GCDAMP Knowledge Assessment: Effects of Experimental & Management Actions

Resource Topic:	Invasive fish species
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Version Date:	2/8/2017, revised by D. Braun 3/15/17 based on email from D.R. 3/10 and 3/14/17

Resource Characteristic	Specific Measure	Exper or Mgt Action	Strength	Direction	Confidence	Rationale: Strength & Direction	Rationale: Confidence	Recommendations
All non-native coldwater fish	abundance	Fall HFEs > 96-hr duration	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coldwater fish	abundance	Fall HFEs ≤ 45,000 cfs in October or November	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coldwater fish	abundance	Humpback chub translocation	Unknown	Unknown	High	no direct or indirect effect	no direct or indirect effect	
All non-native coldwater fish	abundance	Macroinvertebrate production flows	Unknown	Unknown	Low	if it increases macroinvertebrates - more food		
All non-native coldwater fish	abundance	Mechanical removal of rainbow trout from LCR reach	Unknown	Unknown	Low	Removal of RBT from the LCR reach should result in less competition and less predation for other fish. However, the overall abundance of non-native coldwater fish in the LCR reach is not known, so it is not possible to assess how mechanical removal of rainbow trout from the LCR reach will affect on non-native coldwater fish (as a group) in this reach or anywhere else in the CRe.		
All non-native coldwater fish	abundance	Proactive Spring HFEs ≤ 45,000 cfs in April, May, or June	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coldwater fish	abundance	Spring HFEs ≤ 45,000 cfs in March or April	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coldwater fish	abundance	Trout management flows	Unknown	Unknown	Low	?		
All non-native coolwater fish	abundance	Fall HFEs > 96-hr duration	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coolwater fish	abundance	Fall HFEs ≤ 45,000 cfs in October or November	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coolwater fish	abundance	Humpback chub translocation	Unknown	Unknown	Low	no direct or indirect effect	no direct or indirect effect	
All non-native coolwater fish	abundance	Macroinvertebrate production flows	Unknown	Unknown	Low	if it increases macroinvertebrates - more food	don't know if "bug" flows work	
All non-native coolwater fish	abundance	Proactive Spring HFEs ≤ 45,000 cfs in April, May, or June	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coolwater fish	abundance	Spring HFEs ≤ 45,000 cfs in March or April	Unknown	Unknown	Low	if present may distribute fish further downstream		
All non-native coolwater fish	abundance	Trout management flows	Unknown	Unknown	Low	?		
All non-native warmwater fish	abundance	Fall HFEs > 96-hr duration	Unknown	Unknown	Low	if warmwater fishes are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
All non-native warmwater fish	abundance	Fall HFEs ≤ 45,000 cfs in October or November	Unknown	Unknown	Low	if warmwater fishes are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
All non-native warmwater fish	abundance	Humpback chub translocation	Unknown	Unknown	Low	no direct or indirect effect		
All non-native warmwater fish	abundance	Macroinvertebrate production flows	Unknown	Unknown	Low	if it increases macroinvertebrates - more food	don't know if "bug" flows work	

All non-native warmwater fish	abundance	Mechanical removal of rainbow trout from LCR reach	Unknown	Unknown	Low	Removal of RBT from the LCR reach should result in less competition and less predation for other fish. However, the overall abundance of non-native warmwater fish in the LCR reach is not known, so it is not possible to assess how mechanical removal of rainbow trout from the LCR reach will affect on non-native warmwater fish (as a group) in this reach or anywhere else in the CRe.		
All non-native warmwater fish	abundance	Proactive Spring HFEs ≤ 45,000 cfs in April, May, or June	Unknown	Unknown	Low	if warmwater fishes are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
All non-native warmwater fish	abundance	Spring HFEs ≤ 45,000 cfs in March or April	Unknown	Unknown	Low	if warmwater fishes are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
All non-native warmwater fish	abundance	Trout management flows	Unknown	Unknown	Low	?		
Brown Trout	abundance	Fall HFEs > 96-hr duration	Moderate	Negative Effect	Medium	thought to improve gravel for spawning and redds	there has been an increase Brown Trout in Lees Ferry reach since fall HFE implemented	
Brown Trout	abundance	Fall HFEs ≤ 45,000 cfs in October or November	Moderate	Negative Effect	Low	thought to improve gravel for spawning and redds	there has been an increase Brown Trout in Lees Ferry reach since fall HFE implemented	
Brown Trout	abundance	Humpback chub translocation	Unknown	No Effect	Medium	no direct or indirect effect on Brown Trout	only affects Humpback Chub	none
Brown Trout	abundance	Macroinvertebrate production flows	Weak	Negative Effect	Low	if it increases macroinvertebrates - more food for juvenile brown trout	don't know if "bug" flows work	
Brown Trout	abundance	Mechanical removal of rainbow trout from LCR reach	Moderate	Negative Effect	Medium	Mechanical removal of Rainbow Trout (RBT) may reduce competition with juvenile Brown Trout (BNT), or reduce prey items for piscivorous BNT, if the removal of RBT does not also involve significant removal of BNT. However, the capture methods directed at RBT likely would result in capture of BNT. Note: Experimental and management actions rated based on whether it potentially will cause an increase or decrease in the threat posed for RBT, HBC, and other native fishes. If an experimental or management action potentially will cause the threat level to increase, rated this as a negative effect, meaning a negative effect on RBT, HBC, and other native fishes.	It is likely but not demonstrated that the capture methods directed at RBT likely result in significant capture of BNT.	remove Brown Trout also
Brown Trout	abundance	Proactive Spring HFEs ≤ 45,000 cfs in April, May, or June	Unknown	Unknown	Low	no previous data to compare	no previous data to compare	
Brown Trout	abundance	Spring HFEs ≤ 45,000 cfs in March or April	Unknown	Unknown	Low	no previous data to compare	no previous data to compare	
Brown Trout	abundance	Trout management flows	Weak	Positive Effect	Low	within the time constraints of TMF currently it may slightly impact BNT, but may not have any effect	this is untested, time and hydrograph of flow is critical and not known	
Green Sunfish	abundance	Fall HFEs > 96-hr duration	Unknown	Unknown	Low	if GSF are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
Green Sunfish	abundance	Humpback chub translocation	Strong	No Effect	High	no direct or indirect effect	no direct or indirect effect	none
Green Sunfish	abundance	Larval humpback chub head-start program	Strong	No Effect	High	no direct or indirect effect	no direct or indirect effect	none
Green Sunfish	abundance	Macroinvertebrate production flows	Moderate	Negative Effect	Low	if it increases macroinvertebrates - more food for juvenile trout	don't know if "bug" flows work	none

Green Sunfish	abundance	Mechanical removal of rainbow trout from LCR reach	Strong	No Effect	High	Green sunfish are currently absent in the mainstem around the LCR. Thus mechanical removal of rainbow trout from the LCR reach will have little to no effect on green sunfish in this reach or anywhere else in the CRe.	No direct or indirect effect because green sunfish do not occur in the LCR reach.	none
Green Sunfish	abundance	Proactive Spring HFEs ≤ 45,000 cfs in April, May, or June	Unknown	Unknown	Low	if GSF are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
Green Sunfish	abundance	Spring HFEs ≤ 45,000 cfs in March or April	Unknown	Unknown	Low	if GSF are in sloughs at Lees Ferry high flows may distribute them further downstream, but if no GSF are present then there will be no effect		
Green Sunfish	abundance	Trout management flows	Unknown	Unknown	Low	?		