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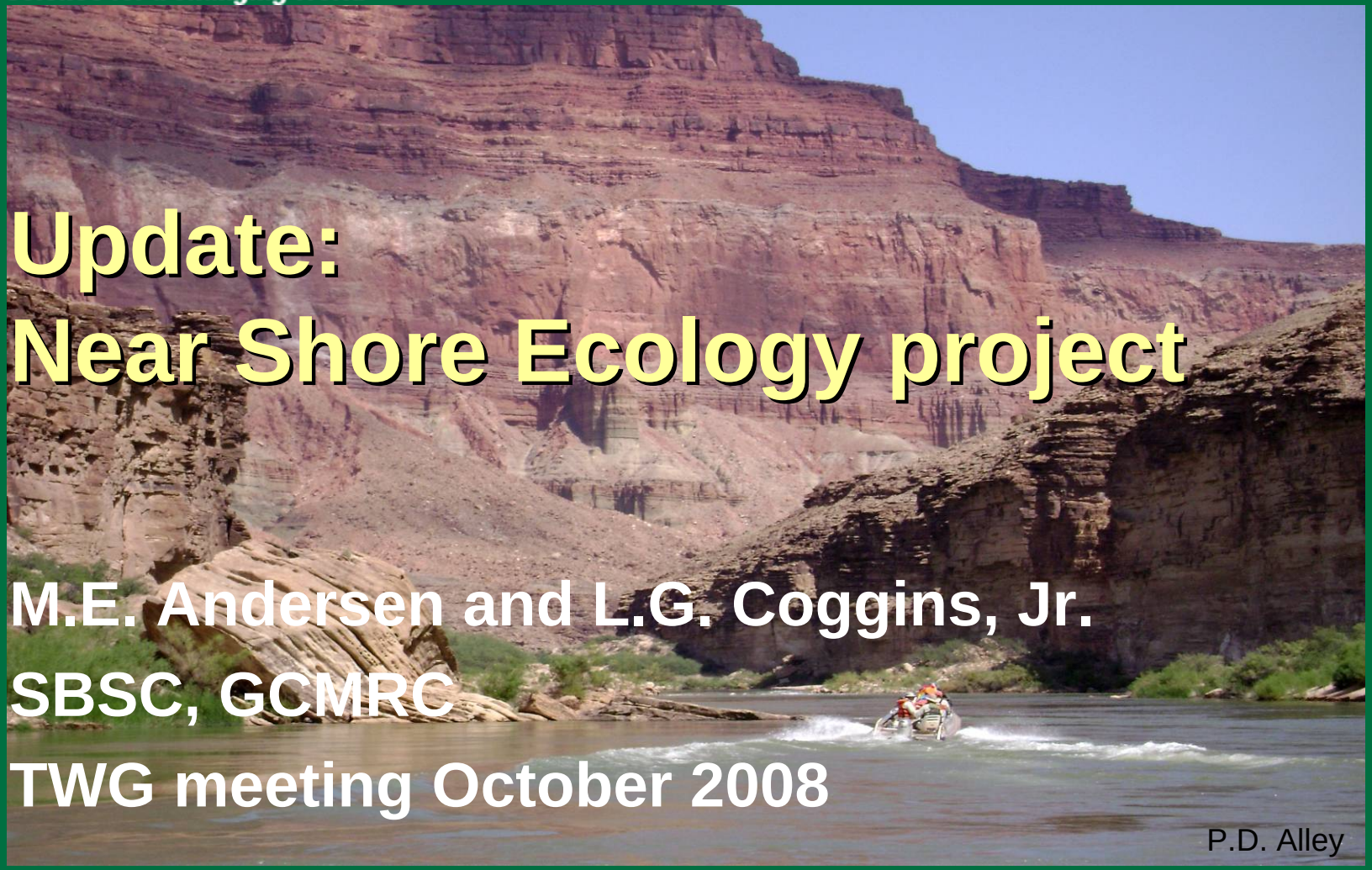

Update:
Near Shore Ecology project

M.E. Andersen and L.G. Coggins, Jr.
SBSC, GCMRC

TWG meeting October 2008

P.D. Alley

U.S. Department of the Interior
U.S. Geological Survey

Approach to Studying Steady Flow in September/October 2008-2012

1. Current Science Program (previously reviewed by TWG and AMWG)
2. Near Shore Ecology/Steady Flow (NSE/SF) solicitation and project
3. 2008 NSE/SF Pilot project
4. 2009 Develop Steady Flows Science Plan

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2. Near Shore Ecology/Steady Flows

- Solicitation reviewed by Science Advisors (May ‘08)
- Requested/received input from NPS, BOR, FWS
- Competitive solicitation (released Sep. ‘08)
- Solicitation open for 60 days, closes 7 Nov.
- Responses reviewed by independent panel (Dec. ‘08)

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2. Near Shore Ecology Study – Background

- **Biological Opinion Conservation Measure**

  "…. nearshore ecology study … will relate river flow variables to ecological attributes of nearshore habitats (velocity, depth, temperature, productivity, etc.) and the relative importance of such habitat conditions to important life stages of native and nonnative fishes. This study will incorporate planned science activities for evaluating the high flow test on nearshore habitats as well as the 5-year period of steady flow releases in September and October."

