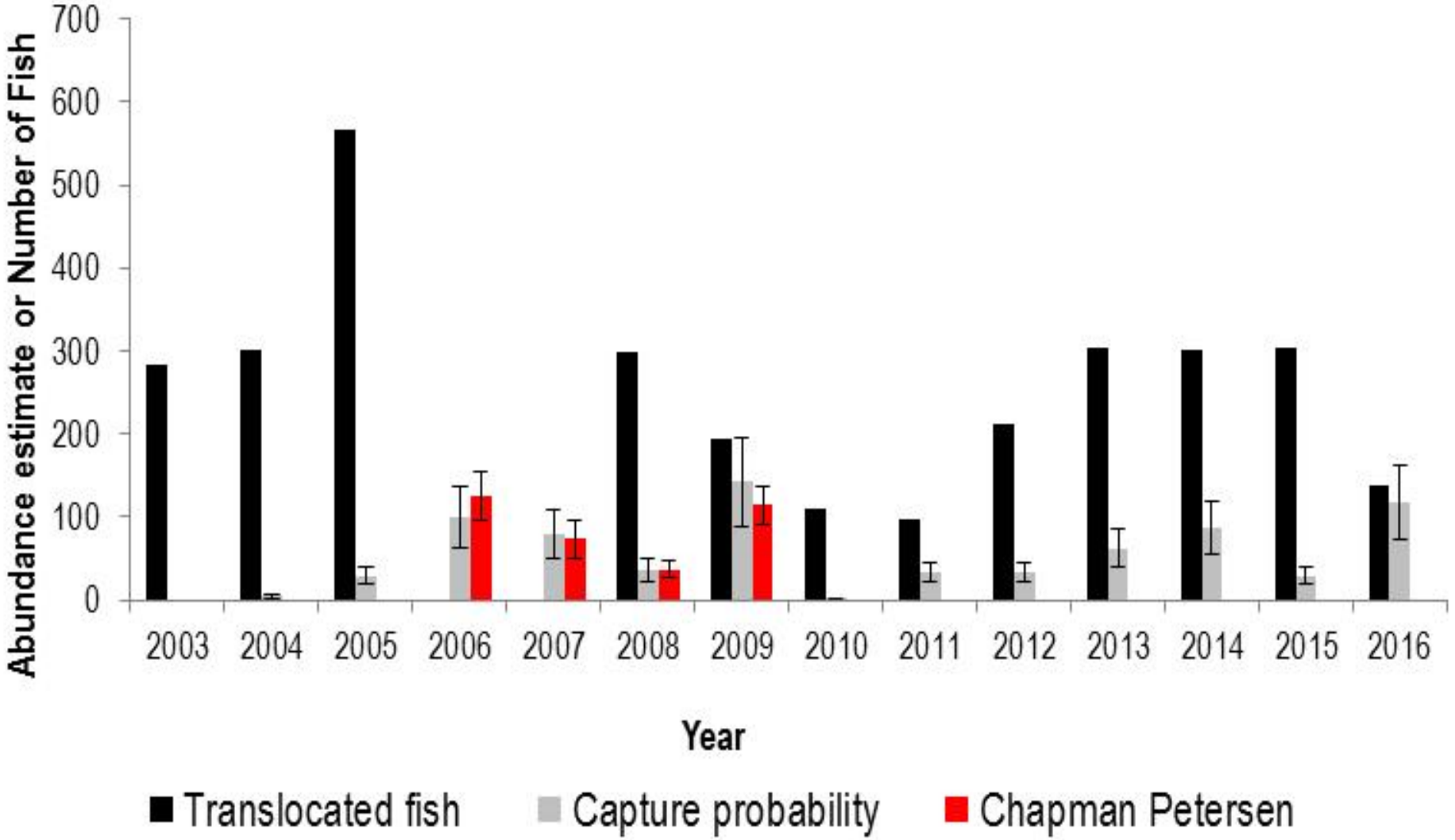
Translocations

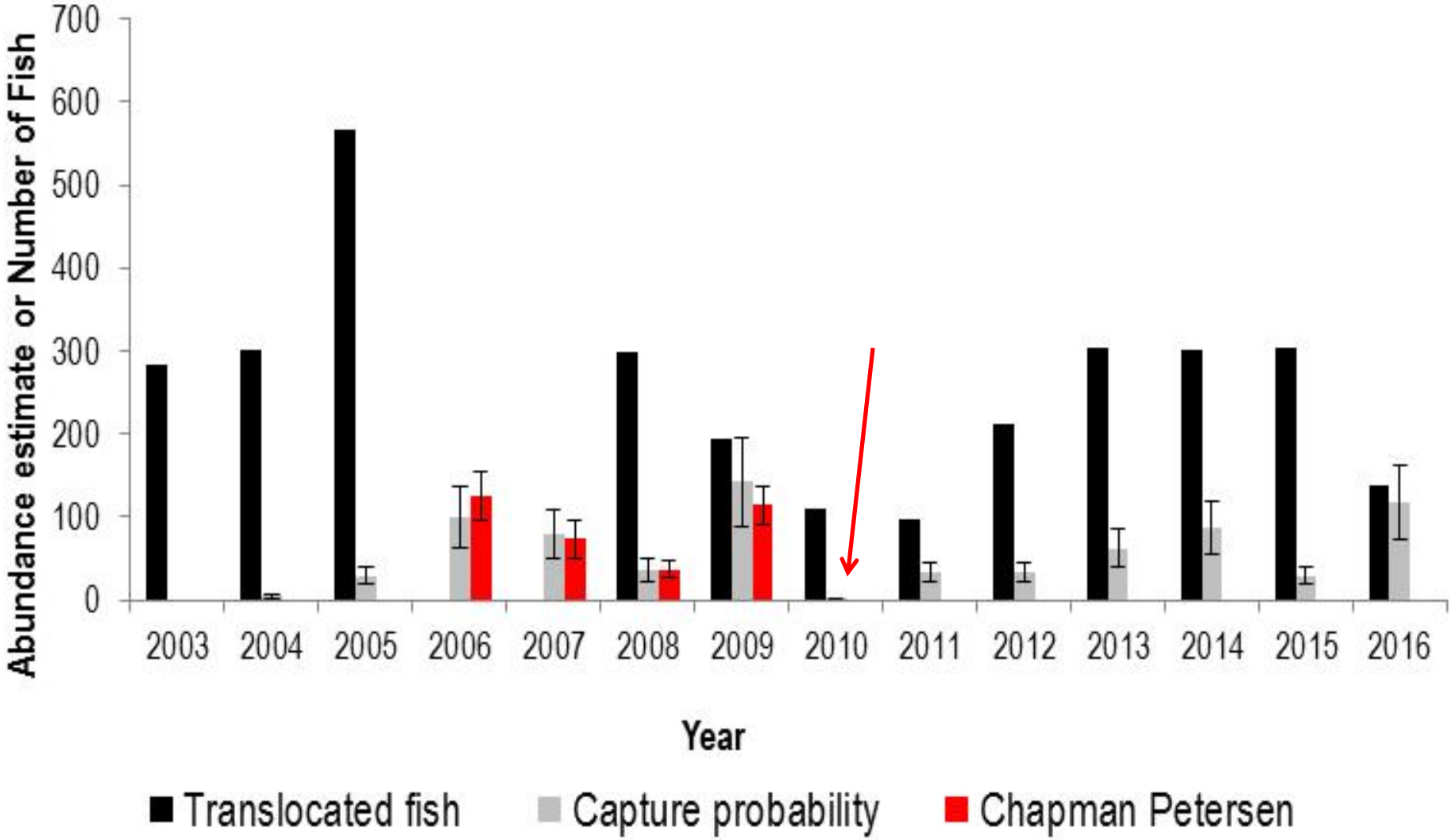
Numbers and sizes of Humpback Chub collected from the Little Colorado River for translocations (2003-2016)

