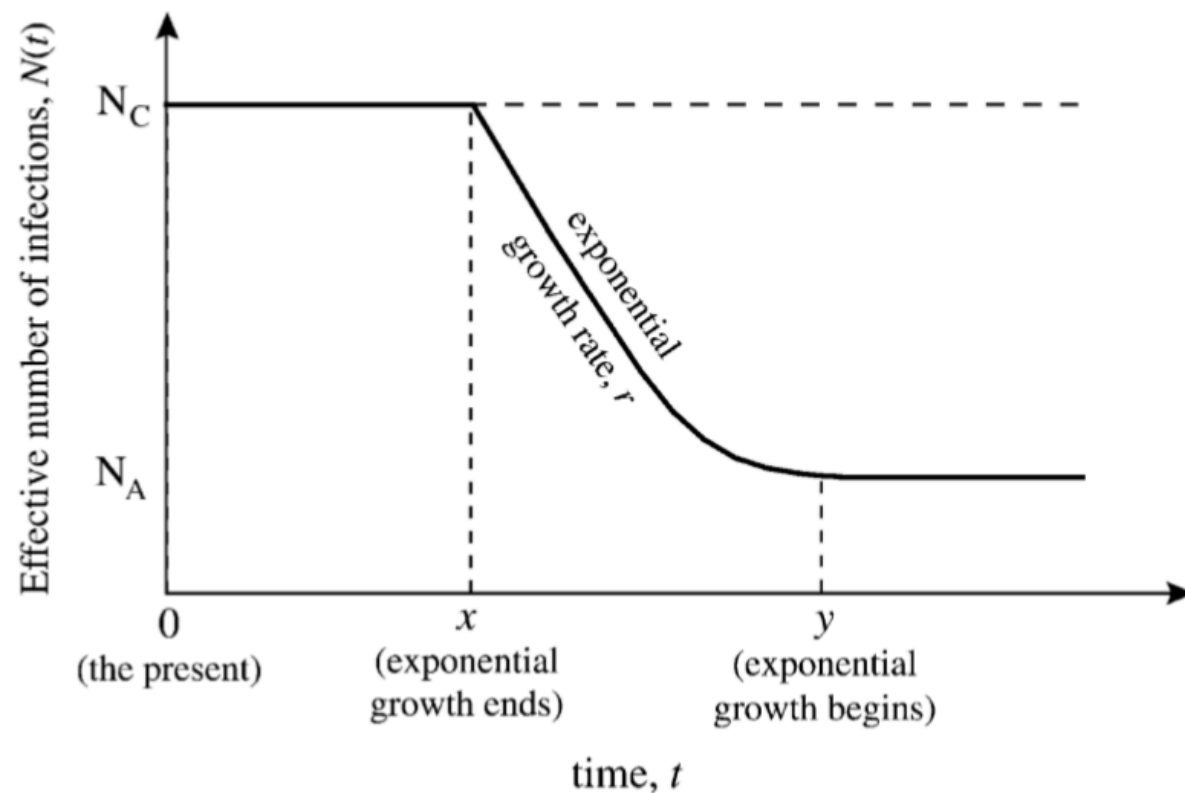


SKYLINE PLOTS

LOUIS DU PLESSIS

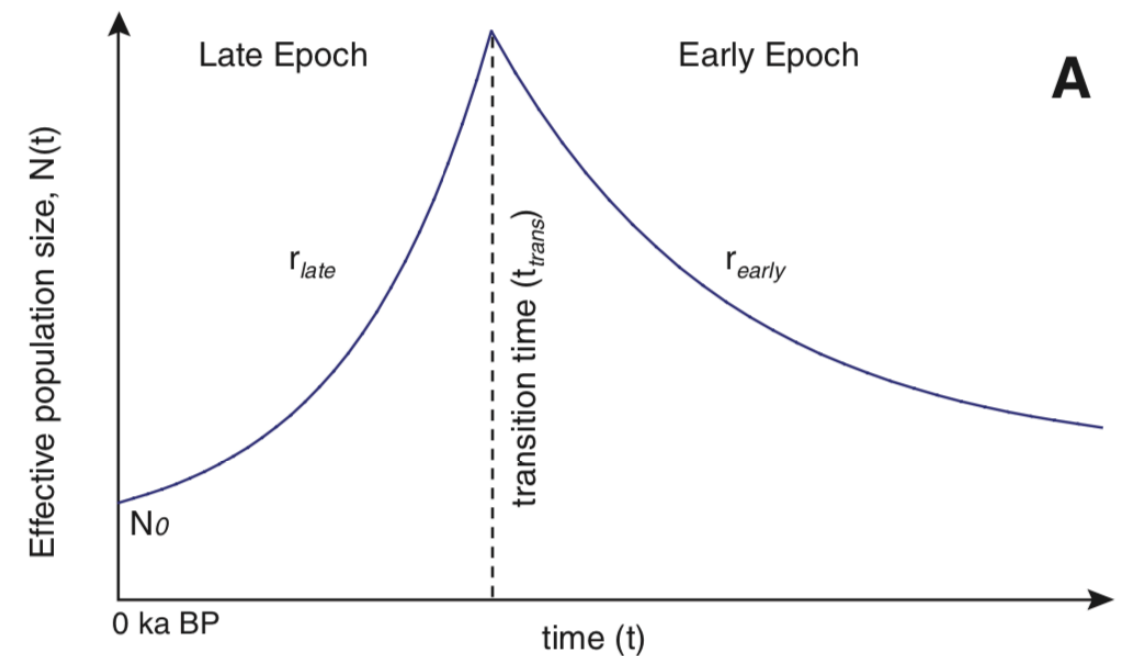
Parametric models for $N_e(t)$

