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Scientific Mapping of Coastal Governance: Global Benchmarks and Trends

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Abstract: This research panoramically and empirically reviews the scientific production on coastal governance studies, mapping global networks of countries, organizations, authors, themes, and journals as referents for this topic. The articles were examined through a bibliometric/scientometric approach based on 2043 articles corpus stored in the Web of Science (JCR), applying the bibliometric laws of Price, Lotka, and Zipf to add further validity to the use of VOSviewer for data and metadata processing. The results highlight an uninterrupted exponential increase in publications since 1991, with a high concentration in 29 countries (21%), 461 organizations (18%), 99 authors (1.45%), and 4 growing journals (1%). The emerging topics observed in the literature are related to coastal sustainability and coastal management. Complementing previous studies on coastal zone management and marine territorial planning, we add coastal systems governance as a topic.

Keywords: coastal management; fishing areas; spatial planning; coastal environmental; coastal geopolitics; blue economy; bibliometrics

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1. Introduction

This article aims to provide an empirical and panoramic overview of the worldwide scientific production on coastal governance. We understand coastal governance to be a system that integrates and manages the complex contexts that exist in the coastal zone to support decision making, based on policies, programs, and regulations, encouraging the participation of stakeholders in achieving sustainable development objectives. Coastal governance implies confronting problems, most of which are difficult problems without a technical solution; at this point, the political process of decision making is a key point in the system and relates to other systems of knowledge, in adjustment with a national or international normative framework. All these considerations put coastal governance into a policy framework: the action of the state and the diversity of actors. Thus, coastal governance encompasses not only the actions of the national/local state but also those of other actors, such as communities, businesses, and civil society organizations, starting with policy problems related by these different actors, their solutions, the decision making, the implementation, and the achievement of those solutions [1–4].

Coastal governance is a topic that has become increasingly important due to the growing interaction between productive activities, commercial flows, habitability in coastal zones, and their effects on the ecosystem [5–10], which has forced the incorporation of participatory and collaborative processes in territorial management and governance [11–16]. The growing interest from the scientific community in the coastal governance phenomenon is reflected in the increase in the articles published in journals indexed in the Web of Science (WoS) databases in the last fifteen years, highlighting research generated in countries, such as Australia [14,17], Canada [18,19], and the USA [20,21].

To achieve the research aims, bibliometric/scientometric methods were used to address questions, such as: What is the evolution of scientific production in recent decades on research on coastal governance? What is the geographical and organizational distribution of research on coastal governance? Which authors are the main researchers on coastal governance? Which journals on coastal governance tend to be more influential for scientific production?

1.1. Fisheries Management and Coastal Governance

Climate change, marine habitat pollution, and indiscriminate fishing are rapidly affecting the marine environment; therefore, governments are intensifying measures to mitigate these effects and promote sustainable development [22–25].

Among these measures, Marine Protected Areas (MPAs) have had a positive effect on conservation processes around the world, through co-management between public and private entities, considering a collaborative strategy, technological introduction, aquaculture development, and tourism promotion [7,8,26]. The challenges presented by Marine Protected Areas are to have guidelines for conflict resolution, organizations' rights recognition, and integration of values and local culture, seeking a balance between the different stakeholders and their own interests and vulnerabilities [11,13,27,28]. Among the weaknesses encountered are clashes between the organizations and the public sector, the lack of rules for co-management between the state and the beneficiaries, instabilities in power groups, ideological, cultural, and political differences, and disagreements between national and local actors [25,29].

Another approach for coastal territories' sustainability has been the implementation of integrated management focuses [12,30,31]. This approach promotes management decentralization, municipal governance power, cooperation with local academic institutions, and civil society participation to achieve resource conservation and preserve the local identity and cultural heritage [32–34]. However, the challenges include securing property rights in small-scale coastal fisheries, stopping illegal fishing, and limiting environmentally damaging fishing equipment, fostering the organizations' empowerment, a balance in co-management, and the internalization of biodiversity conservation [35–37].

