The Importance of Invertebrates When Considering the Impacts of Anthropogenic Noise

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Supplementary Material

Peer-reviewed studies published by the end of 2012 assessing impacts of anthropogenic noise on terrestrial wildlife, categorised by taxonomic group, impact and study type. The following search terms were initially inputted into Web of Knowledge and Google Scholar: 'noise', 'acoust*', 'audio*', 'hearing', 'bird*', 'mammal*', 'amphibian*', 'reptile*', 'fish*', 'invertebrate*' (an '*' acts as a wild card). References within these initially identified publications, and papers citing them, were also considered to ensure the most comprehensive search. To be included in the list, papers had to assess an impact of anthropogenic noise on an animal (i.e. theoretical studies, studies on sound transmission and studies examining impacts of white/broadband noise are not listed). Only papers that refer to noise in the abstract, title or keywords and discuss noise in the text are included. Key to abbreviations in the table: experimental study (E), observational study (O), mammal (M), bird (B), amphibian (A), reptile (R), invertebrate (I).

Study	Taxa	Species	Response	Reported impact of noise
			Behaviour	
E [1]	M	*Dipodomys stephensi*	Acoustic signalling & detection	Reduced signal detection, signal mimicry
E [2]	B	*Parus major*		Reduced signal detection
E [3]	B	*Parus major*		Reduced signal detection
E [4]	B	*Parus major*		Song/call modification
E [5]	B	*Parus major*		Song/call modification
E [6]	B	*Parus major*		Reduced signal detection, Song/call modification
O [7]	B	*Parus major*		Song/call modification
O [8]	B	*Parus major*		Song/call modification
O [9]	B	*Parus major*		Song/call modification
O [10]	B	*Parus major*		Song/call modification
E [11]	B	*Turdus merula*		Song/call modification
O [12]	B	*Turdus merula*		Song/call modification
O [13]	B	*Turdus merula*		Song/call modification
O [14]	B	*Turdus merula*		Song/call modification
E [15]	B	*Erithacus rubecula*		Song/call modification
O [16]	B	*Erithacus rubecula*		Song/call modification
E [17]	B	*Phylloscopus collybita*		Song/call modification
E [18]	B	*Emberiza schoeniclus*		Song/call modification
E [19]	B	*Vireo plumbeus* *Vireo vicinior*		Song/call modification
E [20]	B	*Empidonax wrightii* *Myiarchus cinerascens*		Song/call modification

E [21]	B	*Carpodacus mexicanus*		Song/call modification
E [22]	B	*Agelaius poeniceus*		Song/call modification
E [23]	B	*Zonotrichia leucophrys*		Song/call modification
O [24]	B	*Luscinia megarhynchos*		Song/call modification
O [25]	B	*Melospiza melodia*		Song/call modification
O [26]	B	*Carpodacus mexicanus*		Song/call modification
O [27]	B	*Colluricincla harmonica* *Rhipidura fuliginosa*		Song/call modification
O [28]	B	*Zosterops lateralis*		Song/call modification
O [29]	B	*Junco hyemalis*		Song/call modification
O [30]	B	*Cardinalis cardinalis* *Turdus migratorius*		Song/call modification
O [31]	B	*Serinus serinus*		Song/call modification
O [32]	B	*Manorina melanocephala*		Song/call modification
O [33]	B	*Poecile atricapillus*		Song/call modification
O [34]	B	multiple species		Song/call modification
O [35]	B	multiple species		Song/call modification
O [36]	B	multiple species		Varied between species
E [37]	A	*Rana taipehensis*		Song/call modification
E [38]	A	*Dendropsophus triangulum*		Song/call modification
E [39]	A	multiple species		Song/call modification
E [40]	A	multiple species		Song/calling modificaion
O [41]	A	*Litoria ewingii* *Crinia signifera*		Song/call modification
O [42]	A	*Litoria rheocola* *Austrochaperina pluvialis*		Song/call modification
O [43]	I	*Cryptotympana takasagona*		Song/call modification
O [44]	I	*Chorthippus biguttulus*		Song/call modification
O [45]	M	*Cervus elaphus* *Antilocapra americana*	Alarm/ Avoidance	Reduced responses
E [46]	M	*Odocoileus hemionus crook* *Ovis canadensis mexicana*		Increased alarm response
O [47]	M	*Myotis sodalist*		Increased avoidance behaviours
O [48]	M	*Chalinolobus tuberculatus*		Reduced responses
E [49]	B	*Sterna bergii*		Increased alertness
O [50]	B	*Larus argentatus*		Increased avoidance behaviours
O [51]	B	*Branta bernicla nigricans* *Branta canadensis*		Increased avoidance behaviours
O [52]	B	multiple species		No significant impact
O [53]	B	*Strix occidentalis lucida*		Increased avoidance behaviours
E [54]	M	*Myotis myotis*	Foraging	Reduced foraging efficiency
E [55]	M	*Myotis myotis*		Reduced foraging efficiency
O [53]	B	*Strix occidentalis lucida*		No significant impact
E [56]	M	*Spermophilus beecheyi*	Vigilance	Increased vigilance
O [45]	M	*Cervus elaphus* *Antilocapra Americana*		No significant impact
E [57]	B	*Poecile carolinensis* *Baeolophus bicolor*	Risk taking & sociality	Increased sociality

