Supplementary Table 1. List of advisory board members

Name	Institutions	Country
Broadway, Melissa	EAZA/Wild Planet Trust/Paignton Zoo	UK
Bushell, Melissa	Bristol Zoo	UK
Cabana, Francis	Wildlife Reserves Singapore	Singapore
Che-Castaldo, Judy	Lincoln Park Zoo	USA
Clegg, Isabella	Animal Welfare Expertise	Australia
Delfour, Fabienne	Université Paris 13 Nord/Parc Asterix	France
Eckley, Lindsay	Chester Zoo	UK
Farmer, Holly	Wild Planet Trust Paignton Zoo	UK
Harrison, Bernard	Wild Welfare/Bernard Harrison and Friends	Singapore
Mann, Judy	The South African Association for Marine Biological Research	South Africa
Manteca, Xavier	ZAWEC/Universitat Autonoma de Barcelona	Spain
Maple, Terry	Georgia Institute of Technology	USA
Melfi, Victoria	Hartpury University	UK
Newbolt, Joanna	Wild Planet Trust/Paignton Zoo/University of Plymouth	UK
Ogden, Jackie	AZA/SAFE program	USA
Oliveira Braga de Morais, Igor	Zoo Brazilia/Brazilian Association of Zoos and Aquariums - AZAB	Brazil
Pereboom, Zjef	Antwerp Zoo	Belgium
Plowman, Amy	Bumblebee Conservation Trust	UK
Pullen, Kirsten	Wild Planet Trust/Paignton Zoo	UK
Sherwen, Sally	Zoos Victoria/University of Melbourne	Australia
Tapley, Ben	Zoological Society of London (ZSL)	UK
Veasey, Jake	Wild Welfare/Operations Ocean Wise/Vancouver Aquarium/Care for the Rare/Veasey Zoo Design	UK/Canada
Ward, Samantha	Wild Welfare/Nottingham Trent University	UK
Werth, John	PAAZA	South Africa
Willemsen, Madelon	BIAZA	UK
Yamanash, Yumi	Center for Research and Education of Wildlife/Kyoto City Zoo	Japan

Supplementary Table 2. List of all management interventions used in zoos, as determined by our advisory board, the Jonas et al. (2018) pilot study, and our literature review. Interventions are divided into ten broad level 1 categories and 29 more specific level 2 categories. Interventions marked with an * in the list below have no published evidence for them within our systematic map. These are further summarized in Table 1 of the main manuscript.

Level 1	Level 2
Diet or feeding modification	Food enrichment and/or presentation
	Diet supplementation and/or modification
	Feeding schedule and/or location modification
Object-related enrichment	Provide a toy or novel object
	Water
	Space size, access, or complexity
	Substrate/Wall/Floor type
	Temperature and humidity
	Sound/Auditory
	Scent/Olfactory
	Light
	Sight and/or visual enrichment
	Other sensory or enclosure enrichment or modification
General enrichment	Spatial/temporal enrichment interventions
Social composition or group modification	Increase, decrease, or merge groups
	Change group social structure
Population management	Population increase and/or natural reproduction
	Incubation and rearing methods
	Artificial reproduction
	Population reduction and/or contraception
Behaviour management	Animal training
	Chemical and physiological management
	Other behaviour management
Visitor management	Visitor-animal interaction
	Other visitor management
Animal-keepier interaction	Enclosure cleaning procedures and husbandry disturbances
	Other animal/keeper interactions
Transport and handling	Transport
	Handling

