

SOME REFLECTIONS ON RECOVERY

Tom Burke, USBR Retired

Colorado River Headwaters in Rocky Mountain National Park

RETIRED, NOT YET DEAD



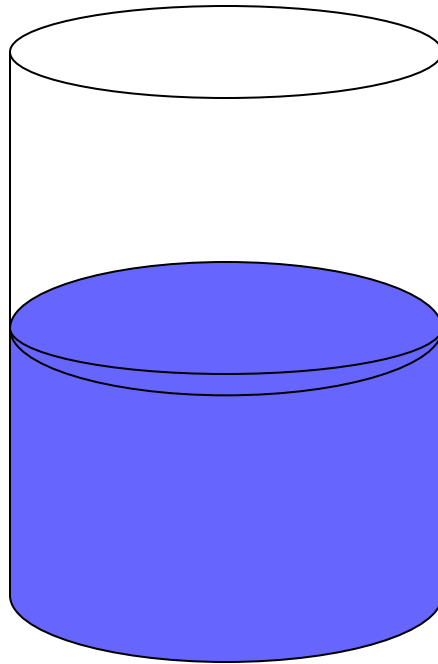
So where are we 38 years after the ESA?

**“We’ve made progress, learned a lot, but
have a long way to go!”**



THE PHILOSOPHICAL QUESTION

HALF FULL - Optimist



HALF EMPTY – Pessimist

Be an Optimist

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First, I don't believe we will ever recover these fishes.

