

Supplementary material Table 1. Number of recapture events by age groups of *H. cruentata* in Norte de Santander, Colombia.

Number of recapture events	Immature male	Mature male	Immature female	Mature female
0	7	14	21	14
1	8	15	9	13
2	7	13	5	5
3	4	13	5	8
4	4	12	6	2
5	5	9	3	1
6	0	6	1	2
7	1	8	0	2
8	2	6	2	2
9	3	4	1	1
10	1	8	0	3
11	0	3	1	2
12	0	3	0	5

Supplementary material Table 2. Model selection for *Hetaerina cruentata* in the Galindo stream, Norte de Santander, Colombia. Phi (survival rate), AICc (Akaike information criterion),  $p$  (detection probability),  $t$  (temporal variation).

Model	QAICc	Delta QAICc	AICc Weights	Model Likelihood	Num. Par	QDeviance	-2log(L)
{Phi(.) p(g) PIM}	1209,0955	0	0,43322	1	5	890,2706	1343,4763
{Phi(g) p(g) PIM}	1210,0193	0,9238	0,27297	0,6301	8	885,0432	1337,619
{Phi(g) p(.) PIM}	1210,5001	1,4046	0,21464	0,4954	5	891,6751	1345,0501
{Phi(.) p(.) PIM}	1212,575	3,4795	0,07606	0,1756	2	899,8357	1354,1941
{Phi(t) p(g) PIM}	1219,3373	10,2418	0,00259	0,006	18	873,3711	1324,5403
{Phi(t) p(.) PIM}	1222,6996	13,6041	0,00048	0,0011	15	883,1105	1335,4533
{Phi(g) p(t) PIM}	1228,1182	19,0227	0,00003	0,0001	18	882,1521	1334,3794
{Phi(.) p(t) PIM}	1229,9995	20,904	0,00001	0	15	890,4104	1343,6329
{Phi(t) p(t) PIM}	1236,794	27,6985	0	0	27	871,2708	1322,1869
{Phi(g*t) p(.) PIM}	1278,707	69,6115	0	0	57	842,9988	1290,5079
{Phi(g*t) p(g) PIM}	1281,3467	72,2512	0	0	60	838,1623	1285,0885
{Phi(.) p(g*t) PIM}	1282,9434	73,8479	0	0	57	847,2352	1295,2548
{Phi(g) p(g*t) PIM}	1287,6115	78,516	0	0	60	844,4271	1292,1083
{Phi(t) p(g*t) PIM}	1292,3776	83,2821	0	0	69	826,223	1271,7105
{Phi(g*t) p(t) PIM}	1294,7387	85,6432	0	0	69	828,5841	1274,3561
{Phi(g*t) p(g*t) PIM}	1371,4889	162,3934	0	0	108	795,3648	1237,1336

Supplementary material Table 3. Model selection for *Hetaerina cruentata* in the Cucalina stream, Norte de Santander, Colombia.

Model	QAICc	Delta QAICc	AICc Weights	Model Likelihood	Num. Par	QDeviance	-2log(L)
{Phi(.) p(t) PIM}	381,5871	0	0,56207	1	15	255,7729	527,7544
{Phi(.) p(g) PIM}	383,3971	1,81	0,22738	0,4045	5	278,9349	562,6749
{Phi(.) p(.) PIM}	385,4682	3,8811	0,08073	0,1436	2	287,1555	575,0687
{Phi(g) p(t) PIM}	385,5453	3,9582	0,07768	0,1382	18	253,0559	523,6581
{Phi(g) p(g) PIM}	386,9468	5,3597	0,03854	0,0686	8	276,2196	558,5811
{Phi(g) p(.) PIM}	389,0313	7,4442	0,01359	0,0242	5	284,5692	571,1694
{Phi(t) p(t) PIM}	407,1284	25,5413	0	0	27	253,8126	524,7989
{Phi(t) p(g) PIM}	407,4113	25,8242	0	0	18	274,9219	556,6246
{Phi(t) p(.) PIM}	408,5163	26,9292	0	0	15	282,702	568,3544
{Phi(.) p(g*t) PIM}	452,6203	71,0332	0	0	56	222,7874	478,0234
{Phi(g) p(g*t) PIM}	459,7025	78,1154	0	0	59	221,0088	475,3419
{Phi(g*t) p(.) PIM}	483,5941	102,007	0	0	55	256,6713	529,1088
{Phi(g*t) p(g) PIM}	483,8054	102,2183	0	0	58	248,0872	516,167
{Phi(t) p(g*t) PIM}	489,292	107,7049	0	0	69	219,5743	473,1793
{Phi(g*t) p(t) PIM}	491,2753	109,6882	0	0	68	224,7678	481,0093
{Phi(g*t) p(g*t) PIM}	591,7136	210,1265	0	0	103	195,795	437,3281

Supplementary material Table 4. Model selection for *Hetaerina cruentata* in the Santa Helena stream, Norte de Santander, Colombia.

Model	QAICc	Delta QAICc	AICc Weights	Model Likelihood	Num. Par	QDevianc e	-2log(L)
{Phi(.) p(t) PIM}	565,2034	0	0,51368	1	15	391,5605	746,0564
{Phi(.) p(g) PIM}	565,94	0,7366	0,35542	0,6919	5	413,4334	776,6205
{Phi(g) p(t) PIM}	569,5644	4,361	0,05804	0,113	18	389,3565	742,9768
{Phi(g) p(g) PIM}	570,4616	5,2582	0,03706	0,0721	8	411,7316	774,2424
{Phi(.) p(.) PIM}	570,8147	5,6113	0,03106	0,0605	2	424,4343	791,9926
{Phi(g) p(.) PIM}	574,9176	9,7142	0,00399	0,0078	5	422,411	789,1653
{Phi(t) p(g) PIM}	579,5186	14,3152	0,0004	0,0008	18	399,3108	756,8863
{Phi(t) p(t) PIM}	580,0061	14,8027	0,00031	0,0006	27	379,4453	729,1273
{Phi(t) p(.) PIM}	584,8226	19,6192	0,00003	0,0001	15	411,1796	773,4712
{Phi(.) p(g*t) PIM}	631,0471	65,8437	0	0	57	354,6007	694,4109
{Phi(g) p(g*t) PIM}	637,5623	72,3589	0	0	60	352,7592	691,8376
{Phi(t) p(g*t) PIM}	655,6028	90,3994	0	0	70	341,798	676,521
{Phi(g*t) p(g) PIM}	661,6701	96,4667	0	0	60	376,8669	725,5245
{Phi(g*t) p(.) PIM}	663,3446	98,1412	0	0	57	386,8981	739,5416
{Phi(g*t) p(t) PIM}	667,9855	102,7821	0	0	70	354,1807	693,824
Check Par. Cnt. {Phi(g*t) p(g*t) PIM}	746,3289	181,1255	0	0	104	318,533	644,0118