Supporting Information

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A. Search and Screening Documentation

Search Queries

Table 1. Results of a systematic literature search conducted on Scopus on 18/08/2023.		
Database	Search terms/string	Records returned
Scopus	ALL ("masculin*") AND TITLE-ABS-KEY ("conservation" OR "ecosystem management" OR "environmental management" OR "land management" OR "forest*" OR "hunt*") AND (LIMIT-TO (LANGUAGE,"English"))	2232

Scopus	ALL ("masculin*") AND TITLE-ABS-KEY (("marine" OR "ocean") AND ("conservation" OR "protected area*")) AND (LIMIT-TO (LANGUAGE , "English"))	53
Scopus	ALL ("masculin*" AND ("rewilding" OR "ecosystem restoration" OR "ecological restoration" OR "ecosystem repair" OR "ecological repair" OR "ecosystem rehabilitation" OR "ecological rehabilitation" OR "reforestation")) AND (LIMIT-TO (LANGUAGE , "English"))	194
Total		2479

Table 2. Results of a systematic literature search conducted on Google Scholar across 18/08/2023, 19/08/2023, and 21/08/23		
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “biodiversity conservation”	Number returned = 2830 Duplicates = 0 Number included = 200
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “nature conservation”	Number returned = 3240 Duplicates = 30 Number included = 170
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “ecosystem management”	Number returned = 895 Duplicates = 14 Number included = 186
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “environmental management”	Number returned = 10,100 Duplicates = 12 Number included = 188
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “land management” AND “conservation”	Number returned = 3340 Duplicates = 31 Number included = 169
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “forest”	Number returned = 278,000 Duplicates = 32 Number included = 168
Google Scholar	("Masculinity" OR "masculinities" OR "masculine") AND “hunt" AND "conservation"	Number returned = 19,900 Duplicates = 21 Number included = 179

Google Scholar	("masculinity" OR "masculinities" OR "masculine") AND (“marine protected areas” OR “marine protected area”)	Number returned = 675 Duplicates = 18 Number included = 182
Google Scholar	(“masculinity" OR "masculinities" OR "masculine") AND ("ocean conservation" OR "marine conservation")	Number returned = 582 Duplicates = 49 Number included = 151
Google Scholar	("masculinity" OR "masculinities" OR "masculine") AND "rewilding"	Number returned = 744 Duplicates = 15 Number included = 185
Google Scholar	("masculinity" OR "masculinities" OR "masculine") AND ("ecosystem restoration" OR "environmental restoration" OR "reforestation")	Number returned = 3410 Duplicates = 13 Number included = 187
Total included		1965

Final totals:
Scopus: 2479 articles
Google Scholar: 1965 articles
Grand Total: 4,444 articles

Screening

First round of screening

Table 2. First screening process		
Level of screening: Title and abstract		
Criteria	Definition	# excluded
Must relate to biodiversity conservation	Papers must refer to biodiversity conservation practices, policies, programs, practitioners, or institutions. This includes: • Ecosystem restoration (and adjacent terms/practices, e.g., rewilding) in the pursuit on biodiversity conservation. Papers focused on “reforestation” for commercial purposes (i.e., replanting commercial forestry plantations) will not be considered.	1250 + 664 from initial GS process = 1902

	• Sustainable agriculture for biodiversity conservation. • Environmental activism (where concerned with biodiversity conservation). • Education for biodiversity conservation. Papers discussing fishing or hunting where *not* explicitly related to ecosystem management practices relevant to biodiversity conservation will be excluded. Papers discussing subsistence, artisanal, commercial and/or industrial fishing without reference to ecosystem management practices relevant to biodiversity conservation will be excluded. Papers discussing commercial and/or industrial forestry without reference to ecosystem management practices relevant to biodiversity conservation will be excluded. Papers discussing climate adaptation for human populations and systems, sustainable development, waste management, green/renewable energy, environmental law, and urban design where biodiversity conservation is not explicitly addressed will not be considered.	
Must relate to masculinities in the context of biodiversity conservation	Papers must discuss the masculinities, or masculine identities of people explicitly in relation to biodiversity conservation practices, policies, programs, practitioners, or institutions. This can be in conjunction with discussions of femininities or gender more broadly, but masculinities/masculinity must be explicitly addressed as a category. Papers which only consider masculinities/masculinity among people using conservation spaces or people affected by conservation policies, practices, programs, practitioners, and institutions (without themselves being involved in said categories) will not be included. Papers reporting purely on biological, geological, physical, chemical, or ecological aspects of conservation will be excluded. Papers that consider gender as a quantifiable variable but do not consider how those gender identities are enacted or how the enactment of those gender identities impacts their object of study will not be considered.	338 + 35 from initial GS = 373
Must be peer reviewed literature	Theses, reports, conference proceedings and other documents not part of the peer-reviewed literature will be excluded. Book reviews will not be included.	2 + 55 from initial GS process = 57

Must have complete citation information	Entries with erroneous, or incomplete bibliographic information that cannot be rectified will be excluded.	25 + 129 from initial GS process = 154
Must be in English	Language constraints meant that only papers written in English will be considered.	5 + 12 from initial GS process = 17
Must be unique entry	Duplicates will be deleted.	320 + 38 from initial GS process = 358
Total excluded		1943 + 932 from initial GS process
Total remaining		1569

A separate list of "conservation adjacent" articles were identified:

Conservation adjacent	Those papers concerned with the performance of masculinities in closely related areas of natural resource management and/or natural resource extraction to biodiversity conservation, but which do not address biodiversity conservation. For example, rural land management, farming, commercial and other forestry, fishing (subsistence, artisanal, industrial).	113 papers identified.

