***Supplementary table 2.*** Papers included in the literature search. The number of loci and the *FST*­ value (global or average pairwise *FST*­) are given.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| References | Common *-*me | Species *-*me | No. of Loci | Fst |
| Rugman-Jones *et al.* 2007 | *-* | *Scirtothrips perseae* | 4 | 0.115 |
| Bo*-*nomi *et al.* 2016 | Atlantic cod | *Gadus morhua* | 4 | *-* |
| Scott *et al.* 2005 | *-* | *Helicoverpa armigera* | 5 | *-* |
| Chevolot *et al.* 2006 | thornback ray | *Raja clavata* | 5 | 0.013 |
| Wilson *et al.* 2007 | Walleye | *Sander vitreus* | 5 | *-* |
| Miko *et al.* 2011 | St. Francis satyr butterfly | *Neonympha mitchellii francisci* | 5 | 0.078 |
| Robinet *et al.* 2011 | pine processio*-*ry moth | *Thaumetopoea pityocampa* | 5 | *-* |
| Graciš *et al.* 2012 | spur-thighed tortoise | *Testudo graeca* | 5 | 0.14 |
| Montoya-Maya *et al.* 2016 | Coral | *Platygyra daedalea* | 5 | 0.105 |
| Kraaijeveld-Smit *et al.* 2005 | Mallorcan midwife toad | *Alytes muletensis* | 6 | *-* |
| Lampila *et al.* 2009 | Siberian flying squirrel | *Pteromys volans* | 6 | 0.23 |
| Raeymaekers *et al.* 2009 | three-spined stickleback | *Gasterosteus aculeatus* | 6 | 0.069 |
| Keller *et al.* 2010 | dragonfly | *Leucorrhinia caudalis* | 6 | 0.13 |
| Beatty *et al.* 2011 | Red Squirrels | *Tamiasciurus hudsonicus* | 6 | *-* |
| Ruykys *et al.* 2015 | black-footed rock-wallaby | *Petrogale lateralis* | 6 | *-* |
| Montoya-Maya *et al.* 2016 | Coral | *Acropora austera* | 6 | 0.097 |
| Rivers *et al.* 2005 | Netterers bats | *Myotis -ttereri* | 7 | 0.017 |
| Crispo *et al.* 2006 | trinnidanian guppies | *Poecilia reticulata* | 7 | 0.302 |
| Piggott Banks & Taylor 2006 | brush-tailed rock-wallaby | *Petrogale penicillata* | 7 | 0.115 |
| Taylor and Costello 2006 | bull trout | *Salvelinus confluentus* | 7 | 0.46 |
| Maher 2009 | woodchuck | *Marmota mo-x* | 7 | *-* |
| Dubey & Shine 2010 | montane lizard | *Eulamprus leuraensis* | 7 | 0.128 |
| Cain Livieri & Swanson 2011 | footed ferrets | *Mustela nigripes* | 7 | 0.084 |
| Cardoso *et al.* 2014 | Eastern quoll | *Dasyurus viverrinus* | 7 | 0.131 |
| Dutta *et al.* 2015 | Sloth bear | *Melursus ursinus* | 7 | 0.042 |
| Oyler-McCance *et al.* 2005 | Gunnison sage-grouse | *Centrocercus minimus* | 8 | 0.2639 |
| Dupont Bourret & Ber*-*tchez 2007 | walleye | *Sander vitreus* | 8 | *-* |
| Underwood *et al.* 2007 | brooding coral | *-* | 8 | 0.095 |
| Vignieri 2007 | Pacific jumping mouse | *Zapus trinotatus* | 8 | 0.043 |
| Ciosi *et al.* 2008 | western corn rootworm | *Diabrotica virgifera virgifera* | 8 | 0.16 |
| Abdelkrim Pascal & Samadi 2009 | ship rat | *Rattus norvegicus* | 8 | *-* |
| Anderson & Meikle 2010 | mice | *Peromyscus leucopus* | 8 | 0.041 |
| Banks *et al.* 2010 | Sea Urchin | *Centrostephanus rodgersii* | 8 | 0.022 |
