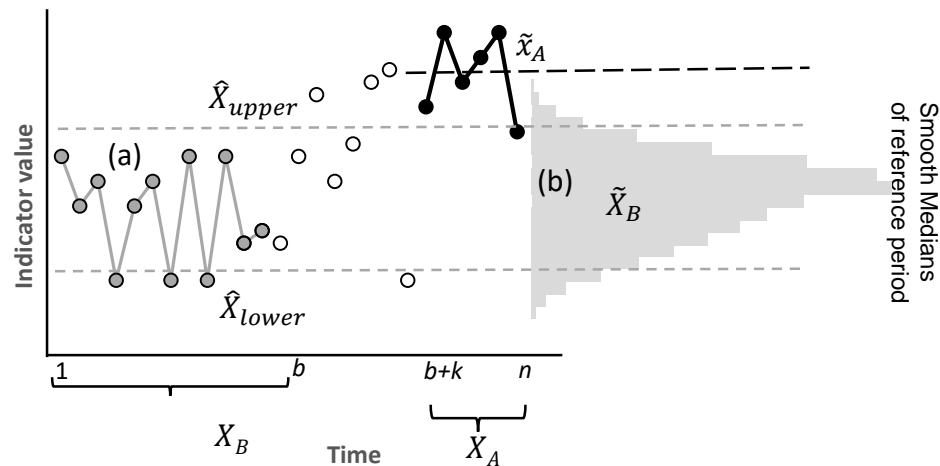


Ecological Assessment from Time Series (EATS) – a framework for assessing ecological status of biological resources

Örjan Östman, Lena Bergström, Kjell Leonardsson, Anna Gårdmark, Michele Casini, Ylva Sjöblom, Fredrik Haas, Jens Olsson

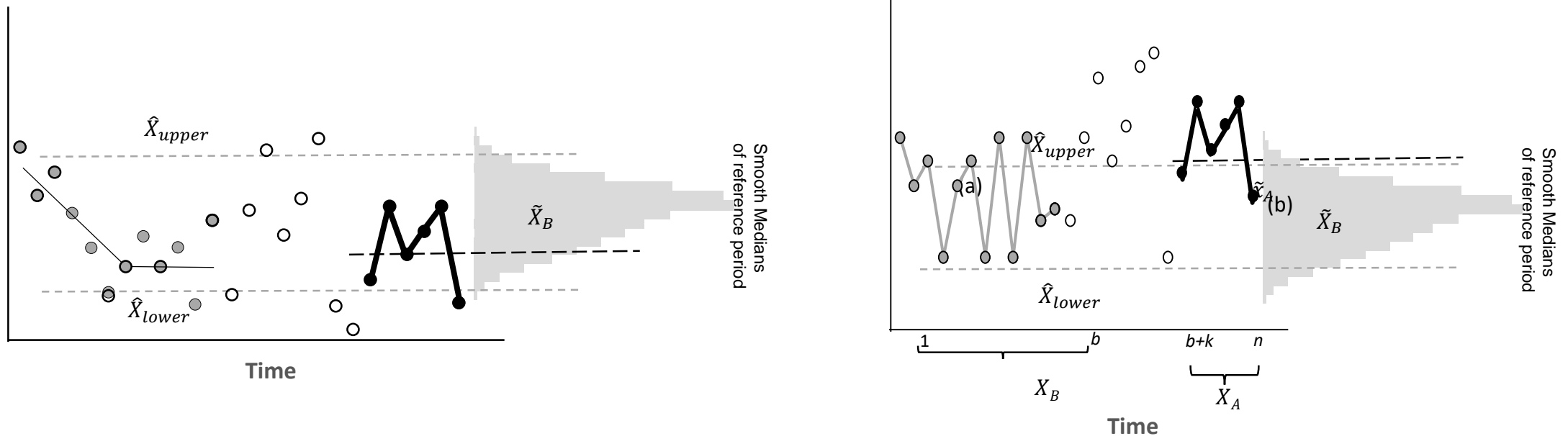
Indicator Assessment

- Helcom Fish uses a time series approach – compare median value from an assessment period with resampled median distributions from a reference period



