



Lake Whitefish Technical Work Group

Whitefish Species Author:

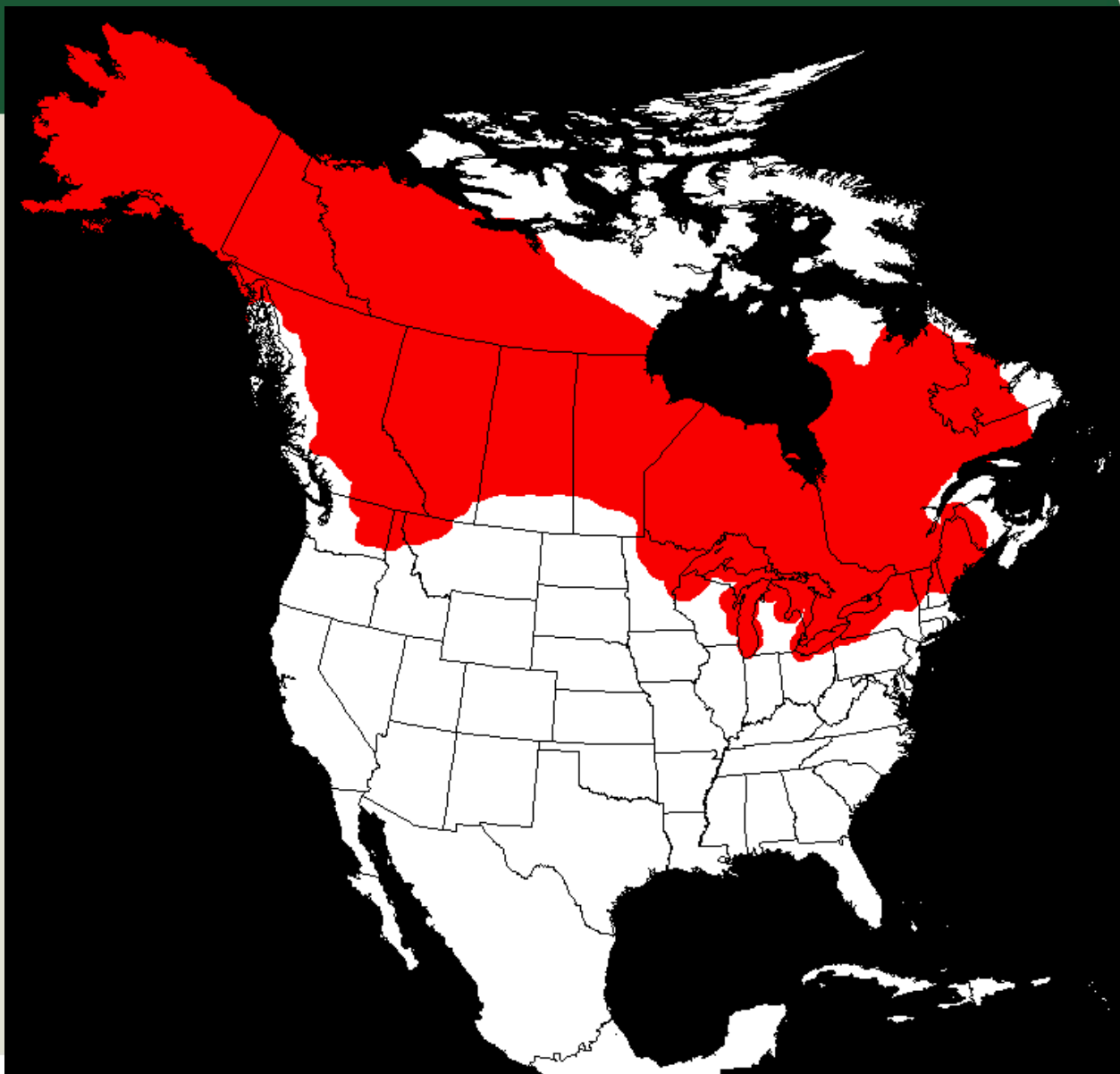
Jeremiah Wood
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Fish River Lakes Region

What are Lake Whitefish?



