

Figure S1. Reconstructed phylogenetic tree of the studied species using V.phylomaker R package (Jin and Qian, 2019)

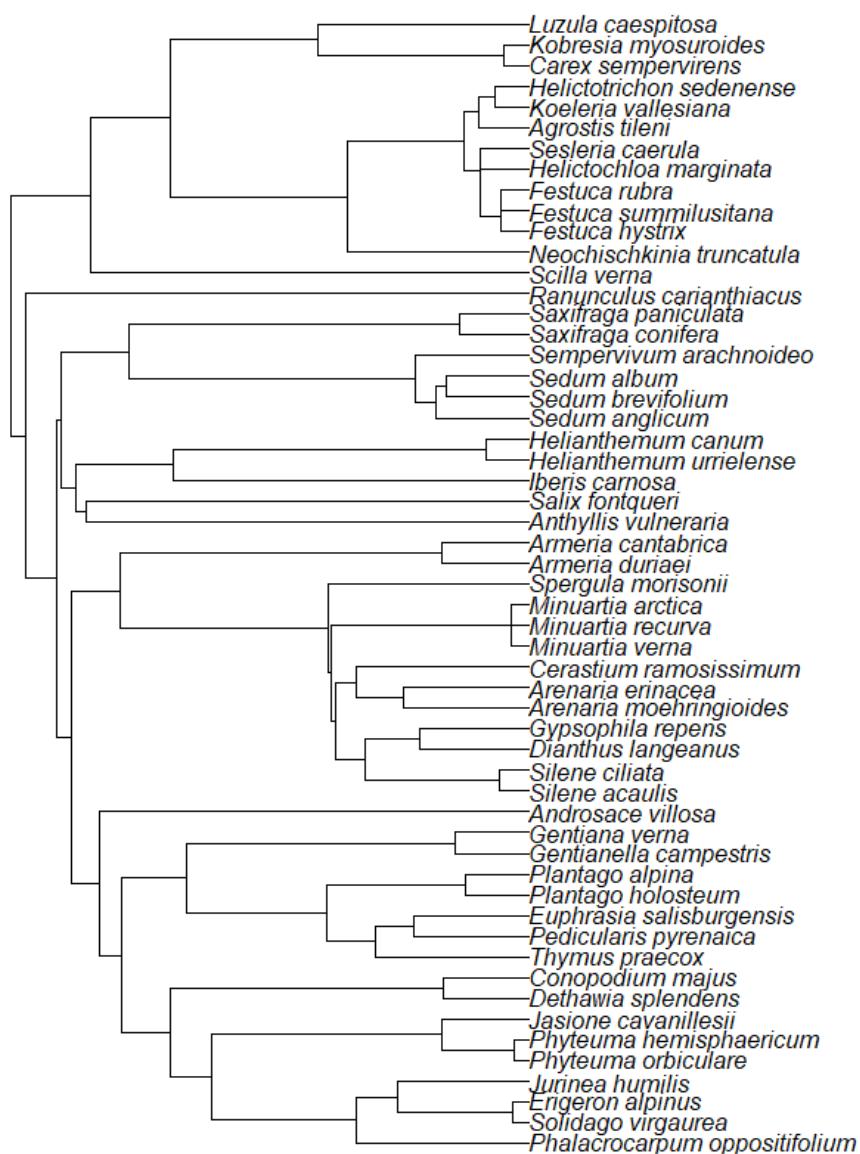
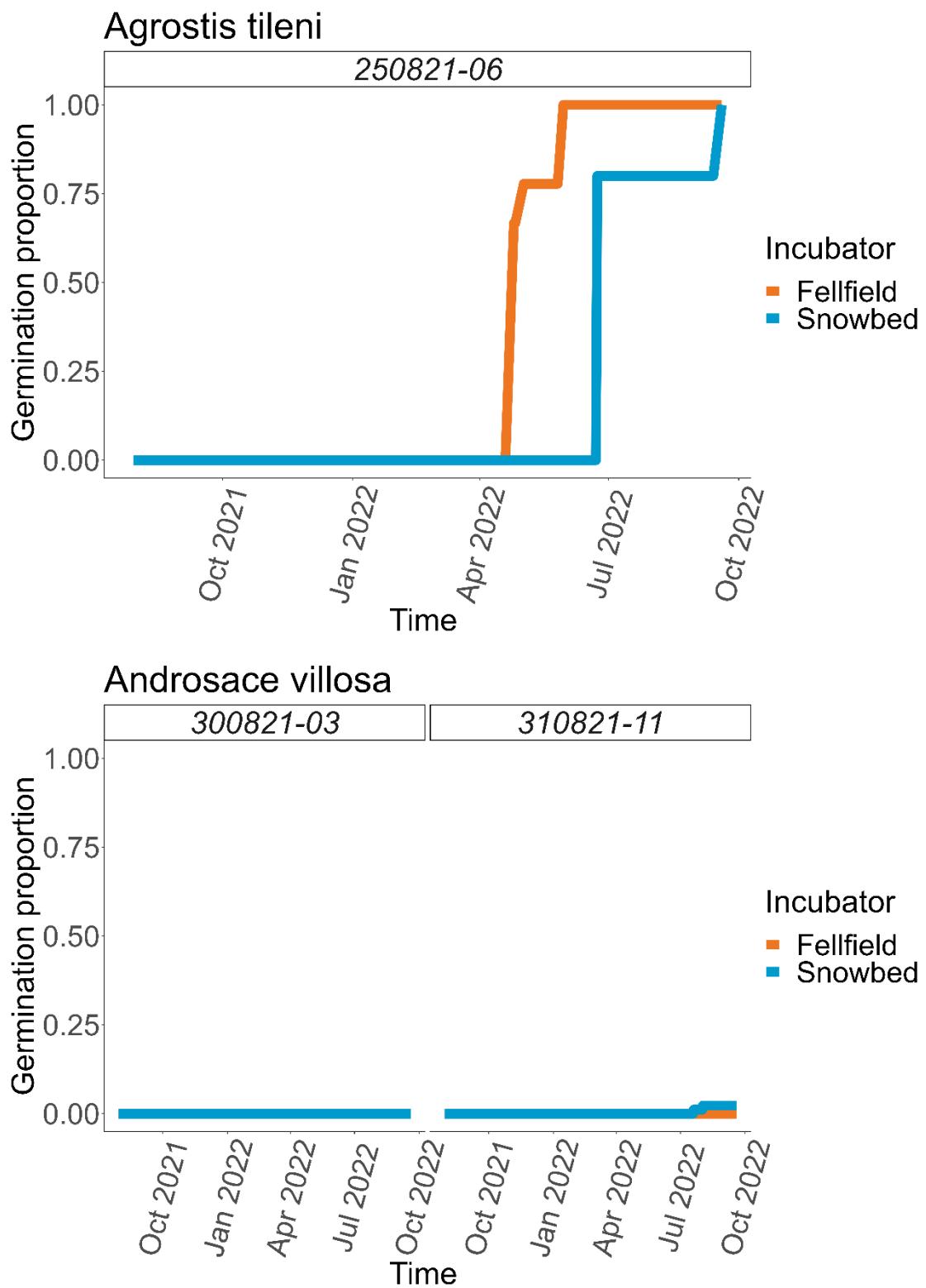
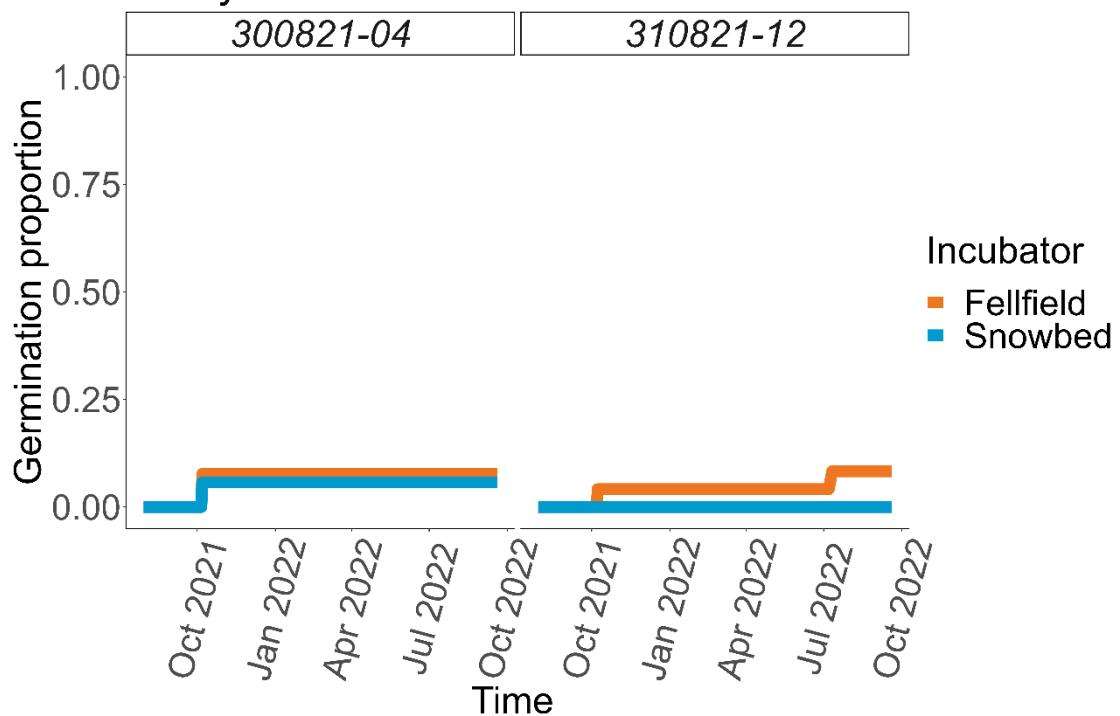


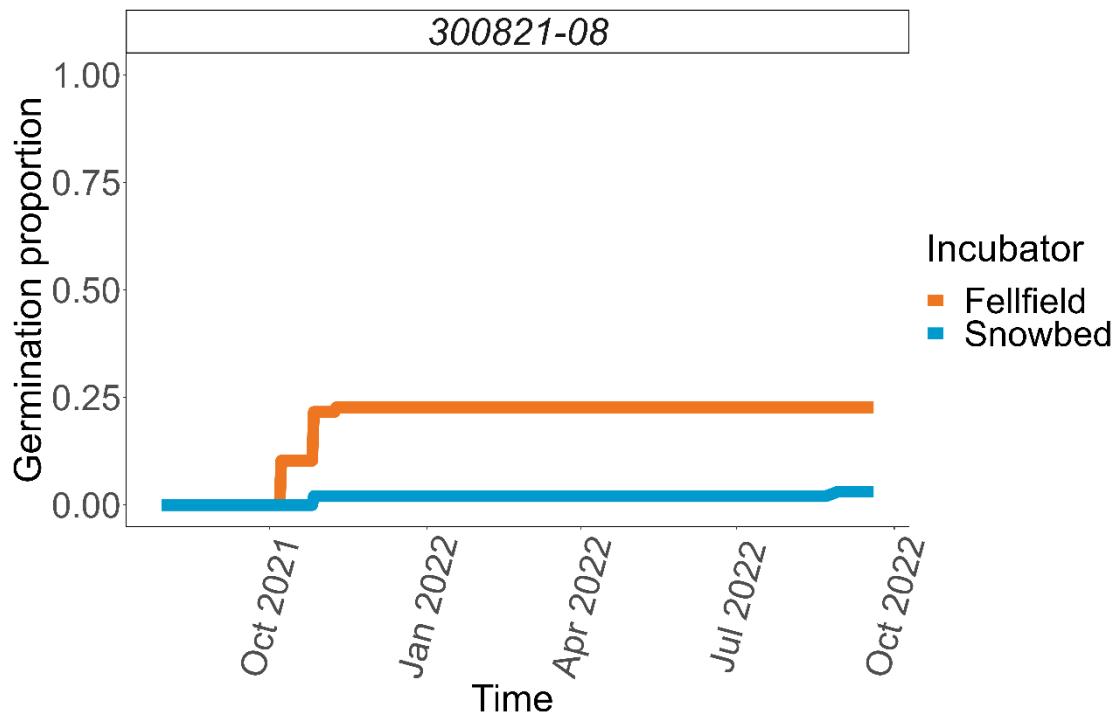
Figure S2. Individual species cumulative germination curves in each microclimatic conditions.



