

The Use of Ultrasound for Early Determination of Maturation and Sex in Captive Broodstock Chinook Salmon

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ODFW

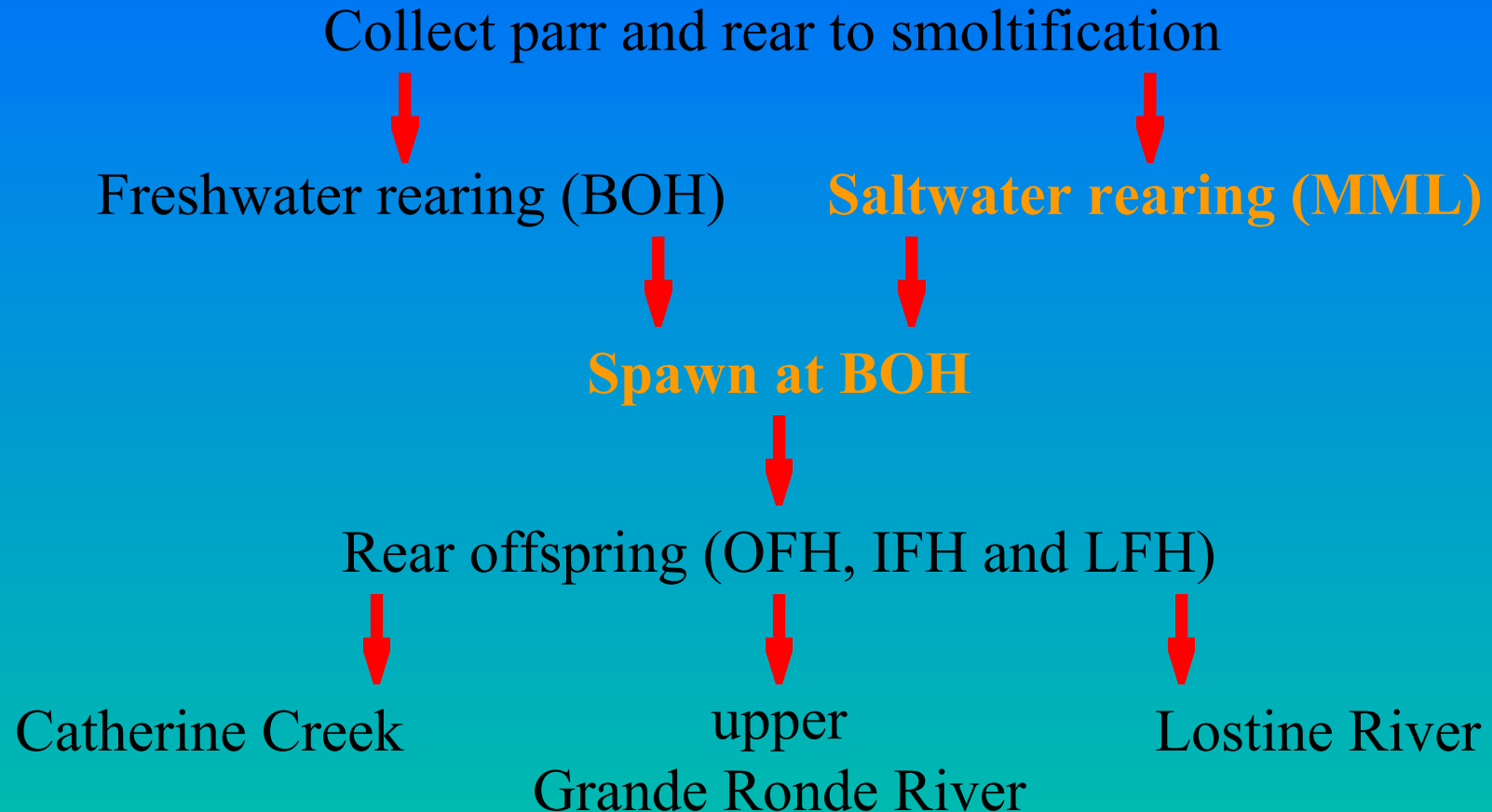
Northeast Region Fish Research

Marla Chaney

ODFW

