



An Overview of Humpback Mark-Recapture Trips During 2011

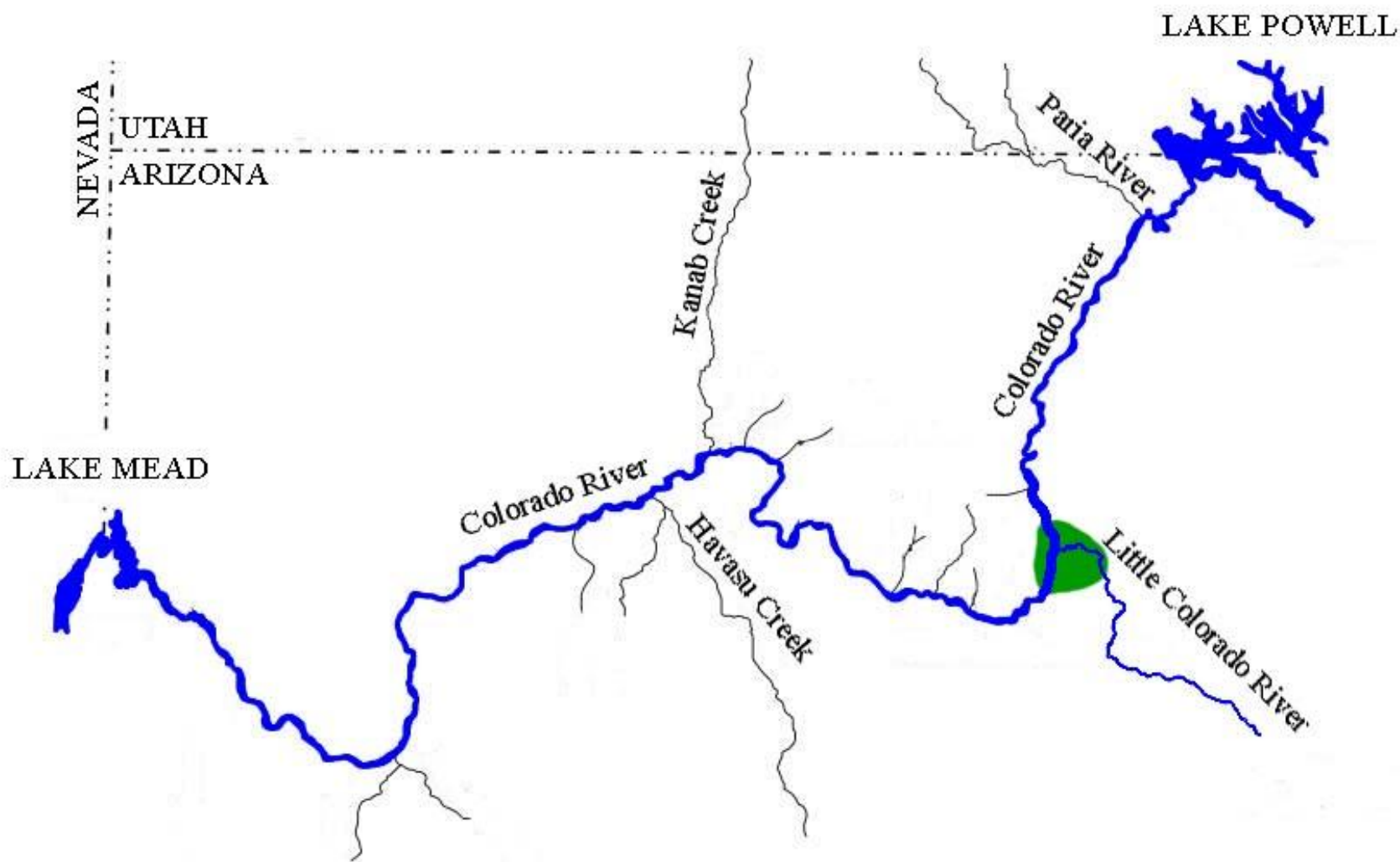
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Objectives

- Obtain spring and fall closed mark-recapture population estimates of humpback chub in the LCR (0 to 13.6 km).
- Obtain population estimates of humpback chub in the LCR (13.6 to ~18 km).
- Monitor native suckers in LCR.