Second round of screening

Table 2. Second screening process		
Level of screening: Title, abstract, and key word searches		
Criteria	Definition	# excluded
Must be about biodiversity conservation	See above	532
Must discuss masculinities in the context of biodiversity conservation	See above	635
Must have complete citation information	See above	21

Must be peer reviewed literature	See above	148
Must be in English	See above	2
Must be a unique entry	Duplicates will be deleted (this includes rationalising individual book chapters into a single book	16
Must have full text of article available	Only those papers with full-text papers will be included.	17
Conservation adjacent	See above	112
Total excluded		1483
Total remaining		86

Third round of screening

Table 3. Screening during coding process		
Level of screening: Content of paper		
Criteria	Definition	# excluded
Must be empirical	The paper's discussion of the performance of masculinities in the context of biodiversity conservation must be based on empirical observations. Paper that are theoretical and/or conceptual in nature will not be included in the review.	14
Must be about biodiversity conservation	See above	4
Must discuss masculinities in the context of biodiversity conservation	See above	2
Conservation adjacent	See above	2
Total excluded		22
Total remaining		64

A separate list of "conservation adjacent" articles were identified:

Conservation adjacent	Those papers concerned with the performance of masculinities in closely related areas of natural resource management and/or natural resource extraction to biodiversity conservation, but which do not address biodiversity conservation. For example, rural land management, farming, commercial and other forestry, fishing (subsistence, artisanal, industrial).	114 papers identified.

B: Coding Framework

Basic Paper Information

Coding Level	1				
	Basic paper information				
Coding Sub-level	Author(s)	Title	Year	Type of Publication	Journal
Data Entry	*Data*	*Data*	*Data*	*Data*	*Data*

Details of Study

2		3		4		5		
Methodology		Focus on masculinities		No. research sites		Time period		
Methodology	Notes	Primary or Secondary focus?	Notes	No. Research Sites	Notes	Time period start	Time period end	Notes
Data	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*

Geographic Information

6		7				8	
Geographic location		Ecological system				Protected area	
Geographic location	Notes	Terrestrial/ Freshwater/ Marine	Biome	Ecoregion	Notes	Protected area	Notes
Data	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*

Conservation practices and actors

9				10							
Type of practice				Subjectivity							
Type	Notes	Scale	Notes	Role	Notes	Gender	Race/ Ethnicity/ Nationality	Age	LGBTIQA+	Other	Notes
Data	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*

Performances and effects of masculinities

12		13				14
Actions/Norms/Values		Effect of Masculinities				Other
Behaviours/ Norms/Values	Notes	Effect	Notes	Qualify effect	Notes	Notes
Data	*Data*	*Data*	*Data*	*Data*	*Data*	*Data*

Figure 1 - coding framework and data entry structure.

Methodology

What methodology is used in the study? Categories are not mutually exclusive. If multiple methods identified, code for each separately. If no method is identified by the study, or methodology does not fit any code, code as “other”. Provide details in the notes section.

a. Participant observation: Data generation methods identified included researchers actively participating in activities/systems/institutions being studied alongside research subjects.

   Examples: Poppe 2012; McCubbin and van Patter 2021

b. Ethnography: Data generation methods are identified as "ethnographic" and are necessarily broader than simply participant observation. If specific ethnographic data generation methods such as participant observation and interviews are identified as well, code separately.

   *Example*s: Colfer 2020; Love-Nichols 2020

c. Interviews (specify): Data generation methods identified include interviewing research subjects. Type of interview should be specified in "notes" if identified in the paper (note if this information is not provided too). E.g., structured (quantitative), semi-structured, unstructured, ethnographic, group interviews.

   *Example*s: Jones and Solomon 2019 (semi-structured); Sabelis 2015 (life-history interviews)

d. Survey (specify): Data generation methods identified include surveys. If information is available, note the size and frequency of the survey.

   Examples: Kuhlman et al. 2023(Quantitative); Reed and Davidson 2011

e. Historical analysis: Data generation methods identified include the systematic analysis and interpretation of historical source material.

   Examples: Hannam 2000; Hazlett 2004

f. Focus groups: Data generation methods identified include the use of focus groups.

   Examples: Westberg and Powell 2015; Curtis et al. 1997

g. Workshops (specify): Data generation methods identified include the use of workshops.

Examples: Brandt et al. 2018; Duffy and Brockington 2022

h. Discourse analysis: Data generation methods identified include the systematic analysis and interpretation of texts (including written, oral, and multimedia texts).

   Examples: Burnett and Milani 2017; Fuchs 2022

i. Participatory action research: Data generation methods identified include participatory action research.

   Examples: Radel 2012

j. Other: Data generation methods are not clearly identified, or they are not included in the codes above.

   Examples: Rabung and Toman 2022, vehicle tours of study sites; Tsing 2017, not clearly stated.

Are masculinities the primary focus of the paper or not?

a. Primary: The guiding research question(s) of the study centre(s) masculinities. I.e., masculinities are one of the primary objects of study/analysis.

   Masculinities are part of the central study's research question(s) or fundamental to answering the research question(s). That is, it is *the* or *one of the* central objects of analysis in the context of the study and a correspondingly significant part of the paper is dedicated to analysing "masculinities" (relative to other primary objects of analysis).

   Example: "We engaged with a group of conservation volunteers in a Scottish city to explore how men and women benefit from and interact with greenspace in a deprived area" (Currie et al. 2016)

   "I place the ups and downs of this story into a new narrative structure that I call a gendered dialectic. I begin with the historical and social background within

which women and men engaged with conservation and move to the gendered saga of the Audubon movement." (Merchant 2010)

"I collected data on prevailing notions of masculinities and femininities in all 10 FPC villages using gender segregated focus group discussions." (Nandigama 2020)

b. Secondary: The guiding research question of the study does not centre masculinities. I.e., masculinities are not one of the primary objects of study.

   Masculinities are not fundamental to the study's research question(s), or the analysis presented in answering the research question(s). That is, masculinities are addressed obliquely/tangentially in relation to the central subject/object of analysis, rather than a category of analysis fundamental to analysing/explaining the primary subject/object of analysis. A correspondingly minor part of the paper is dedicated to discussing masculinities (relative to other primary objects of analysis).