| Bronnenhuber *et al.* 2011 | round goby | *Neogobius melanostomus* | 8 | *-* |
| Hilmo *et al.* 2012 | epiphytic lichen | *Lobaria pulmo-ria* | 8 | 0.07 |
| Miralles *et al.* 2013 | Pilot whale | *Globicephala melas and Globicephala macrorhynchus* | 8 | 0.2957 |
| Wall *et al.* 2014 | Plant | *Astragalus michauxii* | 8 | 0.08 |
| Ceresa *et al.* 2015 | Moustached warbler | *Acrocephalis melanopogon* | 8 | *-* |
| Miller *et al.* 2015 | Maria*-* Common Moorhen | *Gallinula chloropus guami* | 8 | 0.152 |
| Mäder *et al.* 2016 | Fireweed | *Senecio madagascariensis* | 8 | 0.312 |
| Beneteau *et al.* 2008 | Greenside Darter | *Etheostoma Blennioides* | 9 | 0.076 |
| Bradbury, Campa*-* & Bentzen 2008 | rainbow smelt | *Osmerys mordax* | 9 | 0.053 |
| Cully & Hardiman. 2008 | or*-*mental pear tree | *Pyrus callerya-* | 9 | *-* |
| Janssens *et al.* 2008 | european otters | *Lutra lutra* | 9 | 0.102 |
| Cibrišn-Jaramillo *et al.* 2009 | fishtail palm | *Chamaedorea ernesti-august* | 9 | *-* |
| Sloop *et al.* 2010 | *-* | *Lim-nthes floccosa ssp. Califonica* | 9 | 0.65 |
| Kitanishi *et al.* 2012 | masu salmon | *Oncorhynchus masou* | 9 | 0.011 |
| Qi *et al.* 2013 | Qinghai toad-headed agamid | *Phrynocephalus vlangalii* | 9 | *-* |
| Sackett *et al.* 2013 | black-tailed prairie dog | *Cynomys ludovicianus* | 9 | 0.1136 |
| Sackett *et al.* 2013 | prarie dog | *Cynomys spp* | 9 | *-* |
| Dalen *et al.* 2006 | arctic fox | *Alopex lagopus* | 10 | *-* |
| Plath *et al.* 2007 | livebearing fish | *Poecilia mexica-* | 10 | 0.24 |
| Schweizer *et al.* 2007 | common vole | *Microtus arvalis* | 10 | *-* |
| Aspi *et al.* 2008 | Grey Wolf | *Canis lupus* | 10 | 0.152 |
| Marcet *et al.* 2008 | *-* | *Triatoma infestans* | 10 | 0.027 |
| Perez de Rosas *et al.* 2008 | Triatoma infestans | *Hemiptera: Reduviidae* | 10 | *-* |
| van Oppen *et al.* 2008 | coral | *Seriatopora hystrix* | 10 | 0.201 |
| Gauffre *et al.* 2009 | common vole | *Microtus arvalis* | 10 | *-* |
| Liu *et al.* 2009 | Yun*-*n snub-nosed monkeys | *Rhinopithecus bieti* | 10 | *-* |
| Noreen Harrison & Van Oppen 2009 | brooding reef coral | *Seriatopora hystrix* | 10 | 0.224 |
| Thibault *et al.* 2009 | rainbow trout | *Oncorhynchus mykiss* | 10 | 0.14 |
| Andrews *et al.* 2010 | spinner dolphins | *Stenella longirostris* | 10 | *-* |
| Plath *et al.* 2010 | Atlantic molly | *Poecilia mexica- Poeciliidae* | 10 | 0.215 |
| Wellband *et al.* 2012 | juvenile steelhead | *Oncorhynchus mykiss* | 10 | 0.008 |
| Garner *et al.* 2013 | Walleye | *Sander vitreus* | 10 | *-* |
| Kangas *et al.* 2013 | Finnish moose | *Alces alces* | 10 | 0.041 |
| Awad *et al.* 2014 | Fir tree | *Abies cilicica Carr.* | 10 | 0.0536 |
| Frankham *et al.* 2014 | Potoroid | *Potorous tridactylus* | 10 | *-* |
