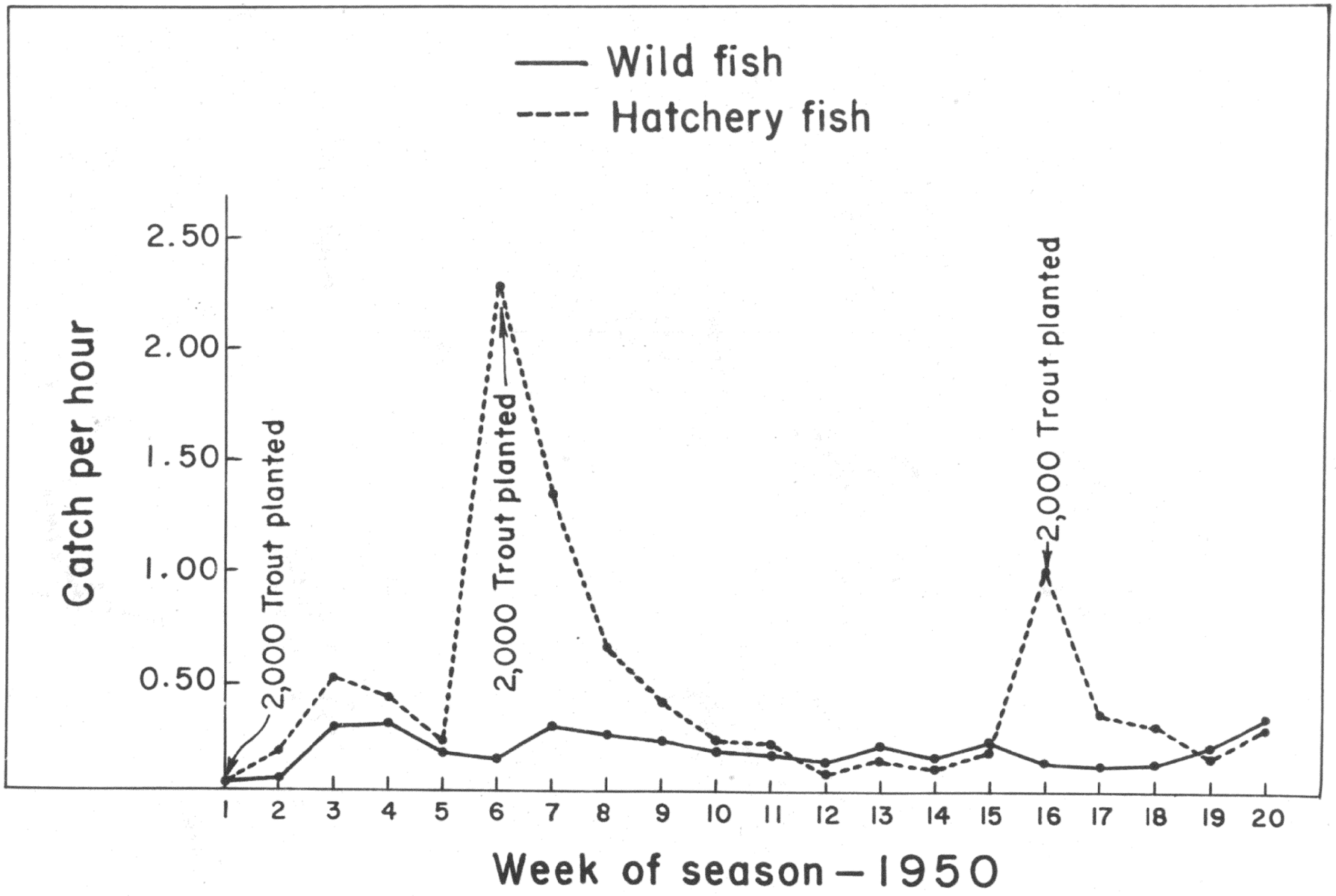
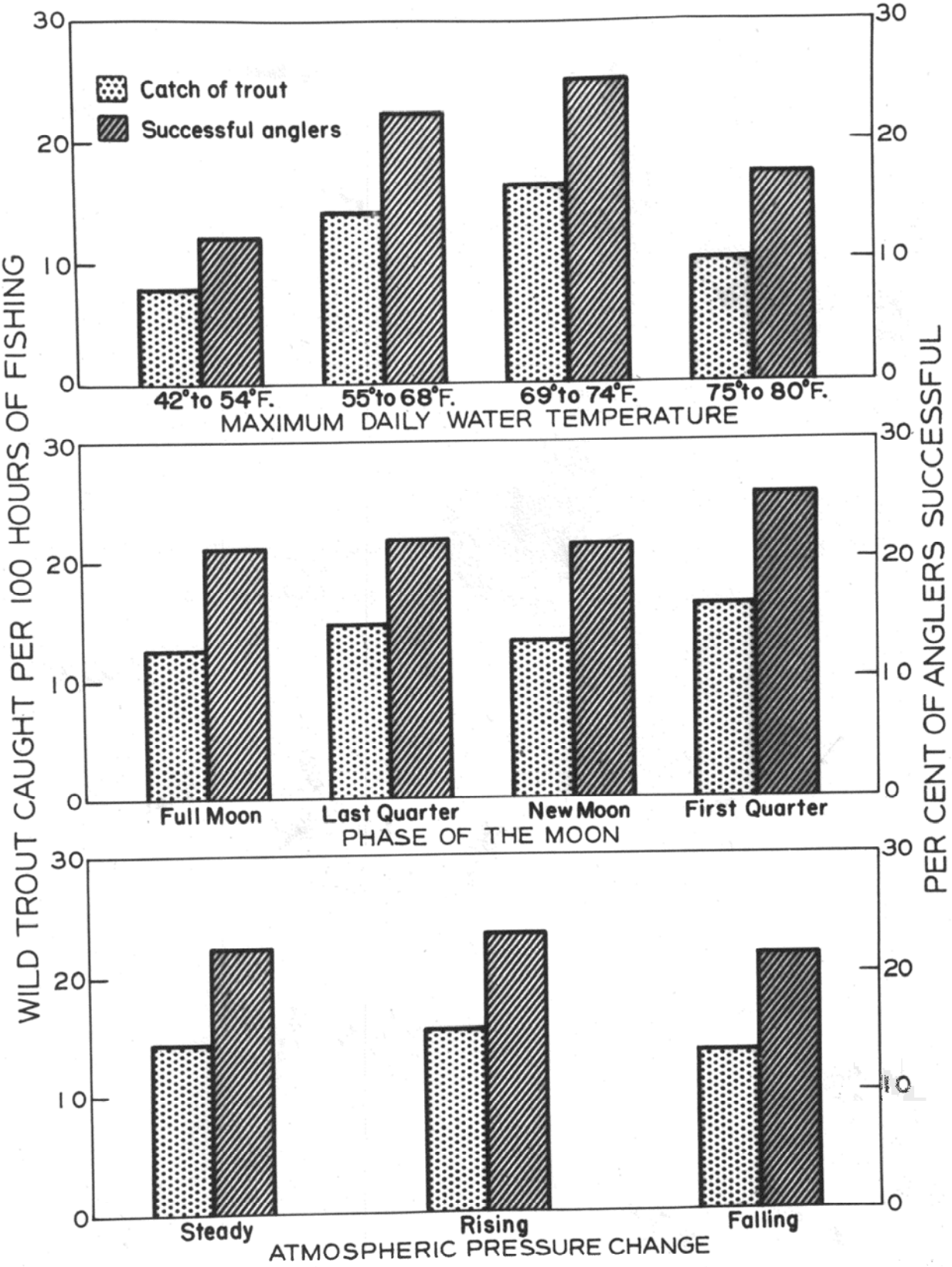

