Alonso et al., 2027. Effects of amphibian species loss on freshwater ecosystem structure and functioning: current knowledge and research gaps. Limnetica 46(2), 2027.

Table S1. Summary of studies analysing the effects of anurans and urodeles on phytoplankton. Black coarse lines separate the effects of anurans, urodeles, both, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en fitoplancton. Las líneas negras gruesas separan los efectos de anuros, urodelos, ambos, y desaparición total de anfibios.*

Reference	Species lost	Location	Study type	Results
Anderson and Kneitel (2015)	*Pseudacris regilla*	USA, North America	Outdoor mesocosms	*P. regilla* loss had no effect on phytoplankton biomass
Buck et al. (2015)	*Rana cascadae*	USA, North America	Outdoor mesocosms	*R. cascadae* loss had no effect on phytoplankton biomass
Costa and Vonesh (2013a)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* and *D. ebraccatus* loss reduced phytoplankton biomass, with a greater decrease for *A. callidryas* than for *D. ebraccatus*
Costa and Vonesh (2013b)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* loss reduced phytoplankton biomass *D. ebraccatus* loss had no effect on phytoplankton biomass
Distel and Boone (2010)	*Anaxyrus americanus* *Lithobates pipiens*	USA, North America	Outdoor mesocosms	*A. americanus* and *L. pipiens* loss increased phytoplankton biomass
Dvorsky et al. (2023)	*Hyla chrysoscelis*	USA, North America	Outdoor mesocosms	*H. chrysoscelis* loss increased phytoplankton biomass
Earl et al. (2023)	*Litoria ewingii*	New Zealand, Oceania	Outdoor mesocosms	*L. ewingii* loss reduced phytoplankton biomass, but only when exposed to light, when shadowed there were no effects
Harjoe et al. (2022)	*Anaxyrus boreas*	USA, North America	Outdoor mesocosms	*A. boreas* loss increased phytoplankton biomass
Hite et al. (2018)	*Agallychnis callidryas*	Panama, Central America	Outdoor mesocosms	*A. callidryas* loss increased phytoplankton biomass
Iwai et al. (2012)	*Ranoidea alboguttata*	Australia, Oceania	Outdoor mesocosms	*R. alboguttata* loss decreased phytoplankton biomass
Mokany (2007)	*Limnodynastes tasmaniensis*	Australia, Oceania	Outdoor microcosms	*L. tasmaniensis* loss reduced phytoplankton biomass
Preston et al. (2012)	*Aquarana catesbeiana*	USA, North America*	Outdoor mesocosms	*A. catesbeiana* loss had no effect on phytoplankton biomass
Van Meter et al. (2011)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss increased phytoplankton biomass
Van Meter and Swan (2014)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss had no effect on phytoplankton biomass
Arribas et al. (2014)	*Discoglossus galganoi* *Epidalea calamita* *Hyla meridionalis* *Pelobates cultripes* *Pelophylax perezi* *Triturus pygmaeus* (larvae)	Spain, Europe	Outdoor mesocosms	*Discoglossus galganoi, Epidalea calamita, Hyla meridionalis, Pelobates cultripes, Pelophylax perezi* and *Triturus pygmaeus* loss reduced phytoplankton biomass, but the effect of individual species could not be differentiated since their loss was coupled

Table S1. Cont.

Reference	Species lost	Location	Study type	Results
Harris (1995)	*Anaxyrus woodhousii* *Pseudacris triseriata* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*A. woodhousii, P. triseriata* and *A. maculatum* loss had no effect on phytoplankton biomass
Mills and Semlitsch (2004)	*Lithobates sphenocephalus* *Pseudacris crucifer* *Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*L. sphenocephalus, P. crucifer* and *N. viridescens* loss had no effect on phytoplankton biomass
Morin (1995)	*Anaxyrus woodhousii* *Hyla andersonii* *Pseudacris crucifer* *Ambystoma opacum* (larvae) *Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*A. woodhousii, H. andersonii* and *P. crucifer* loss had no effect on phytoplankton biomass *A. opacum* and *N. viridescens* loss reduced phytoplankton biomass
Rowland et al. (2017)	*Lithobates sphenocephalus* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*L. sphenocephalus* loss decreased phytoplankton biomass *A. maculatum* loss had no effect on phytoplankton biomass
Rubbo et al. (2012)	*Lithobates sylvaticus* *Ambystoma maculatum* (larvae)	USA, North America	Field experiment with amphibian community manipulation at pond level	*L. sylvaticus* and *A. maculatum* loss had no effect on phytoplankton biomass
Benoy (2008)	*Ambystoma tigrinum* (adult and larvae)	Canada, North America	Pond sampling	*A. tigrinum* loss decreased phytoplankton biomass
Holomuzki et al. (1994)	*Ambystoma tigrinum* (larvae)	Canada, North America	Field enclosures in ponds	*A. tigrinum* loss decreased phytoplankton biomass
Relyea et al. (2005)	*Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*N. viridescens* loss had no effect on phytoplankton biomass
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss reduced phytoplankton biomass, but only with larvae in their early development stages, not in the intermediate or later ones

Table S2. Summary of studies analysing the effects of anurans and urodeles on periphyton. Black coarse lines separate the effects of anurans, urodeles, both, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en perifiton. Las líneas negras gruesas separan los efectos de anuros, urodelos, ambos, y desaparición total de anfibios.*