Bonneville Fish Hatchery

Captive Broodstock Program







Maturity Sorts

1998	4
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1999	4
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2000	3
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2001	2
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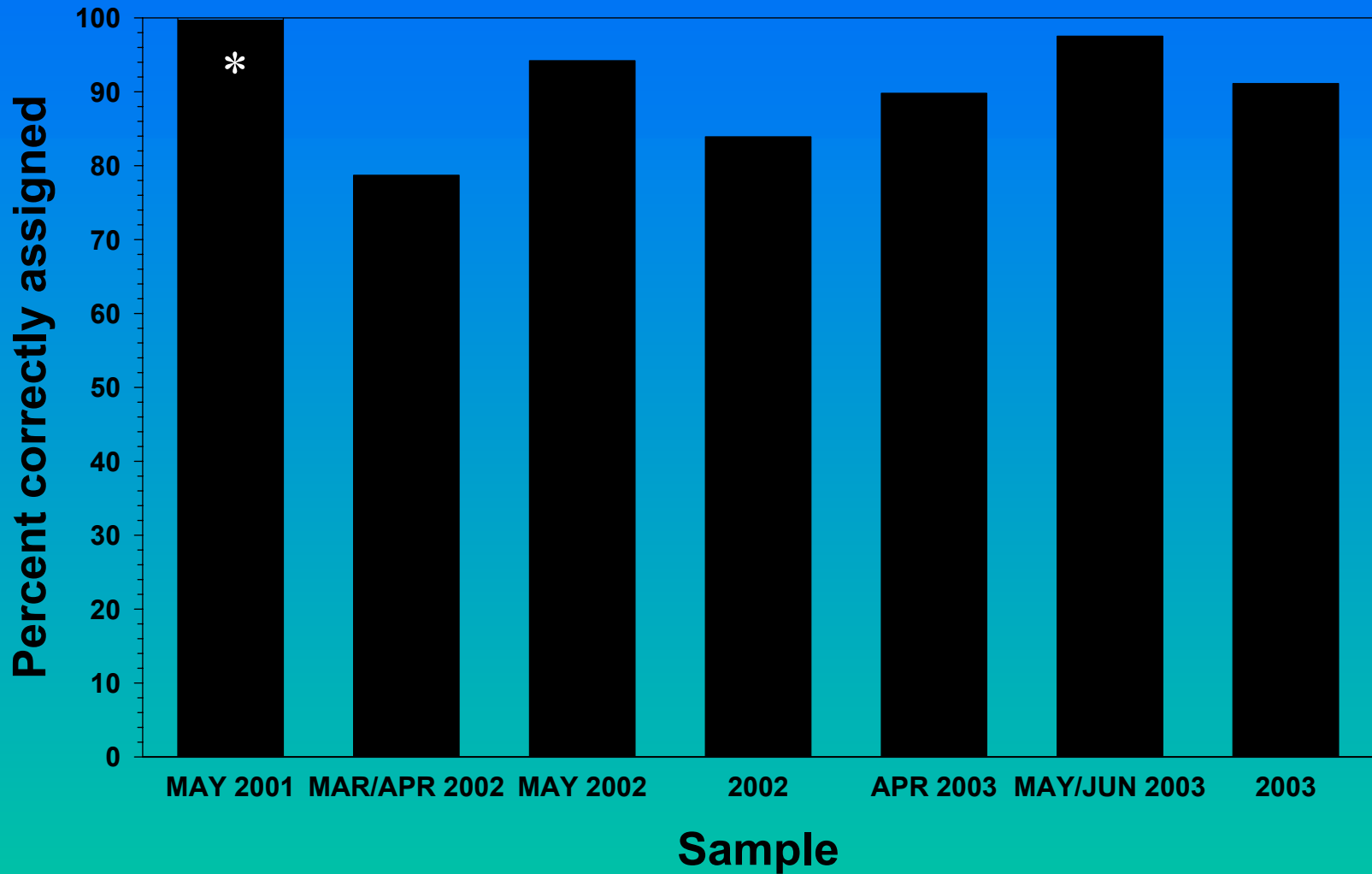
2002	2
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2003	2
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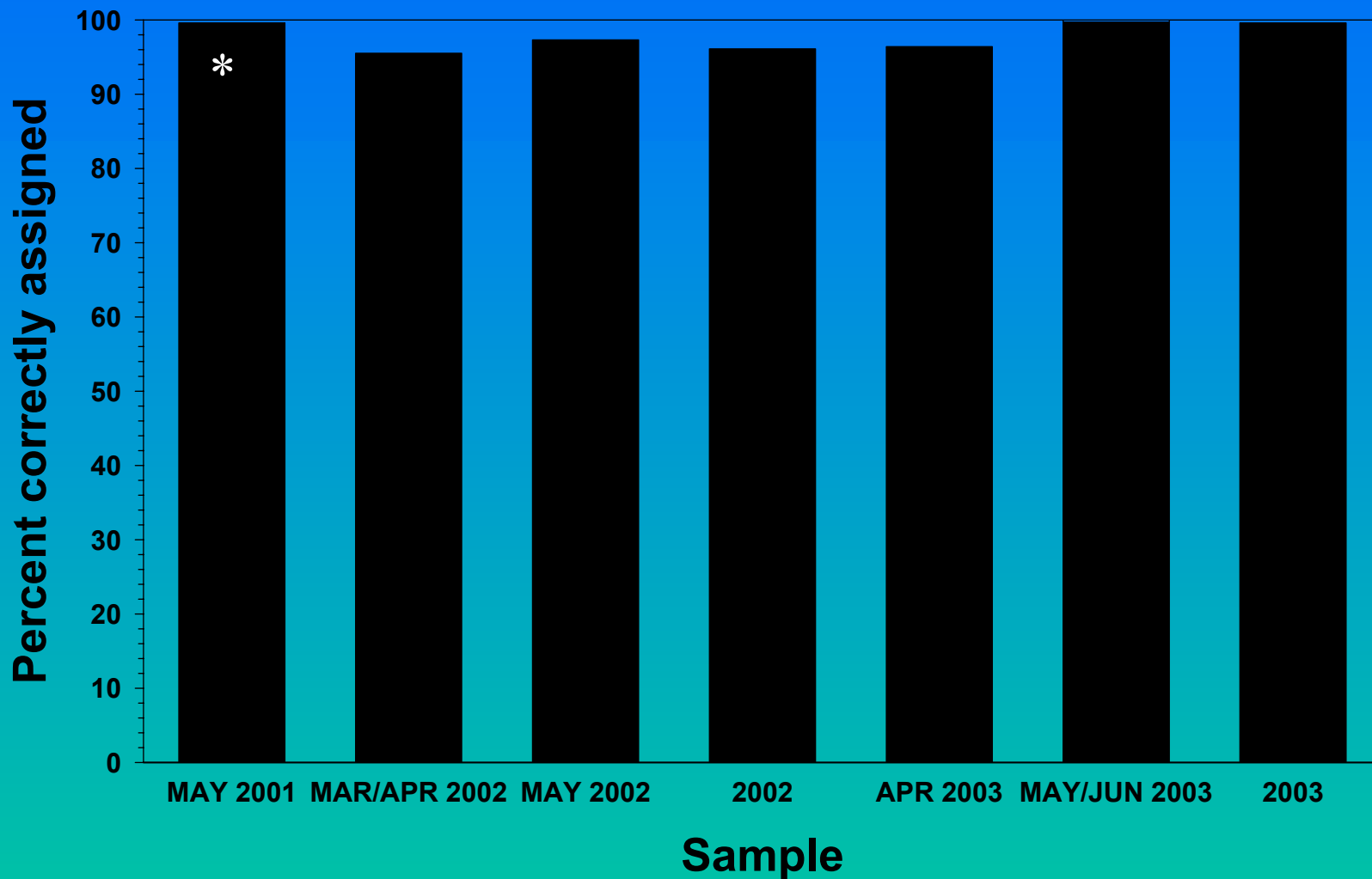
Data Collection and Analysis