Anthyllis vulneraria

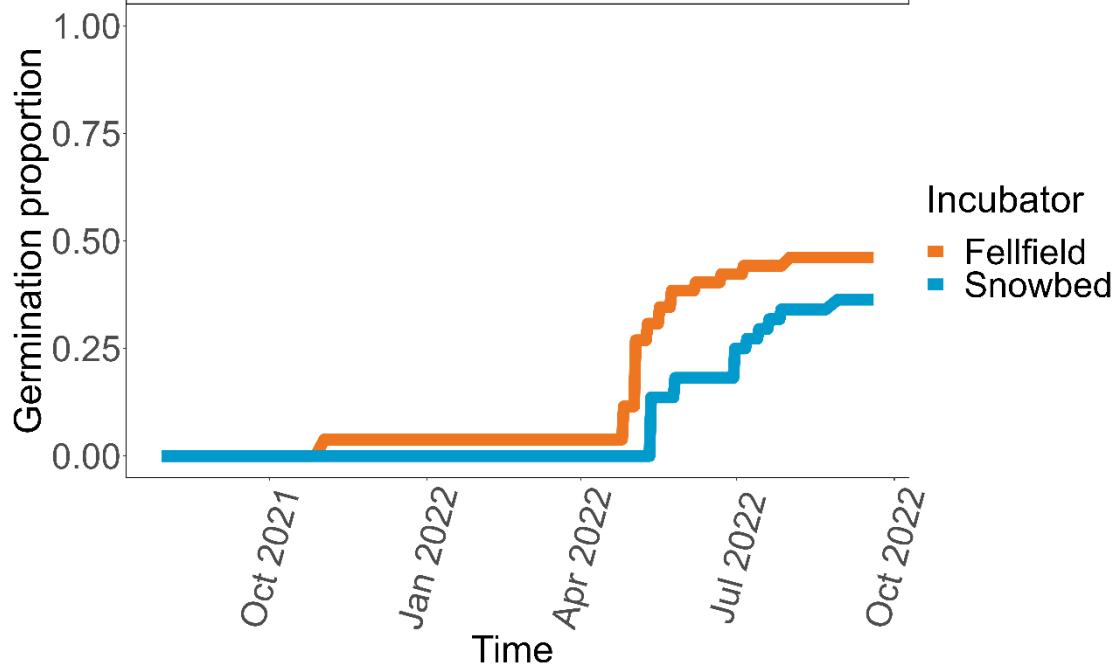


Arenaria erinacea



Arenaria moehringioides

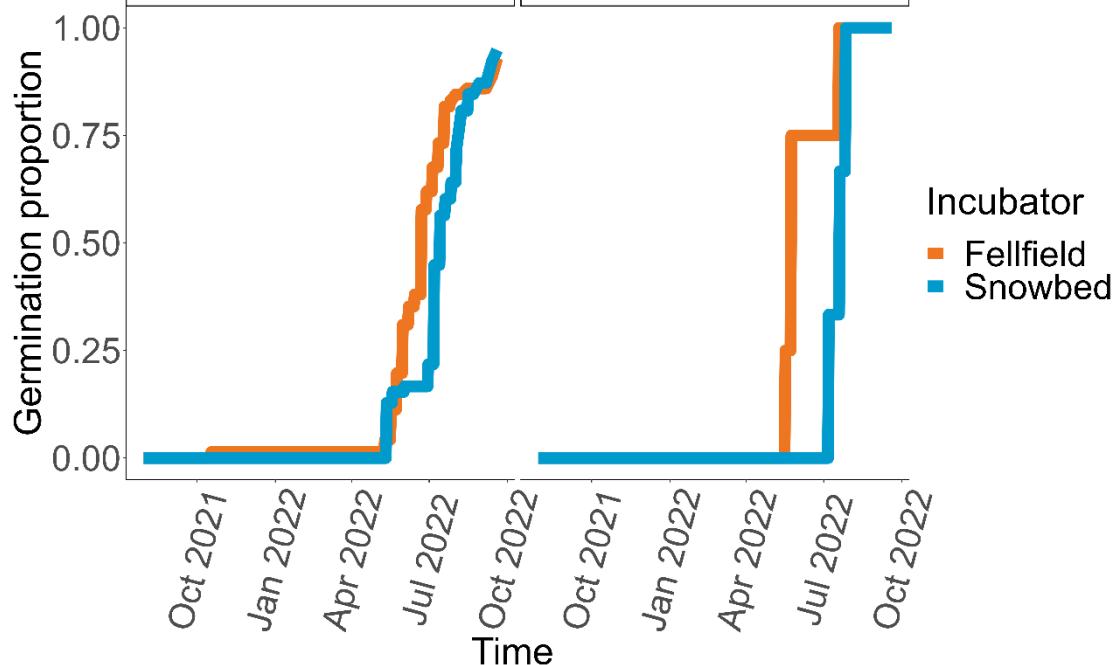
140921-02



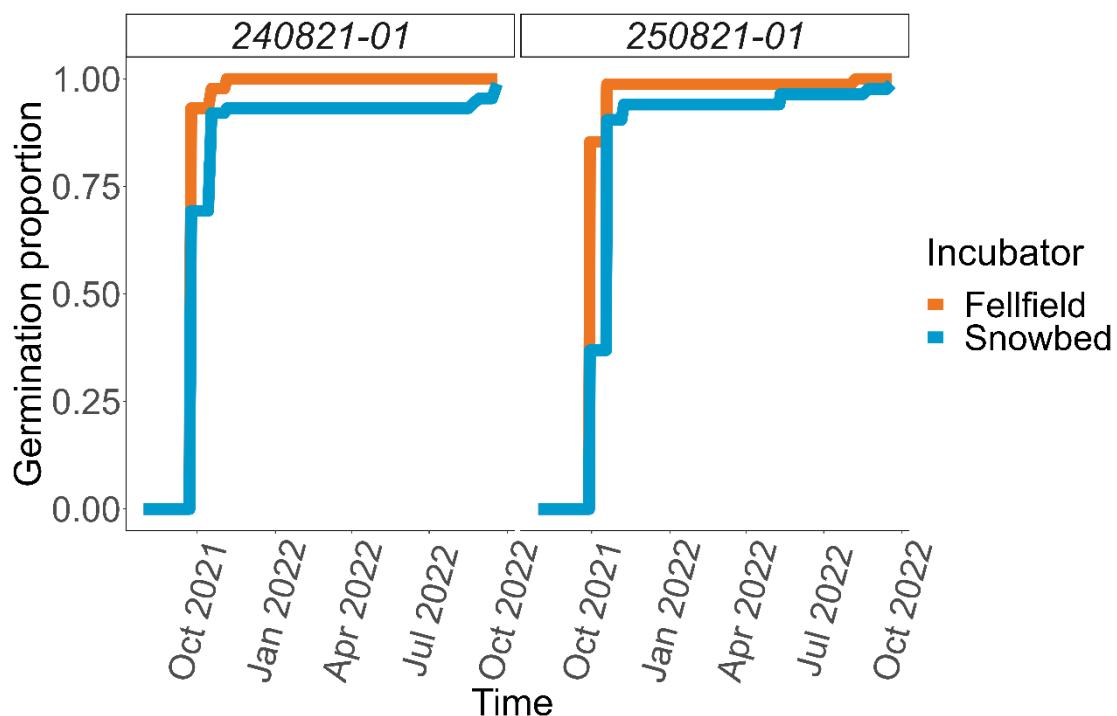
Armeria cantabrica

130921-15

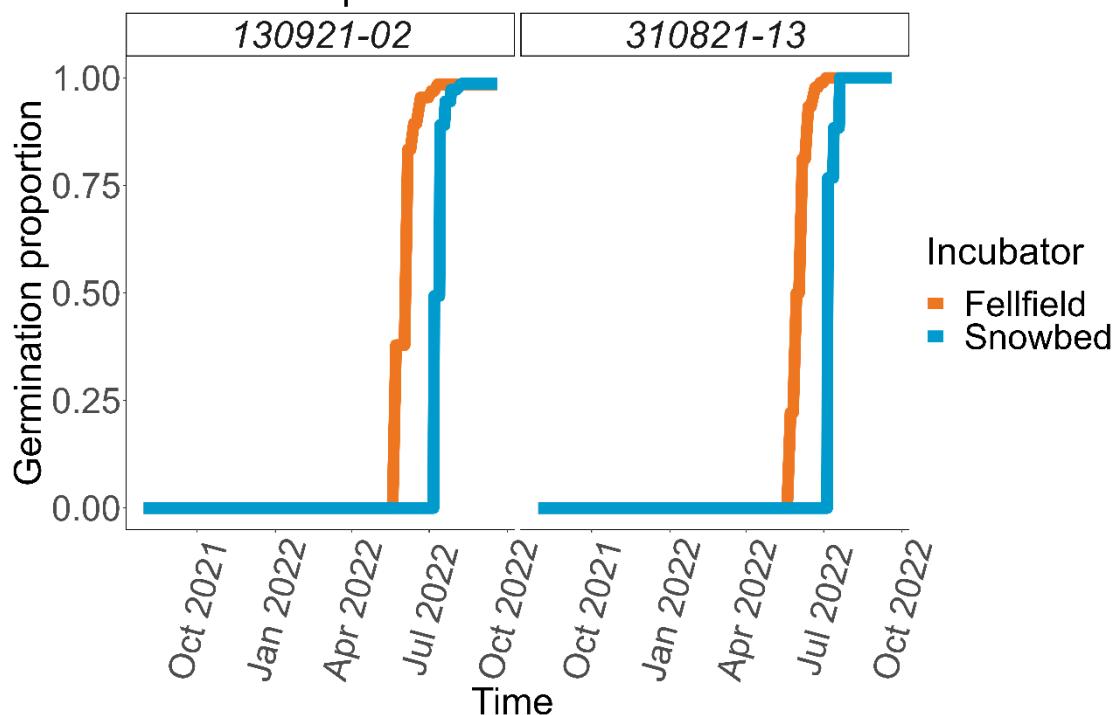
140921-07



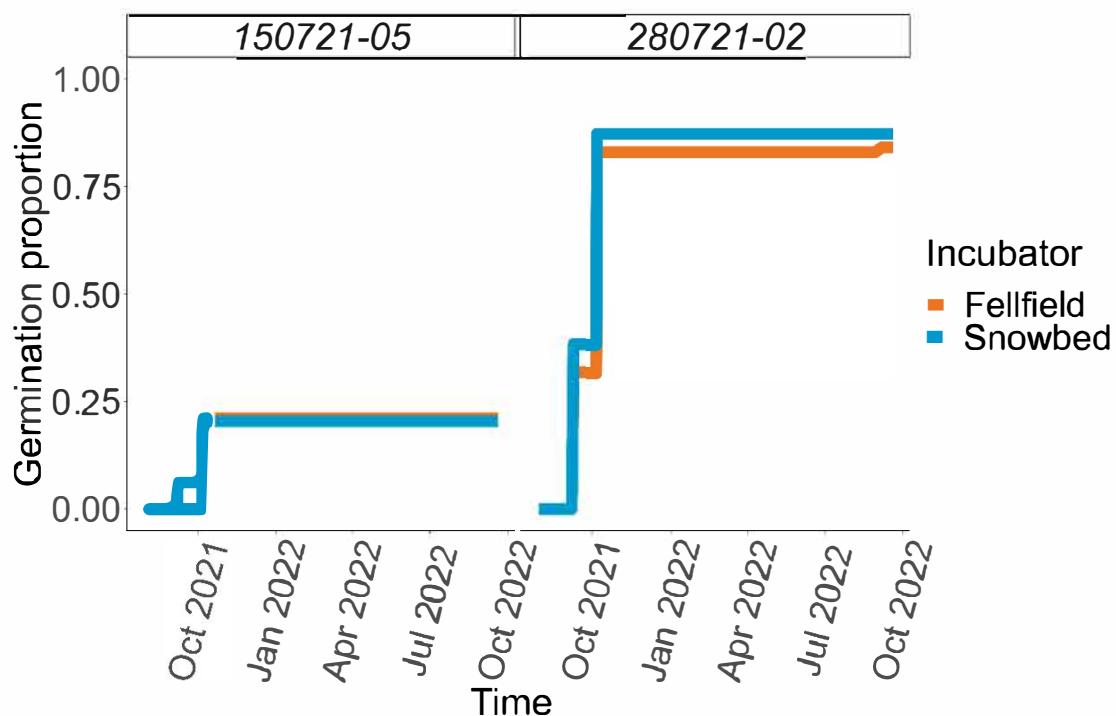
Armeria duriae



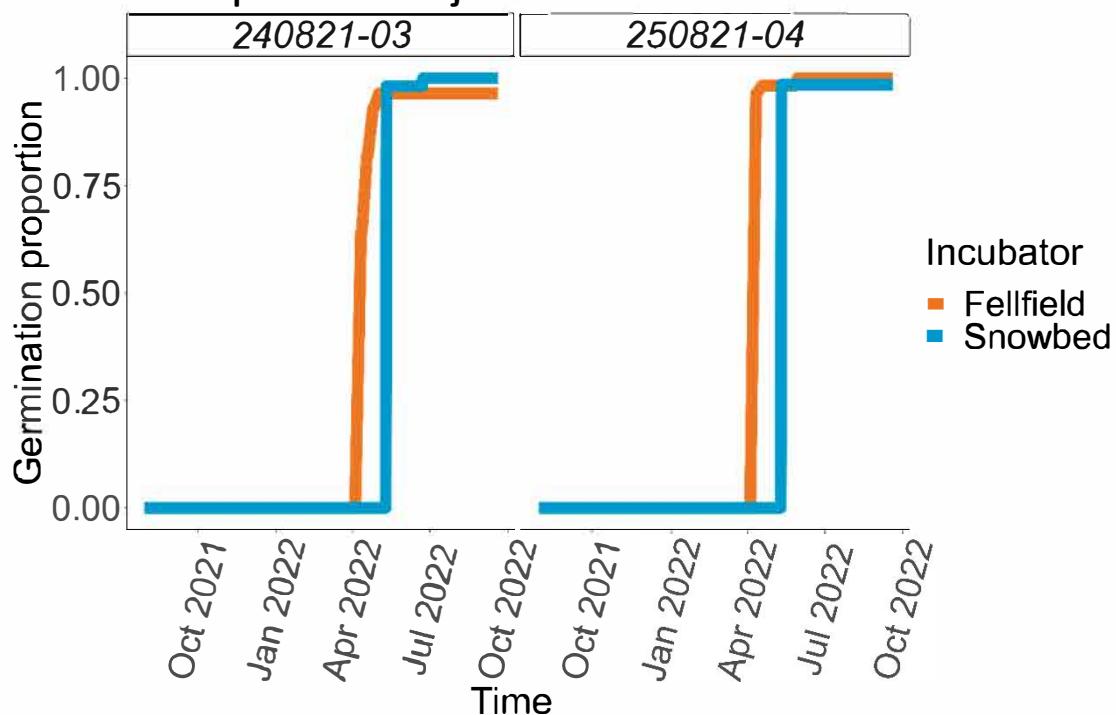
Carex sempervirens



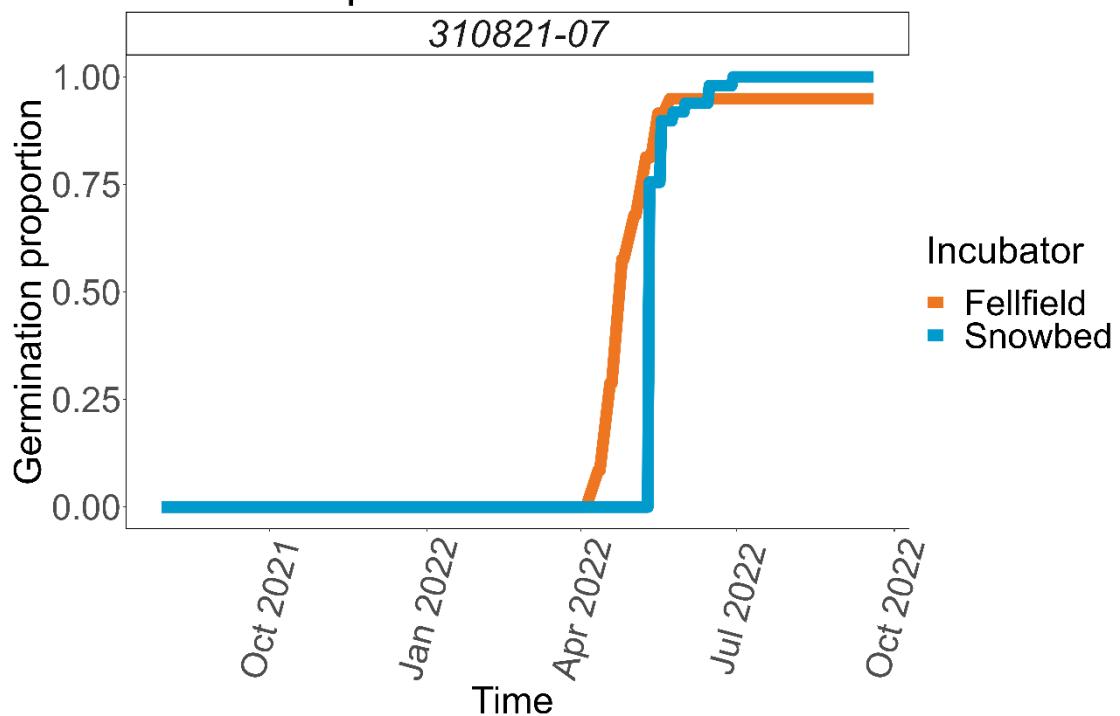
Cerastium ramossissimum



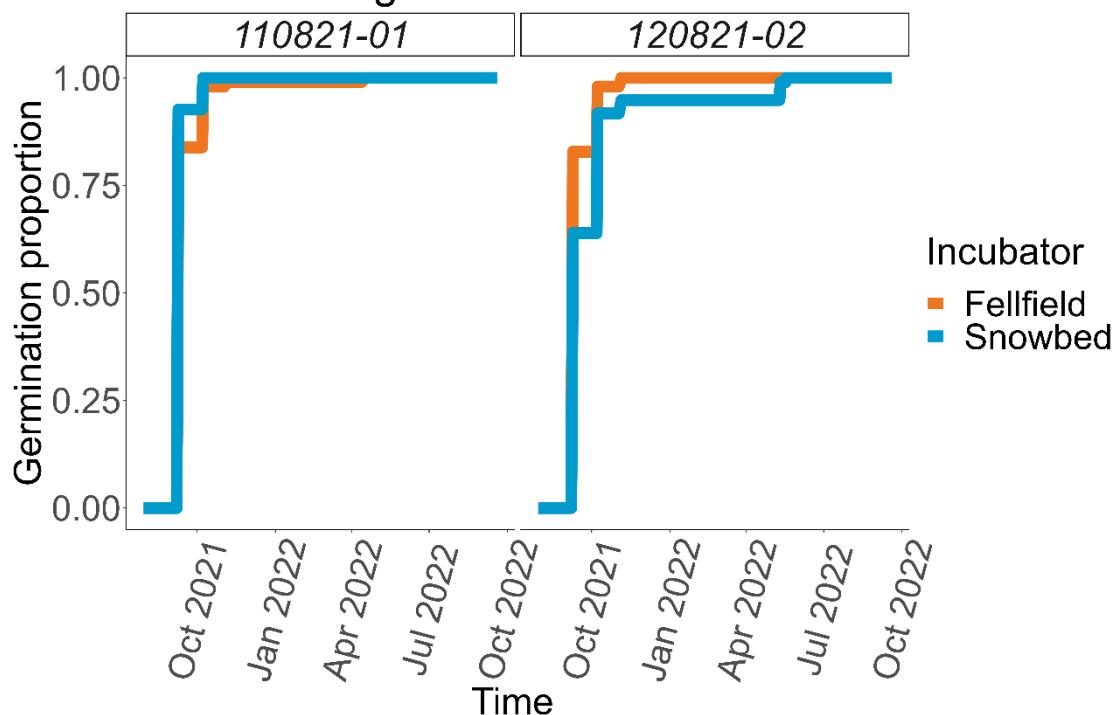
Conopodium majus



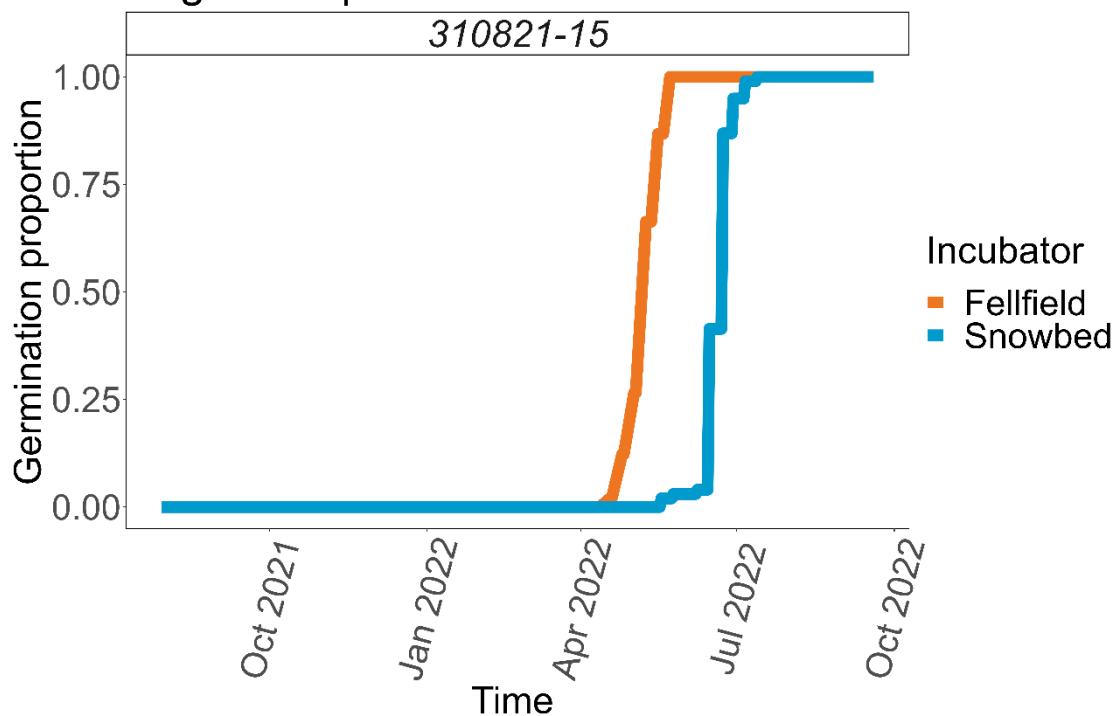