   Example: "Having established that women were statistically a minority in the national parks system, we wanted to identify the issues around being female and working in field positions in the context of the whole of women's lives" (Black and Davidson 2001)

   "The article focuses on the multiple identities of rangers in interaction with other residents at the periphery of the W Park in Burkina Faso, as rangers are local conservationists who simultaneously submit to and produce conservation practices" (Poppe 2012)

Number of research sites in study

How many different physical research sites are used in the study. If the study does not have a physical site at which research was conducted or the study is not clear on the matter, code as "N/A" e.g., Fairchild and Petrzelka 2021. Code as numerals, note additional details about sites in notes (e.g., number of participants, surveys etc.)

Geographic location

In what country does the study/study site(s) occur? If the study/study site(s) are across multiple countries, code each separately. If there are multiple study site(s) in one country, code each separately (i.e., in different rows). If the study/study sites are not within a country or are not concerned with specific countries, code as “other” and provide details in notes section.

Ecological system

In what ecological system does the study site/sites occur?

a. Terrestrial, marine, and/or freshwater? If study sites are across multiple domains, code each separately. Code freshwater swamp/wetland ecosystems as freshwater.

b. Biome: Identify the biome in which the study site/sites occur in (as defined by Dinerstein et al. 2017). For map, see: https://ecoregions.appspot.com/

c. Ecoregion: Identify the ecoregions in which the study takes placed (as defined by Dinerstein et al. 2017); https://ecoregions.appspot.com/

If there is no physical study site or the location of the study site is not given with sufficient detail to code for biome or ecoregion, code as “N/A”.

Protected Area

Does the study/study sites(s) take place in a designated protected area (including community designated protected areas)?

a. Yes
b. No
c. Not clear/other

Specify details in notes section. E.g., name, IUCN classification etc.

Time period

In what year/years did the study take place? That is, what date(s) were data generated. If that information is not provided or inferred, code the date the paper was received. If that is not available either, code the date of publication.

For historical analyses code the specific time period studied (as identified by the paper). Record dates as year beginning, year ending in separate columns.

Type of conservation practices, policies, or institutions

What type or types of conservation practices, policies, and/or institutions are the subject of the study?

Type (note if multiple, code each separately)

a. Management of protected areas: activities associated with the process of trying to control or direct ecosystems, environmental change, or the lives of specific species in the context of formal protected areas and/or formally protected species.

   Keywords: National parks, national parks and wildlife agencies, park rangers, marine protected areas
   Example: "…we sought to determine and verify the extent of gender issues in Australian national park agencies." (Black and Davidson 2001)

b. Other management: activities associated with the process of trying to control or direct ecosystems, environmental change, or the lives of specific species (not including formally protected species) outside of formal protected areas. This includes, hunting, fishing and other forms of sustainable use.

   Keywords: Game farms, private forests, agriculture, volunteer collectives,
   Example: "This article presents empirical material from field experiences on South African game farms." (Brandt and Josefsson 2017)

c. Governance: activities associated with the processes, structures, and patterns of governing in the context of biodiversity conservation especially as it relates to how decisions are arrived at, paths of action decided, and participation is structured.

   Keywords: Advisory Committees, Stakeholder Committees, board, chairpersons, decision-making body
   Example: "Confirming research elsewhere, the national survey of public advisory committees found that women and men had both shared and separate interests and values related to forest management." (Reed and Davidson 2011)

d. Policy: the construction or operation of specific biodiversity conservation policies, programs, and legislation.

   Keywords: Legislation, policy, administration, policy makers, consultation, government representatives
   Examples: "With the reinstitution of an aggressive wolf-eradication project, Alaska policy makers retooled frontier masculinity." (Anahita and Mix 2006)

e. Scientific research: activities associated with the generation, organization and dissemination of biodiversity conservation data, ideas, and information.

   Keywords: research, fieldwork, data collection, experimentation, data analysis
   Example: "…this masculine care is not only subjected to the pursuit of new scientific insights about sharks but also embedded in a discourse of competition." (Fuchs 2022)

f. Activism: activities intended to bring about social, ecological or political change with respect to biodiversity conservation, including advocacy or protest.

   Keywords: Activism, advocacy, protest, campaign
   Examples: "Ecofeminist ideas circulated through the Clayoquot Sound protests and other sites of forestry conflict in the 1990s." (Stoddart and Tindall 2011)

g. Education: activities and/or programs intended to provide information, foster learning and raise awareness of issues related to biodiversity conservation or specific biodiversity policies or programs. Includes teaching and/or the provision of hands-on experiences.

   Keywords: Teaching, awareness raising, learning, training, public outreach, university
   Example: "She recalls teachers taking special care to encourage and promote women students "despite the stringent gender hierarchy prevalent during that time." (Christie and Giri 2011)

h. Communication: activities associated with the production and dissemination of information relating to issues of biodiversity conservation generally or specific biodiversity policies or programs where such activities are not part of an education program or activism campaign.

   Keywords: nature writing, journalism, outreach, documentaries, media coverage, magazine
   Example: "Natural resources communicators, including those who work in interpretation, advocacy, or for the media, hold incredible power in shaping perceptions of public lands and wilderness." (Ronald et al. 2023)

i. Security: activities associated with security and enforcement of conservation-related laws and policies.

   Keywords: Anti-poaching, wildlife crime, illegal wildlife trade, security, enforcement
   Example: "This article develops the idea of a political ecology of security to understand the implications of the increasing integration of biodiversity conservation with the security sector." Duffy and Brockington 2022

j. Not clear/other: activities where it is not clear what category of practice the subject of the study/studies are engaged in, especially where discussing organisations that might cover several different practices.

   Example: "Participants met five inclusion criteria: self-identify as a woman, be currently based in the United States, work for an organization with a

conservation mission, be employed in a leadership role, and have a natural and/or social science background." (Jones and Solomon 2019)

Scale

a. Local/Regional: conservation practices/policies/institutions operate at a sub-national level. This can include multiple local/regional sites in the same or different countries. N.B. If national/international institution managing practices or policies code at national/international level.

