DEXTER STOCKS

- 1981 Year Class - 136 wild adults collected from Lake Mohave, spawned in 1984
  - not currently used for production
  - 56 left

- Paired matings future broodstock - product of paired matings of wild caught adults spawned at Willow Beach NFH (1994-2003)

- Wild caught future broodstock - mix of 5 year classes of juvenile wild-caught fish from Lake Mohave (8 sites; 1999-2004)

PURPOSE

- Compare genetic diversity of Lake Mohave wild fish to Dexter stocks

METHODS

- 400 individuals
  - 81YC (n = 43)
  - PMB (n = 71)
  - WCB (n = 248)
  - Wild (n = 38)
- 17 microsatellite loci
  - 4 developed at Dexter
  - 13 developed for other suckers

RESULTS

	observed heterozygosity (H_O)
Dexter 81 stock	0.86
Paired matings	0.91
Wild caught broodstock	0.90
Lake Mohave wild	0.90

RESULTS

	Allelic Richness (range for 17 loci)
Dexter 81 stock	5.54 - 18.89
Paired matings	6.62 - 22.50
Wild caught broodstock	6.22 - 21.41
Lake Mohave wild	7.00 - 21.21

RESULTS - PAIRWISE F_{ST}

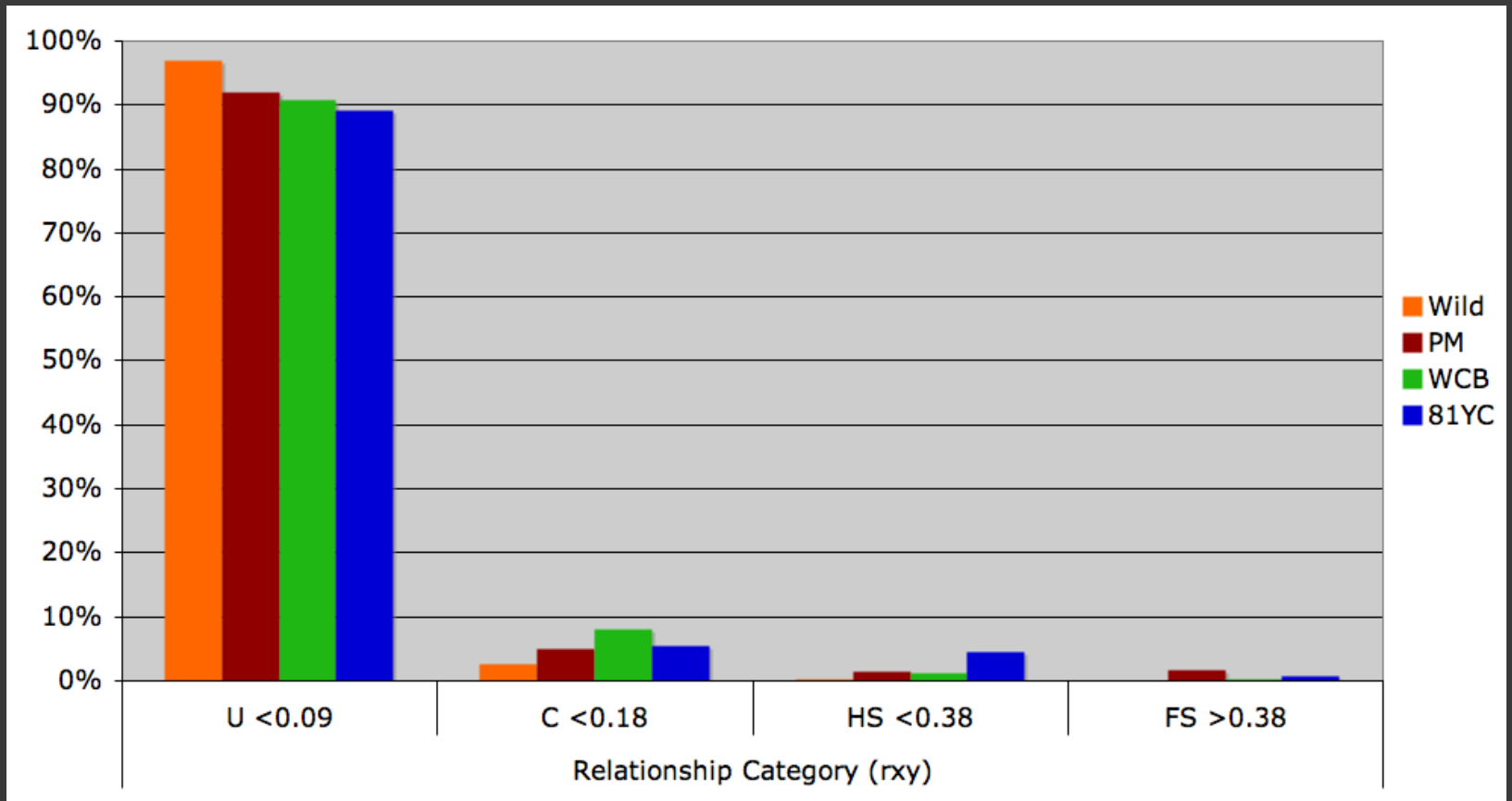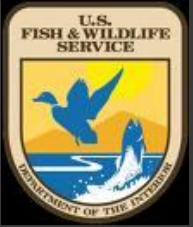|	81YC	PM	Wild	WCB
81YC		0.019	0.014	0.013
PM	0.019		0.001	0.003
Wild	0.014	0.001		0.001
WCB	0.013	0.003	0.001	

significant

RELATEDNESS

- Relationship (r)

  - probability of individuals (x, y) share alleles by descent (r_{xy})

    - Unrelated (U) - (0.0 to 0.09)

    - Cousins (C) - mean 0.125 (0.10 to 0.18)

    - Half-Sibs (HS) - mean 0.25 (0.19 to 0.38)
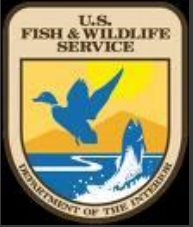
    - Full-Sibs (FS) - mean 0.50 (> 0.39)

PAIRWISE RELATEDNESS

CONCLUSIONS

- Dexter stocks are genetically diverse and reflect Lake Mohave wild fish
    - high heterozygosity
    - high number of alleles

- 1981 stock has three private (unique) alleles that are not found in any other wild or captive population

- Most individuals are unrelated (average 92%) or cousins (average 5%) with few half-sibs or full-sibs

FUTURE WORK

- Complete analyses
    - Upper Basin (Ouray and Grand Junction)

- Sequence mtDNA (cyt b)
    - Dowling et al. (2005) - 28 haplotypes
    - How many are represented in Dexter stocks?