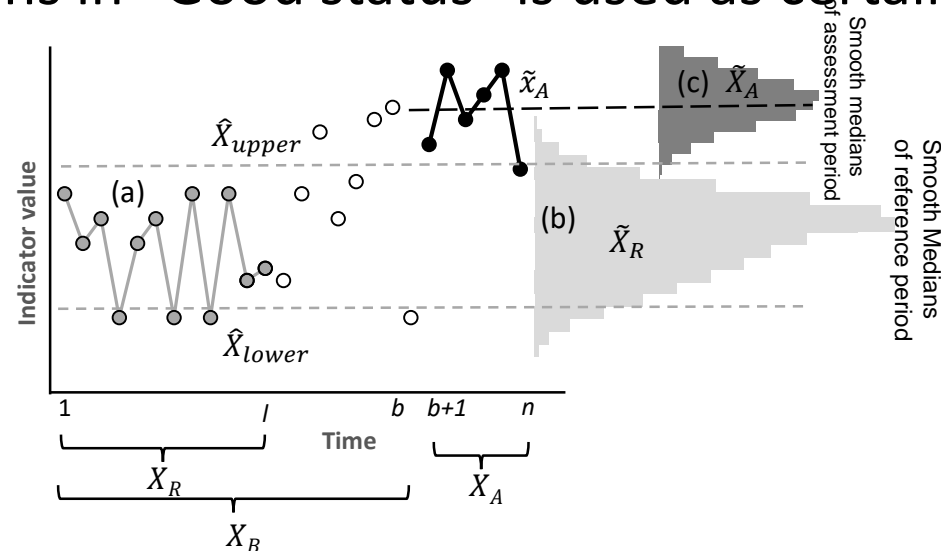
Indicator Assessment

- Trends or structural changes during the Baseline period?
- Certainty of assessments?

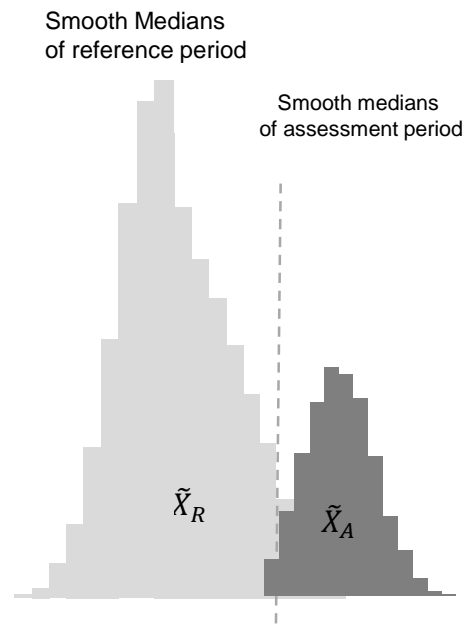


Indicator Assessment

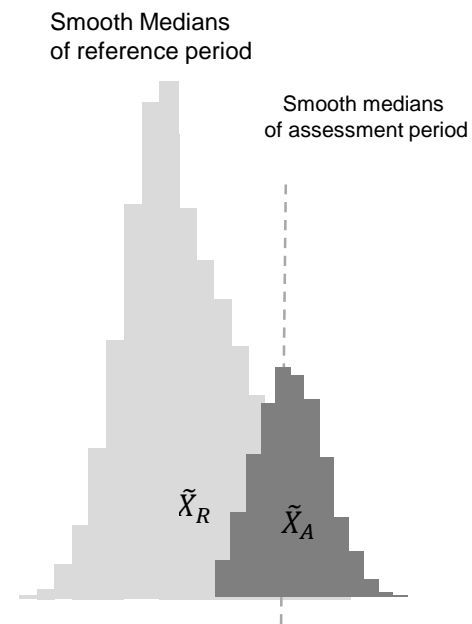
- Trends or structural changes during the Baseline period?
 - Test for structural changes! Use a reference period with no/less structural change, split up trend data. *Data determine breakpoints!*
- Certainty of assessments?
 - Resampled smoothed medians during assessment period. Proportion of resampled medians in “Good status” is used as certainty of assessment.