Nor do I expect that buffalo will freely roam the great plains.

But I do believe we can conserve these fishes for future generations to observe, study and enjoy. Just as we can take our families to Custer State Park or Yellowstone NP and view free ranging buffalo.





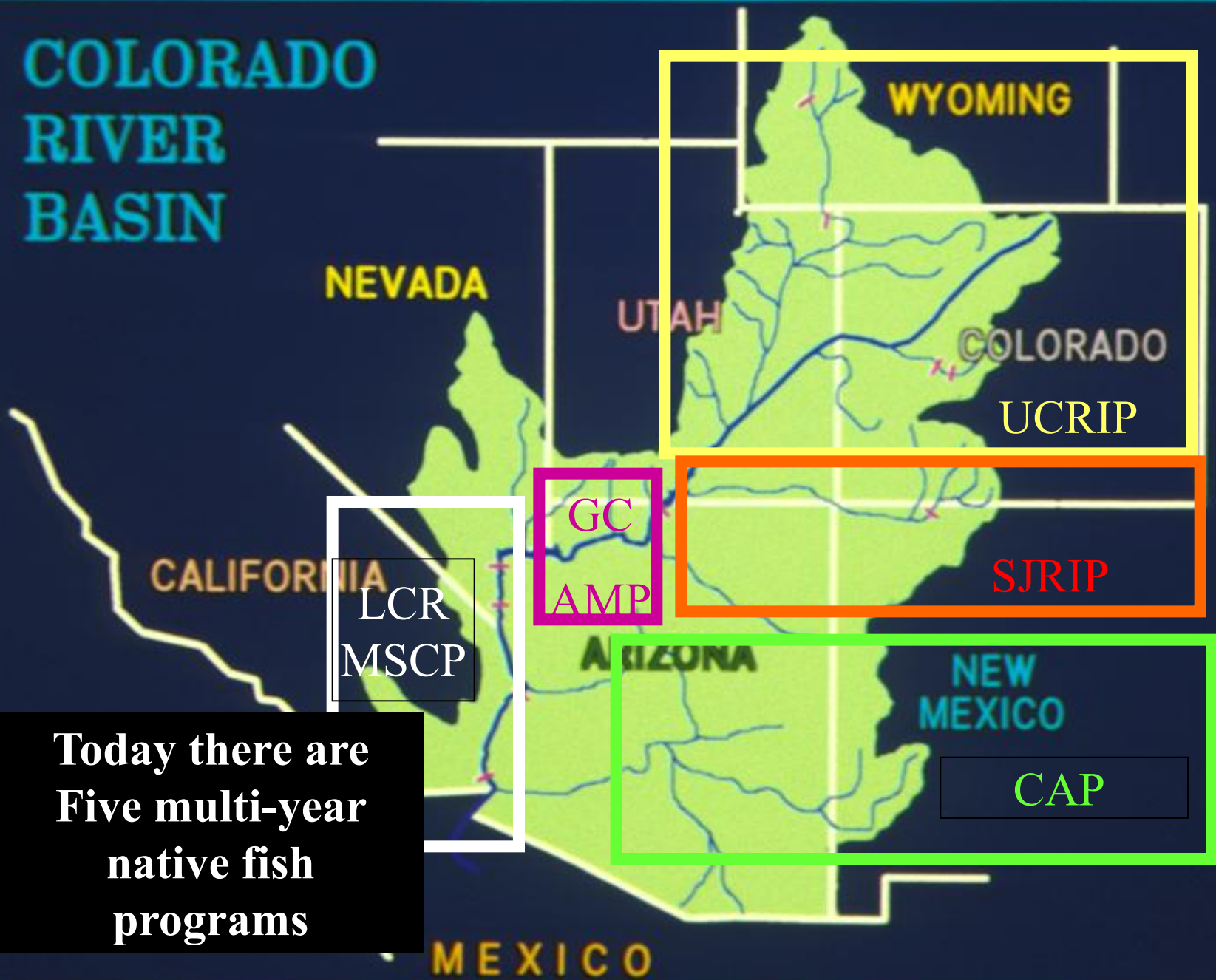
**The historical habitats for these animals are mostly gone! Look at this picture of Lake Mead!
“Colorado” means *RED RIVER*. Over 80 % of it in the lower basin is *BLUE!***

