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The following Supporting Information is available for this article:

Online supplementary material A: The Literature review of 127 case studies in detail.

Sr. No.	Geographic location	Title	CES evaluation methods	CES categories
1	China	A review of empirical studies of cultural ecosystem services in urban green infrastructure	review	CES
2	Germany	A meta-analysis of the value of ecosystem services of floodplains for the Danube River Basin	review	
3	Spain	A tourism potential index for cultural heritage management through the ecosystem services approach	interview	tourism
4	Italy	Harnessing artificial intelligence technology and social media data to support Cultural Ecosystem Service assessments	social media based	aesthetic value, outdoor recreation, cultural heritage, symbolic species

5	USA	Engaging stakeholders across a socio-environmentally diverse network of water research sites in North and South America	theory	
6	Germany	Impact of summer heat on urban park visitation, perceived health and ecosystem service appreciation	questionnaire	CES
7	China	Performance assessment indicators for comparing recreational services of urban parks	observation and questionnaire	recreation
8	China	The Evaluation of Ecological Service Value of Liaohe River Estuary Wetland	theory, survey, PPGIS	scientific research culture, leisure and entertainment
9	China	Changes in ecosystem services values in the south and north Yellow Sea between 2000 and 2010	quantitative, expert based	tourism, research and education
10	France	Toward an evaluation of cultural ecosystem services delivered by urban micro-farms	observation, document	CES
11	Sweden	Regulating and cultural ecosystem services of urban green infrastructure in the nordic countries: A systematic review	review	
12	China	Rethinking non-material links between people and drylands from a cultural ecosystem services perspective	review	
13	Japan	National geographic distribution and number of TV nature programs across the Japanese archipelago	social media based	education, aesthetic enjoyment, and nature experience
14	Latin America	How protected are marine protected areas: A case study of tributyltin in Latin America	survey, PPGIS	CES
15	Russia, China	Cultural Ecosystem Services of Urban Green Spaces. How and What People Value in Urban Nature?	interview, questionnaire, observation	CES
16	China	Forest cultural value evaluation index system and methodology	theory	
17	China	Water Ecosystem Service Quality Evaluation and Value Assessment of Taihu Lake in China	survey	tourism and leisure, research and education
18	Bangladesh	Urban ecosystems and ecosystem services in megacity Dhaka: mapping and inventory analysis	observation, survey	recreation, inspiration for art and culture, religious values
19	Taiwan	Integrating Aspects of Ecosystem Dimensions into Sorghum and Wheat Production Areas in Kinmen, Taiwan	choice experiment	ecotourism
20	China	Land senses ecology analysis of coastal ecological restoration projects in Guangdong-Hong Kong-Macao Greater Bay Area	theory	
21	China	Construction and empirical analysis of the suitability evaluation of study travel development in national park	travel cost	educational and recreational value
22	Japan	An explorative analysis of landscape value perceptions of naturally dead and cut wood: a case study of visitors to Kaisho Forest, Aichi, Japan	questionnaire	spiritual and aesthetic values
23	China	Evaluation of the Xinghua Duotian Traditional Agrosystem in Jiangsu Province based on the evaluation methods of the Important Agricultural Heritage Systems	direct market approach, alternative market approach	aesthetic values, spiritual values

24	Taiwan	Hybrid decision-making evaluation for future scenarios of cultural ecosystem services	multicriteria decision analysis	CES
25	China	Evaluation of the cultural ecosystem services of wetland park	quantitative, survey	CES
26	Europe	A Meta-analysis of the Willingness to Pay for Cultural Services from Grasslands in Europe	review	
27	Ireland	Evaluating and communicating cultural ecosystem services	observation, survey, social media based, PGIS	CES
28	China	Land use trade-offs associated with protected areas in China: Current state, existing evaluation methods, and future application of ecosystem service valuation	review	
29	Iceland	Reflections on the ecosystem services of whales and valuing their contribution to human well-being	direct market valuation, hedonic pricing, travel cost, contingent valuation, choice experiment, questionnaire, multicriteria decision analysis	tourism, music and art, education, religious, aesthetic
30	China	Establishment of management and evaluation system of sustainable development planning of green infrastructure	participatory GIS	culture heritage
31	China	Cultural ecosystem services evaluation using geolocated social media data: a review	review	
32	China	Ecological function evaluation and regionalization in Baiyangdian Wetland	field survey, PPGIS	CES
33	China	Evaluation of ecosystem services value and its implications for policy making in China – A case study of Fujian province	quantitative, PGIS	aesthetic
34	China	Estimating the Cultural Value of Wild Animals in the Qinling Mountains, China: A Choice Experiment	choice experiment	tourism
35	China	Land use trade-offs associated with protected areas in China: Current state, existing evaluation methods, and future application of ecosystem service valuation	review	
36	China	Changes in ecosystem service values in Karst areas of China	benefit transfer method	recreation and tourism
37	China	Assessment of the Impact of a Sea Reclamation Project in an Emerging Port City in Tianjin	market value method, alternative cost method	CES
38	China	Perceptions of cultural ecosystem services in urban parks based on social network data	social media based	aesthetics, recreation, sports, inspiration, education, cultural heritage, and spiritual satisfaction

