Determining a minimum video review rate to estimate discards in New England groundfish

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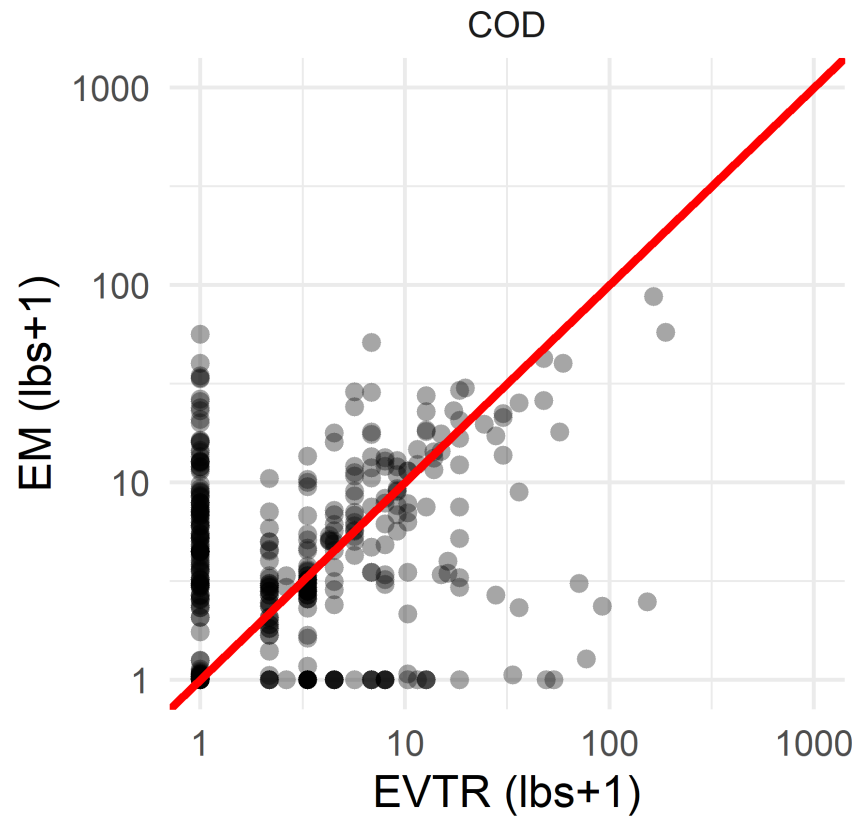
12 Feb 2020