Dethawia splendens



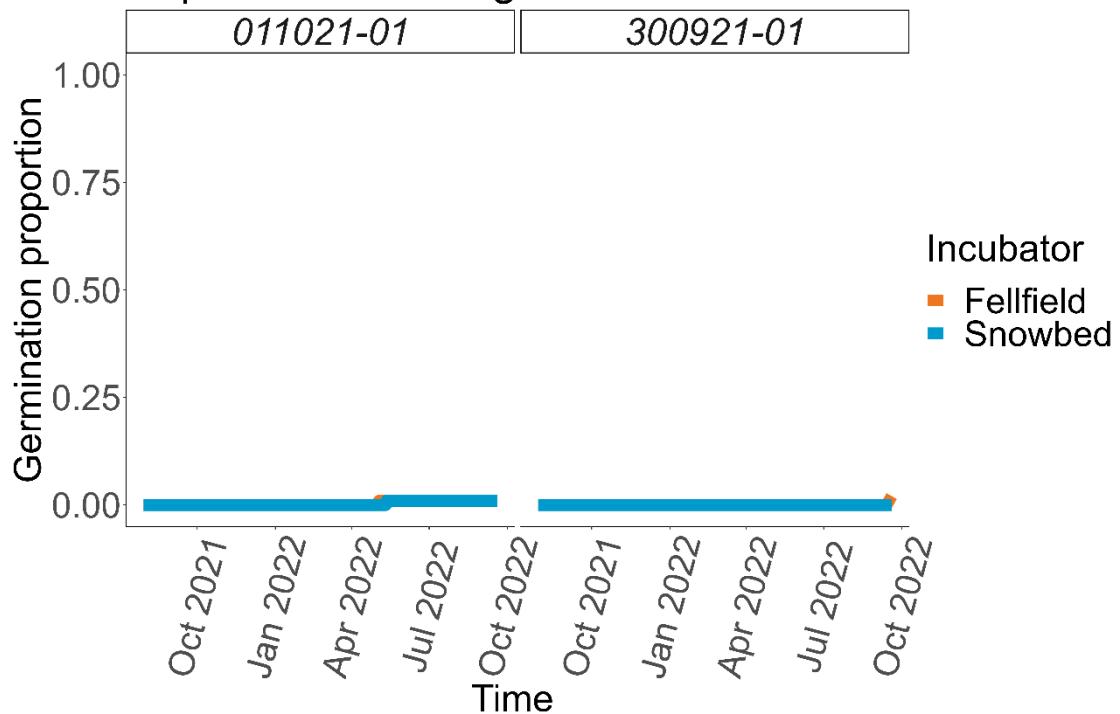
Dianthus langeanus



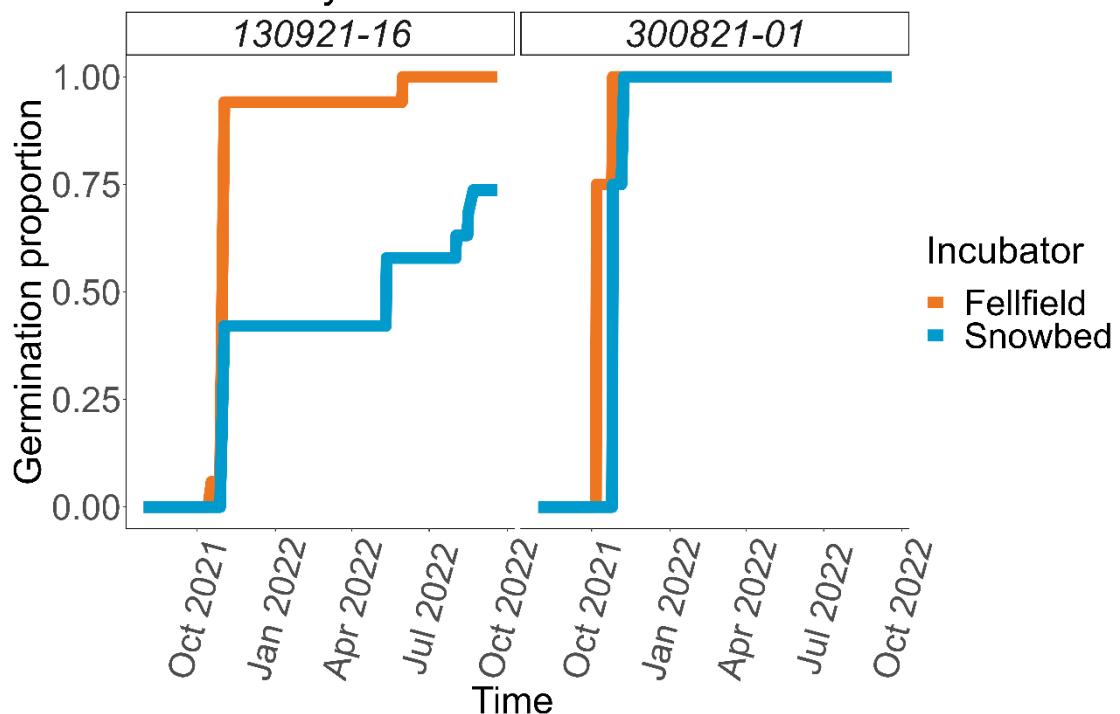
Erigeron alpinus



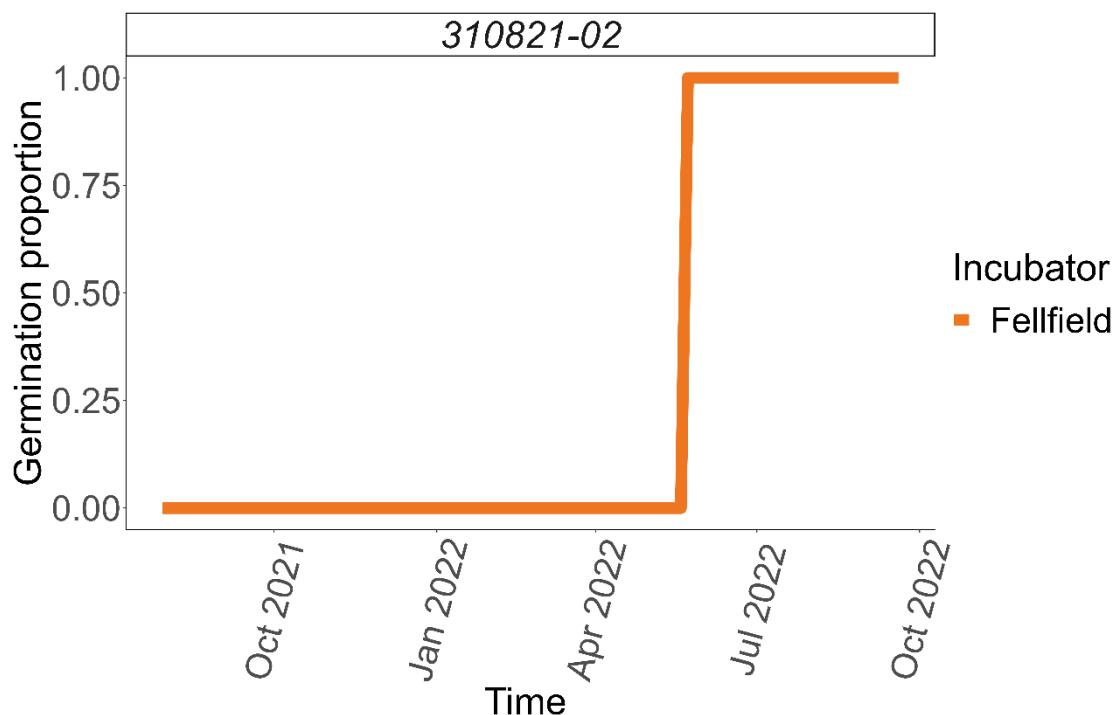
Euphrasia salisburgensis



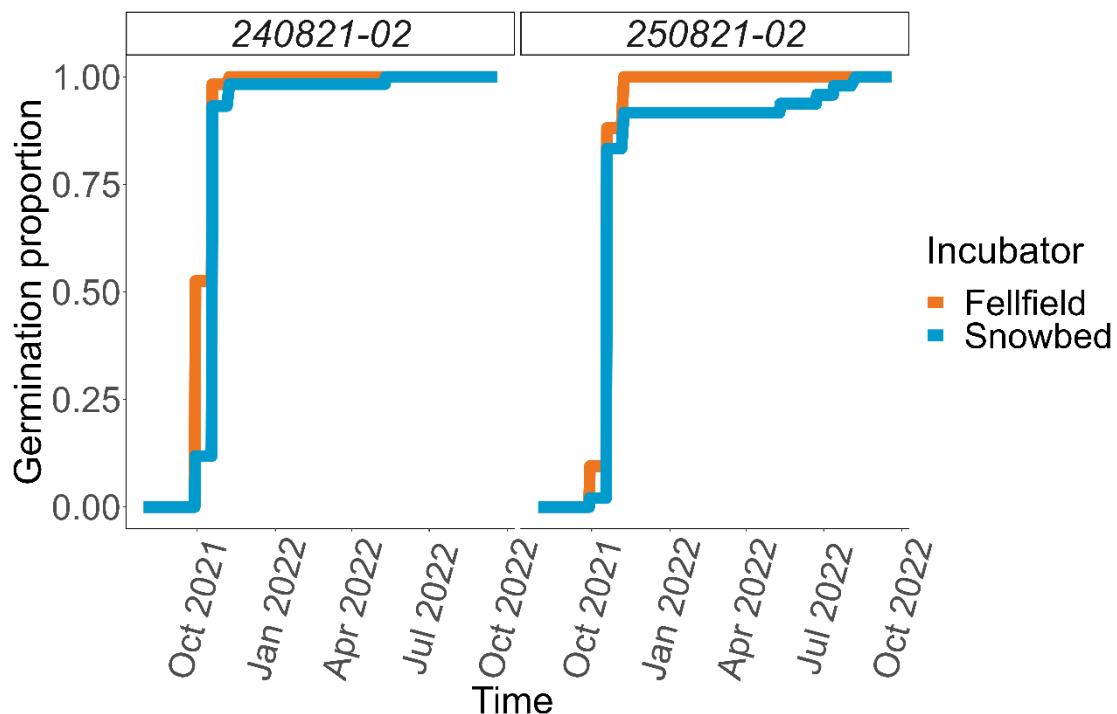
Festuca hystrix



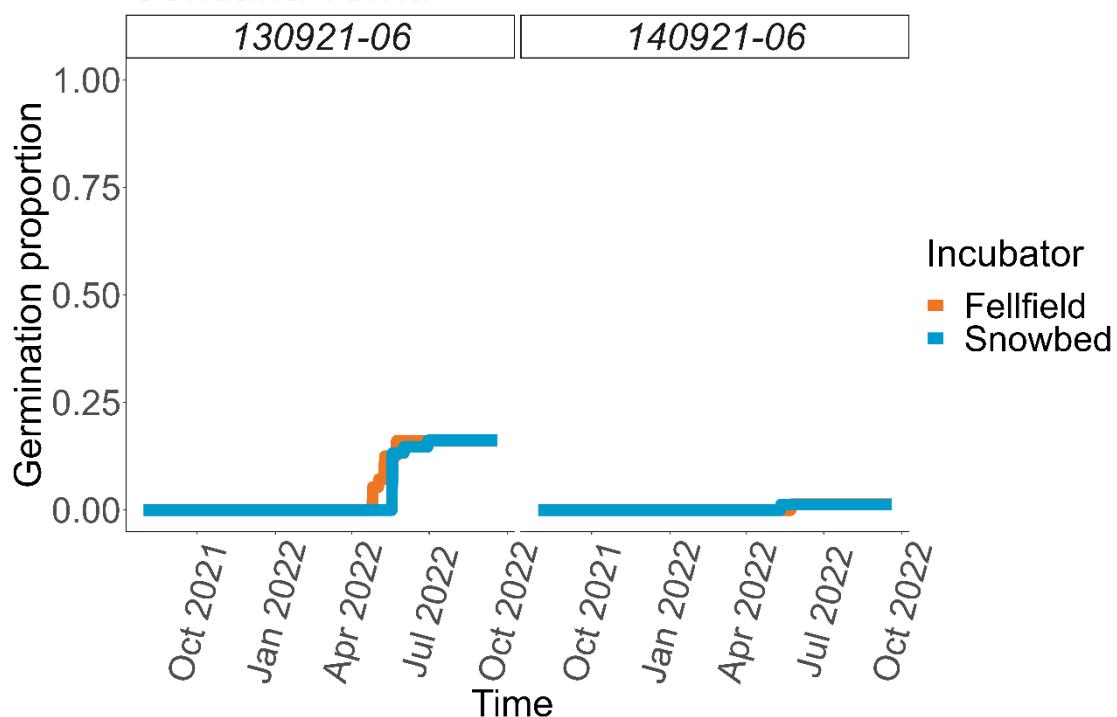
Festuca rubra



Festuca summisitana

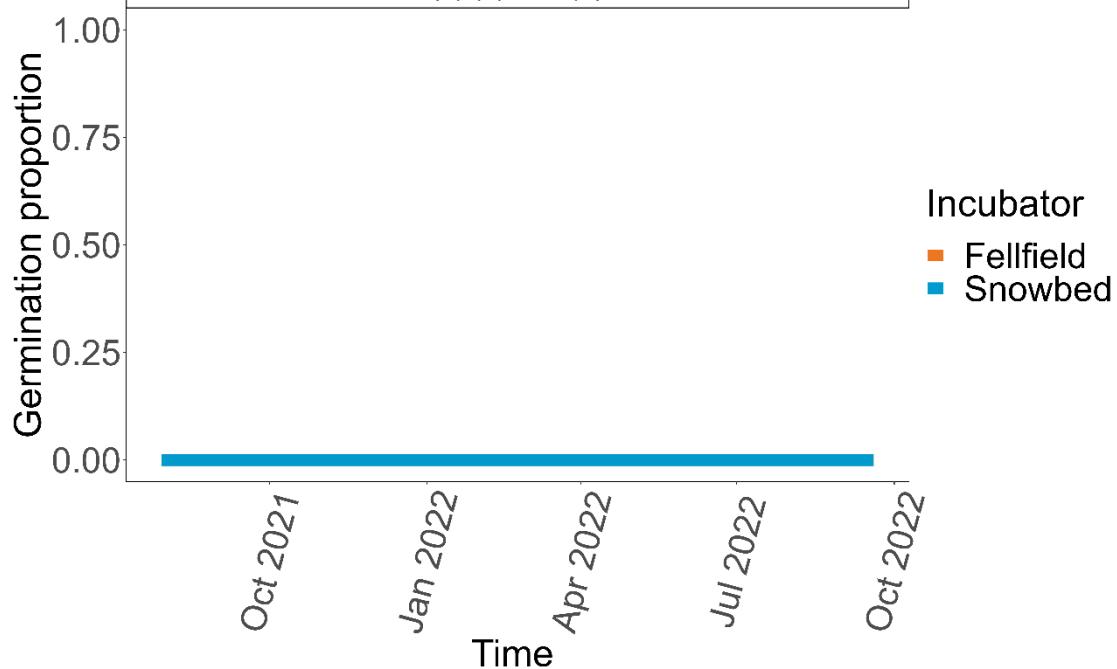


Gentiana verna



Gentianella campestris

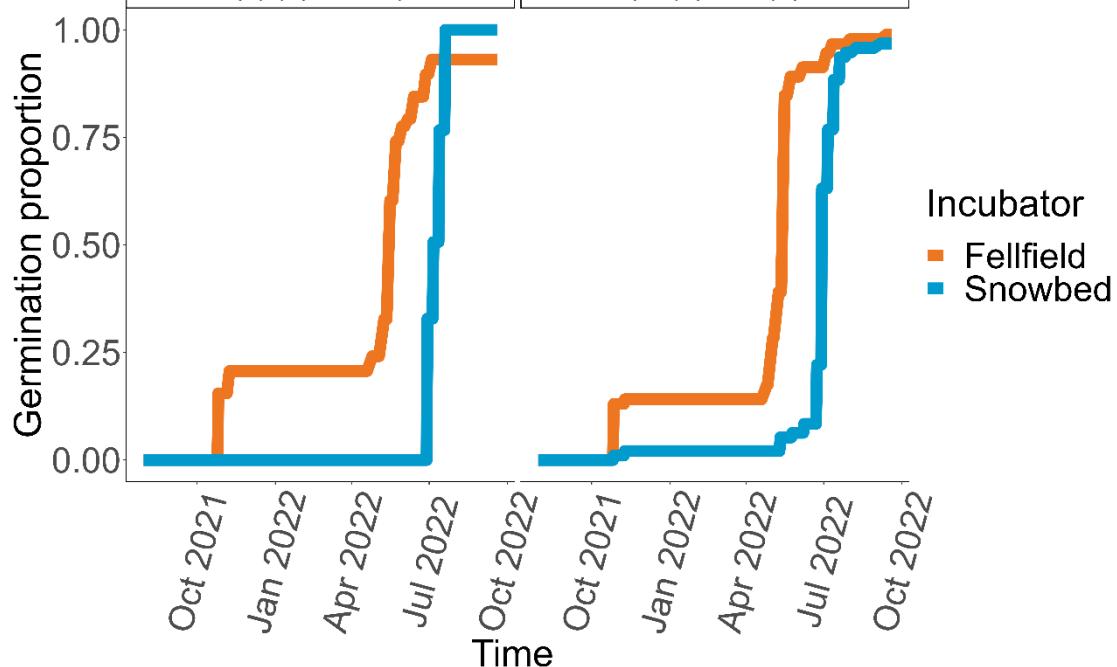
300921-03



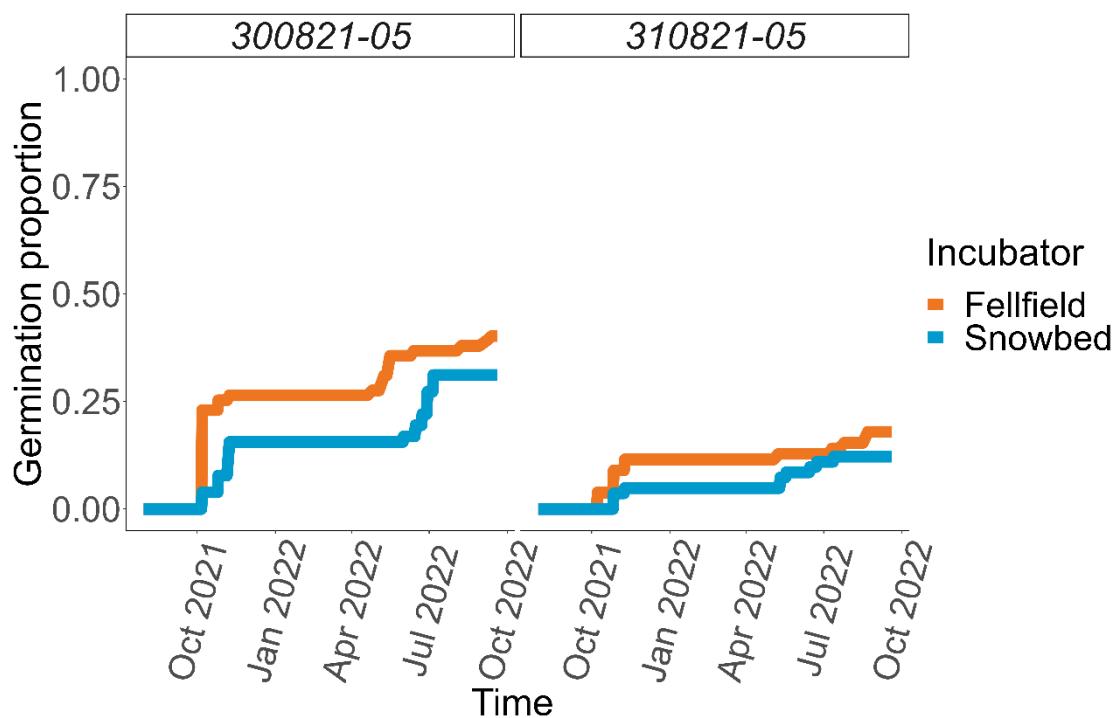
Gypsophila repens

300821-10

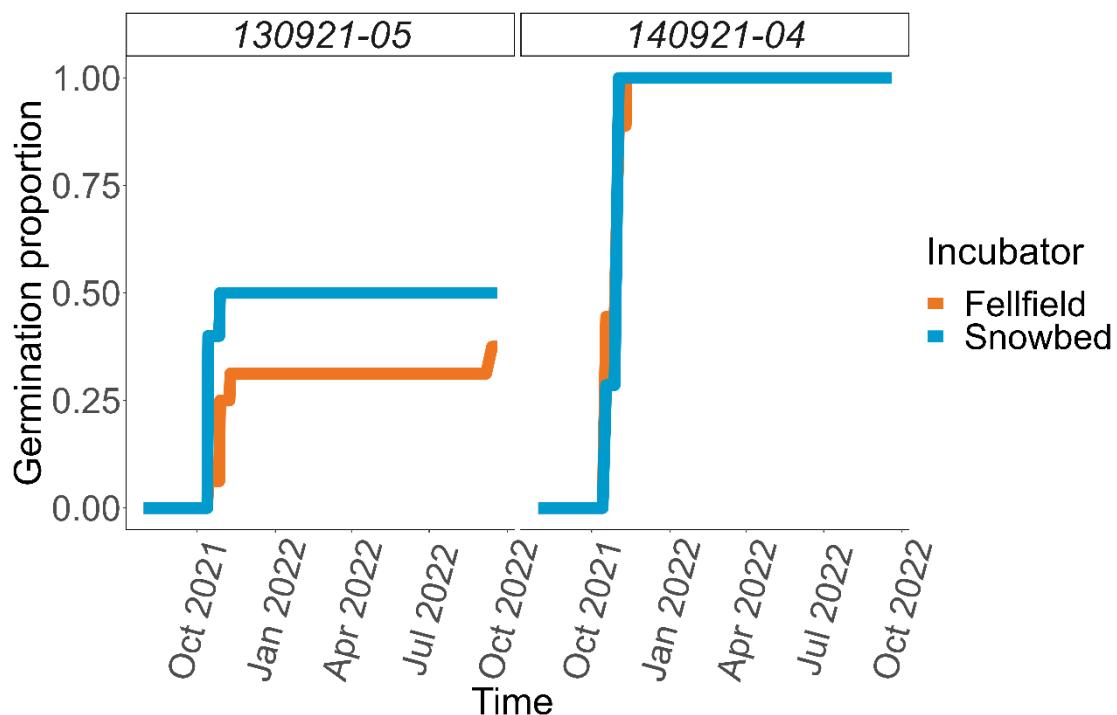