Date	Chute Falls *	Size (mm)	SNARRC	Shinumo	Havasu	Size (mm)	Total
8/1/03	283	50-100					283
7/30/04	299	50-100					299
7/29/05	567	50-100					567
7/22/08	299	~80-130		207		<80	506
10/13/08			300	100		<130	400
7/24/09	194	~80-130	205	83		<80	482
10/10/09				238		<130	238
7/16/10	108	~80-130	175			<80	283
11/5/10				300	300	<80	600
11/9/11	96	~80-130	200		300	<80	596
7/12/12	212	~80-130	202	200	300	<80	914
5/24/13				73		<30	73
7/11/13				99		<80	99
11/7/13	303	~80-130		11	300	<130	614
5/1/14					660	<30	660
10/31/14	305	65-137				<130	305
5/28/15					315	<30	315
11/1/15	303						303
10/27/16	137	58-146					137
Totals	3,106		1,082	1,311	2,175		7,674

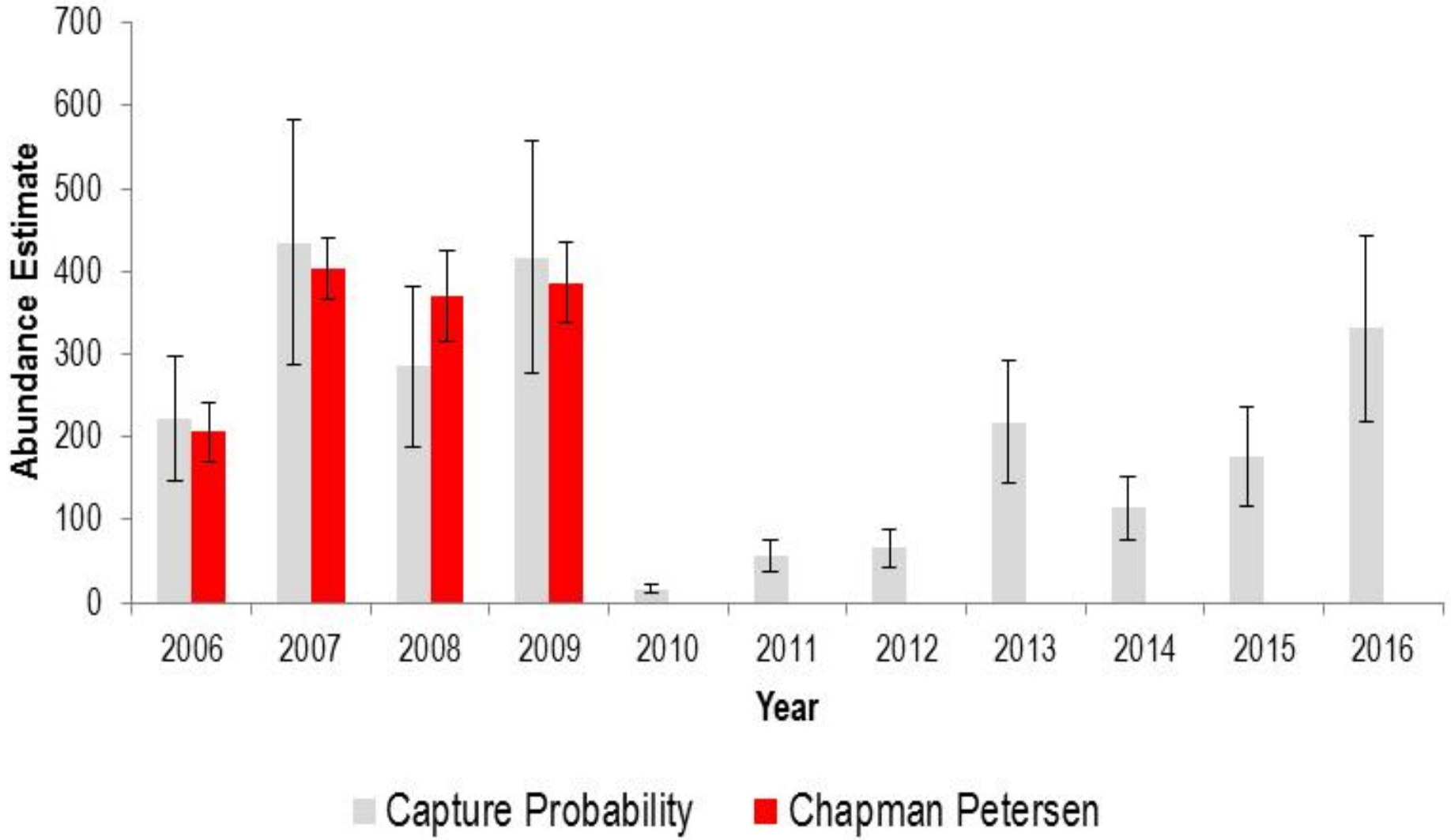
Above Chute Falls - Number of juvenile Humpback Chub translocated (black) and adult abundances (red & grey)



