

Additional File 2. Literature search specific for each database

Does anthropogenic introduction of guppy fish (*Poecilia reticulata*) impact faunal species diversity and abundance in natural aquatic habitats? A systematic review protocol
Environmental Evidence

Search strategies for

1. Web of Science
2. CAB Abstracts
3. Agricola
4. Embase
5. Biological Abstracts
6. Medline
7. Scopus
8. GreenFILE
9. LILACS
10. OpenGrey

For database descriptions see end of this document. In this preliminary search duplicates have not been removed.

I1 – Intervention 1

I2 – Intervention 2

O - Outcome

1. Web of Science (Accessed from NMBU). Includes KJD, WOS, RSCI, SCIELO, MEDLINE databases - searched 21.08.21

PICO	Text search (topic)	# hits
I1	(Poecilia or "rainbow fish" or (Girardinus "NEAR/1"(guppil or petersi or poeciloides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish)	16,557
I2	Aedes or mosquito or ((Aedes or mosquito* or vector) "NEAR/1"(control or management)) or chikungunya or "chikun gunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) "NEAR/1"vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping"	100,804
O	biodiversity or "biological diversity" or (ecological "NEAR/1"(balance or effect* or system*)) or (species "NEAR/1"(diversity or richness or composition or evenness or abundance)) or ((community or population) "NEAR/1"(structure or abundance)) or (ecological "NEAR/1"(impact or risk*))	159,756
(I1 AND I2) OR (I1 AND O)		695

KJD= Korean Journal Database (1980-present). WOS=Web of Science Core Collection (1945-present). RSCI=Russian Science Citation Index (2005-present). SCIELO=provides scholarly literature in sciences, social sciences, and arts and humanities published in leading open access journals from Latin America, Portugal, Spain, and South Africa) (2002-present). MEDLINE=The U.S. National Library of Medicine® (NLM®) premier life sciences database) (1950-present). NMBU= Norwegian University of Life Sciences library.

2. CAB Abstracts (Accessed via OVID from NMBU) - 1910 to 2021 Week 33 – searched 22.08.21

PICO	Alternative CAB Thesaurus	Text search	# hits
I1	Poecilia reticulata/ Poecilia/	(Poecilia or "rainbow fish" or (Girardinus adj2 (guppil or petersi or poecilioides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish).tw.	8,000
I2	Aedes/ Chikungunya virus/ Dengue virus/ zika virus/ vector control/ disease transmission/ disease vectors/ mosquito-borne diseases/	(Aedes or mosquito or ((Aedes or mosquito* or vector) adj2 (control or management)) or chikungunya or "chikungunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) adj2 vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping").tw.	206,998
O	biodiversity/ species diversity/ species richness/	(biodiversity or "biological diversity" or (ecological adj2 (balance or effect* or system*)) or (species adj2 (diversity or richness or composition or evenness or abundance)) or ((community or population) adj2 (structure or abundance)) or (ecological adj2 (impact or risk*))).tw.	278,949
(I1 AND I2) OR (I1 AND O)			1,808

3. Agricola (Accessed via OVID from NMBU) – 1970 to August 2021 – searched 23.08.21

PICO	Agricola Subject Heading	Text search	# hits
I1	Poecilia reticulata/ Poecilia/	(Poecilia or "rainbow fish" or (Girardinus adj2 (guppil or petersi or poecilioides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish).tw.	3,480
I2	exp aedes/ chikungunya virus/ dengue/ vector control/ mosquito control/ insect vectors/ mosquito vectors/	(Aedes or mosquito or ((Aedes or mosquito* or vector) adj2 (control or management)) or chikungunya or "chikungunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) adj2 vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping").tw.	30,234
O	biodiversity/ species diversity/ species richness/ species abundance/	(biodiversity or "biological diversity" or (ecological adj2 (balance or effect* or system*)) or (species adj2 (diversity or richness or composition or evenness or abundance)) or ((community or population) adj2 (structure or abundance)) or (ecological adj2 (impact or risk*))).tw.	138,316
(I1 AND I2) OR (I1 AND O)			340