Data from Groundfish EM projects
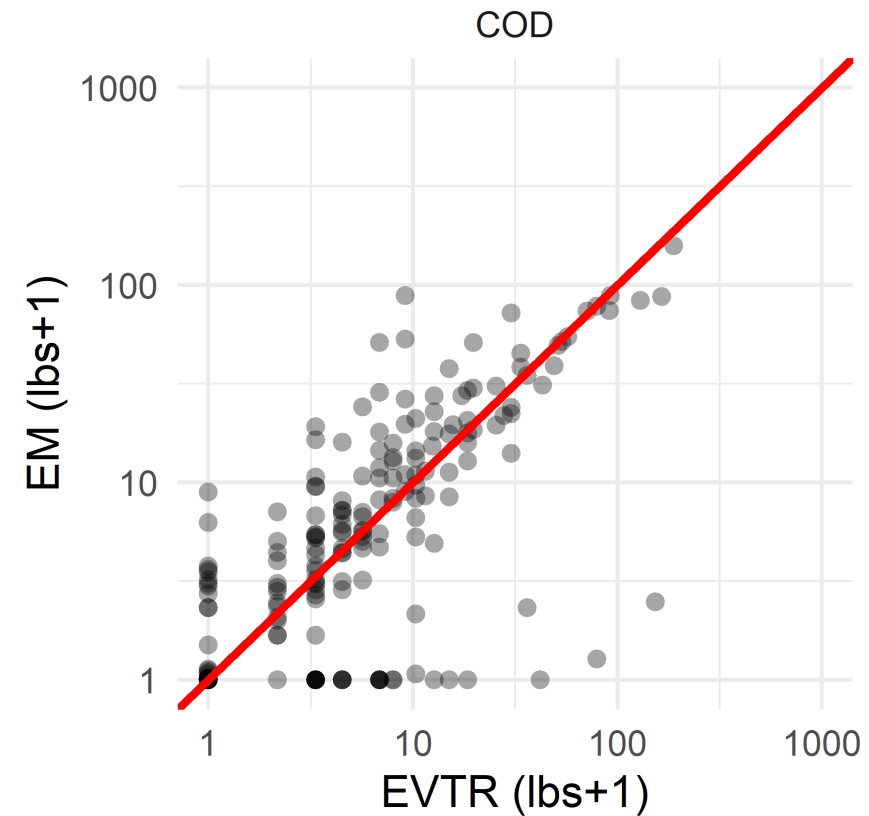
- 25 vessels
- 2016–2019
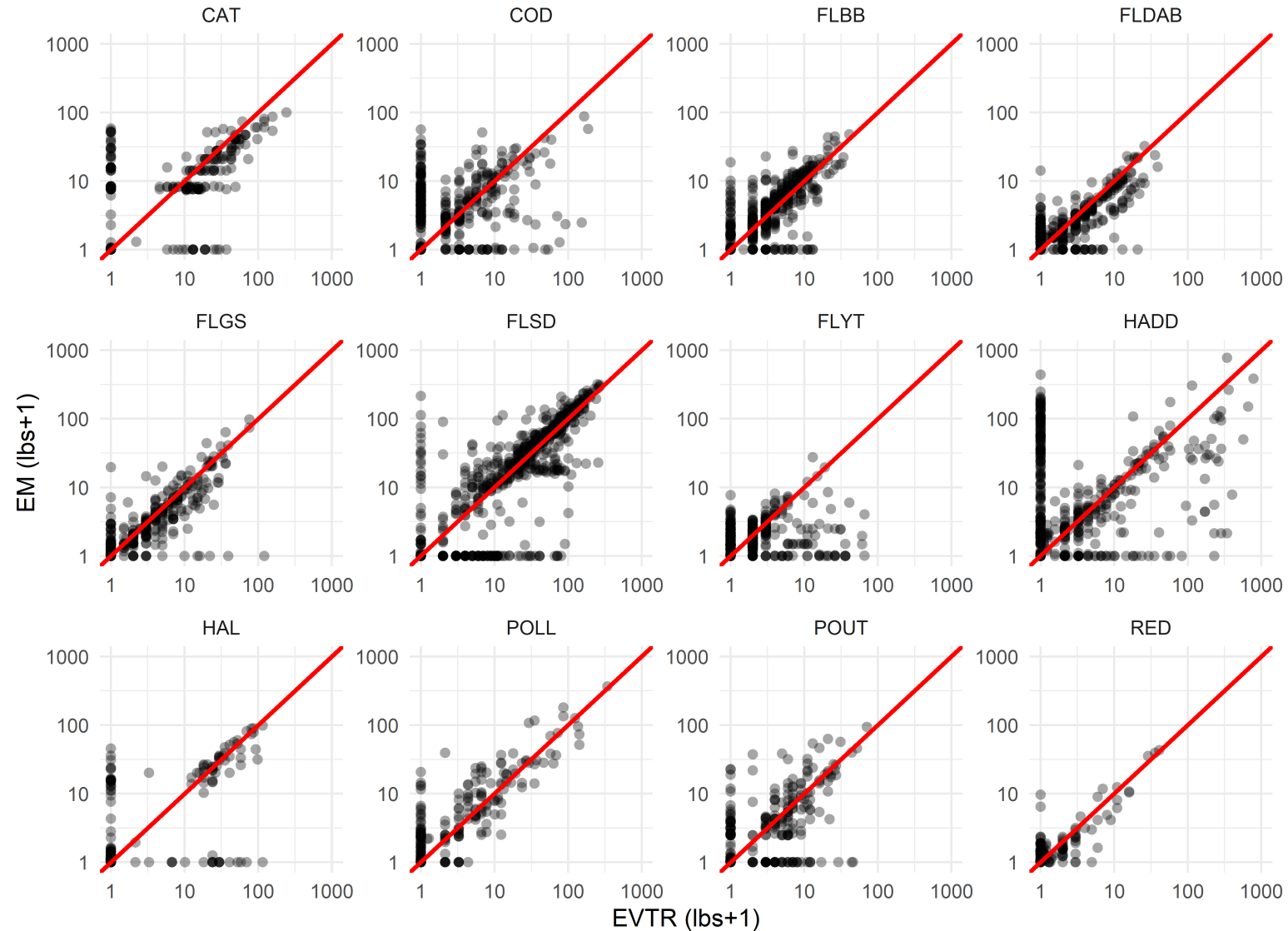- 567 trips
- 2,104 hauls