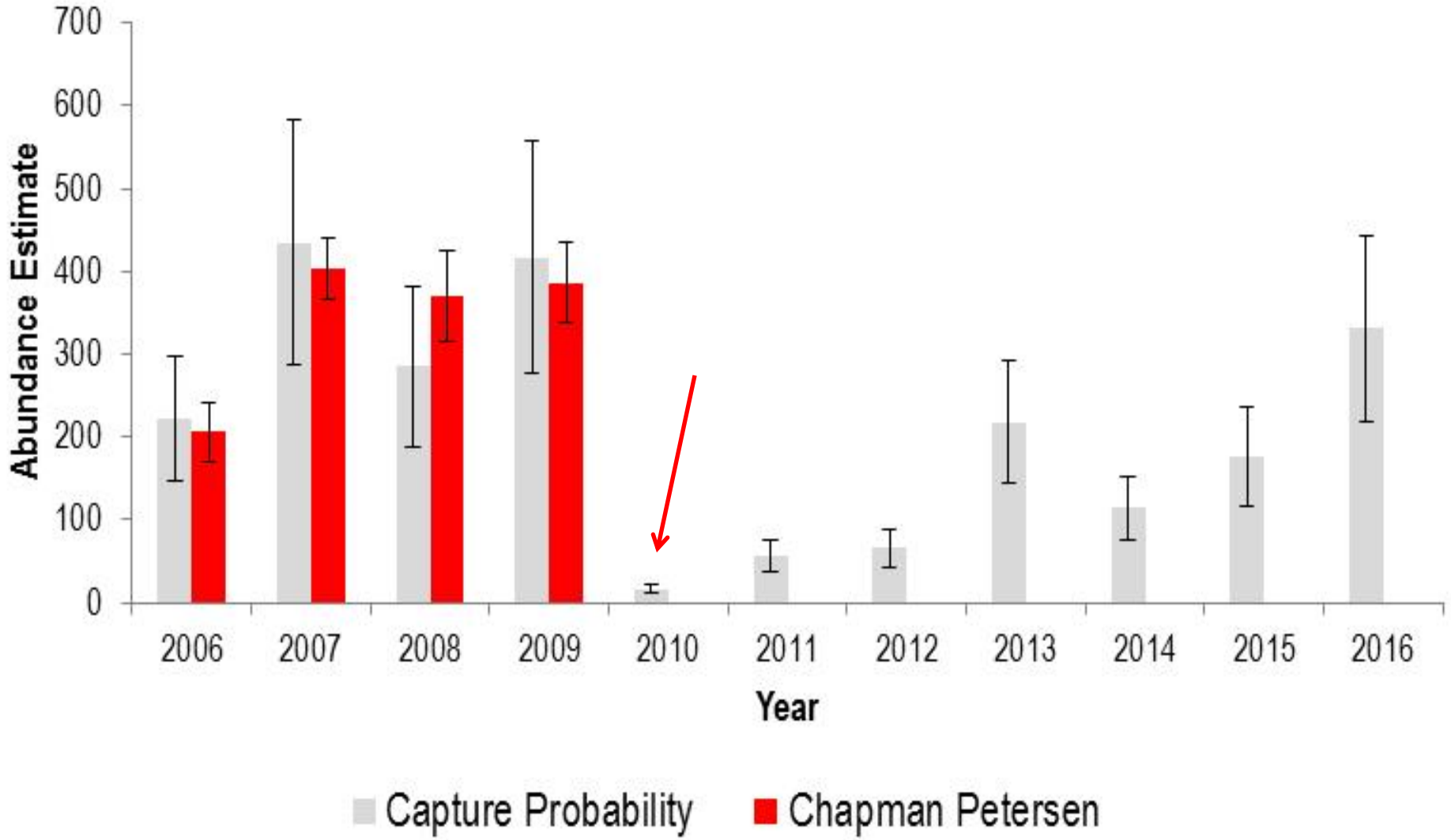
Above Chute Falls - Number of juvenile Humpback Chub translocated (black) and adult abundances (red & grey)



