

Grand Canyon Fishes 2005



Adaptive Management Program
Adaptive Management Workgroup
Phoenix, Arizona
8 March 2006

Presentation Contributors

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Lake Powell Hydrology

- Surface elevation - 3555 ft on April 8, 2005
- Lowest elevation since May 1969
- 38 % of total capacity
- 145 ft below full pool elevation of 3700 ft
- Large amount of deltaic sediment exposed in inflow areas

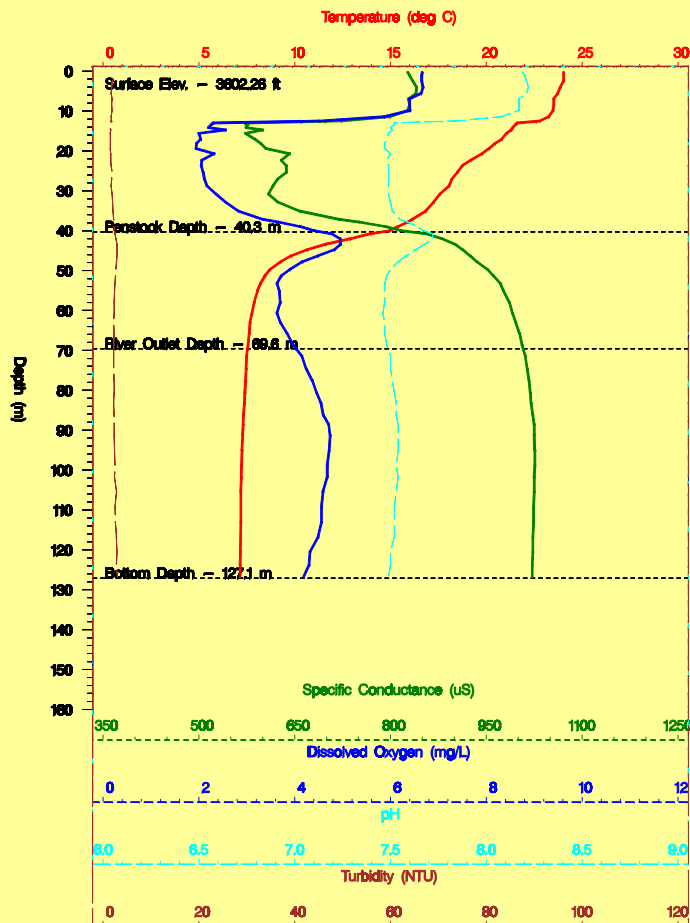


2005 Inflow to Lake Powell

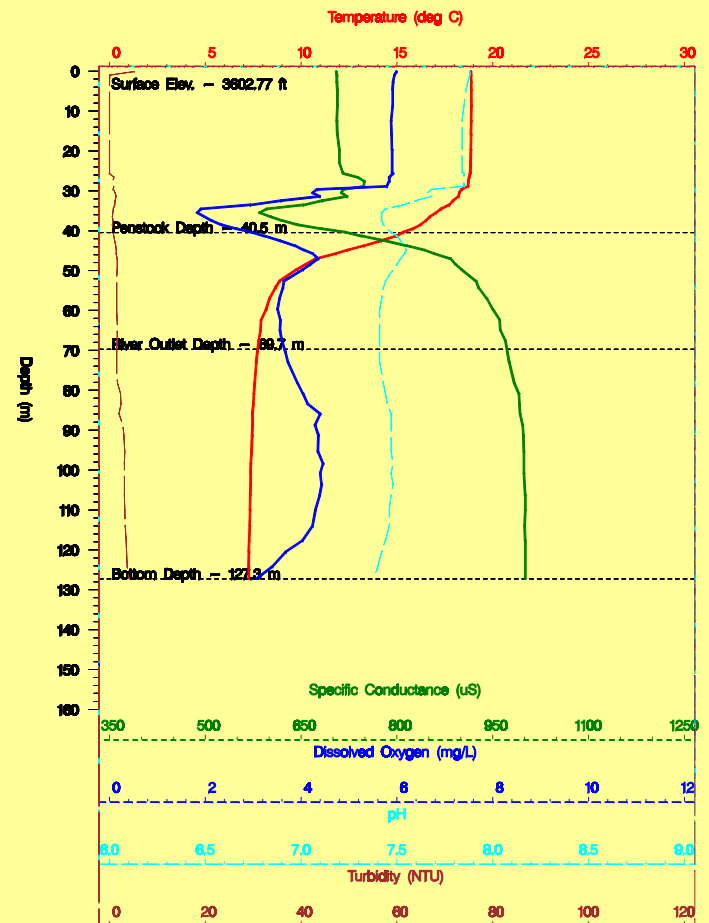
- Apr-Jul 2005 unregulated inflow 8.813 maf
- 111% of normal
- Surface elevation - 3608 ft on July 13, 2005
- Increase of 53 ft in 2005
- Resuspension of large amount of sediment from inflow areas
- Resulted in low dissolved oxygen levels in inflow plume as it traveled through reservoir