Reference	Species lost	Location	Study type	Results
Alonso et al. (2022)	*Alytes obstetricans*	Spain, Europe	Field enclosures in streams	*A. obstetricans* loss increased periphyton accrual and altered algal community by increasing big diatom abundance, but had no effect on sediment mass
Anderson and Kneitel (2015)	*Pseudacris regilla*	USA, North America	Outdoor mesocosms	*P. regilla* loss reduced periphyton accrual, but reduction density benefited periphyton at intermediate tadpole densities
Atwood et al. (2014)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss increased periphyton accrual
Bardsley and Beebee (2000)	*Bufo bufo* *Epidalea calamita*	UK, Europe	Field enclosures in ponds	*B. bufo* and *E. calamita* loss increased periphyton accrual, altering the community by increasing Bacillariophyta and Zygnematales, without differences depending on anuran species
Bardsley and Beebee (2001)	*Bufo bufo* *Rana temporaria*	UK, Europe	Field enclosures in ponds	*B. bufo* and *R. temporaria* loss increased periphyton accrual
Barnum et al. (2013)	*Lithobates warszewitschii*	Panama, Central America	Stream sampling	*L. warszewitschii* loss increased periphyton accrual
Bennett et al. (2015)	*Anaxyrus boreas*	USA, North America	Indoor mesocosms	*A. boreas* loss had no effect on periphyton accrual and slightly altered community, although, if their combination with the snail *Potamopyrgus antipodarum* is taking into account, their loss induced a great increase in periphyton accrual and further altered algal community
Brönmark et al. (1991)	*Rana temporaria*	Sweden, Europe	Field enclosures in ponds	*R. temporaria* loss increased periphyton accrual
Buck et al. (2015)	*Rana cascadae*	USA, North America	Outdoor mesocosms	*R. cascadae* loss increased periphyton accrual
Cochak et al. (2024)	*Scinax fuscovarius*	Panama, Central America	Outdoor microcosms	*S. fuscovarius* loss altered algal community by reducing their richness
Costa and Vonesh (2013a)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* and *D. ebraccatus* loss increased periphyton accrual, with a greater increase for *A. callidryas* than for *D. ebraccatus*
Costa and Vonesh (2013b)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* and *D. ebraccatus* loss increased periphyton accrual, with a greater increase for *A. callidryas* than for *D. ebraccatus*
de Lima Mamede and Nomura (2021)	*Dendropsophus minutus*	Brazil, South America	Indoor mesocosms	*D. minutus* loss had no effect on periphyton accrual
Distel and Boone (2009)	*Anaxyrus americanus*	USA, North America	Outdoor mesocosms	*A. americanus* loss had no effect on periphyton accrual
Distel and Boone (2010)	*Anaxyrus americanus* *Lithobates pipiens*	USA, North America	Outdoor mesocosms	*A. americanus* and *L. pipiens* loss had no effect on periphyton accrual
Distel and Boone (2011)	*Anaxyrus americanus* *Lithobates pipiens*	USA, North America	Outdoor mesocosms	*A. americanus* and *L. pipiens* loss had no effect on periphyton accrual

Table S2. Cont.

Reference	Species lost	Location	Study type	Results
Dvorsky et al. (2023)	*Hyla chrysoscelis*	USA, North America	Outdoor mesocosms	*H. chrysoscelis* loss increased periphyton accrual
Earl et al. (2023)	*Litoria eweingii*	New Zealand, Oceania	Outdoor mesocosms	*L. ewingii* loss increased periphyton accrual
Flecker et al. (1999)	*Lithobates palmipes*	Venezuela, South America	Field enclosures in ponds	*L. palmipes* loss increased sediment mass
Graham and Vinebrooke (1998)	*Lithobates clamitans*	Canada, North America	Field enclosures in streams	*L. clamitans* loss increased periphyton accrual and altered the community by increasing loosely attached algae, especially tall ones, but also short ones, and reducing firmly attached algae, both tall and short
Harjoe et al. (2022)	*Anaxyrus boreas*	USA, North America	Outdoor mesocosms	*A. boreas* loss increased periphyton accrual
Hernandez and Chalcraft (2012)	*Lithobates sphenocephalus*	USA, North America	Outdoor mesocosms	*L. sphenocephalus* loss increased periphyton accrual, the magnitude of the effect was dependant on the colonization time
Holomuzki and Hemphill (1996)	*Anaxyrus americanus*	USA, North America	Outdoor mesocosms	*A. americanus* loss increased periphyton accrual and induced changes in algal community, shifting from one dominated by diatoms to one dominated by colonial and filamentous green algae, besides, the effects of *A. americanus* loss were greater if taking into account their interaction with the snail *Physella integra*
Holomuzki (1997)	*Anaxyrus americanus*	USA, North America	Stream and pond sampling	*A. americanus* loss increased periphyton accrual and altered the algal community from one dominated by diatoms to one dominated by filamentous green algae
Holomuzki (1998)	*Lithobates clamitans*	USA, North America	Field enclosures in ponds	*L. clamitans* loss increased periphyton accrual, but did not alter community composition
Iwai et al. (2012)	*Ranoidea alboguttata*	Australia, Oceania	Outdoor mesocosms	*R. alboguttata* loss did not affect periphyton accrual in accessible tiles, but reduced periphyton accrual in non-accessible tiles through indirect effects
Kiffney and Richardson (2001)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss had no effect on periphyton accrual
Knoll et al. (2009)	*Lithobates palmipes*	Venezuela, South America	Outdoor mesocosms	*L. palmipes* loss had no effect on periphyton accrual
Kupferberg (1997b)	*Rana boylii* *Pseudacris regilla*	USA, North America	Field enclosures in streams	*R. boylii* loss reduced periphyton accrual and altered the algal community by especially increasing diatoms and reducing *Cladophora* *P. regilla* loss had no effect on periphyton accrual or algal community
Kupferberg (1997a)	*Aquarana catesbaiana* *Rana boylii* *Pseudacris regilla*	USA, North America	Field enclosures in streams	*A. catesbaiana, R. boylii* and *P. regilla* loss increased periphyton accrual, with a greater increase for *A. catesbaiana* loss than for *R. boylii* or *P. regilla*
Lamberti et al. (1992)	*Ascaphus truei*	USA, North America	Field experiment with amphibian community manipulation at stream level	*A. truei* loss increased periphyton accrual and altered algal community by increasing filamentous green algae and reducing small adnate diatoms

Table S2. Cont.