310821-08



Helianthemum canum

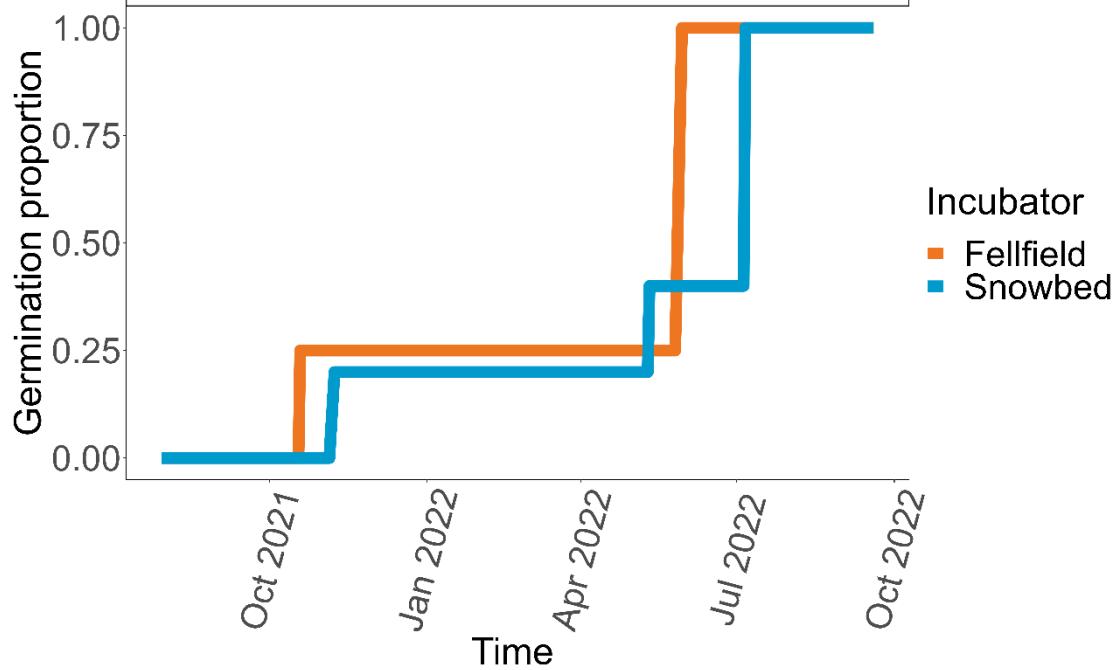


Helianthemum urvilense



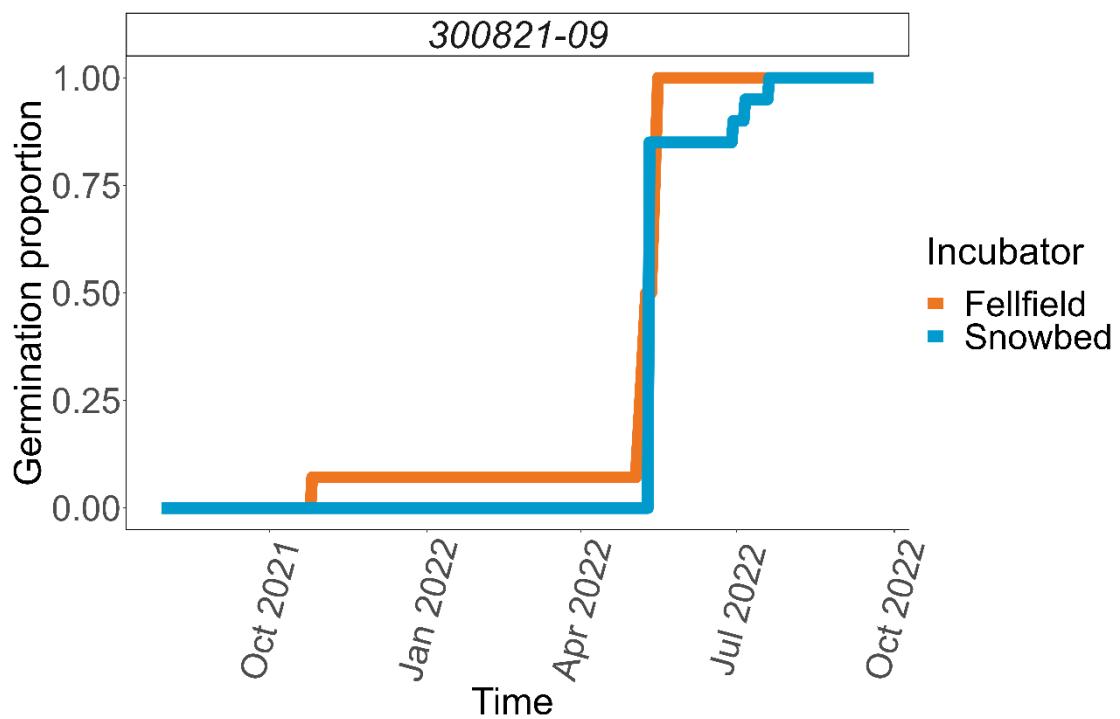
Helictochloa marginata

240821-06

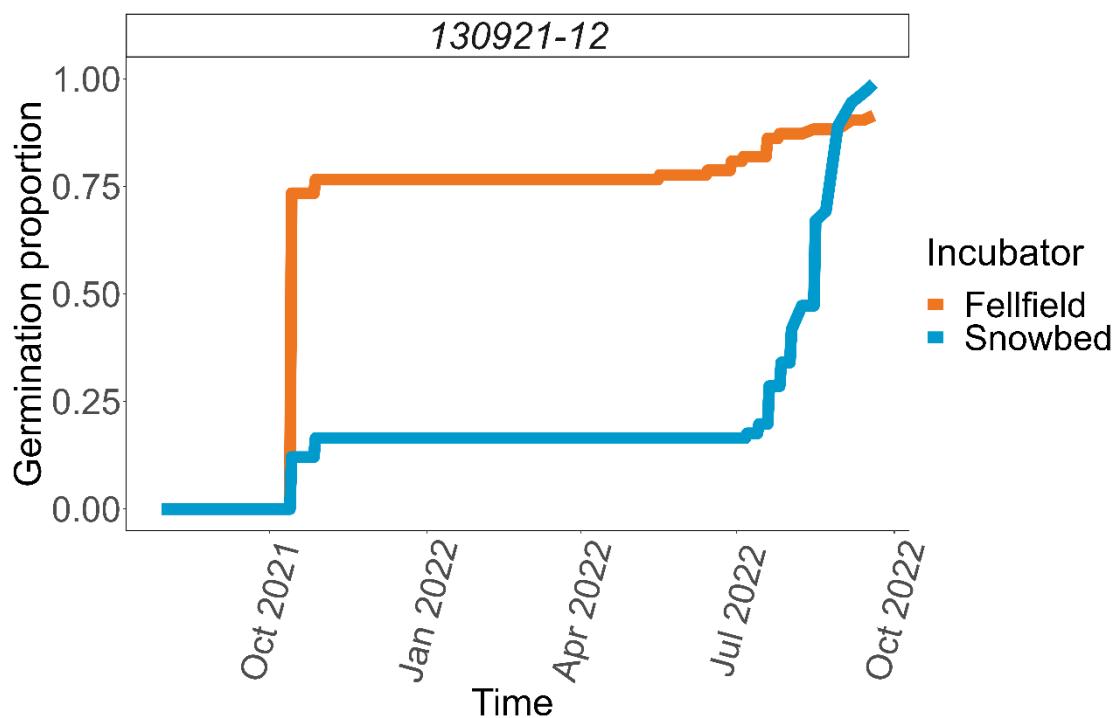


Helictotrichon sedenense

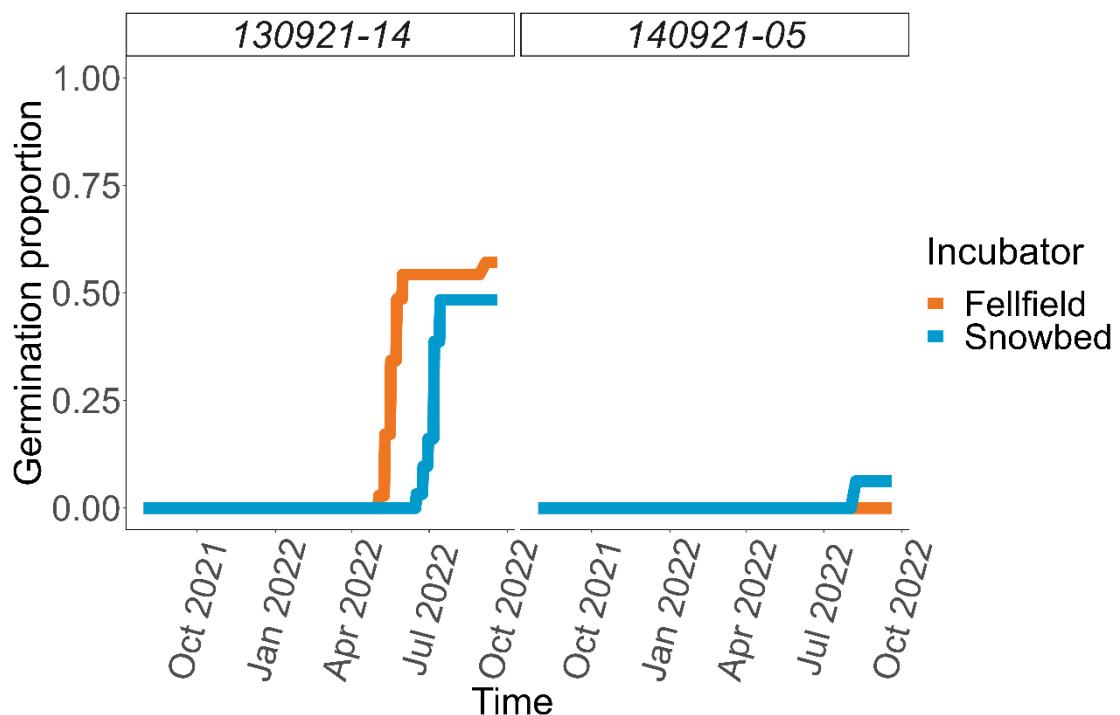
300821-09



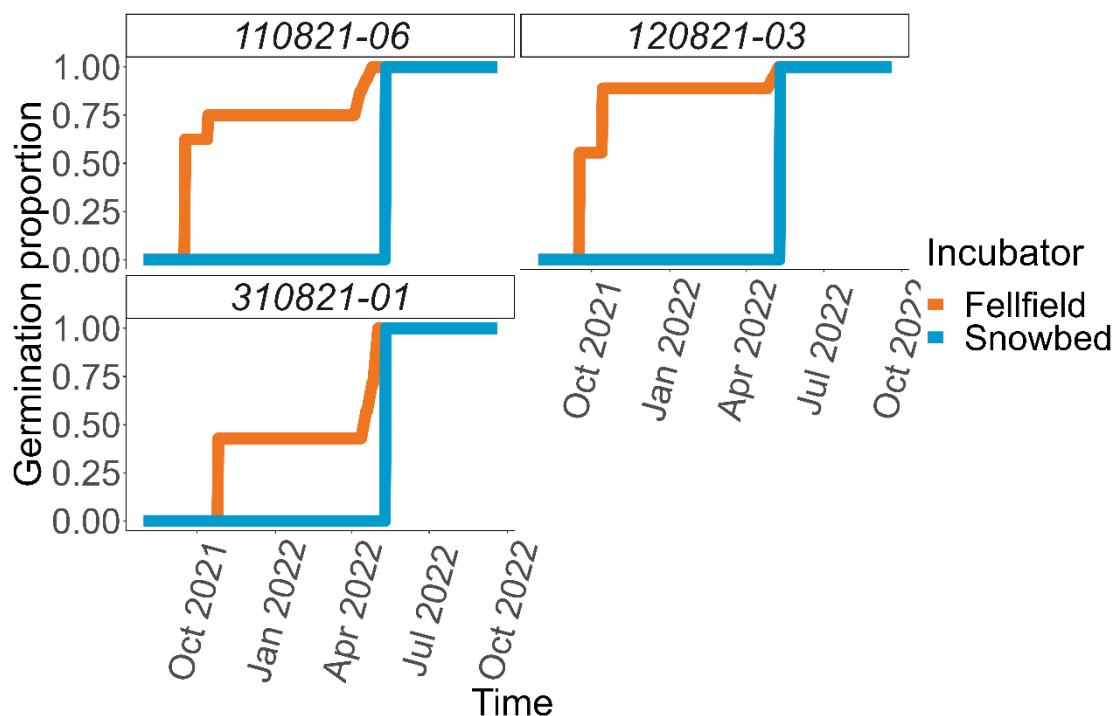
Iberis carnosa



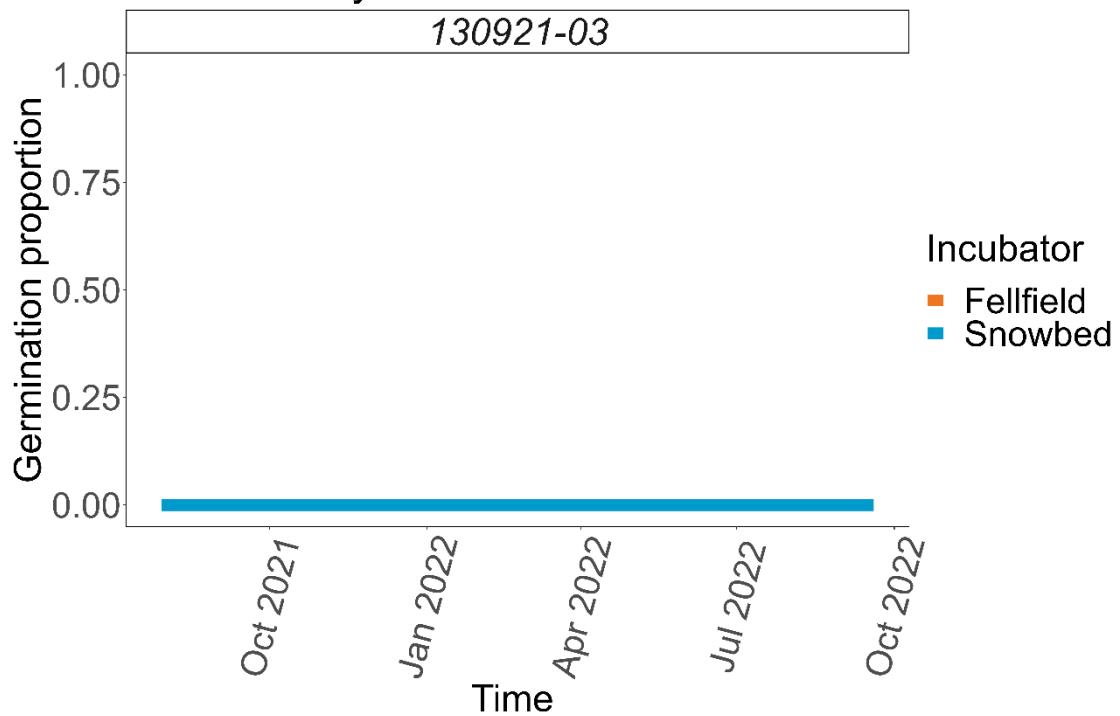
Jasione cavanillesii



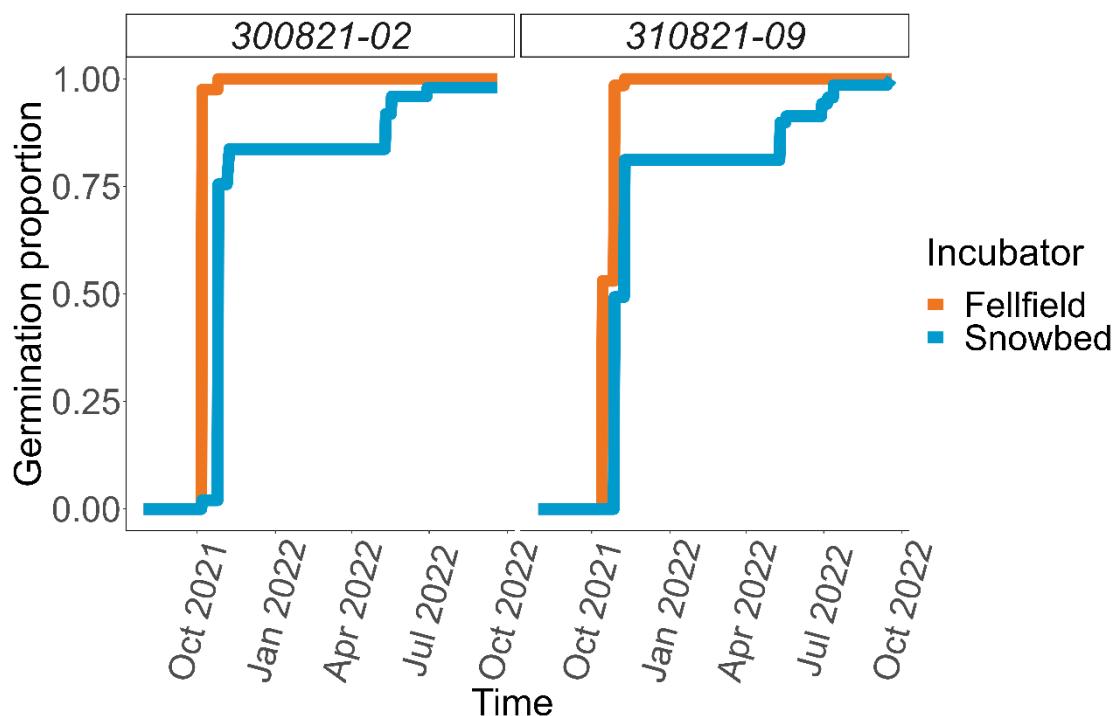
Jurinea humilis



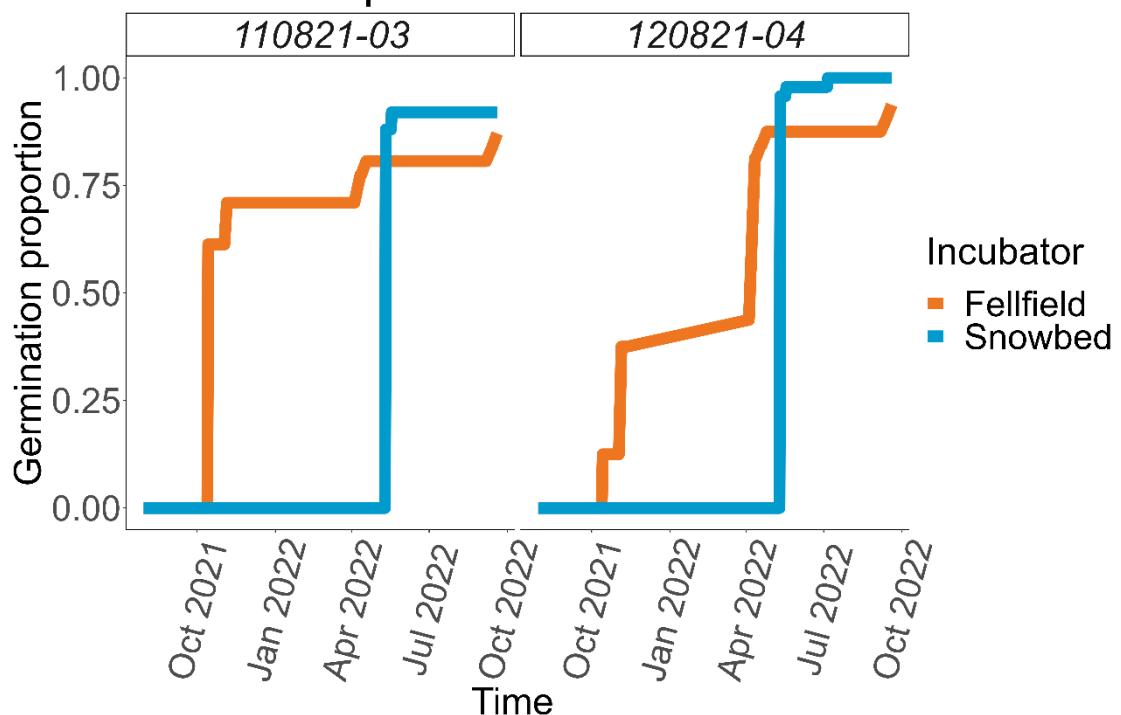
Kobresia myosuroides



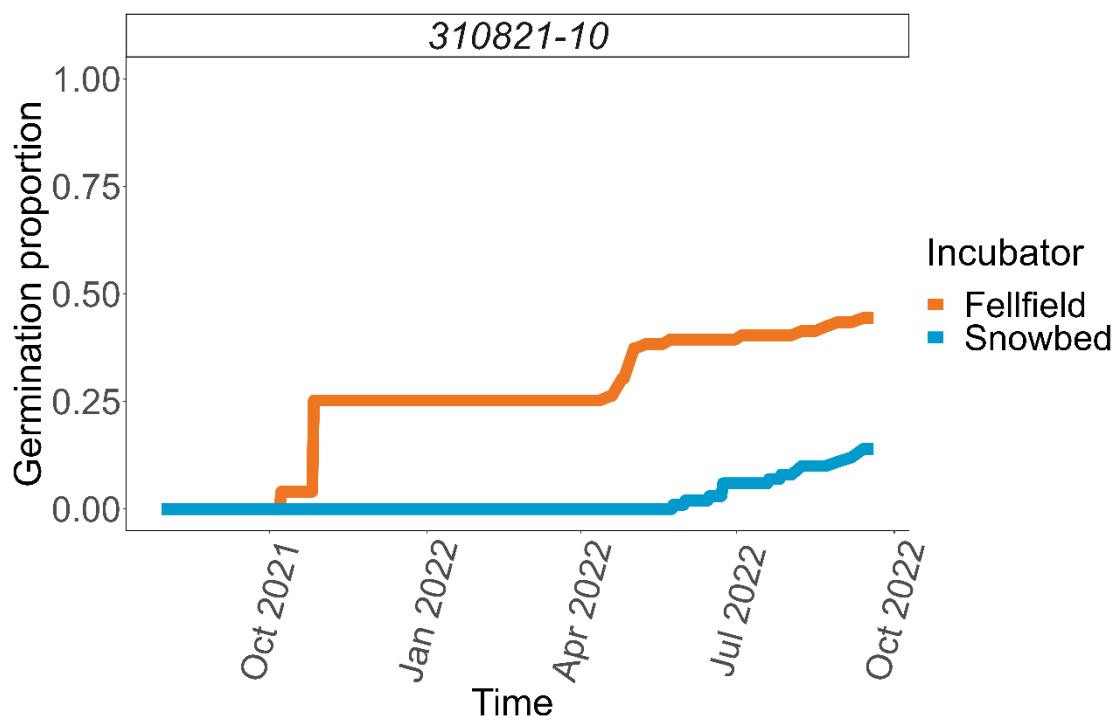