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Near Shore Ecology/Steady Flows

- **Primary Science Questions**
  - **What sampling and analytical methods are appropriate for determining abundance, density or occurrence of small native and nonnative fishes?**
  - **What are the habitat types that juvenile native and nonnative fish select?**
  - **How do abiotic and biotic factors influence individual growth and survival in these habitat types?**
  - **How available are these habitat types?**

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3. Pilot Study

- Study plan developed by GCMRC (May ‘08)
- Reviewed by Science Advisors (June ‘08)
- Conduct pilot study (Aug. – Sep. ‘08)

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Pilot Study (Aug. & Sep. 2008)

- Objectives
  - Evaluate methods to obtain density, abundance, and occupancy of near shore habitats by small, juvenile fishes
  - Estimate relative piscivory risk among different habitat types and flow patterns
  - Estimate use and movement of fish in backwater habitats
  - Evaluate methods to assess flow impacts on fish growth (otoliths, RNA/DNA ratios)

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Pilot Study Aug. ’08 (MLFF)

- Investigating
  - Humpback chub habitat use
  - Humpback chub population in LCR reach
  - Capture and tagging methods
  - Collecting flannelmouth sucker samples for growth study

P.D. Alley

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Pilot Study Aug. ’08 (MLFF)

- **Preliminary observations**
  - **Humpback chub numbers relatively high**
  - **Nonnative fishes number relatively low**
  - **Trout species generally absent in sampling 2005-07, now being observed in small numbers**
  - **Preliminary data presented to TWG: Oct. ‘08**

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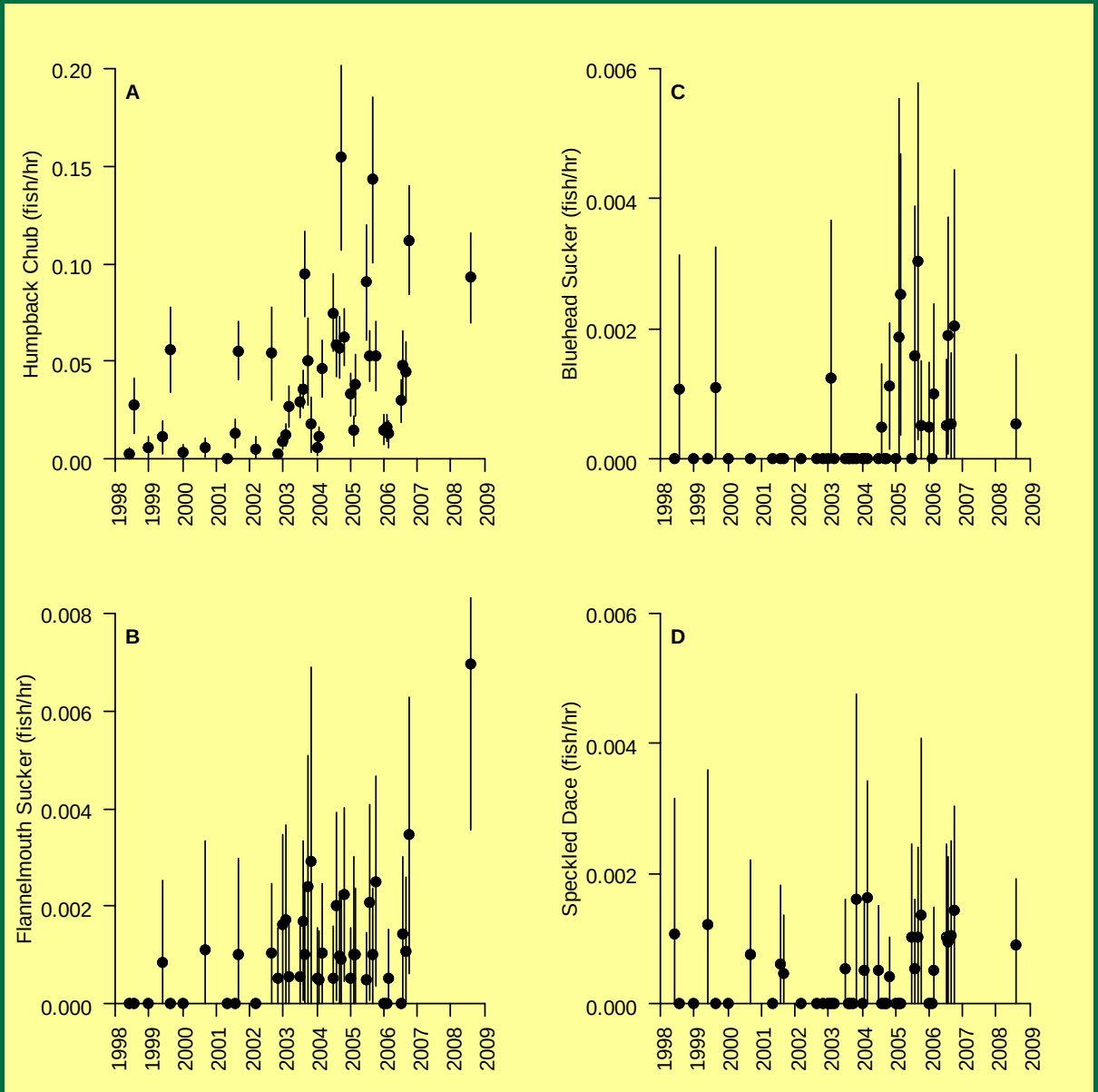
Preliminary data, subject to review and revision