   Keywords: communities, districts, provinces, states, regions, national parks, bioregion
   Example: "The article focuses on the multiple identities of rangers in interaction with other residents at the periphery of the W Park in Burkina Faso, as rangers are local conservationists who simultaneously submit to and produce conservation practices" (Poppe 2012)

b. National: conservation practices/policies/institutions operating at national level. This includes practices and policies of national government agencies or departments (or those departments themselves) and to policies/programs that are described at the scale of entire countries.

   Keywords: countries, national, federal, national government, ministry, department,
   Examples: "the esprit de corps of the [US] Forest Service" (Lewis 2005); "…the Civilian Conservation Corps… President Roosevelt's Emergency Relief Work program" (Johnson 2007)

c. International: conservation practices/policies/institutions operating at international level i.e., multiple entire countries, or geographic regions that span multiple countries. Limit

   Keywords: collections of countries, EU, international agreements, transboundary
   Example: "transfrontier parks, ecotourism, and the vital historical role of the transfrontiersman." (Draper 2018)

d. Global: conservation practices/policies/institutions operating across multiple continents or globally. This includes broad references to global communities, organisations, or political/socioeconomic distinctions (e.g., “developing world”).

   Keywords: global, United Nations, multinational organisation, global South, global North
   Example: N/A

e. Not clear: conservation practices/policies/institutions that transverse multiple scales or where scale is not explicitly specified and there is insufficient contextual information for them to be placed in any other category.

   Example: “an organization with a conservation mission” (Jones and Solomon 2019)

Subjectivity of conservation actor(s)

Role of the conservation actor(s)

What kind of role is being played by the actors undertaking the conservation policy/practices in the study? If multiple code each separately.

a. Manager: overseeing and coordinating the activities, resources, and personnel.

   Keywords: manager, coordinator, director, supervisor, authority, administrator
   Examples: “…we interviewed land managers at several training installations.” (Rabung and Toman 2022); “…Field Officer, Field Supervisor, Ranger, Senior Ranger, Assistant District Manager, District Manager” (Black and Davidson 2001).

b. Policy maker: responsible for the creation and implementation of policies, programs and legislation

   Keywords: policy maker, civil servant, representative
   Examples: “fishery civil servants” (Waitt and Hartig 2005); “Alaska policy makers” (Anahita and Mix 2006)

c. Researcher: undertaking the generation, organization and dissemination of scientific data, ideas, and information

   Keywords: scientist, researcher, academic, consultant, expert
   Examples: “In this way scientists and horticulturalists exhibited both anxiety around foreign bodies” (Bierman 2016); “…a Malaysian researcher, a man, wanted to sanction secretaries who spoke Indonesian…” (Colfer 2020)

d. Hunter: undertaking hunting

   Keywords: hunter, huntsman, stalking, trapping, outdoorsman, sportsman
   Examples: “Because of his identity as a hunter and outdoorsman…” (Hazlett 2004); “an analysis of the sportsman ecocultural identity” (Love-Nichols 2020)

e. Ranger: employed to carry out tasks in the context of conservation programs where not a hunter, researcher, volunteer, or educator. May include fire management, patrolling, law enforcement, infrastructure maintenance, other practices associated management or restoration of habitat.

   Keywords: Warden, wildlife officer, park ranger
   Examples: “Daggett was not the first female employee of the Forest Service” (Lewis 2005); “a middle-aged male ranger in a Tanzanian national park” (Reid-Hresko 2018)

f. Volunteer: unpaid, voluntary work in the context of biodiversity conservation

   Keywords: Volunteer, aid worker, charity worker
   Example: “a group of conservation volunteers in a Scottish city” (Currie et al. 2015)

g. Educator: involved in providing information, fostering learning and raising awareness of issues of biodiversity conservation or specific policies or programs.

   Keywords: teacher, instructor, trainer, instructor, faculty, educator
   Examples: “teachers taking special care to encourage and promote women students” (Christie and Giri 2011); “connecting the work of reading to the

pursuit of masculine independence helped CCC educational leaders overcome enrollees' resistance to the education program" (Turner 2010)

h. Activist/advocate: undertaking activism or advocacy in the name of biodiversity conservation generally, or specific biodiversity conservation programs or policies

   Keywords: advocate, activist, campaigner, protester
   Examples: "they often justified their activism as an extension of traditionally feminine responsibilities" (Rome 2006); "Long before outdoor recreationists, wilderness advocates, and wildlife activists began campaigning to protect remote natural spaces…" (Taylor 2016).

i. Student/trainee: undertaking training or learning about biodiversity conservation generally or in the context of specific biodiversity conservation programs

   Keywords: student, trainee, enrollee, children
   Examples: "to teach enrollees the necessary labor skills to undertake such projects, and to instruct enrollees in the theoretical underpinnings of their conservation effort" (Maher 2002); "This paper draws on the experience of female students currently at the IOF and graduates to explore its gendered structure and masculinist culture." (Christie and Giri 2011)

j. Citizen: member of the general public engaged in biodiversity program or policy

   Keywords: citizen, villager, member of the public, civilian, community member, local
   Example: "when the forests returned as a result of the untiring efforts of men, women and children in these villages" (Arora-Jonsson 2016); "Participants were self-selected members of the public" (McCubbin 2021).

k. Media/commentator: involved in the production of news and other media

   Keywords: journalist, commentator, columnist, public intellectual, writer, report, correspondent, author
   Example: "George Bird Grinnell, conservationist and editor of Forest and Stream" (Merchant 2010); "The media, of which the ADN is an example, are an

institution recognized as instrumental in constructing and maintaining gender regimes." (Anahita and Mix 2006).

l. Advisor/Board member: person appointed to governance or advisory board as part of a biodiversity conservation program or policy

   Keywords: Board member, advisor, chairperson, committee member
   Example: "An elected committee member chairs meetings…" (Richardson et al. 2007); "members of politically appointed committees, governing bodies, and councils" (Lundberg 2018).

m. Farmer: directly engaged in agriculture. Includes farm managers, farm workers, farm owners etc.

