

# Catch & release on wild trout fisheries

Credit: Much of this information is derived from articles written by Robert J. Behnke for Trout Unlimited's *Trout Magazine*, compiled in the book *About Trout* (The Lyons Press, 2007)

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# Catch & release - does it make a difference?

- It depends!
- Two important factors:
  - The biology of the trout population – recruitment, production, growth and survival rates
  - Vulnerability of the trout population – how easy are they to catch and re-catch?



# Biology – example 1

- Brook trout in Michigan & Wisconsin (1950s and 60s)
- No effect of catch & release on total annual mortality rates
- Typical e.g. Lawrence Creek, WI. One mile, angling closed 5 years = fewer fish than when open to angling.
- Why?



# Biology – example 1

- Brook trout mortality rate patterns

Age	Mortality rate
Egg to age 0 (end of first growing season)	Very high (95%+)
Age 0 to 1 (over first winter)	50 - 60%
Age 1+ first spawning (in second autumn of life)	80 – 95%
Age 2 - 3	95 – 98%



- i.e. in fish populations that live fast and die young, catch and release doesn't make a lot of difference

## Biology – example 2

- Cutthroat trout, Yellowstone Lake (88,000 acres)
- Cutthroats very vulnerable to capture, even at low angling levels
- Up to 1970, bag limit 3 trout of any size.
- 1970 – 73, bag limit two trout of **more than** 14 ins.
- Still a big decline in the population



# Biology – example 2

- 1975 All fish **over** 13 ins must be **released**, 2-fish bag limit, fly/artificial lure only.
- Very successful:



	Before 1975 regulation	After
Pelican Creek spawning run	1960s – 12,000	1980s – 24,000
Clear Creek spawning run	1950s - <10,000	1978 – 70,000
Trophy fish (>18 ins)	1973 – 3 per 1000 1974 – 5 per 1000	1983 – 80 per 1000
Proportion of repeat spawners	Pre-regs – a few %	Post-regs – 25 to 30%

# Biology – example 2

- Similar results on Yellowstone River
- 1973 introduced no-kill , fly & lure only
- 1974-75 total catch was 2.5 times the catch in 1970-72
- Catch per hour tripled
- Average fish age and size increased
- In 1981 study estimated 7500 trout provided a catch of 72,698 captures in 6 weeks.
- Each trout caught and released average of 9.7 times
- Mortality in this period 0.3%



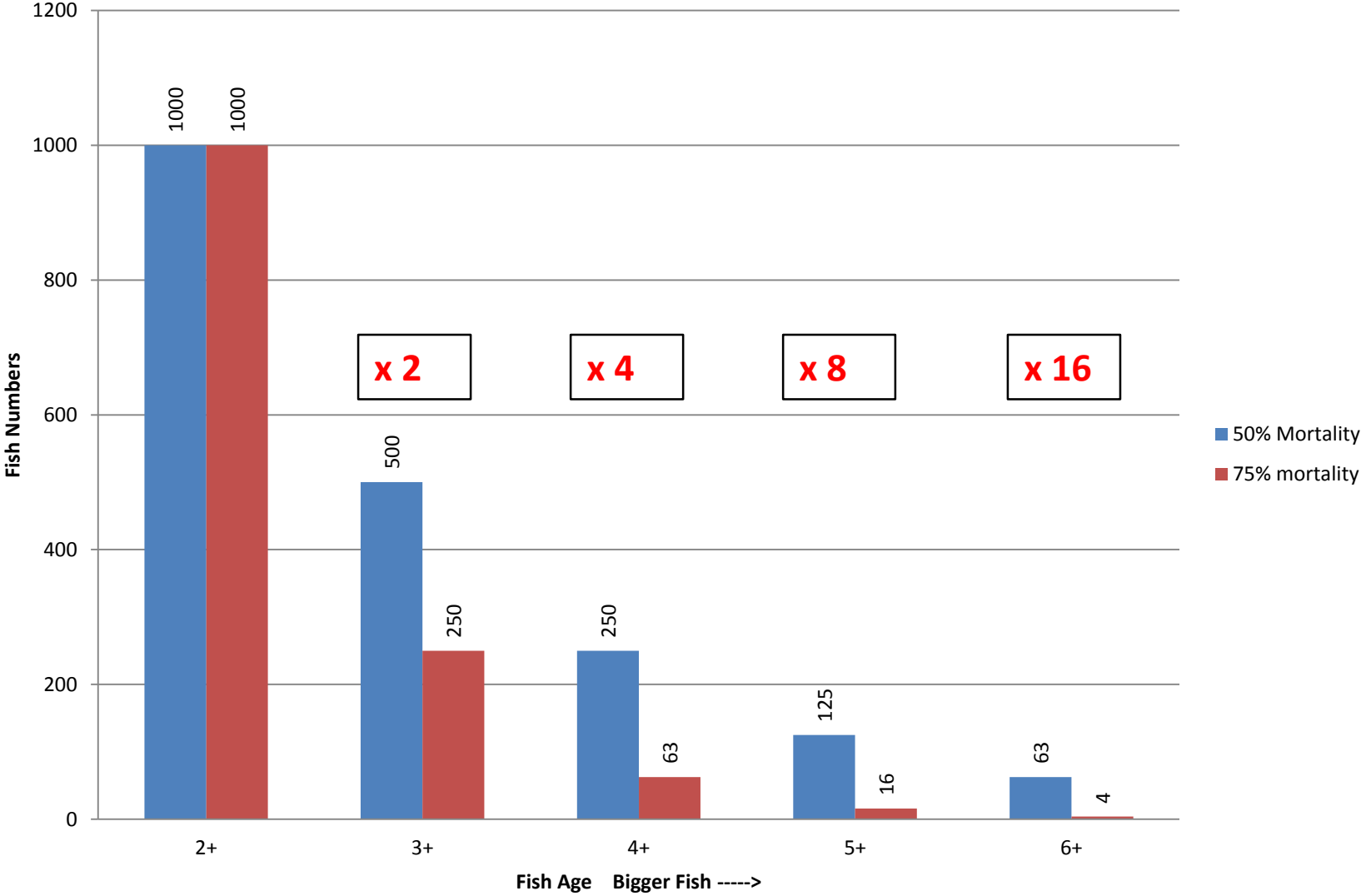
## Biology – example 2

- Why were restrictions on killing fish so successful in Yellowstone?
- The fish are relatively long-lived (5 – 8 years)
- They grow well throughout their life (around 3 inches p.a.)
- They are very vulnerable to capture and re-capture (10-12 hours angling/acre/year to catch each fish once)





# Mortality Rate (Natural + Angling) Comparison



# Is this applicable on the waters we fish?

- Fish certainly fit the biological requirements: long-lived, good growth...
- ...but brown trout not as vulnerable to capture as cutthroats and brook trout
- Culture of “take-able” fish above about 12” – these are the ones we should be returning!
- I think it does apply to our rivers....





21-inch (about 3¼ lb) wild brown trout from upper Dove, June 2010  
Re-captured May 2011. Also know it was caught by other members: once in 2009  
and once in 2010.



A 60-cm Laxa fish – an 80-cm fish of the future?