Wild fish
Hatchery fish
Catch per hour
2.50
2.00
1.50
1.00
0.50
2,000 Trout planted
2,000 Trout planted
2,000 Trout planted
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Week of season — 1950

Figure 2. The relationship between fishing quality and water temperatures, lunar cycles and atmospheric pressure changes for trout fishing in the Pigeon River, 1949, 1950 and 1951.


Catch of trout
Successful anglers
WILD TROUT CAUGHT PER 100 HOURS OF FISHING
PER CENT OF ANGLERS SUCCESSFUL
0
10
20
30
42°to 54°F.
55°to 68°F.
69°to 74°F.
75°to 80°F.
MAXIMUM DAILY WATER TEMPERATURE
Full Moon
Last Quarter
New Moon
First Quarter
PHASE OF THE MOON
Steady
Rising
Falling
ATMOSPHERIC PRESSURE CHANGE

maximum water temperature was between 55 degrees F. and 74 degrees F., whereas temperatures above or below these values apparently had an inhibiting effect on feeding (Figure 2). Fishing when water temperatures remained below 50 degrees F. produced almost nothing, the catch per hundred hours being about 2 fish. These observations are in agreement with detailed studies of optimum temperatures for good growth in trout in other parts of the country.

It should be emphasised that these data are based on averages obtained from a large sample of anglers. These anglers by no means are equal in their ability to catch fish. A tabulation of the fishing records of individuals for the three years indicates that a small number of individuals account for a "lion's share" of the catch. Even though 4,500 legal-sized trout were planted each year in 2½ miles of stream, roughly half of the anglers took no fish and 4 percent of the best anglers accounted for 40 percent of the total catch. For wild fish, over 75 percent of the anglers took no fish.

There are many factors that influence the quality of fishing and it has not been possible as yet to obtain information on many of them. However, of the conditions that have lent themselves to accurate measurement and evaluation, it is obvious that atmospheric pressure changes and lunar periods are perhaps the least in importance of any that we have studied. Since trout fishing is a highly individualised sport, the psychological attitude of the angler is an important consideration. Consequently anything that gives the angler more confidence in his own ability to catch fish very probably actually increases his fishing success. However, if you want to catch fish, there