

Supplementary Table 1. Recent publications (since 2005) examining links between diversity and infectious disease transmission indicating whether diversity decreased transmission (“protective”), had no effect on transmission (“none”), or increased transmission (“amplifying”). When mechanisms for effects were reported by authors or demonstrated in the text, the mechanism is indicated (A = abundance of hosts, vectors; B = behavior of hosts, vectors, parasites); see Box 1 for details). Studies prior to 2005 were reviewed in Keesing et al. 2006.

| Disease | Parasite/pathogen | Host(s) | Vector(s) or intermediate host(s) | Location(s) | Type of investigation | Focal diversity | Measure of transmission or risk | Effect of diversity | Mechanisms | References |
|--|--------------------------------------|--|--------------------------------------|---------------------------|--------------------------------|---------------------------|--|---------------------|------------|-------------------------|
| Amphibian limb malformation | <i>Ribeiroia ondatrae</i> | Anurans | Snails | Laboratory | Experiment | Anuran | Pathogen abundance | Protective | B | Johnson et al. 2008 |
| Bacteriophage | RNA bacteriophage $\Phi 6$ | <i>Pseudomonas syringae phaseolicola</i> | -- | Laboratory | Experiment | Bacterial genotype | Pathogen population growth rate | Protective | B | Dennehy et al. 2007 |
| Barley/cereal yellow dwarf virus disease | Barley & cereal yellow dwarf viruses | Barley and cereals | Aphids | California, USA | Experiment | Plants, large vertebrates | Host infection prevalence | Amplifying | A | Borer et al. 2009 |
| Cockle trematode disease | Trematode <i>Himasthla elongata</i> | Seabirds | Cockle (<i>Cerastoderma edule</i>) | Laboratory | Experiment | Macrozoobenthic taxa | Parasite intensity | Protective | B | Thieltges et al. 2008 |
| Coral diseases | Pathogens of coral | Corals | -- | Philippines | Correlation | Marine fish | Host infection prevalence | Protective | A | Raymundo et al. 2009 |
| Fungal disease of <i>Daphnia</i> | <i>Metschnikowia bicuspidata</i> | Daphnia species | -- | Michigan, USA; Laboratory | Experiment, model, correlation | Daphnia | Pathogen prevalence | Protective | B | Hall et al. 2008 |
| Hantavirus disease | Hanta viruses | Rodents | -- | Panama | Experiment | Rodent | Host seroprevalence, density of seropositive hosts | Protective | A, B | Suzan et al. 2009 |
| Hantavirus disease | Sin Nombre virus | <i>Peromyscus maniculatus</i> | -- | Utah, USA | Correlation | Rodent | Host seroprevalence | Protective | A, B | Clay et al. 2009 |
| Hantavirus disease | Hanta viruses | Rodents | -- | Oregon, USA | Correlation | Mammal | Host seroprevalence | Protective | Not A; B* | Dizney & Ruedas 2009 |
| Hantavirus disease | Hanta viruses | Rodents | -- | -- | Model | Rodent | Host infection prevalence | Protective | A | Peixoto & Abramson 2006 |
| Hantavirus disease | Hanta viruses | Rodents | -- | Belgium | Correlation | Rodent | Host seroprevalence | Protective | B* | Tersago et al. 2008 |
| Lyme disease | <i>Borrelia burgorferi</i> | Vertebrates | Ticks | New York, USA | Correlation | Rodent | Vector burden on hosts | Protective | B | Brunner & Ostfeld 2008 |
| Lyme disease | <i>Borrelia burgorferi</i> | Vertebrates | Ticks | New York, USA | Experiment, model | Vertebrate | Density of infected vectors | Protective | A, B* | Keesing et al. 2009 |
| Lyme disease | <i>Borrelia burgorferi</i> | Vertebrates | Ticks | New York, USA | Correlation | Vertebrate | Host abundance | Protective | A* | LoGiudice et al. 2008 |
| Lyme disease | <i>Borrelia burgorferi</i> | Vertebrates | Ticks | -- | Model | Host | Density of infected vectors | Equivocal | -- | Ogden & Tsao 2009 |
| Malaria | <i>Plasmodium</i> species | Humans | <i>Anopheles gambiae</i> | Kenya | Correlation | Invertebrate predators | Vector abundance | Protective | A | Carlson 2009 JME |
| Parasitic disease of fish | Helminth parasites | Fish | Freshwater invertebrates | New Zealand | Correlation | Fish | Parasite intensity | Protective | A*, B | Kelly et al. 2009 |
| Rust disease | <i>Puccinia</i> rust fungi | Ryegrass | -- | Germany | Experiment | Herbaceous plant | Host infection prevalence, severity | Protective | A, B* | Roscher et al. 2007 |

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|---------------------------|---|--|--|----------------|-------------|--------------------|--|------------------|----|-----------------------|
| Salmonid whirling disease | Myxozoan <i>Myxobolus cerebralis</i> | Salmonid fish | <i>Tubifex tubifex</i> | Laboratory | Experiment | Tubificid worms | Host infection prevalence | Amplifying | -- | Steinbach et al. 2009 |
| Schistosomiasis | <i>Schistosoma mansoni</i> | Mammals | <i>Biomphalaria glabrata</i> snails | Laboratory | Experiment | Intermediate host | Pathogen abundance | Protective | B | Johnson et al. 2009 |
| Trematode disease | Trematode <i>Maritrema novaezealandensis</i> | Crab <i>Macrophthalmus hirtipes</i> | <i>Zeacumantus subcarinatus</i> snails | Laboratory | Experiment | Intermediate host | Host infection prevalence | None; protective | B | Hopper et al. 2008 |
| Trematode disease | <i>Microphallus</i> sp. | Waterfowl | <i>Potamopyrgus antipodarum</i> | New Zealand | Experiment | Intermediate host | Host infection prevalence, host survival | Protective | B | Kopp and Jokela 2007 |
| Trematode disease | Trematode <i>Himasthla elongata</i> | Seabirds | Blue mussel (<i>Mytilus edulus</i>) | Germany | Experiment | Bivalve | Parasite intensity | Protective | B | Thieltges et al. 2009 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | USA | Correlation | Birds | Human incidence rates | Protective | B* | Allan et al. 2009 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | Missouri, USA | Correlation | Birds | Vector infection prevalence | Protective | B* | Allan et al. 2009 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | Louisiana, USA | Correlation | Passerine bird | Human incidence rates, mosquito infection prevalence | None | -- | Ezenwa et al. 2006 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | Louisiana, USA | Correlation | Non-passerine bird | Human incidence rates, mosquito infection prevalence | Protective | B* | Ezenwa et al. 2006 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | Illinois, USA | Correlation | Birds | Vector infection prevalence | None | -- | Loss et al. 2009 |
| West Nile fever | West Nile virus | Birds, mammals, reptiles | Mosquitoes | Eastern USA | Correlation | Birds | Human cases | Protective | A* | Swaddle & Calos 2006 |

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