TWG meeting 22-Oct-99

Recent research on Flannelmouth Sucker (*Catostomus latipinnis*) and Humpback Chub (*Gila cypha*) in Grand Canyon:

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Focus of research is on localized populations; we study aspects of conservation genetics, population estimates, seasonality, and reproduction.

GENETICS (FMS):
Evaluation of genetic diversity within- and among-populations in upper and lower basin.
Sonora Sucker (*C. insignis*) and the undescribed Little Colorado River sucker (*C. 'crassicauda'*) are also included.
Methods: Sequence analyses of 3 mtDNA genes. Microsatellite DNA analyses started.
Results: Surprising little variability in mtDNA
Conclusions: Populations may be of recent origin throughout the basin.

GENETICS (HBC):
Evaluation of genetic diversity within LCR population and among aggregates.
Calculation of effective population size (Ne) based on genetic data (this provides a minimum size for a second population of HBC in Grand Canyon)
Assessment of introgressive hybridization within LCR population.
Methods: Sequence analyses of 3 mtDNA genes (completed). Microsatellite DNA analyses (initiated).
Results: As in FMS, surprising little genetic diversity in mtDNA
High levels of genetic diversity detected at 3 microsatellite loci
Low levels of introgressive hybridization
Conclusions: Second population must consist of more than 17,391 breeding adults to ensure long-term maintenance of genetic diversity.

POPULATION ESTIMATES (FMS):
First publication (size of Havasu Creek population) is "in press" (COPEIA 2001: 238-244). Second publication dealing with over-winter residency is in preparation.
Methodology: Mark/Recapture (concentrated fishing effort of 3+ weeks).
Results: Population estimates correlated with tributary flows
Documented late-season (October) reproduction by native suckers
Possible razorback Sucker (*Xyrauchen texanus*) larvae found
Conclusions: Tributary inflows important to native fishes.
Concentrated fishing efforts are necessary
No apparent over-winter residency of individuals

POPULATION ESTIMATES (HBC):
Estimate population size and structure at specific locations (aggregations).
Methods: Mark/Recapture
Concentrated fishing effort (3+ weeks)
Results: Population estimates not possible due to low catch rates
Conclusions: Concentrated fishing efforts necessary.