From: (Paniw, 2017; Merow, 2014, Ellner and Rees, 2016)

nlz.tl: size distribution of adults in t $(1-p_b(z))$: probability of not_ flowering according to size

st. probability surival according *osite

Browing to size 2 in this GL'A probability according to size 2 in t

n(z',t+1): size distribution of adults in t+1

Note: 1 - (goCont +**goSB**) is the fraction of year t seeds that die; i.e. do not go into the seedbank and do not germinate in year t+1

Note: 1 - (outSB +**staySB**) is the fraction of year *t* seedbank seeds that die; i.e. do not go into leave or stay in the seedbank to year t+1

P_b(z): probability of flowering according to size

b(z): number of seeds produced according to size **S(t):** No. of seedlings in *t*

co(z'): size distribution of new establishments in t+1 Pestab: probability of a seedling establishing to a rosette in t+1

 δ : fraction of year t seeds

p_r: fraction of non-seedbank seeds that germinate into seedlings

(**goSdIng**) (year t seeds that germinate in year t+1 into seedlings)

S(t+1): No. of seedlings in *t+1*

γ: fraction of seedbank seeds that leave the seedbank (outSB)



B(t): size of seedbank in t that go into the seedbank (goSB)

S_B: seeds that stay in the seedbank to year *t+1* (*staySB*)



B(t+1): size of seedbank in t+1