Diet or feeding modification

Food enrichment and/or presentation

Provide larger pellets, biscuits, or other food items (e.g., to increase foraging time)
Present food items whole instead of chopped and/or processed (or vice-versa)
Change the height/depth at which the food is presented within the enclosure
Feed animals in water
Hide or bury food around the enclosure
Hang food/chewable material (e.g., floss ropes, tree branches, swing feeders)
Scatter food throughout enclosure/tank
*Add additional scents to food to make it more palatable
Present food dipped in different food dyes
Provide gum product/solution in artificial wooden trees or other feeders
Present food/drinks frozen or in ice
Provide artificial termite mounds
Provide dead invertebrates
Provide grain (such as rice, corn, millet or barley)
Provide carcasses, bones and/or hides as feeding enrichments
Provide fresh fruit/vegetables as an enrichment
*Provide straw (as a chewable item)
Provide live vegetation for foraging
Provide live prey, or vary its dietary proportion
Present food in, or spread food on, trees or other vegetation

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Provide browse as an enrichment tool
Present food in electronic/automated feeders
Treat food with chemicals/adhesives to make it more difficult to access
Present food which requires the use (or modification) of tools
Mix food and non-food items (such as wood shavings or pieces of fabric)
Present food or drinks in a liquid dispenser
Use a feeding pole
Provide devices to simulate live prey, including sounds, lures, pulleys, chase activities
Provide an artificial nest with eggs for foraging
Float feeding enrichment devices in water
Present/hide food inside natural items (e.g., pine cones, banana leaves, grass bundles)
Hide food in balls, cubes, boxes or other complex objects (not puzzles)
Hide food in bags, paper, or cardboard rolls
Present food in a puzzle-feeder
Present food in an artificial turf mat
Present food in foraging racks
Present food in a perforated object (e.g., log, PVC pipe, etc.)
Present food in social feeding devices (usable by multiple animals) rather than solitary devices (usable by a single animal)
Feed animals within a social group
Feed animals separately (e.g., one tray each rather than one tray per group/enclosure)
*Feed animals in subgroups
*Hand-feed animals
Vary frequency of feeding enrichment sessions

Diet supplementation and/or modification
Vary the amount of food provided per feeding event
Vary variety of food items
Formulate larval diets
*Leave infertile eggs at spawn site as food for egg-eating larvae
Vary food provision to reflect seasonal availability in the wild
Irradiate food before presentation
Feed an in-house formulated diet rather than a commercial diet
Add preferred food flavour to commercial diet
Provide food/liquids of different tastes
Liquefy food or vary consistency of liquid food
Supplement diet with pellets or vary their dietary proportion
Supplement the diet with chitin
Feed a dry biscuit-based commercial diet
Supplement the diet with soil
Supplement the diet with honey or other similar sweet produce
Add browse to the diet or vary its dietary proportion
Vary dietary grass content
Provide herbs or other plants for self-medication, or vary self-medicating herbs/plants
Provide different species of leaves or plants
Provide hay (as food)
Provide leaves or plants (dried, ensiled, or live)
Vary dietary proportion of fruit/vegetables
Supplement the diet with gum or increase gum concentration
Supplement the diet with nectar or increase nectar concentration
Feed Spirulina or other microalgae or vary its dietary proportion
Feed artificial milk
Vary proportion of milk in the diet
Add invertebrates to the diet or vary the dietary proportion
Feed Artemia or other invertebrates for aquatic species, or vary the dietary proportion
Alter diet of live feed organisms
*Provide live food that was exposed to UV
Feed a fish-based diet
Feed processed meat or vary its composition/dietary proportion
Feed non-processed meat or vary its dietary proportion
Feed carcasses/dead vertebrates instead of commercial or prepared diets
Feed whole carcasses or half/partial carcasses
Vary caloric intake
Vary intake of dietary carbohydrates (including starch, sugar, and fibre)
Vary the dietary protein content
Add or remove artificial protein supplements
Feed a plant-derived protein diet instead of animal-based proteins
Vary the dietary fat content
Vary the dietary copper content
*Provide faecal bacteriotherapy/supplement
Vary salt content in diet
Vary calcium content in diet
Supplement feed/pellets with organic/amino acids (e.g. aspartic acid, alanine, citric acid…)
Supplement the diet with omega-3 fatty acids (or other fatty acids)
Supplement the diet with Folic Acid
Supplement meat-based diets with prebiotic plant material to facilitate digestion
Supplement the diet with Vitamins A,B,C or E (or their vitamin analogues)
Supplement the diet with Vitamin D (or Vit-D analogues)
Vary phosphorus content in diet
Vary iron content of diet
Vary tannins in the diet
Provide carotenoid supplementation and/or increase the dietary carotenoid content
Use natural carotenoids rather than artificial ones
Supplement diet with Putrescine
*Supplement the diet with nutraceutical