Koeleria vallesiana



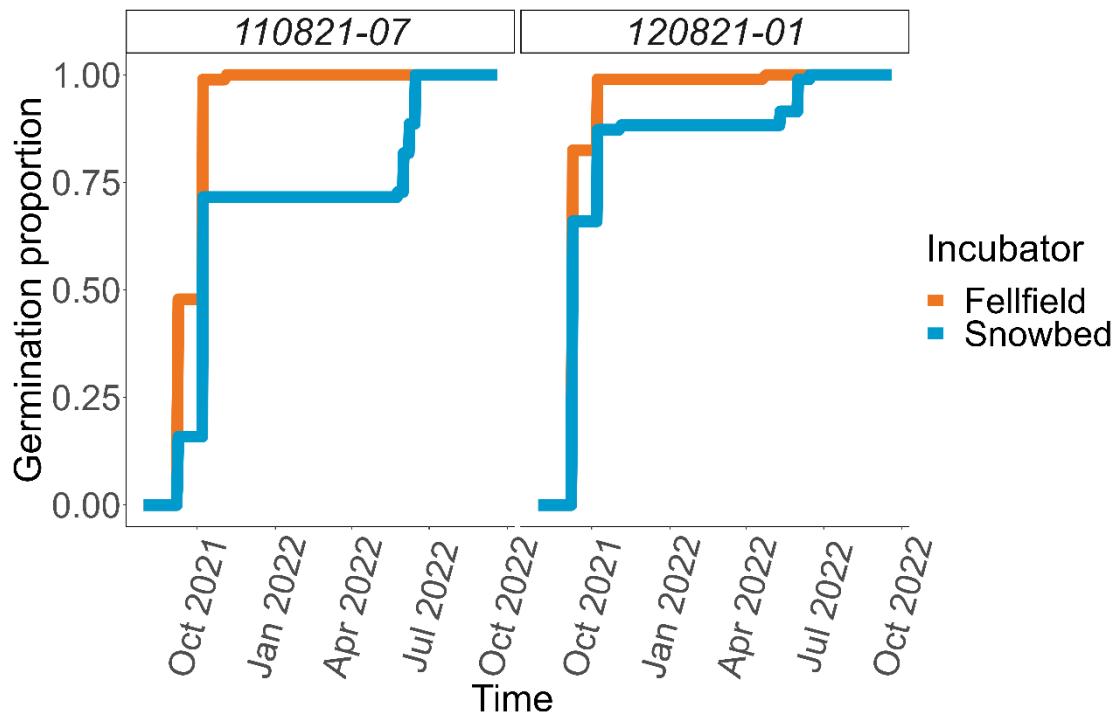
Luzula caespitosa



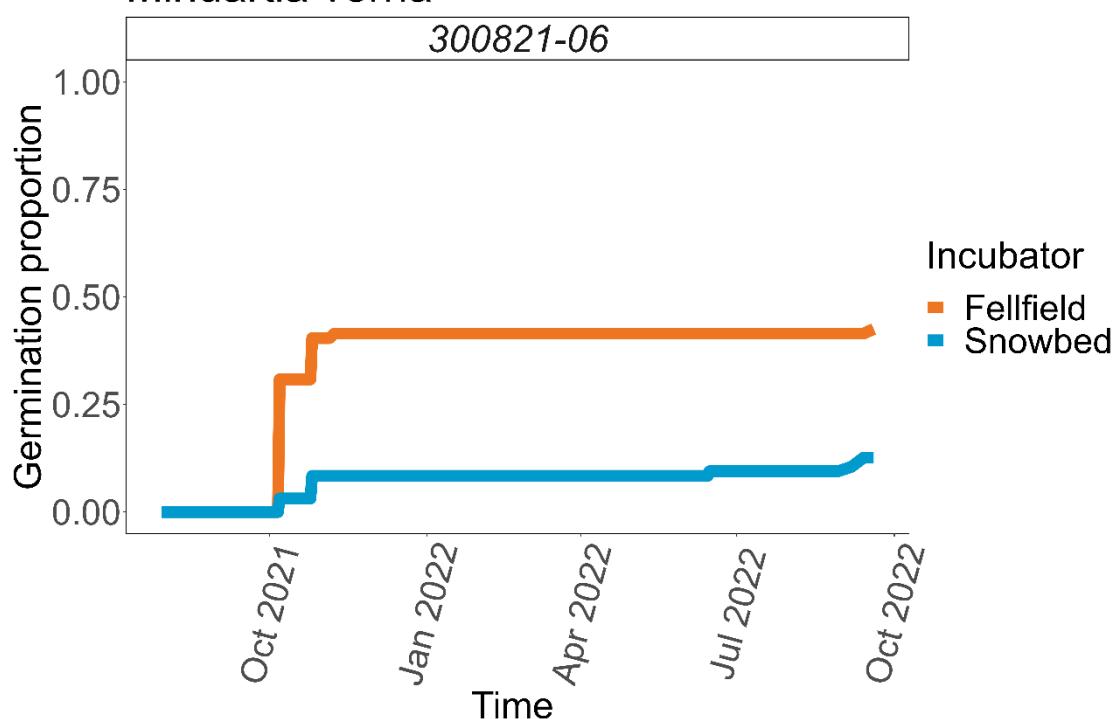
Minuartia CF



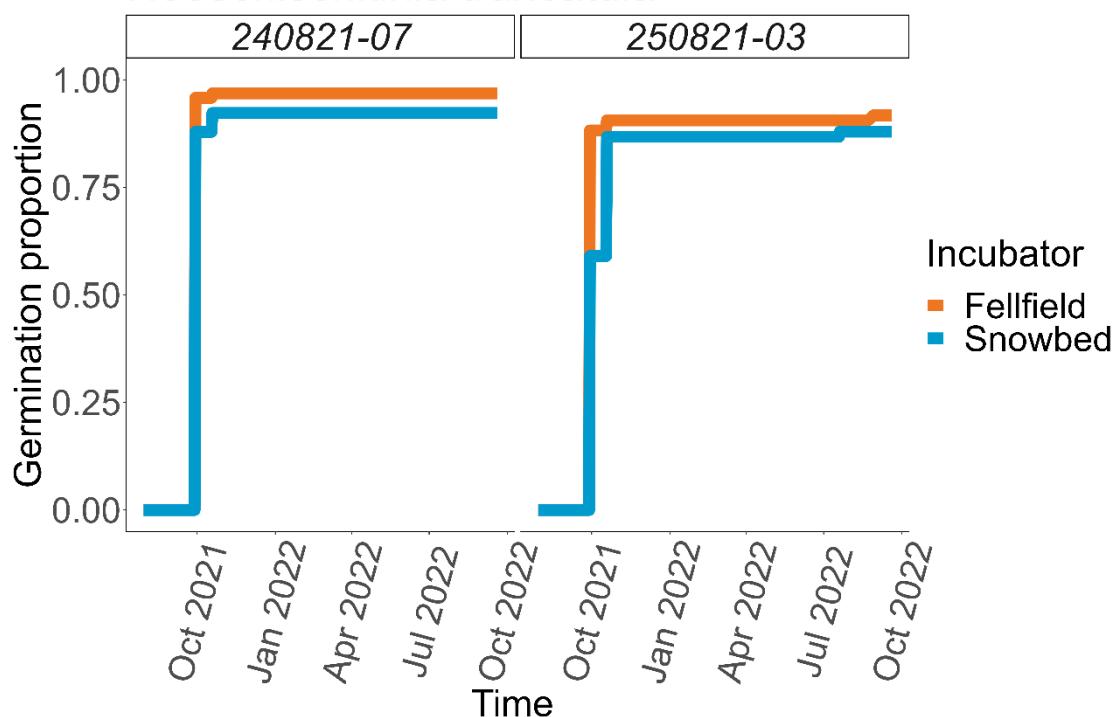
Minuartia recurva



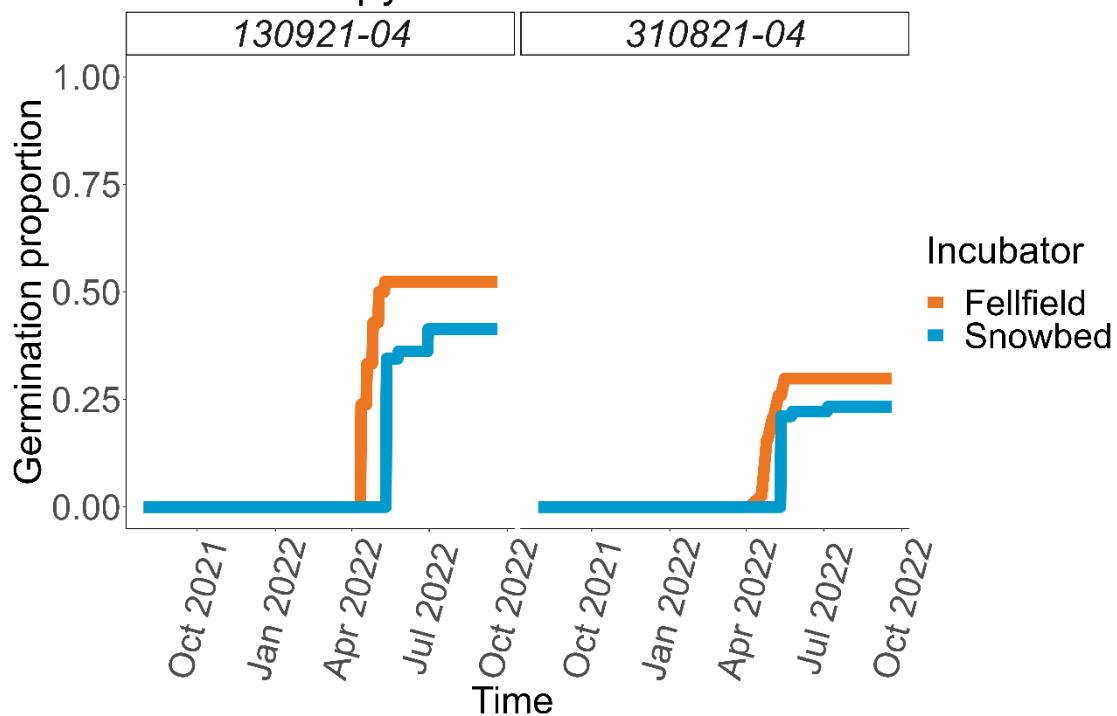
Minuartia verna



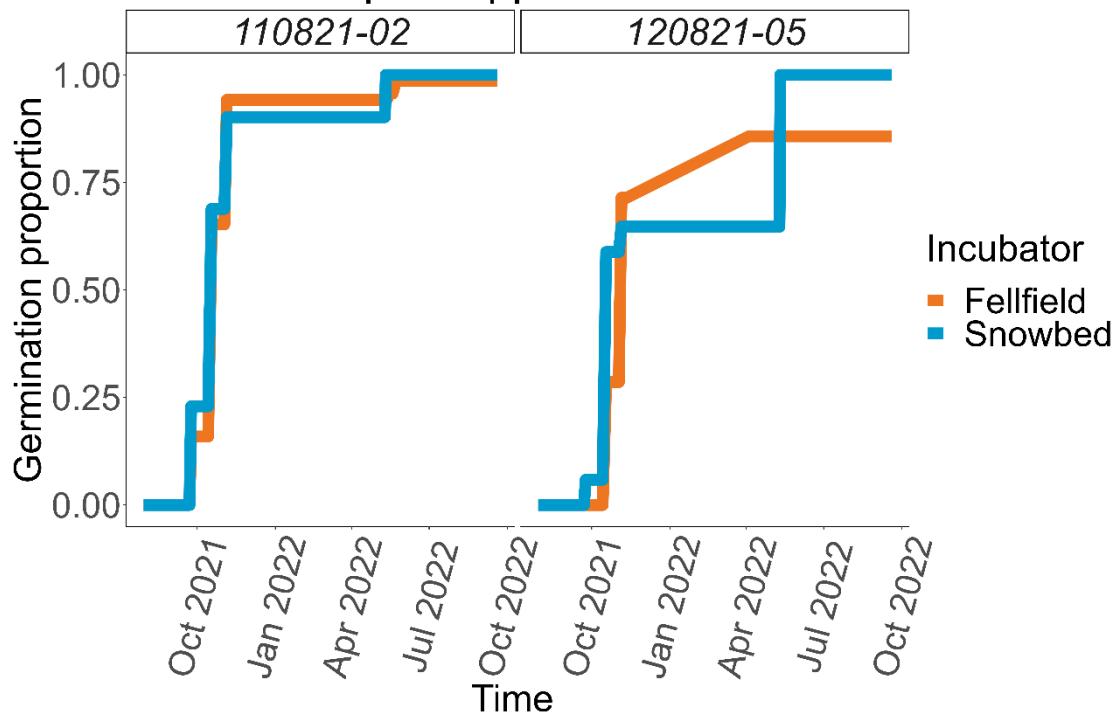
Neoschischkinia truncatula



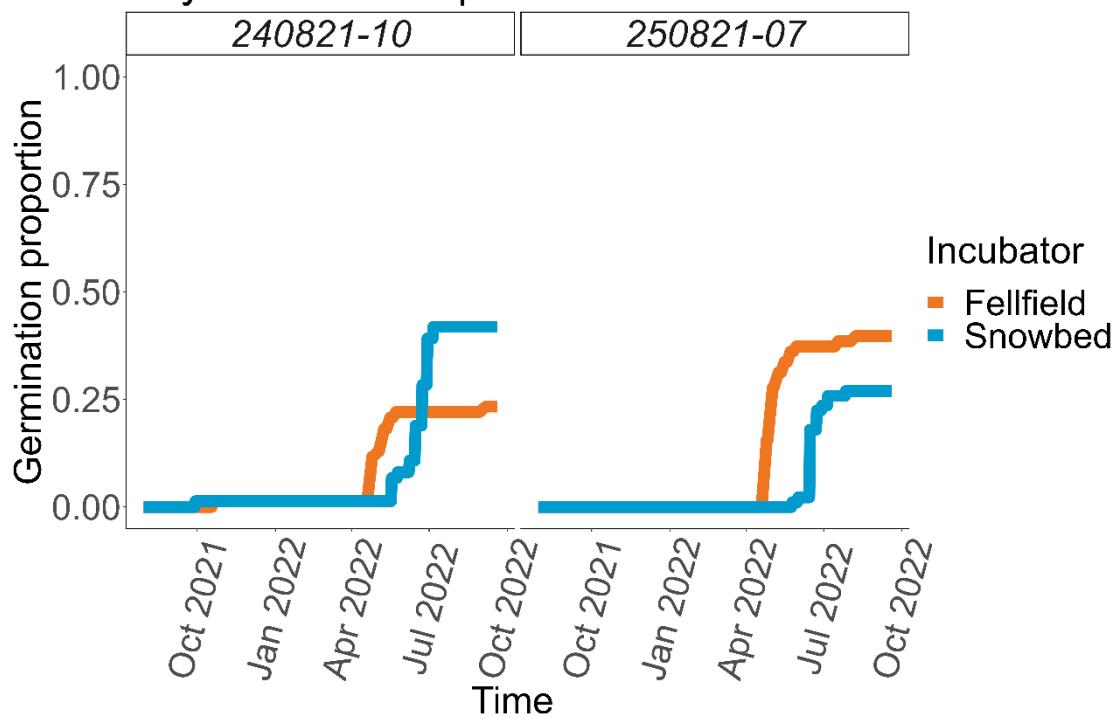
Pedicularis pyrenaica



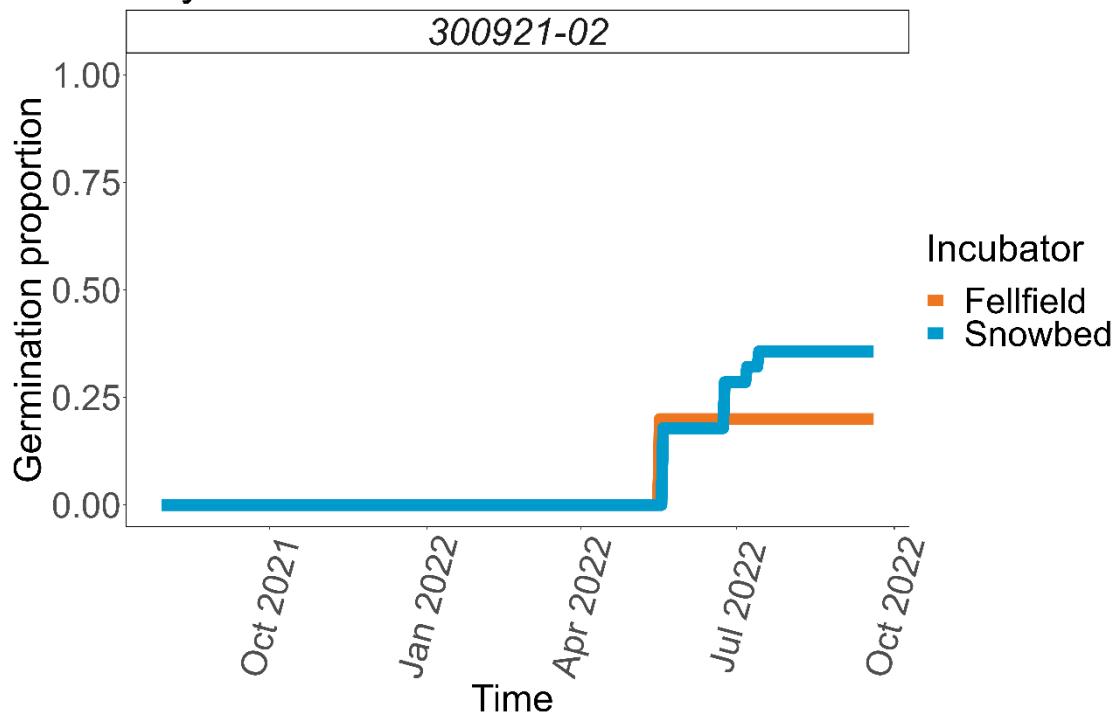
Phalacrocarpum oppositifolium



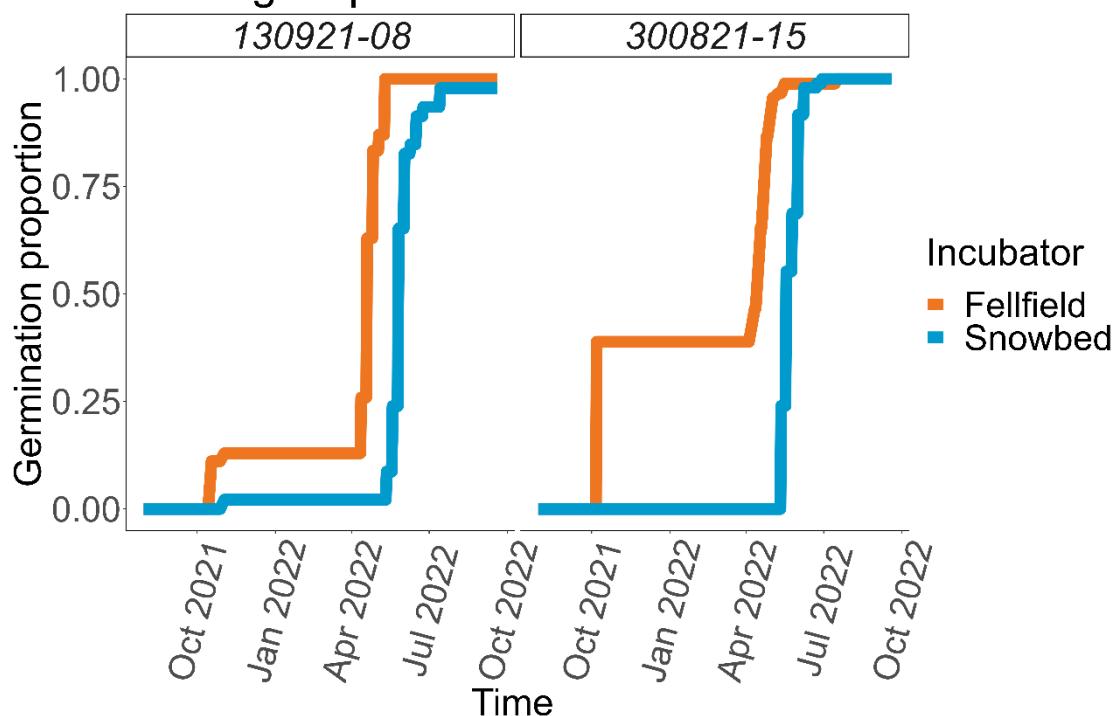
Phyteuma hemisphaericum



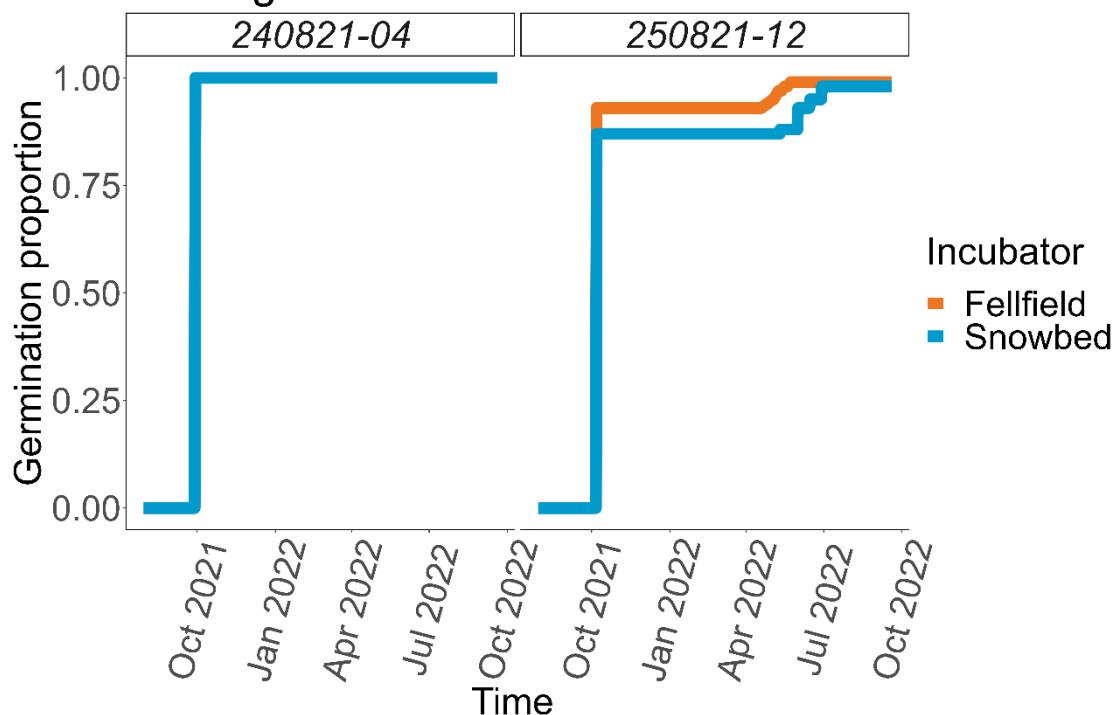