Methods

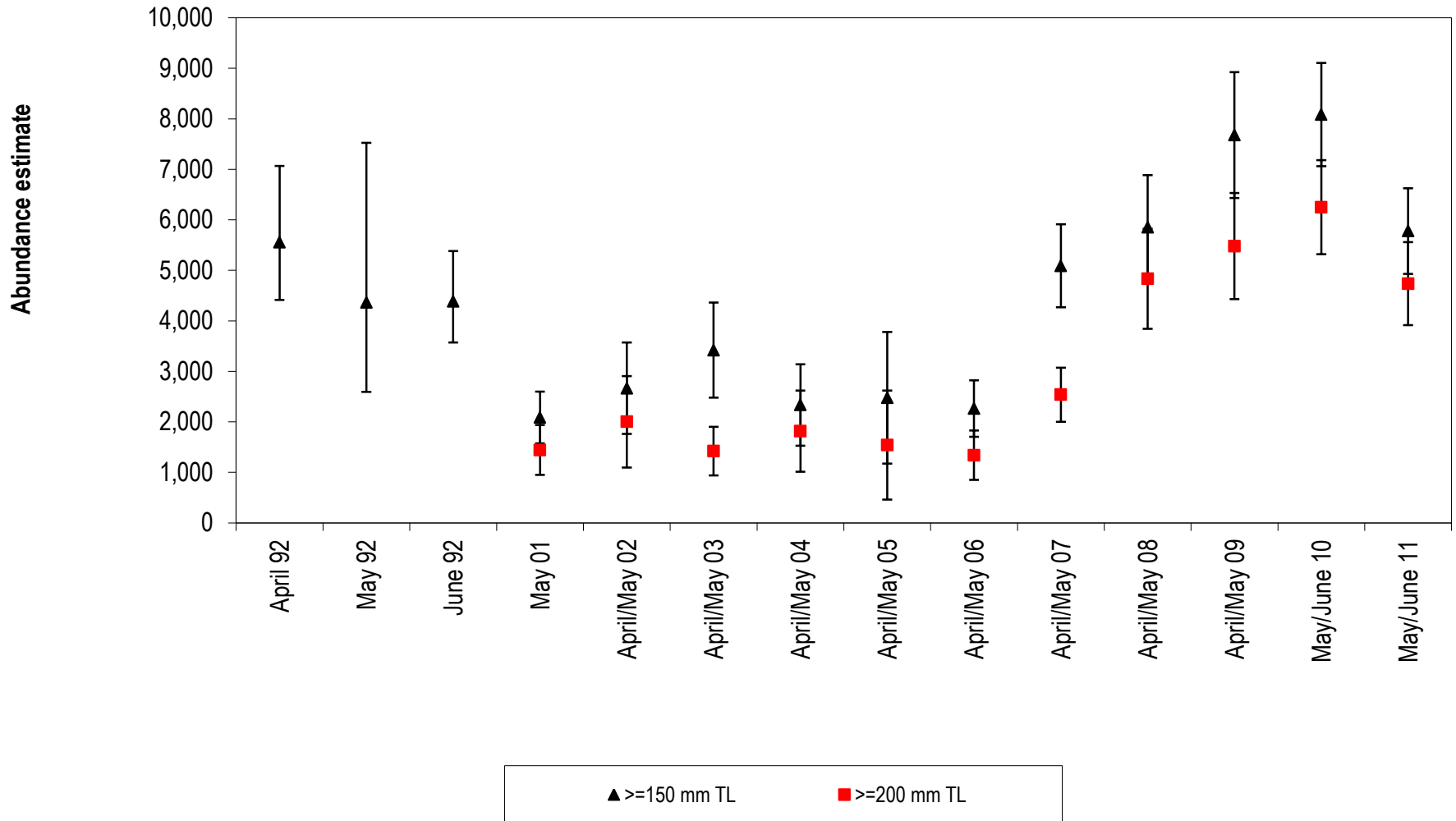
- Mark-Recapture Methodologies
- Closed Chapman Peterson Estimator is used.
- Mark trips – 10 days
- Recapture trips – 10 days
- 2 weeks between trips



