

Coverage  
Island  $C_i$

Trusted Reference  
Sequence  $R_i$

Alignments  $A_i, A_j, \dots$

Assembled Scaffolds  $S_i, S_j, \dots$

$$\text{Coverage} = \frac{\sum C_i}{\sum R_i}$$

“What fraction of the reference was assembled (in some form)?”

$$\text{Validity} = \frac{\sum A_i}{\sum S_i}$$

“What fraction of the assembly can be validated by the reference?”

$$\text{Multiplicity} = \frac{\sum A_i}{\sum C_i}$$

“Were repeats replicated or collapsed during assembly?”

$$\text{Parsimony} = \frac{\sum S_i}{\sum C_i} = \frac{\text{multiplicity}}{\text{validity}}$$

“What's the cost of the assembly (assembled bp vs. validated bp)?”