Feeding schedule and/or location modification
Vary the number of feeds per day
Vary interval between feeding days
Feed animals at set times
Vary feeding times
*Create or remove predictable signals of feeding times
Feed animals for longer
Vary feeding locations
Provide food during natural active periods
Provide access to food at all times (day and night)
Provide food during visitor experiences
*Feed at different visitor crowd levels

Object-related enrichment

Provide a toy or novel object
Provide electronic toys, touchscreens, or other cognitively stimulating interactive objects
Provide a fleece, cover, or other piece of garment
Provide hessian/paper sacks
Provide a running wheel or similar device
Provide a bubble machine
Provide a puzzle device (not a feeder)
Provide balls, cylinders (not hollow) or other rolling items
Provide tubes/tunnels/pipes/hollow cylinders/hoops
Provide bottle caps
Provide empty bottles, cans, boxes, or other small containers
Provide a sand box
Provide paper
Provide magazines, books, or other illustrated material
Provide paint and/or brushes and paint tools
Provide logs

Provide slides
Provide pieces of string or rope
Provide straw/hay/branches/sticks (as an enrichment object)
Provide tools
Provide human toys
Provide pet toys (e.g., chew-toys)
Provide floating or submersible toys
Provide plush animal-shaped toys
Provide destructible and/or edible toys
Provide toys/objects of different colours
Provide toys dipped in flavoured food colouring
Provide toys made of different material
Provide toys of different sizes
Provide a paint roller or other apparatus for grooming
Introduce a fearful object (including taxidermy predators or predator-shaped models)
*Introduce a model of a prey species
Provide objects that emit sounds (such as a musical toy)

Enclosure or habitat modification or enrichment

Water
*Change pool configuration
Vary the water:land ratio in an enclosure
Provide pools, baths or other water features
Vary depth, size, or number of pools or other water features
Provide saltwater rather than freshwater pools to marine species, or vice-versa
Vary water current/speed of artificial streams/rivers
Vary water current speed/strength in aquarium tanks
Circulate water between aquarium tanks
Employ an open system in aquariums, circulating water from rivers/lakes/oceans
Add iodine/chlorine to aquarium tanks/pools
Vary magnesium in aquarium tanks
Vary phosphates in aquarium tanks
Keep aquatic animals in carbon-filtered water
Vary pH of aquarium water
Vary CO_2 content of water
Simulate artificial rainfall or mist (e.g. by spraying water on animals)
Provide artificial aquifers for species which breed in upwelling springs
Provide animals with interactive showers
Add mud baths/pools

Space size, access, or complexity

Vary enclosure space or size (size and/or height and/or floor space)
Change the enclosure design to increase complexity, heights, and add more hiding places
Vary access to outdoor areas
Keep animals exclusively inside
Add or increase number of nest boxes/shelters
*Provide pre-made burrows/tunnels
Provide a dark or light obscuring nest box or shelter
Vary nest box size
Vary size or shape of nest box entrance
Provide a perch, ladder, swing, trapeze or other suspended structures to increase structural complexity
Provide a resting platform
Vary height of resting platform/nest box
*Vary material or orientation of resting platform
Add artificial plants or seaweed to aquarium tanks/enclosures
Add natural plants to aquarium tanks/enclosures
Provide floating resting structures to pools/aquarium tanks (such as floating pontoons)