Discard comparison

Hauls — COD, EM (lbs+1) vs EVTR (lbs+1)
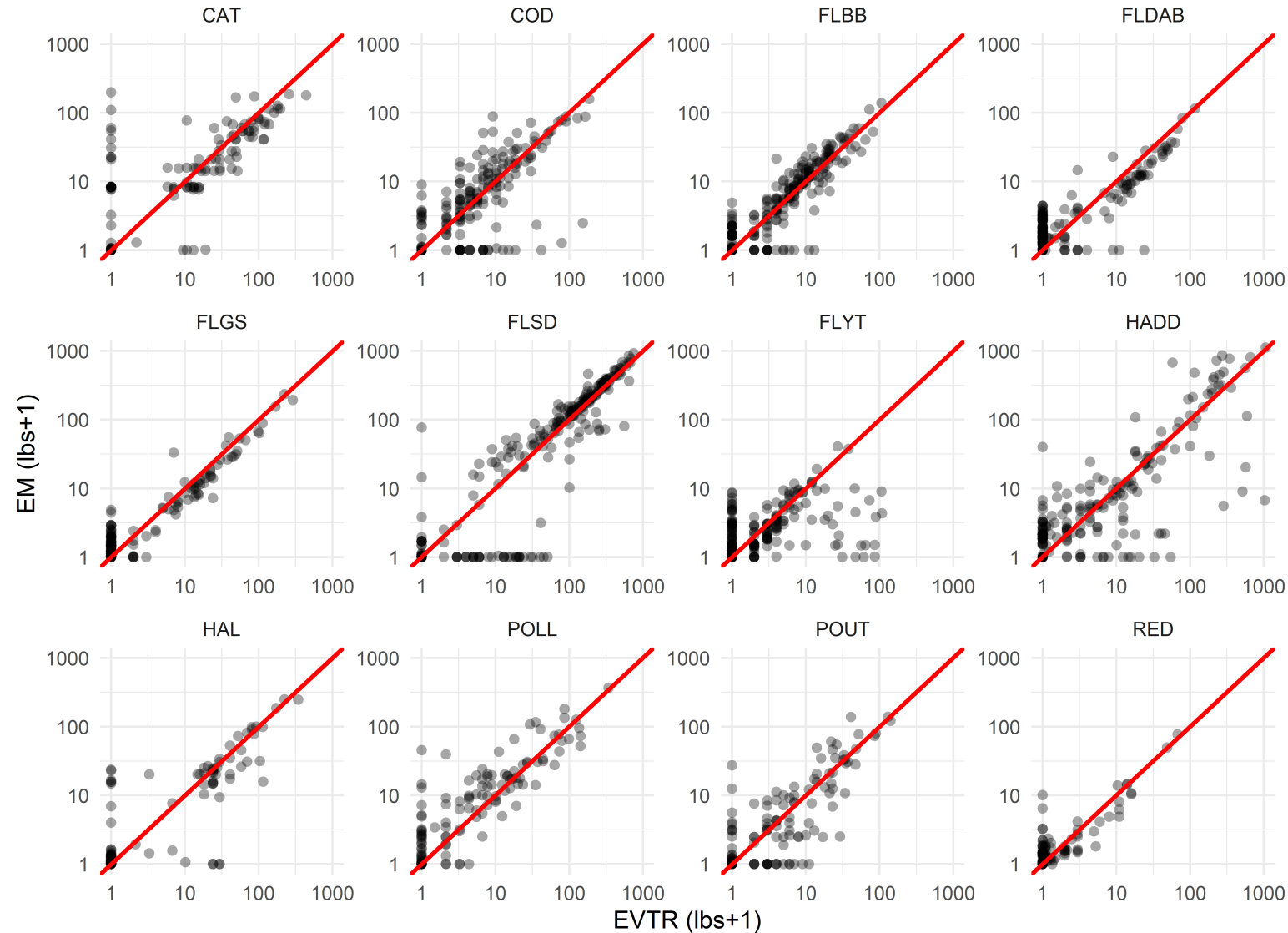
Trips — COD, EM (lbs+1) vs EVTR (lbs+1)

