

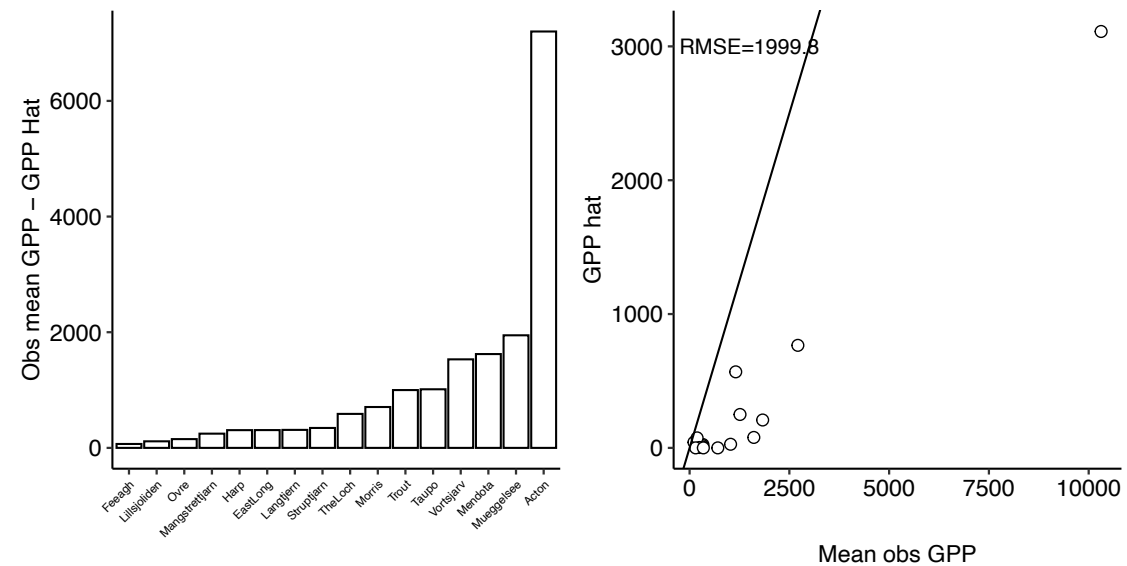
The first three slides show differences in predicted GPP compared to observed mean or median GPP for each lake:

Slide 2 = default parameters vs. unconstrained grid search (“free range”)

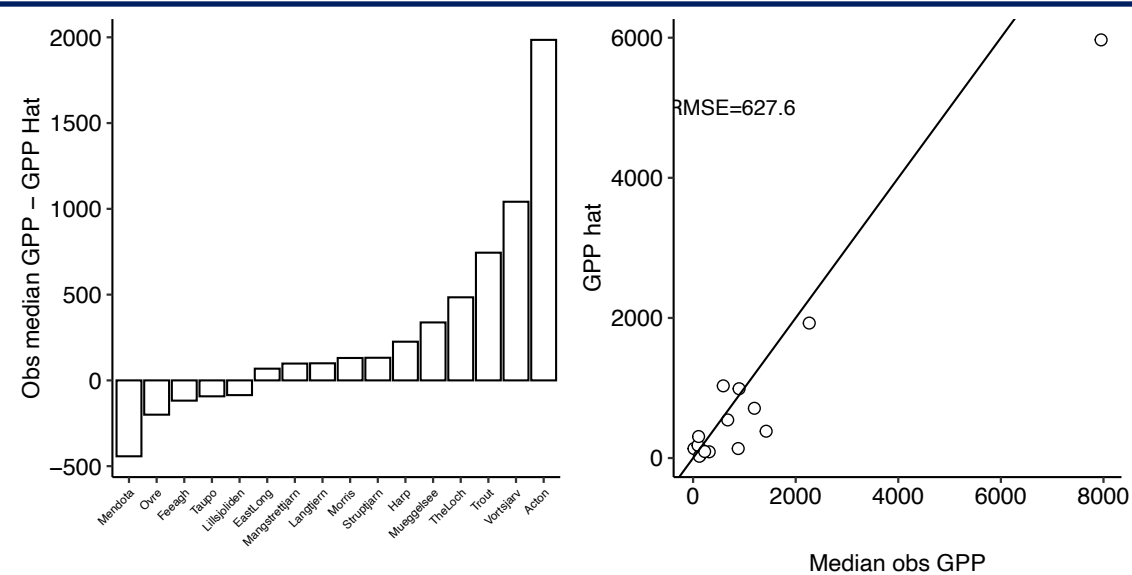
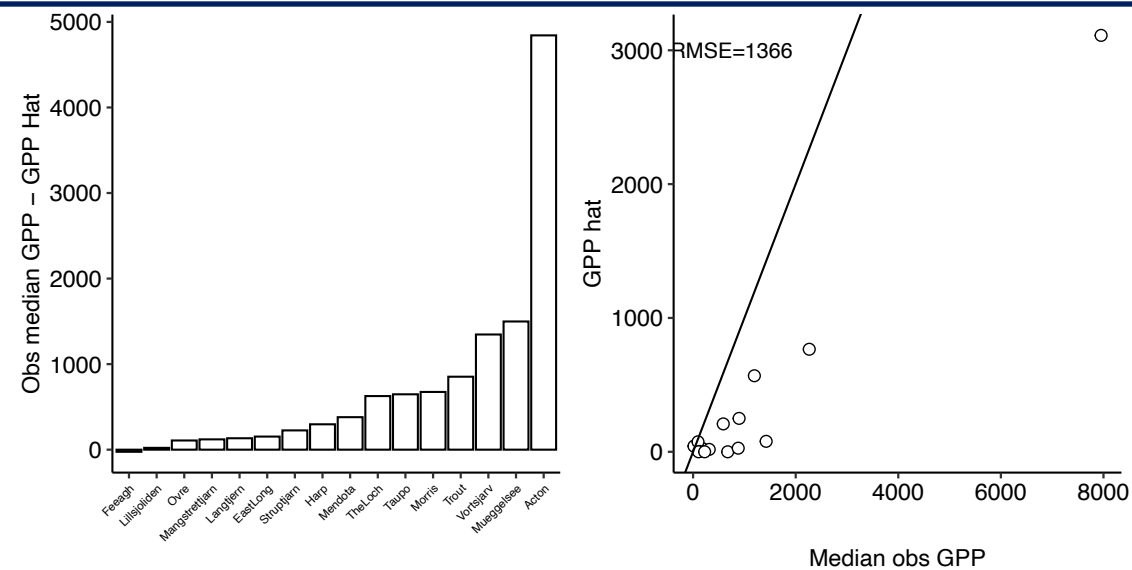
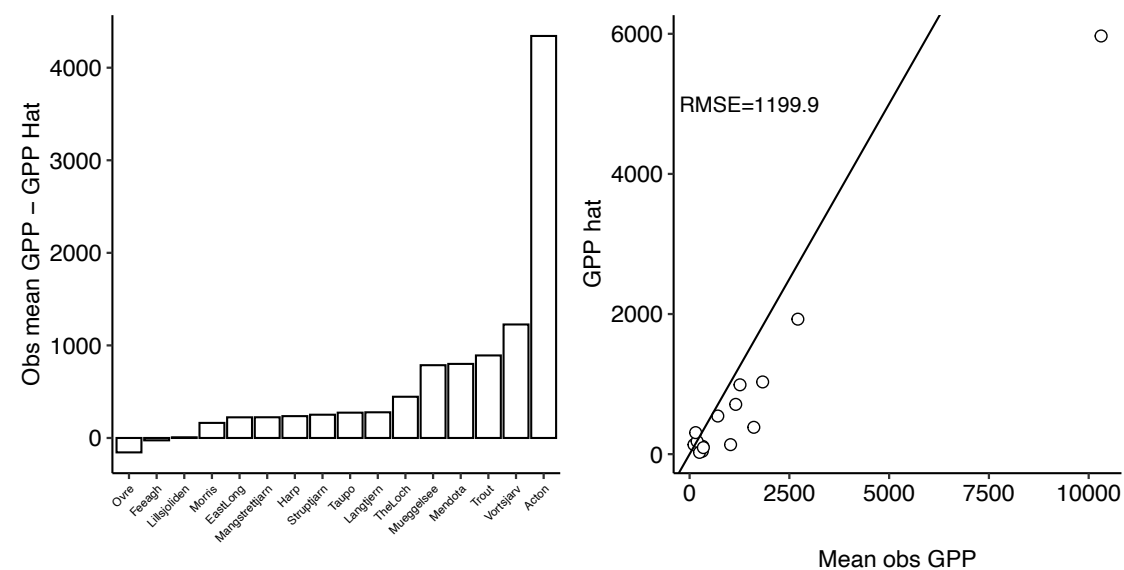
Slide 3 = default parameters vs. constrained grid search ($\pm 20\%$)