   Keywords: farmer, agriculturist, horticulturist, rancher, grower, primary producer, land-owners
   Example: "I focus on women non-operator landowners" (Carter 2019); "three farmers singing to their land after a satisfying day of collaborative labor" (Paulson et al. 2022).

n. Fisher: directly engaged in the wild capture of fish

   Keywords: fisher, fishing, fishery, fisher, fisherman
   Example: "our first interview with a corporate fisher was conducted on a trawler at 5 a.m" (Waitt and Hartig 2005); "viewers are likely meant to side with the fishermen's hands-on experience" (Fuchs 2022).

o. Forester: directly involved in the harvesting of trees for commercial purposes, as well as forest owners.

   Keywords: forest owner, forester, forest manager, woodland manager
   Examples: "this paper examines various forest tenure regimes of Nepal from feminist institutionalist approach" (Wagle et al. 2017); "was to understand how and why social stratification impacts the functioning of local community forestry institutions" (Nandigama 2020)

p. Not clear/other: No clear role provided or role outside of the codes provided above.

Example: “tourist” (Ray 2013); “the nation’s leading federal agricultural agency, the USDA” (Fairchild and Petrzelka 2021)

Intersectional identities

Where information is available, what other identities are ascribed to those performing masculinities? If no information available code as “N/A”.

a. Gender: Are they coded as “men” (or if a group, “predominantly men”); “women” (or if a group “predominantly women”; or “non-binary”?
b. Race/Ethnicity/Nationality
c. Age
d. LGBTQIA+
e. Other: Any other qualifying details

Actions/norms/values/attitudes associated with masculinities

What are the actions/norms/values/attitudes that are associated with the masculinities performed in the context of the conservation practices/policies/institutions studied? Categories are not mutually exclusive, where multiple codes are relevant, code each separately.

a. Rationalism: masculinities are associated with rationalism, the belief system or behavioural norm emphasising logic, reason, and critical thinking in acquiring knowledge, often independent from sensory (including emotional) experience

   Keywords: rationality, scientific, discipline, logic, unemotional, quantitative
   Examples: "FRI, as a research institute, put very high value on rationality, as did its research staff." (Colfer 2020); "Scouting developed the firm reason and scientific judgment boys needed" (Jordan 2010)

b. Strength: masculinities are associated with physical strength and/or the valorisation of physical strength and associated qualities of toughness, endurance, and vigor

Keywords: power, physical condition, muscular, endurance, hardiness, vigor, toughness
Examples: “The roots of this anxiety went back to the turn of the century, when many middle-class Americans began worrying that American men had become overcivilized, overly cultured, and physically soft…” (Maher 2002); "courage, endurance, toughness and guts" (Suzik 1999)

c. Risk-taking: masculinities are associated with a greater willingness to take risks or engage in what are seen to be risky activities or the valorisation of such behaviours and attitudes.

   Keywords: dangerous, risky, taking risks, putting life/lives on the line
   Examples: “…absolutely devoid of the timidity which is ordinarily associated with her sex…” (Lewis 2005); "the first few words of Expedition Great White stress the risks that all men involved in the expedition to Guadalupe Island accept" (Fuchs 2022)

d. Assertiveness: masculinities are associated with (and/or valorise) patterns of interpersonal communication and/or action that prioritises oneself and or/one’s perspectives over others on the basis of self-confidence/assuredness.

   Keywords: interruption, dismissal, outspoken, decisiveness, confident, intimidating
   Examples: "Furthermore, women were viewed negatively if they exhibited certain ‘‘feminine’’ characteristics such as being ‘‘shy’’ or emotional’’ but were viewed more favourably if they exhibited traits typically ascribed to certain kinds of masculinity, such as being ‘‘strong’’, ‘‘outspoken’’, and ‘‘confident’’" (Richardson 2011); "strong, muscular men who had triumphed over challenges in nature and had the physical presence to impose their will on others" (Taylor 2016)

e. Control/authority: masculinities are associated with (and/or valorise) the exercise of power over others, including non-human others.

   Keywords: leadership, domination, decision-making, control, subdue, breadwinner, authority

Examples: “[Rangers have] a specific kind of political and religious authority in society" (Poppe 2012); "Agriculture is categorized as a masculine domain which not only constitutes social relations of power and authority between female and male Kuruma farmers but also denies women the right to claim agricultural knowledge" (Padmanabhan 2016)

f. Paternalism: masculinities are associated with the practice of exercising actual or perceived authority to make decisions for other people believed to be in their interests but in a way that prevents from taking responsibility for their own lives.

   Keywords: control, paternalistic, supervision, intervention, patriarchal, patronising, guidance
   Examples: “Benevolent but firm Christian patriarch" (Brandt et al. 2018); “[care is] framed in a paternalistic imaginary which relies on the representation of 'nature' as inherently 'other'" (Shefer et al. 2022)

g. Aggression, violence, and/or harassment (including sexual violence/harassment): masculinities are associated with the expression or glorification of physical, sexual, or psychological violence or aggressive behaviours towards others, including non-human others.

   Keywords: aggression, violence, harassment, insult, assault, attack, threaten, force
   Examples: "Steele's story lays claim to, and constructs, a greater masculinity than one which asserts its hegemony through simple violence" (Draper 1998); “Our study also revealed that some women experienced sexual harassment ranging from physical assault to sexual innuendo" (Black and Davidson 2001)

h. (Hyper)competition: masculinities are associated with competing against others (often to the detriment of cooperation) and/or the idealisation of (hyper)competition.

