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Table S1 Results of the AICc-based selection of models explaining host density in terms of the overall effects of habitat isolation at different spatial scales, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	5	0	0.731
2[*]						+	+	+	5	2.2	0.24
3					+		+	+	5	8.3	0.012
4		+					+	+	5	9.1	0.008
5				+			+	+	5	10.1	0.005
6	+								3	11.8	0.002
7						+			3	12.6	0.001
8			+				+	+	5	13.3	0.001
9		+							3	15.9	0
10					+				3	17.3	0
11[†]									2	17.7	0
12				+					3	17.7	0
13			+						3	18.1	0
14							+	+	4	20.6	0

* = Models retained in 95% confidence set of models. † = Null model. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S2 Results of the the AICc-based model selection for models explaining host density in terms of the effects of habitat isolation at different spatial scales, host mortality from the virus AbgrNPV, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	AbgrNPV mortality[‡]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	6	0	0.67
2[*]						+	+	+	+	6	1.8	0.267
3[*]					+		+	+	+	6	6.8	0.022
4	+						+			4	8.6	0.009
5		+					+	+	+	6	8.9	0.008
6				+			+	+	+	6	8.9	0.008
7						+	+			4	9.1	0.007
8			+				+	+	+	6	11.1	0.003
9		+					+			4	12.2	0.001
10							+			3	12.5	0.001
11					+		+			4	12.6	0.001
12				+			+			4	13.2	0.001
13			+				+			4	13.4	0.001
14							+	+	+	5	15.3	0
15[†]										2	20	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage host mortality from the virus AbgrNPV. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S3 Results of the AICc-based model selection for models explaining host density in terms of the effects of habitat isolation at different spatial scales, parasitism, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Parasitism[‡]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	6	0	0.638
2[*]						+	+	+	+	6	1.3	0.33
3					+		+	+	+	6	8.1	0.011
4						+	+			4	8.8	0.008
5		+					+	+	+	6	9.7	0.005
6				+			+	+	+	6	10.6	0.003
7	+						+			4	11.3	0.002
8			+				+	+	+	6	13.9	0.001
9					+		+			4	15	0
10		+					+			4	15.1	0
11				+			+			4	16.2	0
12[†]										2	16.3	0
13			+				+			4	16.8	0
14							+			3	17	0
15							+	+	+	5	20.4	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage host mortality from the parasitoid. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S4 Results of the AICc-based model selection for models explaining host density in terms of the effects of habitat isolation at different spatial scales, host mortality from the virus AbgrNPV, parasitism, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	AbgrNPV mortality[‡]	Parasitism[§]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	+	7	0	0.979
2						+	+	+	+	+	7	8.5	0.014
3		+					+	+	+	+	7	11.8	0.003
4					+		+	+	+	+	7	12.8	0.002
5				+			+	+	+	+	7	14	0.001
6	+						+	+			5	14.6	0.001
7			+				+	+	+	+	7	15.6	0
8						+	+	+			5	15.7	0
9							+	+			4	18.2	0
10		+					+	+			5	18.4	0
11					+		+	+			5	19.1	0
12				+			+	+			5	19.5	0
13			+				+	+			5	19.6	0
14							+	+	+	+	6	20.1	0
15[†]											2	24.5	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage mortality from the virus AbgrNPV. § = Site-level percentage mortality from the parasitoid. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S5 Results of the AICc-based model selection for models explaining host mortality from the virus AbgrNPV in terms of the overall effects of habitat isolation at different spatial scales, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Site elevation	Plant height	K	ΔAICc	Akaike weight
1*†									2	0	0.129
2*					+		+	+	5	0.3	0.114
3*		+					+	+	5	0.3	0.113
4*						+	+	+	5	0.7	0.092
5*				+			+	+	5	0.9	0.084
6*						+			3	1.5	0.062
7*	+						+	+	5	1.7	0.055
8*		+							3	1.7	0.055
9*	+								3	1.8	0.052
10*					+				3	1.8	0.052
11*				+					3	1.9	0.049
12*			+				+	+	5	1.9	0.049
13*			+						3	2	0.047
14							+	+	4	2	0.047

* = Models retained in 95% confidence set of models. † = Null model. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S6 Results of the AICc-based model selection for models explaining host mortality from the virus AbgrNPV in terms of the effects of habitat isolation at different spatial scales, parasitism, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Parasitism[‡]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]						+	+			4	0	0.338
2[*]						+	+	+	+	6	1.8	0.136
3[*]					+		+			4	2.1	0.116
4[*]				+			+			4	3.1	0.071
5[*]							+			3	3.2	0.067
6[*]			+				+			4	3.7	0.052
7[*]		+					+			4	3.7	0.052
8[*]					+		+	+	+	6	3.9	0.049
9[*]	+						+			4	4.5	0.036
10[*]							+	+	+	5	5.3	0.024
11[*]				+			+	+	+	6	5.8	0.019
12		+					+	+	+	6	6.1	0.016
13			+				+	+	+	6	6.5	0.013
14	+						+	+	+	6	7.1	0.01
15[†]										2	15	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage host mortality from the parasitoid. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S7 Results of the AICc-based model selection for models explaining host mortality from the virus AbgrNPV in terms of the effects of habitat isolation at different spatial scales, host density, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Host density[‡]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*†]										2	0	0.229
2[*]							+			3	1.2	0.126
3[*]					+		+	+	+	6	2.3	0.071
4[*]		+					+	+	+	6	2.4	0.07
5[*]						+	+	+	+	6	2.8	0.057
6[*]						+	+			4	2.9	0.052
7[*]				+			+	+	+	6	3	0.052
8[*]		+					+			4	3.1	0.049
9[*]					+		+			4	3.1	0.048
10[*]	+						+			4	3.2	0.047
11[*]				+			+			4	3.2	0.046
12[*]			+				+			4	3.3	0.045
13[*]							+	+	+	5	3.5	0.04
14[*]	+						+	+	+	6	3.8	0.035
15				+			+	+	+	6	4	0.032