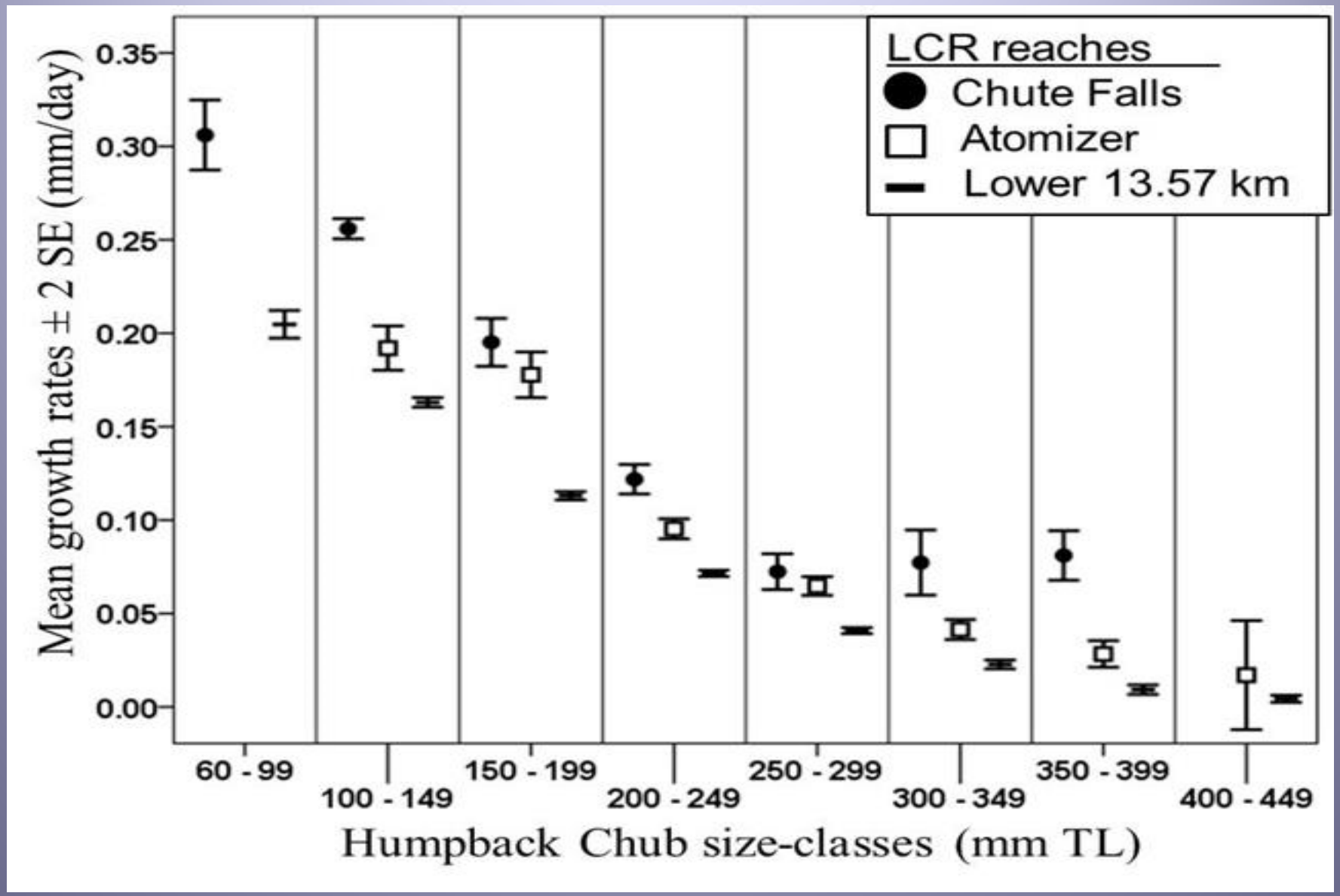
Below Chute Falls (Atomizer reach) - Adult Humpback Chub abundances (red & grey)