COLORADO RIVER BASIN



1973 - No Fish Recovery Programs

COLORADO RIVER BASIN



Today there are
Five multi-year
native fish
programs

1 - WILD THINGS DO WILD THINGS

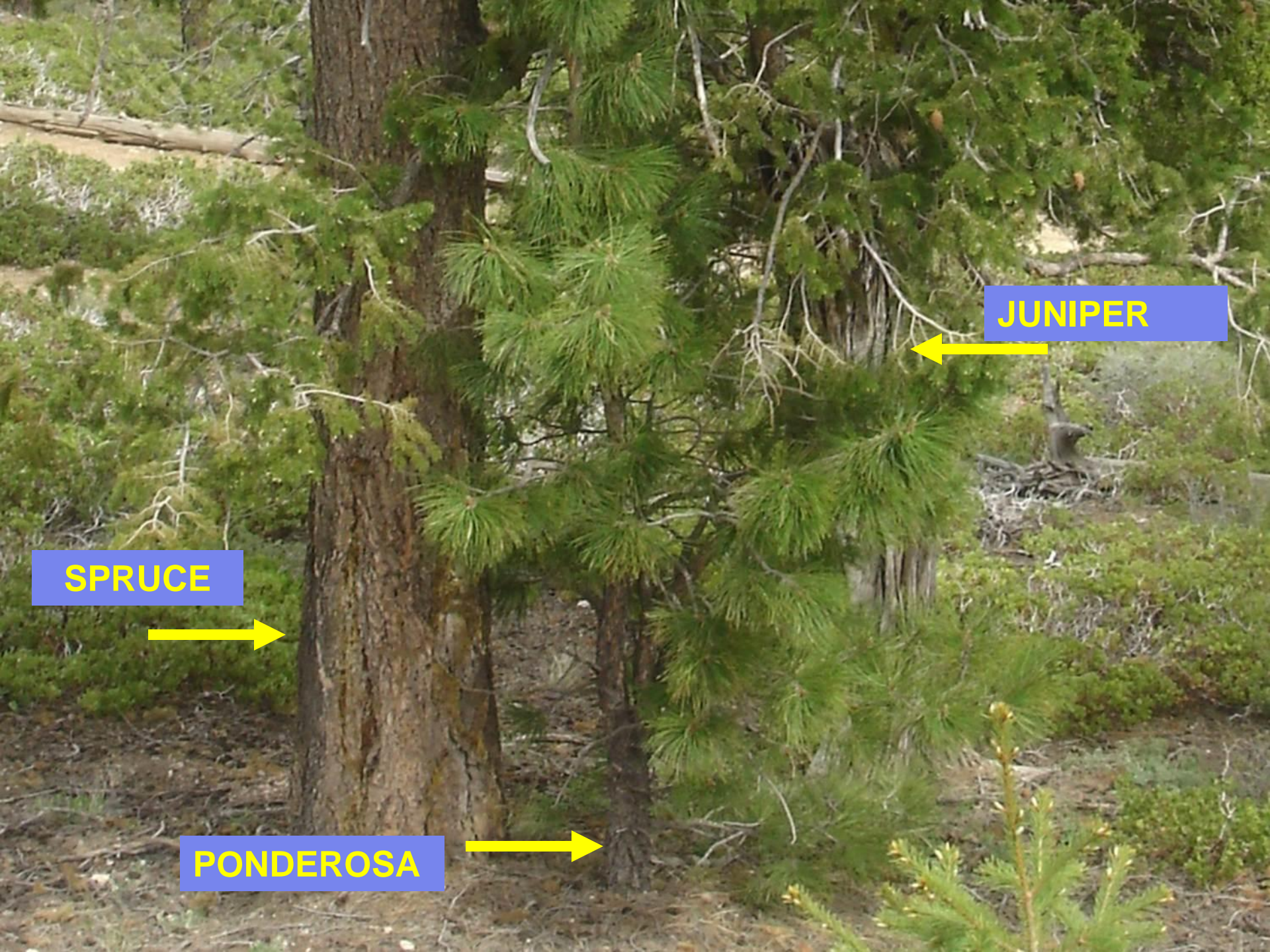
BRYCE CANYON NP





**THE
FAMILY
PINE**

**Here are Father
Spruce and Mother
Juniper with their
adopted Ponderosa**



SPRUCE



PONDEROSA



JUNIPER



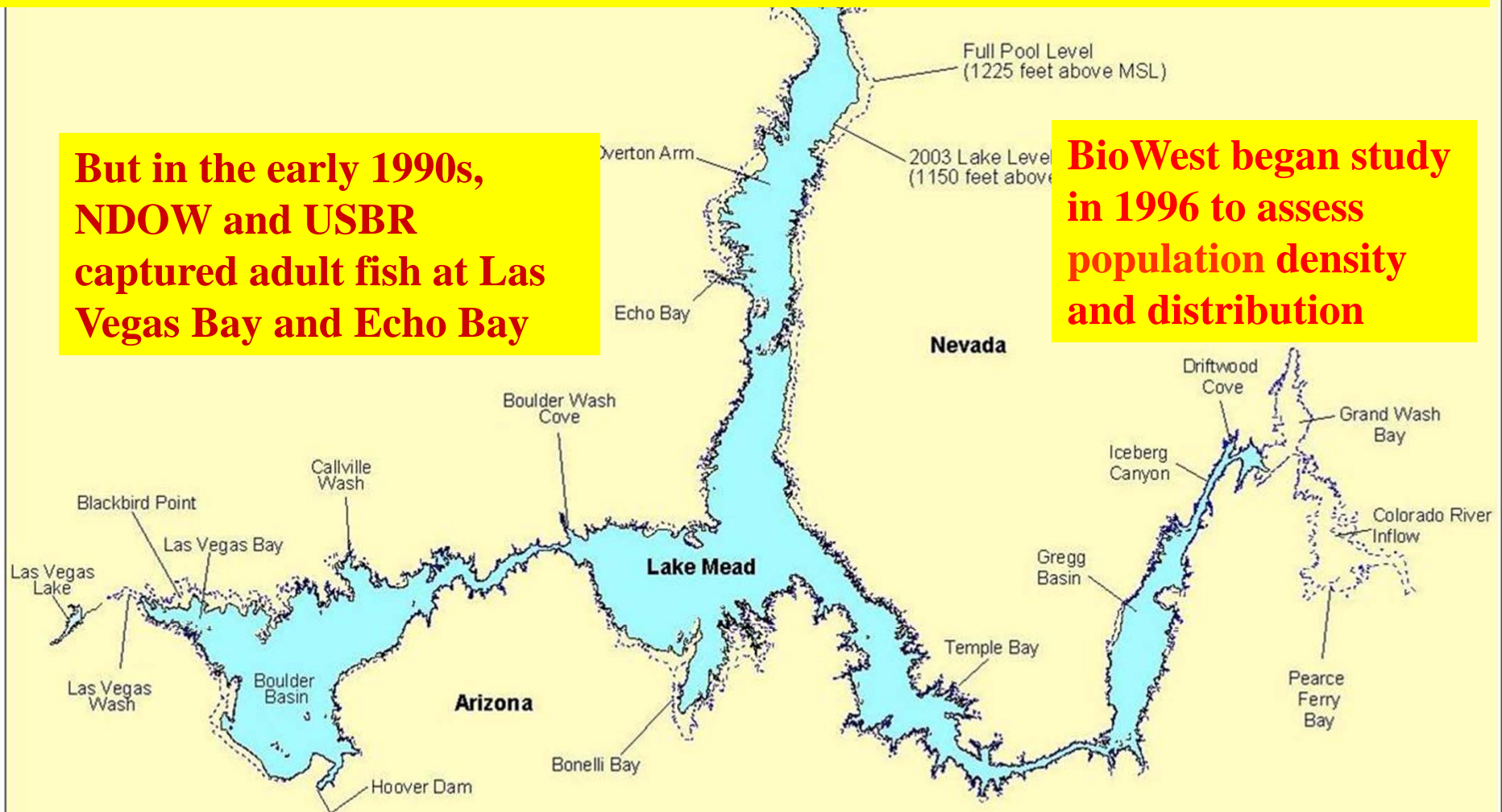
**UNEXPECTED
ASSOCIATION
YET,
HERE IT
IS !**



Razorback sucker believed to be extirpated from Lake Mead by the 1980s and because of the tremendous populations of non-native fishes, recovery of any native Colorado River fish in Lake Mead was unfathomable, unthinkable, impossible!

But in the early 1990s, NDOW and USBR captured adult fish at Las Vegas Bay and Echo Bay

BioWest began study in 1996 to assess population density and distribution



**OVER THE PAST 15 YEARS BIO-WEST HAS DOCUMENTED
PERSISTENT ANNUAL RECRUITMENT OF RAZORBACK SUCKER,
CAPTURING OVER 100 SUBADULT RAZORBACK SUCKER FROM
LAKE MEAD**



UNEXPECTED, BUT THERE IT IS!



W.L. Minckley reported in 1979 that none of the 600 flannelmouth sucker stocked below Davis Dam in 1976 by AGFD had been seen since their introduction, inferring that the stocking failed. But today we know this action was a great success. **UNEXPECTED, BUT THERE IT IS !**