Forebay Water Quality

Wahweap
September 13, 2005

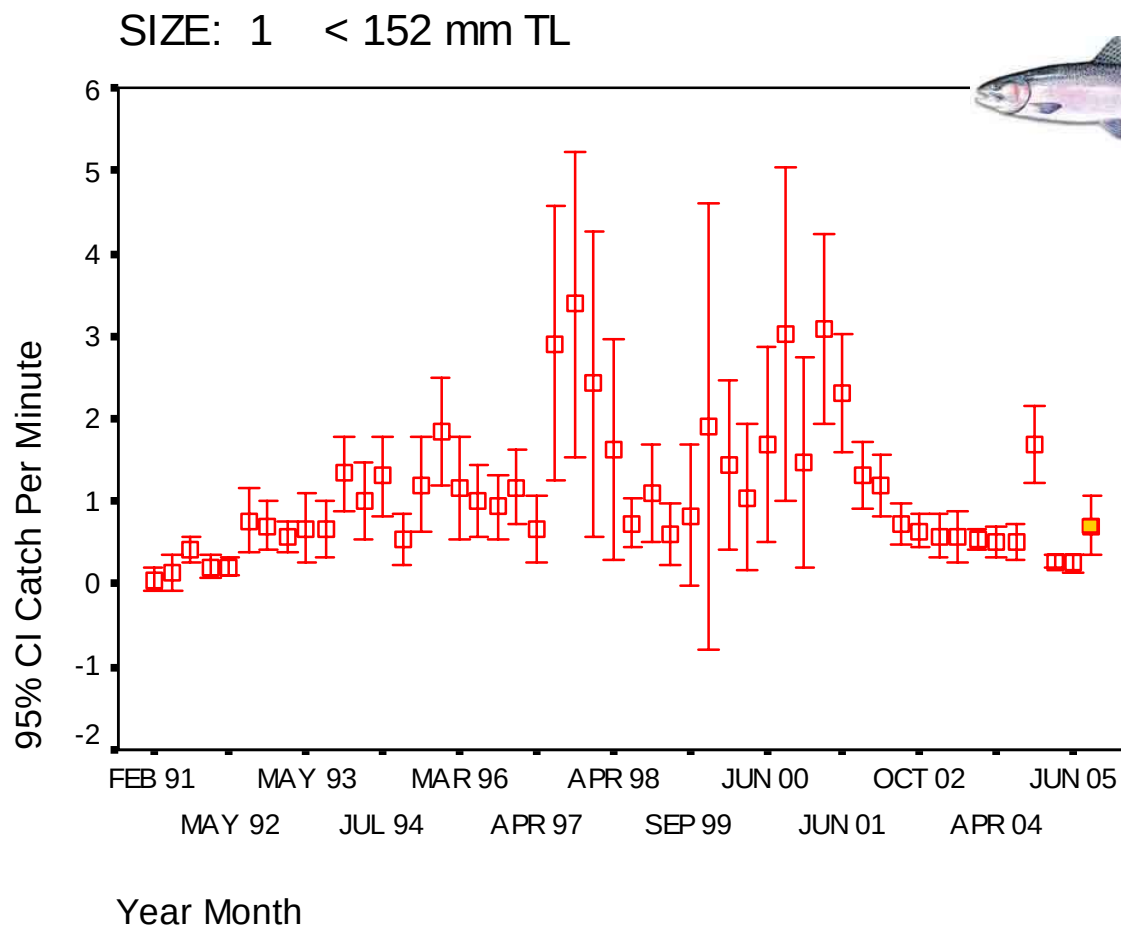


Wahweap
November 2, 2005



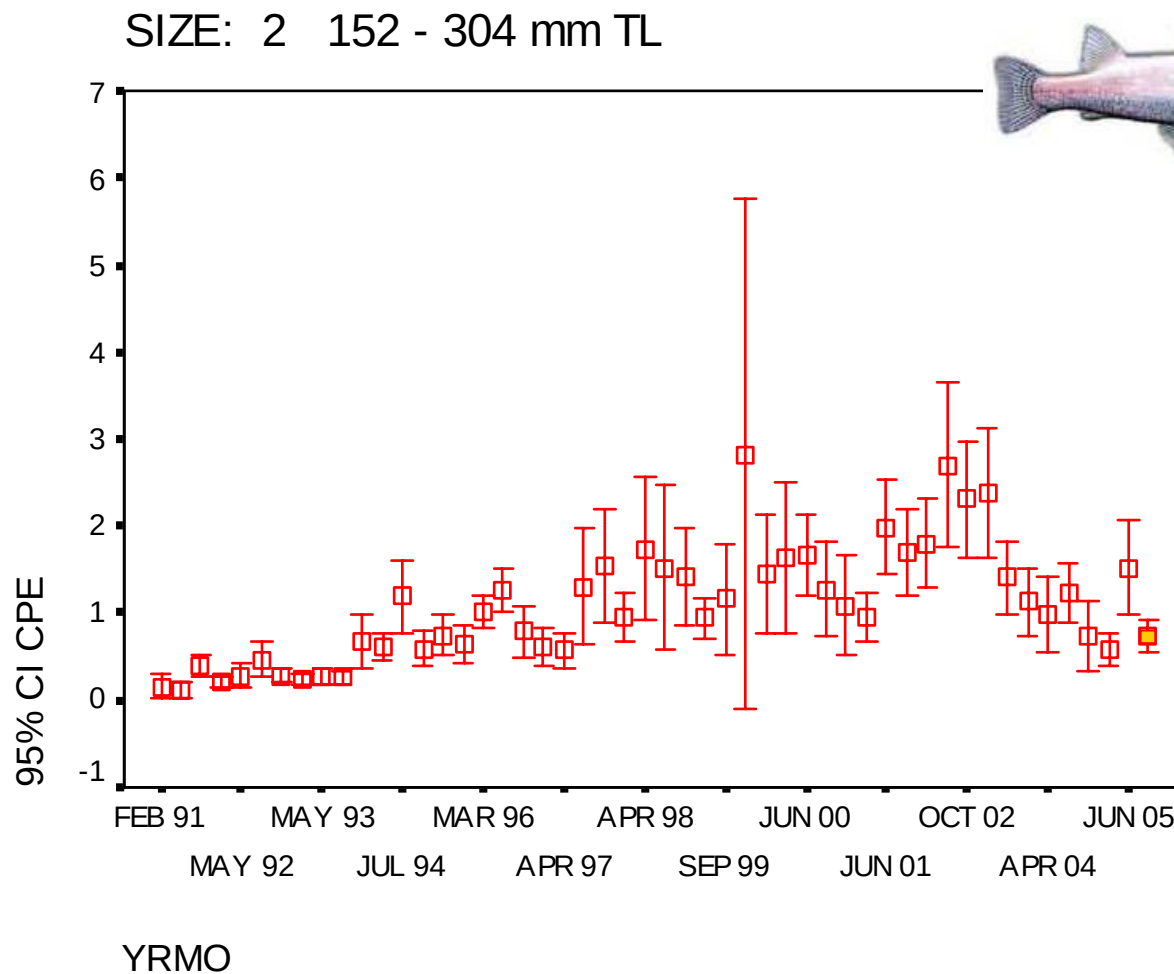


Electrofishing catch/minute 1991-Nov 2005



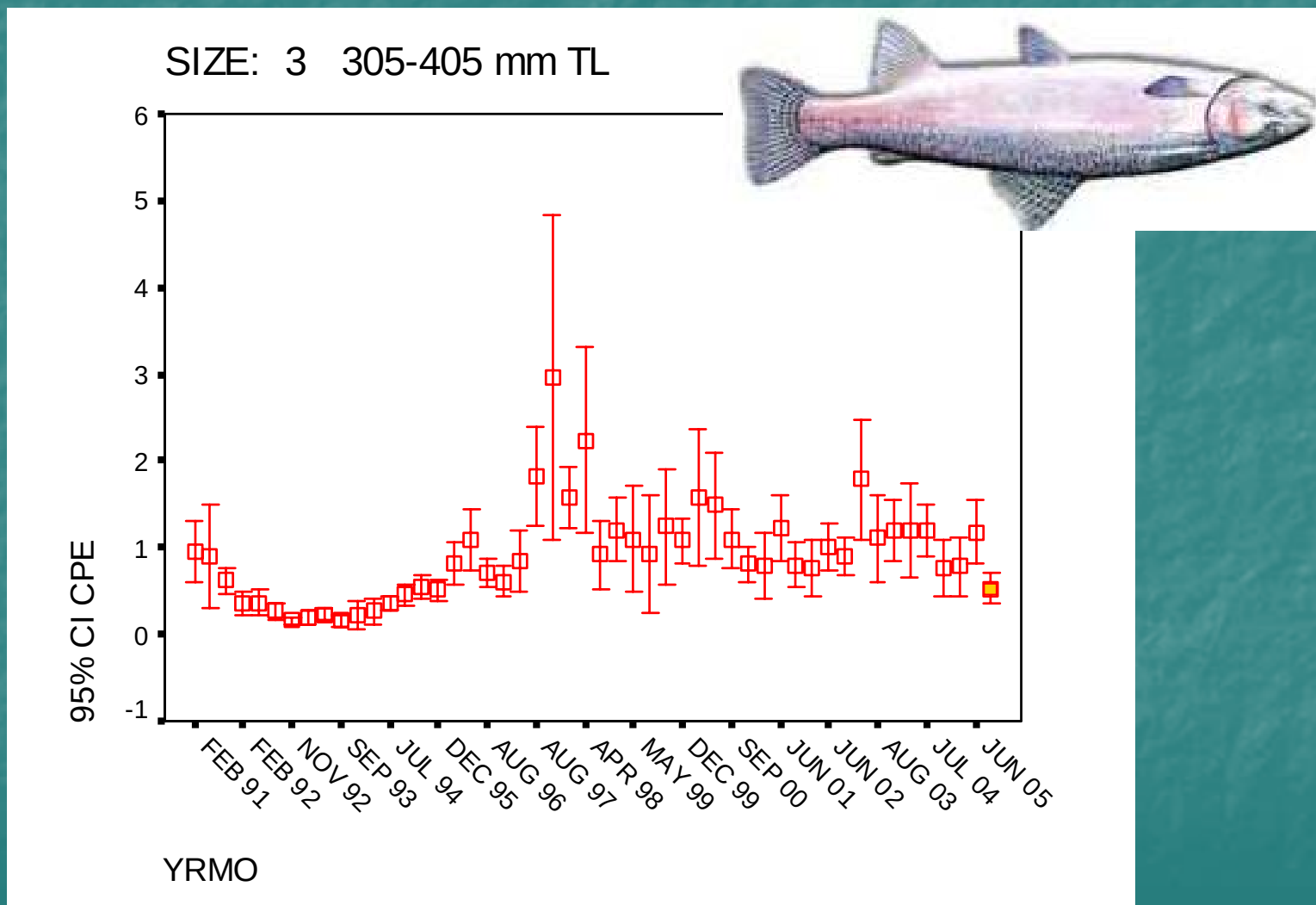


Electrofishing catch/minute 1991-Nov 2005





Electrofishing catch/minute 1991-Nov 2005





Lees Ferry Trout Fishery Summary:

- Catch rates and condition of larger size classes of fish decreased significantly in November 2005.
- Anglers report very slow fishing.
- Anglers report little or no spawning activity.
 - No sexually mature fish were observed in November 2005, a time when fish are typically beginning to spawn.