Hoopnet catch rates by month and species

Note: different scales



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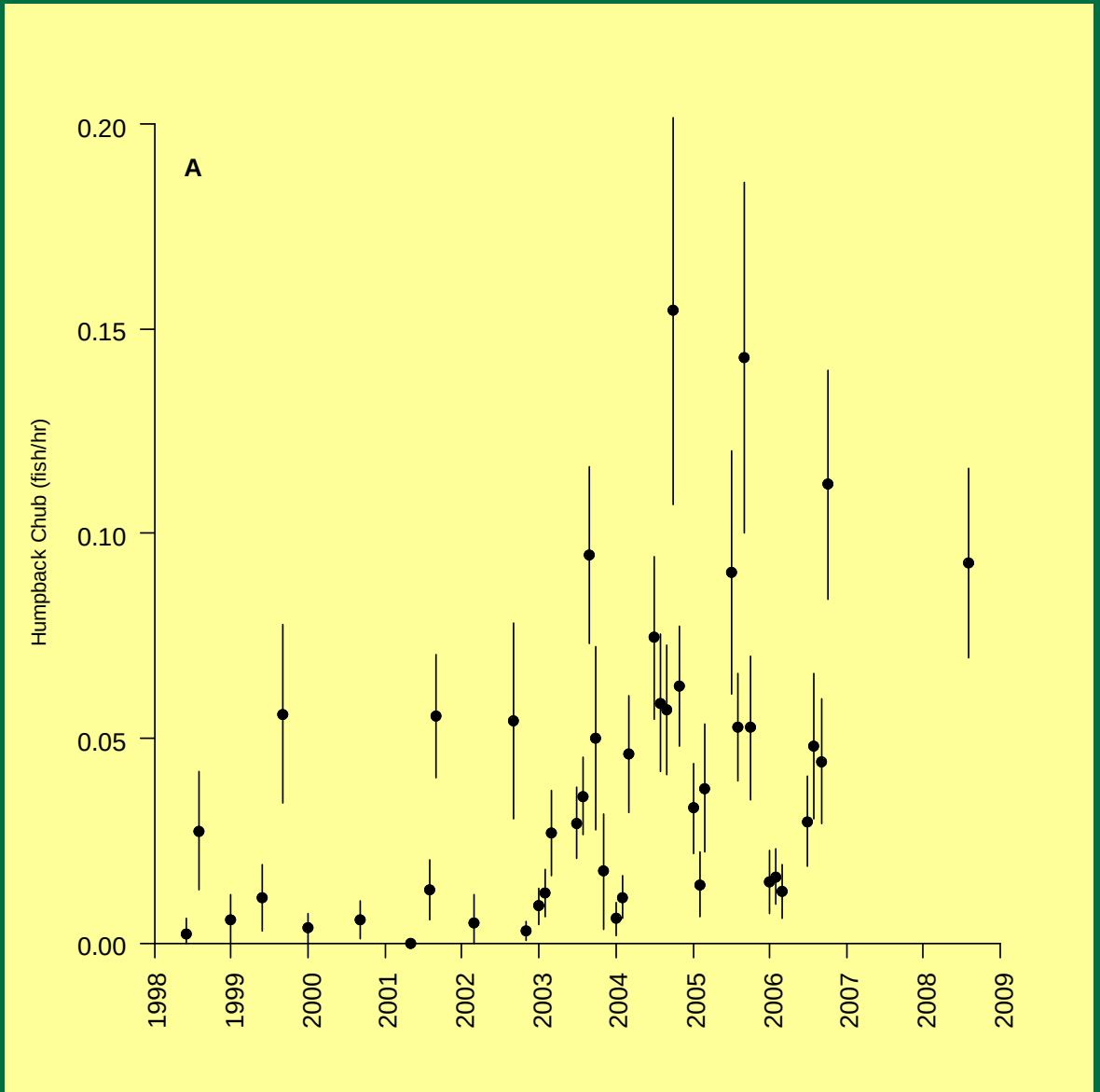
HBC hoopnet catch rate by month