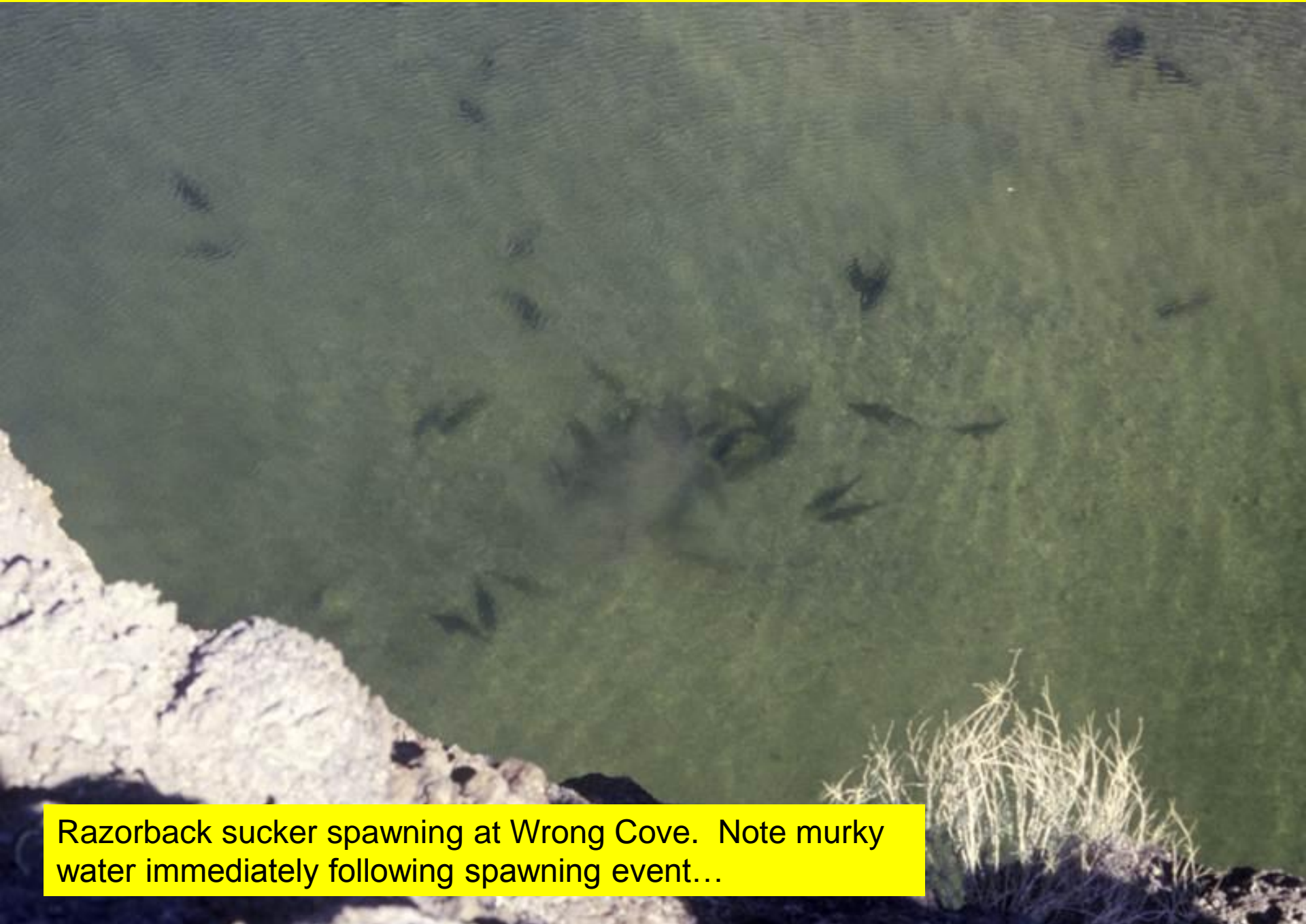


2 - GET OFF YOUR BUTT AND GO LOOK

A lot of our “Discoveries” were accidental or opportunistic observations. Larvae were 1st discovered by accident in 1982 when we turned on a remote camera light at night to see if fish were spawning after dark.