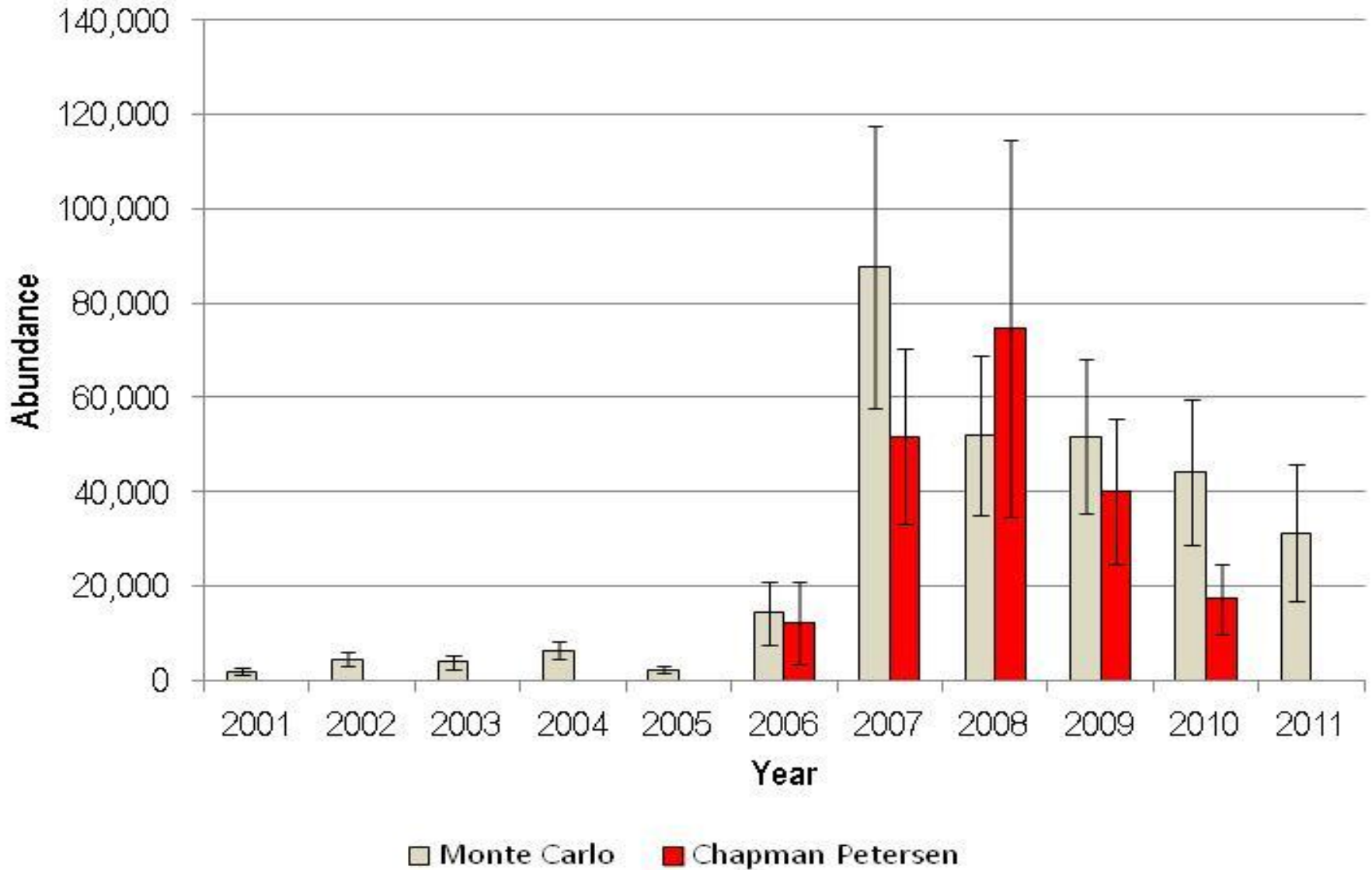
Results: Lower 13.57 km of the Little Colorado River



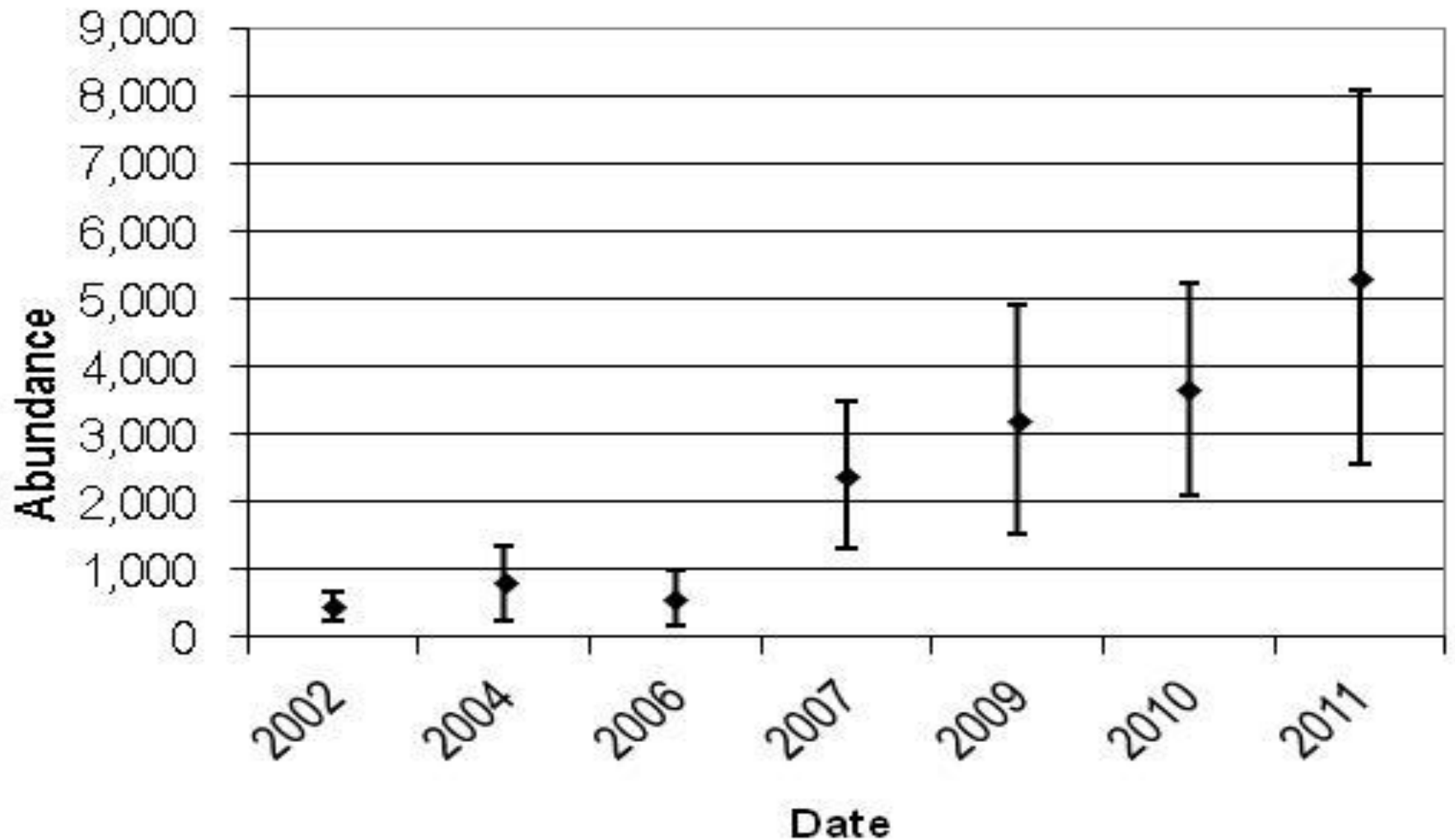
Spring Abundance of Humpback Chub ≥ 150 mm and ≥ 200 mm