- Salmonids (related to trout)
- Silvery body, forked tail, large scales, tiny mouth, dark fins
- Native to Maine and parts of northern U.S. & Canada
- Significant declines – species of ‘Special Concern’

LWF Distribution



LWF Habitat

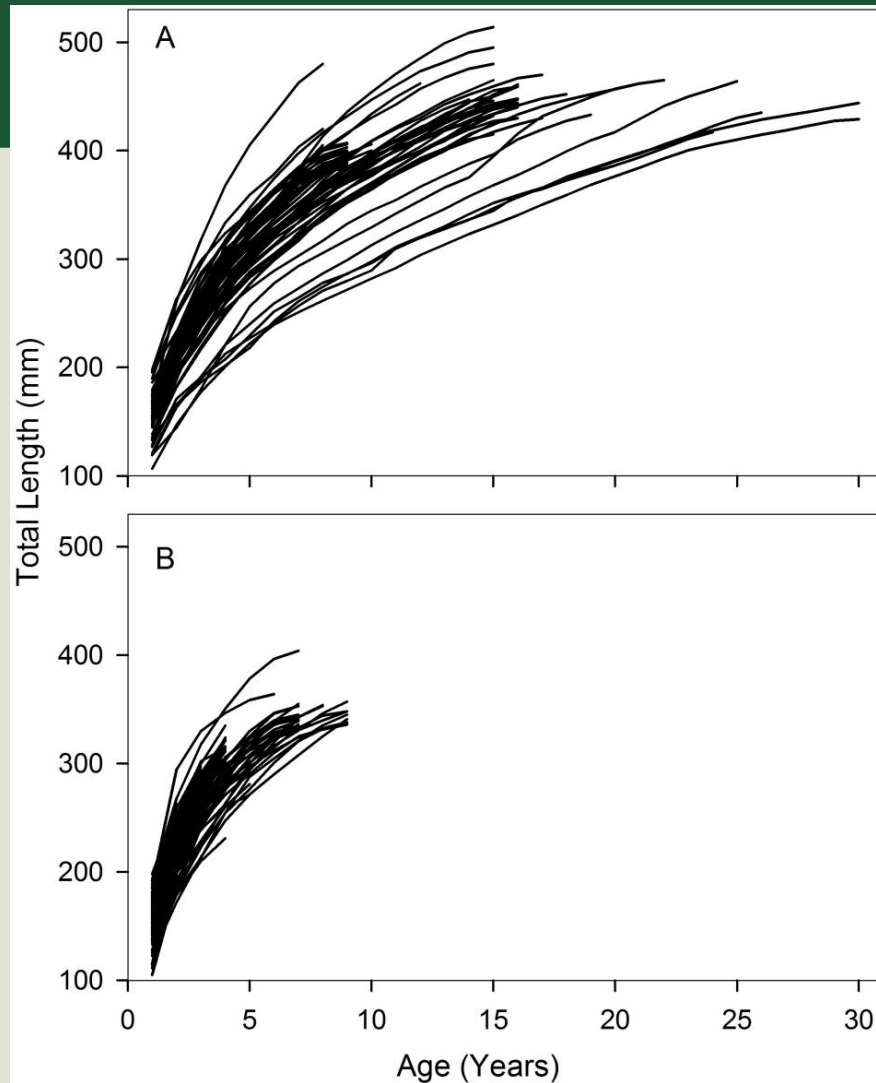


- Lake dwellers – occupy deep, oligotrophic lakes (with some exceptions)
- Schooling fish
- Bottom dwellers
- Feeding or spawning excursions into streams

Age & Growth



- Long lived species – can live up to 30 years!
- Rapid growth until onset of maturity, then growth slows substantially
- Most adults weigh 1-3 lbs, but some can grow much larger (4-5 lbs, state record 7.5 lbs)



LWF Reproduction



- Mature between age 3-6
- Spawn in fall (water temp below 6 deg C)
- Spawn on shallow windswept shoals, or suitable tributary streams
- Broadcast spawners – eggs fall in cracks of rocks and incubate over winter





LWF Diet

- Larval/Postlarval stage – zooplankton
- Juveniles – snails, insect larvae, etc
- Adults – snails, small clams, insect larvae, smelts where available