New Zealand Mud Snail



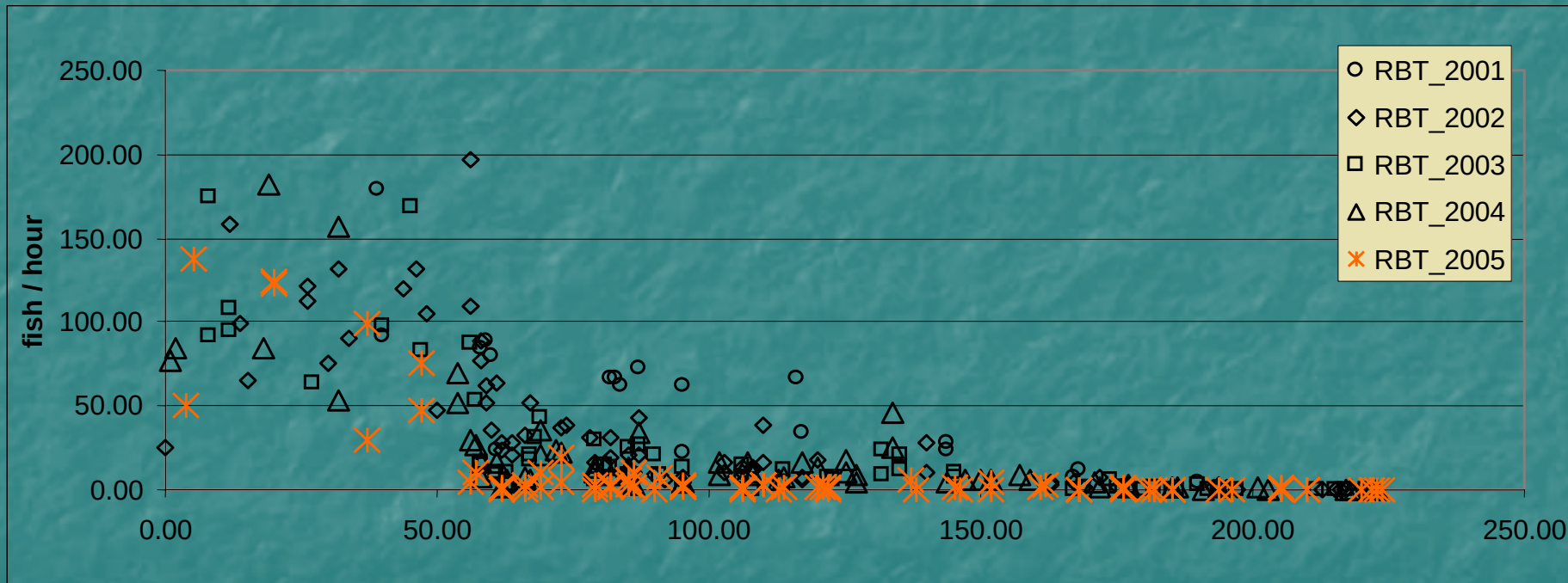
Introduced in late 1990s, became abundant in 2000. This species thought to be consuming large amounts of available vegetation. Does not appear to be digestible by rainbow trout.





Rainbow trout

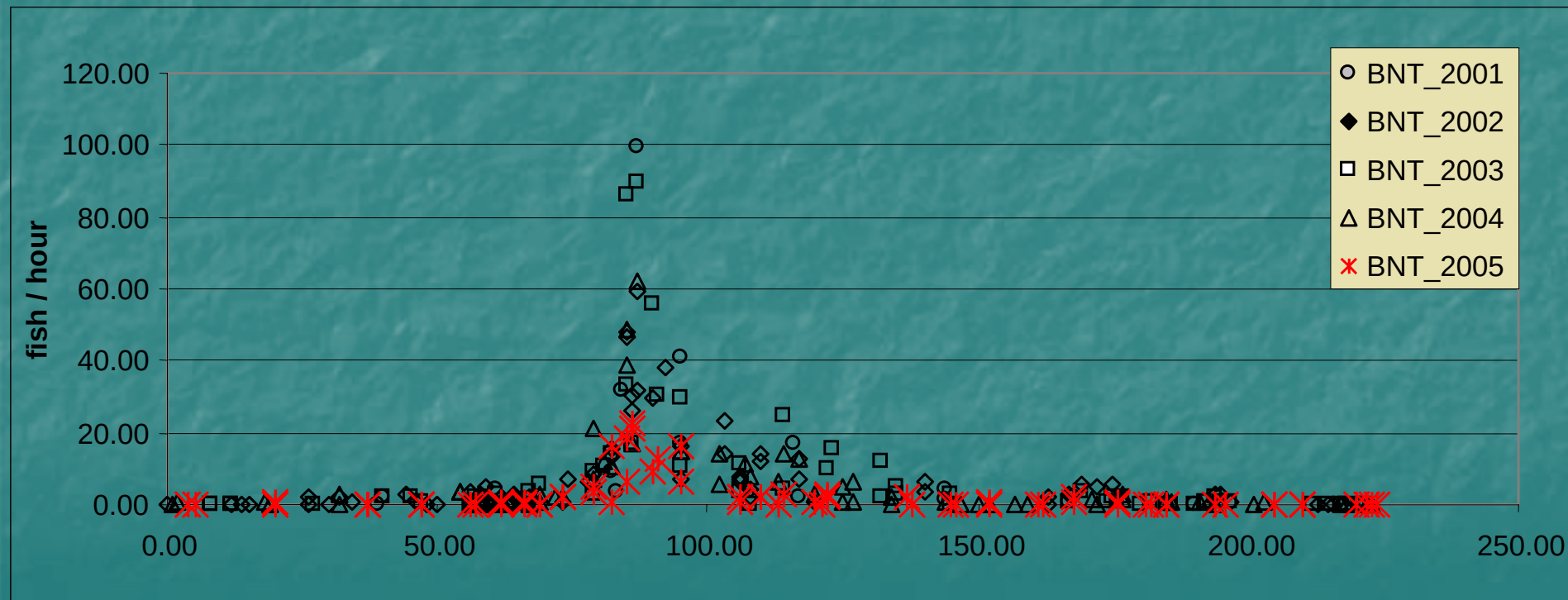
Mean CPUE (fish/hour) for rainbow trout at individual sample sites in the Colorado River from Lees Ferry to Diamond Creek (long-term monitoring trips [2001-2005]). Each point represents an N of 8-15)





Brown trout

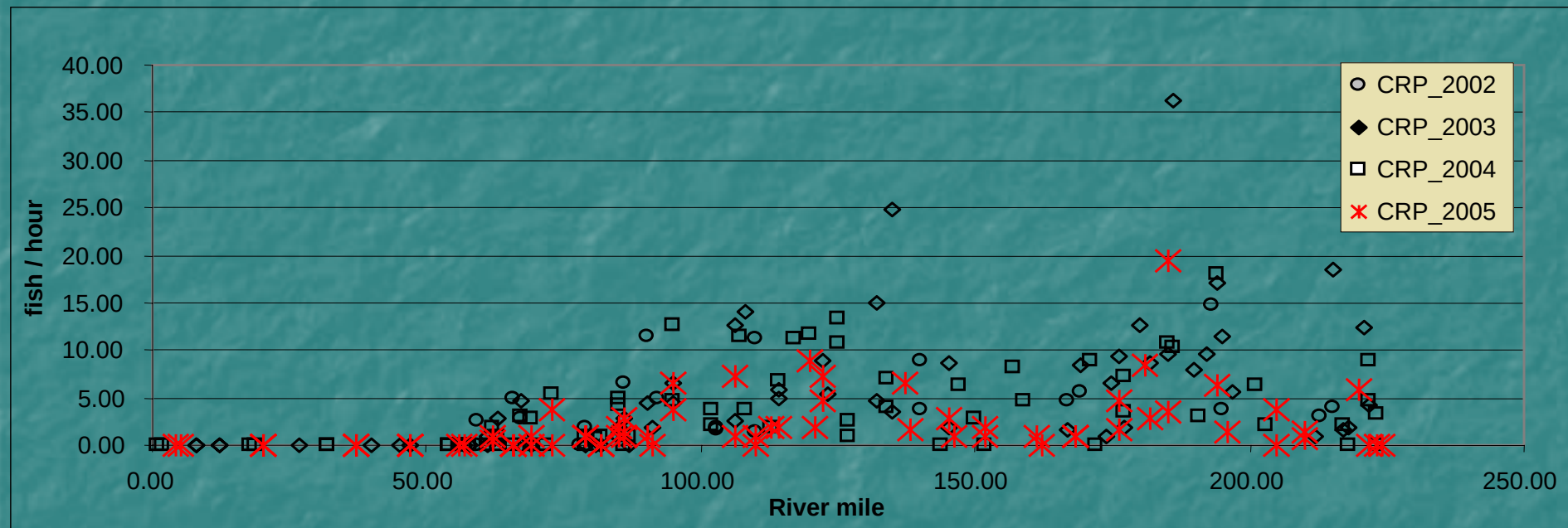
Mean CPUE (fish/hour) for brown trout at individual sample sites in the Colorado River from Lees Ferry to Diamond Creek (long-term monitoring trips [2001-2004]). Each point represents an N of 8-15)