39	Slovakia	Multi-objective land allocation for zoning of ecosystem services in mountain forests	PGIS	recreation, spiritual and aesthetic values, mental and physical health
40	India	Evaluating the cultural ecosystem services of India: Comparison of budget allocations to improve the use value of recreational open spaces	Survey	recreation
41	Spain	Perceived Environmental Aesthetic Qualities Scale (PEAQS) – A self-report tool for the evaluation of green-blue spaces	questionnaire, focus group	aesthetic
42	Australia	Mainstreaming indigenous and local communities' connections with nature for policy decision-making	theory	
43	Israel	The 'desert experience': Evaluating the cultural ecosystem services of drylands through walking and focusing	interview	social and cultural identity, spiritual values, knowledge, skills, education, reflection and inspiration, recreation and tourism, aesthetic values
44	Italy	The use of crowdsourced geographic information for spatial evaluation of cultural ecosystem services in the agricultural landscape: The case of chianti classico (Italy)	social media based	aesthetic
45	China	Evaluation of cultural ecosystem services: A review of methods	review	
46	Germany	The importance of cultural ecosystem services and biodiversity for landscape visitors in the biosphere reserve Swabian Alb (Germany)	Survey	recreation and aesthetic
47	Portugal	Can geocaching be an indicator of cultural ecosystem services? The case of the montado savannah-like landscape	quantitative	CES
48	China	Evaluation of ecosystem cultural services of urban protected areas based on public participation GIS (PPGIS): A case study of Gongqing Forest Park in Shanghai, China	PPGIS	aesthetic and inspirational value
49	Italy	Uncertainty assessment in climate change scenarios: A methodological proposal for management of forest ecosystem services	theory	
50	Europe	Linking ecosystem services and measures in river and floodplain management	expert based	aesthetic, cultural heritage
51	Germany	Expert-based evaluation of ecosystem service provision in coastal reed wetlands under different management regimes	expert based	CES
52	Italy	Big data and evaluation of cultural ecosystem services: An analysis based on geotagged photographs from social media in tuscan forest (Italy)	social media based	aesthetic
53	Russia	Spatial assessment of recreational ecosystem services in the large inland river basin (Upper Ob, Russia)	PGIS	recreational
54	Italy	Investigating tourism attractiveness in inland areas: Ecosystem services, open data and smart specializations	InVEST	tourism
55	Japan	Relational values from a cultural valuation perspective: how can sociology contribute to the evaluation of	theory	

