

## Appendix A: Data Quality Assessment

Category	Indicator	Explanation
Data Source	Professional Opinion – Single Expert	Opinion from a single expert/source. If peer reviewed, state this and the type of peer review.
	Professional Opinion – Consultation Workshop	Opinion from a consultation workshop involving multiple experts and stakeholders. If peer reviewed, state this and the type of peer review.
	Semi-Quantitative	Some quantitative data was used to inform the creation of the function, but the function is based partially on expert opinion or qualitative data. Cite/explain any anchor points and note whether peer-review was conducted.
	Mechanistic Theory Based	The function is based on a strong, well-developed mechanistic theory. If relevant, include citations.
	Empirical Studies	The function is based on empirical, peer-reviewed studies. Include the number of studies/data sources in the Error! Reference source not found. section. The citation(s) for the function should be included.
Data Type	Qualitative/Expert Opinion	The data are qualitative and/or derived from one or multiple expert opinions.
	Theory/Mechanistic Model	The data are based on a well-developed theory or mechanistic model.
	Empirical Data	The data are empirical from either field observations or a controlled experiment. Include the source of the empirical data.
	Combination of above	Some combination of expert opinion, theory/mechanistic models and empirical data.
Data Quality	Low	Opinion-based.
	Moderate	Quantitative or semi-quantitative, with decent

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		empirical data from at least one relevant study.
	High	Good quality empirical data, well-replicated by more than one study, with confidence intervals. If it is a mechanistic SR function, then it has been well-validated in several relevant or comparable systems.
Confidence in SR Function	Highly uncertain	Poor empirical and/or theoretical basis, with wide or non-existent confidence intervals.
	Moderate uncertainty	Decent empirical data with moderate bounds on uncertainty; or, a decent mechanistic model with well-understood range limits.
	High confidence	Good empirical data or theory with well-fit models and well-defined confidence intervals (even if the confidence intervals are wide).
Confidence Intervals	None	No confidence intervals available.
	Qualitative	Qualitative confidence intervals based on expert judgement.
	Semi-Quantitative	Upper and lower bound constraints defined with confidence. Confidence intervals are based on empirical data, theory, or expert opinion.
	Quantitative 95% CIs	Include the data source and reference for the confidence intervals.

*Alberta Fisheries Sustainability Assessment rankings for the quality, quantity and timeliness of monitoring data used to assess population status.*

<b>FSA Ranks for Monitoring Quality (Is the data precise and accurate?)</b>
<p>1 = Imprecise and inaccurate</p> <p>2 = Precise but inaccurate data</p> <p>3 = Accurate but imprecise</p> <p>4 = Likely OK</p> <p>5 = Precise and accurate</p>

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<b>FSA Ranks for Monitoring Quantity (Is sufficient data available to evaluate this metric?)</b>
1 = No data 2 = Insufficient data 3 = Moderately sufficient data 4 = Nearly sufficient data 5 = Sufficient data
<b>FSA Ranks for Monitoring Timeliness (How likely is it the population being assessed is functionally different from when the last field data were collected?)</b>
n/a = The focal fish species has never been surveyed 1 = Extremely different 2 = Very different 3 = Moderately different 4 = Slightly different 5 = Not different