   Keywords: compete, rival, non-cooperation, competition
   Examples: "Other masculinity-related issues bedevilled our work, including debilitating competition between the two coordinating institutions" (Colfer 2020)*;* "Crew bosses are also engaged in fostering the competitive nature of tree-planting" (Walby and Evans-Boudreau 2022)

i. Stoicism/emotional restraint or repression: masculinities are associated with not showing emotion

   Keywords: stoic, unemotional, rational, detached, discipline, repression
   Examples: "At FRI, being rational was often counterposed to being emotional, with the latter avoided. Northern men were taught, rather harshly, never to cry" (Colfer 2020); ""I have trouble dealing with and I think most guys do when it gets too emotional and it's an emotional argument, as opposed to a rational, science-based as I call it" (Richardson et al. 2011)

j. Independence/self-reliance: Masculinities are associated with (and/or valorise) a capacity to be self-reliant, autonomous, and capable.

   Keywords: independent, self-reliant, autonomous, provide for oneself, breadwinner
   Examples: ""Steele's unthinkingly disciplined militarism and obedience to bureaucratic dictates was balanced by his licentious rugged individualism" (Draper 1998); "male joblessness had threatened male status" (Maher 2002)

k. Care: masculinities are associated with (and/or valorise) giving attention to and providing for the needs of others, including non-human others

   Keywords: protection, caretaker, nurture, protector, empathy
   Examples: "he has become legendary among the people for his selflessness, dedication and humility" (Arora-Jonsson 2012); "observed men enacting care that extends beyond humans to other animals, plants, earth, and water" (Paulson et al. 2022)

l. Cooperation: masculinities are associated with (and/or valorise) cooperation over competition

   Keywords: teamwork, cooperation, mutual benefit, collaboration, cohesion
   Examples: "he decided to "stop the rot" and try and bring cohesion in the village…" (Arora-Jonsson 2012); "Both men and women heavily depend on collaboration in their paddy cultivation and seed management strategies" (Padmanabhan 2016)

m. Deliberate destabilisation of gender norms: masculinities are associated with deliberate subversion of gender norms.

   Keywords: transgression, subvert, drag, gender roles, ideology, contravention
   Examples: "the young men who enrolled in President Roosevelt's Emergency Relief Work program used their time in the homosocial world of the CCC to negotiate the meanings of masculinity and American manhood." (Johnson 2007, 19); “[a woman forester says] “I try to be more masculine"” (Walby and Evans-Boudreau 2022).

n. Heroism: masculinities are associated with the performance of or valorisation of what are considered heroic acts towards others, including non-human others.

   Keywords: heroism, self-sacrifice, noble, bravery, courageous
   Examples: "The Commission appealed to the ‘‘masculine allure of adventure” through its discursive imagining of blight control as strenuous but virtuous work" (Bierman 2016, 216); “…game rangers had to earn a heroic place in the public imagination for which both Player and Steele fought and won in their work and writing" (Draper 1998, 802)

o. Discrimination: masculinities are associated with the prejudicial treatment of other genders

   Keywords: assuming wrongness or inadequacy, typecasting, stereotyping, sexism, prejudice
   Examples: "The prevention of women, albeit in subtle ways, from accessing decision-making positions, that is, management positions" (Black and Davidson 2001, 652); “Men ask women to do administrative tasks that are not part of the women’s leadership roles" (Jones and Solomon 2019, 4)

p. Utilitarianism: the performance of masculinities is associated with the advancement of or adherence to utilitarian perspectives

   Keywords: maximisation, utilitarian, rationalism, efficiency
   Examples: "…women were described as being more ‘‘caring’’ and ‘‘holistic’’ in relation to their environment, while men were described as having more ‘‘utilitarian’’ interests" (Richardson et al. 2011, 530); “…men were much more

likely to tie their satisfaction with the PES program to how much money they made" (Schwatrz 2017, 903)

q. Managerial professionalism: masculinities are associated with traditional standards and characteristics of bureaucratic management, including rational decision-making, the desirability of control and predictability, and formal standards of dress and interpersonal behaviour.

   Keywords: Elite, rational, professionalism, economic utilitarianism, bureaucratic, efficiency, control, impersonal
   Examples: “For corporate fishers, the masculine gendered identity of managerial professionalism that sought to maintain the productivity (fertility) of the ocean can only be achieved through the rationality of biological sciences and resource economics” (Waitt and Hartig 2005, 415); “[The professional identity of the NRM groups is based on] scientific knowledge and bureaucratic management and attitudes are loaded with a certain type of masculine connotations" (Westberg and Powell 2015, 1242)

r. Virility: masculinities are associated with sexual potency and the capacity for/ expression of sexual feelings and engagement in sexual acts

   Keywords: virile, sexual, forwardness, sexual invitations, sexual relations,
   Examples: “vigorous, virile, sane" (Rome 2008); “They used sex and sexuality to affirm their power over me” (Brandt and Femke 2017)

s. Homosociality: the formation and maintenance of social bonds between men to the exclusion (actively or passively) of other genders

   Keywords: male-only, male-bonding, camaraderie, mateship, homosocial, exclusive, esprit de corps
   Examples: “Women find themselves in a masculine system of top-down communication and male-only social environments involving alcohol that traditionally exclude women" (Christie and Giri 2011); "...it was thought that married men would not be able to bond and forge the necessary esprit de corps during training because of the distractions of married life." (Hannam 2000)

t. Positivism: masculinities are associated with the adherence to and/or valorisation of a positivist epistemology

   Keywords: scientific rationality, objectivity, empiricism, quantification
   Examples: "…viewers are reassured that scientific certainties of knowledge and control are possible and key to the success of the restoration effort" (O'Brien 2007); "The objectivity of normative science is trusted to provide unbiased answers and insights" (Waitt and Hartig 2005)

u. Limited inclusivity: masculinities are associated with efforts to include other subjectivities in activities without addressing systems of male control/dominance

   Keywords: superficial, bias, power structures, non-transformational
   Examples: Merchant 2010; "The four male board members often referred to the local communities they represented homogeneously without distinguishing between different interests and groups of people." (Lunberg 2018, 1274)

v. Sensitivity: masculinities are associated with emotional responsiveness and empathy towards other, including non-human others.