Phyteuma orbiculare



Plantago alpina

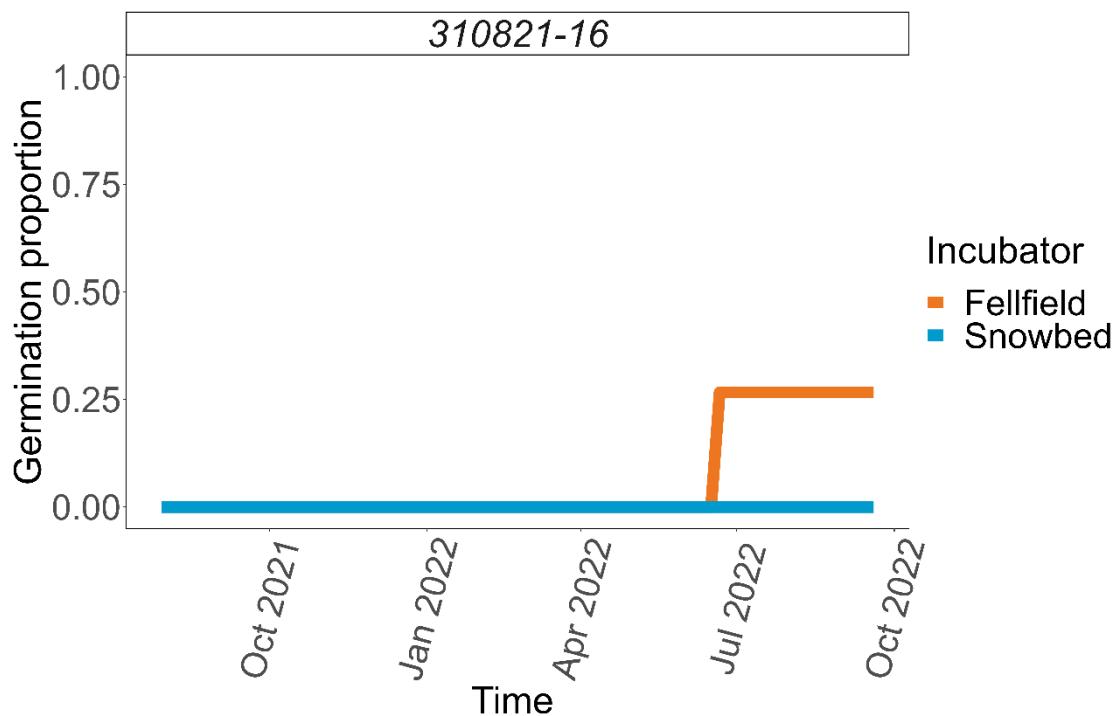


Plantago holosteum



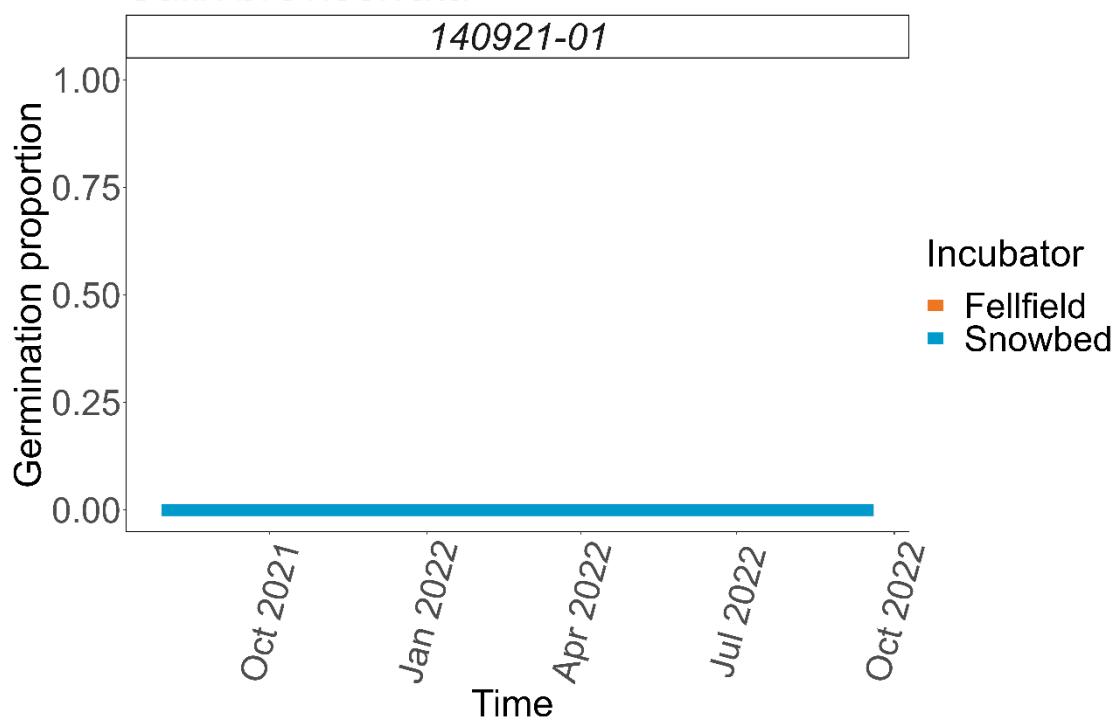
Ranunculus carinthiacus

310821-16

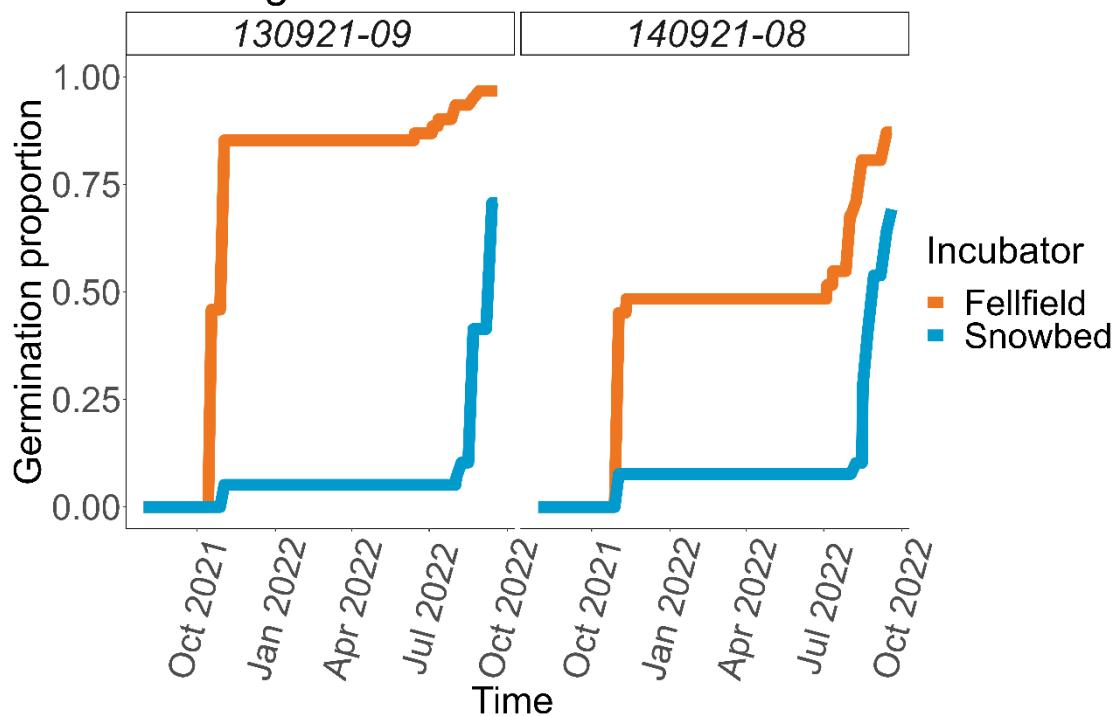


Salix breviserrata

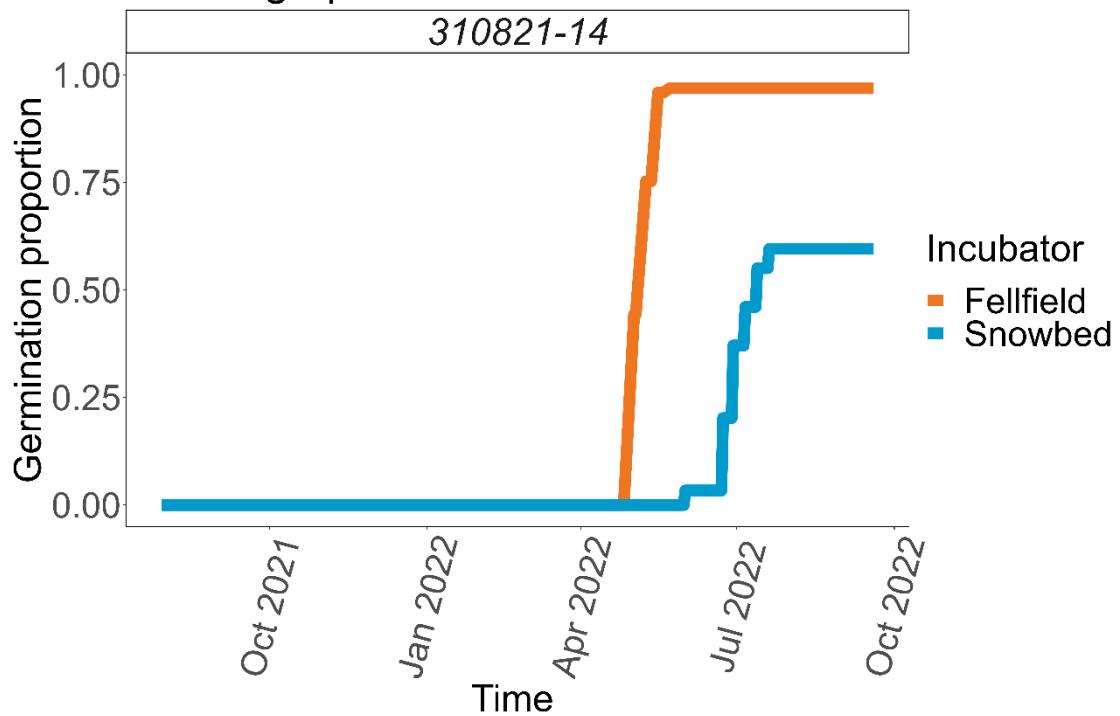
140921-01



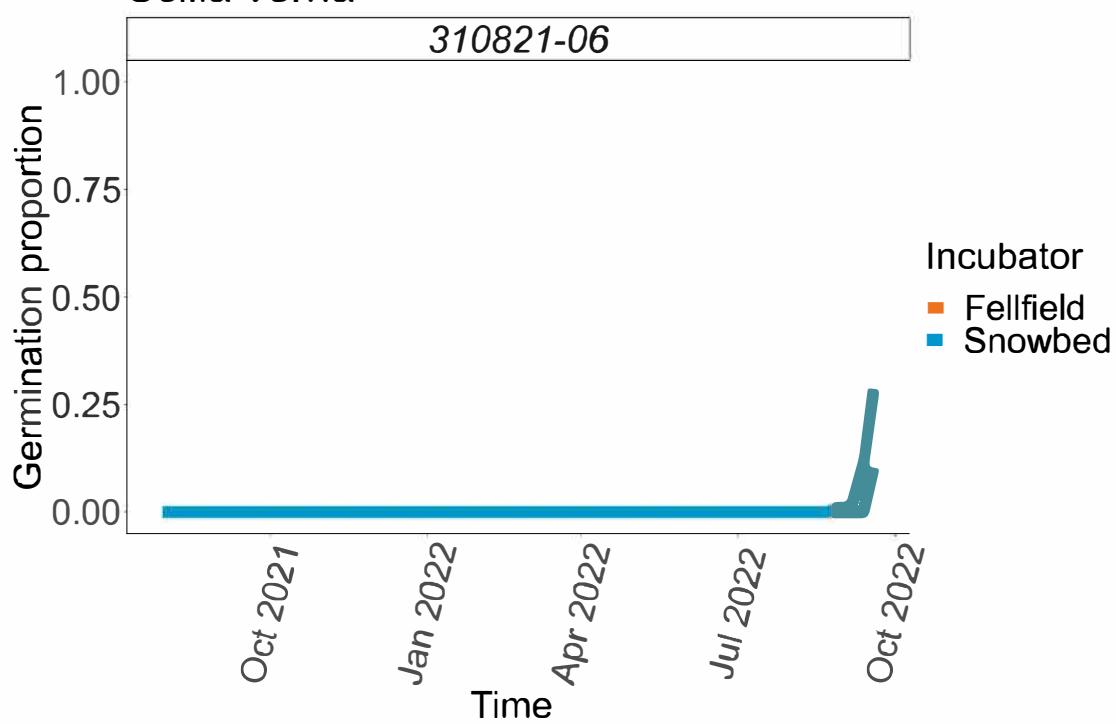
Saxifraga conifera



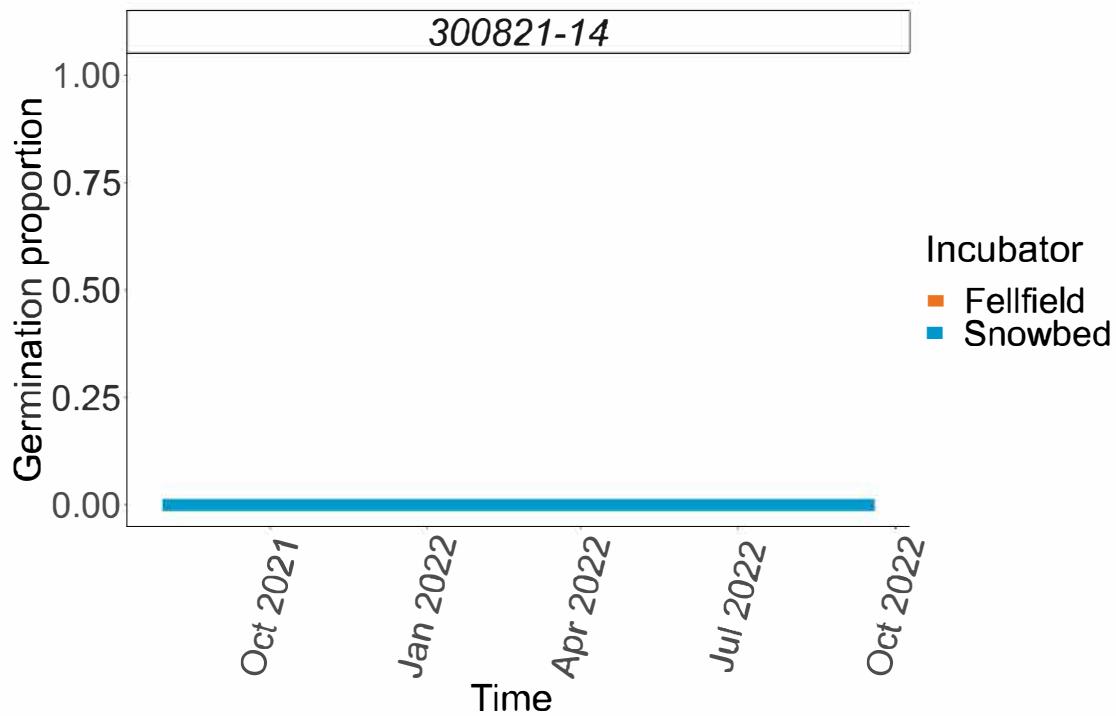
Saxifraga paniculata



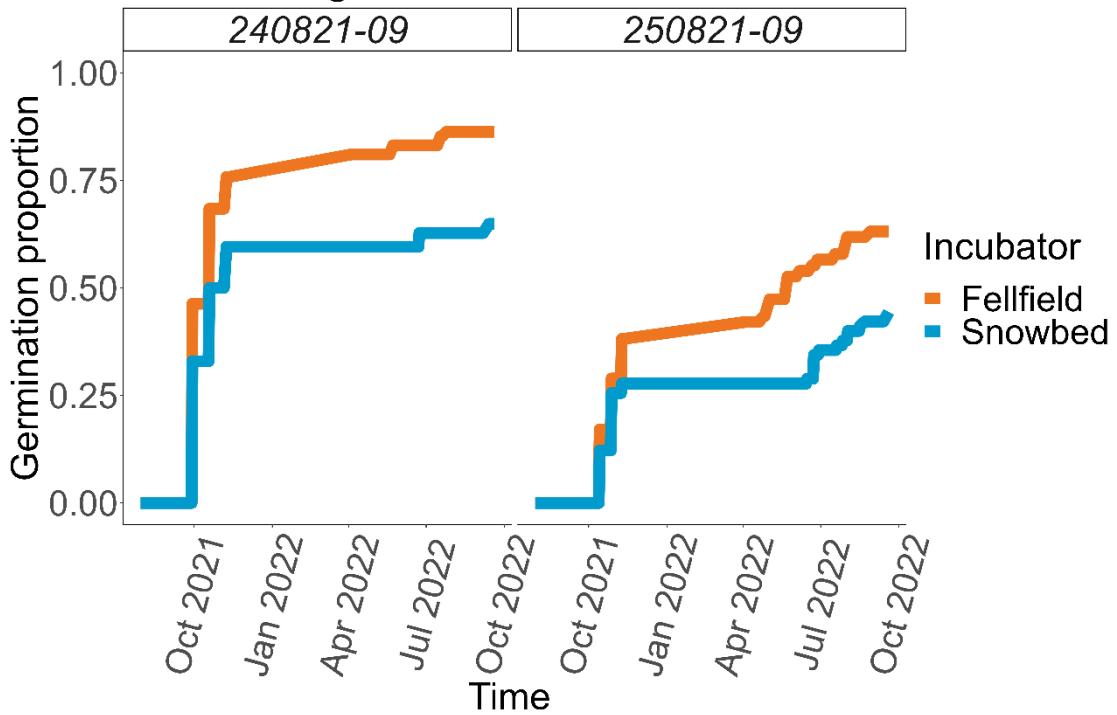
Scilla verna



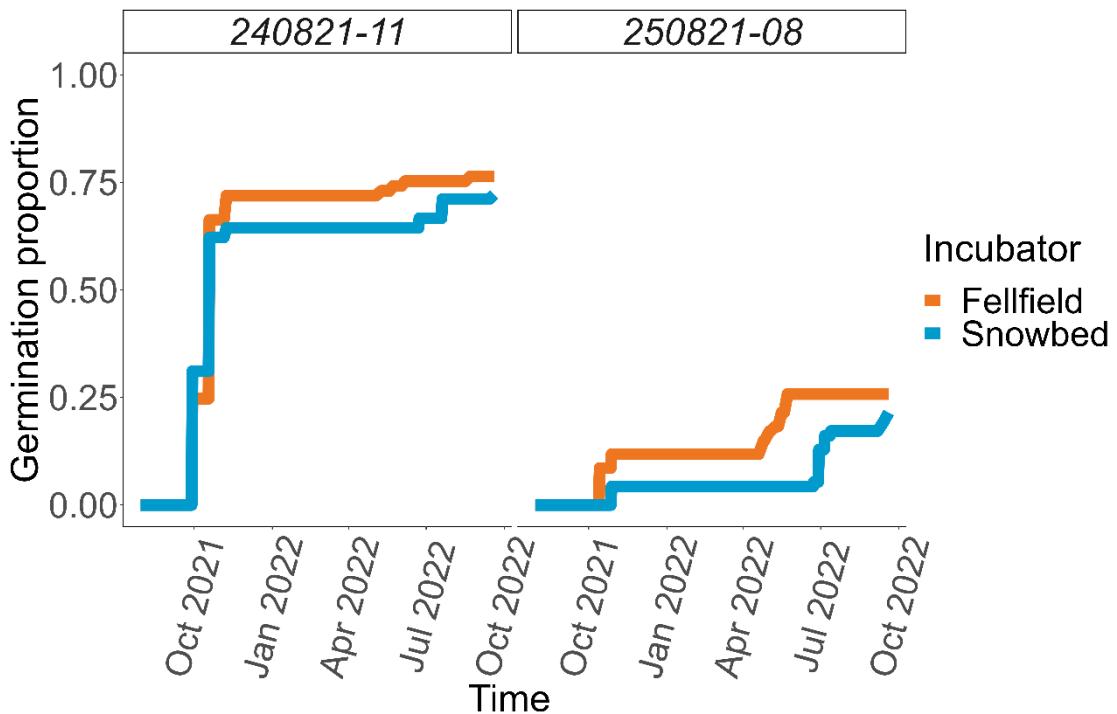
Sedum album



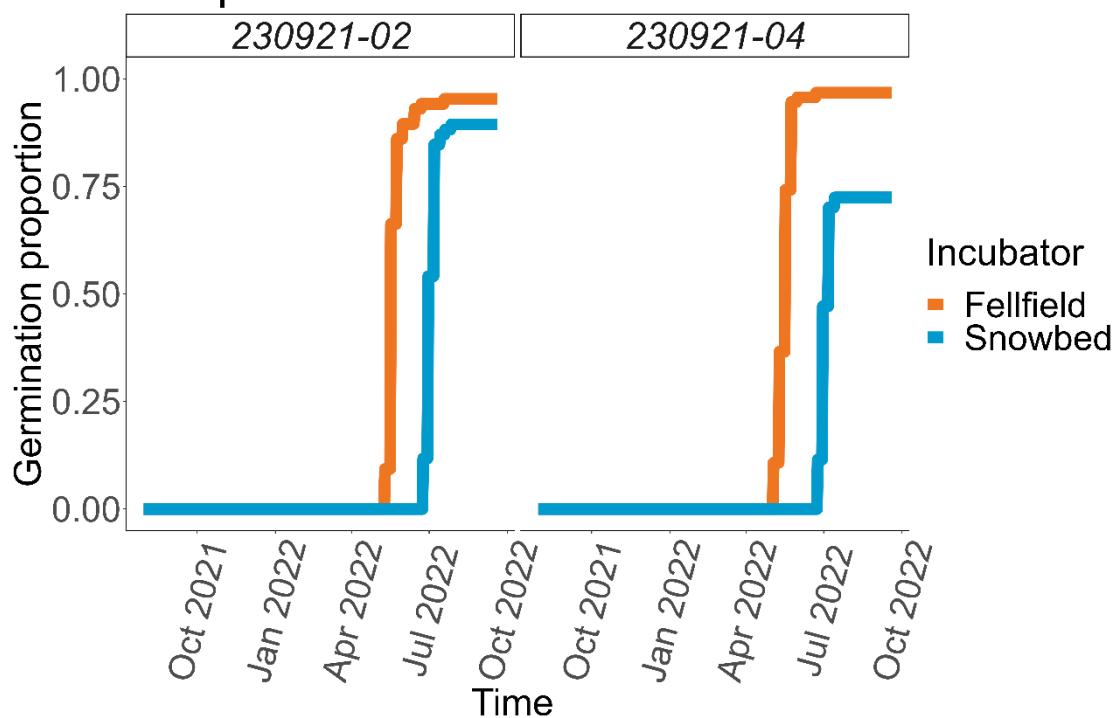
