

684 Table 1. A summary of selected studies featuring investigations of GEI and sexually selected traits in the last decade (1998-2007). See the text
685 for a detailed description of how the survey was conducted.

Taxon	Environmental dimension(s)	GEI for sexually selected male trait	GEI for performance index	Rank-order change in performance or mating success across environments	Environmental dependence of mate choice benefits	Reference
Bank vole (<i>Clethrionomys glareolus</i>)	Litter size	Yes (Dominance)	No (Condition: residuals of body mass on head width)	Yes	Yes (Dominant males sire higher dominant sons only when reared in similar environments)	(Mills et al. 2007)
Blue tit (<i>Parus caeruleus</i>)	Experimentally manipulated brood size		No?* (Tarsal length)	No		(Merila et al. 1999)
Coal tit (<i>Parus ater</i>)	Early versus late in the season		Yes (Recruitment & no. of grandchildren)	Yes	Yes (Extrapair young have higher fitness if born late in the season)	(Schmoll et al. 2005)
Collared flycatcher (<i>Ficedula albicollis</i>)	Year of study				Yes (Benefits of mating older male not apparent in some years)	(Hegyi et al. 2006)
Collared flycatcher (<i>Ficedula albicollis</i>)	Year of study & experimentally manipulated brood size				Yes (Sons resembled fathers only during favourable conditions)	(Qvarnstrom 1999)
<i>Drosophila mojavensis</i>	Host cactus species	Yes (Song traits)		Yes		(Etges et al. 2007)
Gray tree frog (<i>Hyla versicolor</i>)	Larval density		Yes (Developmental period & size at metamorphosis)	Yes	Yes (Choice adaptive in only one environment)	(Welch 2003)

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Guppy (<i>Poecilia reticulata</i>)	Social environment (opportunity to expend energy mating and courting)	No (Male colour, display rate & attractiveness)	No (Male size)	No		(Miller and Brooks 2005)
Lesser waxmoth (<i>Achroia grisella</i>)	Food quantity, temperature, & photoperiod	Yes (Male signal rate)	Yes (Developmental period)	Yes		(Jia et al. 2000)
Lesser waxmoth (<i>Achroia grisella</i>)	Larval density	Yes (Song attractiveness)	Yes (Body mass & development rate)	Yes		(Danielson-Francois et al. 2006)
Lesser waxmoth (<i>Achroia grisella</i>)	Temperature				Yes? (Significant GEI for threshold of female choice)	(Rodriguez and Greenfield 2003)
Moor frog (<i>Rana arvalis</i>)	Predator size		Yes (Survival)		Yes (Higher survival for offspring of blue males only when predator is large)	(Sheldon et al. 2003)
Orange sulphur butterfly (<i>Colias eurytheme</i>)	Food quality & presence of thermal stress	No** (Wing colouration)		No**		(Kemp and Rutowski 2007)
Stalk-eyed fly (<i>Cyrtodiopsis dalmanni</i>)	Food quality	Yes (Eye span)		No		(David et al. 2000)

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Tree swallow (<i>Tachycineta bicolor</i>)	Nest temperature & parasite abundance		Yes (Longer flight feathers)	No	Yes (Genetic benefits significant only in favourable environment)	(O'Brien and Dawson 2007)

* Merila et al., (1999) report a marginally non-significant GEI during the harshest year, but no GEI in other years.

** Kemp & Rutowski (2007) do report some significant GEI, but not in the pattern expected if GEI is a large factor in signal evolution.