From:
http://www.nrs.fs.fed.us/disturbance/climate_change/landscape_ecological_modeling/shift/

SHIFT ASSUMPTIONS AND LIMITATIONS

- Assumption: Climate will change as projected, and DISTRIB captures the potential changes in suitable habitat.
- Assumption: Current climate limits to tree distributions are physiologically based and are fixed.
- Assumption: Tree abundance within cells is linked to colonization probability. Higher abundance=higher probability of propagules spreading outward.
- Assumption: Maximum dispersal for any propagules is 400 km (the search window of the program).
- Assumption: No direct effect of CO_2 on migration potential.
- Assumption: Each time step simulated is one generation in time, so that a species that matures to produce seed would have 4 generations in 100 years. Generation times are presented within our web site (e.g., http://www.nrs.fs.fed.us/atlas/tree/lhdr_951.html: Seeding, yrs (begins/optimal/maximum)).
- Assumption: There was a constant rate of migration (~50 km/century) for all species when the landscape is in a fully forested condition. According to paleo data, wind- and animal-dispersed species had roughly the same speed at migration.
- Assumption: Abundances within previously occupied cells were held constant throughout the simulation.
- Limitation: Slow computer processing.
- Limitation: Calibration can be a challenge

SHIFT ADVANTAGES

- Dispersal accounted for within new suitable habitat
- Fragmentation of landscape considered
- 1 km resolution
- Simply uses Holocene average migration rates of 50 km per century (fully forested) with long-distance dispersal also included
- Possible to do “What if” scenarios for future landscapes