Sedum anglicum



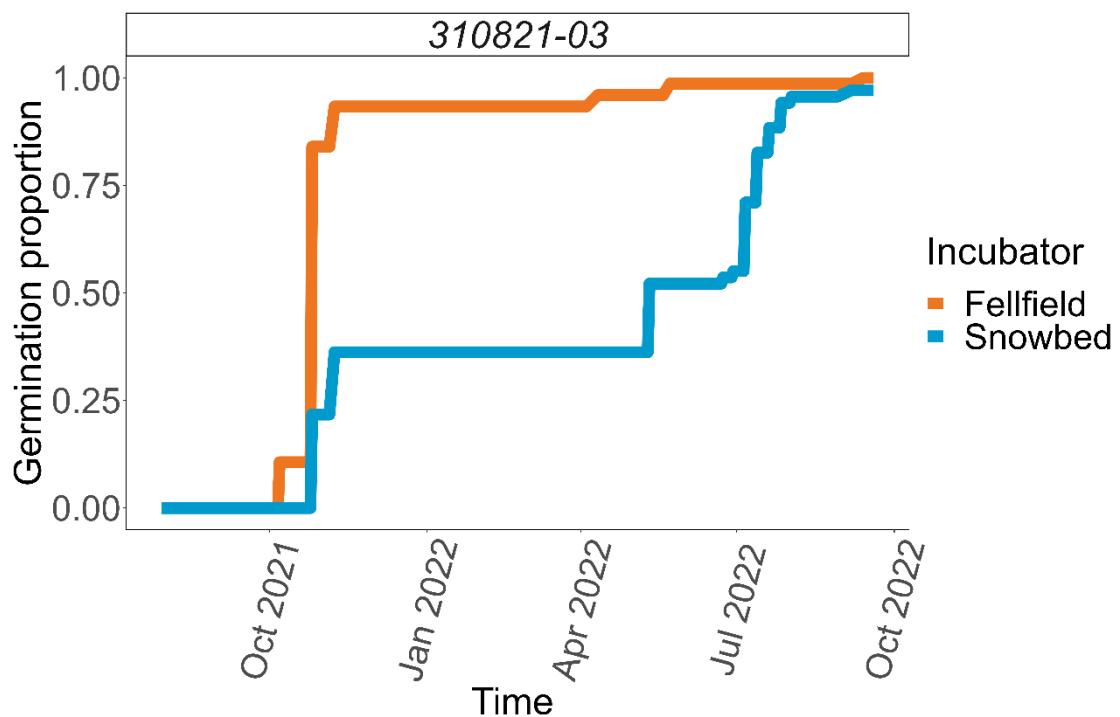
Sedum brevifolium



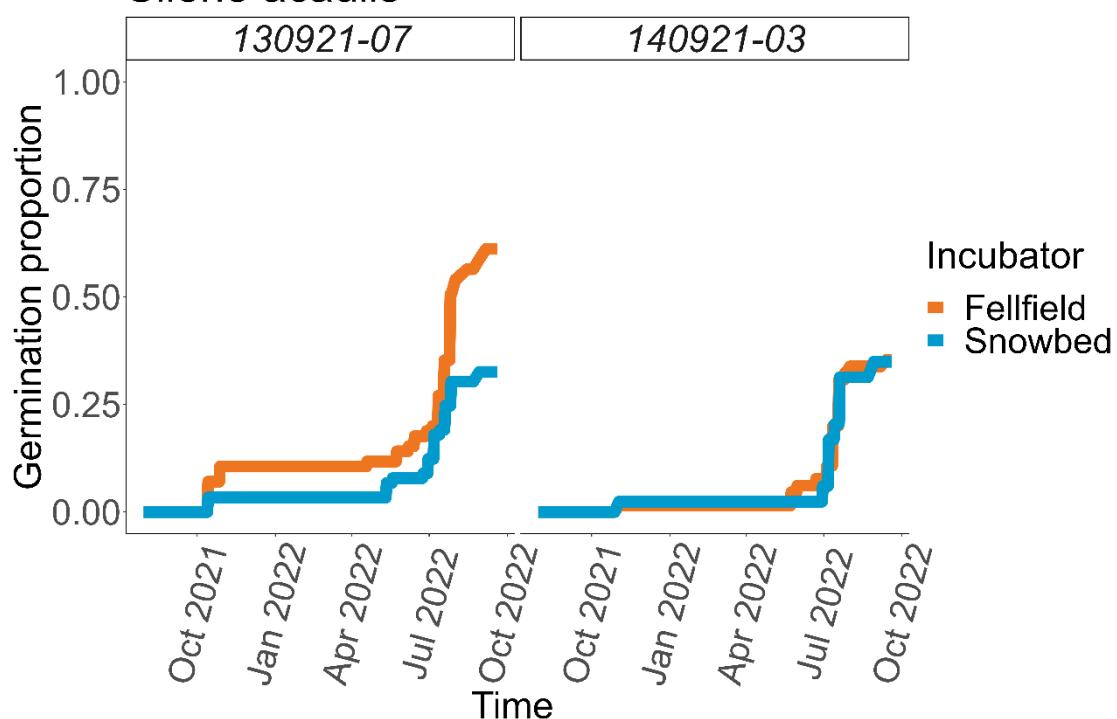
Sempervivum arachnoideum



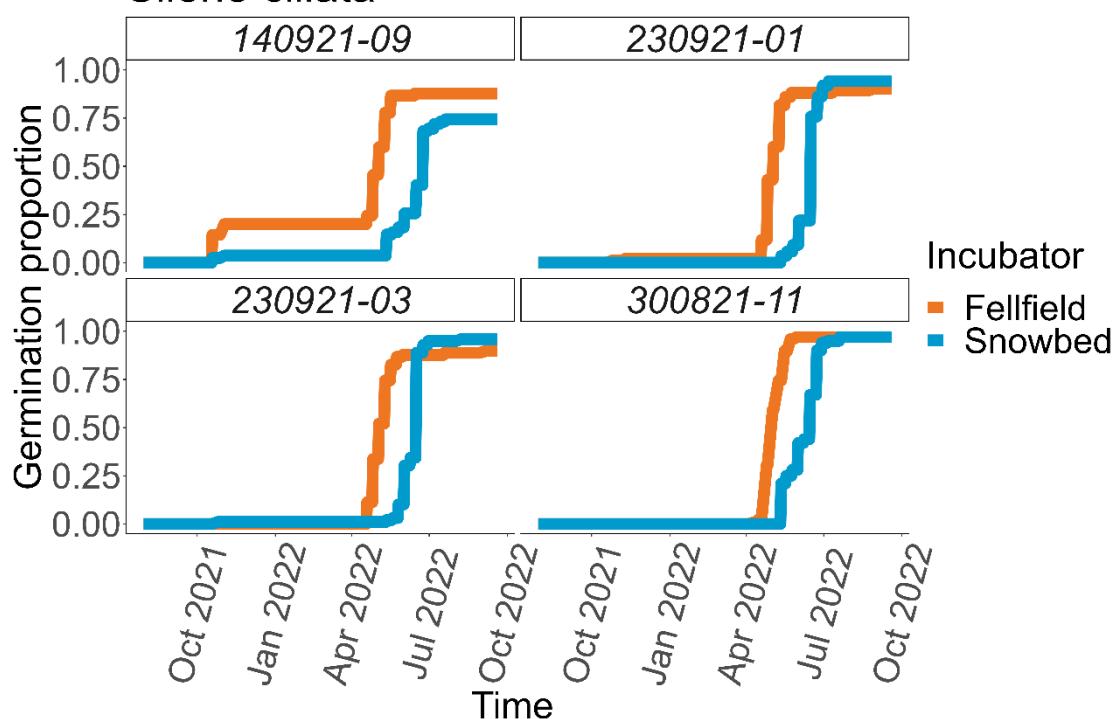
Sesleria caerulea



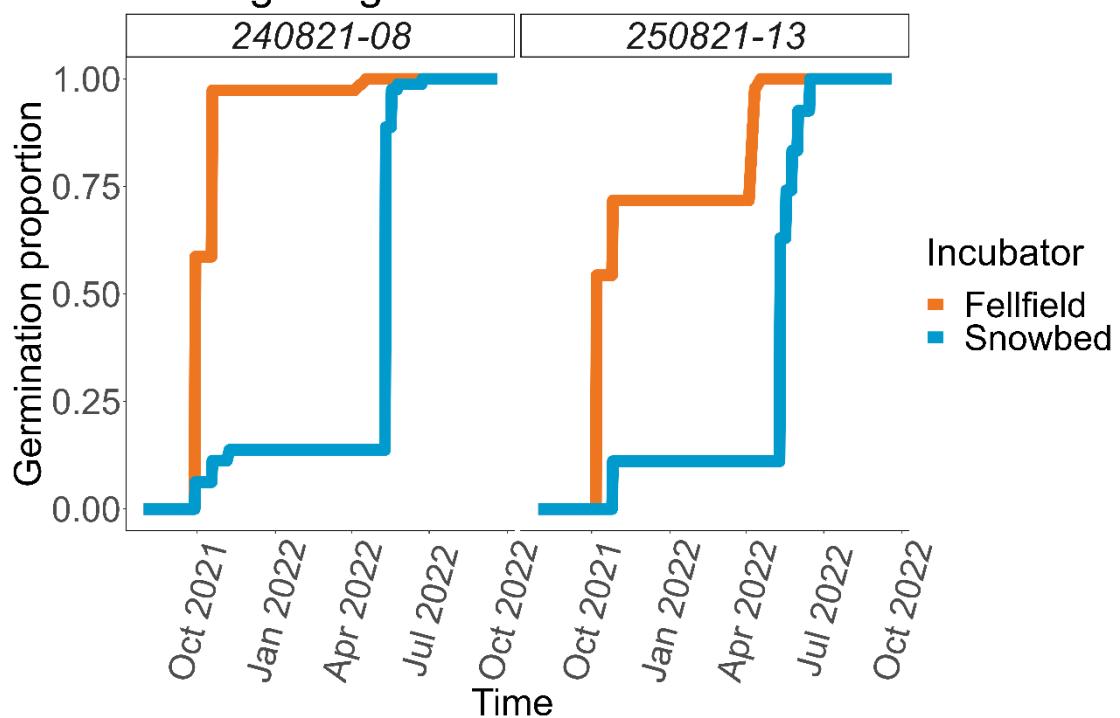
Silene acaulis



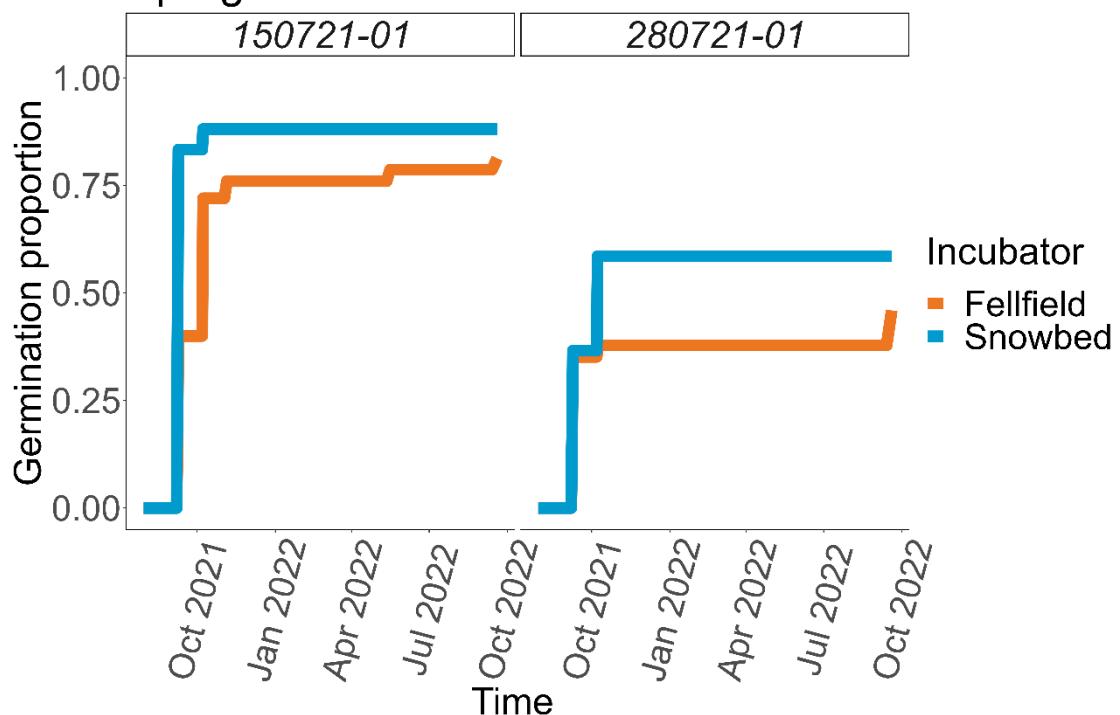
Silene ciliata



Solidago virgaurea



Spergula morisonii



Thymus praecox

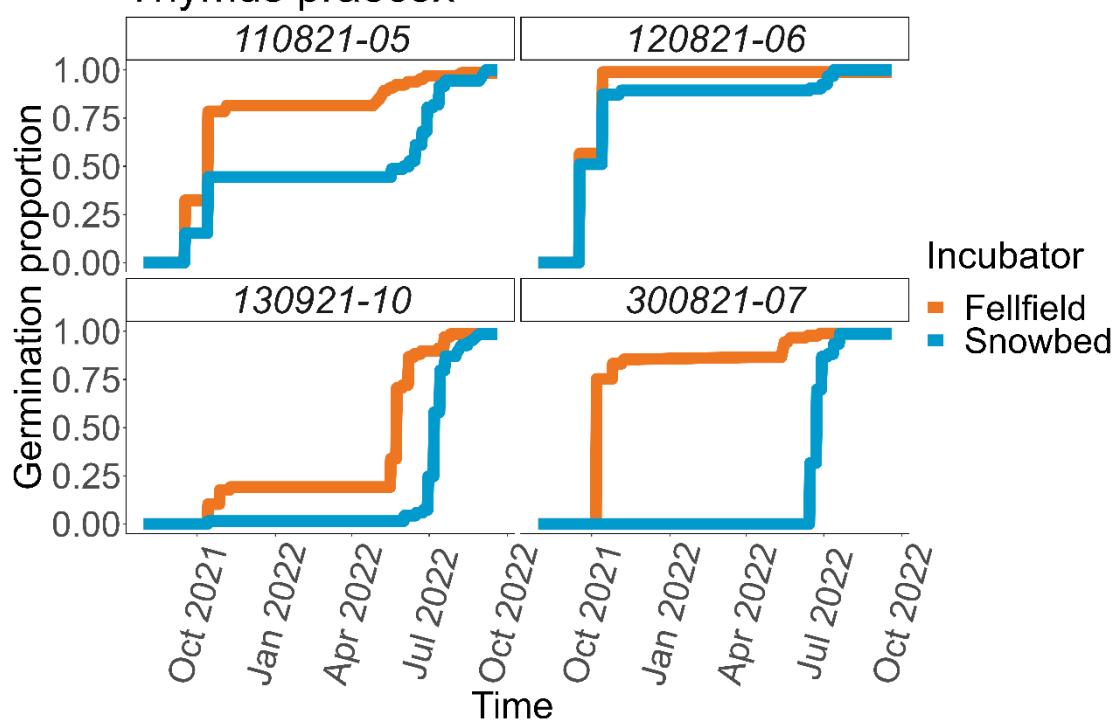


Table S1. Summary table with all species specific germination phenology traits calculated for each microclimatic condition (F = Fellfield, S = Snowbed)