Slide 4 = free range vs. $\pm 20\%$

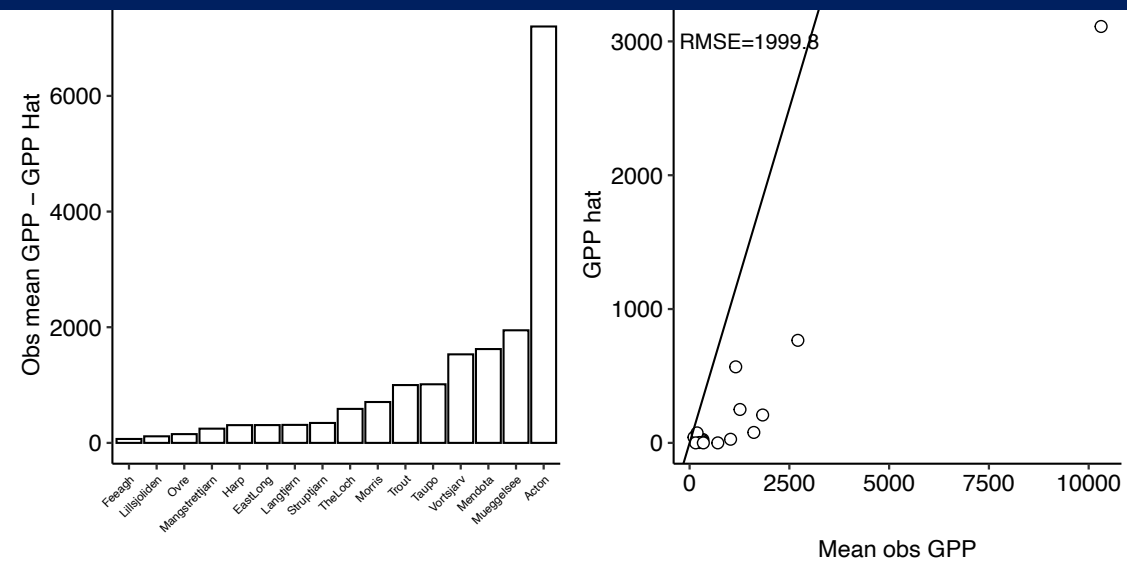
Default (published) Kelly model parameters