Preliminary data – Subject to review and revision

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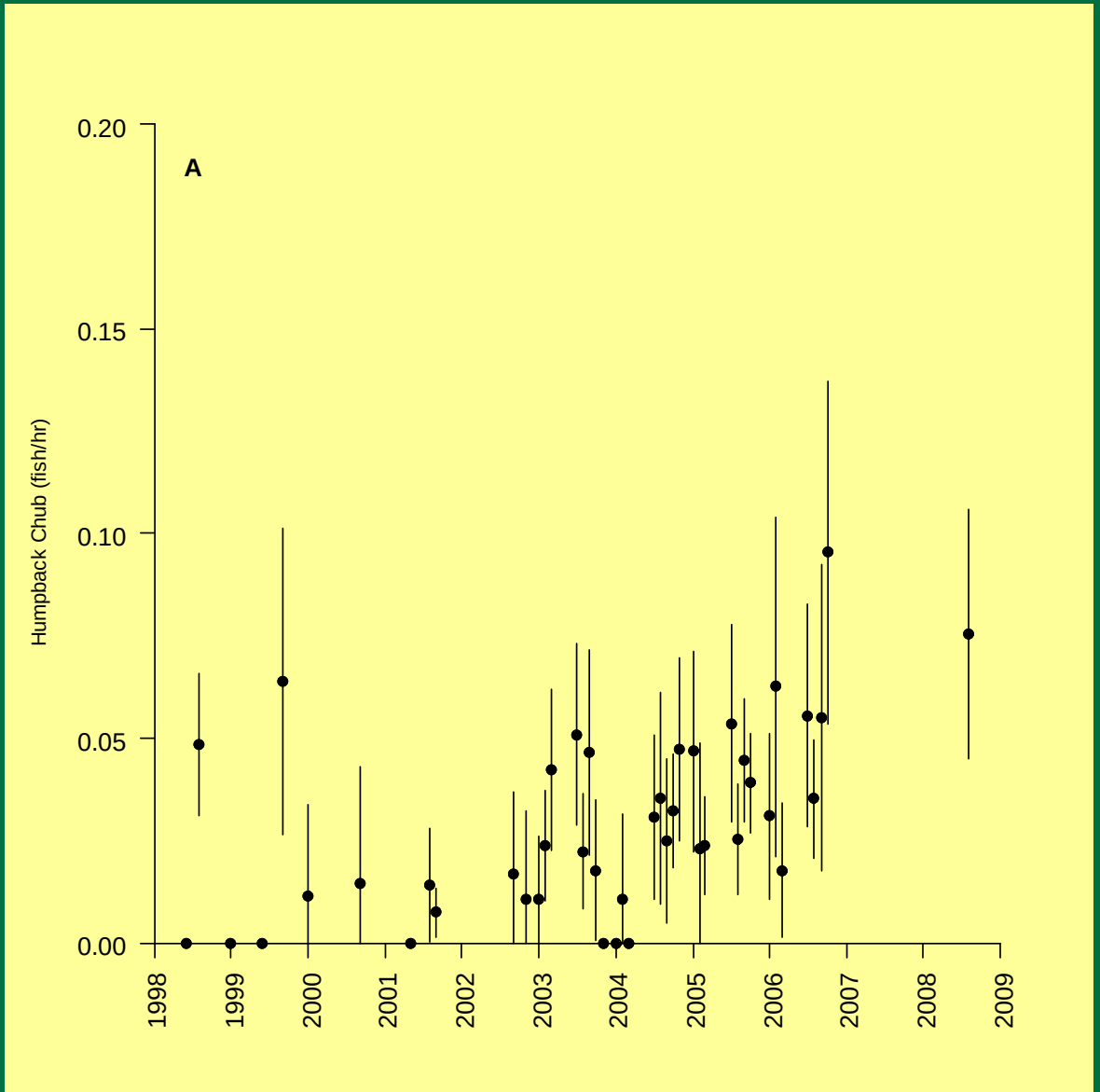
HBC ≥ 150 mm TL hoopnet catch rate by month