Substrate/Wall/Floor type
Allow animals access to grassed/vegetated areas
Provide rubber flooring
Provide different substrates in an enclosure
Provide different substrates in an aquarium tank
Provide substrates of different colours
Increase the thickness or depth of the floor/substrate
Place animals in tanks/enclosures made of glass rather than opaque plastic
Use a photograph or image of a natural floor/substrate as the floor/substrate
Provide different background colours to enclosures
Add stones to substrate to provide anchor points for burrows
Provide mounds
Provide bedding or vary bedding material

Temperature and humidity
Vary the enclosure air temperature
Vary the enclosure water temperature
Provide temperature gradients within an enclosure
*Provide temperature-controlled nest boxes
Vary enclosure humidity
Provide humidity gradients within an enclosure

Sound/Auditory
Vary/regulate the noise level in enclosures
Vary volume/pitch of auditory enrichment
Provide artificial auditory enrichment (e.g. music)
*Play music at a constant level to prevent other external noises alarming animals
Provide natural ecosystem sounds (e.g. rain, ambient forest sounds)
Provide sounds from prey species
Provide sounds of predators, competitors, or other potentially threatening species
Provide sound of conspecifics
*Use a different aeration type to provide a novel acoustic environment in aquarium tanks

Scent/Olfactory
Spread or place pheromones within the enclosure
Spread or place scents of prey species within the enclosure
Spread or place scents of predators, competitors, or other potentially threatening species
Spread or place scents of conspecifics within the enclosure (or vary olfactory proximity to conspecifics)
Spread or place environmental scents naturally occurring in the animals' habitat
Spread or place artificial scents within the enclosure
*Vary olfactory proximity of predator or prey species

Light

Vary the lighting frequency (Hz)
Vary the photoperiod (e.g. longer/shorter daylength)
Vary lighting intensity gradients to simulate natural light pattern (i.e. dusk and dawn)
Provide additional light (number of appliances, lighting duration or intensity)
Vary intensity and duration of UV lights
Provide incandescent light rather than UV lights
Provide shaded structures or areas
Vary the lighting colour
Use a light regime composed of multiple light sources/colours rather than a uniform source
Vary exposure to natural light
Reduce light intensity outside of the exhibit

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Sight and/or visual enrichment
Place visual barriers within or between enclosures
Allow animals to see beyond their enclosures
Allow views of conspecifics in neighbouring enclosures
*Allow views of predator/prey species in neighbouring enclosures
Provide screens for animals to watch
*Add images as visual enrichment within the enclosure
Add objects to act as visual enrichments (such as shiny or reflective objects)
Add mirrors
*Provide motion illusions

Other sensory or enclosure enrichment
Alternate animals between zoo enclosures as a form of novel environmental enrichment
Temporarily or permanently relocate animals to a novel unfamiliar enclosure/exhibit
Vary proximity of conspecifics in separate enclosures
Provide multiple egg laying sites within an enclosure
Provide particular enclosure furniture for calling sites, breeding areas or egg laying sites
Provide particular plants as breeding areas or egg laying sites
*Provide natural nesting sites/environments (rather than artificial ones)
Provide nesting material
Provide an artificial nest or other breeding substrate
Keep animals off-exhibit rather than in public exhibits
Provide scratching posts
Provide brush heads/bristles for grooming, scratching, or foraging
Provide different plants/fruits/vegetables as a fur-rubbing enrichment

General enrichment interventions

Spatial/temporal enrichment interventions
Provide enrichments at a set or predictable schedule
Provide enrichment earlier in animals' development/life rather than later
Vary frequency that enrichment items are provided
Vary time animals are tethered/restrained
Provide an individualized enrichment programme