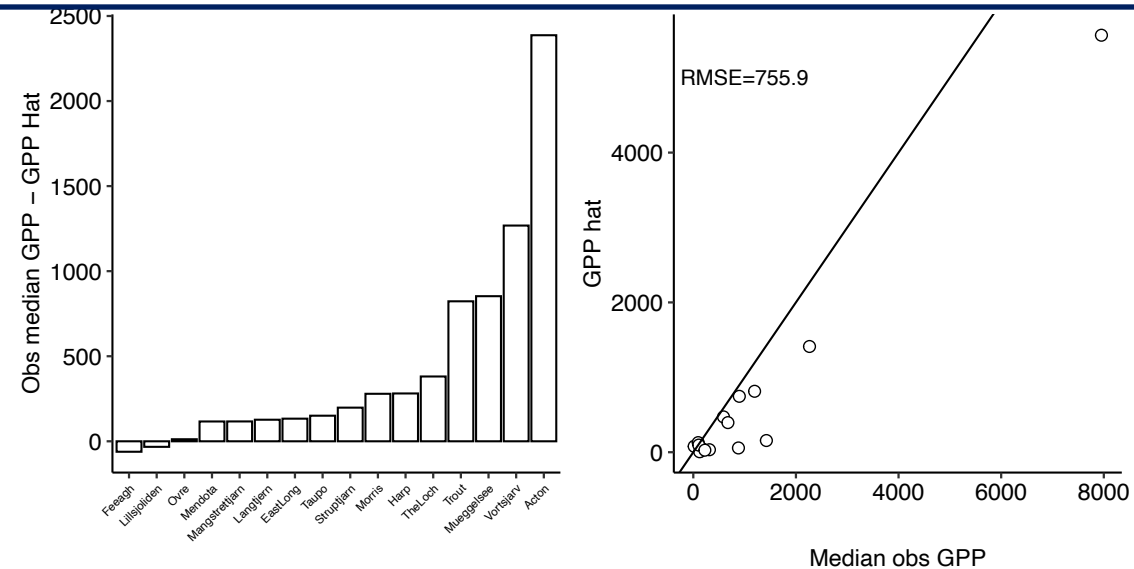
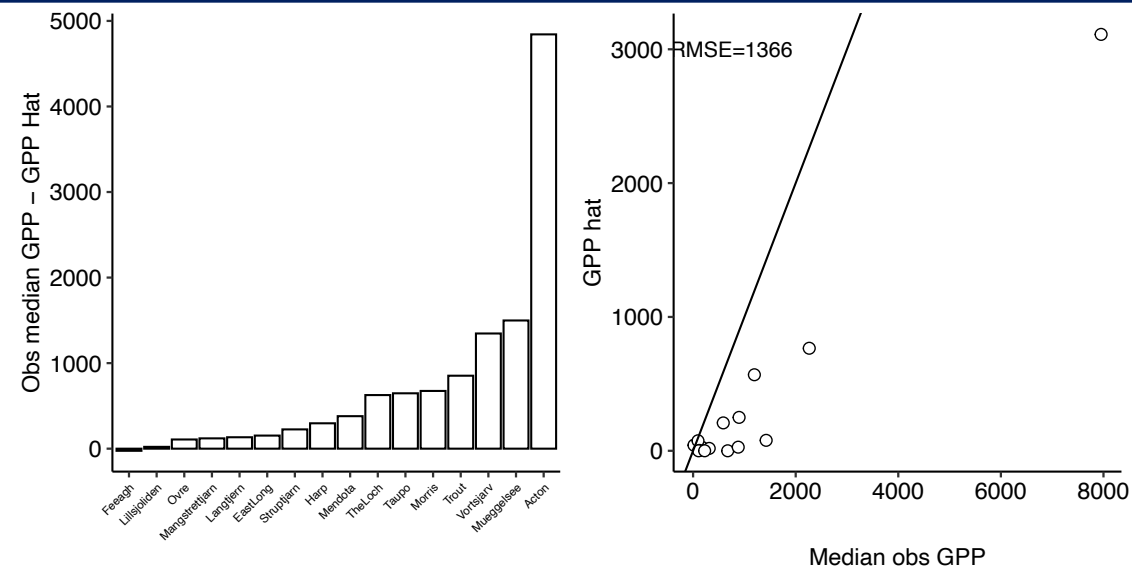
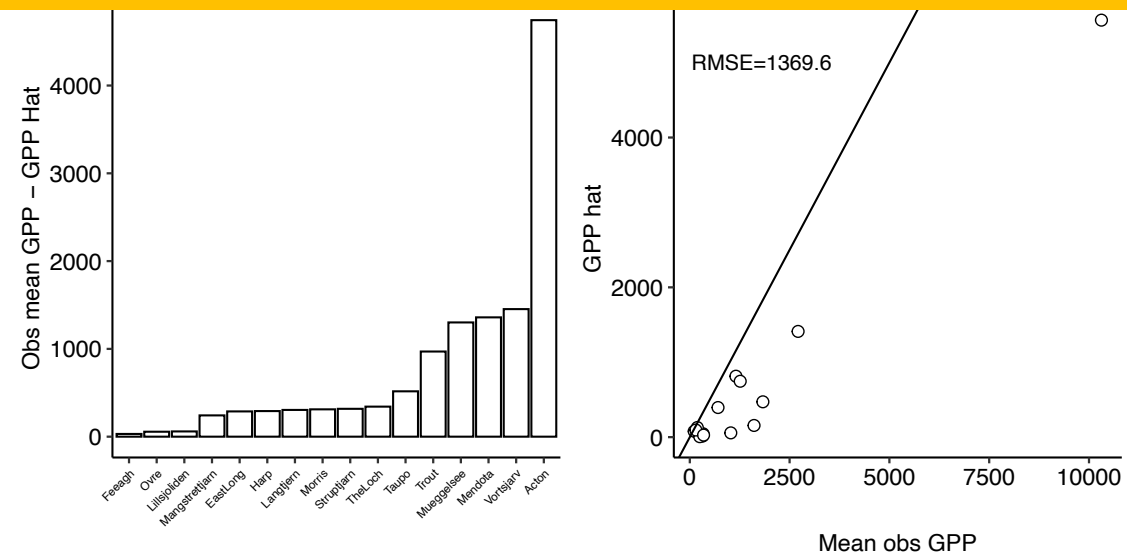
Optimized model parameters ("free range")