- Two maturity sorts were conducted per year in 2002 and 2003:
 - March/April
 - May/June
- At each sort, fish were checked for maturity (visible maturing gonads) and, if the fish was determined to be maturing, sex was determined. Data were recorded for individual fish, based on PIT tags.
- At the end of the spawning season, we compared the final determination of maturation and sex for each fish with the characterization based on ultrasound.

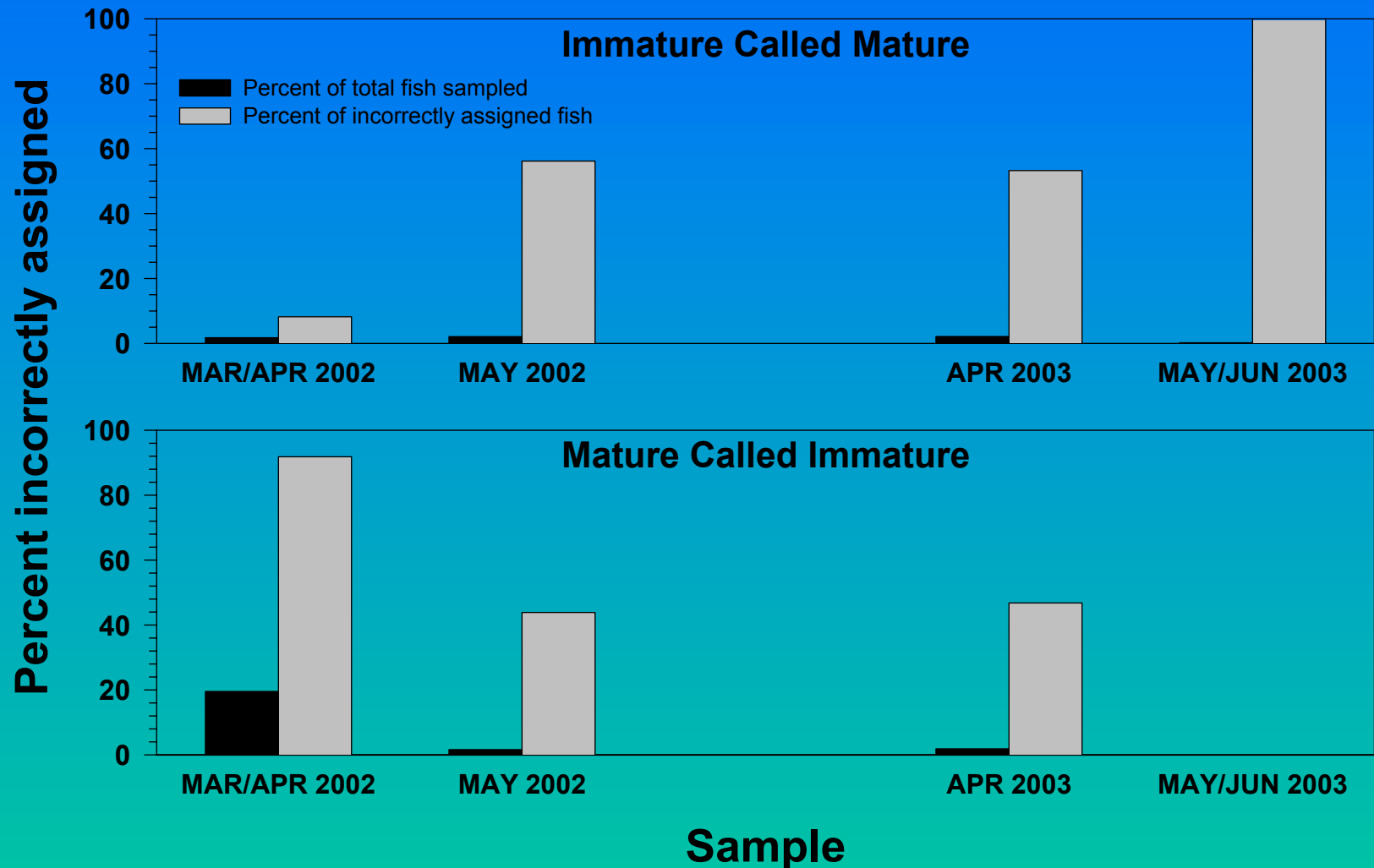