Egyptian HCV



Constant-Exponential-Constant dynamics

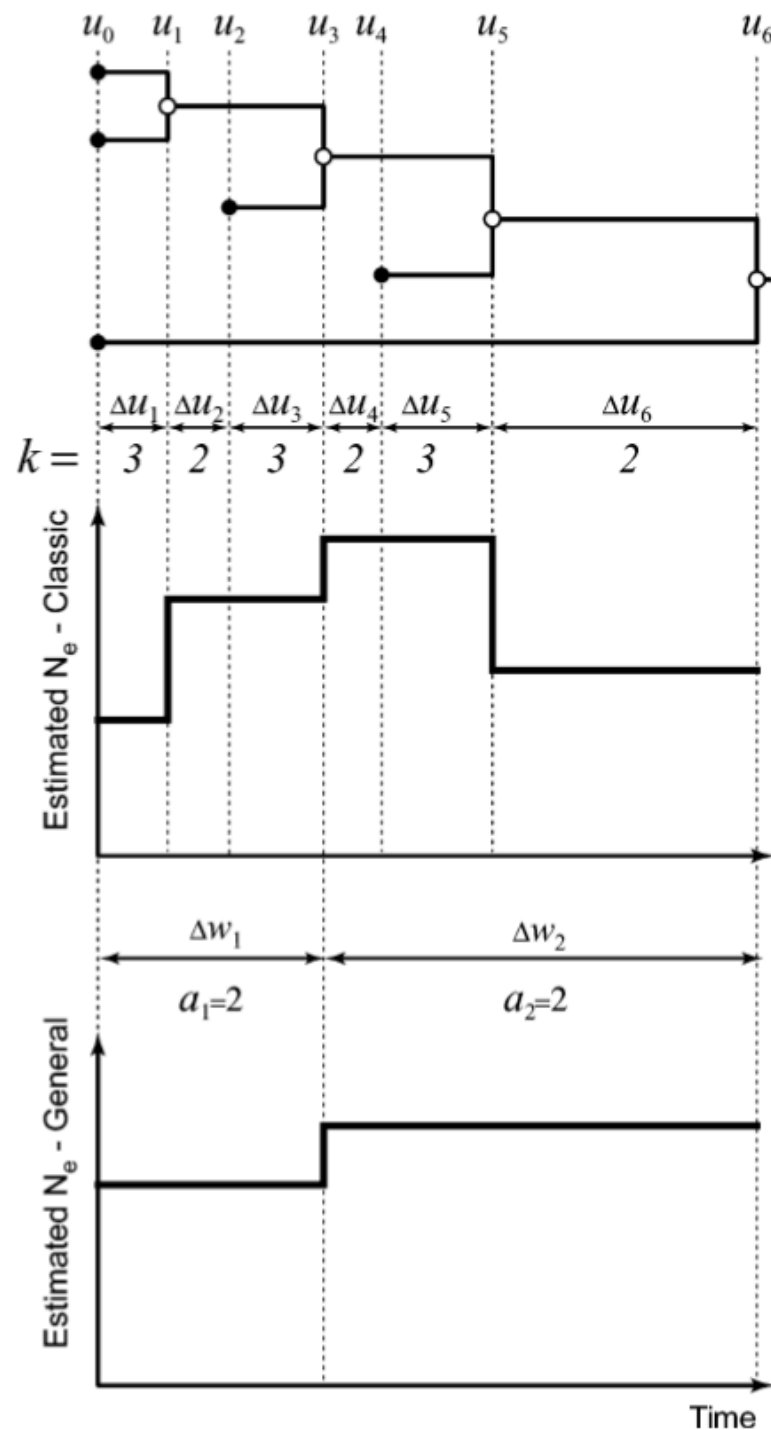
Steppe Bison



Boom-Bust dynamics



