

Table 4: Data quality problems and solutions regarding the quality control.

Quality control	Problems	Solutions
	No reference data	Use reference data from different spatial scales Provide reference data
	No robust data evaluation strategies	Include data evaluation in data collection (e.g. species identification counts only when pictures are added) Use automatic internal quality check and cross-validation for data evaluation (e.g. correlated water quality parameters) Use replicates (repeated observations, repeated samples)
	Errors in data processing	Prefer raw data to processed data
	Errors due to simplification or not standardized sampling	Include standardized samples (e.g. standard rows for water quality) Compare and evaluate standard methods with simplified methods Compare deviations in sample storage with standard procedure
	Wrong identifications of species, low quality of provided pictures	Use automatic filters of “expected” data and continuously adjust them Give immediate feed-back and require double-check and proof Review by experts Use expertise of internet community (e.g. forum)