Percent Correctly Assigned Maturity



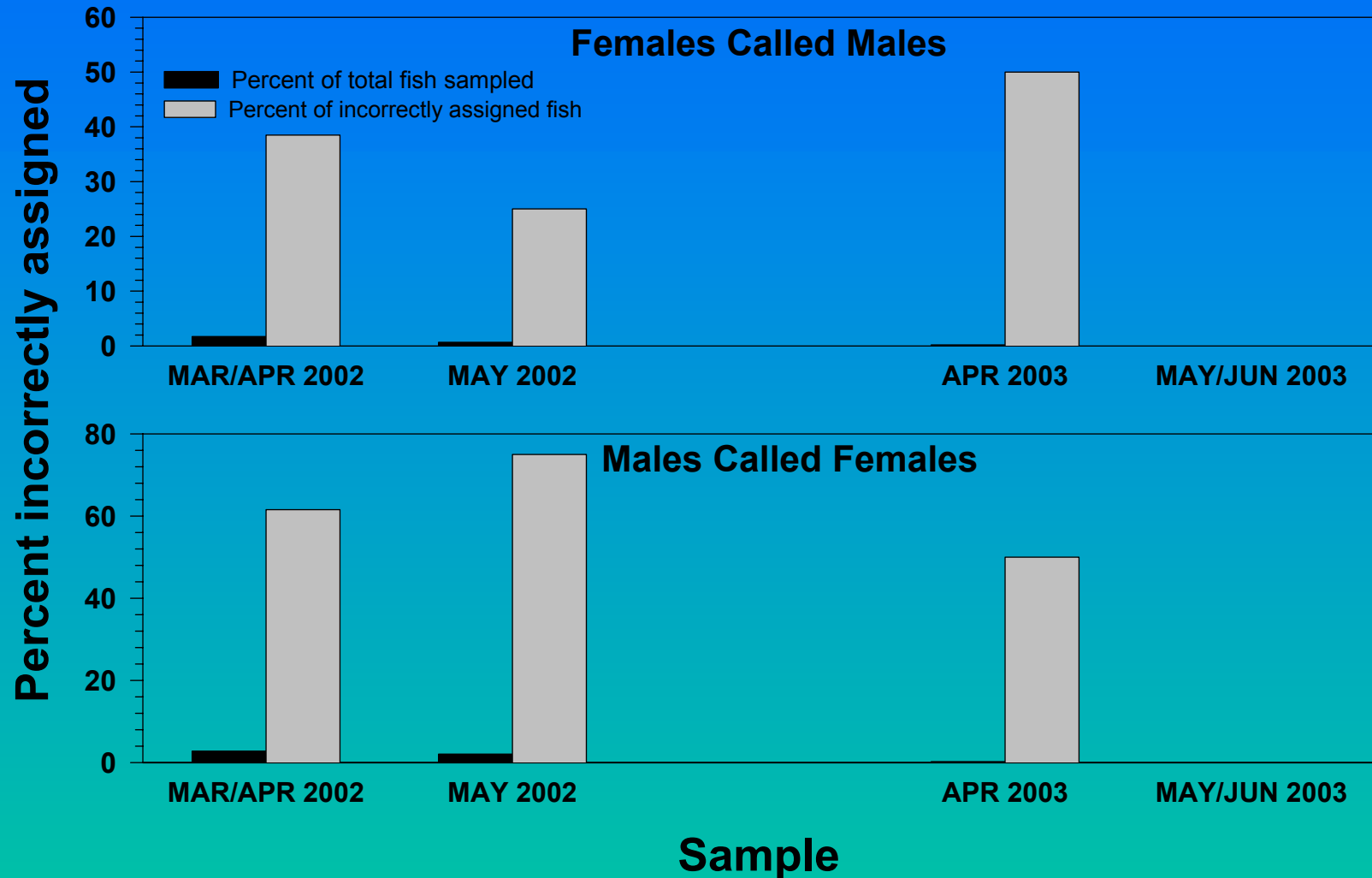
Percent Correctly Assigned Sex



Incorrect Maturity Assignments



Incorrect Sex Assignments



*No correlation between incorrectly called sex and actual sex

Conclusions

- Viable method for early maturation and sex determination.
 - 91% mean accuracy for maturation
 - 98% mean accuracy for sex of mature fish
- Maintains health of maturing fish.
- Allows for easy determination of spawning protocols and matrices.
- Learning curve.