4. Embase (Accessed via OVID from NMBU) – 1974 to 2021 August 20 – searched 23.08.21

PICO	Emtree	Text search	# hits
I1	Poecilia/ guppy/	(Poecilia or "rainbow fish" or (Girardinus adj2 (guppil or petersi or poeciloides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish).tw,kw.	4,351
I2	exp Aedes/ chikungunya/ chikungunya virus/ dengue / dengue virus/ vector control/ mosquito control/ insect vector/ mosquito vector/	(Aedes or mosquito or ((Aedes or mosquito* or vector) adj2 (control or management)) or chikungunya or "chikungunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) adj2 vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping").tw,kw.	107,419
O	biodiversity/ species diversity/ species richness/ species abundance/	(biodiversity or "biological diversity" or (ecological adj2 (balance or effect* or system*)) or (species adj2 (diversity or richness or composition or evenness or abundance)) or ((community or population) adj2 (structure or abundance)) or (ecological adj2 (impact or risk*))).tw,kw.	136,641
(I1 AND I2) OR (I1 AND O)			421

5. Biological Abstracts (Accessed via OVID from NMBU) – 1985 to August 2021– searched 23.08.21

PICO	Text search	# hits
I1	(Poecilia or "rainbow fish" or (Girardinus adj2 (guppil or petersi or poeciloides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish).tw,kw.	10,928
I2	(Aedes or mosquito or ((Aedes or mosquito* or vector) adj2 (control or management)) or chikungunya or "chikun gunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) adj2 vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping").tw,kw.	201,540
O	(biodiversity or "biological diversity" or (ecological adj2 (balance or effect* or system*)) or (species adj2 (diversity or richness or composition or evenness or abundance)) or ((community or population) adj2 (structure or abundance)) or (ecological adj2 (impact or risk*))).tw,kw.	540,797
(I1 AND I2) OR (I1 AND O)		1,656

6. MEDLINE ALL (Accessed via OVID from NMBU) – 1946 to August 20, 2021 – searched 23.08.21

PICO	Mesh	Text search	# hits
I1	Poecilia/	(Poecilia or "rainbow fish" or (Girardinus adj2 (guppil or petersi or poeciloides* or poeciloides)) or Lebistes or lebister or "Libistes poeciloides" or guppy or guppies or molly or mollies or gully or mosquitofish or "mosquito fish" or Haridichtys or "Acanthocephalus guppil" or "Acanthocephalus reticulatus" or Heterandia or millionfish or killifish).tw,kf.	4,364
I2	Aedes/ chikungunya virus/ dengue/ Zika virus/ mosquito control/ insect vector/ mosquito vector/	(Aedes or mosquito or ((Aedes or mosquito* or vector) adj2 (control or management)) or chikungunya or "chikun gunya" or dengue or breakbone or denque or zika or ((insect or mosquito or disease) adj2 vector*) or "disease transmission" or "mosquito-borne disease*" or "aquarium dumping").tw,kf.	102,484
O	biodiversity/	(biodiversity or "biological diversity" or (ecological adj2 (balance or effect* or system*)) or (species adj2 (diversity or richness or composition or evenness or abundance)) or ((community or population) adj2 (structure or abundance)) or (ecological adj2 (impact or risk*))).tw,kf.	117,066
(I1 AND I2) OR (I1 AND O)			381

7. Scopus (Accessed from NMBU) – searched 24.08.21

PICO	Text search	# hits
I1	TITLE-ABS-KEY ((poecilia OR "rainbow fish" OR (girardinus W/1 (guppil OR petersi OR poecilioides* OR poeciloides)) OR lebistes OR lebister OR "Libistes poeciloides" OR guppy OR guppies OR molly OR mollies OR gully OR mosquitofish OR "mosquito fish" OR haridichtys OR "Acanthocephalus guppil" OR "Acanthocephalus reticulatus" OR heterandia OR millionfish OR killifish))	17,893
I2	TITLE-ABS-KEY (aedes OR mosquito OR ((aedes OR mosquito* OR vector) W/1 (control OR management)) OR chikungunya OR "chikun gunya" OR dengue OR breakbone OR denque OR zika OR ((insect OR mosquito OR disease) W/1 vector*) OR "disease transmission" OR "mosquito-borne disease*" OR "aquarium dumping")	285,132
O	TITLE-ABS-KEY (biodiversity OR "biological diversity" OR (ecological W/0 (balance OR effect* OR system*)) OR (species "NEAR/1" (diversity OR richness OR composition OR evenness OR abundance)) OR ((community OR population) W/1 (structure OR abundance)) OR (ecological W/1 (impact OR risk*)))	385,661
(I1 AND I2) OR (I1 AND O)		1,218