Reference	Species lost	Location	Study type	Results
Mallory and Richardson (2005)	*Ascaphus truei*	Canada, North America	Field enclosures in streams	*A. truei* loss increased periphyton accrual
Morin and Johnson (1988)	*Pseudacris crucifer* *Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased periphyton accrual *P. crucifer* loss had no effect on periphyton accrual
Morin et al. (1990)	*Anaxyrus woodhousii*	USA, North America	Outdoor mesocosms	*A. woodhousii* loss had no effect on periphyton accrual
Parlato and Mott (2023)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss had no effect on periphyton accrual, but due to the interactions between direct and indirect effects, in presence of tadpoles, non-accessible tiles had higher periphyton accrual than accessible ones
Parlato and Mott (2025)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased periphyton accrual, especially large individuals
Rohr and Crumrine (2005)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased periphyton accrual
Rosenfeld (1997)	*Ascaphus truei*	USA, North America	Outdoor artificial streams	*A. truei* loss had no effect on periphyton accrual, but in communities with the mayfly *Ameletus spp.*, tadpole loss induced increases in periphyton accrual
Rugenski et al. (2012)	*Smilisca sila*	Panama, Central America	Field enclosures in streams	*S. sila* loss increased periphyton accrual
Schmidt et al. (2019)	*Litoria serrata* *Myxophies coggeri*	Australia, Oceania	Outdoor artificial streams	*L. serrata* loss had no effect on periphyton accrual or sediment mass *M. coggeri* loss increased periphyton accrual and sediment mass
G. R. Smith et al. (2006)	*Aquarana catesbeiana* *Lithobates clamitans*	USA, North America	Outdoor mesocosms	*A. catesbeiana* and *L. clamitans* loss had no effect on periphyton accrual
Smith and Burgett (2012)	*Anaxyrus americanus* *Hyla versicolor*	USA, North America	Outdoor mesocosms	*A. americanus* and *H. versicolor* loss increased periphyton accrual, without differences depending on anuran species
Smith et al. (2012)	*Anaxyrus americanus* *Hyla versicolor*	USA, North America	Outdoor mesocosms	*A. americanus* and *H. versicolor* loss increased periphyton accrual, without differences depending on anuran species
G. R. Smith et al. (2016)	*Aquarana catesbeiana* *Anaxyrus americanus*	USA, North America	Outdoor mesocosms	*A. catesbeiana* and *A. americanus* loss increased periphyton accrual, with a greater increase for *A. americanus* loss than for *A. catesbeiana* loss
Solomon et al. (2004)	*Lithobates palmipes*	Venezuela, South America	Field enclosures in streams	*L. palmipes* loss had no effect on periphyton accrual but altered the algal community by reducing diatoms *L. palmipes* loss increased sediment mass
Van Meter et al. (2011)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss increased periphyton accrual
Van Meter and Swan (2014)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss increased periphyton accrual
Wang and Kam (2019)	*Bufo bankorensis*	Taiwan, Asia	Field enclosures in streams	*B. bankorensis* loss increased periphyton accrual and altered community by increasing stalked diatoms
Ward et al. (2023)	*Lithobates blairi*	USA, North America	Outdoor mesocosms	*L. blairi* loss increased periphyton accrual

Table S2. Cont.

Reference	Species lost	Location	Study type	Results
Wood and Richardson (2010)	*Anaxyrus boreas*	USA, North America	Outdoor mesocosms	*A. boreas* loss increased periphyton accrual *A. boreas* loss increased sediment mass
Alonso, Bosch and Boyero (2024)	*Alytes obstetricans* *Triturus marmoratus* (larvae)	Spain, Europe	Outdoor mesocosms	*A. obstetricans* loss reduced periphyton accrual and altered algal community, by increasing long filamentous algae *A. obstetricans* loss reduced sediment mass *T. marmoratus* loss reduced periphyton accrual and altered algal community, but with weaker effects
Harris (1995)	*Anaxyrus woodhousii* *Pseudacris triseriata* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*A. woodhousii, P. triseriata* and *A. maculatum* loss had no effect on periphyton accrual
Mills and Semlitsch (2004)	*Lithobates sphenocephalus* *Pseudacris crucifer* *Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*P. crucifer* loss increased periphyton accrual *L. sphenocephalus* and *N. viridescens* loss had no effect on periphyton accrual
Morin (1995)	*Anaxyrus woodhousii* *Hyla andersonii* *Pseudacris crucifer* *Ambystoma opacum* (larvae) *Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*A. woodhousii, H. andersonii, P. crucifer, A. opacum,* and *N. viridescens* loss had no effect on periphyton accrual
Rowland et al. (2017)	*Lithobates sphenocephalus* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*Lithobates sphenocephalus* loss increased periphyton accrual *Ambystoma maculatum* loss had no effect on periphyton accrual
Rubbo et al. (2012)	*Lithobates sylvaticus* *Ambystoma maculatum* (larvae)	USA, North America	Field experiment with amphibian community manipulation at pond level	*L. sylvaticus* and *A. maculatum* loss had no effect on periphyton accrual
Alonso, Bosch, Pérez, et al. (2024)	*Salamandra salamandra* (larvae)	Spain, Europe	Field enclosures in streams	*S. salamandra* loss reduced periphyton accrual
Atlas et al. (2013)	*Dicamptodon tenebrosus* (larvae)	USA, North America	Field experiment with amphibian community manipulation at stream level	*D. tenebrosus* loss had no effect on periphyton accrual

Table S2. Cont.

Reference	Species lost	Location	Study type	Results
Bayer et al. (2021)	*Eurycea bislineata* (larvae) *Gyrinophylus porphyriticus* (adult and larvae)	USA, North America	Outdoor artificial streams	*E. bislineata* and *G. porphyriticus* loss had no effect on periphyton accrual
Blaustein et al. (1996)	*Salamandra infraimmaculata* (larvae)	Israel, Asia	Outdoor mesocosms	*S. infraimmaculata* loss reduced periphyton accrual
Ramamonjisoa and Mori (2019)	*Cynops pyrrhogaster* (adult)	Japan, Asia	Outdoor mesocosms	*C. pyrrhogaster* loss reduced periphyton accrual
Relyea et al. (2005)	*Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*N. viridescens* loss had no effect on periphyton accrual
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (adult)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss increased periphyton accrual, but only with larvae in early and intermediate stages, having no effects in later stages
Barnum et al. (2022)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual
Colón-Gaud et al. (2009)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual
Colón-Gaud et al. (2010)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual
Connelly et al. (2008)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual and altered algal community by increasing proportion of big diatoms Amphibian loss increased sediment accrual
Connelly et al. (2014)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual Amphibian loss had no effect on periphyton nutrient concentration
Rantala et al. (2015)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual
Ranvestel et al. (2004)	Total depletion	Panama, Central America	Field enclosures in streams	Amphibian loss increased periphyton accrual, altered algal community by increasing proportion of big diatoms, and increased sediment mass
Whiles et al. (2013)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased periphyton accrual