Discard comparison – Haul level

Discard comparison – Trip level

Model-based approach to discard estimation using audit review

- Review *random* X% of fishing effort

- Fit model to predict EM using VTR

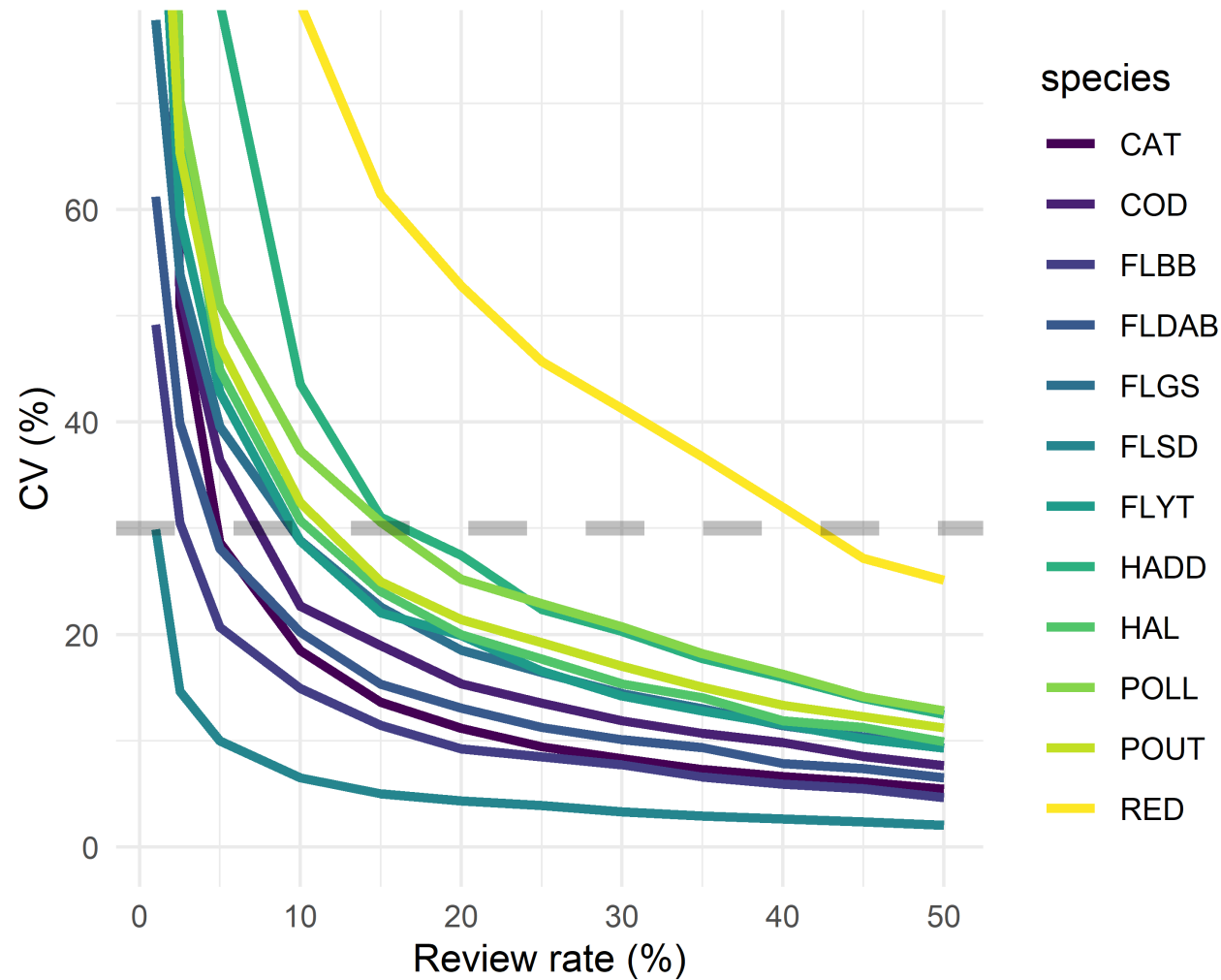- Estimate adjustment to non-reviewed effort