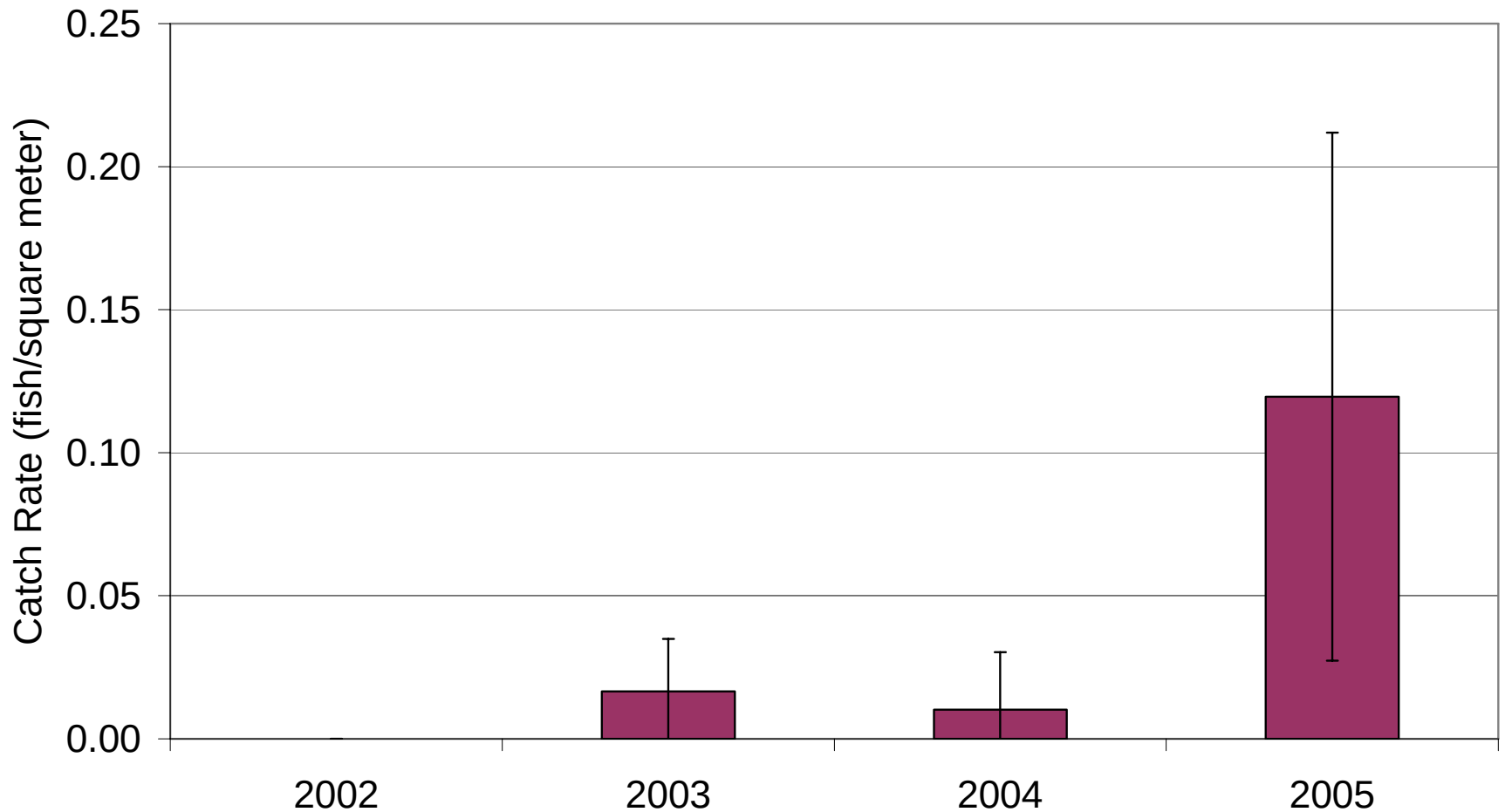
Common carp

Mean CPUE (fish/hour) for common carp at individual sample sites in the Colorado River from Lees Ferry to Diamond Creek (long-term monitoring trips [2001-2004]). Each point represents an N of 8-15)