Table S3. Summary of studies analysing the effects of anurans and urodeles on macrophytes and metaphyton. Black coarse lines separate the effects of anurans, or anurans and urodeles. *Resumen de los estudios analizando los efectos de anuros y urodelos en macrófitos y metafiton. Las líneas negras gruesas separan los efectos de anuros, o anuros y urodelos.*

Reference	Species lost	Location	Study type	Results
Anderson and Kneitel (2015)	*Pseudacris regilla*	USA, North America	Outdoor mesocosms	*P. regilla* loss increased macrophyte biomass and diversity
Earl et al. (2023)	*Litoria ewingii*	New Zealand, Oceania	Outdoor mesocosms	*L. ewingii* loss increased macrophyte biomass
France and Welbourn (1992)	*Aquarana catesbeiana* *Lithobates clamitans*	Canada, North America	Lake sampling	*A.catesbeiana* and *Lithobates clamitans* loss increased metaphyton biomass
Kupferberg (1997a)	*Aquarana catesbeiana*	USA, North America	Field enclosures in streams	*A.catesbeiana* loss increased metaphyton biomass
Mokany (2007)	*Limnodynastes tasmaniensis*	Australia, Oceania	Outdoor mesocosms	*L. tasmaniensis* loss increased metaphyton biomass
Pinero-Rodríguez et al. (2021)	*Pelobates cultripes*	Spain, Europe	Outdoor mesocosms	*P. cultripes* loss increased macrophyte survival, density and floration, with different effects depending on the species
Arribas et al. (2014)	*Discoglossus galganoi* *Epidalea calamita* *Hyla meridionalis* *Pelobates cultripes* *Pelophylax perezi* *Triturus pygmaeus* (larvae)	Spain, Europe	Outdoor mesocosms	*P. cultripes* loss increased macrophyte biomass and altered their community *D. galganoi, E. calamita, H. meridionalis, P. perezi* and *T. pygmaeus* loss reduced macrophyte biomass, but the effect of individual species could not be differentiated since their loss was coupled

Table S4. Summary of studies analysing the effects of anurans and urodeles on zooplankton. Black coarse lines separate the effects of anurans, urodeles, or both. *Resumen de los estudios analizando los efectos de anuros y urodelos en zooplancton. Las líneas negras gruesas separan los efectos de anuros, urodelos o ambos.*

Reference	Species lost	Location	Study type	Results
Anderson and Kneitel (2015)	*Pseudacris regilla*	USA, North America	Outdoor mesocosms	*P. regilla* loss had no effect on zooplankton abundance
Buck et al. (2015)	*Rana cascadae*	USA, North America	Outdoor mesocosms	*R. cascadae* loss increased zooplankton abundance
Costa and Vonesh (2013a)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* loss increased zooplankton abundance and altered their community by increasing copepods and reducing rotifers *D. ebraccatus* loss had no effect on zooplankton abundance
Costa and Vonesh (2013b)	*Agallychnis callidryas* *Dendropsophus ebraccatus*	Panama, Central America	Outdoor mesocosms	*A. callidryas* and *D. ebraccatus* loss increased zooplankton abundance
Distel and Boone (2010)	*Anaxyrus americanus* *Lithobates pipiens*	USA, North America	Outdoor mesocosms	*A. americanus* and *L. pipiens* loss had no effect on zooplankton abundance
Dvorsky et al. (2023)	*Hyla chrysoscelis*	USA, North America	Outdoor mesocosms	*H. chrysoscelis* loss had no effect on zooplankton abundance
Harjoe et al. (2022)	*Anaxyrus boreas*	USA, North America	Outdoor mesocosms	*A. boreas* loss increased zooplankton abundance and altered their community by reducing cladoceran abundance
Hite et al. (2018)	*Agallychnis callidryas*	Panama, Central America	Outdoor mesocosms	*A. callidryas* loss increased zooplankton biomass
Mokany (2007)	*Limnodynastes tasmaniensis*	Australia, Oceania	Outdoor microcosms	*L. tasmaniensis* loss increased zooplankton abundance
Parlato and Mott (2023)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased zooplankton abundance and altered their community by increasing cladocerans and copepod nauplii
Parlato and Mott (2025)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased zooplankton abundance and altered their community by increasing cladocerans and copepod nauplii, especially compared with the presence of big tadpoles
Preston et al. (2012)	*Aquarana catesbeiana*	USA, North America	Outdoor mesocosms	*A. catesbeiana* loss had no effect on zooplankton abundance
Rettig et al. (2021)	*Anaxyrus americanus* *Aquarana catesbaiana*	USA, North America	Outdoor mesocosms	*A. americanus* and *A. catesbaiana* loss had no effect on zooplankton abundance
Rohr and Crumrine (2005)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss had no effect on zooplankton abundance
Van Meter et al. (2011)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss increased zooplankton abundance and altered their community by increasing copepod nauplii and rotifers
Van Meter and Swan (2014)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss had no effect on zooplankton abundance

Table S4. Cont.