Preliminary data – Subject to review and revision

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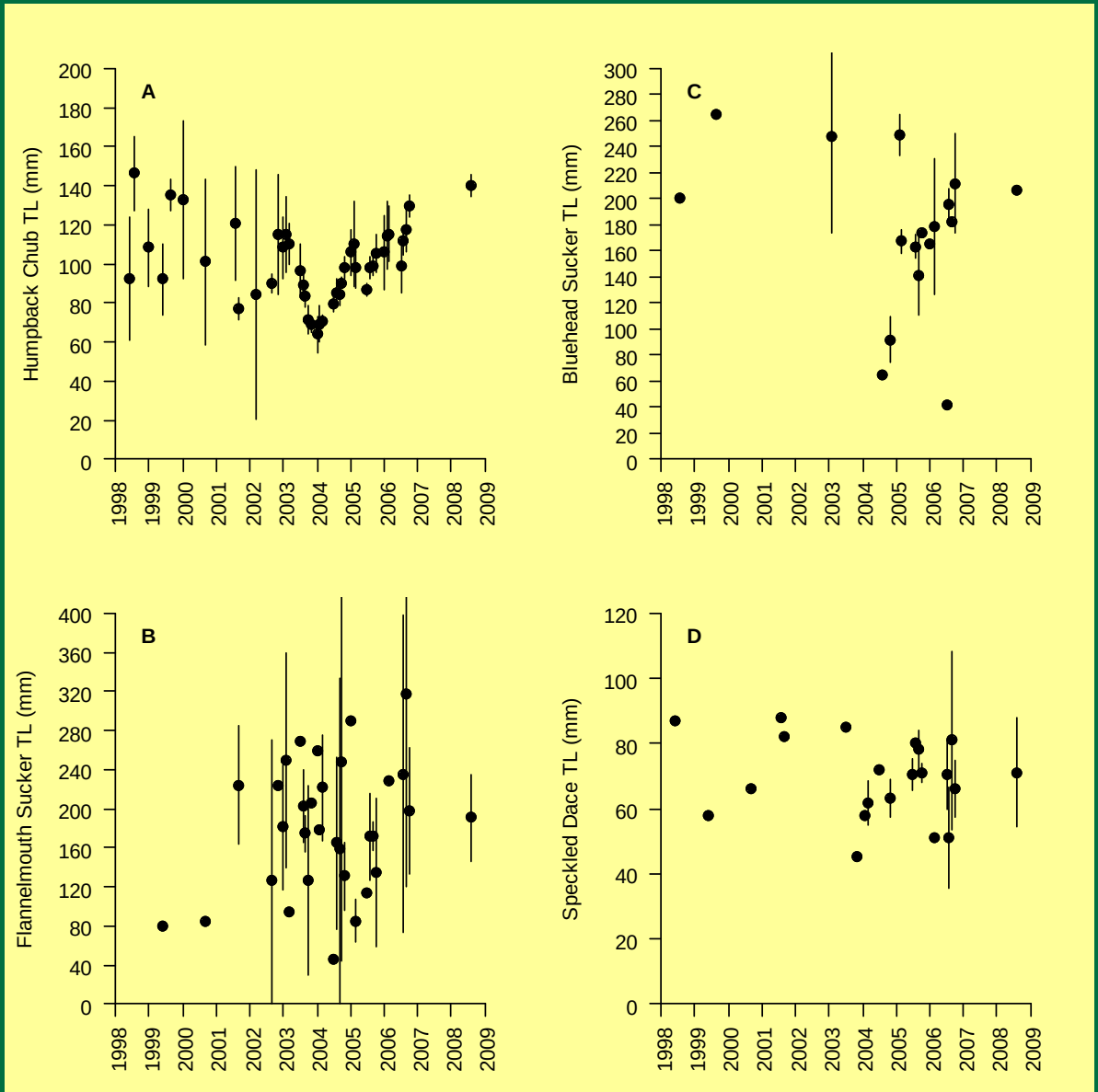
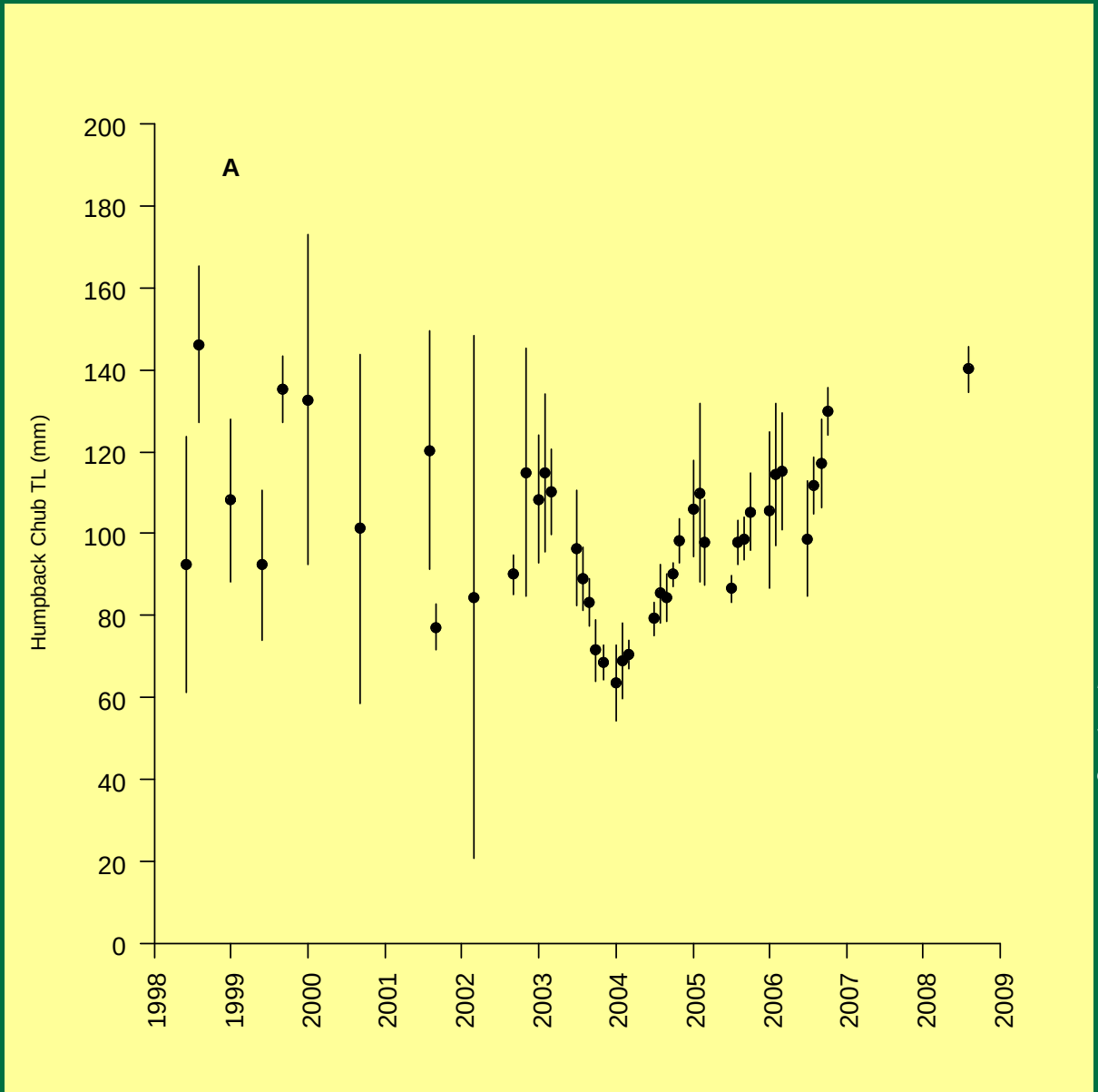
Average TL by species caught by month