		ecosystem services?		
56	Europe	Use and usefulness of open-source spatial databases for the assessment and management of European coastal and marine ecosystem services	review	
57	Italy	A Sentiment Analysis Approach for Evaluation of Events in Field of Cultural Heritage	expert based	cultural heritage
58	China	The Evaluation Method for Ecosystem Service Value Based on National Census Geography Results	quantitative	CES
59	Italy	Integration between GIS and multi-criteria analysis for ecosystem services assessment: A methodological proposal for the National Park of Cilento, Vallo di Diano and Alburni (Italy)	scenario simulation, multicriteria decision analysis	recreation, cultural heritage
60	Spain	Mapping the intangible: Using geolocated social media data to examine landscape aesthetics	social media based	aesthetic
61	India	Assessment of freshwater ecosystem services in the Beas River Basin, Himalaya's region, India	expert based	recreation
62	USA	Quantifying the visual-sensory landscape qualities that contribute to cultural ecosystem services using social media and LiDAR	social media based	tourism
63	Australia	The value of coastal lagoons: Case study of recreation at the Ria de Aveiro, Portugal in comparison to the Coorong, Australia	travel cost, contingent valuation	recreation
64	Spain	Resin-tapped pine forests in Spain: Ecological diversity and economic valuation	theory	
65	Germany	Large-scale river restoration pays off: A case study of ecosystem service valuation for the Emscher restoration generation project	damage cost avoided, contingent valuation, benefit or value transfer	aesthetic, recreation, educational
66	Italy	A decision support system for trade-off analysis and dynamic evaluation of forest ecosystem services	choice experiment, contingent valuation, travel cost	tourism, recreational
67	Mexico	Analysing the impacts of PES programmes beyond economic rationale: Perceptions of ecosystem services provision associated to the Mexican case	survey	CES
68	China	The evaluation of forest cultural value based on WTP: A case study in Diebu County of Gansu Province in China	contingent valuation	CES
69		Taking an ecosystem services approach for a new national park system in China	theory	
70	Germany	Holistic evaluation of ecosystem services of renaturated slope bogs - Analysis using the example of the 'Hunsrück bogs'	survey	CES
71	China	A theoretical framework for researching cultural ecosystem service flows in urban agglomerations	theory	
72	Greece	A trustworthy multimedia participatory platform for cultural heritage management in smart city environments	theory	
73	Iran	Performance evaluation of multiple methods for landscape aesthetic suitability mapping: A comparative study between Multi-Criteria Evaluation, Logistic Regression and Multi-Layer Perceptron neural network	expert based, participatory mapping	aesthetics
74	China	Evaluation of mangrove ecosystem service functions of Ximen Island Marine Specially Protected Areas in Yueqing Bay, China	market price	leisure production, cultural research

75	USA	The social and economic value of cultural ecosystem services provided by urban forests in North America: A review and suggestions for future research	review	
76	China	Ecosystem services of Chongyi Hakka Terraces	quantitative	cultural heritage
77	China	Indicators for quantitative evaluation of the social services function of urban greenbelt systems: A case study of shenzhen, China	quantitative	recreation and ecotourism
78	Thailand	Combining ecosystem services with cost-benefit analysis for selection of green and grey infrastructure for flood protection in a cultural setting	expert based, survey, interview	aesthetic, recreation and tourism, scientific and education, spiritual and religious
79	Global	Socioeconomic Value(s) of Restoring Environmental Flows: Systematic Review and Guidance for Assessment	review	
80	Italy	Effects of different thinning systems on the economic value of ecosystem services: A case-study in a black pine peri-urban forest in Central Italy	questionnaire, travel cost	recreation
81	Romania	Mapping and assessment of ecosystem services from divici-pojejena wetland based on recommended methodology	participatory mapping	CES
82	Slovakia	Travel cost method of evaluating cultural ecosystem services	travel cost	recreation and tourism
83	Italy	Measuring territorial specialization in tourism sector: The basilicata region case study	InVEST	tourism
84	China	Willingness-to-pay for recreation services of urban ecosystem and its value assessment: A case study in the Wenjiang District of Chengdu City, China	survey, contingent valuation	recreation
85	Korea	Performing ecosystem services at mud flats in Seocheon, Korea: Using Q methodology for cooperative decision making	Q method	ecotourism
86	Poland	Specific features of parks and their impact on regulation and cultural ecosystem services provision in Warsaw, Poland	expert based, document	recreation, aesthetic, sense of identity
87	China	Evaluation of the economic value of final ecosystem services from the Baiyangdian wetland	market price, replacement cost, travel cost, contingent valuation	recreation and tourism
88	Austria, Italy	Cultural ecosystem services of mountain regions: Modelling the aesthetic value	questionnaire	aesthetic
89	UK	Aesthetic and spiritual value of ecosystems: Recognising the ontological and axiological plurality of cultural ecosystem services	theory	
90	Norway	An empirical evaluation of spatial value transfer methods for identifying cultural ecosystem services	benefit transfer, PPGIS	recreation and ecotourism, aesthetic, cultural diversity, spiritual and religious value, sense of place