| Tsuchida *et al.* 2014 | Paper wasp | *Polistes chinensis anten-lis* | 10 | 0.145 |
| Tsuchida *et al.* 2014 | Paper wasp | *Polistes chinensis anten-lis* | 10 | 0.057 |
| Ginson *et al.* 2015 | Easter sand darter | *Ammocrypta pellucidda* | 10 | *-* |
| van Oppen *et al.* 2015 | Coral | *Acropora millepora* | 10 | 0.055 |
| Richards *et al.* 2016 | Giant barrel sponge | *Xestospongia muta* | 10 | 0.119 |
| Peakall & Lindenmayer 2006 | bush rats | *Rattus fuscipes* | 11 | 0.056 |
| Sonstebo *et al.* 2006 | brown trout | *Salmo trutta* | 11 | 0.095 |
| Bergl & Vigilant 2007 | Cross River gorilla | *Gorilla gorilla diehli* | 11 | *-* |
| He *et al.* 2009 | arillate pea | *Daviesia triflora* | 11 | 0.03 |
| Lopes *et al.* 2009 | Portuguese grapevine | *Vitis vinifera subsp. sylvestris* | 11 | *-* |
| *-* | common starling | *Sturnus vulgaris* | 11 | *-* |
| Lin *et al.* 2011 | Chinook salmon | *Oncorhynchus tshawytscha* | 11 | 0.009 |
| Harrisson *et al.* 2012 | superb fairy-wren | *Malurus cyaneus* | 11 | *-* |
| Leigh *et al.* 2012 | African wild dog | *Lycaon pictus* | 11 | *-* |
| Harris *et al.* 2013 | Lake trout | *Salvelinus -maycush* | 11 | 0.025 |
| Peterson *et al.* 2014 | Sockeye salmon | *Oncorhynchus nerka* | 11 | *-* |
| NemeshÕzi *et al.* 2016 | White-tailed eagles | *Haliaeetus albicilla* | 11 | *-* |
| Walsh *et al.* 2016 | Woodland Deer Mouse | *Peromyscus maniculatus gracilis* | 11 | *-* |
| Hazlitt *et al.* 2006 | brush-tailed rocked wallaby | *Petrogale penicillata* | 12 | *-* |
| Fabbri *et al.* 2007 | Italian wolf | *Canis lupus* | 12 | 0.09 |
| Lin *et al.* 2008 | sockeye salmon | *Oncorhynchus nerka* | 12 | *-* |
| Potter *et al.* 2012 | short-eared rock-wallaby | *Petrogale brachyotis* | 12 | *-* |
| Kopatz *et al.* 2014 | Northern Quropean brown bear | *Ursus arctos* | 12 | *-* |
| Choi *et al.* 2015 | Long-tailed goral | *-emorhedus caudatus* | 12 | *-* |
| Kelly *et al.* 2016 | Sonog sparrow | *Melospiza melodia* | 12 | *-* |
| Unger *et al.* 2016 | Easter hellbenders | *Cryptobranchus alleganiensis alleganiensis* | 12 | *-* |
| Dionne *et al.* 2008 | Atlantic salmon | *Salmo salar* | 13 | 0.051 |
| Hall *et al.* 2009 | marbled murrelet | *Brachyramphus marmoratus* | 13 | *-* |
| Steinfartz *et al.* 2009 | gallapagos igua*-* | *Amblyrhynchus cristatus* | 13 | 0.12 |
| Haag *et al.* 2010 | Atlantic Forest jaguars | *Panthera onca* | 13 | 0.089 |
| Bock *et al.* 2011 | Violet tunicate | *Botrylloides violaceus* | 13 | 0.173 |
| Lin *et al.* 2011 | Chum salmon | *Oncorhynchus keta* | 13 | 0.005 |
| Clarke *et al.* 2013 | Cutting Grass | *Gahnia trifida* | 13 | 0.476 |
| Monceau *et al.* 2013 | Ze*-*ida Dove | *Ze-ida aurita* | 13 | *-* |
| Sorenson *et al.* 2013 | Marlin | *Makaira nigricans* | 13 | 0.0099 |
| Green *et al.* 2014 | white-tailed deer | *Odocoileus virginianus* | 13 | *-* |