Social composition or group modification

Increase, decrease, or merge groups
Vary group size/density
Keep animals in groups rather than pairs (or vice-versa)
Keep animals in pairs or groups rather than solitary (or-vice-versa)
Combine/merge two or more distinct social groups into one social group
Separate larger groups into smaller groups
Add males to an established social group that does not have any other males
Add males to an established social group that already has at least one male
Add females to an established social group that already has females
Add reproductive males to groups that previously only had castrated males
Add immature males to an established bachelor group
Keep orphaned juveniles with their social group after the death of their parent(s)
Introduce or remove male parent to/from social group including its young
Introduce submissive kin groups to dominant groups
Introduce hand-reared juveniles to a social group
*Identify and breed a similar species to refine husbandry techniques prior to working with target species
Remove individuals temporarily
Remove or separate unusually aggressive individuals from a social group
Remove dominate male from group

Change group social structure
Keep animals in mixed-species enclosures
Keep animals in same enclosures as their predators
Vary sex ratio within a group
Keep animals in same sex pairs or groups
Keep groups with more than one male
Keep only one dominant animal/sub-group per social group (e.g., one silverback gorilla)
Keep animals in mixed age groups
House conspecifics of various sizes rather than similar sizes
House animals in a simulated fission-fusion social system rather than standard permanent group
Separate social groups overnight
Separate juveniles from mothers
Separate by sexes in non-breeding periods
House unfamiliar animals together
Use a sequential method when introducing new individuals to a social group
Allow full contact between animals housed together
*Allow animals to choose social companions
*Place animals with impairments (such as blind or deaf animals) with healthy conspecifics

Population Management:

Population increase and/or natural reproduction
Add a mating-male to induce ovulation
*Allocate breeding pairs using DNA-based (genetic) relatedness coefficient rather than pedigree or kinship
*Genetically screen (barcode) animals to ensure species identity
Facilitate hybridized offspring
Separate an established pair and then reunite later
Allow one sex access to the other, but not vice-versa
Transfer embryos/eggs to surrogate mothers or incubators to boost reproduction rates (e.g., by encouraging reclutching)
Select sperm to maximize genetic health
Allow animals mate choice (including with predetermined preferred partner)
Allow mating with multiple partners (e.g. multiple consecutive mating events)
Keep animals in monogamous breeding pairs
Artificially vary length of breeding season
*Provide objects which facilitate mating behaviour

Incubation and rearing methods
Hand rear young instead of parent rear (or vice-versa)
Temporarily hand-rear and/or provide supplemental feeding to young
Provide supplementary feeding to young that are parent-reared
Vary weaning age
Rear infants outdoors rather than indoors
Feed hand-reared young using syringes, spoons or pipettes rather than tubes
*Allow adults to attend to their eggs
Tube feed young
Foster eggs/young with adults of the same species
Cross-foster eggs/young with adults of a different species
Use a surrogate or foster infant to encourage maternal behaviour
Foster young with behaviourally normal adults

Socialize hand-reared animals with other juveniles of the same species
Switch social partners for hand-reared animals
Allow young to be raised by both parents (bi-parental care) rather than by the mother only
Only allow mother access to young
Provide access to mothers and infants during the early years of life and/or before having their own offspring
Vary keeper-animal interactions during hand-rearing
Vary keeper-animal interactions during parturition
Vary contact time with conspecifics during parturition
Hand-rear young in heat incubators
Rear in a peer group (similar age) rather than a multi age group
Rear young in harem or large family groups rather than peer groups
Vary size of rearing groups
Incubate eggs artificially
Vary egg storage time prior to incubation
*Vary parental incubation time before artificial incubation
Incubate eggs artificially on different substrates
Incubate eggs at different temperatures
Incubate eggs at different humidity/water potentials
Incubate eggs at different Carbon Dioxide levels
Replicate natural parameters during incubation
Fumigate eggs prior to incubation