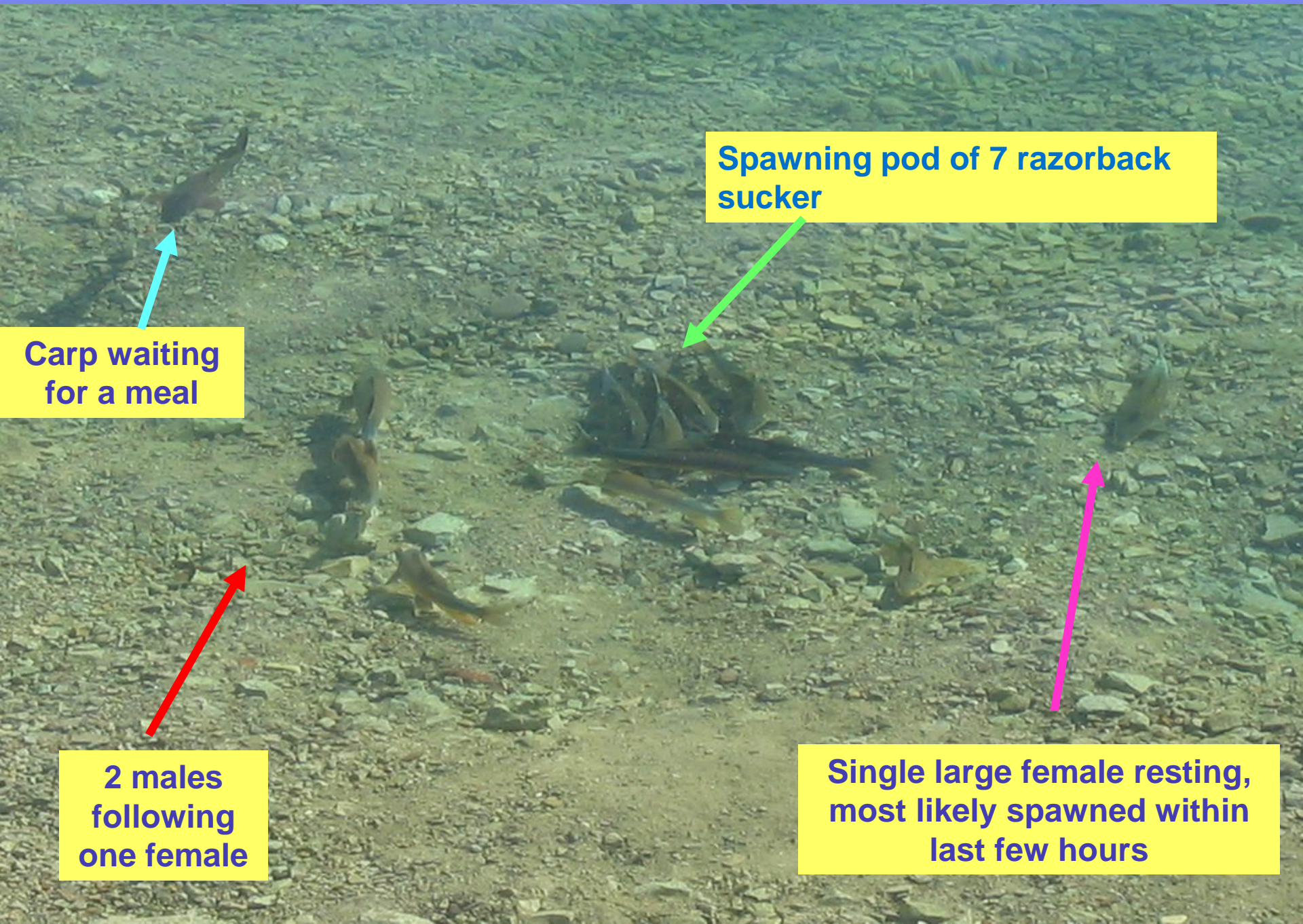
RAZORBACK SPAWNING ON L.MOHAVE

A SCIENTIST IS A TRAINED OBSERVER, SO GO OBSERVE



Razorback sucker spawning at Wrong Cove. Note murky water immediately following spawning event...

Clear water of Lake Mohave allows observation of behavior



Carp waiting for a meal



Spawning pod of 7 razorback sucker



2 males following one female



Single large female resting, most likely spawned within last few hours



3 - PLAN THE EVENT, NOT THE OUTCOME: Original plan was to use Yuma Cove for spawning of adults from the lake itself and then transfer YOY fish to Davis Cove for grow-out.