   Keywords: emotional, empathy, compassion, sympathy, sensitivity, care
   Examples: "Steele's elegant construction of an oxymoron that juxtaposes the two contrasting faces of the game ranger, a combination common to men in conservation: the aggressive fighter and the sensitive artistic thinker." (Draper 1998)

w. Adventure: masculinities are associated with being adventurous and or embracing adventure and the associated qualities of hardship, difficulty, dangerous conditions etc.

   Keywords: rugged, adventurous spirit, endurance, exploration, survival
   Example: "…is a real adventurer and someone who really cares about the ocean" and who "has [thus] earned […] his spot on this crew" (Fuchs 2022, 247); "…emphasised the adventurous nature of being a forest officer" (Hannam 2000, 220)

x. Protection: masculinities are associated with taking or desiring to take actions that protect others, including non-human others, from threats. This may include both violent and non-violent approaches to protection.

Keywords: protect, care, defend, guardian, preserve, safeguard
Examples: "In many of the game ranger memoires, the male game rangers is predominantly represented as warden, protector and, ultimately, policymaker for the taming, protection and assessment of wilderness (and other 'dependents,' like women) to preserve 'nature' for generations to come" (Shefer et al. 2022, 103); "…protect what is ours." (Burnett et al. 2017, 565)

y. Nature/culture dualism: masculinities are associated with an adherence to (and or the valorisation of) the ontological and epistemological separation of human society from "nature" in a hierarchical manner.

Keywords: human exceptionalism, binary, dualism, nature/culture, wilderness
Examples: "In line with a colonial ontology that separates humans and nature…" (Youdelis et al. 2020); "the control and taming of "wild" female Nature" (O'Brien 2007).

z. Other: the behaviours/norms/values/and/or attitudes associated with the performance of masculinities are not clear or do not align with any of the codes presented above.

Examples: "[for] many conservationists and Commission members, blight control was explicitly linked to the broader project of nation building" (Biermann 2016); "which celebrated the many virtues of the European "sportsman" while condemning all methods and tactics employed by native hunters" (Taylor 2007); "Their tools are capitalism, elite technology, and canonical philosophy" (Tsing 2017); "The general appearance of tree planters is masculine. Contractors and clients often demand that tree planters wear steel-toed boots, hard hats and reflective vests. While 'at' tree planting, personal hygiene is often mediocre, hairstyles tend towards unkempt and tobacco use is rampant" (Sweeney 2009); "'A Gentleman is No Sissy' recognized those fears and, by linking American heroes to courteous behavior (and the ability to get a job), tried to diffuse them" (Turner 2010);

Effect of the masculinities

What effects do the actions/values/norms of masculinities have on the biodiversity conservation processes, outcomes and/or institutions?

Type of effect. If multiple categories are relevant, code each separately.

a. Marginalisation of other subjectivities: the behaviours/values/norms of masculinities lead to or reinforce male control over biodiversity conservation practices, policies, programs, and/or institutions. This includes the exclusion of other genders from leadership positions.

   Keywords: exclusion, marginalisation, outsiders, hierarchy, masculine domain
   Examples: "The women who have worked at FRI have attempted to fit into this masculine domain, many nibbling away at the edges to insert concerns that might be called feminine" (Colfer 2020); "...this "new" identity does not challenge the existing power hierarchies. In fact, it allows farmers and landowners to maintain their positions as ("benevolent") patriarchs and entrench their belonging in the farming landscape." (Brandt 2018)

b. Cultures of risk-taking: the behaviours/values/norms of masculinities contribute to a culture of risk-taking/valorisation of risk-taking within biodiversity conservation practices, policies, programs, and/or institutions.

   Keywords: risk, institutionalised risk, culture of risk taking, standard, expected behaviour
   Examples: "Planters push themselves to the edge ... The standard for 'risk boundaries' are often dictated by the 'toughest' in the group, which establishes limits exceeding what some planters are comfortable with" (Walby and Evans-Boudreau 2022)

c. Cultures of nurture/care: the behaviours/values/norms of masculinities contribute to caring/nurturing relationships between people and/or species.

   Keywords: care, nurture, culture of care, compassion, collective
   Examples: "...administrators did everything in their power to protect all the staff (particularly the Chinese who had been so targeted). 'Protection' was not,

however, used as an excuse to prevent women from performing our work (unlike in some places)." (Colfer 2020); "even in the face of violent norms and structural domination, these men have managed to expand and enjoy identities as reproducers and caretakers" (Paulson et al. 2022)

d. Cultures of competition: the behaviours/values/norms of masculinities contribute to a culture of competition within biodiversity conservation practices, policies, programs, and/or institutions.

   Keywords: competitions, institutionalised competition, competitive dynamics
   Examples: "Connected to the principle of domination that feeds into hegemonic masculinity, Fischer, in particular, repeatedly employs a discourse that 'institutionalizes competition'" (Fuchs 2022); "a new administration believed that excellence emerged from competition, and so competition began to be expressly encouraged among us. I do not believe this improved the quality of our work, and it certainly reduced the level of cooperation within the institution" (Colfer 2020)

e. Cultures of cooperation: the behaviours/values/norms of masculinities contribute to a culture of cooperation within biodiversity conservation practices, policies, programs, and/or institutions.

   Keywords: cooperation, sharing, non-hierarchical, learn from each other
   Examples: "There was routine sharing of expertise among researchers." (Colfer 2020); "it was a space in which the volunteers could learn from each other and develop their own interests, capabilities and strength" (Currie et al. 2015)

f. Gendered division of labour: the behaviours/values/norms of masculinities contribute to a division of labour along gendered lines.

   Keywords: work segregation, gender roles, gender-specific work, gendered labour
   Examples: "All the women interviewed in the study identified the occurrence of typecasting within the workplace. Typecasting is the distribution of tasks according to sex, based on the assumption that either men or women are better able to fulfill particular tasks." (Black and Davidson 2001); "…she

reflected her forest ownership through her husband by talking about his activities" (Vainio and Paloniemi 2013).

g. Characteristics of policy/practice: the behaviours/values/norms of masculinities influence or have an impact on the characteristics of particular policies/practices, including the selection of particular policies/practices over other. Specify what such characteristics and the policies/practices they effect are in the notes section.