Spring Bluehead Sucker Abundances (≥ 150 mm)



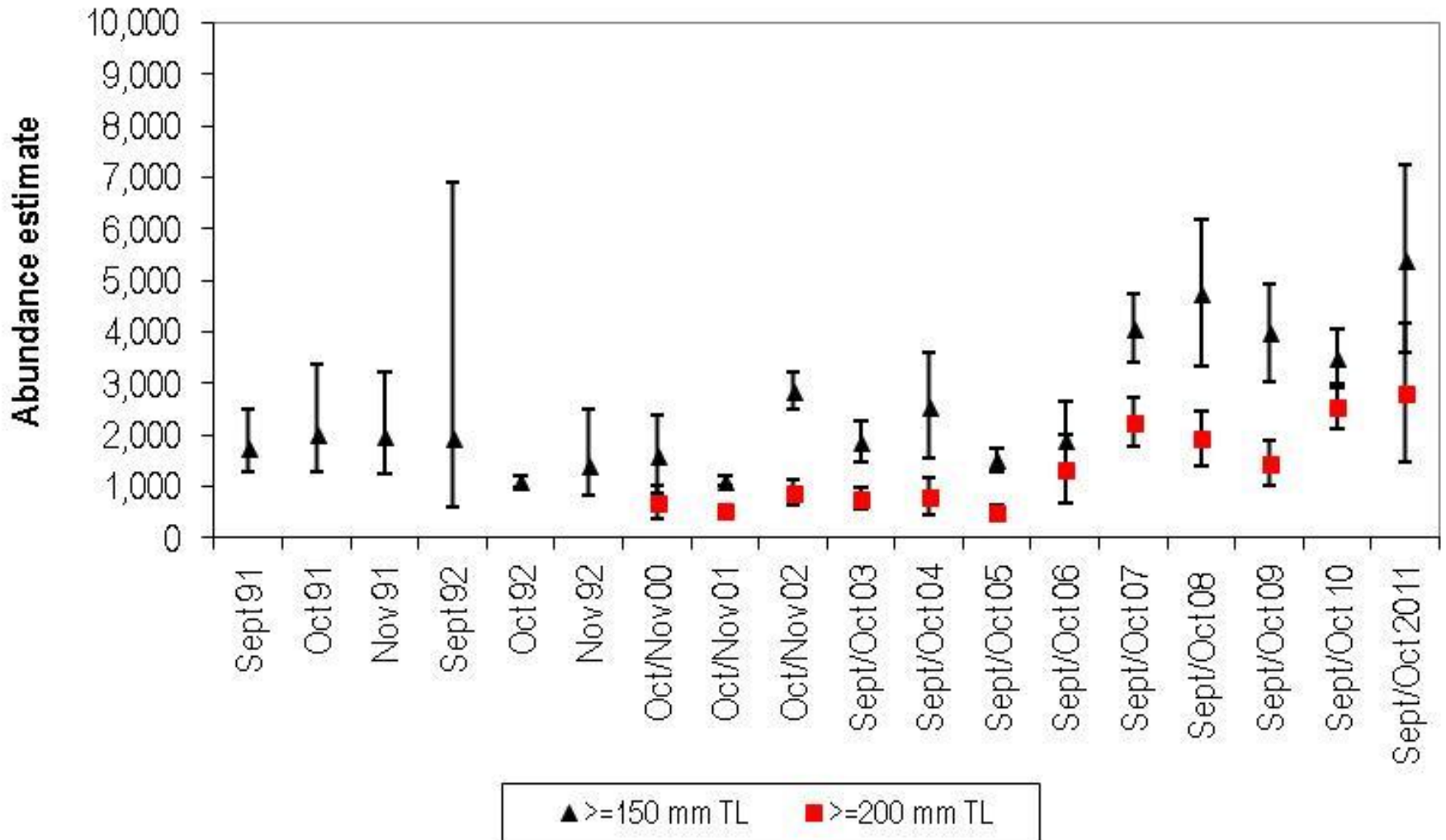
Spring Flannemouth Sucker Abundances (>150 mm)