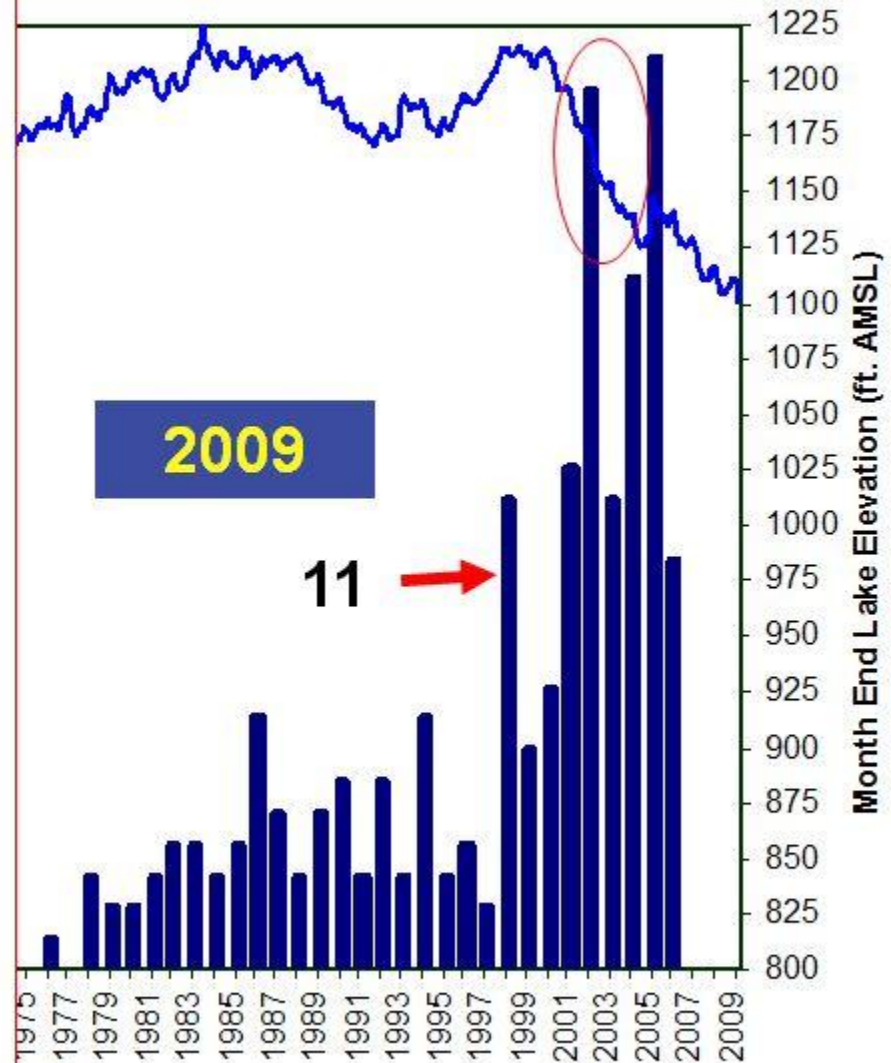


TODAY YUMA COVE IS USED FOR GROW-OUT



STAY ENGAGED - Give time time

Good thing we didn't stop after ten years of study!



STAY ENGAGED - GIVE TIME TIME

- 30 K RAZORBACKS STOCKED INTO HAVASU BETWEEN '93 & '00
(TOPOCK GORGE ABOVE LAKE HAVASU)



THIS SPAWNING GROUP ABOVE NEEDLES WASN'T FOUND UNTIL 2004-05.