Artificial reproduction
Collect sperm post-mortem for future artificial insemination
Collect semen using an artificial vagina
Collect sperm using electro-ejaculation
Collect sperm using manual stimulation
Use a proxy male before artificial insemination
Wash sperm before artificial fertilization
Vary incubation temperature of sperm before artificial fertilization
Use freshly collected sperm rather than stored sperm for artificial fertilization
Vary concentration of sperm before artificial fertilization
Vary volume of sperm for artificial insemination
Add antibiotic to sperm used for artificial fertilization
Use a hormone or hormone analogue to induce ovulation and/or sperm production
Induce superovulation to produce multiple embryos
Insert embryos into a surrogate species
Develop embryos in an artificial uterus
Select parents displaying desirable characteristics for captive breeding
*Artificially select sex by sorting sperm
Freeze/cryopreserve sperm or eggs for future use
Use different freezing/cooling methods to cryopreserve/chill sperm
Freeze/cryopreserve sperm using different extenders/ cryoprotectors
Chill/freeze/cryopreserve sperm using different diluents
Centrifuge sperm prior to cryopreservation
Use cryopreserved sperm for artificial insemination
Use chilled sperm for artificial insemination
Inseminate multiple times
Inseminate using laparoscopic techniques
*Use artificial cloning from frozen or fresh tissue

Population reduction and/or contraception
Give contraceptive pills
Give contraceptive implants
Give contraceptive injections
*Alternate the type of contraceptive to avoid resistance
Vasectomize/castrate males
Chemically abort pregnancies
Separate sexually mature males/females
*Isolate ovulating females

Behaviour management:

Animal training
Train animals in specific behaviours to improve survival upon release into the wild
Train animals using Positive Reinforcement methods
Train animals using desensitization methods
Train animals to self-medicate
Use multiple trainers during animal training rather than only one trainer
Place barriers between trainers and animals during training sessions

Chemical and physiological management
Use hormone or hormone-inhibiting injections to alter behaviour
Use hormone-supplemented feed to alter behaviour
Insert implants to alter behaviour
Use chemicals and/or deterrents on objects or surfaces
Give drugs or other chemicals to alter behaviour
Use surgical procedures (i.e. castration) to alter the behaviour of animals
Use a non-reversible method of flight restraint
Use a reversible method of flight restraint

Other behaviour management
Give animals a cognitive task
Use “demonstrator” animals/species to teach specific behaviours to ‘naïve’ animals
Induce or allow animals to hibernate/have a dormancy/brumation period
Offer greater choice and control over space and resources
Paint genitals to reduce aggression

Visitor management

Visitor-animal interaction
*Use visitors as a source of stimulation
Provide opportunities for visitors to interact with animals in the same space
*Provide a refuge or “safe” area for animals during opportunities for visitors to interact with animals
Vary proximity of visitors to animals
*Vary the height of visitors above the animals

Other visitor management
Communicate rules to reduce noise and/or behavioural disturbance from visitors
Regulate the number of visitors at an enclosure
Station staff in uniforms to manage/monitor visitor behaviour
Vary duration or timing of visitor access to walk or drive-through enclosures

Animal-keeper interaction

Enclosure/exhibit cleaning procedures and husbandry disturbances
*Vary frequency of enclosure cleaning
Vary frequency of water changes
*Vary the amount of water changed during aquarium tank husbandry
*Vary enclosure cleaning schedule

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Filter water in aquarium tanks
Use a disinfectant in aquarium tanks
Add commercial brand salts to aquarium tanks
Vary salinity of aquarium tanks
Use a biological control to clean enclosures or regulate unwanted organisms
Separate animals from keepers during enclosure maintenance
Change the colour of clothing or equipment used during husbandry procedures

Other animal/keeper interactions
Undertake positive interactions between keepers and animals (such as grooming, or interacting with toys)
Impersonate species behaviour during interactions between keepers and animals (such as lip-smacking, vocalization, etc.)
Eat food to encourage animals to eat the same food
Walk animals (or assist them in performing other types of exercises)
Use familiar keepers to interact with or handle animals
Vary the number of keepers caring for an animal

Transport and handling

Transport
Transport animals between institutions
Vary age of animals being transported
Vary substrate used during transportation
Regulate water quality during the transportation of aquatic animals
*Regulate temperature during transport
*Provide animals with food/water/nutrient supplements prior to transportation