Finally, ecosystem-based assessments help to reduce uncertainty in resource inventories and provide ecological functional indicators, allowing for flexible policy integration, social and ecological justice, collaborative governance, and local autonomy over coastal resource management [38–43]. To achieve effective long-term protection, conventional and centralized conservation approaches are not sufficient [9,44]. Challenges in marine ecosystem planning include resource scarcity management, scientific uncertainty, policy design to promote species conservation and recovery, coordination among the activities and practices of the various actors in planning, sensitivity to climate-change-driven species redistribution, and improving social connectedness [4,14,45–49].

1.2. Policies of Coastal Governance

Researchers have used various terms, such as agency, incentives, governance, environmental management, and systemic complexity, to refer to the policy concept. Agency has been treated as the work of actors in the creation, maintenance, and disruption of organizational practices [10,50], associated with the collaboration and participation of the actors involved in these processes, identifying collaborative structures and substructures, generally referred to as collaborative networks whose policy outcomes will depend on the characteristics of these structures and substructures.

Co-management has been used by authors, such as Marin et al. [51] and Linke et al. [52], when referring to the multiplicity of actors that optimize the management of resources and social capacities that allow the forms and functions of adaptive organizational systems to be modified in contexts of adaptive and sustainable governance. Co-management recognizes the multiplicity and types of actors that relate and interrelate [10,51,53] in the planning and implementation processes related to adaptive strategies and interactions that tend

to occur at the local level [53], noting the relevance of participatory processes to balance sustainability with survival, community development, and urbanization [54].

Other studies have noted the agency difficulties, such as the institutional fragmentation and constant change processes [15], the identification of dense collaborative substructures, with an increasing specificity and complexity of collaborative links [10], the integrated agency paradox [50], the diversity of rationalities involved [19], as well as the coexistence of conflicting preferences in coastal management in the face of various climate scenarios [54].

Economic incentives and coastal economic, social, and territorial transformations are other aspects that research has examined, addressing the economic incentives and fiscal reform effects on land development [55], the local public finance effects, urbanization, economic policy transformation [56], compensation policies in land acquisition processes, and new problems, such as displaced people [57]. This shows the relevance of financial management in policies involving coastal land use.

The governance concept has been linked to participatory and collaborative policy processes, as evidenced when referring to the work of actors and the legitimacy of practices in territorial management [50] or polycentric multistakeholder governance at various scales that exceed the state [58]. This can be related to local governance levels [53], governance practices [59], the regional approach to maritime governance in the pan-European context [15], ecosystem services governance [19], marine/maritime spatial planning (MSP), as an approach involving an adaptive ecosystem-based approach [42], and Integrated Management (IM) of coastal and marine activities [14].

Likewise, challenges emerge for environmental governance and restoration, marine and coastal environments [60,61], and environmental governance [17]. Forms of rescaled environmental governance have been identified [17], which, in some cases, would lead to their identification as pendulum swings [17]. These challenges could give way to adaptive governance, sustainable resource management [52], and a blue economy (BE) [62].

This has been associated with a systemic spatial complexity and the interests of different actors, identifying multifaceted problems that require complex arrangements [63], a conflicting spatial competition between economic, maritime, and biodiversity activities that can lead to the fragmentation of policies, private initiatives, and regulations [15]. The vulnerability of coastal regions is an open question for coastal use, linked to coastal tourism governance and other land uses [64,65]. A particular challenge has also been observed in local governments in the face of little or no adequate international governance in response to climate change, ecosystem integration, and the establishment of systemic governance [16].

Environmental management has gained relevance in studies associated with policies, identifying terms related to: watershed approach [17], the combination of complex nature and coastal uses [64], ecosystem-based management (EBM), as an integral approach to improve the environment and collaborate on public policies and public administration [10], ecosystem service use improvement to increase human well-being [19], long-term uncertainty in the face of climate change risks and its impacts [54], the coastal zone's characterization as a complex socioecological system [66], the focus on poor people in access to coastal resources [67], territorial use rights for small-scale fisheries [68], ecosystem service classification and adaptation to vulnerability [69], and finally, the linkage with the Sustainable Development Goals [62].