Below Chute Falls (Atomizer reach) - Adult Humpback Chub abundances (red & grey)

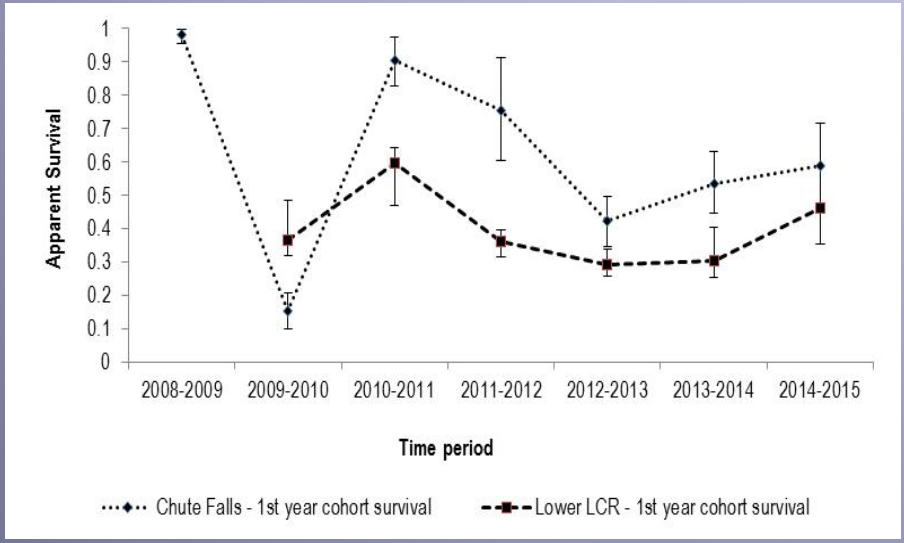


Growth of Humpback Chub from three Little Colorado River reaches

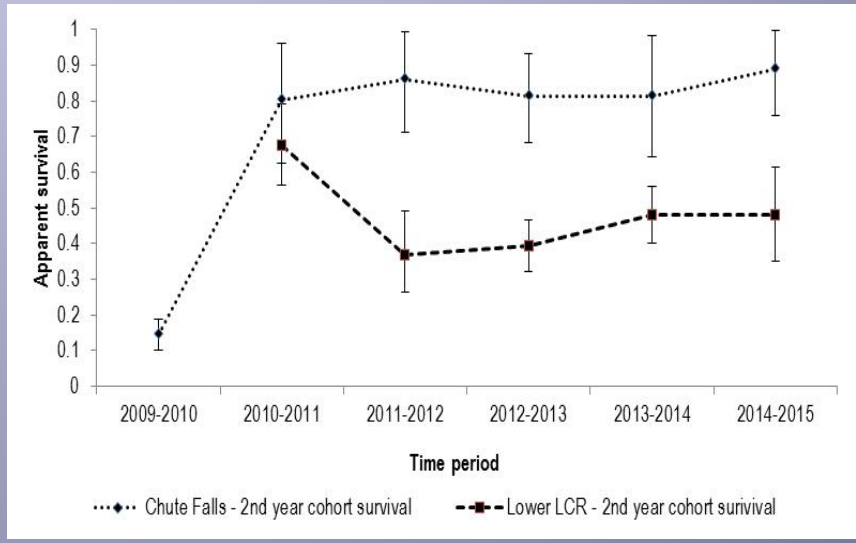


Apparent survival of translocated age 0 chub vs those not translocated (provisional)