- Similar to design-based SBRM

Model-based approach to discard estimation using audit review
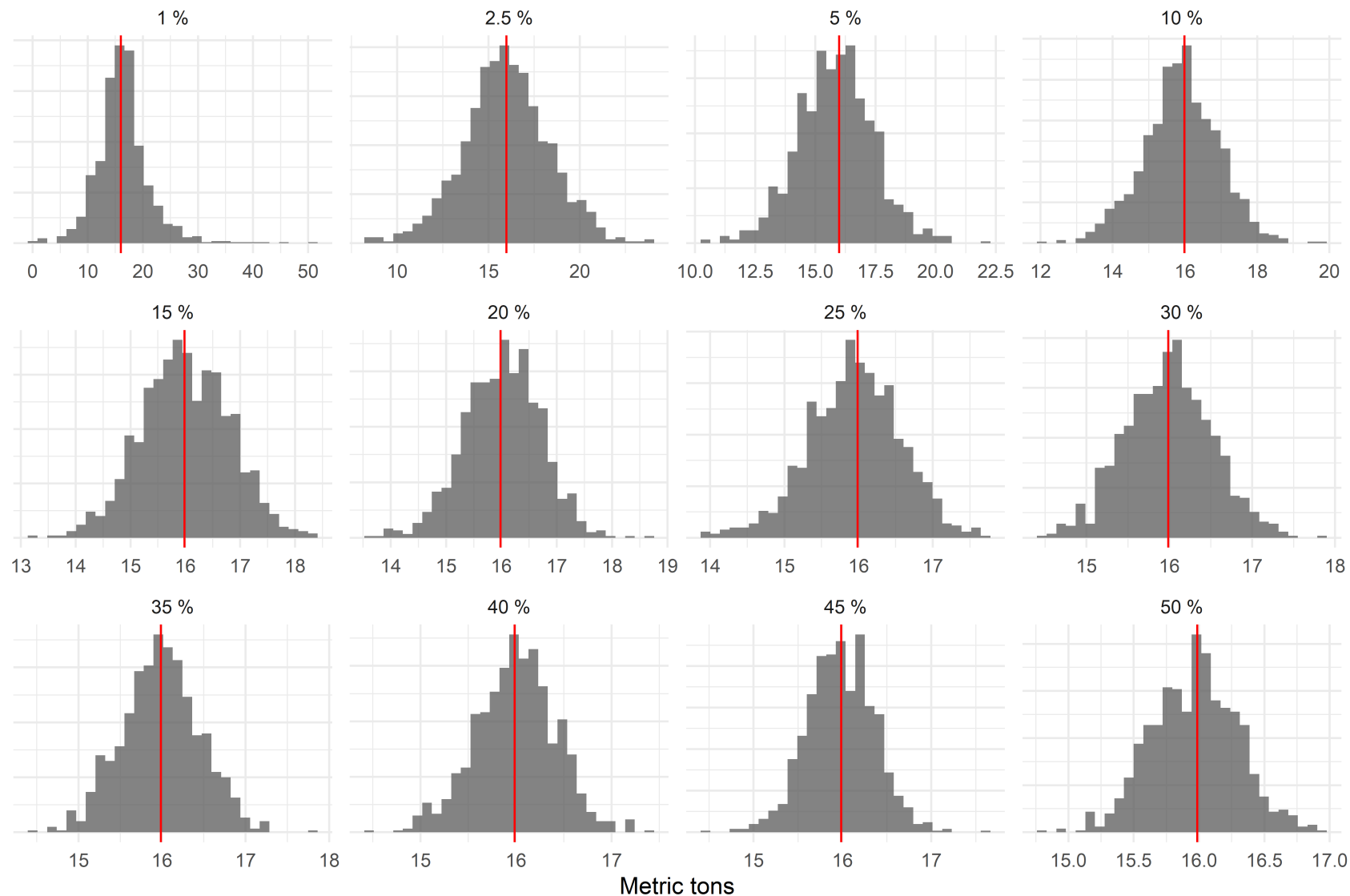
$$d_{\text{EM}} \sim \text{Poisson}(\lambda)$$