91	Germany, Poland	Educational values and services of ecosystems and landscapes - An overview	expert based	educational value
92	South Africa	The ecosystem service of sense of place: Benefits for human well-being and biodiversity conservation	review	
93	China	Effects of Freshwater Releases on the Delivery of Ecosystem Services in Coastal Wetlands of the Yellow River Delta Using an Improved Input-State-Output Approach	market price	recreation and ecotourism
94	Portugal	Estimating cultural benefits from surface water status improvements in freshwater wetland ecosystems	contingent valuation, observation	CES
95	China	Accounting of gross ecosystem product based on emergy analysis and ecological land classification in China	theory	
96	UK	Valuing Cultural Ecosystem Services	review	
97	Spain	Ecosystem services values in Spain: A meta-analysis	review	
98	Germany	Exploring the link between supply and demand of cultural ecosystem services-towards an integrated vulnerability assessment	participatory mapping	CES
99	Global	Empirical PPGIS/PGIS mapping of ecosystem services: A review and evaluation	review	
100	Spain	Mapping recreation supply and demand using an ecological and a social evaluation approach	participatory mapping, questionnaire	recreation and ecotourism, aesthetic values
101	Italy	The evaluation of ecosystem services production: An application in the province of Ferrara	expert based, quantitative	recreation and tourism, aesthetic value
102	China	New research progress and trends in ecosystem health	review	
103	China	The assessment of aquatic ecosystem services for polder in Taihu Basin	quantitative	CES
104	Morocco	Combining vulnerability analysis and perceptions of ecosystem services in sensitive landscapes: A case from western Moroccan temporary wetlands	interview	recreation and ecotourism, educational values
105	China	Evaluation of the ecosystem services in Caohai Wetland, Guizhou Province	market price, travel cost, contingent valuation	recreation
106	Slovakia	Evaluation of the ecosystem services of inland waters in the Slovak Republic - To date findings	observation	recreation and ecotourism
107	Singapore	A rapid indicator of cultural ecosystem service usage at a fine spatial scale: Content analysis of social media photographs	social media based	recreation and ecotourism, educational values, cultural heritage values
108	China	Research progress in culture ecosystem services (CES) and its development trend	review	
109	Spain	A framework for the social valuation of ecosystem services	theory	

110	USA	Ecosystem services of traditional irrigation systems in northern New Mexico, USA	focus group	recreation and ecotourism, educational values, aesthetic values
111	Spain	Mapping recreation and aesthetic value of ecosystems in the Bilbao Metropolitan Greenbelt (northern Spain) to support landscape planning	PPGIS, Q	aesthetic values, recreation and ecotourism
112	Spain	Socio-cultural and economic valuation of ecosystem services provided by Mediterranean mountain agroecosystems	expert based, contingent valuation, questionnaire	aesthetic values, recreation and ecotourism, spiritual and religious values, educational values
113	Argentina	Recreation potential assessment at large spatial scales: A method based in the ecosystem services approach and landscape metrics	observation	recreation
114	Chile	A multi-criteria model for mapping ecosystem services in forested watersheds, southern Chile	theory	
115	China	Evaluation of ecosystem services valuation of alpine wetlands in Zoigê Plateau	market method, replacement cost, travel cost	recreation
116	Italy	Valuing cultural landscape services: A multidimensional and multi-group SDSS for scenario simulations	scenario simulation	CES
117	Spain	Which are, what is their status and what can we expect from ecosystem services provided by Spanish rivers and riparian areas?	review	
118	China	Evaluation of the services provided by the Shuangtai estuary wetland in Panjin based on emergy theory	theory	
119	China	Effects of land use change on ecosystem services in earth-rock mountainous area of Loess Plateau, Northwest China: A case study of Ningwu County	market price	CES
120	Spain	Hierarchical priority setting for restoration in a watershed in NE Spain, based on assessments of soil erosion and ecosystem services	participatory mapping	ecotourism
121	USA	Ecosystem service provision by stormwater wetlands and ponds - A means for evaluation?	quantitative	recreation and ecotourism, educational values, aesthetic values
122	China	Emergy appraisal on the loss of ecosystem service caused by marine reclamation: A case study in the Taozi Bay	expert based	recreation and ecotourism, research and education
123	USA, Austria, France	Contributions of cultural services to the ecosystem services agenda	theory	
124	China	Evaluation of ecosystem services of the Yongding River in Beijing	market price	recreation and ecotourism
125	China	Impact of cascade hydropower development in the lower-reach of Yalong river on river ecosystem services	market price	CES

126	China	Valuing the effects of hydropower development on watershed ecosystem services: Case studies in the Jiulong River Watershed, Fujian Province, China	market price, travel cost, contingent valuation	CES
127	China	The impact of land use/cover change on ecosystem service in Xiamen	market price	recreation and ecotourism