Skyline plots



Classic skyline plot

- Piecewise constant N_e
- Change-points at coalescence events
- Noisy estimate

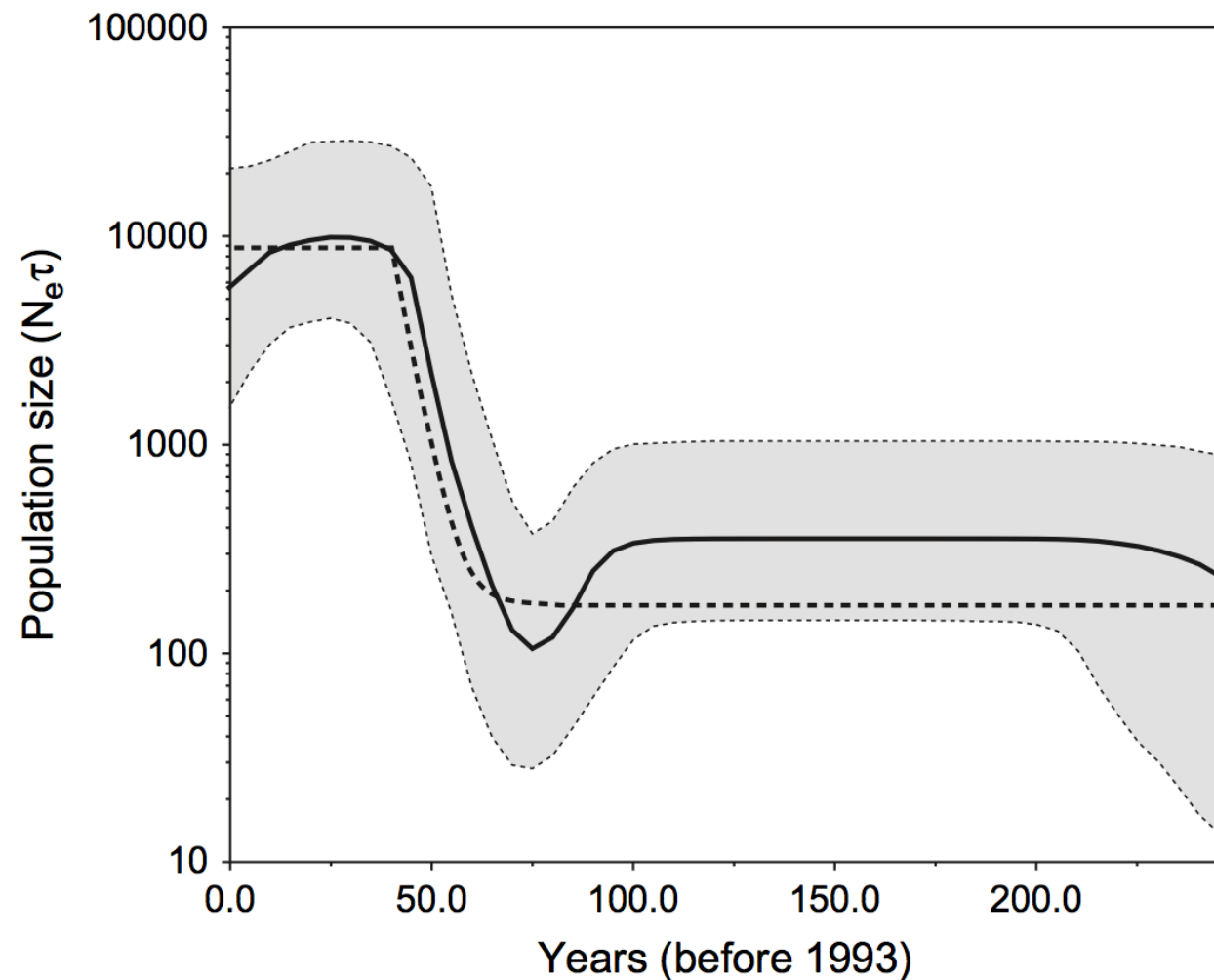
Generalised skyline plot

- Group neighbouring segments
- Smoother estimate

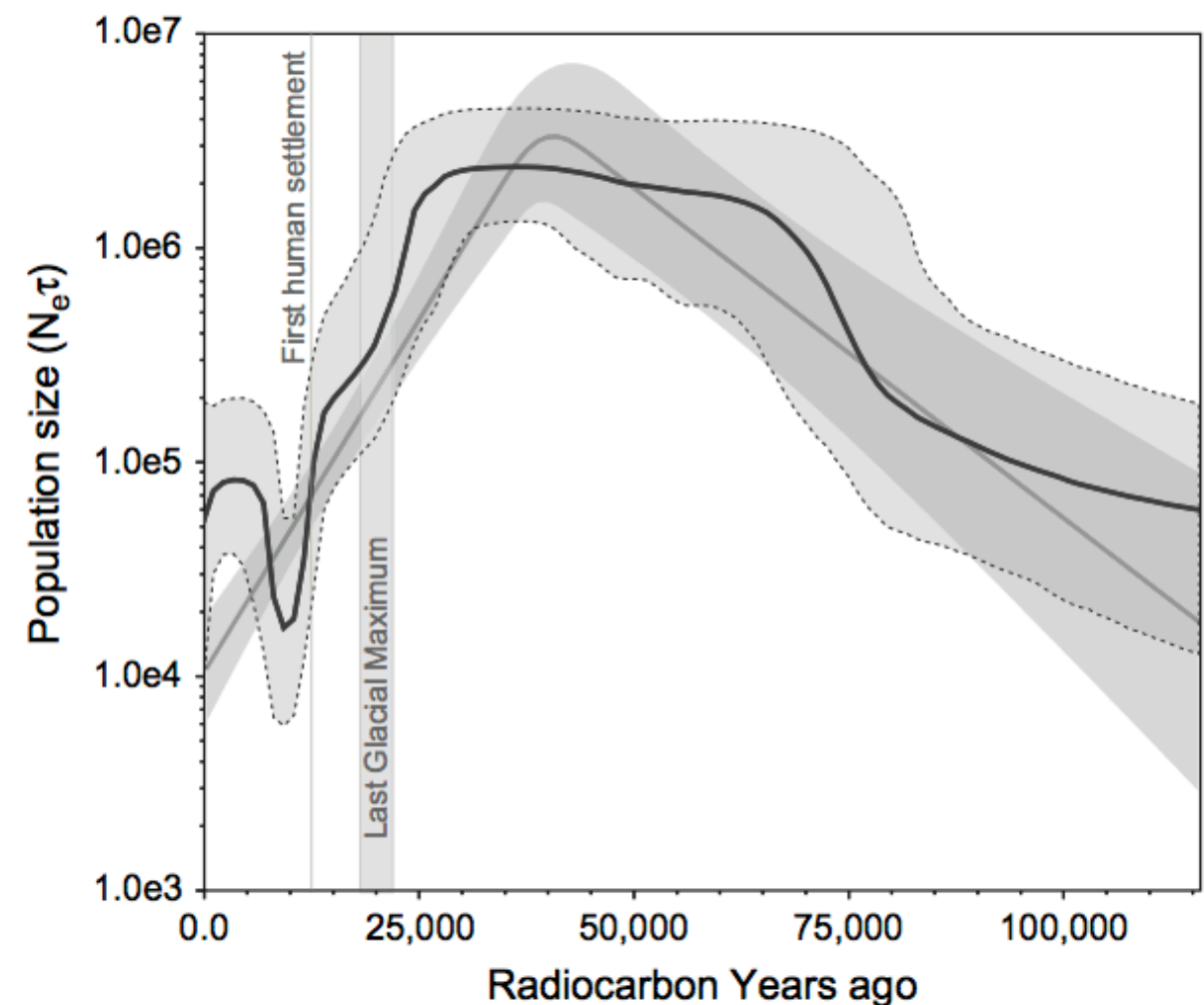


