Key improvements

1. Multicore/Multiprocessor processing
2. Fuzzy c-memberships used to evaluate model output instead of KHAT.
3. Develop conditional fuzzy c-means.
4. Nearest neighbor with user defined weights and/or constraints (i.e. consistency within biogeoclimatic zones).
5. Monte Carlo (sampling without replacement – X observations at a time held back as test cases the remaining ones used for calibration purposes; with user defined number of replications; fuzzy c-memberships used within a likelihood framework to weight alternative models).
6. Ensemble modeling (development of X-number of models to be handled within the Monte Carlo framework; note ensemble modeling usually means using the same model with different parameters rather than using different models each with their own parameters. In this instance it means both. Also there is an issue of similarities amongst the models – more weight needs to be given to models that are different – in this case in their variable inputs and secondarily in their parameter weights that appear to be equally successful in forecasting – this refers to the concept of equifinality – that there are potentially many models that are equally successful in predicting certain outcomes and there is no reason or rationale for selecting one (or some) of them and the other(s).
7. Integration of climate data and perhaps topological index based on use of DEM.
8. Application of ensemble modeling to target dataset.
9. kNN in Y vs. X (i.e. how are the X formulated with respect to Y)
10. Autocorrelation
11. Separate out evaluations of species composition, site index, and stand structure perhaps with individual models – look at cross correlations amongst variable selections and also reversals in parameter weightings.