Fall Mark-Recapture Efforts

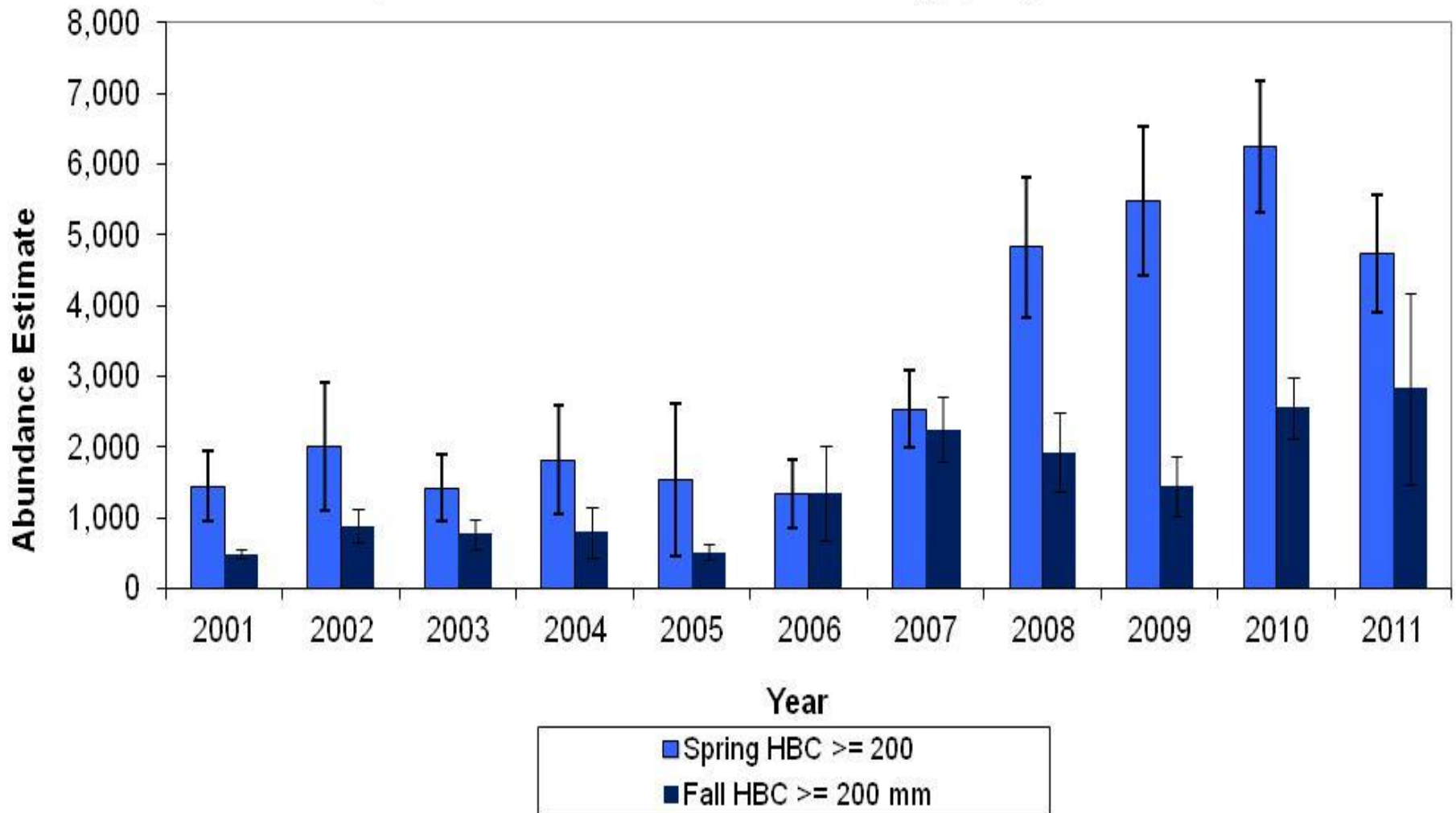


Fall Abundance of Humpback Chub ≥ 150 mm and ≥ 200 mm

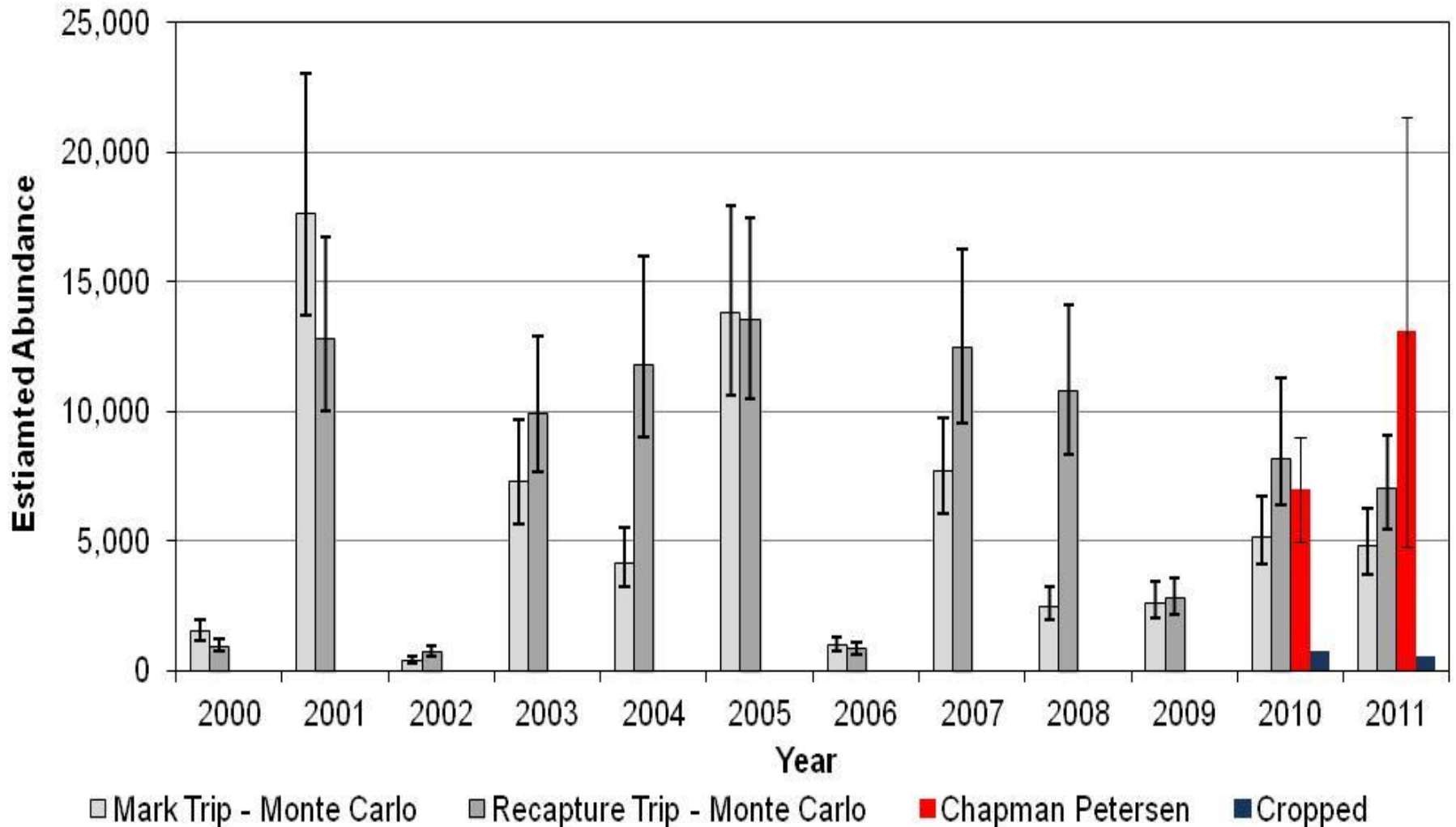