Young HBC RM 30-60

Beach Seine Catch Rate of Young of Year Humpback Chub

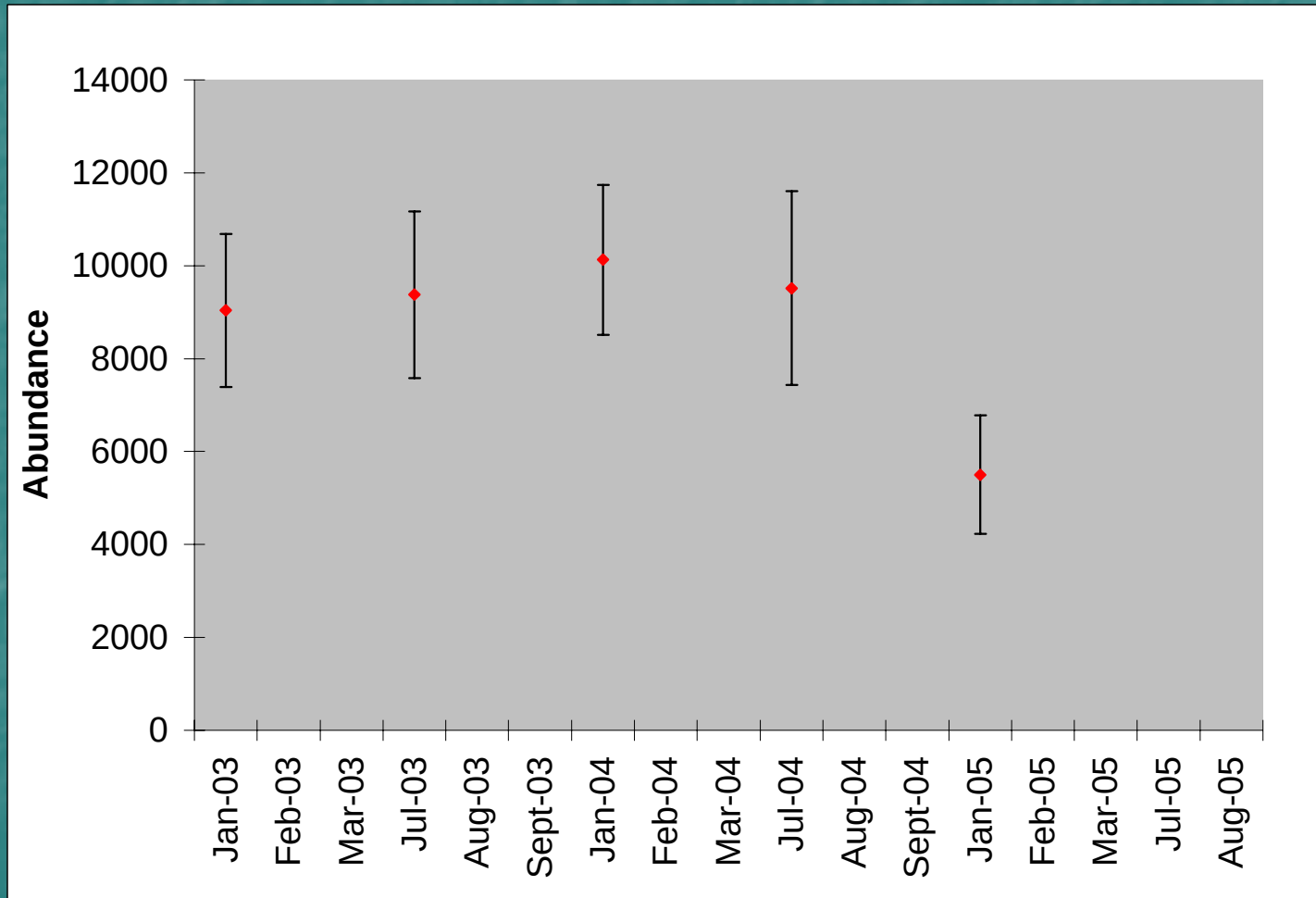


Mechanical Removal Control Reach

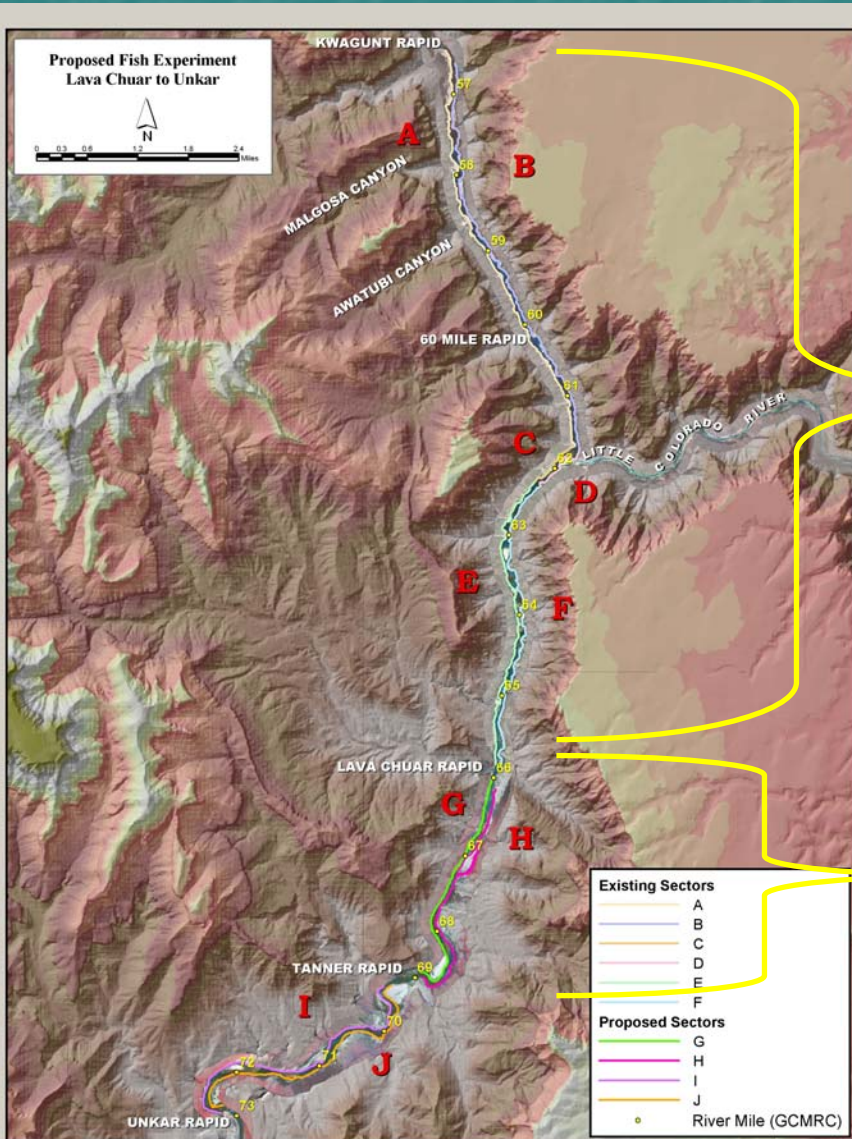
- River Miles 44-52
- One sampling night per trip



Rainbow Trout in Control Reach



Mechanical Removal



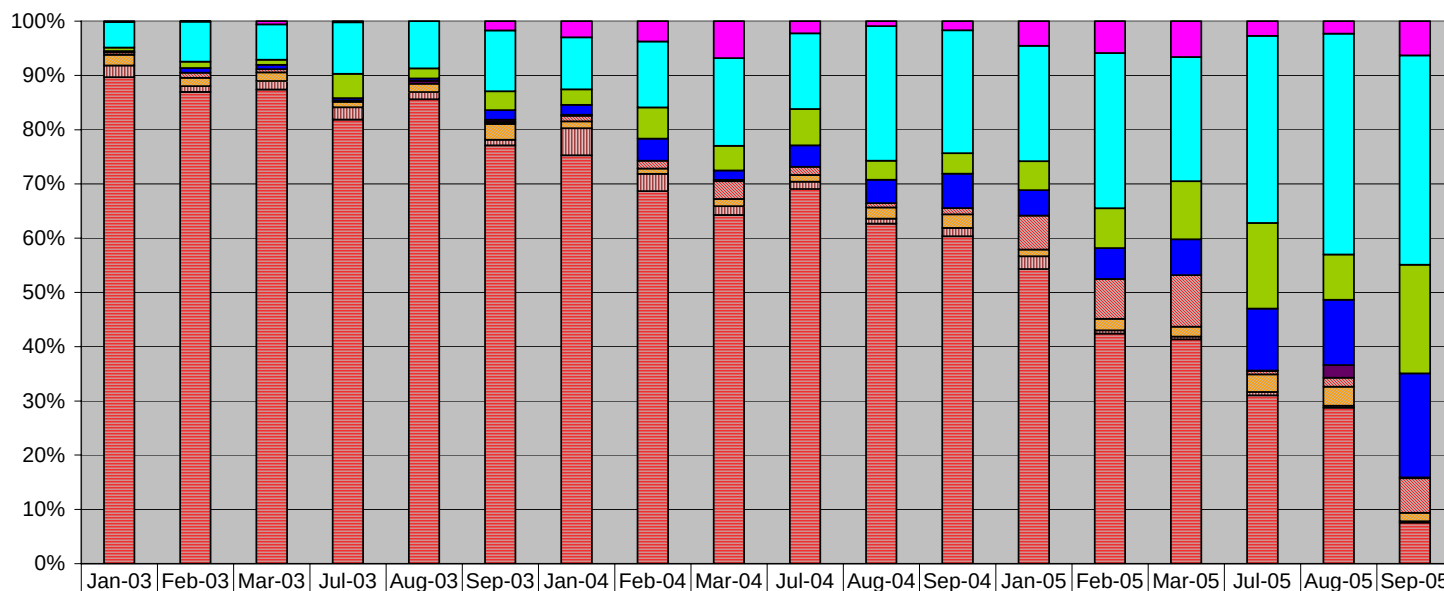
Little Colorado River Removal Reach (Kwagunt Rapid to Lava Chuar Rapid, 9.5 miles)