Reference	Species lost	Location	Study type	Results
Arribas et al. (2014)	*Discoglossus galganoi* *Epidalea calamita* *Hyla meridionalis* *Pelobates cultripes* *Pelophylax perezi* *Triturus pygmaeus* (larvae)	Spain, Europe	Outdoor mesocosms	*Pelobates cultripes* loss increased zooplankton abundance and altered their community *Discoglossus galganoi, Epidalea calamita, Hyla meridionalis, Pelobates cultripes, Pelophylax perezi* and *Triturus pygmaeus* loss increased zooplankton abundance and altered their community, but the effect of individual species could not be differentiated since their loss was coupled
Harris (1995)	*Anaxyrus woodhousii* *Pseudacris triseriata* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*P. triseriata and A. woodhousi* loss had no effect on zooplankton community *A. maculatum* loss increased zooplankton abundance and altered their community by increasing isopod and amphipod abundance
Mills and Semlitsch (2004)	*Lithobates sphenocephalus* *Pseudacris crucifer* *Notophthalmus viridescens* (adult)	USA, North America	Outdoor mesocosms	*L. sphenocephalus, P. crucifer* and *N. viridescens* loss had no effect on zooplankton abundance, but *N. viridescens* loss altered their community by increasing *Daphnia spp.* abundance and decreasing *Ceriodaphnia spp.* and *Scapholeberis spp.* dominance
Rowland et al. (2017)	*Lithobates sphenocephalus* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*L. sphenocephalus* loss had no effect on zooplankton biomass *A. maculatum* loss increased *Daphnia spp.* biomass
Rubbo et al. (2012)	*Lithobates sylvaticus* *Ambystoma maculatum* (larvae)	USA, North America	Field experiment with amphibian community manipulation at pond level	*Lithobates sylvaticus* and *Ambystoma maculatum* loss had no effect on zooplankton abundance
Benoy (2008)	*Ambystoma tigrinum* (adult and larvae)	Canada, North America	Pond sampling	*A. tigrinum* loss had no effect on zooplankton abundance
Blaustein et al. (1996)	*Salamandra infraimmaculata* (larvae)	Israel, Asia	Outdoor mesocosms	*S. infraimmaculata* loss increased zooplankton abundance
Blaustein (1997)	*Salamandra infraimmaculata* (larvae)	Israel, Asia	Outdoor mesocosms	*S. infraimmaculata* loss increased zooplankton abundance
Cabrera-Guzmán et al. (2017)	*Triturus pygmaeus* (larvae)	Spain, Europe	Outdoor mesocosms	*T. pygmaeus* loss reduced zooplankton abundance and altered the community by reducing cladoceran abundance so much that overshadowed the increase in the other groups
Holomuzki et al. (1994)	*Ambystoma tigrinum* (larvae)	Canada, North America	Field enclosures in ponds	*A. trigrinum* loss had no effect on zooplankton abundance, but altered their community by increasing herbivorous zooplankton
Roe et al. (2006)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss had no effect on zooplankton abundance
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss altered zooplankton community when larvae were at early and intermediate stages, but not at the later ones

Table S4. Cont.

Reference	Species lost	Location	Study type	Results
Urban (2013)	*Ambystoma opacum* (larvae)	USA, North America	Combination of indoor microcosms, outdoor mesocosms and pond sampling	*A. opacum* loss increased zooplankton abundance and altered their community

Table S5. Summary of studies analysing the effects of anurans and urodeles on macroinvertebrates. Black coarse lines separate the effects of anurans, urodeles, both, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en macroinvertebrados. Las líneas negras gruesas separan los efectos de anuros, urodelos, ambos, y desaparición total de anfibios.*

Reference	Species lost	Location	Study type	Results
Alonso et al. (2022)	*Alytes obstetricans*	Spain, Europe	Field enclosures in streams	*A. obstetricans* loss reduced the caddisfly *Allogamus laureatus* size
Atwood et al. (2014)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss did not affect macroinvertebrate abundance, but altered their community by increasing grazer abundance
Barnum et al. (2013)	*Lithobates warszewitschii*	Panama, Central America	Stream sampling	*L. warszewitschii* loss had no effect on macroinvertebrate abundance
Blaustein and Margalit (1994)	*Bufotes viridis*	Israel, Asia	Outdoor mesocosms	*B. viridis* loss had no effect on *Culiseta longiareolata* survival, but reduced their development time and increased their size
Brönmark et al. (1991)	*Rana temporaria*	Sweden, Europe	Field enclosures in ponds	*R. temporaria* loss increased size and reproduction of the snail *Lymnaea stagnalis*
Earl et al. (2023)	*Litoria ewingii*	New Zealand, Oceania	Outdoor mesocosms	*L. ewingii* loss increased macroinvertebrate abundance and altered their community by increasing Chironomidae and Culicidae abundance
Holomuzki and Hemphill (1996)	*Anaxyrus americanus*	USA, North America	Outdoor mesocosms	*A. americanus* loss had no effect on survival and size of the snail *Physella integra*, but increased their reproduction
Iwai and Kagaya (2007)	*Rana japonica* *Rana ornativentris* *Bufo japonicus* *Rhacophorus arboreus*	Japan, Asia	Indoor mesocosms	*R. japonica, R. ornativentris, B. japonicus* and *R. arboreus* loss reduced the size of *Asellus hilgendorfii*
Iwai et al. (2012)	*Ranoidea alboguttata*	Australia, Oceania	Outdoor mesocosms	*R. alboguttata* loss did not affect chironomid abundance or size, but decreased the size of chironomids in non-accessible tiles
Jara and Pueta (2023)	*Batrachyla taeniata*	Argentina, South America	Outdoor mesocosms	*B. taeniata* loss increased development time of the caddisfly *Verger vespersus*
Kiffney and Richardson (2001)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss increased macroinvertebrate abundance
Kupferberg (1997b)	*Rana boylii* *Pseudacris regilla*	USA, North America	Field enclosures in streams	*R. boylii* loss increased macroinvertebrate abundance, altering their community by increasing Ephemeroptera, Diptera and Oligochaeta *P. regilla* loss had no effect on macroinvertebrate community
Lamberti et al. (1992)	*Ascaphus truei*	USA, North America	Field experiment with amphibian community manipulation at stream level	*A. truei* loss increased macroinvertebrate abundance and altered their community
Lawler et al. (1999)	*Aquarana catesbeiana*	USA, North America	Outdoor mesocosms	*A. catesbeiana* loss had no effect on macroinvertebrate community

Table S5. Cont.

