

**GCDAMP Knowledge Assessment: Status & Trend**

Resource Topic:	Humpback chub
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Resource Characteristic	Specific Measure	Status	Trend	Confidence	Rationale: Status/Trend	Rationale: Confidence	Recommendations
Juvenile chub population in CR near LCR	Abundance	Moderate Concern	Deteriorating	Medium	Catch of the juveniles in September 2016 was lower than it has been since 2010. Survival is relatively high, however recruitment to the JCM juvenile population has been low for a number of years in a row.	Status/Trend are based on catch statistics as we are still in the process of estimating abundances. Survival estimates are reasonable, but highly uncertain, in part do to declining catch and in part due to uncertainty associated with terminal estimates of survival. Recruitment to the LCR population is driven by both production in the LCR (which appears to be highly variable) and outmigration rates (which appear to be highly variable).	
Adult population that spawns in the LCR	Abundance	Good Condition	Deteriorating	Medium	Adult fish condition remains low. Estimates of the spawning population in the last two years are below all estimates from 2008-2014. Catch of adults in the JCM reach of the CR has declined somewhat in the last two years. Adult abundances have NOT yet been estimated for this year using the multistate model.	Humpback chub population dynamics are thought to be slow, estimates of adult abundance are characterized by high uncertainty (particularly estimates at the end of a time series), and it is difficult to determine in the short term whether adults populations have declined, or rates of immigration into the LCR for spawning have declined.	
Juvenile chub population in western Grand Canyon	CPE (relative abundance)	Moderate Concern	Improving	Low	In the last few years (especially in 2014), catch of juveniles has been particularly high. We are seeing multiple size classes in several sampling sites in western Grand Canyon.	Status/Trends are based on catch statistics, location of sampling varies over time, effort is relatively low compared to studies of humpback chub around the LCR. Little understanding of drivers, so it is difficult to determine whether trends will persist.	
Adult population in western Grand Canyon	CPE (relative abundance)	Moderate Concern	Improving	Medium	In recent years, catch of adult humpback chub is higher.	Status/Trends are based on catch statistics, location of sampling varies over time, effort is relatively low compared to studies of humpback chub around the LCR. Little understanding of drivers, so it is difficult to determine whether trends will persist.	