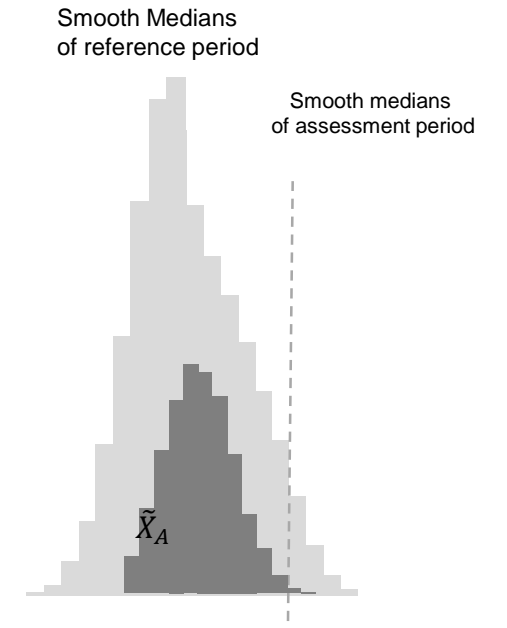
Certainty of assessment, $C(\text{GS})$



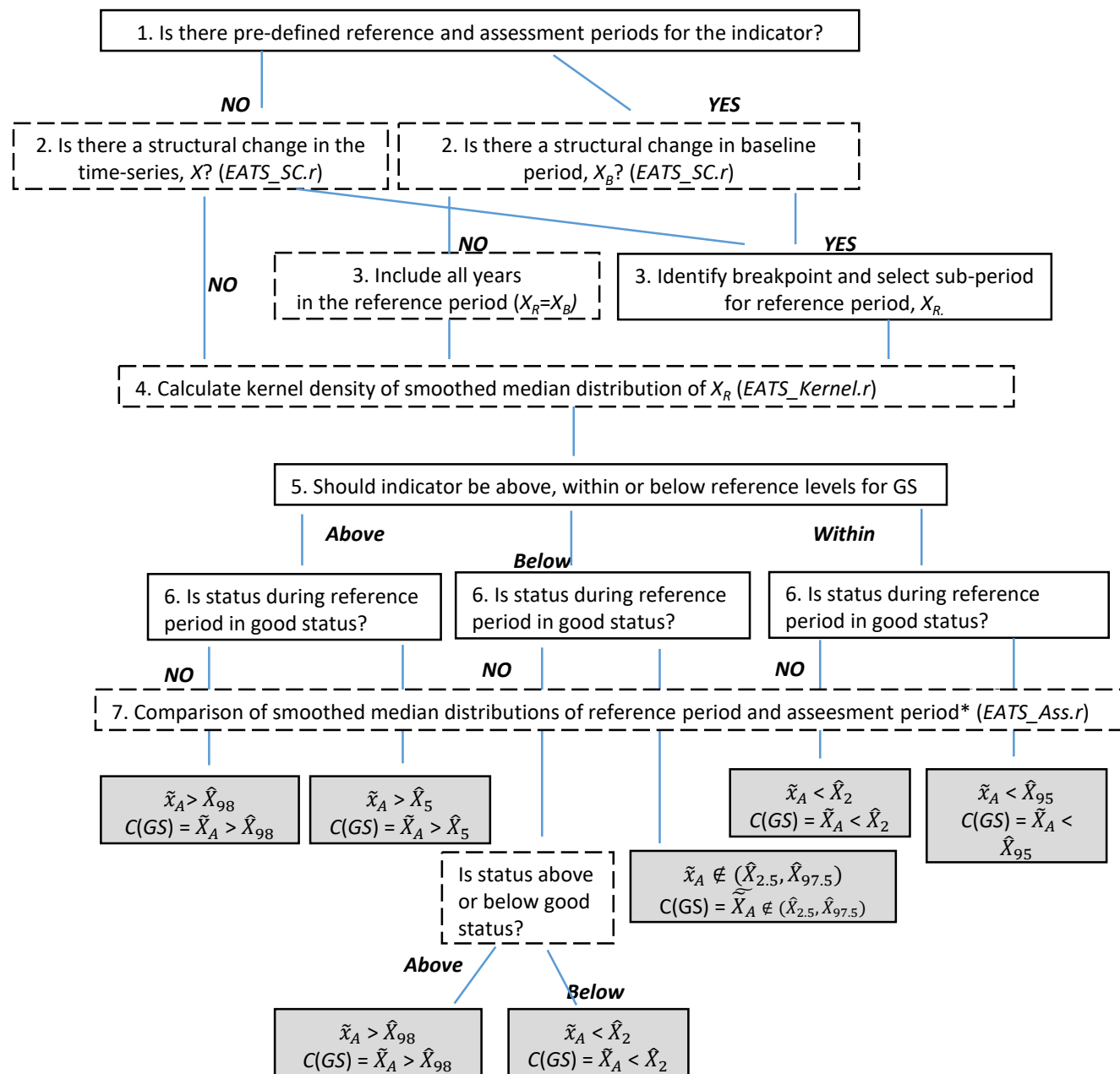
95% of medians in Good status, $C(\text{GS}) = 0.95$



50% of medians in Good status, $C(\text{GS}) = 0.5$



5% of medians in Good status, $C(\text{GS}) = 0.05$



*) If there is no pre-defined assesment period and no structural change in time-series, the whole time series is used for calculating reference points.