Preliminary data – Subject to review and revision

Average TL of HBC caught in hoopnets by month



Preliminary data – Subject to review and revision

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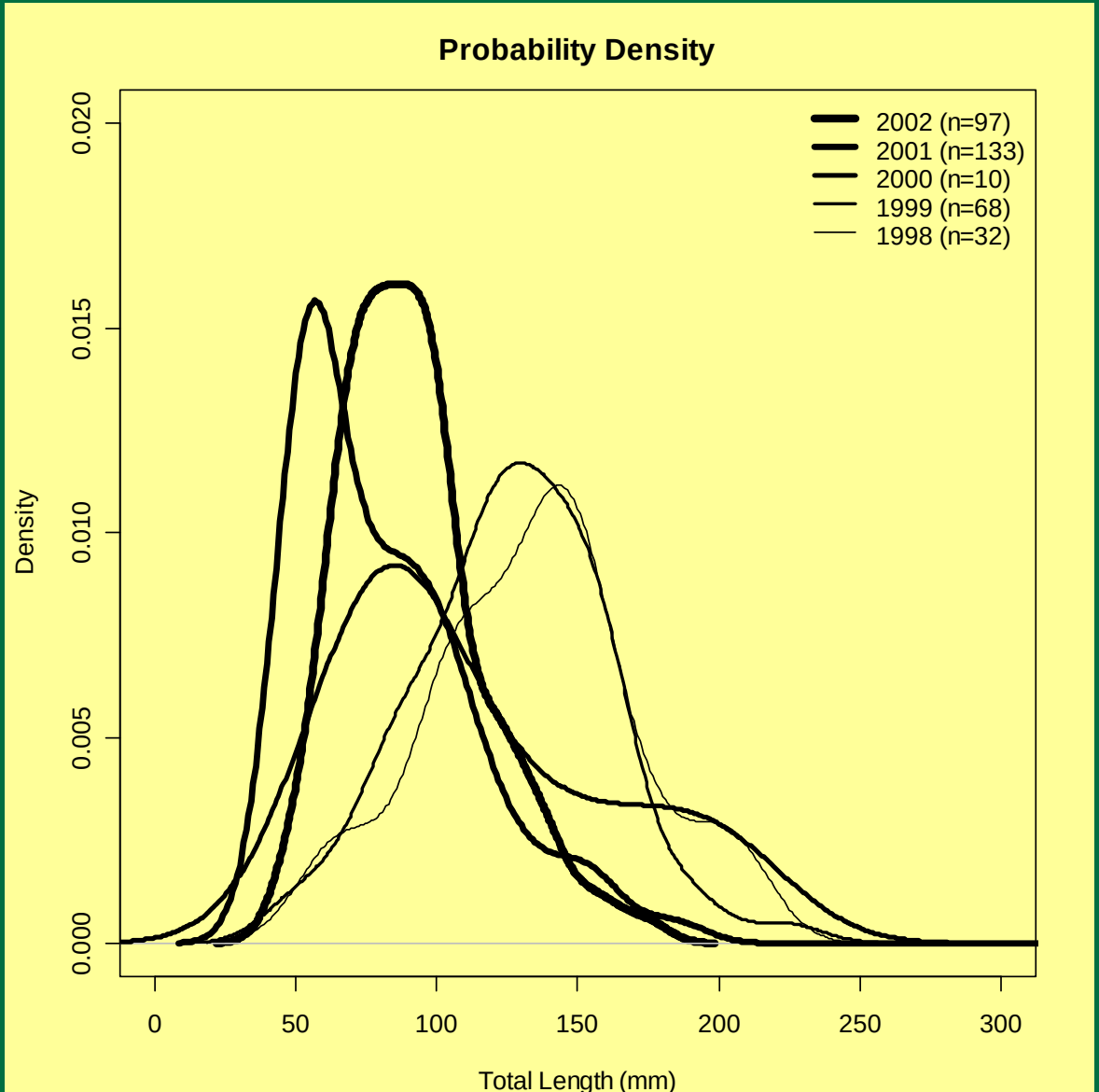
Length distribution of HBC in hoopnets all months 1998-2002



Preliminary data – Subject to review and revision

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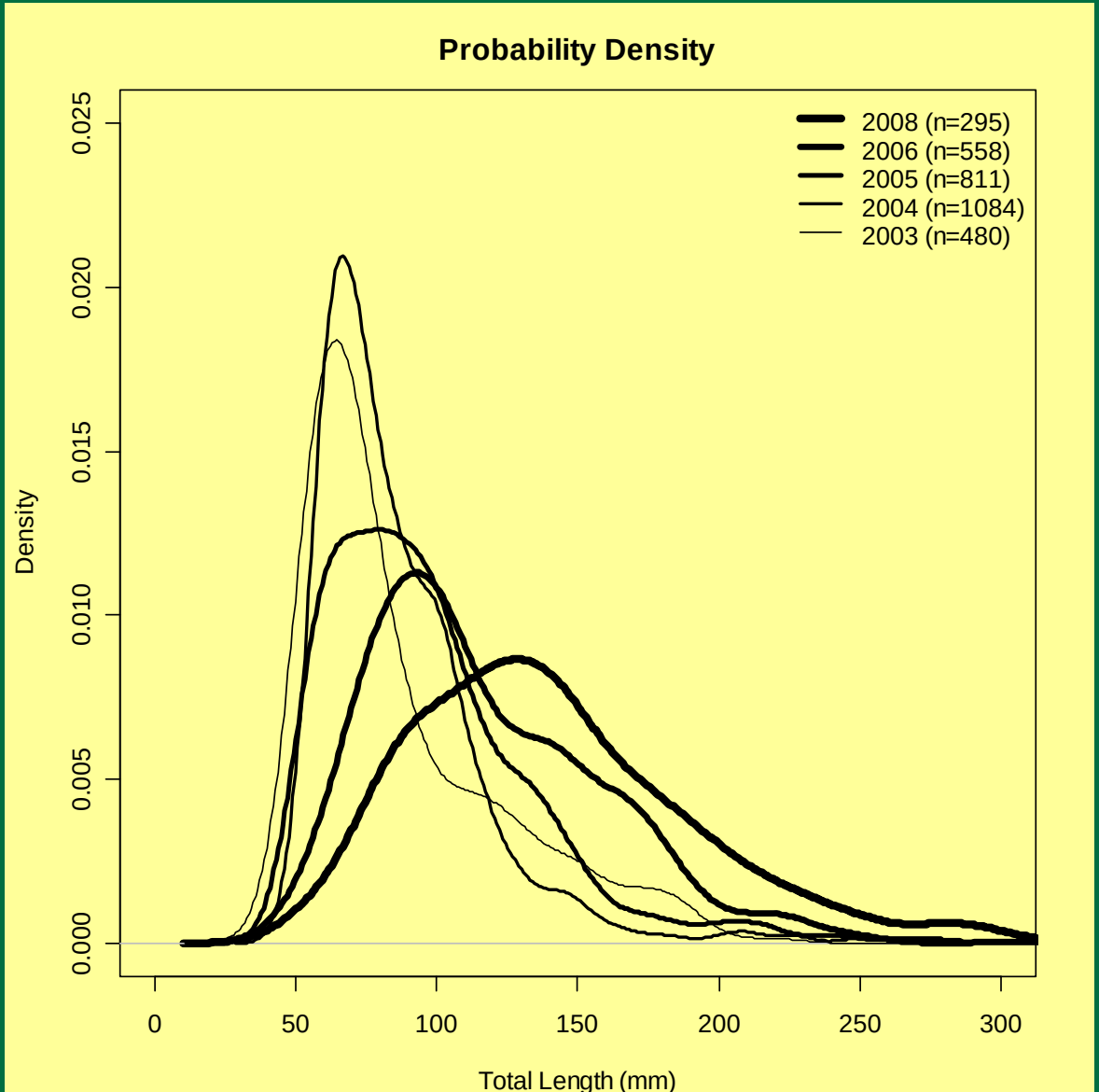
Length distribution of HBC in hoopnets all months 2003-2008