Dwarf LWF – Species Divergence

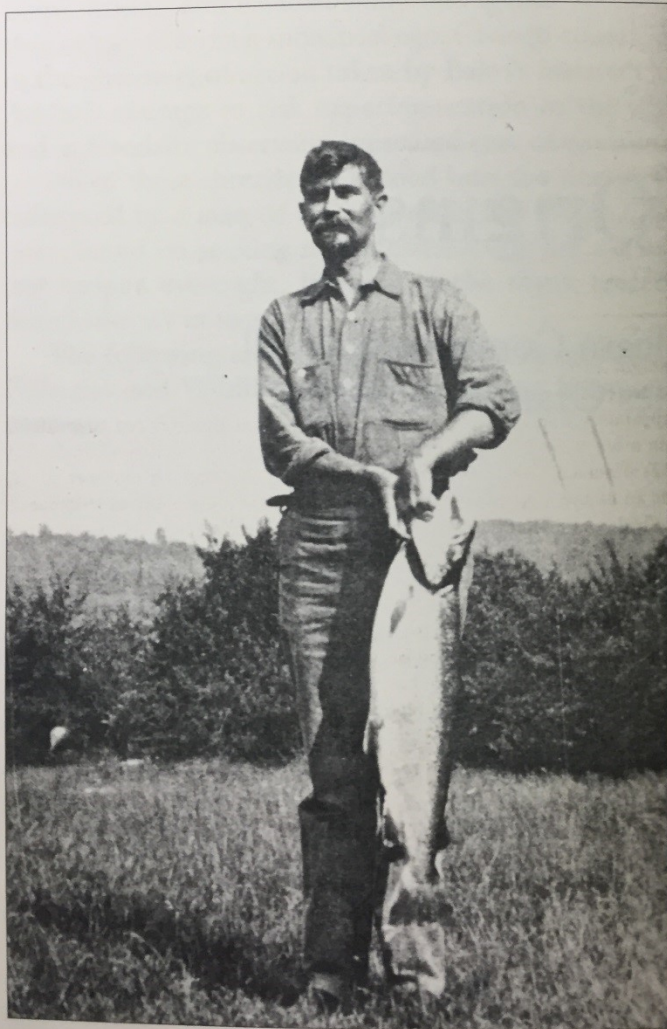
- Dwarf and normal LWF
- Dwarf form matures earlier, reaches smaller adult size, has much shorter life span
- Were found in 29 Maine Lakes (fewer today)
- Unique life history strategy





Dr. William Converse Kendall

U.S. Fish Commission 1890 – 1929



Dr. W.C. Kendall holds a 16-pound landlocked salmon caught in Sebago Lake, August 1, 1907.

Dr. William Converse Kendall, one of the earliest ichthyologists in America, became an international authority on the trout, Atlantic salmon, and landlocked salmon of the United States. He spent much of his time as one of the first surveyors of Maine's distinctive fisheries. He also happened to be the grandfather of future Maine Fisheries Biologist Ken Warner -- and his earliest mentor.

Even today, Dr. Kendall's research and prolific publishing about the salmon family remain relevant. He worked for the U.S. Fish Commission⁸ for over 40 years, at a time when the federal commission was branching out across the U.S. to survey in earnest the country's fisheries and wildlife. Career longevity appears to run in the family, as his



- U.S. Fish Commission
- Early fisheries surveys
ca. 1901-1904
- described 3 'species' of whitefish
- common whitefish
- chivy
- Stanley's whitefish