NEEDLES BRIDGE

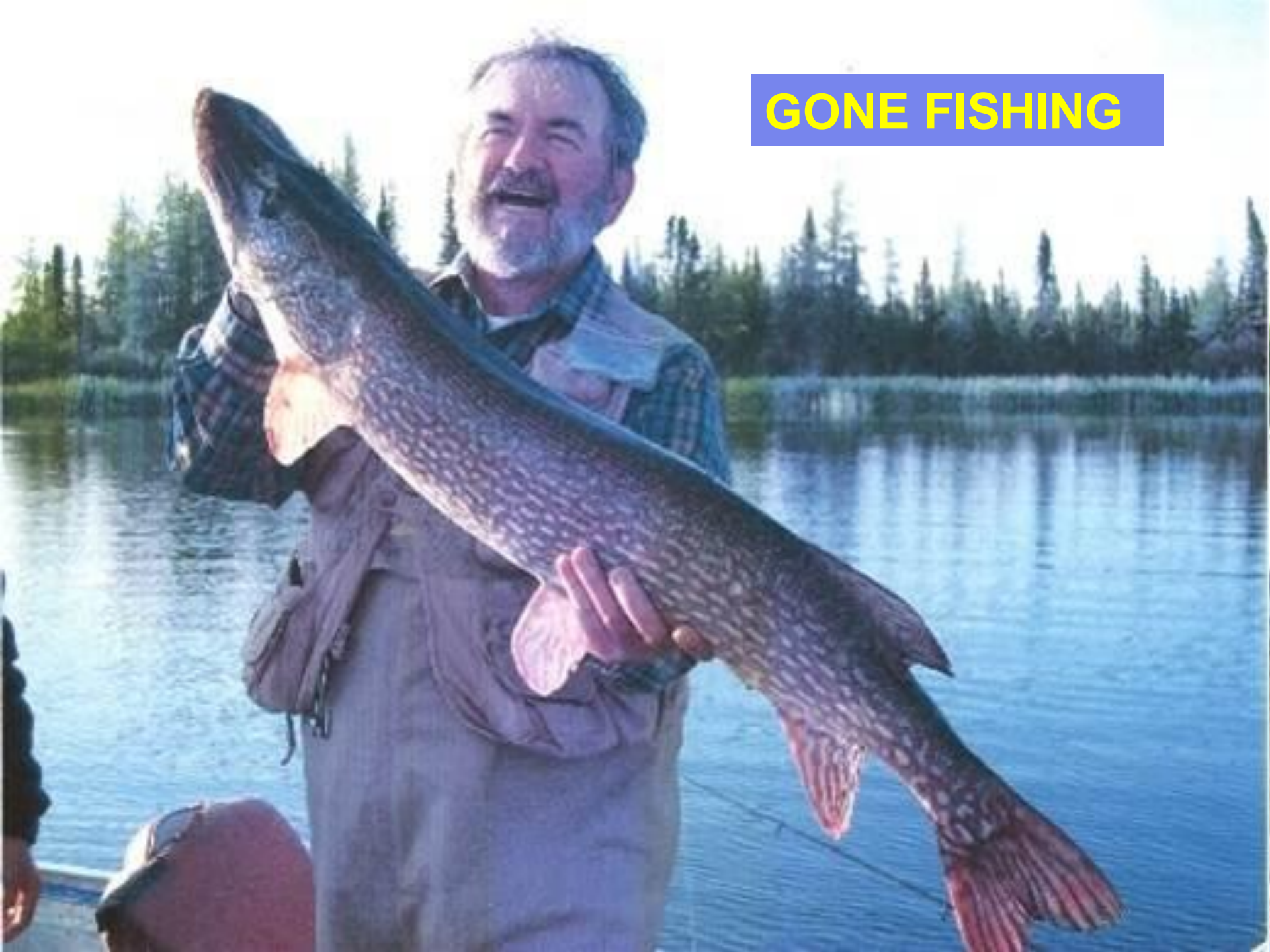
RAZORBACK SPAWNING REACH ABOVE NEEDLES

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**KEEP GOING, STAY ON COURSE AND
REMEMBER:**

- 1 - Wild Things do Wild Things**
- 2 - Get off your butt and go look**
- 3 - Plan the event, not the outcome**
- 4 - Stay engaged in the fight**

GONE FISHING



STAY ENGAGED - EACH POPULATION TOOK YEARS TO DEVELOP AND FOR US TO EVEN FIND THEM