Bayesian Skyline plot

Egyptian HCV

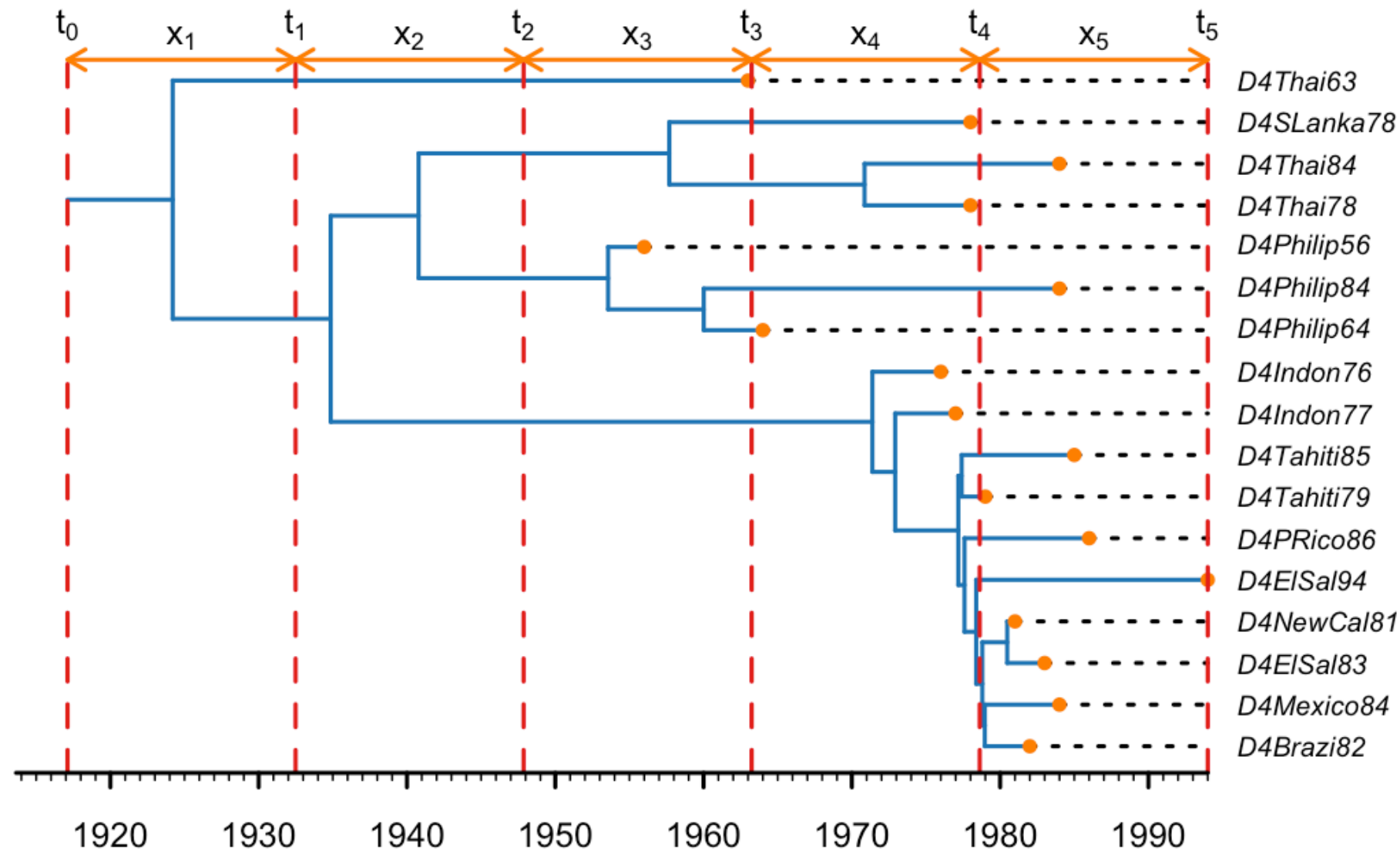


Steppe Bison



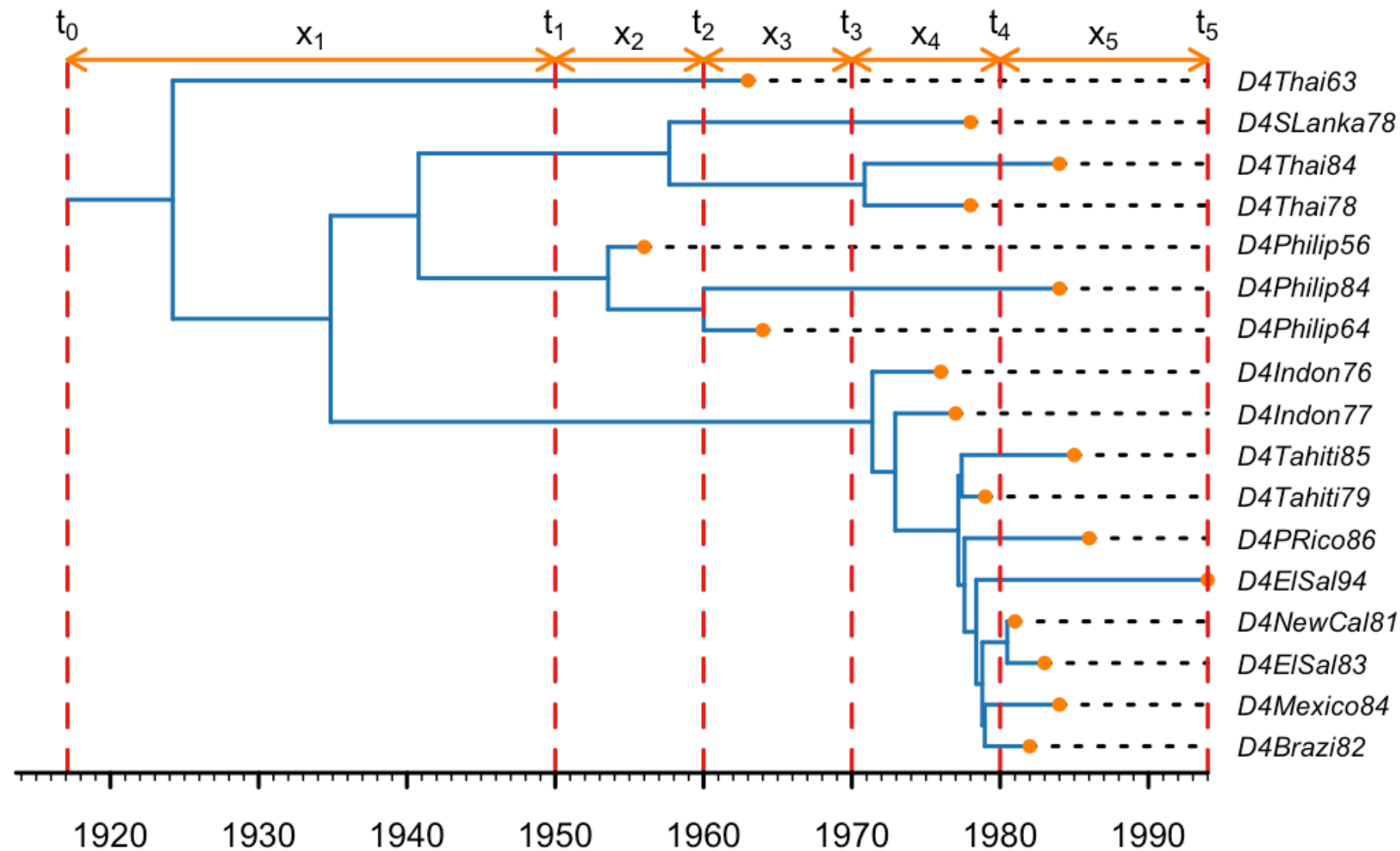
- Recovers the same dynamics as the parametric model
- More flexible but also more uncertain

Birth-Death Skyline (BDSKY)