LWF History in Maine



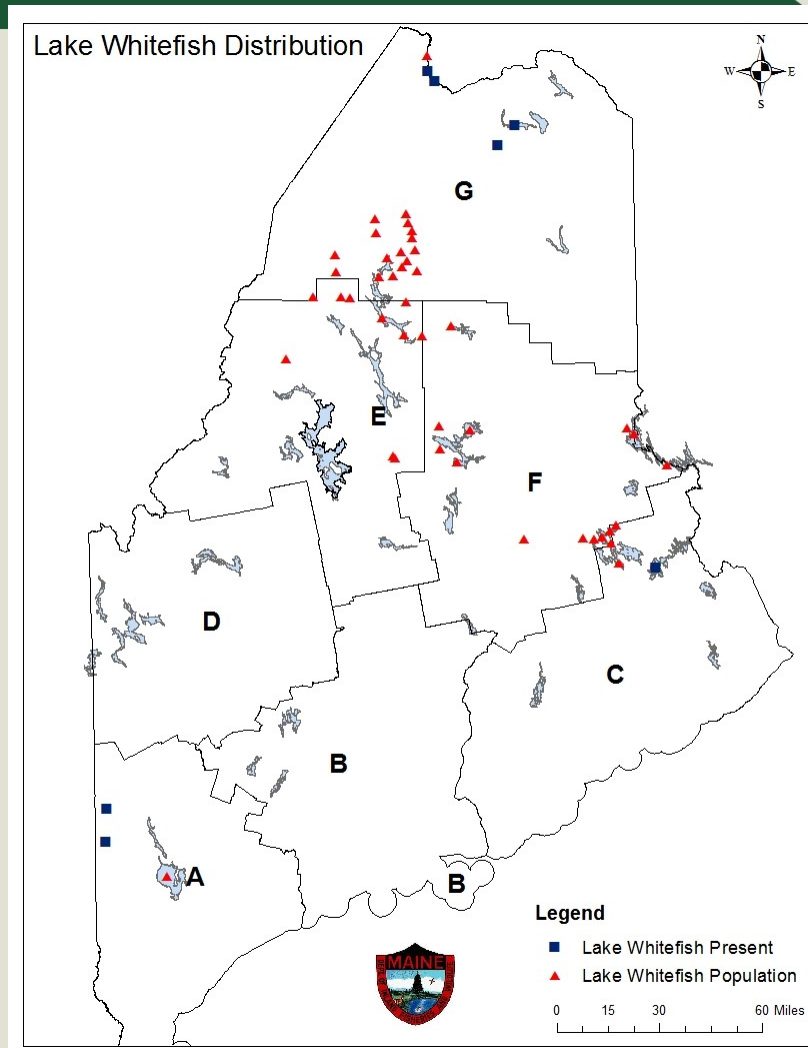
- Native to many Maine lakes
- Contact site of 3 distinct glacial lineages
- Food fish for Native Americans and logging communities
- Historic gill net history
- Modern sport fishery – mainly associated w/ ice fishing
- WC Kendall (flyrod 1905), Owen Fenderson – “Are Anglers Missing a Bet?“, T. Shoener – “Discover Whitefish” (1972)