Comparison of spring and fall adult HBC ≥ 200 mm

Comparison of HBC ≥ 200 mm in LCR during spring and fall



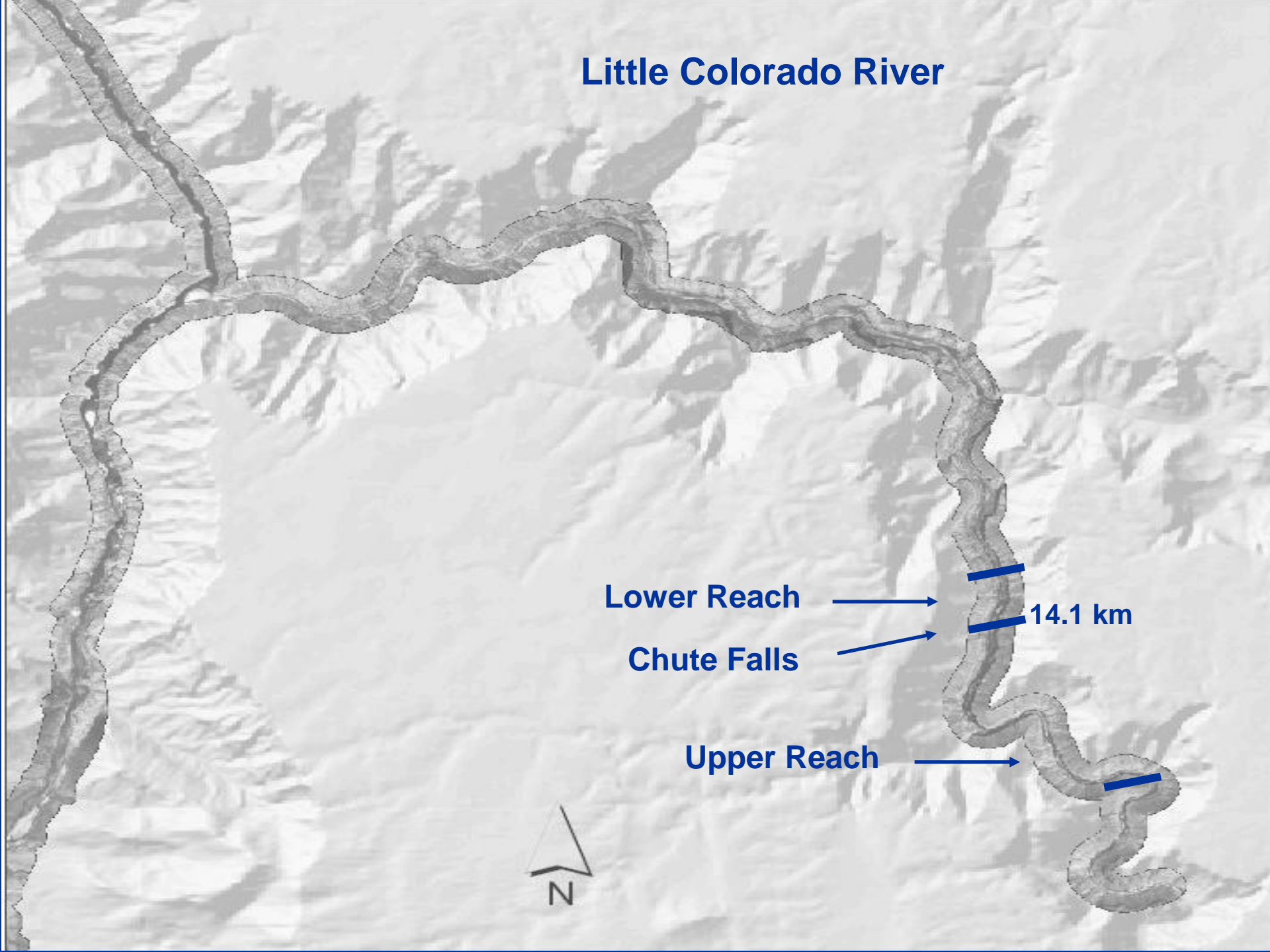
Age-0 HBC – Monte Carlo, Chapman Petersen, and cropping