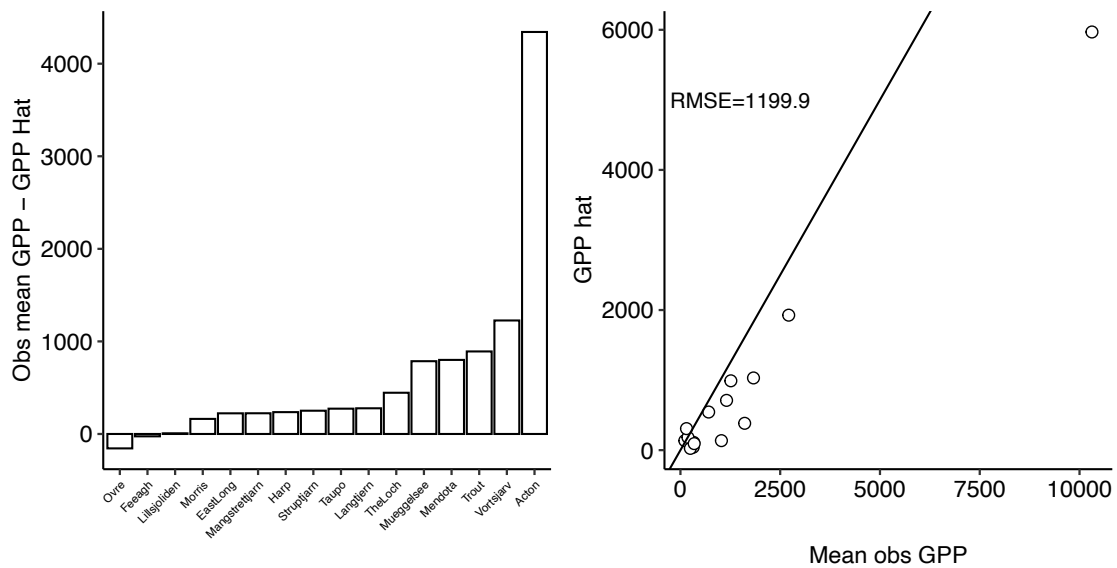
Default (published) Kelly model parameters



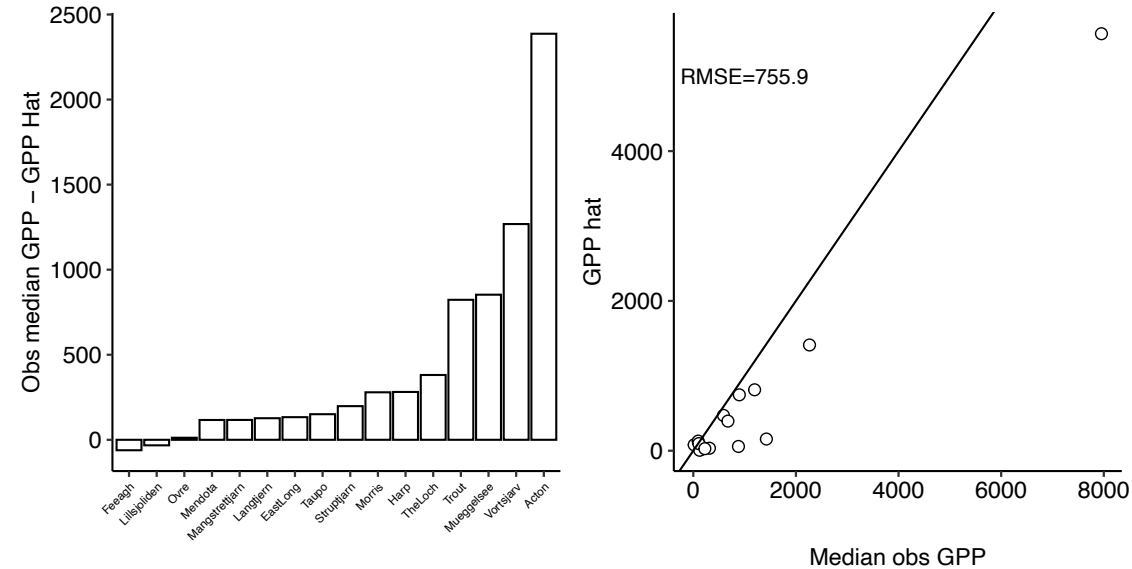
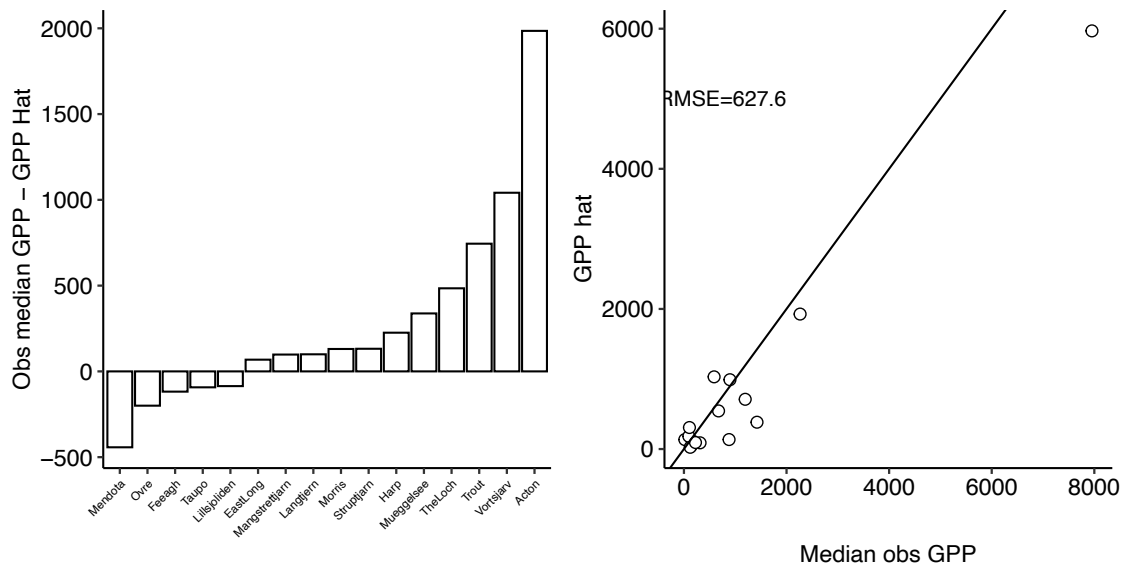
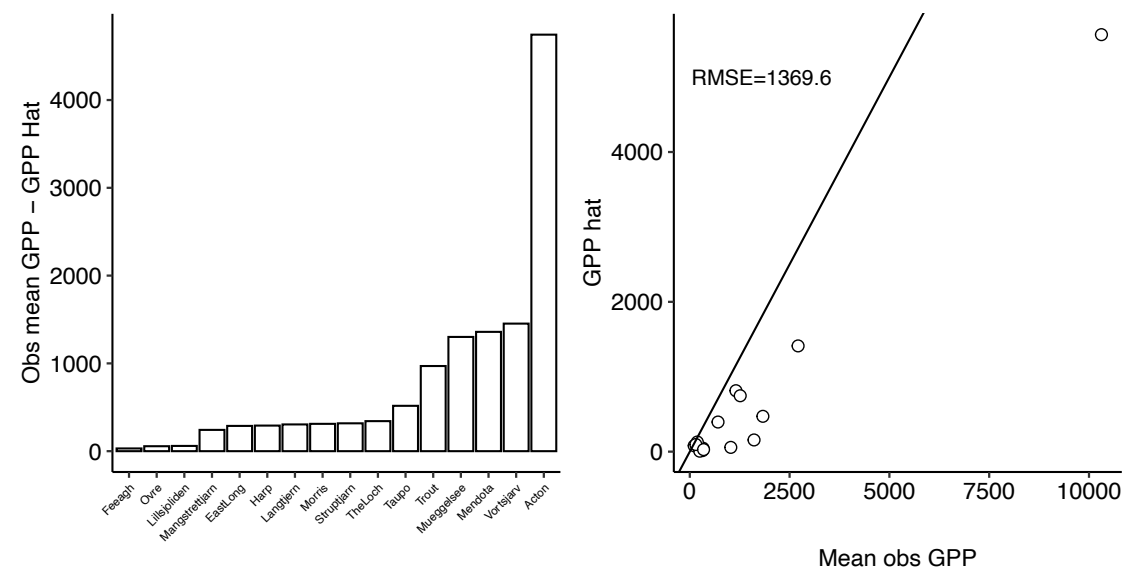
Constrained model parameters ($\pm 20\%$)