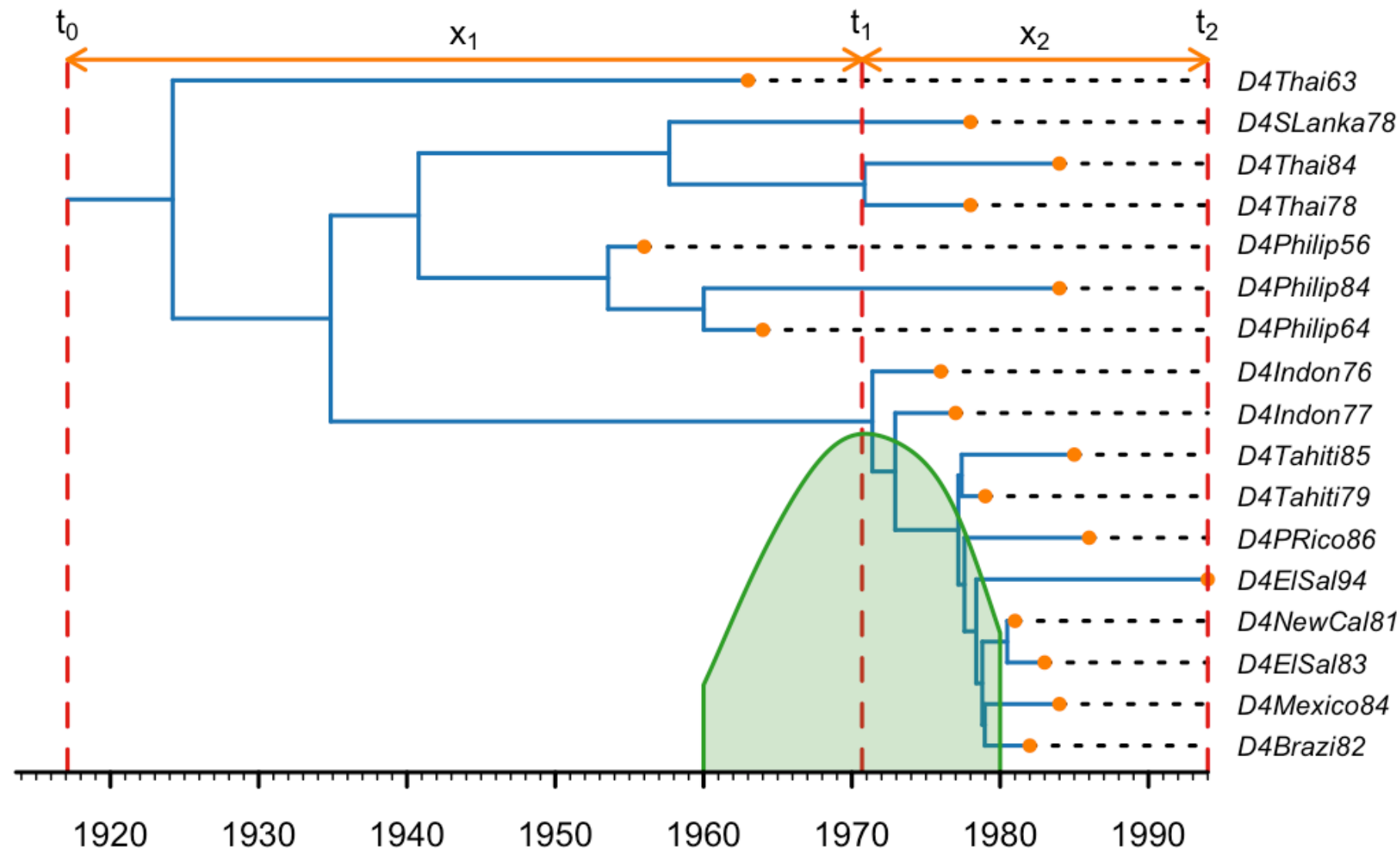
- Time-changing parameter can be **any** or **all** of the model rates (birth, death, sampling)

Birth-Death Skyline (BDSKY)



- Change-points can be anywhere between origin and present
- More difficult to set up XML if not equally-spaced

Birth-Death Skyline (BDSKY)



- Can even estimate change-point times (times of major transitions, e.g. when R_e first drops < 1)

EBOV in West Africa