E [58]	A	*Hyla chrysoscelis*	Mate attraction	Reduced localisation of male
			Abundance	
O [59]	M	multiple species	Density/ occupancy	Varied between species
E [19]	B	*Vireo plumbeus* *Vireo vicinior*		No significant impact
E [60]	B	*Centrocercus urophasianus*		Decreased abundance
E [61]	B	*Empidonax wrightii* *Aphelocoma californica*		Decreased occupancy
O [62]	B	*Pandion haliaetus*		No significant impact
O [63]	B	*Dendroica chrysoparia*		No significant impact
O [42]	A	*Litoria rheocola* *Austrochaperina pluvialis*		Decreased abundance near road
E [64]	B	multiple species		Varied between species
E [65]	B	multiple species		Decreased density
O [66]	B	multiple species		Decreased abundance near road
E [20]	B	*Empidonax wrightii* *Myiarchus cinerascens*		Varied between species
O [67]	B	multiple species		Varied between species
O [68]	B	multiple species		Varied between species
O [59]	R	multiple species		Varied between species
E [69]	B	multiple species	Species richness	Decreased species richness
O [70]	B	multiple species		Varied between species
O [71]	B	multiple species		Decreased species richness
O [72]	B	multiple species		Decreased species richness
O [73]	B	multiple species		Decreased species richness
O [74]	B	multiple species		No significant impact
O [73]	A	multiple species		No significant impact
			Physiology/anatomy	
E [75]	M	*Mus musculus*	Anatomy	Adrenal gland enlargement
E [46]	M	*Odocoileus hemionus crook* *Ovis canadensis mexicana*	Heart rate	Temporary heart rate increase
E [52]	M	*Falco mexicanus*		No significant impact
E [76]	B	*Anas rubripes*		Temporary heart rate increase
E [77]	B	*Cygnus atratus*	Stress	Temporary corticosteroid increase
E [78]	B	*Centrocercus urophasianus*		Corticosteroid increase
			Ecology	
E [79]		multiple species	Ecosystem services	Increased pollination, decreased seed dispersal
E [69]	B	multiple species	Community interactions	Community interactions modified
			Reproduction	
E [61]	B	*Empidonax wrightii* *Aphelocoma californica*	Productivity/ nest success	Increased nest success in *Empidonax wrightii*
O [53]	B	*Strix occidentalis lucida*		No significant impact
O [63]	B	*Dendroica chrysoparia*		No significant impact
O [80]	B	*Passer domesticus*		Reduced nest success
O [50]	B	*Larus argentatus*		Reduced nest success
O [81]	B	*Sailia sialis*		Reduced productivity

O [82]	B	*Parus major*		Reduced reproductive success
O [52]	B	multiple species		No significant impact
E [69]	B	multiple species		Varied between species
E [83]	B	*Seiurus aurocapilla*	Pairing success	Reduced pairing success

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