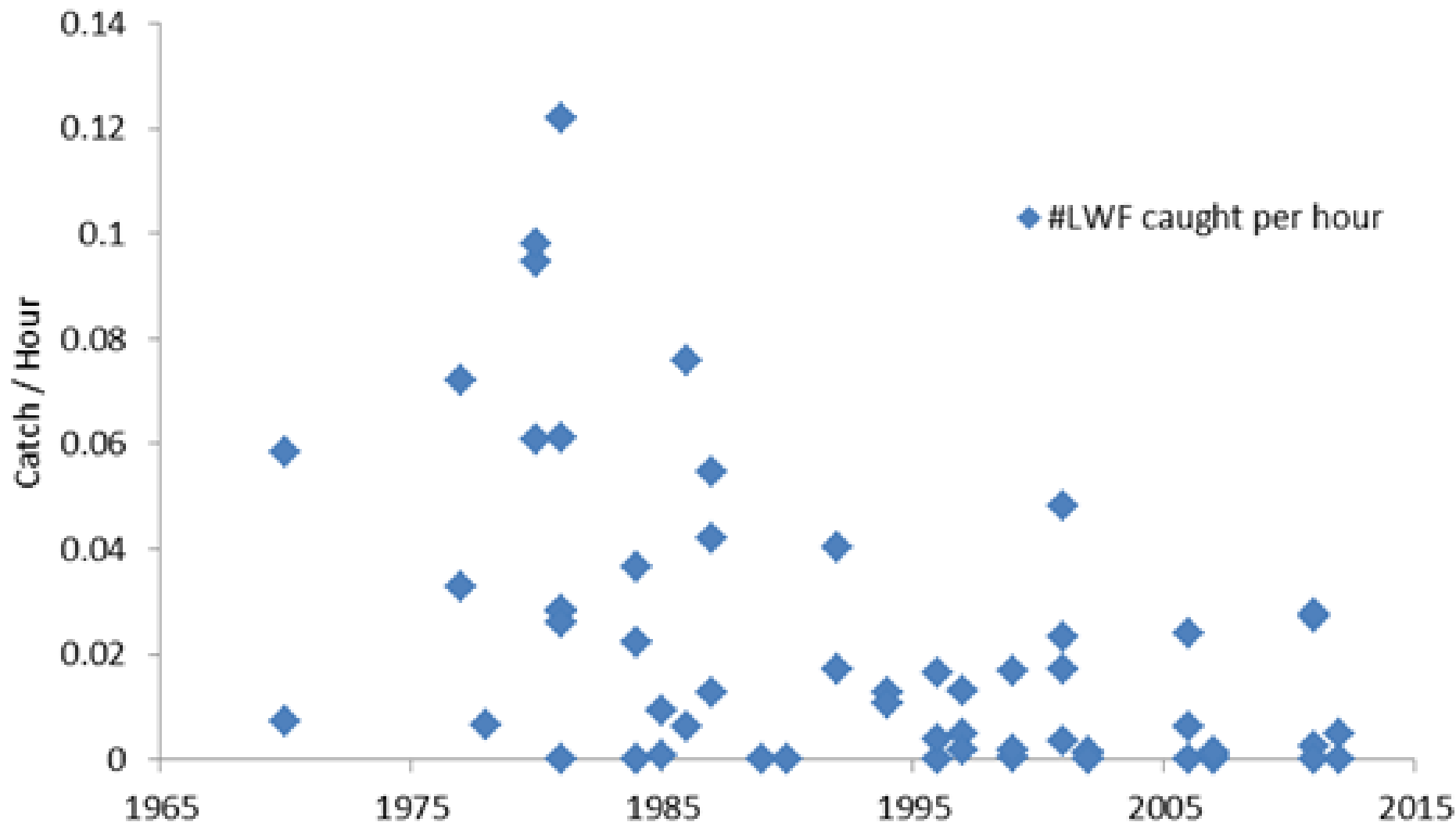
Current Status of LWF in Maine



- 50 waters (+/-44 populations)
- Many extirpated
- Many headed for extirpation