2. Materials and Methods

The method used was oriented to scientific measurement, based on documented scientific research, according to bibliometric laws. Scientometrics as a kind of meta-analysis [70] focuses on studying what, how much, when, who, and where knowledge is produced [71], and it is a method recently used in subjects related to this study [72–81].

A set of articles were extracted from the Web of Science Core Collection (WoS), using the databases: the Science Citation Index Expanded (SCIE) with 178 indexing categories and the Social Sciences Citation Index (SSCI) with 58 indexing categories; both indexes

were included in the Journal Citation Report (JCR-WoS) and conformed to high-quality journals, whose impact is calculated annually based on the average citations received. These articles were identified with the search vector TS = (Coastal AND Governance), using the topics field label (TS), Boolean operator (AND), and simultaneously incorporating the concepts of coastal and governance. Time restrictions were left free, to the date of extraction (29 September 2021) from the year 1900 for SCI-E and 1956 for SSCI, the restrictions on access to the WoS database. [82].

The annual growth of research publications on the recovered article set was examined based on the Price Law [83,84], searching for possible exponential growth, based on the annual number of published articles and the adjusted coefficient of determination (R-squared) for the exponential growth rate of these publications over time. For data and metadata analysis, VOSviewer (CWTS—Leiden University, Leiden, The Netherlands) [85] was used, as well as the bibliometric laws of: (1) Lotka to identify the prolific authors set with the highest number of published articles on the coastal governance topic, a set estimated by the square root of the total authors contributing to the article set analyzed [86]; the author identification process by VOSviewer, based on the database extracted from WoS, incorporated the total of authors registered as data and metadata for each article analyzed; and (2) Zipf, which recognizes the exponential decrease in the use frequency of words inside a knowledge corpus [87–89]; therefore, there are words that are used very frequently and others that are present in the literature rarely. This law was applied in this case for the empirical determination of the keywords plus metadata incorporated in the database extracted from WoS with the highest occurrence frequency in the total set of articles studied [90].

3. Results

The 2043 articles on coastal governance, extracted on 29 September 2021, presented a temporal exponential growth, with an R^2 of 89.96% between 1991 and 2021, excluding, in this adjustment, one isolated article published in 1978 (see Supplementary Material Table S1: CGv2.txt to be read with bibliometric software and a spreadsheet_CG.xlsx for standard use). This accounted for an overall critical researcher mass, interested in increasing the knowledge corpus on this topic. In addition to this, the temporal distribution of the 2043 articles published on coastal governance in 386 JCR-WoS journals is presented in Figure 1.