Reference	Species lost	Location	Study type	Results
Manenti et al. (2017)	*Rana temporaria* *Bombina variegata* *Bufo bufo*	Italy, Europe	Pond sampling	*B. variegata* and *B. bufo* loss increased *Aeshna spp.* presence *R. temporaria* loss had no effect on *Aeshna spp.*
McLachlan (1981)	*Ptychadena anchietae*	Non stated, Africa	Outdoor mesocosms	*P. anchietae* loss increased *Chironomus imicola* adult density but reduced their larval density and size
Mokany and Shine (2003)	*Limnodynastes peronii* *Crinia signifera*	Australia, Oceania	Indoor mesocosms	*L. peronii* and *C. signifera* loss increased survival and size of mosquito *Culex quinquefasciatus* and *Oclherotatus australis,* but had no effect on their development time
Mokany (2007)	*Limnodynastes tasmaniensis*	Australia, Oceania	Outdoor microcosms	*L. tasmaniensis* loss increased macroinvertebrate abundance and altered their community with a reduction in taxon richness
Parlato and Mott (2023)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss did not affect macroinvertebrate abundance, but altered their community by increasing Oligochaeta, Chironomidae and Trichoptera
Parlato and Mott (2025)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased macroinvertebrate abundance and altered their community by increasing Oligochaeta abundance
Preston et al. (2012)	*Aquarana catesbaiana*	USA, North America*	Outdoor mesocosms	*A. catesbaiana* loss increased the snail *Heliosoma sp.* abundance
Rohr and Crumrine (2005)	*Lithobates sylvaticus*	USA, North America	Outdoor mesocosms	*L. sylvaticus* loss increased survival of the snail *Planella trivolvis* and the abundance of the chironomid *Polypedilum*
Rosenfeld (1997)	*Ascaphus truei*	USA, North America	Outdoor artificial streams	*A. truei* loss had no effect on chironomid abundance, but in communities with the mayfly *Ameletus* sp., tadpole loss induced an increase in chironomid abundance
Smith et al. (2012)	*Anaxyrus americanus* *Hyla versicolor*	USA, North America	Outdoor mesocosms	*Anaxyrus americanus* and *Hyla versicolor* loss reduced *Physella spp*. abundance
Rowland et al. (2017)	*Lithobates sphenocephalus* *Ambystoma maculatum* (larvae)	USA, North America	Outdoor mesocosms	*L. sphenocephalus* loss increased chironomid abundance *A. maculatum* loss had no effect on chironomids
Alonso, Bosch, Pérez, et al. (2024)	*Salamandra salamandra* (larvae)	Spain, Europe	Field enclosures in streams	*S. salamandra* loss had no effect on macroinvertebrate abundance or community
Atlas et al. (2013)	*Dicamptodon tenebrosus* (larvae)	USA, North America	Field experiment with amphibian community manipulation at stream level	*D. tenebrosus* loss had no effect on macroinvertebrate biomass
Bayer and Lowe (2021)	*Eurycea bislineata* (larvae) *Gyrinophylus porphyriticus* (larvae)	USA, North America	Outdoor artificial streams	*E. bislineata* loss had no effect on macroinvertebrate abundance *G. porphyriticus* loss increased macroinvertebrate abundance *E. bislineata* and *G. porphyriticus* combined loss had no effect on macroinvertebrate abundance
Benoy (2008)	*Ambystoma tigrinum* (adult and larvae)	Canada, North America	Pond sampling	*A. tigrinum* loss increased macroinvertebrate abundance and altered their community by increasing Diptera, Hemiptera, Coleoptera and Trichoptera abundance

Table S5. Cont.

Reference	Species lost	Location	Study type	Results
Blaustein et al. (1996)	*Salamandra infraimmaculata* (larvae)	Israel, Asia	Outdoor mesocosms	*S. infraimmaculata* loss increased chironomid abundance
Burgett and Chase (2015)	*Ambystoma maculatum* (larvae)	USA, North America	Pond sampling	*A. maculatum* loss increased macroinvertebrate richness
Keitzer and Goforth (2013)	*Eurycea wilderae* (larvae) *Desmognathus quadramaculatus* (larvae)	USA, North America	Field enclosures in streams	*E. wilderae* and *D. quadramaculatus* loss had no effect on macroinvertebrate abundance, richness or community *E. wilderae* and *D. quadramaculatus* combined loss increased macroinvertebrate abundance and richness, and altered the community by increasing predators and gatherer collectors
Manenti et al. (2020)	*Salamandra salamandra* (larvae)	Italy, Europe	Cave stream and pond sampling	*S. salamandra* loss increased macroinvertebrate abundance
Nery and Schmera (2016)	*Salamandra salamandra* (larvae)	Sweden, Europe	Field enclosures in streams	*S. salamandra* loss increased macroinvertebrate abundance and altered their community
Ptatscheck et al. (2025)	*Salamandra salamandra* (larvae)	Germany, Europe	Indoor microcosms	*S. salamandra* loss increased macroinvertebrate abundance and altered their community in different ways depending if they were from streams or from ponds
Reinhardt et al. (2017)	*Salamandra salamandra* (larvae)	Germany, Europe	Field enclosures in ponds	*S. salamandra* loss had no effect on macroinvertebrate abundance or community
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss altered macroinvertebrate communities with larvae at early and intermediate stages, but not in the later ones
Takatsu (2022)	*Hynobius retardatus* (larvae)	Japan, Asia	Field enclosures in ponds	*H. retardatus* loss increased macroinvertebrate abundance and altered their community by increasing Diptera, Hemiptera and Ephemeroptera, with greater effects for earlier development stages than for later ones
Wissinger et al. (1999)	*Ambystoma tigrinum* (adult and larvae)	USA, North America	Outdoor mesocosms	*A. tigrinum* loss increased the survival of the caddisflies *Asynarchus nigriculus* and *Limnephilus externus,* but in presence of both caddisflies, *A. tigrinum* loss reduced *L. externus* survival
Barnum et al. (2022)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on grazer macroinvertebrate abundance, but altered their community by reducing several taxa as *Petrophila spp, Tricorythodes spp*. and *Psephenus spp*. and increasing others as *Baetodes spp*.
Colón-Gaud et al. (2009)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased macroinvertebrate biomass and altered their community by increasing filter-feeders and grazers and reducing shredders
Colón-Gaud et al. (2010)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss altered macroinvertebrate community by increasing filter-feeders and grazers and reducing shredders
Colón-Gaud et al. (2010)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on grazer macroinvertebrate abundance, but altered their community by reducing small grazers
Connelly et al. (2008)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on macroinvertebrate abundance
Connelly et al. (2011)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on macroinvertebrate abundance or community
Rantala et al. (2015)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss reduced macroinvertebrate abundance and altered their community, by reducing shredders, filterers and grazers and increasing collector-gatherers

Table S5. Cont.