Lava Chuar to Tanner Removal Reach, 2.8 miles



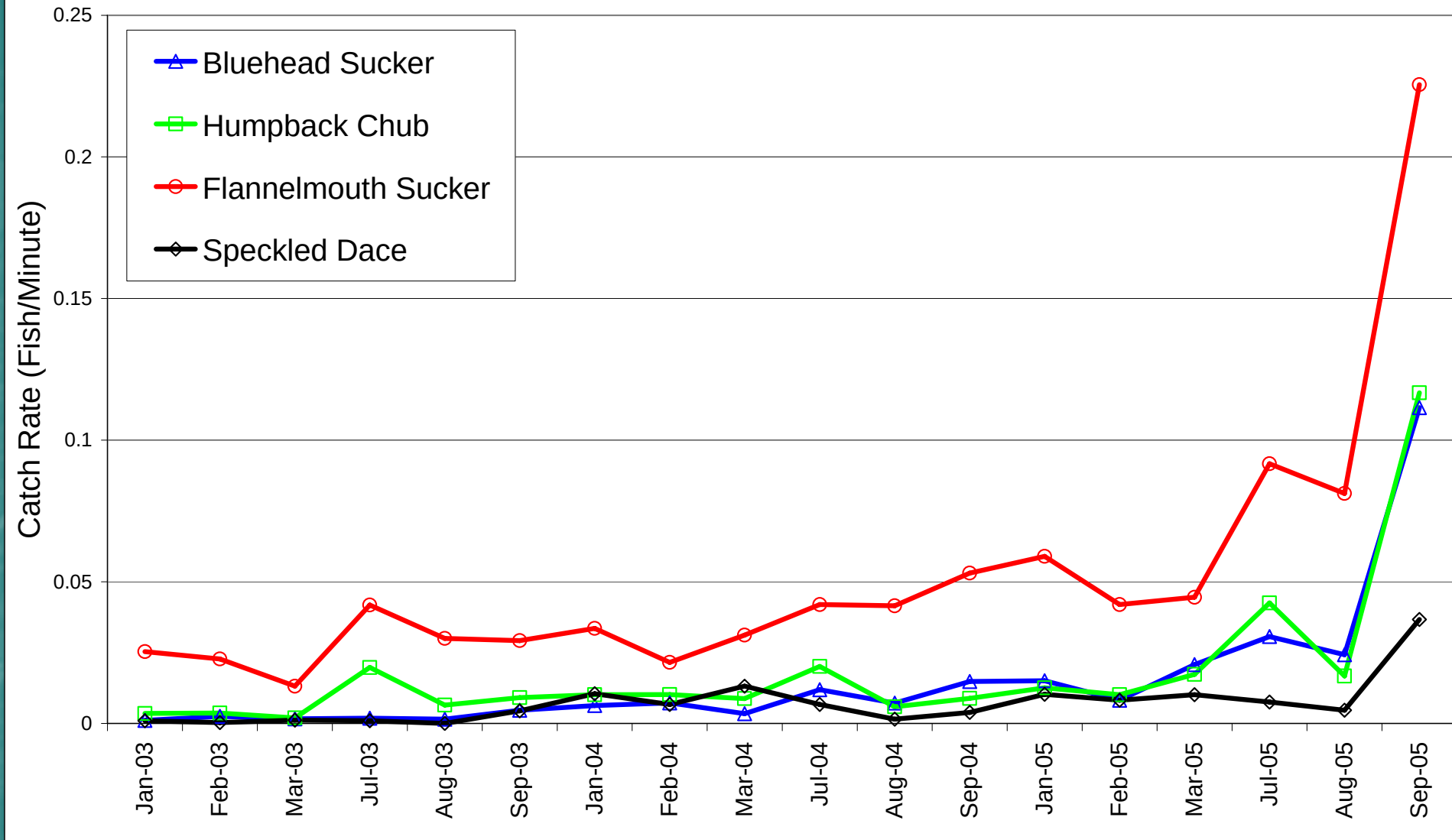
LCR Reach Species Composition

Electrofishing Catch by Species and Month within the Little Colorado River Removal Reach

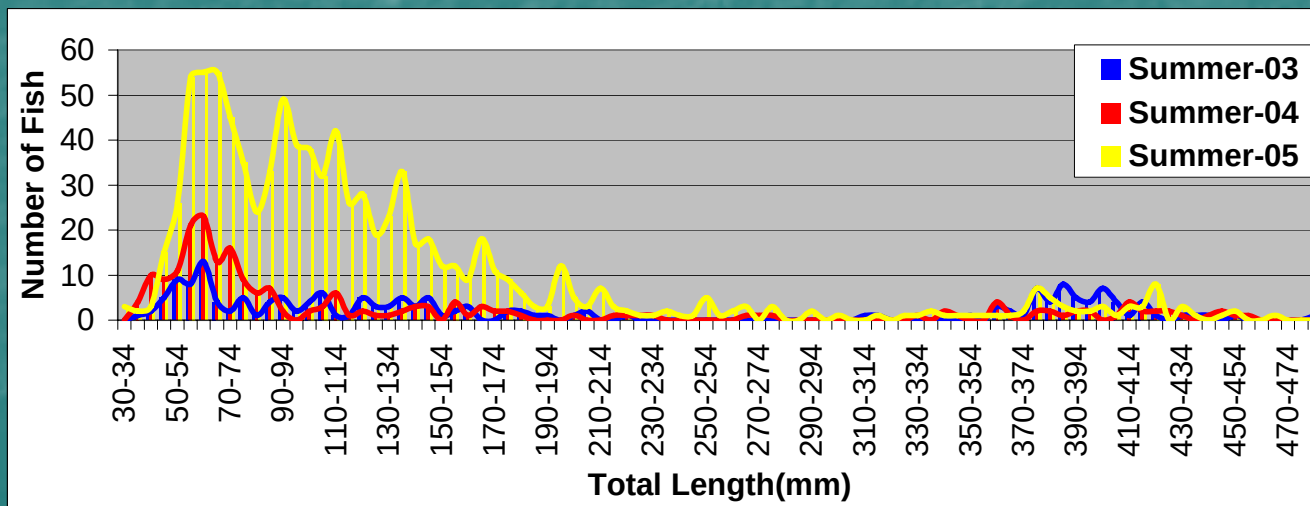
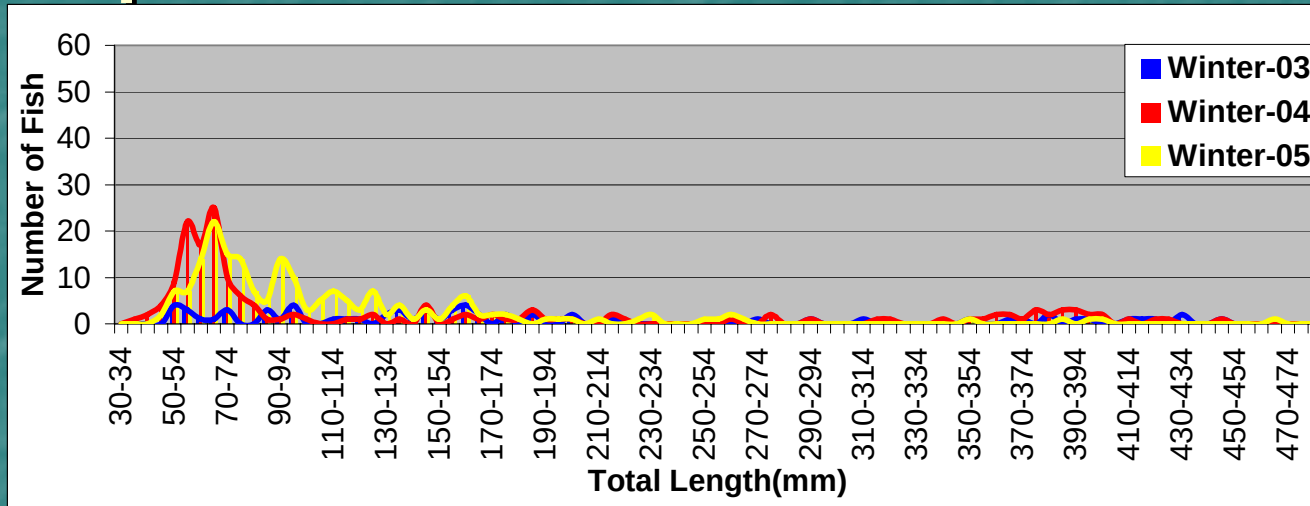