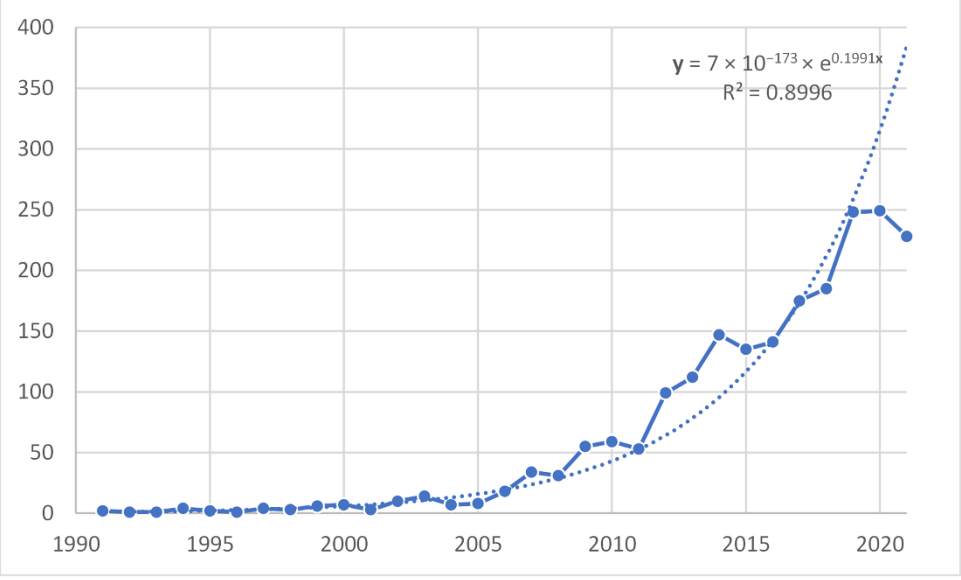

Figure 1. Publication time series and trend on coastal governance.

3.1. Global Scientific Benchmarks in Coastal Governance Studies

At the global level, the contribution of countries or territories to the scientific production documented on coastal governance studies in JCR-WoS journals varied from one country or territory to another, with their contribution commonly being at low-production levels. In this way, it was possible to identify the global referents for exceeding the average of the geographical set.

Above the average global contribution, 29 countries or territories were identified as contributing 28 or more articles, and 461 organizations contributed 3 or more articles (see Figure 2). Other background information provided by the descriptive analysis was the high atomization of scientific production by territory and institution, corroborated by mode 1 (see Table 1, mode) and the variation coefficient that gave us a value of 2.38 for the territory and 1.76 for the organizations, confirming high variability. The distribution of the data was represented by a leptokurtic curve (see Table 1, kurtosis), which indicated that most of the data were concentrated around the mean and with a higher concentration above the mean, as indicated by the skewness coefficient (see Table 1, skewness).

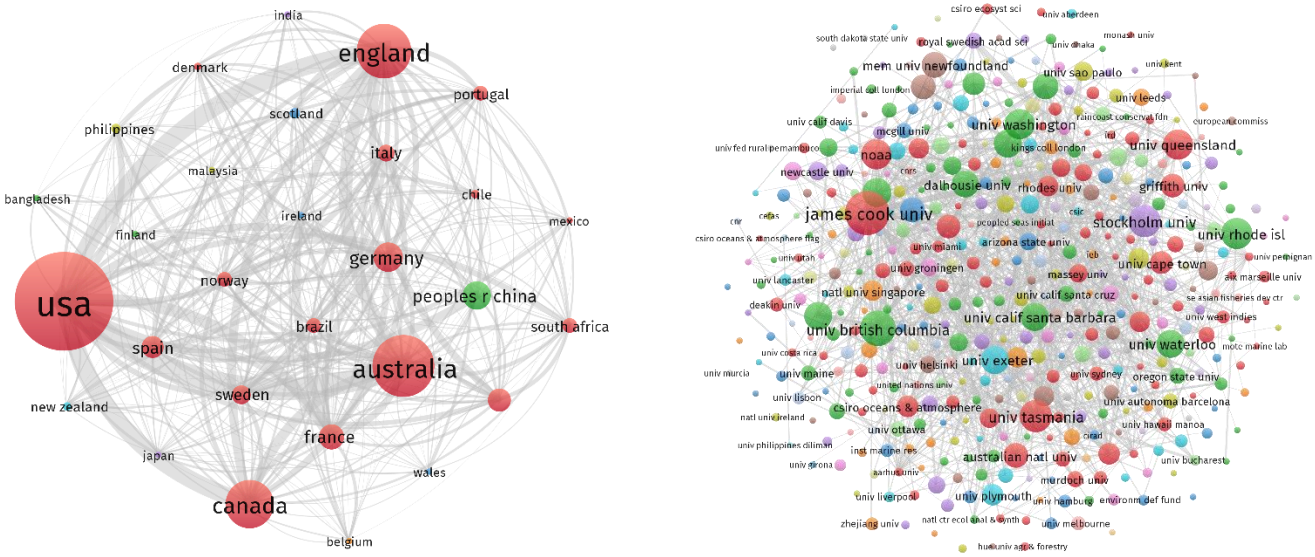

Figure 2. Co-authorship networks. (**a**) Co-authorship at a national level. (**b**) Co-authorship at an organizational level (1978–2021).