8. GreenFILE (Accessed via EBSCO online) – from 1968 to 2021 – searched 12.09.2021

PICO	Text search	# hits
I1	Poecilia or (rainbow fish) or (Girardinus N1 (guppil or petersi or poecilioides* or poeciloides)) or Lebistes or lebister or (Libistes poeciloides) or guppy or guppies or molly or mollies or gully or mosquitofish or (mosquito fish) or Haridichtys or (Acanthocephalus guppil) or (Acanthocephalus reticulatus) or Heterandia or millionfish or killifish	2,972
I2	Aedes or mosquito or ((Aedes or mosquito* or vector) N1 (control or management)) or chikungunya or (chikun gunya) or dengue or breakbone or denque or zika or ((insect or mosquito or disease) N1 (vector*)) or (disease transmission) or (mosquito-borne disease) or (aquarium dumping)	3,449
O	biodiversity or (biological diversity) or ((ecological N1 (balance or effect* or system*)) or ((species N1 (diversity or richness or composition or evenness or abundance)) or ((community or population) N1 (structure or abundance)) or (ecological N1 (impact or risk*)))	80,780
(I1 AND I2) OR (I1 AND O)		425

9. LILACS (Accessed online) – from 1968 to 2021 – searched 13.09.2021

PICO	Text search, including DeCs	# hits
I1	MH: Poecilia OR Guppies OR Guppy OR Lebistes OR Mollies OR Molly OR Poeciliias OR "mosquito fish" OR Ciprinodontiformes OR Killifishes OR "Peixes Listrados" OR "Acanthocephalus guppil"	93
I2	MH: Aedes OR "mosquito vectors" OR "Mosquitos Vectores" OR "Mosquitos Vetores" OR "insect vector" OR "Insectos Vectores" OR "Insetos Vetores" OR "mosquito control" OR "Control de Mosquitos" OR "Controle de Mosquitos" OR "Chikungunya Fever" OR "Fiebre Chikungunya" OR "Febre de Chikungunya" OR "Chikungunya virus" OR "Virus Chikungunya" OR "Virus Chikungunya" OR dengue OR "Dengue Virus" OR "Virus del Dengue" OR "Virus da Dengue" OR "Zika Virus" OR "Virus Zika" OR "Disease Vectors" OR "Vectores de Enfermedades" OR "Vetores de Doenças" OR "Arthropod Vectors" OR "Vectores Artrópodos" OR "Vetores Artrópodes" OR "Disease Transmission, Infectious" OR "Transmisión de Enfermedad Infecciosa" OR "Transmissão de Doença Infecciosa"	7,532
O	MH: biodiversity OR Biodiversidad OR Biodiversidade OR "ecological balance" OR "Ecological Equilibrium" OR "Equilibrio Ecológico" OR "Equilíbrio Ecológico" OR "Ecological Disorder" OR "Desequilibrio Ecológico" OR "Desequilíbrio Ecológico"	2,502
(I1 AND I2) OR (I1 AND O) ((MH: Poecilia OR Guppies OR Guppy OR Lebistes OR Mollies OR Molly OR Poeciliias OR "mosquito fish" OR Ciprinodontiformes OR Killifishes OR "Peixes Listrados" OR "Acanthocephalus guppil") AND (MH: Aedes OR "mosquito vectors" OR "Mosquitos Vectores" OR "Mosquitos Vetores" OR "insect vector" OR "Insectos Vectores" OR "Insetos Vetores" OR "mosquito control" OR "Control de Mosquitos" OR "Controle de Mosquitos" OR "Chikungunya Fever" OR "Fiebre Chikungunya" OR "Febre de Chikungunya" OR "Chikungunya virus" OR "Virus Chikungunya" OR "Virus Chikungunya" OR dengue OR "Dengue Virus" OR "Virus del Dengue" OR "Virus da Dengue" OR "Zika Virus" OR "Virus Zika" OR "Disease Vectors" OR "Vectores de Enfermedades" OR "Vetores de Doenças" OR "Arthropod Vectors" OR "Vectores Artrópodos" OR "Vetores Artrópodes" OR "Disease Transmission, Infectious" OR "Transmisión de Enfermedad Infecciosa" OR "Transmissão de Doença Infecciosa")) OR ((MH: Poecilia OR Guppies OR Guppy OR Lebistes OR Mollies OR Molly OR Poeciliias OR "mosquito fish" OR Ciprinodontiformes OR Killifishes OR "Peixes Listrados" OR "Acanthocephalus guppil") AND (MH: biodiversity OR Biodiversidad OR Biodiversidade OR "ecological balance" OR "Ecological Equilibrium" OR "Equilibrio Ecológico" OR "Equilíbrio Ecológico" OR "Ecological Disorder" OR "Desequilibrio Ecológico" OR "Desequilíbrio Ecológico"))		16

DeCS: Descriptores en Ciencias de la Salud (Descriptors on Health Sciences)

10. OpenGrey (Accessed online) – searched 13.09.2021

Due to limitations in search structure of this database only the Intervention 1 term was used.