Handling
Gently manually handle animals instead of other forms of restraint
Vary frequency and/or duration of animal handling
Keep aquatic animals submerged while transferring them between tanks
Use different coloured clothing/equipment when handling animals

Supplementary Table 3. List of academic journals searched in full for systematic map

List of core academic journals searched in full for our systematic map	List of journals previously searched as part of the Conservation Evidence project. Volumes/ years of searches are indicated in brackets.
American Journal of Primatology	Acta Chiropterologica (2018)
Animal Behavior and Cognition	Acta Herpetologica (2013-2018)
Animal Behaviour	Acta Oecologica-International Journal of Ecology
Animal Conservation	Acta Theriologic Sinica (2018)
Animal Nutrition	African Journal of Herpetology (formerly The Journal of The Herpetological Association of Africa) (2013-2018)
Animal Reproduction Science	African Journal of Marine Science (2018)
Animal Welfare	African Sea Turtle Newsletter (2014-2018)
Animals	American Naturalist (2018)
Anthrozoös	Amphibian and Reptile Conservation (1996-2018)
Applied Animal Behaviour Science	Amphibia-Reptilia (1980-2018)
Aquarium Science and Conservation	Antarctic Science (1980-2018)
Der Zoologische Garten	Applied Herpetology (2003-2009 - last volume published)*
Endangered Species Research	Aquatic Biology (2007 – 2018)
Frontiers in Psychology (Vol 10)	Aquatic Conservation: Marine and Freshwater Ecosystems (2018)
International Journal of Primatology	Aquatic Ecology (2017 - 2018)
International Zoo Yearbook	Aquatic Ecosystem Health & Management
Journal of Animal Physiology and Animal Nutrition	Aquatic Living Resources = Resources Vivantes Aquatiques (2017-2018)
Journal of Applied Animal Nutrition	Aquatic Mammals (2017-2018)
Journal of Applied Animal Welfare Science	Asian Herpetological Research (formerly Asiatic Herpetological Research) (2010-2018)
Journal of Threatened Taxa	Asiatic Herpetological Research (formerly Chinese Herpetological Research) (1993-2008)
Journal of Zoo and Aquarium Research	Austral Ecology (2018)
Journal of Zoo and Wildlife Medicine (former Journal of Zoo Animal Medicine)	Australian Mammalogy (2018)
Journal of Zoological and Botanical Gardens	Basic and Applied Herpetology (2011-2018)
Marine Mammal Science	Biawak (2007-2017)
Primates	Journal of Forest Research (2018)
Theriogenology	Bibliotheca Herpetologica (1999-2017)
Ursus	Biology Letters (2018)
Zoo Biology	Biotropica (2018)
	Bulletin of the Chicago Herpetological Society (1990-2018)
	Bulletin of the Herpetological Society of Japan (1999-2008 - last volume published)*
	Bulletin of the Maryland Herpetological Society (1980-2015)
	Canadian Field Naturalist (2018)
	Canadian Journal of Fisheries and Aquatic Sciences (2013-2018)
	Caribbean Herpetology (2010-2018)
	CCAMLR Science (1985-2016)
	Chelonian Conservation and Biology (1993-1996 and 2005-2018)
	Chelonian Research Monographs (1996-2017) Latin American Journal of Aquatic Mammals
	Collinsorum (formerly Journal of Kansas Herpetology) (2012-2018)
	Contemporary Herpetology (1998-2009 - last volume published)*
	Copeia (2004-2018)
	Current Herpetology (formerly Acta Herpetologica Japonica and Japanese Journal of Herpetology) (1964-2018)
	Ecological Entomology Mammalia (2018)
	Ecological Management & Restoration (2018)
	Entomologia Experimentalis et Applicata
	Environmental Entomology
	Forest Ecology & Management (2018)
	Freshwater Science (2017-2018)
	Frontiers in Marine Science (2017-2018)