Optimized model parameters (“free range”)



Constrained model parameters ($\pm 20\%$)



The next three slides show differences in predicted DOC, TP, zMix compared to observed values for each lake:

Slide 6 = default parameters vs. unconstrained grid search (“free range”)

Slide 7 = default parameters vs. constrained grid search ($\pm 20\%$)

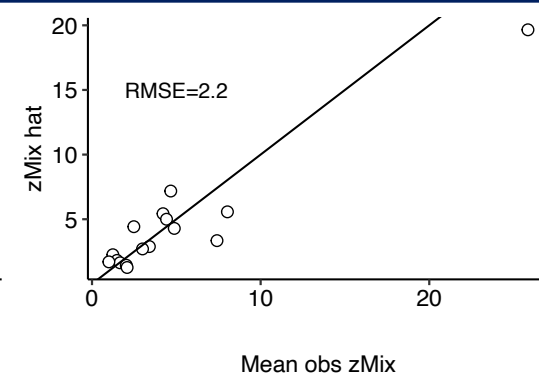
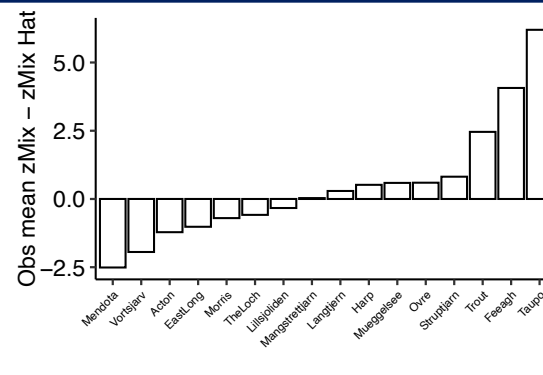
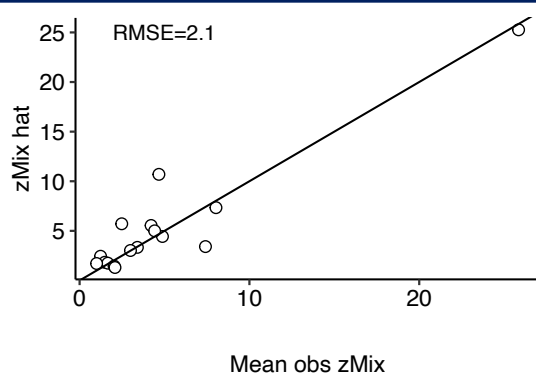
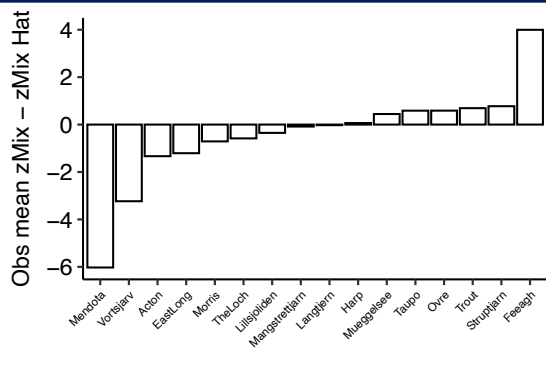