	Jan-03	Feb-03	Mar-03	Jul-03	Aug-03	Sep-03	Jan-04	Feb-04	Mar-04	Jul-04	Aug-04	Sep-04	Jan-05	Feb-05	Mar-05	Jul-05	Aug-05	Sep-05
Speckled Dace	7	2	8	6		18	53	34	92	47	7	19	52	39	51	38	24	190
Flannemouth Sucker	188	161	89	266	79	119	169	110	218	296	190	258	244	191	176	480	419	1166
Humpback Chub	26	26	13	126	17	37	51	52	61	142	27	43	61	49	82	220	86	604
Bluehead Sucker	8	18	11	12	4	19	32	37	24	84	33	72	54	38	51	159	124	579
Unidentified Sucker	2	0	0	3	5	4	3	0	3	0	0	0	0	0	0	1	24	4
Fathead Minnow	17	21	8	4	0	4	18	13	44	32	6	13	72	49	73	9	17	193
Common Carp	80	33	22	29	14	31	23	9	18	26	16	29	14	14	14	45	36	47
Brown Trout	87	24	21	63	12	11	88	29	22	29	7	17	27	4	4	9	4	7
Rainbow Trout	3605	1900	1195	2298	779	818	1330	622	867	1464	480	687	623	283	318	432	296	229

Electrofishing Catch Rate for Native Fish Species within the Little Colorado River Removal Reach

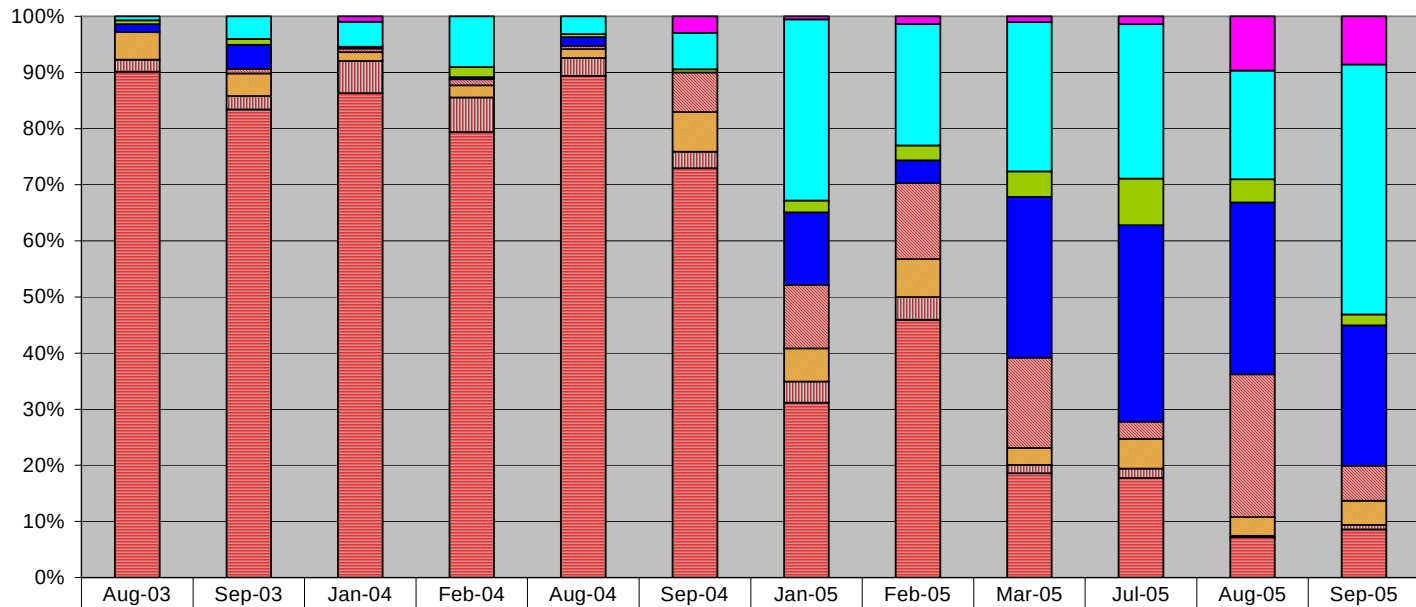


Humpback Chub in LCR reach



Fish sampling in Lava Chuar to Tanner Reach

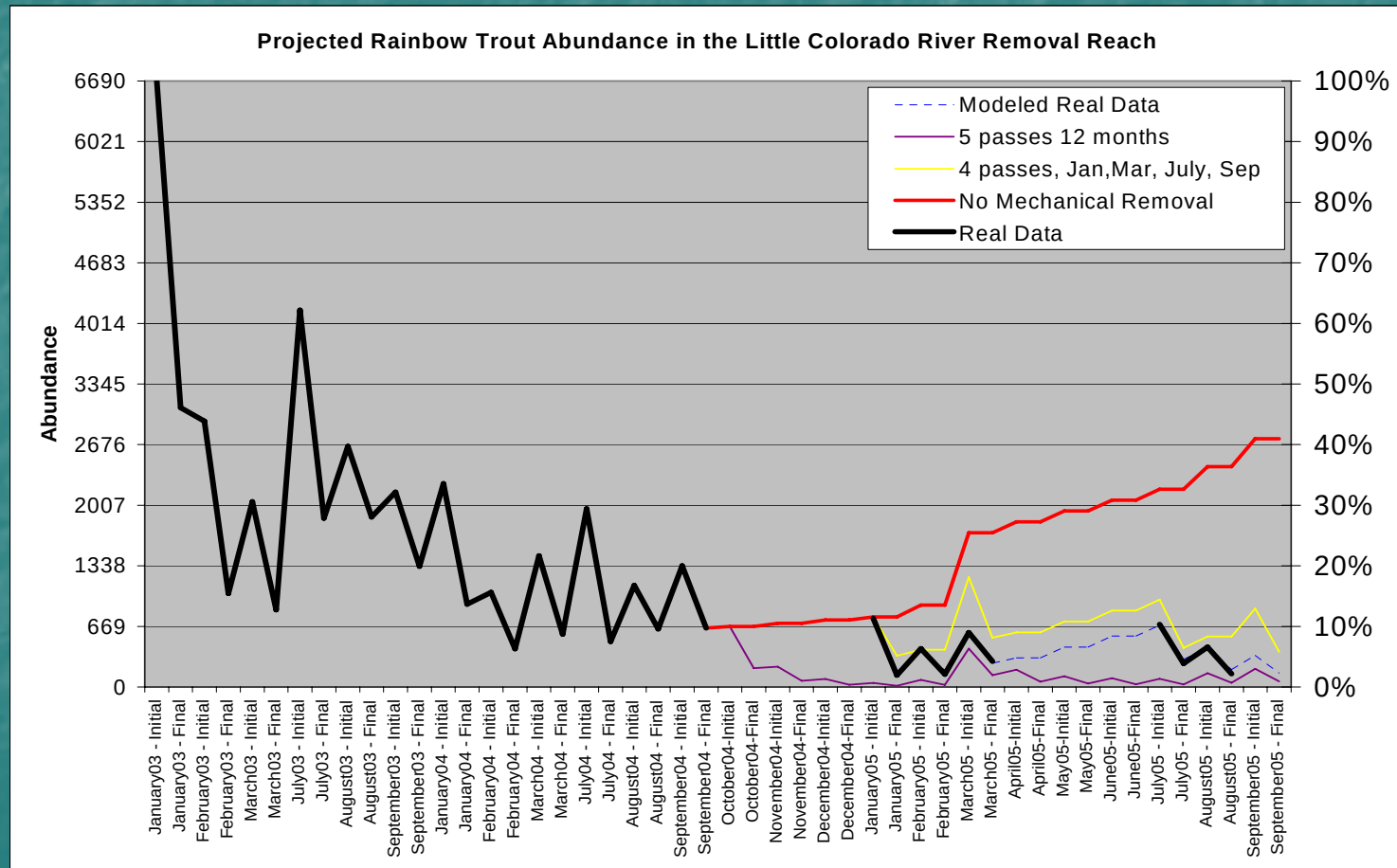
Electrofishing Catch by Species and Month within the Lava Chuar to Tanner Removal Reach