| Nowak *et al.* 2014 | Brown bears | *Ursus arctos* | 13 | *-* |
| Munguia-Vega *et al.* 2015 | Cortes Geoduck | *Panopea globosa* | 13 | 0.022 |
| Palstra OConnell & Russante 2007 | Atlantic salmon | *Salmo salar* | 14 | *-* |
| Gauthier *et al.* 2013 | striped bass | *Morone saxatilis* | 14 | 0.28 |
| NiedziaŠkowska *et al.* 2016 | Moose | *Alces alces* | 14 | *-* |
| Proctor *et al.* 2005 | grizzly bear | *Ursus arctos* | 15 | *-* |
| Pope *et al.* 2007 | Eurasian badger | *Meles meles* | 15 | *-* |
| Lancaster *et al.* 2011 | common ringtail possum | *Pseudocheirus peregrinus* | 15 | *-* |
| Proctor *et al.* 2012 | grizzly bear | *Ursus arctos* | 15 | *-* |
| Olsen *et al.* 2014 | Harbour seal | *Phoca vituli-* | 15 | *-* |
| Zgurski *et al.* 2014 | Collared pika | *Ochoto- collaris* | 15 | *-* |
| Chau *et al.* 2015 | Wasp | *Vespula pensylvanica* | 15 | *-* |
| Kitanishi *et al.* 2016 | masu salmon | *Oncorhynchus masou masou* | 15 | 0.0206 |
| Peery *et al.* 2010 | marbled murrelets | *Brachyramphus marmoratus* | 16 | *-* |
| Ceresa *et al.* 2015 | Eurasion reed warbler | *Acrocephalis scirpaceus* | 16 | *-* |
| Bonin *et al.* 2013 | Seals | *Arctocephalus (Arctophoca) gazel-la* | 17 | 0.014 |
| Stewart *et al.* 2013 | Leatherback turtles | *Dermochelys coriacea* | 17 | *-* |
| de Camargo *et al.* 2015 | Sao Paulo Marsh Antwren | *Formicivora paludicola* | 17 | 0.103 |
| Harris *et al.* 2015 | Northern Dolly Varden | *Salvelinus malma malma* | 17 | 0.099 |
| Hall *et al.* 2016 | Californian black rail | *Laterallus jamaicensis* | 17 | 0.018 |
| Wood *et al.* 2016 | Nile monitor | *Varanus niloticus* | 17 | *-* |
| Munshi-South *et al.* 2010 | white-footed mouse | *Peromyscus leucopus* | 18 | 0.071 |
| Savage *et al.* 2010 | southern long-toes salamander | *macrodactylum sigillatum* | 18 | 0.27 |
| Moore *et al.* 2013 | Arctic char | *Salvelinus alpinus* | 18 | 0.038 |
| Meerow *et al.* 2007 | Iris hexago*-* | *Iridaceae* | 19 | *-* |
| Jedrzejewski *et al.* 2005 | grey wolves | *Canis lupus* | 20 | 0.004 |
| Juarez *et al.* 2016 | Cougar | *Puma concolor* | 20 | *-* |
| Hamner *et al.* 2014 | Hectors dolphins | *Cephalorhynchus hectori* | 21 | *-* |
| Zalewski *et al.* 2016 | American mink | *Neovison vison* | 21 | *-* |
| Yang *et al.* 2015 | Thrips | *Frankliniella occidentalis* | 24 | *-* |
| Buchalski *et al.* 2015 | Peninsular bighorn sheep | *Ovis ca-densis nelsoni* | 25 | *-* |
| Ernest *et al.* 2014 | California puma | *Puma concolor* | 46 | *-* |
| Coleman *et al.* 2013 | Kelp | *Ekonia radiata* | *-* | *-* |
| Jensen *et al.* 2014 | Atlantic salmon | *salmon salar* | *-* | *-* |

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# Simulated Disperser A*-*lysis: determining the number of loci required to genetically identify dispersers

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