Reference	Species lost	Location	Study type	Results
Ranvestel et al. (2004)	Total depletion	Panama, Central America	Field enclosures in streams	Amphibian loss reduced macroinvertebrate abundance
Whiles et al. (2013)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on macroinvertebrate biomass
T. C. Smith et al. (2016)	Total depletion	USA, North America	Pond sampling	One sampling found that ponds with partial and total amphibian loss had slightly higher macroinvertebrate richness but did not alter community structure Another sampling found that ponds that had suffered total amphibian depletion only showed small changes in community composition in one of the two areas, having no effect in the other one

Table S6. Summary of studies analysing the effects of anurans and urodeles on food webs. Black coarse lines separate the effects of anurans, anurans and urodeles, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en redes tróficas. Las líneas negras gruesas separan los efectos de anuros, anuros y urodelos, y desaparición total de anfibios.*

Reference	**Species lost**	**Location**	**Study type**	**Results**
Barnum et al. (2013)	*Lithobates warszewitschii*	Panama, Central America	Stream sampling	*L. warszewitschii* loss did not affect the diet of the mayfly *Thraulodes spp.* but altered the niches of the beetle *Psephenus spp*., the mayfly *Stenonema spp*. and the butterfly *Petrophila spp*. towards the diets of *L. warszewitschii* by increasing non-algal biofilm consumption of *Psephenus spp*. and *Petrophila spp*. and decreasing their consumption of diatoms
Gobel et al. (2023)	*Aquarana catesbaiana*	Uruguay, South America	Pond sampling	*A. catesbaiana* loss increased macroinvertebrate consumption of allochthonous biomass and reduced fish consumption of allochthonous biomass
Arribas et al. (2015)	*Discoglossus galganoi* *Epidalea calamita* *Hyla meridionalis* *Pelobates cultripes* *Pelophylax perezi* *Triturus pygmaeus*	Spain, Europe	Outdoor mesocosms	*P.cultripes* loss increased *H. meridionalis* algal and macrophyte consumption, increased *P. perezi* algal consumption and decreased their macrophyte consumption, and increased *T. pygameus* zooplankton consumption *D. galganoi, E. calamita, H. meridionalis, P. cultripes, P. perezi* and *T. pygmaeus* loss decreased *P. cultripes*, *P. perezi* and *T. pygmaeus* detritus consumption, decreased *H. meridionalis* consumption of the macrophyte *Callitriche* spp. and decreased *T. marmoratus* cladoceran consumption, but the effect of individual species could not be differentiated since their reduction was coupled
Belouard et al. (2024)	*Rana dalmatina* *Hyla arborea* *Lissotriton helveticus* (larvae) *Triturus marmoratus* (larvae)	France, Europe	Pond sampling	*R. dalmatina, H. arborea, L. helveticus* and *T. marmoratus* loss influenced trophic niche of the other amphibians
Barnum et al. (2015)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no significant effect on food webs
Whiles et al. (2013)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss altered food webs, changing from a food web based on periphyton as main resource to one based on particulate organic matter

Table S7. Summary of studies analysing the effects of anurans and urodeles on leaf litter decomposition. Black coarse lines separate the effects of anurans, anurans and urodeles, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en descomposición de hojarasca. Las líneas negras gruesas separan los efectos de anuros, anuros y urodelos, y desaparición total de anfibios.*

Reference	Species lost	Location	Study type	Results
Atwood et al. (2014)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss had no effect on leaf litter decomposition
Earl et al. (2023)	*Litoria ewingii*	New Zealand, Oceania	Outdoor mesocosms	*L. ewingii* loss had no effect on leaf litter decomposition
Iwai and Kagaya (2007)	*Rana japonica* *Rana ornativentris* *Bufo japonicus* *Rhacophorus arboreus*	Japan, Asia	Indoor mesocosms	*R. japonica, R. ornativentris, B. japonicus* and *R. arboreus* loss reduced leaf litter N content
Iwai et al. (2009)	*Litoria genimaculata*	Australia, Oceania	Outdoor artificial streams	*L. genimaculata* loss had no effect on leaf litter decomposition, but decreased the reduction of leaf mass induced by the caddisfly *Anisocentropus kirramys*
Iwai et al. (2012)	*Ranoidea alboguttata*	Australia, Oceania	Outdoor mesocosms	*R. alboguttata* loss had no effect on leaf litter decomposition, but decreased leaf litter N content
Jara and Pueta (2023)	*Batrachyla taeniata*	Argentina, South America	Outdoor mesocosms	*B. taeniata* loss had no effect on leaf litter decomposition
Ramamonjisoa and Natuhara (2018)	*Boophis quasiboehmei* *Mantidactylus melanopleura*	Madagascar, Africa	Field enclosures in streams	*B. quasiboehmei* and *M. melanopleura* loss reduced leaf litter decomposition at higher density, with a different effects of each species loss depending on leaf litter type
Rugenski et al. (2012)	*Smilisca sila*	Panama, Central America	Field enclosures in streams	*S. sila* loss had no effect on leaf litter decomposition by themselves, but in communities with the beetle *Anchytarsus spp. a*nd the caddisfly *Phylloicus spp.,* tadpole loss reduced leaf litter decomposition *S. sila* loss reduced FPOM production
Schmidt et al. (2019)	*Litoria serrata* *Myxophies coggeri*	Australia, Oceania	Outdoor artificial streams	*L. serrata* loss reduced leaf litter decomposition *M. coggeri* loss had no effect on leaf litter decomposition
Stoler et al. (2016)	*Lithobates clamitans*	USA, North America	Indoor microcosms	*L. clamitans* loss reduced leaf litter decomposition
Van Meter et al. (2012)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss had no effect on leaf litter decomposition
Alonso, Bosch, Pérez, et al. (2024)	*Salamandra salamandra* (larvae)	Spain, Europe	Field enclosures in streams	*S. salamandra* loss reduced leaf litter decomposition, but had no effect on fungal sporulation or community
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss increased leaf litter decomposition with larvae in their early and intermediate development stages, but not in the later ones
Colón-Gaud et al. (2009)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased suspended particulate organic matter
Colón-Gaud et al. (2010)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss reduced coarse particulate organic matter

Table S7. Cont.