PICO	Text search (topic)	# hits
I1	Poecilia OR guppy OR guppies OR molly OR mollies OR gully OR mosquitofish* OR mosquito fish* OR millionfish* OR million fish* OR killifish*	146
I2	-	-
O	-	-
(I1 AND I2) OR (I1 AND O)		-

Data base descriptions

The Web of Science is the world's most trusted publisher-independent global citation database". "Our comprehensive platform allows you to track ideas across disciplines and time from almost 1.9 billion cited references from over 171 million records. Over 9,000 leading academic, corporate and government institutions and millions of researchers trust the Web of Science to produce high-quality research, gain insights and make more-informed decisions that guide the future of their institution and research strategy" [1].

CAB Abstracts is the leading English-language bibliographic information service providing access to the world's applied life sciences literature. It comes with CABI Full Text, giving users automatic access to over 550,000 journal articles, conference papers and reports (80% of which are not available electronically anywhere else)" [2].

AGRICOLA (AGRICultural OnLine Access) is a database produced by the National Agricultural Library (NAL), consists of two subsets of records. The first contains citations for journal articles that include abstracts. The second consists of bibliographic records describing monographs, serials, audiovisual materials and online content from around the world. AGRICOLA includes but is not limited to resources available in the library. The database contains 5,200,000+ records and includes printed works from as far back as the 15th century. AGRICOLA records describe publications and resources encompassing all aspects of agriculture and allied disciplines, including animal and veterinary sciences, entomology, plant sciences, forestry, aquaculture and fisheries, farming and farming systems, agricultural economics, extension and education, food and human nutrition, and earth and environmental sciences" [3].

Embase delivers immediate access to a range of intuitive search tools that help researchers efficiently search and retrieve exact answers to their research questions quickly, accurately and easily. Embase supports research needs, by:

- Retrieving clinical evidence for pre-market approval and post-marketing surveillance with medical device literature
- Uncovering drug-disease relationships and drug-drug interactions for drug R&D
- Monitoring literature for drug and device adverse events more efficiently
- Aligning the monitoring of local-language journals (our first module is the French Local Literature Module) for adverse drug reactions with their global processes
- Creating high-quality systematic reviews for evidence-based medicine" [4].

Biological abstracts is "produced by the Web of Science Group, with topics ranging from botany to microbiology to pharmacology." "Subjects Include: Agriculture, Biochemistry, Biology, Biotechnology, Botany, Pharmacology, Pre-clinical and experimental medicine, Veterinary medicine, Zoology" [5].

MEDLINE is the National Library of Medicine's (NLM) premier bibliographic database that contains references to journal articles in life sciences, with a concentration on biomedicine. MEDLINE content is searchable via PubMed and constitutes the primary component of PubMed, a literature database developed and maintained by the NLM National Center for Biotechnology Information (NCBI)" [6].

Scopus uniquely combines a comprehensive, expertly curated abstract and citation database with enriched data and linked scholarly literature across a wide variety of disciplines. Scopus quickly finds relevant and authoritative research, identifies experts and provides access to reliable data, metrics and

analytical tools. Be confident in progressing research, teaching or research direction and priorities — all from one database and with one subscription" [7].

GreenFILE is a free research database covering all aspects of human impact to the environment. Its collection of scholarly, government and general-interest titles includes content on global warming, green building, pollution, sustainable agriculture, renewable energy, recycling, and more" [8].

LILACS is the most important and comprehensive database of LA&C with more than 880 thousand records of peer reviewed journals, thesis and dissertations, government documents, annals of congresses and books, published since 1982. It includes systematic reviews, randomized controlled clinical trials, evidence synthesis, health technology evaluation studies, economic evaluation studies, clinical practice guidelines, technical reports, case reports and others. Maintained and updated by a network composed of more than 600 educational, governmental and health research institutions, and coordinated by BIREME / PAHO / WHO" [9].

System for Information on Grey Literature in Europe is your open access to 700.000 bibliographical references of grey literature (paper) produced in Europe and allows you to export records and locate the documents. Examples of grey (gray) literature include technical or research reports, doctoral dissertations, some conference papers, some official publications, and other types of grey literature. OpenGrey covers Science, Technology, Biomedical Science, Economics, Social Science and Humanities. The site includes preprints from the GL conferences (GreyNet International) in full text" [10].

References

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