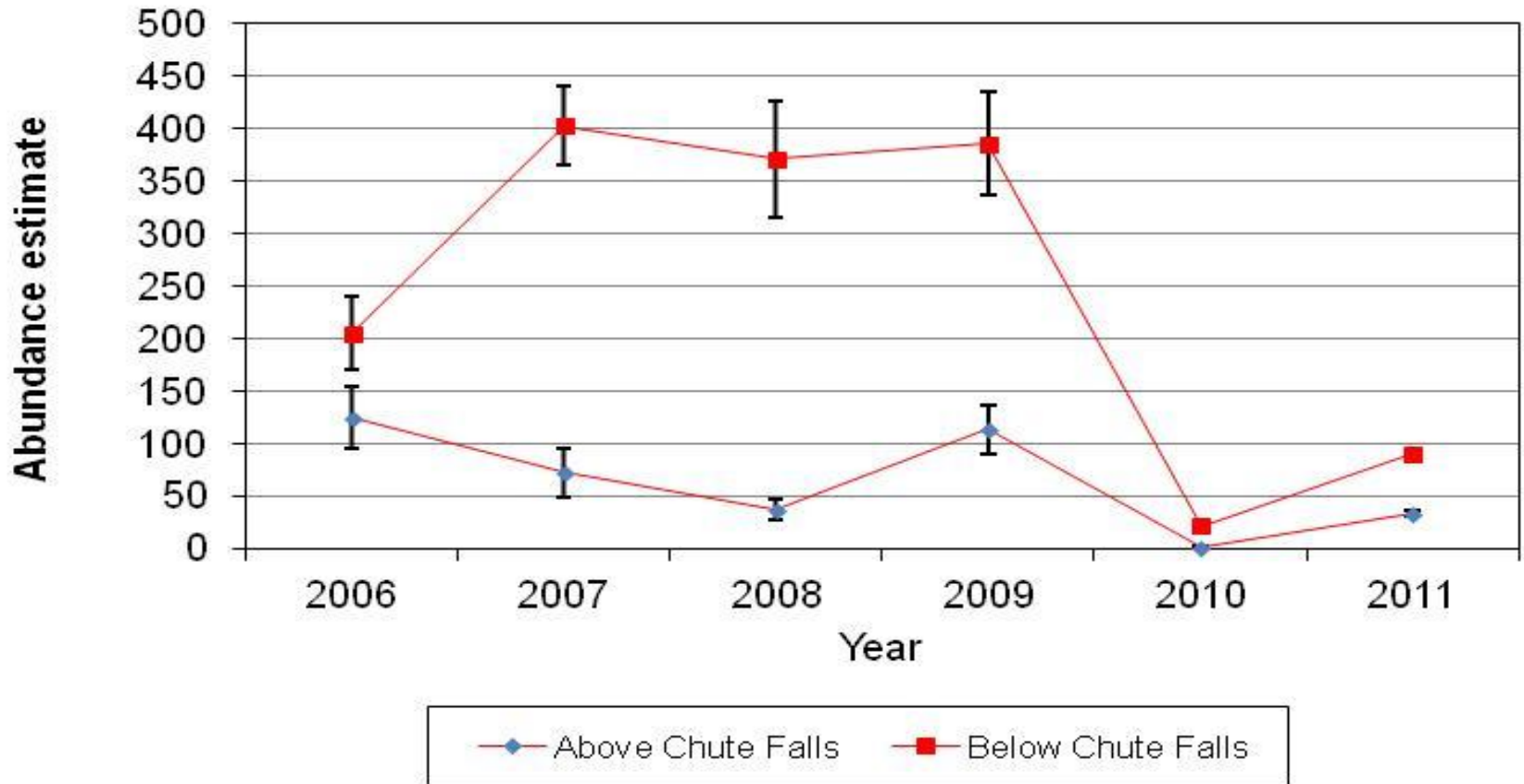
Chute Falls Translocation and Mark-recapture Efforts