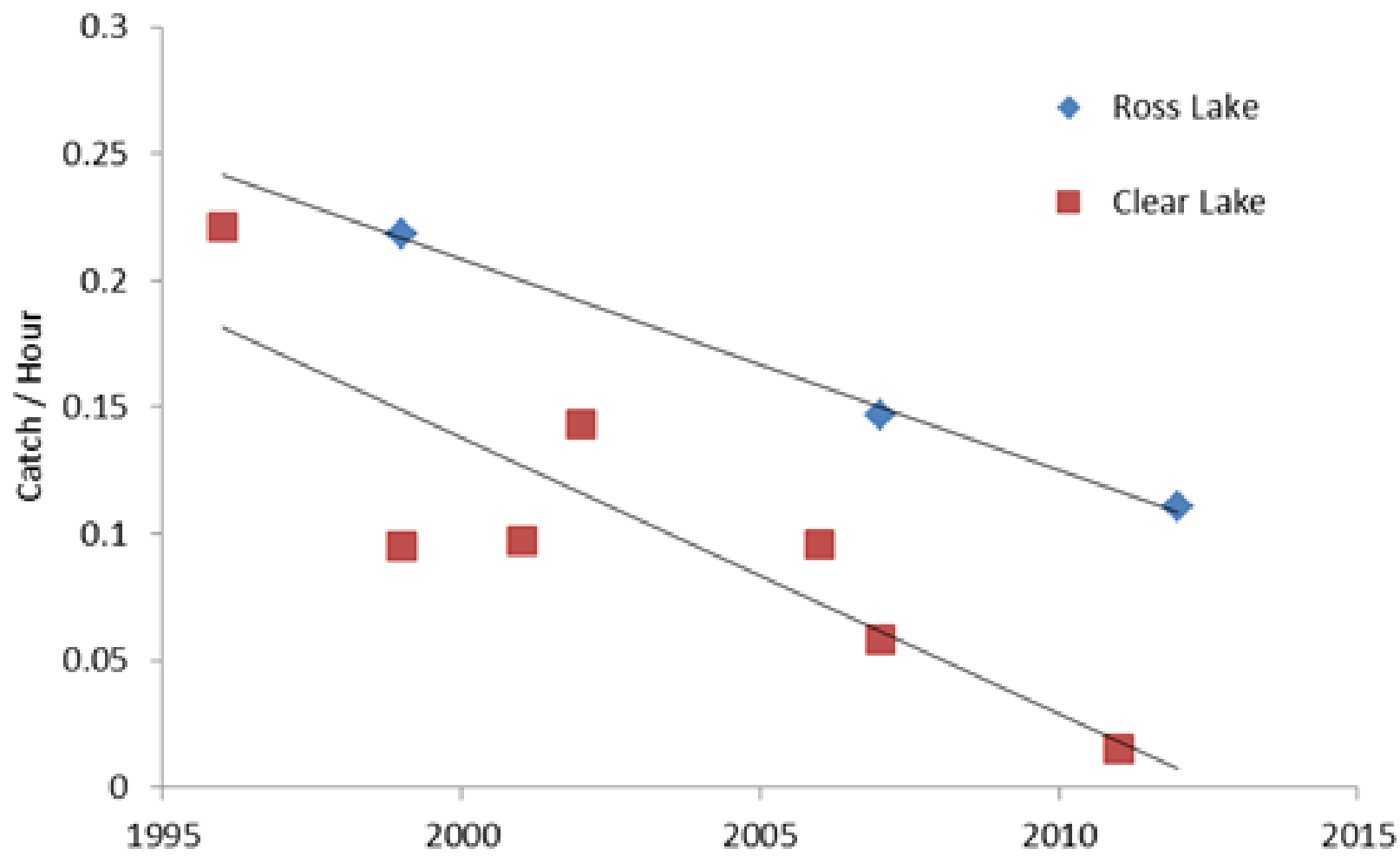


Lake Whitefish Angler Catch Rates in Six Selected Allagash Waters, 1970-2012





Recent Trends in Lake Whitefish Catch Rates: Clear and Ross Lakes





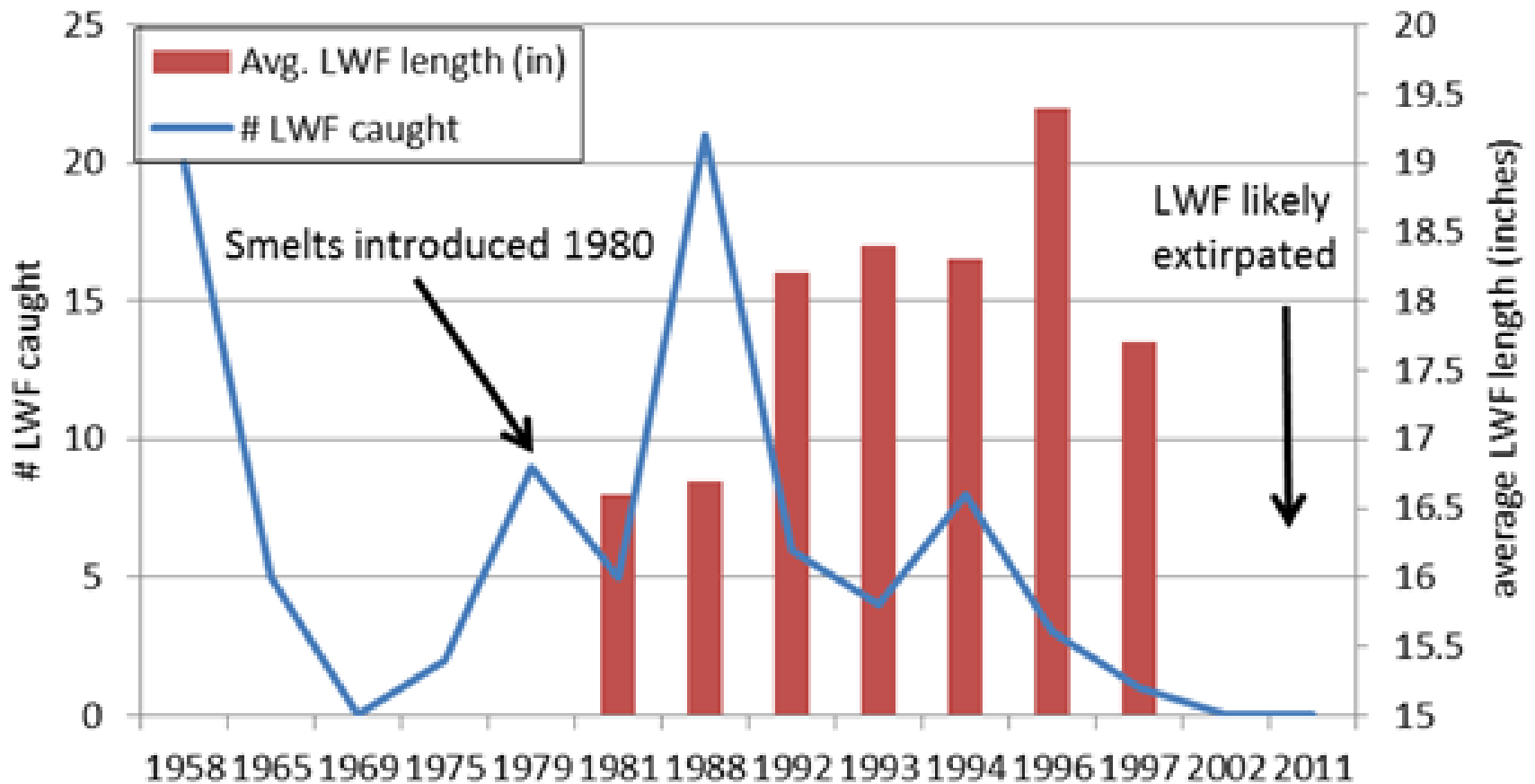
- LWF declines coincided with introductions of rainbow smelts from late 1800's through 1980