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level host density. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S8 Results of the AICc-based model selection for models explaining host mortality from the virus AbgrNPV in terms of the effects of habitat isolation at different spatial scales, parasitism, host density, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Parasitism[‡]	Host density[§]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]						+	+	+			5	0	0.304
2[*]					+		+	+			5	1.7	0.127
3[*]						+	+	+	+	+	7	2	0.111
4[*]							+	+			4	2.4	0.089
5[*]				+			+	+			5	2.7	0.079
6[*]			+				+	+			5	3.3	0.058
7[*]		+					+	+			5	3.4	0.056
8[*]					+		+	+	+	+	7	3.9	0.043
9[*]	+						+	+			5	4	0.04
10[*]							+	+	+	+	6	4.4	0.033
11[*]				+			+	+	+	+	7	5.7	0.018
12		+					+	+	+	+	7	6	0.015
13			+				+	+	+	+	7	6.2	0.014
14	+						+	+	+	+	7	6.5	0.012
15[†]											2	13.1	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage host mortality from the parasitoid. § = Site-level host density. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S9 Results of the AICc-based model selection for models explaining host mortality from the parasitoid in terms of the overall effects of habitat isolation at different spatial scales, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Site elevation	Plant height	K	ΔAICc	Akaike weight
1*	+						+	+	5	0	0.427
2*		+					+	+	5	0.1	0.396
3*			+				+	+	5	3.8	0.065
4*				+			+	+	5	4.6	0.043
5*							+	+	4	4.9	0.037
6					+		+	+	5	6.4	0.018
7						+	+	+	5	7	0.013
8†									2	15.4	0
9						+			3	15.8	0
10					+				3	15.8	0
11				+					3	16.5	0
12			+						3	16.6	0
13		+							3	17.3	0
14	+								3	17.4	0

* = Models retained in 95% confidence set of models. † = Null model. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S10 Results of the AICc-based model selection for models explaining host mortality from the parasitoid in terms of the effects of habitat isolation at different spatial scales, host mortality from the virus AbgrNPV, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	AbgrNPV mortality[‡]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	6	0	0.398
2[*]		+					+	+	+	6	0.5	0.312
3[*]			+				+	+	+	6	3.1	0.085
4[*]							+	+	+	5	3.4	0.074
5[*]						+	+	+	+	6	4.1	0.05
6[*]				+			+	+	+	6	4.5	0.042
7					+		+	+	+	6	5.3	0.028
8						+	+			4	8.8	0.005
9					+		+			4	9.8	0.003
10							+			3	11.6	0.001
11				+			+			4	12.2	0.001
12			+				+			4	12.8	0.001
13		+					+			4	13.4	0
14	+						+			4	13.6	0
15[†]										2	19.1	0

* = Models retained in 95% confidence set of models. † = Null model. ‡ = Site-level percentage host mortality from the virus AbgrNPV. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S11 Results of the AICc-based model selection for models explaining host mortality from the parasitoid in terms of the effects of habitat isolation at different spatial scales, host density, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	Host density[§]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	6	0	0.48
2[*]		+					+	+	+	6	0.3	0.421
3[*]			+				+	+	+	6	4.9	0.041
4[*]				+			+	+	+	6	5.7	0.027
5							+	+	+	5	6.8	0.016
6					+		+	+	+	6	8	0.009
7						+	+	+	+	6	8.9	0.006
8[†]										2	15.3	0
9							+			3	17.2	0
10						+	+			4	17.2	0
11					+		+			4	17.5	0
12				+			+			4	18.2	0
13			+				+			4	18.4	0
14		+					+			4	19.1	0
15	+						+			4	19.2	0

* = Models retained in 95% confidence set of models. † = Null model. § = Site-level host density. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.

Table S12 Results of the AICc-based model selection for models explaining host mortality from the parasitoid in terms of the effects of habitat isolation at different spatial scales, host mortality from the virus AbgrNPV, host density, site elevation and plant height.

Rank	Isolation (100 m)	Isolation (250 m)	Isolation (500 m)	Isolation (1000 m)	Isolation (2500 m)	Isolation (5000 m)	AbgrNPV mortality[‡]	Host density[§]	Site elevation	Plant height	K	ΔAICc	Akaike weight
1[*]	+						+	+	+	+	7	0	0.499
2[*]		+					+	+	+	+	7	0.4	0.412
3[*]			+				+	+	+	+	7	4.8	0.044
4							+	+	+	+	6	7	0.015
5				+			+	+	+	+	7	7	0.015
6						+	+	+	+	+	7	8.3	0.008
7					+		+	+	+	+	7	9.1	0.005
8						+	+	+			5	13.3	0.001
9					+		+	+			5	14.1	0
10							+	+			4	15.9	0
11				+			+	+			5	16.6	0
12			+				+	+			5	17.1	0
13		+					+	+			5	17.7	0
14	+						+	+			5	17.9	0
15[†]											2	21.4	0

* = Models retained in 95% confidence set of models. † = null model. ‡ = Site-level percentage host mortality from the virus AbgrNPV. § = Site-level host density. + = variable included in the model. K = number of parameters in the model. Models are ranked based on the difference in AICc values (ΔAICc) between a given model and the best model in the set. Akaike weights represent the probability of each model given the data, relative to all other models in the set.