

## Major modifications needed to turn existing general models into the NextGen SAM.

Model	Changes	Practicality and potential
SS	Recode in TMB to include random effects	Complete rewrite required
Casal2	Implement Laplace approximation using the AD for higher level derivatives	Unclear, worth investigating
SAM	Increased functionality (e.g., length comp data, space)	Unclear, potential depends on application architecture
WHAM	Increased functionality	Unclear, potential depends on application architecture
Gadget	Recode in TMB	Complete rewrite required