Survival of translocation cohorts during first year



Survival of translocation cohorts during second year



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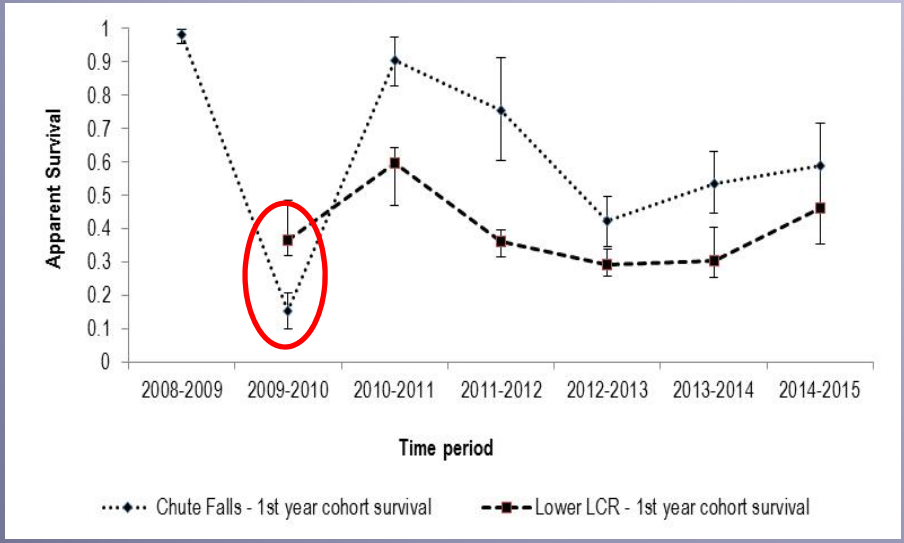
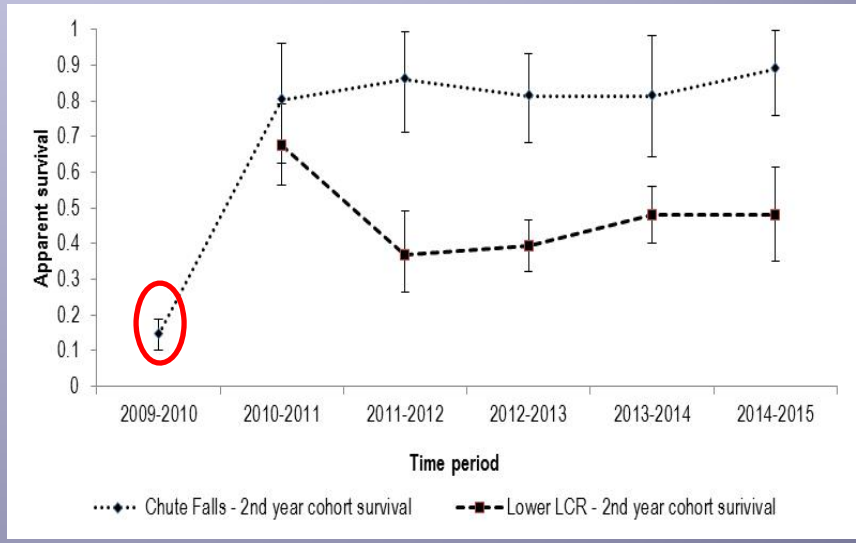


Survival of translocation cohorts during second year



Summary

- Higher growth rates and increased survival appear to be a result of translocating fish to above Chute Falls.
- Environmental stochasticity (floods/loss of habitat) may be one factor ultimately precluding permanent colonization of Humpback Chub above Chute Falls.
- Translocations are relatively easy and inexpensive beneficial conservation actions compared to other options that may be much more expensive and politically difficult to implement.

Thank You