Reference	Species lost	Location	Study type	Results
Connelly et al. (2011)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on leaf litter decomposition, fungal biomass or bacterial biomass
Rantala et al. (2015)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss reduced coarse and suspended organic matter, but had no effect on fine particulate organic matter
Whiles et al. (2013)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss increased fine particulate organic matter and reduced suspended organic matter, but had no effect on coarse organic matter

Table S8. Summary of studies analysing the effects of anurans and urodeles on nutrient cycling and ecosystem metabolism. Black coarse lines separate the effects of anurans, urodeles, both, and total amphibian depletion. *Resumen de los estudios analizando los efectos de anuros y urodelos en ciclado de nutrientes y metabolismo del ecosistema. Las líneas negras gruesas separan los efectos de anuros, urodelos, ambos, y desaparición total de anfibios.*

Reference	**Species lost**	**Location**	**Study type**	**Results**
Atwood et al. (2014)	*Ascaphus truei*	Canada, North America	Outdoor artificial streams	*A. truei* loss reduced ecosystem respiration
Holomuzki and Hemphill (1996)	*Anaxyrus americanus*	USA, North America	Outdoor mesocosms	*A. americanus* loss had no effect on primary production
Holomuzki (1998)	*Lithobates clamitans*	USA, North America	Field enclosures in ponds	*L. clamitans* loss had no effect on PO_4^- and NO_3^- concentration in water
Iwai et al. (2009)	*Litoria genimaculata*	Australia, Oceania	Outdoor artificial streams	*L. genimaculata* loss had no effect on PO_4^- and NO_3^- concentration in water
Iwai et al. (2012)	*Ranoidea alboguttata*	Australia, Oceania	Outdoor mesocosms	*R. alboguttata* loss reduced PO_4^- concentration in water, but had no effect on NO_3^- concentration
Knoll et al. (2009)	*Lithobates palmipes*	Venezuela, South America	Outdoor mesocosms	*L. palmipes* loss decreased PO_4^-, NH_4^+ and NO_3^- concentration in water, with greater effects for PO_4^-
Kupferberg (1997b)	*Rana boylii* *Pseudacris regilla*	USA, North America	Field enclosures in streams	*R. boylii* and *P. regilla* loss had no effect on N concentration in water *R. boylii* loss reduced primary production *P. regilla* loss had no effect on primary production
Mokany (2007)	*Limnodynastes tasmaniensis*	Australia, Oceania	Outdoor mesocosms	*L. tasmaniensis* loss reduced PO_4^- and NO_3^- concentration in water *L. tasmaniensis* loss reduced primary production
Preston et al. (2012)	*Aquarana catesbeiana*	USA, North America*	Outdoor mesocosms	*A. catesbeiana* loss had no effect on N concentration in water
Ramamonjisoa and Natuhara (2018)	*Boophis quasiboehmei* *Mantidactylus melanopleura*	Madagascar, Africa	Field enclosures in streams	*B. quasiboehmei* and *M. melanopleura* loss reduced N and P concentration in water
Rugenski et al. (2012)	*Smilisca sila*	Panama, Central America	Field enclosures in streams	*S. sila* loss reduced ecosystem respiration
Van Meter et al. (2012)	*Hyla versicolor*	USA, North America	Outdoor mesocosms	*H. versicolor* loss had no effect on ecosystem respiration
Wang and Kam (2019)	*Bufo bankorensis*	Taiwan, Asia	Field enclosures in streams	*B. bankorensis* loss slowed down nutrient cycling
Ward et al. (2023)	*Lithobates blairi*	USA, North America	Outdoor mesocosms	*L. blairi* loss increased primary production
Arribas et al. (2014)	*Discoglossus galganoi* *Epidalea calamita* *Hyla meridionalis* *Pelobates cultripes* *Pelophylax perezi* *Triturus pygmaeus*	Spain, Europe	Outdoor mesocosms	*P. cultripes* loss reduced PO_4^- and NH_4^+ concentration in water

Table S8. Cont.

Reference	Species lost	Location	Study type	Results
Rubbo et al. (2012)	*Lithobates sylvaticus* *Ambystoma maculatum* (larvae)	USA, North America	Field experiment with amphibian community manipulation at pond level	*L. sylvaticus* and *A. maculatum* loss had no effect on ecosystem respiration and primary production
Holomuzki et al. (1994)	*Ambystoma tigrinum* (larvae)	Canada, North America	Field enclosures in ponds	*A. trigrinum* loss increased PO_4^- concentration in water, but had no effect on NO_3^- concentration
Munshaw et al. (2013)	*Dicamptodon tenebrosus* (adult and larvae)	USA, North America	Stream sampling	*D. tenebrosus* loss induced a slower nutrient cycling
Rudolf and Van Allen (2017)	*Ambystoma talpoideum* (larvae)	USA, North America	Outdoor mesocosms	*A. talpoideum* loss increased respiration and primary production when larvae were at early developmental stages, but not at intermediate or later ones
Connelly et al. (2008)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss reduced ecosystem respiration and increased primary production
Connelly et al. (2011)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss had no effect on ecosystem respiration
Rantala et al. (2015)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss slowed down nutrient cycling Amphibian loss reduced ecosystem respiration but had no effect on primary production
Whiles et al. (2013)	Total depletion	Panama, Central America	Stream sampling	Amphibian loss slowed down nutrient cycling Amphibian loss reduced ecosystem respiration and increased primary production