Parameter reality table

Table 1: Table of parameter values, their definitions and whether we could get data on these things ... anywhere.

Parameter	Definition	Reality notes
N_i	seedbank of species i	data possible, sure (RCN with Elsa?)
s_i	survival of species i	data possible, sure
δ	total length of growing season	yes! I have those data
B_i	biomass of species i	yes
R	resource	blargg, no?
c_i	conversion of R uptake to biomass of species i	someone has something like this
m_i	maintenance costs of species i	someone has something like this
a_i	uptake increase as R increases for species i	someone has something like this, maybe
u_i	max uptake for species i	someone has something like this, maybe
ϕ_i	converesion of biomass to seedbank for species, includes overwintering of seeds i	this is totally weird, must ask Megan
ϵ	abiotic loss of R	hmm, could look at water draw down curves? Would not be the same thing ...
$g_{max,i}$	max germination of species i	data possible
h_i	controls the the rate at which germination declines as τ_p deviates from optimum for species i	I think this is possible
g_i	germination fraction	yes, someone has these
τ_p	timing of pulse	well, I have data on SOS
τ_i	timing of max germination of species i	uh, I don't think anyone on earth has these ...
α_i	phenological tracking of species i	I have these data!
θ_i	shape of uptake for species i	sure, someone has these
b_i	seedling biomass of species i	uh, ask Megan
$f_i(R)$	R uptake $f(x)$ for species i	NA – only a conglomeration of other params
d_i	death rate of species i, used in calculations of lifespan	uh, ask Megan
T	between year time	years
τ	within season time	days

Thoughts, Friday-style:

There are basically 5 categories for these variables:

1. Resource uptake f(x)s which exist somewhere for a bunch of species for exactly the model stuff here I suspect: R*

2. Germination curves: Different folks have these data; Margie Mayfield approached me about starting a group to pull such data together; Elsa knows someone with some data like these—we were discussing running an RCN together. (For our current models, our curves are too simple to take in these data. Megan suggested looking at different shapes of curves could be interesting, like do truncated on one side decrease coexistence. Would be cool also to know how often different cues are at play and flexibility versus our abstraction of flexible vs. not flexible.)

3. Parameters I don't quite get or suspect are impossible to measure: d_i (natural death rate of seedbank; notoriously difficult to measure – would Jim Brown have any data on this?), b_i (Megan thinks this could be seed size or seed biomass), ϕ_i (dry weight versus seed number)

and I stopped here. Data I actually have: related all to start of season and phenologically-tracking. I should note that I have the **biological** start of season (SOS), not a climatic one (if we wanted that we could work with Ben Cook to get it though); and also I have weird data because I have ground-collected data. Some might argue satellites would be better for SOS because there is no bias in species studied etc. – but then you argue back that I might have the little baby species that actually start the seasons, not the green wave.

4. Stuff not on the list here that I think were interested in: namely, what changes with climate change and how much! Must add that to the list!