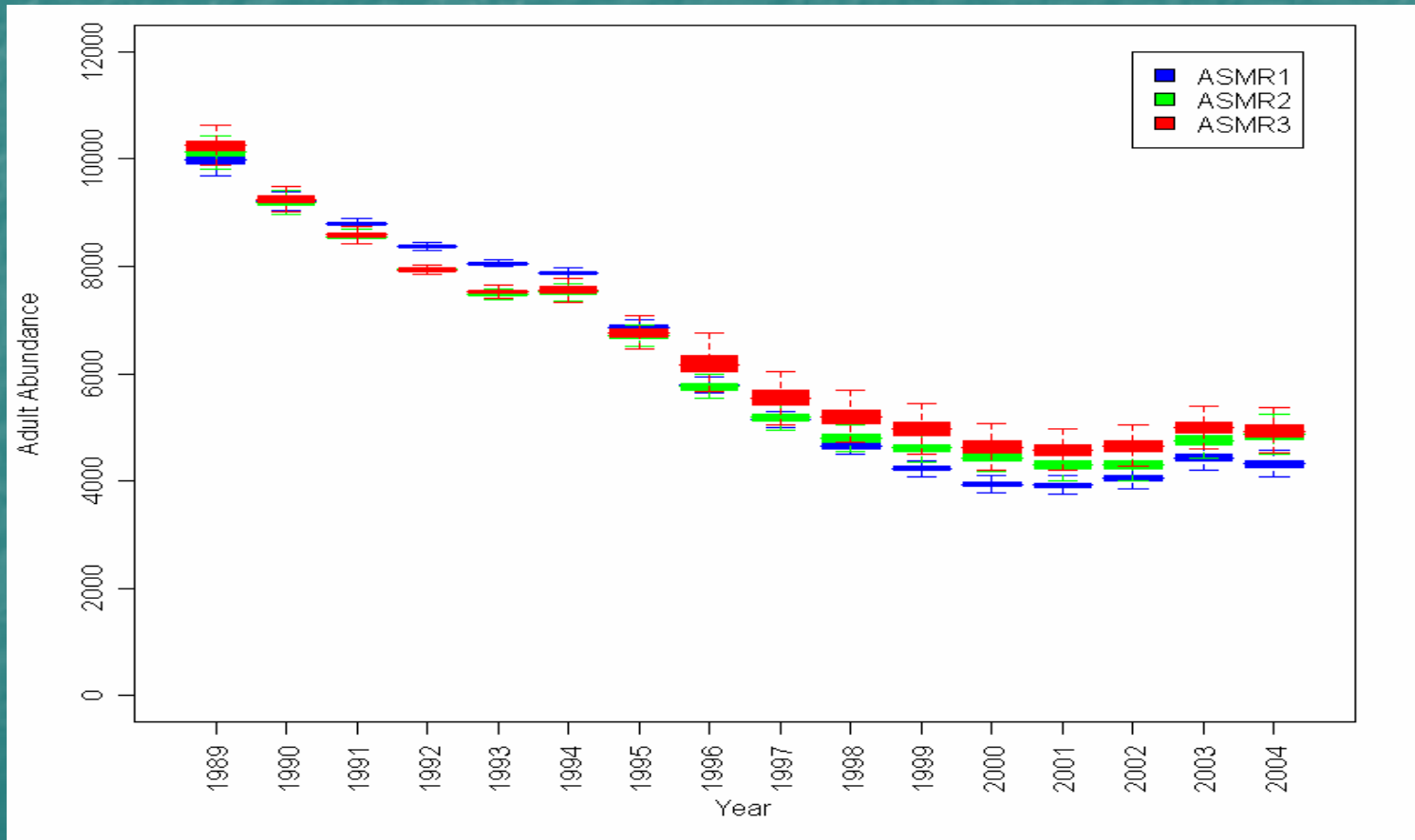
Speckled Dace			3		5	1	1	2	5	35	22
Flannelmouth Sucker	1	15	14	25	6	11	60	16	53	70	114
Humpback Chub	1	4	1	5	1	1	4	2	9	30	5
Bluehead Sucker	2	16		1	3		24	3	57	126	64
Fathead Minnow		3	2	3	1	12	21	10	32	11	92
Common Carp	7	15	5	6	3	12	11	5	6	19	12
Brown Trout	3	9	18	17	6	5	7	3	3	6	2
Rainbow Trout	128	312	271	220	169	124	58	34	37	64	26



Actual and Modeled Rainbow Trout Population; Various Removal Scenarios



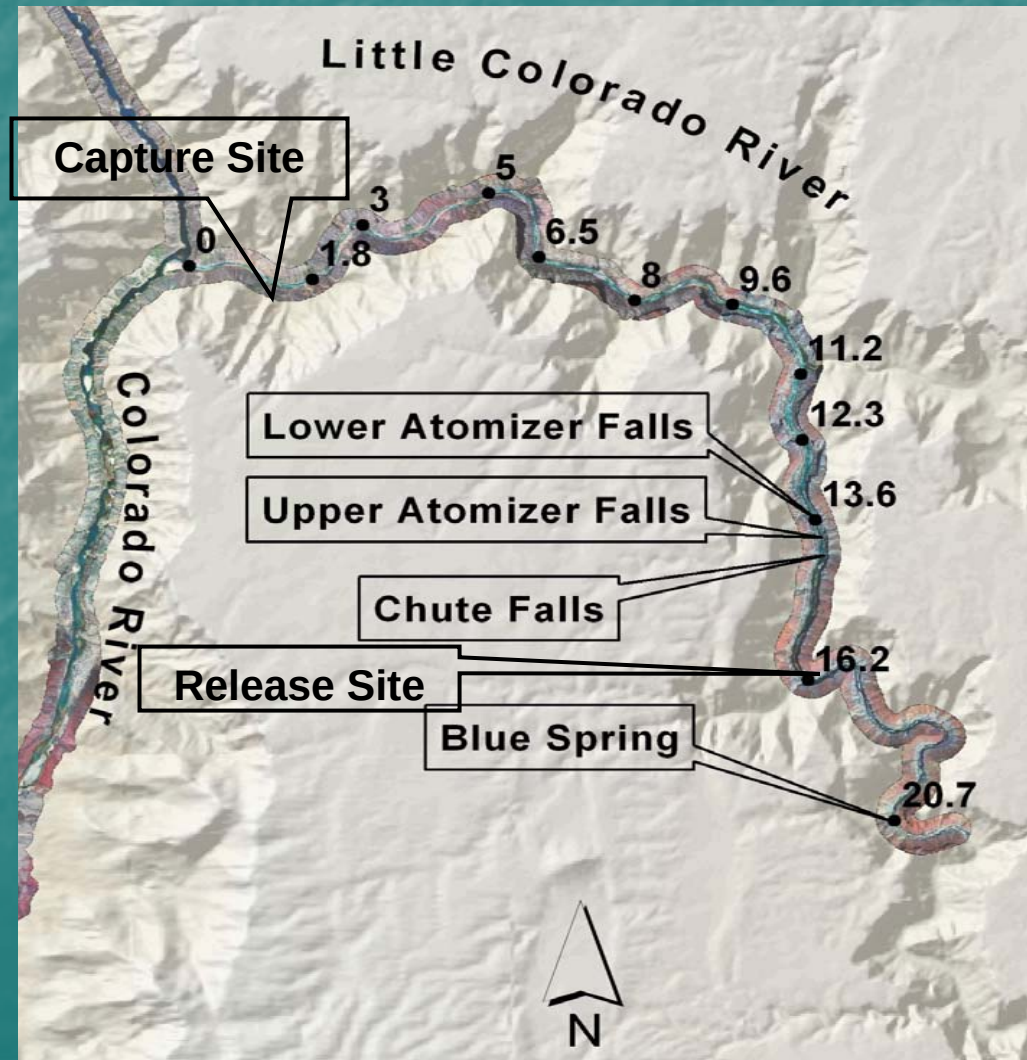
Age Structured Mark Recapture Model of Grand Canyon HBC Population





HBC in the Little Colorado R.

- Four monitoring trips in 2005
- Mark/recapture population estimates
- Translocation



Chute Falls Translocation

- Translocation
 - 283 fish in 2003
 - 299 fish in 2004
 - 567 fish in 2005
- Spring/Fall Monitoring



November 2005 Monitoring

- 217 HBC captured
 - 55 were PIT recaps
 - 75 new fish with green VIE tag
- 101 small, unmarked fish
- Range has extended up to rkm 18



