

	Stock Synthesis	CASAL	MULTIFAN	GADGET	SAM	Casal2
Issue is fairly well understand and best practices are understood						
Scalable from data-rich to data-poor	Yes	Yes	Yes	Yes	No	Yes
Age-length dynamics	No <sup>1</sup>	No <sup>1</sup>	No	Yes	No	No <sup>1</sup>
Estimate data weights (index, composition and tagging)	Yes <sup>2</sup>	Yes <sup>2</sup>	Yes <sup>3</sup>	Yes <sup>4</sup>	Yes	Yes <sup>5</sup>
State-space formulation	No <sup>6</sup>	No <sup>6</sup>	No	No	Yes	No <sup>6</sup>
Generate expected values of data	Yes	Yes	Yes	Yes <sup>7</sup>	Yes	Yes
Reference point calculation	Yes <sup>8</sup>	Yes <sup>8</sup>	Yes <sup>8</sup>	Yes <sup>7</sup>	Yes <sup>9</sup>	No
Projections	Yes <sup>8</sup>	Yes <sup>8</sup>	Yes <sup>8</sup>	Yes <sup>7</sup>	Yes	Yes
Several alternative models exist but the field has yet to identify best practices						
Spatial structure	Yes	Yes	Yes	Yes	No	Yes
New issue to most assessment analysts; methods under development						
Multiple stocks	No	Yes	Implicitly	Yes	No <sup>10</sup>	Yes
Close-kin genetics	No	No	No	No	No	No
Multispecies relationships	No	No	No	Yes	No	Yes