Supplementary Table 3. Continued

List of journals previously searched as part of the Conservation Evidence project. Volumes/years of searches are indicated in brackets.	
Frontiers in Marine Science (2017-2018)	Mammal Review (2018)
Herpetofauna (2003-2007)*	Mammal Study (2018)
Herpetologica (2013-2018	Mammalian Biology (2018)
Herpetological Bulletin (2008-2017)	Marine and Freshwater Research (previously Australian Journal of Marine and Freshwater Research) (1980-2018)
Herpetological Conservation and Biology (2006-2018)	Marine Ecology (1980-2018)
Herpetological Journal (2002-2014)	Marine Environmental Research (2017-2018)
Herpetological Monographs (2013-2018)	Marine Mammal Science (2017-2018)
Herpetological Review (1980-2018)	Marine Pollution Bulletin (2017-2018)
Herpetology Notes (2008-2018)	Marine Turtle Newsletter (1976-2018)
Herpetozoa (1988-2018)	Mesoamerican Herpetology (2014-2017)
Hydrobiologia (2018)	Natural England Access to Evidence – Freshwater Invertebrates
Hystrix (2018)	Natural England Access to Evidence – Marine Invertebrates
ICES Journal of Marine Science (2018)	Natural England Access to Evidence – Reptiles
Insect Conservation and Diversity	Natural England Access to Evidence – Terrestrial Invertebrates
IUCN Crocodile Specialist Group Articles (2006-2017)	Neotropical Entomology
Journal for Nature Conservation (2018)	New Zealand Journal of Marine and Freshwater Research (1967-2018)
Journal of Bat Conservation & Research (2018)	Phyllomedusa (2002-2018)
Journal of Cetacean Research and Management (2013 – 2018)	Regional Studies in Marine Science (2017-2018)
Journal of Herpetological Medicine and Surgery (2009-2018)	Reptile Rap (1999-2016)
Journal of Herpetology (2004-2018)	Revista de Biología Tropical
Journal of Insect Conservation	Riparian Ecology and Conservation
Journal of Insect Science	Russian Journal of Herpetology (1996-2018)
Journal of Kansas Herpetology (formerly Kansas Herpetological Society Newsletter) (1974-2011)	Salamandra (German Journal of Herpetology) (1965-2017)
Journal of Mammalogy (2018)	South American Journal of Herpetology (2013-2018)
Journal of North American Herpetology (formerly Contemporary Herpetology) (2014-2017)	Testudo (1978-2016)
Journal of Sea Research (2017-2018)	Tropical Conservation Science
Kansas Herpetological Society Newsletter (1974-2001)	Tropical Ecology
Knowledge and Management of Aquatic Ecosystems	Wildlife Conservation Society working papers (1976-2018)
Latin American Journal of Marine Mammals (2017-2018)	Wildlife Research (2018)
Limnologica – Ecology and Management of Inland Waters	Wildlife Society Bulletin (2018)
Mammal Research (2018)	

Supplementary Table 4. List of specialist aquariums

Institution name	# studies
Aquário de São Paulo	1
Baiji Dolphinarium	3
Blue Planet Aquarium	1
Dallas World Aquarium	1
Dingle Aquarium	1
Dolfinarium Harderwijk	2
Dolphin Discovery-Anguilla	1
Haichang Polar Ocean world	2
John G. Shedd Aquarium	3
Lisbon Oceanarium	1
Melbourne Aquarium	1
Mote Marine Aquarium	2
Mystic Aquarium	7
National Aquarium Baltimore	1
Ocean Expo Park	2
Ocean Park Hong Kong	1
Oceanogràfic, València	1
Okinawa Churaumi Aquarium	1
SEA LIFE Michigan Aquarium	1
Sea World	1
Sealife Centre, Scarborough	1
Seaworld San Diego	3
The Florida Aquarium	1
Three un-named US Aquariums	1
Tynemouth Aquarium	2
Vancouver Aquarium	2
Zoomarine Portugal	1
Total	45

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