Study system	Species	Family	Phenology period with highest germination	Autumn germination		Winter germination		Spring germination		Summer germination		Time to reach 50% germination		Environmental Heat Sum		Delay time to 50% germ (days)	Germination shift (area between curves)	
				F	S	F	S	F	S	F	S	F	S	F	S			
Temperate	<i>Androsace villosa</i>	Primulaceae	Summer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	NA	NA	NA	NA	NA	-0.6	
Temperate	<i>Anthyllis vulneraria</i>	Fabaceae	Autumn	5.9	2.9	0.0	0.0	0.0	0.0	0.0	2.1	0.0	NA	NA	NA	NA	12.2	
Temperate	<i>Arenaria erinacea</i>	Caryophyllaceae	Autumn	22.7	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	NA	NA	NA	NA	69.1	
Temperate	<i>Arenaria moehringioides</i>	Caryophyllaceae	Spring	3.9	0.0	0.0	18.2	38.5	0.0	3.9	18.2	272.0	294.0	1082.5	792.0	22.0	30.8	
Temperate	<i>Armeria cantabrica</i>	Plumbaginaceae	Spring	0.7	0.0	0.0	7.7	65.7	0.6	30.1	89.1	238.2	278.0	654.2	596.8	39.8	30.8	
Temperate	<i>Carex sempervirens</i>	Cyperaceae	Spring	0.0	0.0	0.0	0.0	96.6	0.0	2.6	99.3	244.9	282.9	694.0	548.3	38.0	38.2	
Temperate	<i>Dethawia splendens</i>	Apiaceae	Spring	0.0	0.0	0.0	91.8	94.9	6.1	0.0	2.0	212.9	230.4	457.6	251.9	17.5	11.9	
Temperate	<i>Erigeron alpinus</i>	Asteraceae	Spring	0.0	0.0	0.0	3.0	100.0	83.8	0.0	13.1	219.8	261.6	463.9	325.1	41.9	43.8	
Temperate	<i>Euphrasia salisburgensis</i>	Orobanchaceae	Summer	0.0	0.0	0.0	0.5	0.5	0.0	1.0	0.0	NA	NA	NA	NA	NA	0.1	
Temperate	<i>Festuca hystrix</i>	Poaceae	Autumn	97.1	71.1	0.0	7.9	2.9	0.0	0.0	7.9	15.1	122.8	144.8	178.0	107.7	83.2	
Temperate	<i>Festuca rubra</i>	Poaceae	Spring	0.0	0.0	0.0	100.0	0.0	0.0	239.5	0.0	648.0	0.0	0.0	-239.5	NA	NA	
Temperate	<i>Gentiana verna</i>	Gentianaceae	Spring	0.0	0.0	0.0	7.3	8.7	0.7	0.0	0.7	NA	NA	NA	NA	NA	1.2	
Temperate	<i>Gentianella campestris</i>			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	
Temperate	<i>Gypsophila repens</i>	Caryophyllaceae	Spring	Summer	17.4	1.1	0.0	2.1	70.5	7.9	8.1	87.4	230.3	281.8	566.0	523.1	51.6	75.4
Temperate	<i>Helianthemum canum</i>	Cistaceae	Autumn	19.0	10.2	0.0	1.8	5.8	4.5	4.3	5.2	279.0	NA	1245.0	NA	NA	29.8	
Temperate	<i>Helianthemum urrielense</i>	Cistaceae	Autumn	65.6	75.0	0.0	0.0	0.0	0.0	3.1	0.0	13.3	14.8	135.3	91.0	1.4	-32.5	
Temperate	<i>Helictotrichon sedenense</i>	Poaceae	Spring	Winter	7.1	0.0	0.0	85.0	92.9	0.0	0.0	15.0	229.6	231.6	568.3	277.0	2.0	23.0
Temperate	<i>Iberis carnosa</i>	Brassicaceae	Autumn	Summer	76.6	16.5	0.0	0.0	2.1	0.0	12.8	82.4	9.6	311.7	97.8	1005.9	302.1	183.4
Temperate	<i>Jasione cavanillesii</i>	Campanulaceae	Spring	Summer	0.0	0.0	0.0	0.0	27.1	4.8	1.4	22.5	226.3	272.3	491.5	474.3	46.0	14.0
Temperate	<i>Jurinea humilis</i>	Asteraceae	Spring	Winter	42.9	0.0	0.0	100.0	57.1	0.0	0.0	0.0	119.6	230.5	376.3	268.5	110.9	94.1
Temperate	<i>Kobresia myosuroides</i>			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	
Temperate	<i>Koeleria vallesiana</i>	Poaceae	Autumn	Autumn	100.0	82.4	0.0	11.2	0.0	0.0	0.0	5.4	12.1	30.0	132.0	185.9	17.9	54.5
Temperate	<i>Minuartia CF</i>	Caryophyllaceae	Autumn	Summer	25.3	0.0	0.0	1.0	14.1	5.0	5.1	8.0	227.0	NA	534.0	NA	NA	97.2
Temperate	<i>Minuartia verna</i>	Caryophyllaceae	Autumn	Autumn	41.5	8.4	0.0	0.0	0.0	1.1	1.1	3.2	NA	NA	NA	NA	NA	112.4
Temperate	<i>Pedicularis pyrenaica</i>	Orobanchaceae	Spring	Winter	0.0	0.0	0.0	29.2	41.1	0.0	0.0	3.1	203.7	249.5	378.3	334.0	45.8	21.1
Temperate	<i>Phyteuma orbiculare</i>	Campanulaceae	Spring	Winter	0.0	0.0	0.0	17.9	20.0	10.7	0.0	7.1	NA	NA	NA	NA	NA	-11.4
Temperate	<i>Plantago alpina</i>	Plantaginaceae	Spring	Winter	25.9	1.1	0.0	65.9	73.5	29.2	0.6	2.7	176.0	234.5	334.4	225.3	58.5	83.0
Temperate	<i>Ranunculus carinthiacus</i>	Ranunculaceae	Spring	0.0	0.0	0.0	0.0	26.7	0.0	0.0	0.0	NA	NA	NA	NA	NA	24.7	
Temperate	<i>Salix breviserrata</i>			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	
Temperate	<i>Saxifraga conifera</i>	Saxifragaceae	Autumn	Summer	66.8	6.4	0.0	0.0	0.8	0.0	24.3	63.5	62.5	327.6	338.5	1284.7	265.1	195.2
Temperate	<i>Saxifraga paniculata</i>	Saxifragaceae	Spring	Summer	0.0	0.0	0.0	0.0	96.9	20.2	0.0	39.3	222.0	283.5	499.9	551.5	61.5	84.8
Temperate	<i>Scilla verna</i>	Asparagaceae	Summer	Summer	0.0	0.0	0.0	0.0	0.0	0.0	10.4	28.6	NA	NA	NA	NA	NA	-1.4
Temperate	<i>Sedum album cf</i>			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	
Temperate	<i>Sesleria caerulea</i>	Poaceae	Autumn	Autumn	93.3	36.2	0.0	15.9	5.3	1.5	1.3	43.5	25.1	195.4	267.8	304.6	170.4	146.8
Temperate	<i>Silene acaulis</i>	Caryophyllaceae	Autumn	Summer	6.1	2.9	0.0	2.2	6.6	0.6	35.6	28.1	303.9	288.0	1601.5	692.5	-15.9	17.5
Temperate	<i>Silene ciliata</i>	Caryophyllaceae	Spring	Spring	10.0	1.8	0.0	21.3	82.4	56.0	0.0	6.6	210.9	255.8	404.3	296.9	44.9	56.6
Temperate	<i>Thymus praecox</i>	Lamiaceae	Autumn	Spring	52.3	0.7	0.6	0.0	40.9	37.8	5.0	60.1	121.8	275.0	344.7	459.2	153.2	151.8
Mediterranean	<i>Agrostis tilieni</i>	Poaceae	Spring	Spring	0.0	0.0	0.0	0.0	100.0	80.0	0.0	20.0	225.5	301.7	574.3	817.5	76.2	69.8
Mediterranean	<i>Armeria duriaeui</i>	Plumbaginaceae	Autumn	Autumn	99.4	93.6	0.0	1.2	0.0	0.0	0.6	4.0	7.3	15.2	94.9	130.9	7.9	25.4

Mediterranean	Cerastium ramosissimum	Caryophyllaceae	Autumn	Autumn	52.0	53.8	0.0	0.0	0.0	0.0	0.6	0.0	48.8	48.0	800.3	755.6	-0.8	-8.0
Mediterranean	Conopodium majus	Apiaceae	Spring	Winter	0.0	0.0	0.0	98.3	98.2	0.9	0.0	0.0	207.6	239.0	534.7	354.3	31.4	29.2
Mediterranean	Dianthus langeanus	Caryophyllaceae	Autumn	Autumn	99.5	97.4	0.0	2.6	0.5	0.0	0.0	0.0	3.7	5.4	56.0	70.3	1.7	6.1
Mediterranean	Festuca summilisitana	Poaceae	Autumn	Autumn	100.0	95.0	0.0	1.9	0.0	1.0	0.0	2.1	18.4	23.1	219.6	182.3	4.7	17.0
Mediterranean	Helictochloa marginata	Poaceae	Spring	Summer	25.0	20.0	0.0	20.0	75.0	0.0	0.0	60.0	142.8	165.7	582.3	432.5	22.9	34.6
Mediterranean	Jurinea humilis	Asteraceae	Autumn	Winter	81.9	0.0	0.0	100.0	18.1	0.0	0.0	0.0	9.7	246.5	141.3	445.5	236.8	191.2
Mediterranean	Luzula caespitosa	Juncaceae	Autumn	Winter	54.2	0.0	3.1	94.9	26.7	0.0	6.4	1.1	102.4	245.5	514.6	432.5	143.2	107.0
Mediterranean	Minuartia recurva	Caryophyllaceae	Autumn	Autumn	99.5	79.9	0.0	2.2	0.5	17.9	0.0	0.0	6.0	14.0	87.5	159.8	8.0	54.2
Mediterranean	Neoschischkinia truncatula	Poaceae	Autumn	Autumn	93.7	89.5	0.0	0.0	0.0	0.0	0.6	0.6	6.8	8.8	83.4	75.8	2.0	17.6
Mediterranean	Phalacrocarpum oppositifolium	Asteraceae	Autumn	Autumn	82.8	77.4	7.1	22.6	2.2	0.0	0.0	0.0	40.3	82.1	451.7	278.6	41.8	2.7
Mediterranean	Phyteuma hemisphaericum	Campanulaceae	Spring	Spring	0.7	0.7	0.0	3.9	29.1	20.8	1.9	9.0	NA	284.5	NA	547.0	NA	10.1
Mediterranean	Plantago holosteum	Plantaginaceae	Autumn	Autumn	96.5	93.5	0.0	0.5	3.0	3.5	0.0	1.5	8.1	8.4	100.1	71.4	0.3	8.9
Mediterranean	Sedum anglicum	Crassulaceae	Autumn	Autumn	57.0	43.7	4.6	0.0	7.6	4.9	5.5	6.1	83.7	166.2	293.3	515.2	82.4	62.9
Mediterranean	Sedum brevifolium	Crassulaceae	Autumn	Autumn	41.9	34.4	0.0	0.0	8.7	1.7	0.6	10.8	75.0	84.9	352.6	240.6	9.8	28.4
Mediterranean	Sempervivum arachnoideum	Crassulaceae	Spring	Summer	0.0	0.0	0.0	0.0	95.5	11.6	0.6	69.3	212.8	259.8	359.3	351.0	47.0	55.3
Mediterranean	Silene ciliata	Caryophyllaceae	Spring	Spring	1.1	0.5	0.0	9.1	86.9	79.9	2.1	5.5	198.9	240.8	268.4	184.4	41.9	30.5
Mediterranean	Solidago virgaurea	Asteraceae	Autumn	Winter	84.5	12.4	0.0	78.6	15.5	9.0	0.0	0.0	14.9	235.3	174.4	305.6	220.4	164.6
Mediterranean	Spergula morisonii	Caryophyllaceae	Autumn	Autumn	56.9	73.3	0.0	0.0	1.3	0.0	5.4	0.0	167.8	36.2	1604.9	559.1	-131.7	-62.1
Mediterranean	Thymus praecox	Lamiaceae	Autumn	Autumn	90.2	66.9	0.0	2.1	6.9	10.3	1.5	20.8	13.8	83.4	190.6	265.9	69.5	65.8

Table S2. Separate model results for each study system with incubator as fixed factor.

	Model	Mediterranean					Temperate					
		Factors	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	post.mean	L_95% CI	U_95% CI	pMCMC	
	Autumn germination	(Intercept)	0.3278	-5.0313	5.6357	7623	0.888	-5.4088	-11.4717	-0.2977	1086	0.0333
		incubatorSnowbed	-1.313	-1.7022	-0.9455	9000	<1e-04	-2.8734	-3.373	-2.4062	7390	<1e-04
Winter germination	(Intercept)	-8.913	-13.541	-4.727	7967	0.000222	-13.352	-18.925	-7.993	896.8	<1e-04	
	incubatorSnowbed	5.275	4.252	6.309	5012	<1e-04	8.027	5.44	10.831	511.1	<1e-04	
Spring germination	(Intercept)	-4.0135	-8.1435	0.2037	7764	0.0511	-2.213	-6.718	2.432	7718	0.291	
	incubatorSnowbed	-1.482	-1.9918	-0.9571	8625	<1e-04	-3.243	-3.767	-2.744	8676	<1e-04	
Summer germination	(Intercept)	-6.18	-9.485	-2.915	8387	0.002	-4.601	-7.179	-2.094	9000	0.00156	
	incubatorSnowbed	1.894	1.309	2.476	8683	<1e-04	3.15	2.635	3.65	9000	0.0001	
Total germination	(Intercept)	4.36833	0.06825	8.50151	7825	0.0384	2.0965	-1.2157	5.0541	9000	0.16956	
	incubatorSnowbed	-0.18778	-0.56115	0.1889	9042	0.3358	-0.5501	-0.8811	-0.2067	9000	0.00111	
t50	(Intercept)	-0.01699	-0.89034	1.00691	9000	0.952	-0.3529	-0.9928	0.2598	9000	0.242	
	incubatorSnowbed	0.3319	0.1921	0.47228	9000	<1e-04	0.8247	0.6486	0.9911	9000	<1e-04	
Environmental heat sum	(Intercept)	0.14607	-0.66019	0.85809	9000	0.626	0.06683	-0.57943	0.74327	9000	0.838	
	incubatorSnowbed	-0.16618	-0.33657	0.01873	9000	0.066	0.1397	-0.09198	0.3599	9000	0.216	

Table S3. Model results for each germination traits with incubator and study system as fixed factors

Autumn germination ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	-1.2058	-6.0965	3.9891	3164	0.65	lamba	0.97	0.95	0.99
Snowbed	-1.3056	-1.6766	-0.928	9000	<1e-04	phlogeny	42.08	13.07	80.15
Temperate	-3.3769	-5.2656	-1.6011	5041	0.000444	population:species	3.73	1.61	6.73
Snowbed:Temperate	-1.5722	-2.1752	-0.9351	8525	<1e-04				

Winter germination ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	-11.02727	-16.14827	-6.3829	5034.5	<1e-04	lamba	0.96	0.93	0.99
Snowbed	5.32881	4.36314	6.32126	4940.9	<1e-04	phlogeny	36.89	11.68	71.38
Temperate	-2.32362	-5.4347	0.63654	1050	0.0991	population:species	1.11	0	2.94
Snowbed:Temperate	2.76127	0.02432	5.65154	913.6	0.0211				

Spring germination ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	-4.6001	-8.7471	-0.6848	6036	0.02444	lamba	0.91	0.8	0.98
Snowbed	-1.4936	-2.0146	-0.9632	8207	0.0001	phlogeny	29.59	3.24	61.16
Temperate	2.1545	0.7167	3.6048	6961	0.00444	population:species	2.84	0.59	6.07
Snowbed:Temperate	-1.8345	-2.5447	-1.038	9000	0.0001				

Summer germination ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	-5.79454	-8.36251	-3.10879	8599	<1e-04	lamba	0.86	0.75	0.95
Snowbed	1.90418	1.30014	2.52494	9000	<1e-04	phlogeny	11.61	3.48	21.15
Temperate	1.09207	-0.08803	2.29047	8501	0.0707	population:species	0.82	0	1.8
Snowbed:Temperate	1.23857	0.46582	2.05616	9000	0.004				

Total germination ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	3.3251	0.3915	6.3164	9289	0.02956	lamba	0.95	0.92	0.98
Snowbed	-0.1843	-0.5484	0.1722	9000	0.31578	phlogeny	16.62	6.71	28.45
Temperate	-1.6193	-2.8093	-0.3817	8302	0.00756	population:species	1.37	0.5	2.49
Snowbed:Temperate	-0.3644	-0.8522	0.1264	9000	0.14378				

T50 (scaled) ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	-0.4064	-1.1043	0.2183	9000	0.207	lamba	0.69	0.43	0.89
Snowbed	0.2975	0.172	0.4195	9000	<1e-04	phlogeny	0.65	0.07	1.35
Temperate	0.7432	0.3968	1.0839	8700	<1e-04	population:species	0.2	0.06	0.36
Snowbed:Temperate	0.3985	0.2084	0.5931	9000	<1e-04				

environmental heat sum (scaled) ~ incubator * study system									
Model	post.mean	L_95% CI	U_95% CI	eff.samp	pMCMC	Random factors	Mean	lower	upper
Fixed factors									
(Intercept)	0.032588	-0.605908	0.71984	9000	0.9387	lamba	0.51	0.14	0.81
Snowbed	-0.159881	-0.331099	0.011447	11454	0.066	phlogeny	0.62	0	1.42
Temperate	0.399984	-0.017123	0.815636	9000	0.0602	population:species	0.34	0.12	0.62
Snowbed:Temperate	0.287376	-0.004271	0.53382	9349	0.036				

Table S4. Phylogenetic signal and random factor significances on models with incubator as fixed factor.

Random = ~ animal + code:ID

Lambda values		Mediterranean			Temperate		
Trait		post.mean	L_95% CI	U_95% CI	post.mean	L_95% CI	U_95% CI
Autumn germination		0.97	0.94	0.99	0.97	0.94	1
Winter germination		0.93	0.86	0.98	0.96	0.91	0.99
Spring germination		0.91	0.81	0.98	0.93	0.8	0.99
Summer germination		0.88	0.74	0.99	0.85	0.71	0.96
Total germination		0.95	0.91	0.99	0.95	0.92	0.98
t50		0.73	0.39	0.95	0.59	0.34	0.83
Environmental heat sum		0.47	0	0.78	0.4	0	0.74

Random = ~ animal + code:ID

		Mediterranean			Temperate		
		post.mean	I-95% CI	u-95% CI	post.mean	I-95% CI	u-95% CI
Autumn germination	phylogeny	40.78	10.45	84.88	46.73	8.51	109.03
	population:species	3.25	0.91	6.62	3.07	0.26	7.86
Winter germination	phylogeny	26.23	6.26	55.91	33.7	0	72.56
	population:species	1.03	0	3.27	1.57	0	6.8
Spring germination	phylogeny	22.98	4.73	48.8	37.55	0	76.44
	population:species	2.48	0.28	5.58	1.57	0	6.92
Summer germination	phylogeny	13.94	1.41	34.33	11.36	1.84	22.71
	population:species	0.58	0	1.86	1.06	0	2.9
Total germination	phylogeny	22.93	4.89	49.38	18.79	6.87	33.22
	population:species	1.52	0.38	3.24	0.64	0	1.8
t50	phylogeny	1.2	0	2.68	0.54	0.1	1.19
	population:species	0.27	0.04	0.64	0.16	0	0.36
Environmental heat sum	phylogeny	0.63	0	1.6	0.49	0	1.4
	population:species	0.38	0.08	0.77	0.56	0.14	1.11

Table S5. Field germination model results.

species	term	EARLY SEASON				LATE SEASON			
		estimate	std. Error	statistic	p.value	estimate	std. Error	statistic	p.value
<i>Androsace villosa</i>	microhabitat_Snowbed	-20.8	4974	-0.00419	0.997	4.49e- 1	0.478	9.39e- 1	0.348
<i>Armeria cantabrica</i>	microhabitat_Snowbed	-0.418	0.375	-1.12	0.265	-9.56e- 2	0.437	-2.19e- 1	0.827
<i>Armeria duriaeui</i>	microhabitat_Snowbed	-18.8	4974	-0.00377	0.997	6.76e- 2	0.368	1.84e- 1	0.854
<i>Carex sempervirens</i>	microhabitat_Snowbed	-3.64	0.765	-4.75	0.00000201	-2.74e- 1	0.428	-6.39e- 1	0.523
<i>Dianthus langeanus</i>	microhabitat_Snowbed	-1.18	0.491	-2.4	0.0165	1.44e+ 0	1.13	1.27e+ 0	0.204
<i>Festuca glacialis</i>	microhabitat_Snowbed	-1.68	0.432	-3.88	0.000105	1.67e+ 0	0.46	3.63e+ 0	0.00028
<i>Gypsophila repens</i>	microhabitat_Snowbed	-20.1	3017	-0.00666	0.995	-2.26E-16	1.02	-2.22E-16	1
<i>Jasione cavanillesii</i>	microhabitat_Snowbed	-2.36	0.776	-3.03	0.00241	6.15e- 1	0.655	9.38e- 1	0.348
<i>Luzula caespitosa</i>	microhabitat_Snowbed	0.636	0.379	1.68	0.0939	4.92e- 1	0.377	1.31e+ 0	0.192
<i>Phyteuma hemisphaericum</i>	microhabitat_Snowbed	0.351	0.376	0.934	0.35	1.62e+ 0	0.396	4.09e+ 0	0.0000431
<i>Plantago holosteum</i>	microhabitat_Snowbed	0.827	0.377	2.19	0.0282	2.88e- 1	0.38	7.57e- 1	0.449
<i>Silene ciliata</i>	microhabitat_Snowbed	-0.914	0.382	-2.39	0.0168	1.04e+ 0	0.454	2.30e+ 0	0.0217