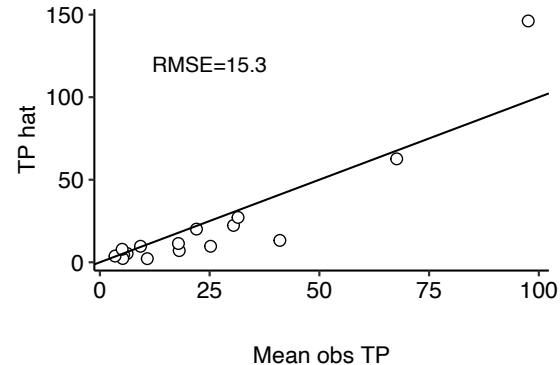
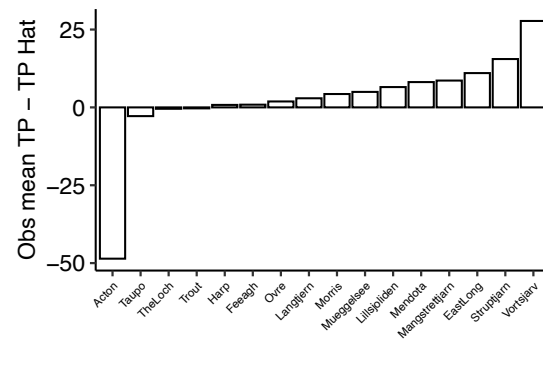
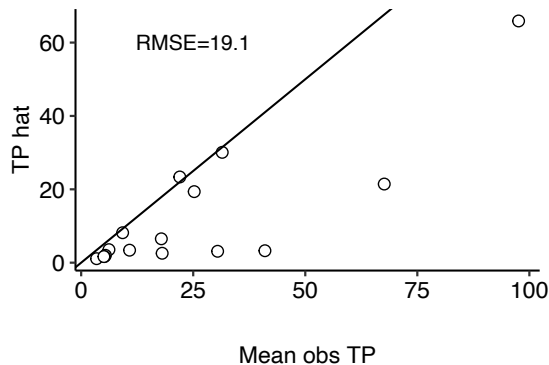
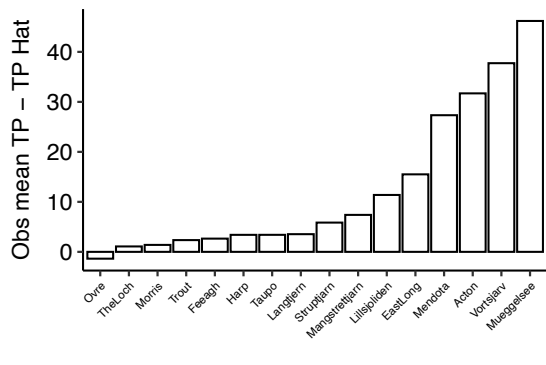
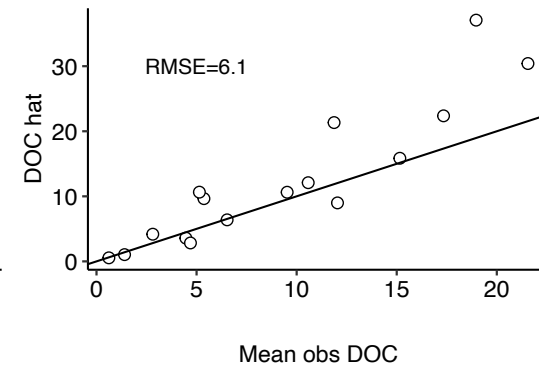
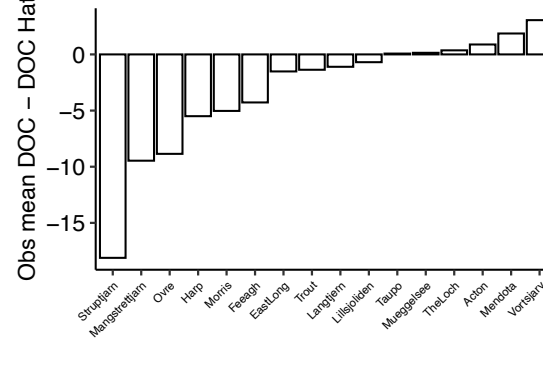
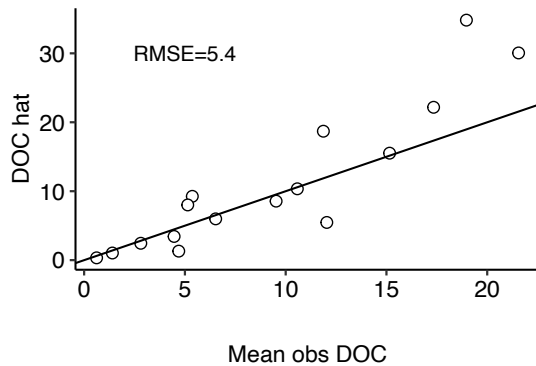
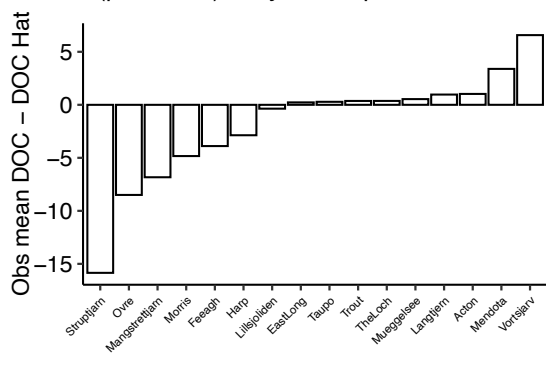
Slide 8 = free range vs. $\pm 20\%$

Default (published) Kelly model parameters

Optimized model parameters ("free range")

Default (published) Kelly model parameters

Optimized Kelly model parameters – "free range"