   Keywords: deploy, pursue, allow, create, practice, based on
   Examples: "The persistence of a masculinist control orientation may work to subvert key principles of ecological restoration, with its grounding in feminine principles of partnership and community" (O'Brien 2006, 147, in discussing a reliance on technological interventions); "Conservation that is compassionate - that takes wild-living apex predators into the equation based on theories of 'trophic cascades' and that is based on research that takes a non-hierarchical multispecies approach - tries to look at conservation or, even better, co-existence through the eyes of carnivores. It is a conservation full of hope that comes with thinking about mini-utopias in the here and now..." (Wels 2018, 94)

h. Selection of knowledges over others: the behaviours/values/norms of masculinities contribute to selection of particular knowledge(s)/ways of knowing over others. Specify what such knowledge(s)/ways of knowing are in the notes section.

   Keywords: choice, prioritisation, adherence, rejection, promotion
   Examples: "Our empirical evidence suggests that unless we attend to gender when involving communities in establishing strategies for forest management, we will reinforce gender disadvantage and exclusion and overrepresent industrial and utilitarian interests of forestry over other community and ecocentric values." (Richarson 2011); Rejection of "emotional arguments" in favour of "science-based" arguments (Reed and Davidson 2011)

i. Biodiversity/ecosystem impacts: the behaviours/values/norms of masculinities have a demonstrable impact or influence on the outcomes for biodiversity/ecosystem in the context of biodiversity conservation programs/policies/practices and/or institutions.

Keyword: preserved, habitat, impact, outcome, enhance
Example: "the desire for a 'natural' landscape with no human-made structures means that there is little development of the type that destroys habitats on other lands. The desire for ecological analogs means that a diverse set of wildlife habitats are preserved across multiple installations" (Rabung 2022); “I plant because nature asks for it. The land asks for plants" (Paulson et al. 2022)

j. Location of policies/practices: the behaviours/values/norms of masculinities influence the location of particular policies/practices over others. Specify location and policies/practices in the notes section.

Keywords: focus, area, scale, location, regional, remote
Example: Patel 2005: CCC projects took place in remote regions to reflect/support notions of rugged masculinities; McCubbin 2021: management directed at ecosystem rather than individual level.

k. Physical well-being: the behaviours/values/norms of masculinities have an impact on the physical well-being of people involved in the conservation practice/policy/program and/or institution.

Keywords: ill-health, injury, well-being, healthy, disease, danger, strength
*Examples: “*Elise (fourth year) planted through serious injuries her first three years, and Shiri (second year) had a hernia and then planted for four months, making it worse” (Walby and Evans-Boudreau 2022)

l. Other: the behaviours/values/norms of masculinities have an impact or influence on the conservation practice/policy/program and/or institution outside of the codes defined above or no effect is identified.

Examples: Nationalism: "According to Danner, in strengthening their bodies through labor in nature "second generation Poles, Slovaks, Italians, Hungarians, all are … finding a new pride in saying, ‘We are Americans!’" (Maher 2002); no effects specified in Sweeney 2009; cooperation: “Volunteers commented on feeling equal within the Group and viewed the greenspace as being ‘neutral’, meaning it was a space in which the volunteers could learn

from each other and develop their own interests, capabilities and strength" (Currie et al. 2015)

Quality of effect

How does the study qualify the effect that masculinities have (if at all)? Is it:

a. Positive

   Example: “[the singing] allowed the trio of men and the pair of women to enact and express caring collaboration among farmers, bulls, seeds, and earth. The song was a chanted declaration that communities of care extend beyond the scope of human life. It was a gift meant to nurture the earth and build their relations with Ch’ela, who nurtured their growing seeds” (Paulson et al. 2022)

b. Negative

   Example: “The research revealed a distinct gender order at work in forestry advisory committees. The existing gender order gave men with direct economic and historical recreational interests in forests and forestry greater opportunities for participation and appeared to provide them with more influence within the committees themselves" (Richardson et al. 2011)

c. Ambiguous (use where the study is not clear on the quality of the effects of masculinities identified)

   Example: “[Corbett’s] idea of conservation was inseparable from the notions of sportsmanship embodied in the 'sportsman's code" of imperial manhood. This statement suggests that hunting was not merely compatible with, but in some senses necessary to, conservation, provided the hunting adhered to the ideals of 'sportsmanship'" (Talor 2007)

Other

Any other information that is not captured by the codes above but that may be useful. e.g., quotes, what is not said about masculinities, the quality of the article.

C: List of articles included in the review

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D: PRISMA Checklist

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	N/A
Synthesis of results	6	Specify the methods used to present and synthesise results.	Yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Yes
DISCUSSION			

Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	N/A
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	Yes
Registration	12	Provide the register name and registration number.	n/a

PRISMA Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	p. 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	p.1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	p.1-3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	p.3
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Pages 5-9; Supporting Information

Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	p.6; Supporting Information
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supporting Information
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Pages 8-9; Supporting Information
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	p.9
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Supporting Information
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions	Supporting Information

		made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	n/a
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	n/a
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	n/a
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	n/a
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	p.9
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	n/a
	13e	Describe any methods used to explore possible causes of heterogeneity among	n/a

		study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	n/a
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	n/a
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	p.7
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	p.6-7; Supporting Information
Study characteristics	17	Cite each included study and present its characteristics.	n/a
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	n/a
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	n/a

Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	n/a
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	n/a
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	p.9-19
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	n/a
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	n/a
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	p.19-22
	23b	Discuss any limitations of the evidence included in the review.	p. 6; p.19
	23c	Discuss any limitations of the review processes used.	p.6; p.24
	23d	Discuss implications of the results for practice, policy, and future research.	p.21-22
OTHER INFORMATION			

Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Yes – not registered.
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	n/a
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Yes - Acknowledgments section
Competing interests	26	Declare any competing interests of review authors.	Yes - Conflict of Interest section
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Yes - Data accessibility section