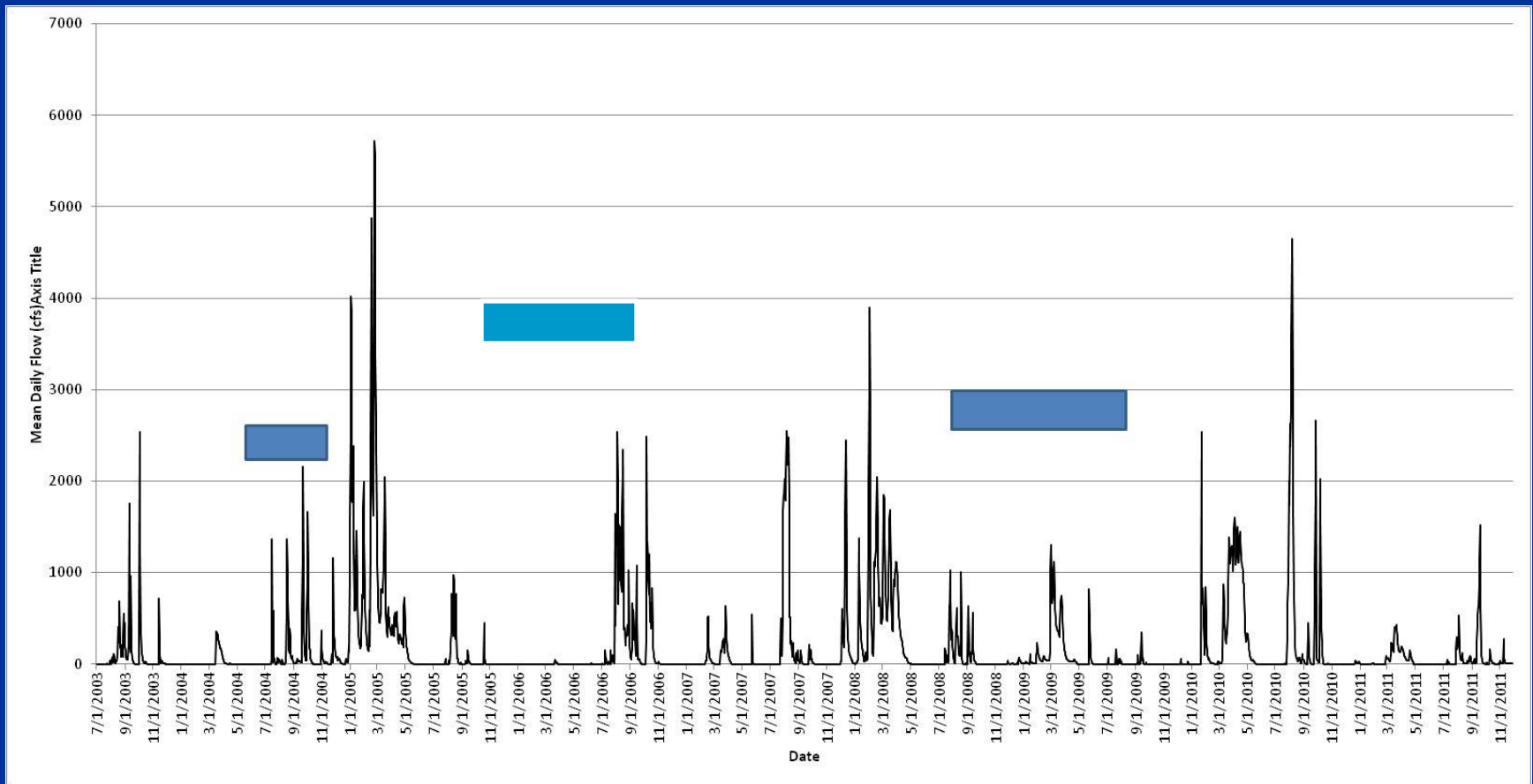
Little Colorado River



Abundances of Humpback Chub ≥ 200 mm above and below Chute Falls



Periods of retention of HBC above Chute Falls related to low flows?



Other Translocations – Dexter

~885 age-0 fish so far



Shinumo Creek – Ongoing ~800 age-0 fish so far



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Havasasu Creek – 2011 (~600 fish)



The Bottom Lines and Take Home Lessons

- Humpback chub appear to be doing well since 2007.
- Capture probability data obtained through mark-recapture can potentially be pooled and used to estimate (investigate) past/future abundances, IF a consistent sampling regime is maintained.
- Flow regimes may hinder the retention of humpback chub above 13.57 km in the LCR.
- Translocations to Chute Falls, Dexter NFHTC, Shinumo and Havasu creeks have been conducted, and have all demonstrated some elements of further improving the situation for humpback chub (e.g., gene pool preservation, population redundancy, high growth rates, recruitment).

Thank You