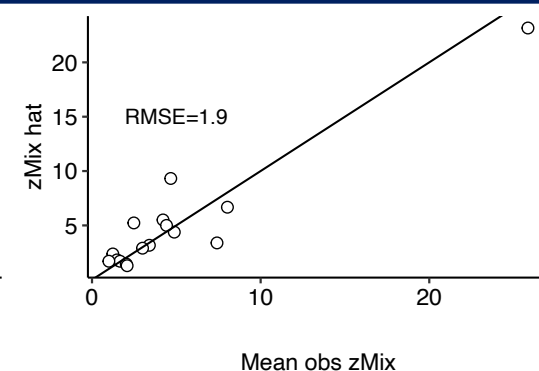
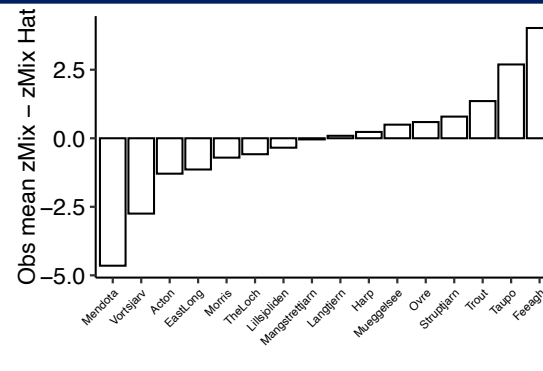
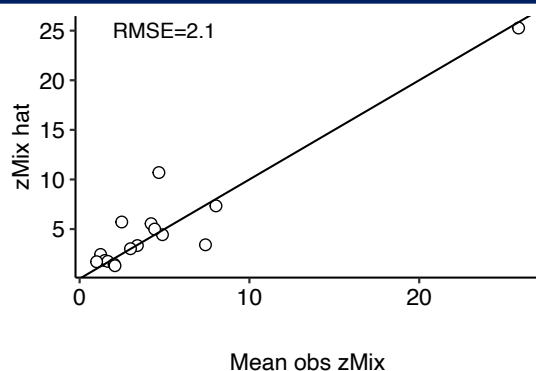
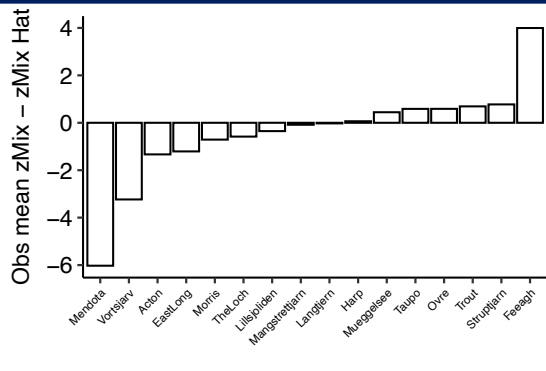
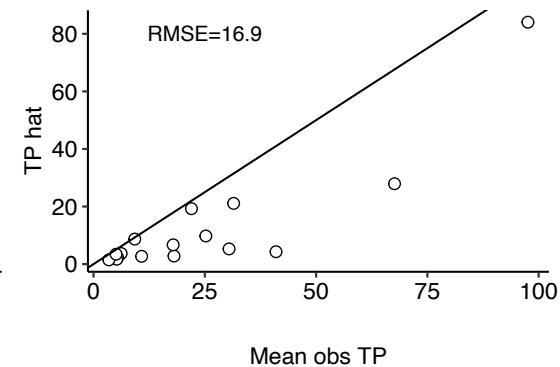
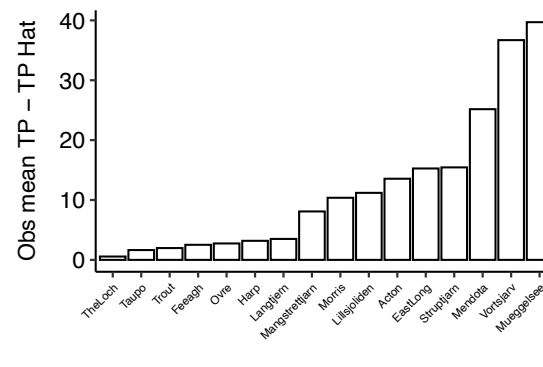
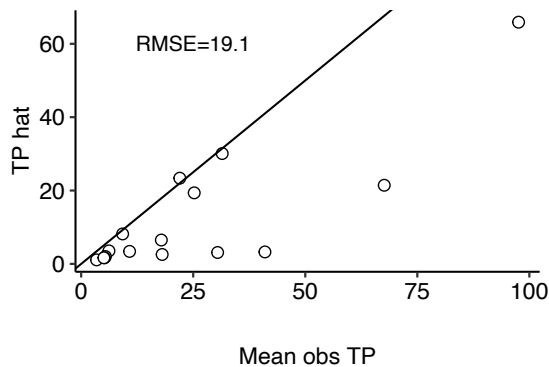
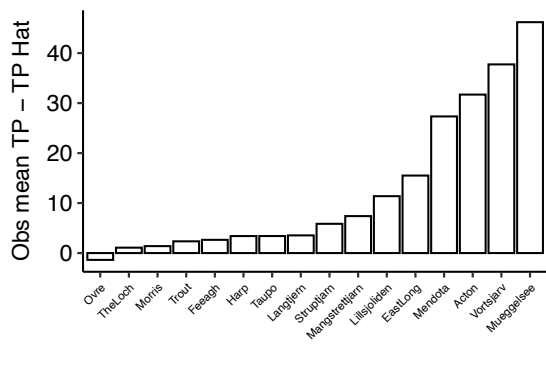
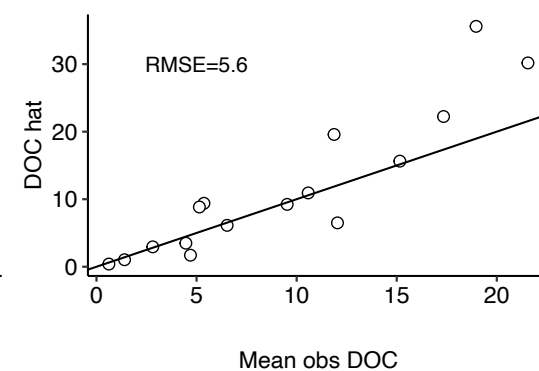
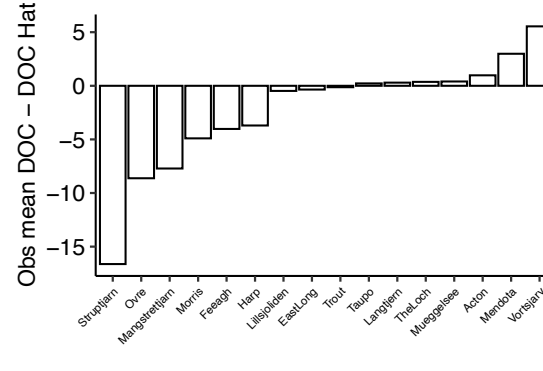
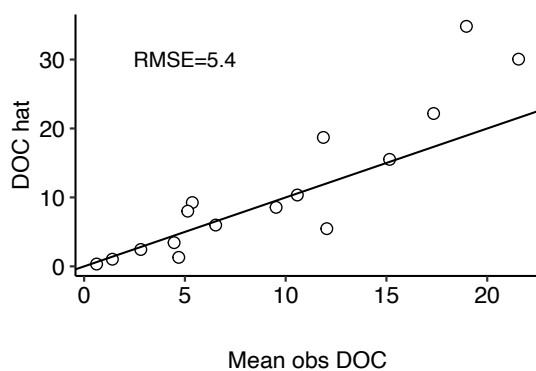
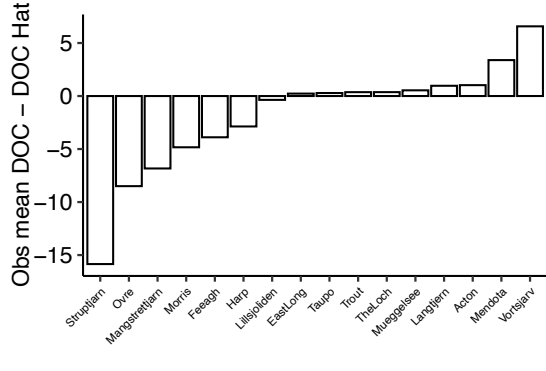