$$\log(\lambda) = \beta_{species} + \beta_{\text{VTR}} \log_{10}(d_{\text{VTR}} + 1)$$
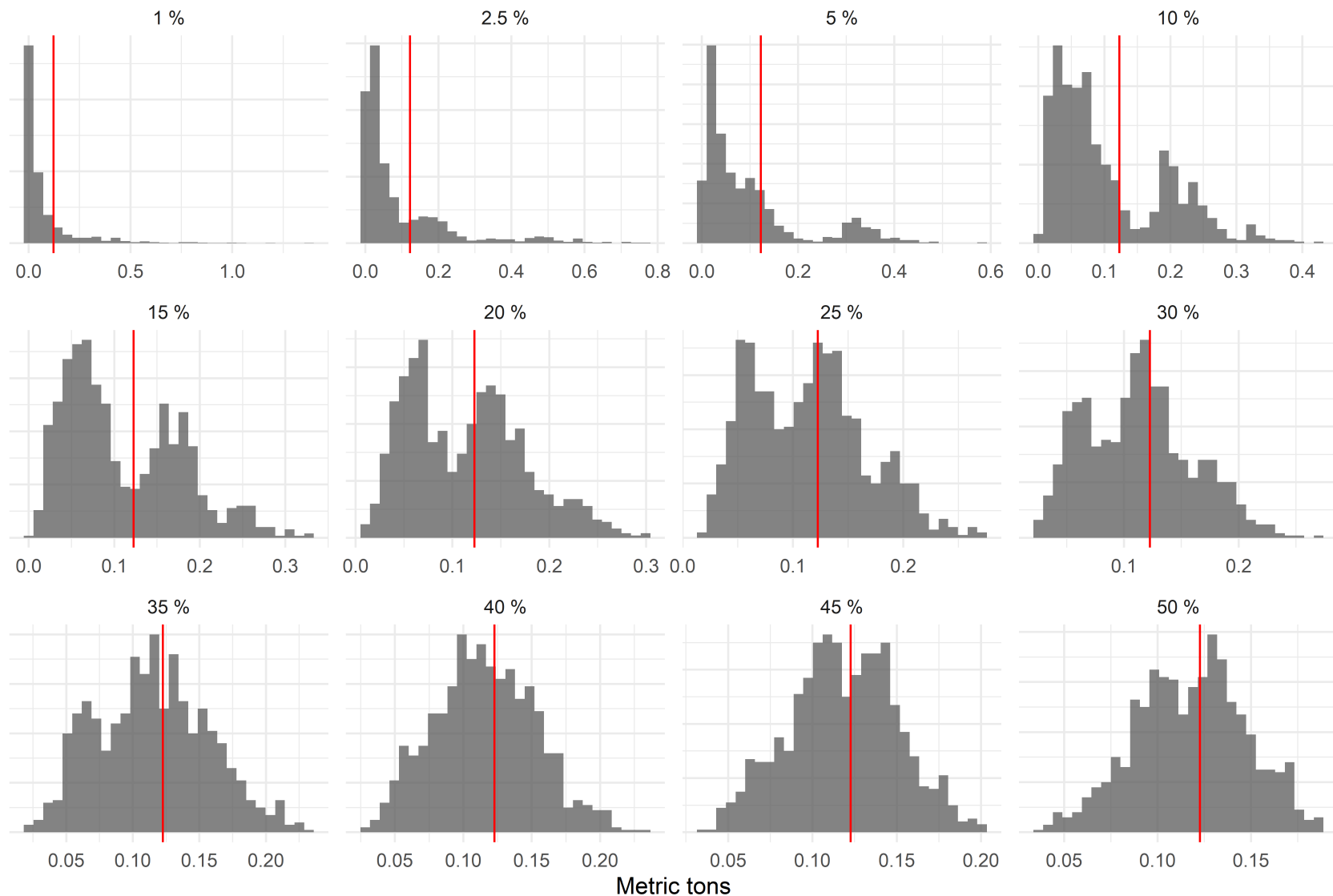
$$\beta_{species} \sim N(\mu, \sigma)$$
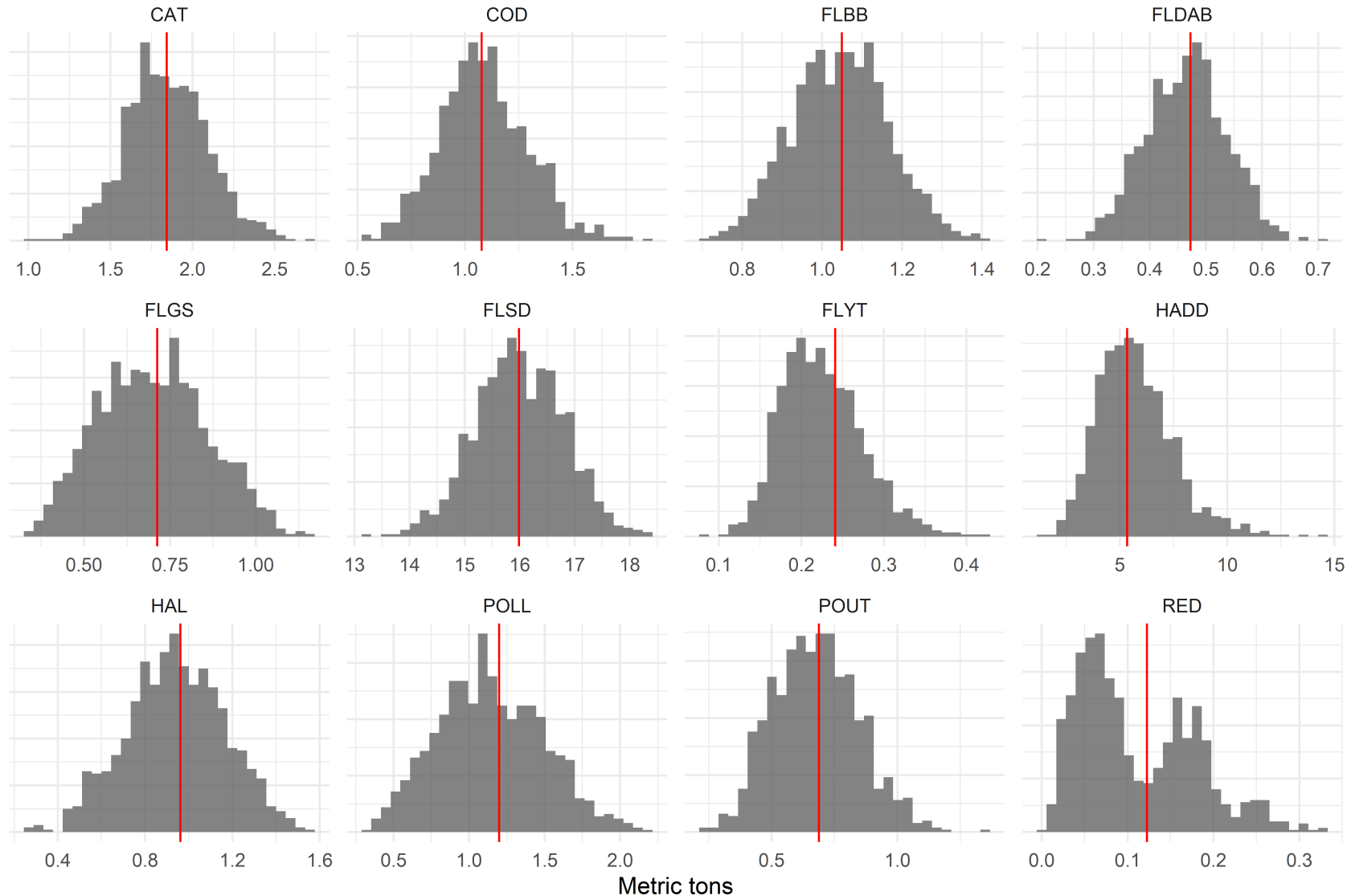
RESULTS: Uncertainty across review rates

Discard estimation: FLSD (sand dabs)

Metric tons

Discard estimation: RED (Acadian redfish)

Metric tons

Discard estimation under 15% review

Metric tons

Considerations for the audit approach

- Additional variables to model
  - Gear
  - Permit

- Vessel performance across fleet
  - High in EFP projects

- Haul monitoring is best

- Estimation vs. reporting

Questions?

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