- Smelts nonnative to northern Maine
- Introduced as forage for landlocked salmon and lake trout
- Have impacted whitefish throughout range



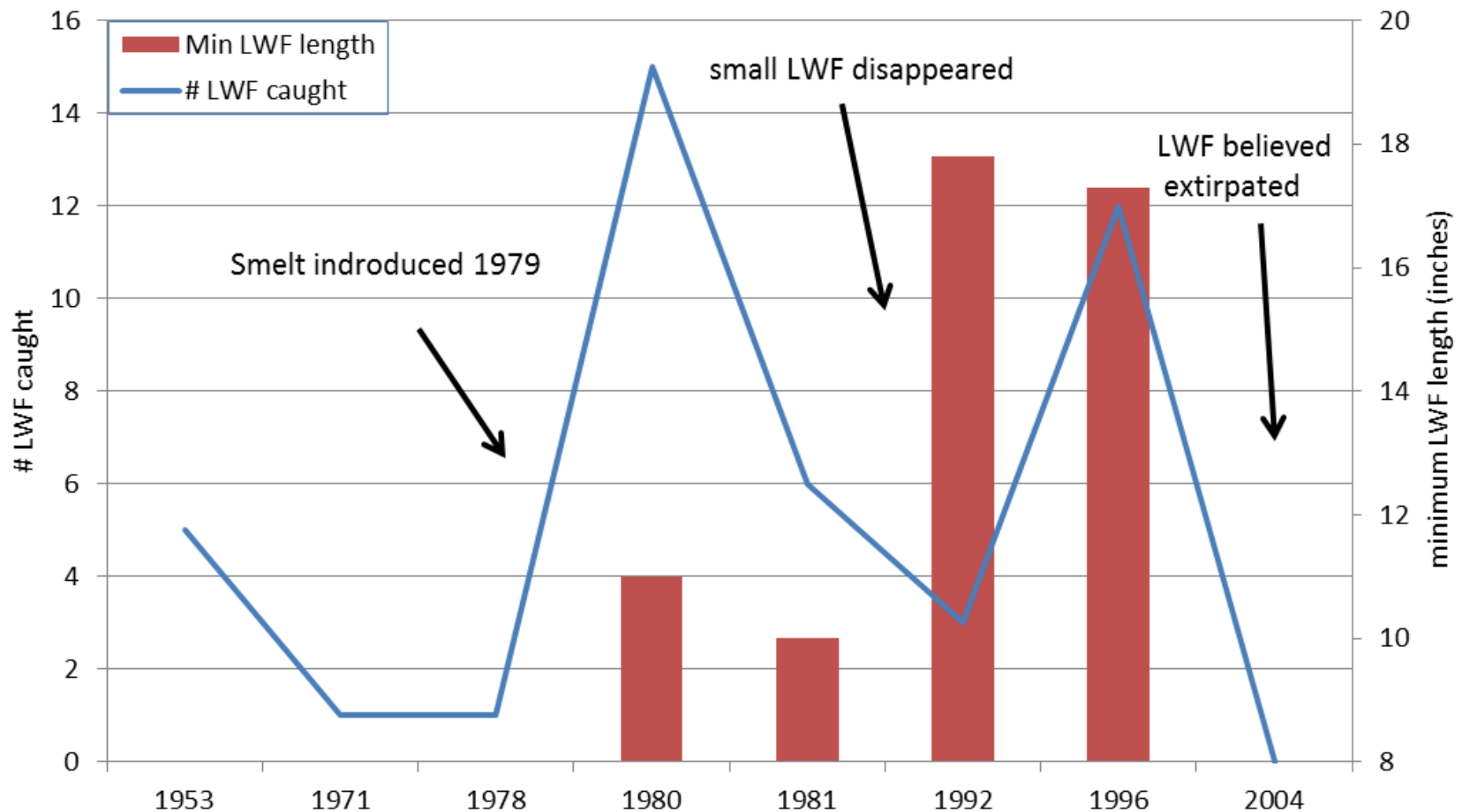


Carr Pond Lake Whitefish: 1958-2011





Fish River Lake Whitefish: 1953-2004





Whitefish Management History - Regulations

- 1972 – 8 fish bag limit statewide
- 1988 – 3 fish bag limit in some waters
- 2002 – 3 fish bag limit statewide
- 2005 – present – further restrictions in Allagash waters

Water	pre-1988	1988-2005	2005-2012	2012-2013	2014-present
Big Eagle	8 fish	3 fish	no harvest	1 fish, 18" min	1 fish, 18" min
Churchill	8 fish	3 fish	no harvest	1 fish, 18" min	1 fish, 18" min
Spider	8 fish	3 fish	no harvest	1 fish, 18" min	1 fish, 18" min
1,2,3 Musquacook	8 fish	3 fish	no harvest	1 fish, 18" min	1 fish, 18" min
Allagash	8 fish	3 fish	3 fish, 16" min	3 fish, 16" min	3 fish, 16" min
Chamberlain/Telos	8 fish	3 fish	3 fish, 16" min	3 fish, 16" min	3 fish, 16" min
Umsaskis	8 fish	3 fish	3 fish, 16" min	1 fish, 16" min	3 fish, 18" min
Long	8 fish	3 fish	3 fish, 16" min	1 fish, 16" min	3 fish, 18" min
Big Indian	8 fish	3 fish	3 fish, 16" min	1 fish, 18" min	1 fish, 18" min
Clear	8 fish	3 fish	3 fish, 16" min	1 fish, 18" min	1 fish, 18" min
Ross	8 fish	3 fish	3 fish, 16" min	1 fish, 18" min	1 fish, 18" min

Whitefish Management History – Hatchery Program



2003-2010: LWF eggs taken from Clear Lake, reared at Enfield Hatchery, stocked in 7 lakes

Table 5. Number of LWF stocked in Maine lakes, 1997-2010, by age class.

Lake	surface acres	years stocked	total # stocked
Churchill	3720	2003,08	3200 FF, 1000 AF
Clear	614	2003,09	28934 FR
Big Eagle	9500	2003,08,09,10	15384 FF, 4000 AF, 3500 FR
2nd Musquacook	813	1997,2003,07,08,09	3856 FF
3rd Musquacook	390	2008,09,10	1200 FF
Spider	890	2003,05,07,08,09,10	7445 FF
St. Froid	2400	2003,04,05,07,08,09,10	229 SY, 18014 FF

*FF=fall fingerling, AF=advanced fry, FR=fry, SY=spring yearling

LWF Assessment Update: 2016



Fishery Final Report Series No. 16-01

Current Status of Lake Whitefish in Maine; an Update to MDIFW's 2001 Whitefish Assessment

By: Jeremiah Wood



June 2016
Maine Department of
Inland Fisheries & Wildlife
Fisheries and Hatcheries Division

- 2016 Recommendations
 - Better understand LWF status through increased monitoring
 - Collect otolith age data to determine age structure and recruitment of populations
 - Implement research to answer questions about recruitment, smelt interactions, and management strategies
 - Explore new LWF stocking program
 - Introduce LWF to waters to establish new (or recover extirpated) populations

Recent Research



- 2015-2018 pilot project – larval trawling and zooplankton abundance
- SWG and MOHF grants, hired 2-year LWF researcher, Dylan Whitaker
- Processed and aged otoliths from 200+ LWF
- Identified LWF spawning habitat in 6 Allagash area waters
- Implemented a pilot ‘egg mat’ study to document spawning
- Radio Telemetry project at Ross Lake Fall 2019





Recent LWF Management Efforts

- Crescent Pond LKT transfer
- Lock Dam/Martin Stream habitat improvement