Default (published) Kelly model parameters

Constrained model parameters ($\pm 20\%$)

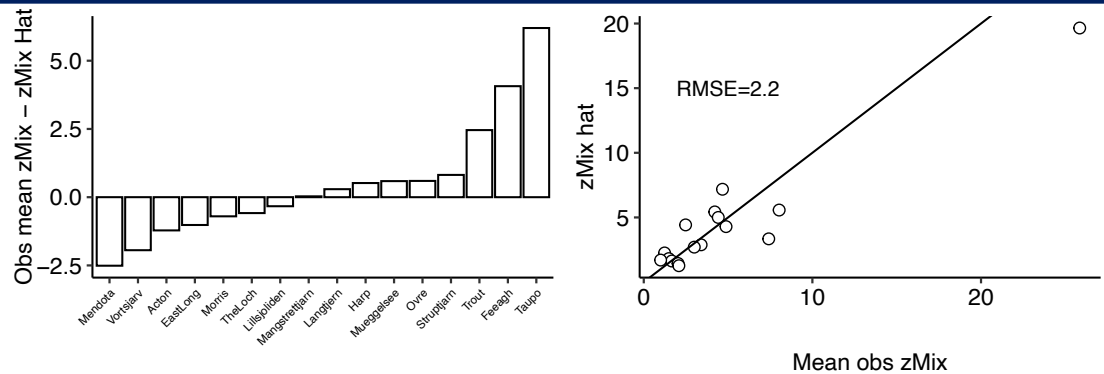
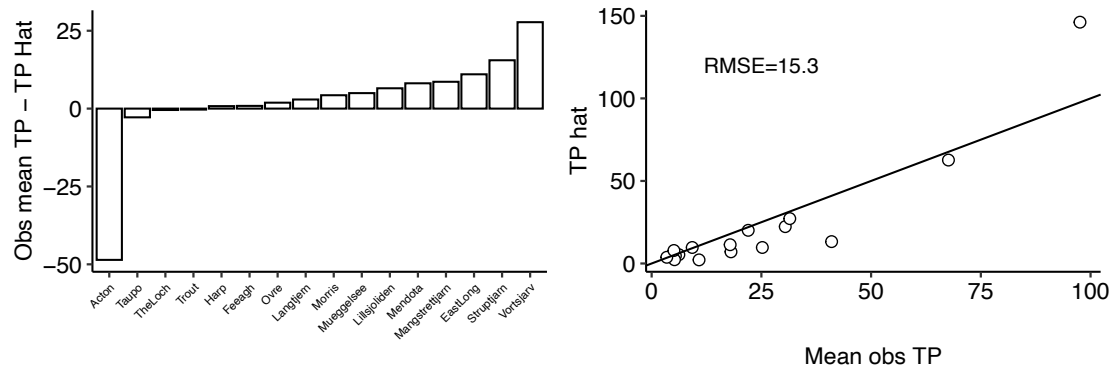
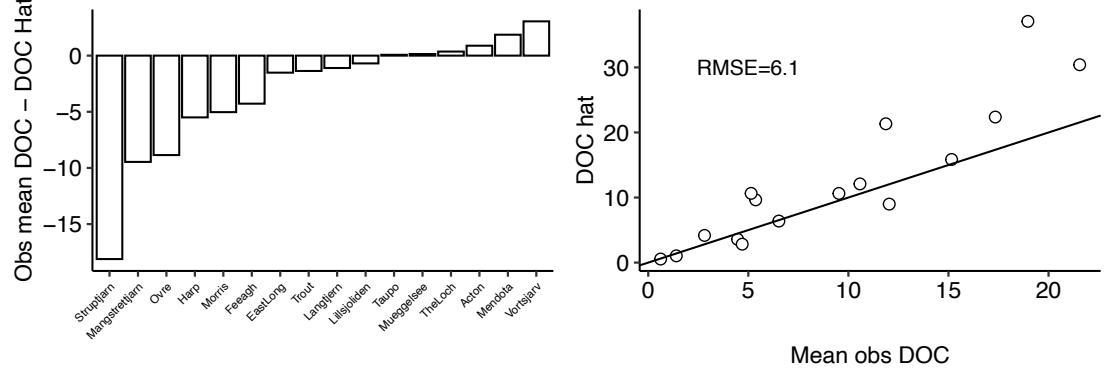
Default (published) Kelly model parameters

Optimized Kelly model parameters – constrained $\pm 20\%$



Optimized model parameters ("free range")

Optimized Kelly model parameters – "free range"



Constrained model parameters ($\pm 20\%$)

Optimized Kelly model parameters – constrained $\pm 20\%$