Preliminary data – Subject to review and revision

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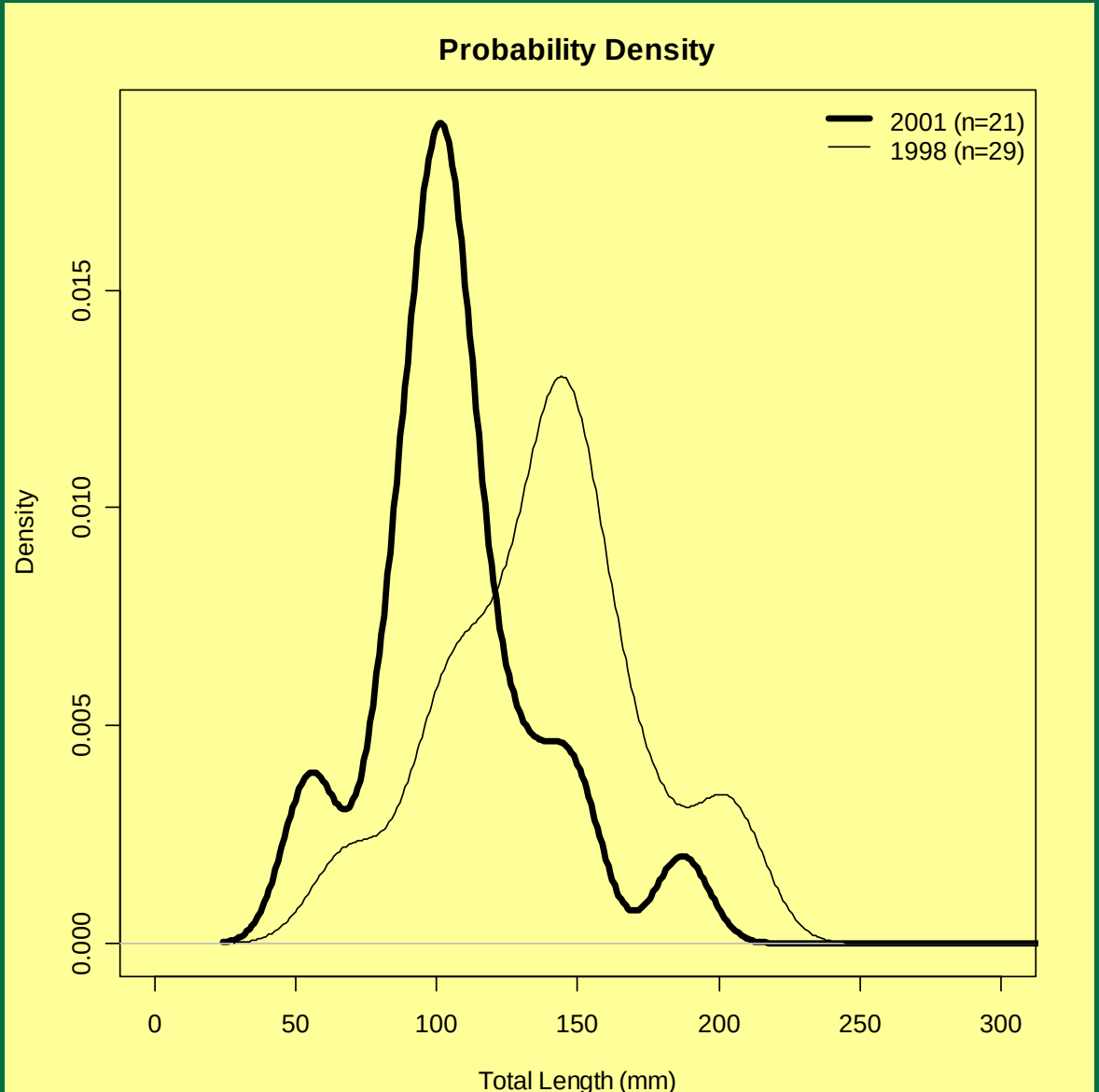
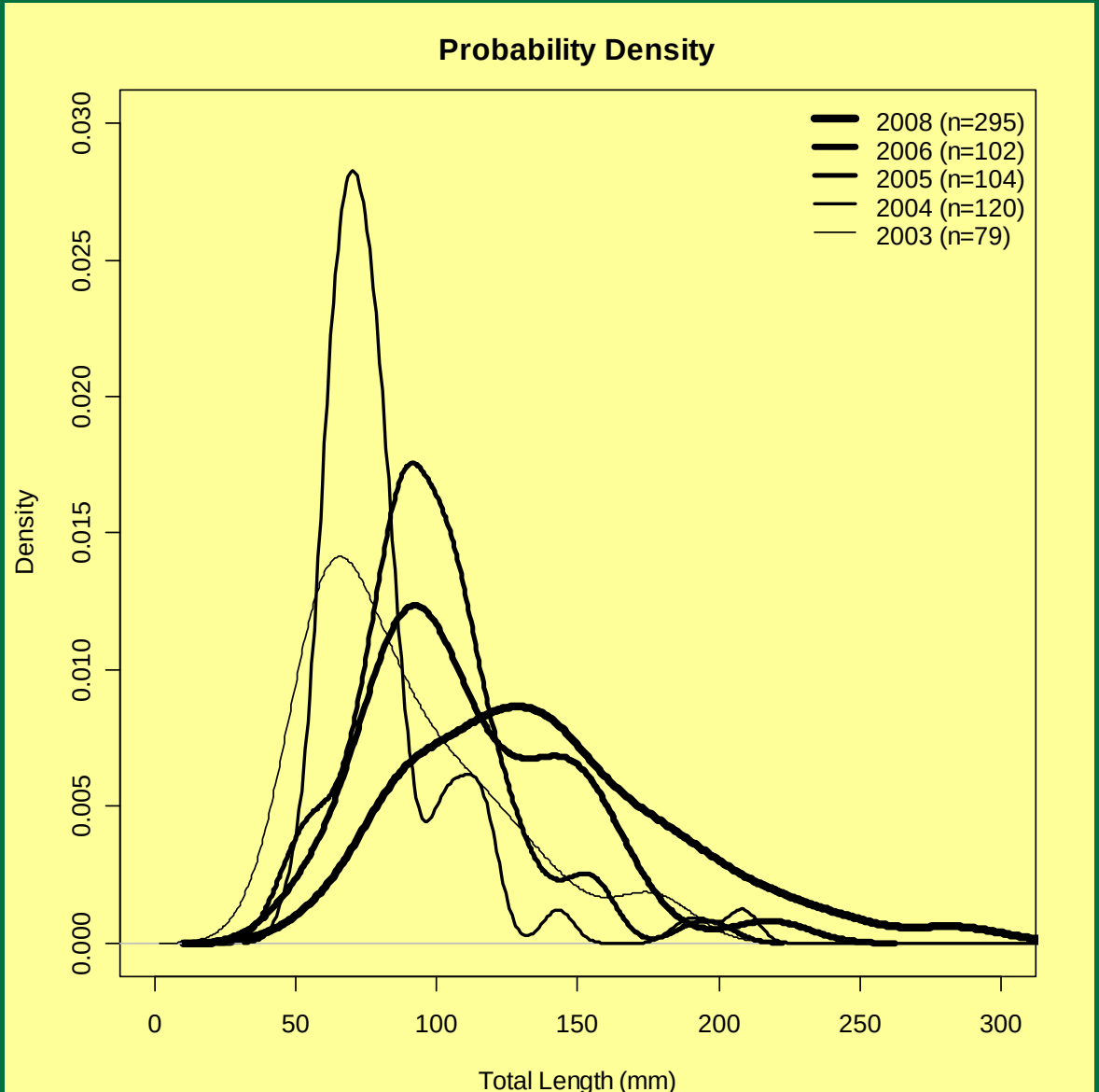
Length distribution of HBC by year August only 1998 & 2001



Preliminary data – Subject to review and revision

USGS

Length distribution of HBC by year August only 2003-2008



Preliminary data – Subject to review and revision

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Pilot Study Sep. ’08 (Steady Flows)

- Investigating
  - Humpback chub habitat use
  - Humpback chub population in LCR reach
  - Capture and tagging methods

P.D. Alley

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NSE/SF Studies

1. Continue with the current science program
   - Existing projects help inform future projects
   - 2000 LSSF synthesis underway
   - Existing projects contribute to understanding 2008 Steady Flows
     - Aquatic food base
     - Riparian vegetation monitoring
     - Rainbow trout monitoring
     - Near shore temperature modeling
2. NSE/SF Solicitation
3. NSE Pilot Study

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NSE/SF Studies

4. Develop Fall Steady Flows Science Plan FY 2009

- Cooperator (Jan. ‘09)
- LSSF synthesis draft plans (Feb. ‘09)
- GCMRC draft fall steady flows science plan (1 Apr ‘09)
- SA and TWG review of plan (Apr. – June ‘09)
- Finalize plan (July ‘09)

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