Table 1. Descriptive statistics of territorial and organizational contribution to coastal governance studies (1978–2021).

Statistics	Country/Territory	Organization
Mean	27.02	2.28
Standard error	5.52	0.08
Median	5	1
Mode	1	1
Standard deviation	64.41	4.01
Variation coefficient	2.38	1.76
Kurtosis	26.69	64.76
Skewness coefficient	4.69	6.74
Minimum	1	1
Maximum	503	69
Count	136	2587

Figure 2a highlights countries/territories, such as the USA, Australia, England, and Canada, with over 250 published articles (see Table 2, rank A). Figure 2b highlights orga-

nizations, such as James Cook University, the University of British Columbia, Stockholm University, and the University of Tasmania, with over 40 articles (see Table 2, rank B).

Table 2. Main global references to territorial and organizational contribution on coastal governance studies (1978–2021).

Rank A	Country/ Territory	Articles	Contributionto 2043	Average Citations	Rank B	Organization [1]	Country/ Territory	Articles	Contribution to 2043	Average Citations
1	USA	503	25%	31	1	James Cook Univ	Australia	69	3%	38
2	Australia	318	16%	31	2	Univ British Columbia	Canada	48	2%	36
3	England	283	14%	35	3	Stockholm Univ	Sweden	42	2%	72
4	Canada	251	12%	25	4	Univ Tasmania	Australia	41	2%	18
5	Germany	153	7%	20	5	Univ Rhode Island	USA	39	2%	33
6	Peoples R China	147	7%	12	6	NOAA [2]	USA	37	2%	52
7	France	132	6%	20	7	Univ Queensland	Australia	37	2%	17
8	Netherlands	121	6%	28	8	Univ Washington	USA	37	2%	41
9	Spain	116	6%	27	9	Duke Univ	USA	35	2%	41
10	Sweden	100	5%	39	10	UC Santa Barbara	USA	33	2%	71

[1] Names used according to the data in the WoS database. [2] Considering 12 other forms of NOAA affiliation, 17 additional articles were reported in this period (NOAA Fisheries, NOAA Int Sect Off Gen Counsel, NOAA Marine Natl Monuments Program, NOAA NCEI, NOAA NMFS, NOAA NOS, NOAA Ocean Initiat Program, NOAA Papahanaumokuakea Marine Natl Monument, NOAA Scientist Emeritus, NOAA Southwest Fisheries Sci Ctr, NOAA Star, and NOAAs Off Natl Marine Sanctuaries).

Table 2 details the contribution to the 2043 documents on coastal governance. The top ten countries contributing to the production of these papers participated in authorship or co-authorship in over 5% of the total articles published, with the USA (25%) and Australia (16%) being the major contributors overall. This is reflected at the level of the top ten organizational contributions, with five affiliation organizations from the USA (Univ Rhode Island, NOAA, Univ Washington, Duke Univ, and UC Santa Barbara) and three affiliation organizations from Australia (James Cook Univ, Univ Tasmania, and Univ Queensland), with James Cook Univ as the organization with the highest global contribution in Australia, with 3%, given its participation in 69 articles.

Finally, with respect to individual authors who manage to be referents for their level of scientific production on coastal governance (1978–2021), of the 6826 authors identified according to Lotka's law, the prolific authors should be approximately 83 (= sqrt (6826)); we chose to recognize 99 of them with a production of five or more articles (up to 20 were observed) for the period studied. These 99 authors were adjusted to 98 by merging the WoS records of the authors: Bennett, Nathan J. (10 articles), and Bennett, Nathan James (6 articles).

Figure 3 allows us to identify, in the larger nodes, the authors who, among 98 cases, presented a much higher number of publications. The authors who were at the second concentration level (sqrt (98) $\approx$ 10) are detailed below. When considering 10 authors, this was equivalent to a scientific production level of 10 publications within the article set analyzed (see Table 3); therefore, 12 authors were considered to include all authors who had published at least 10 articles.

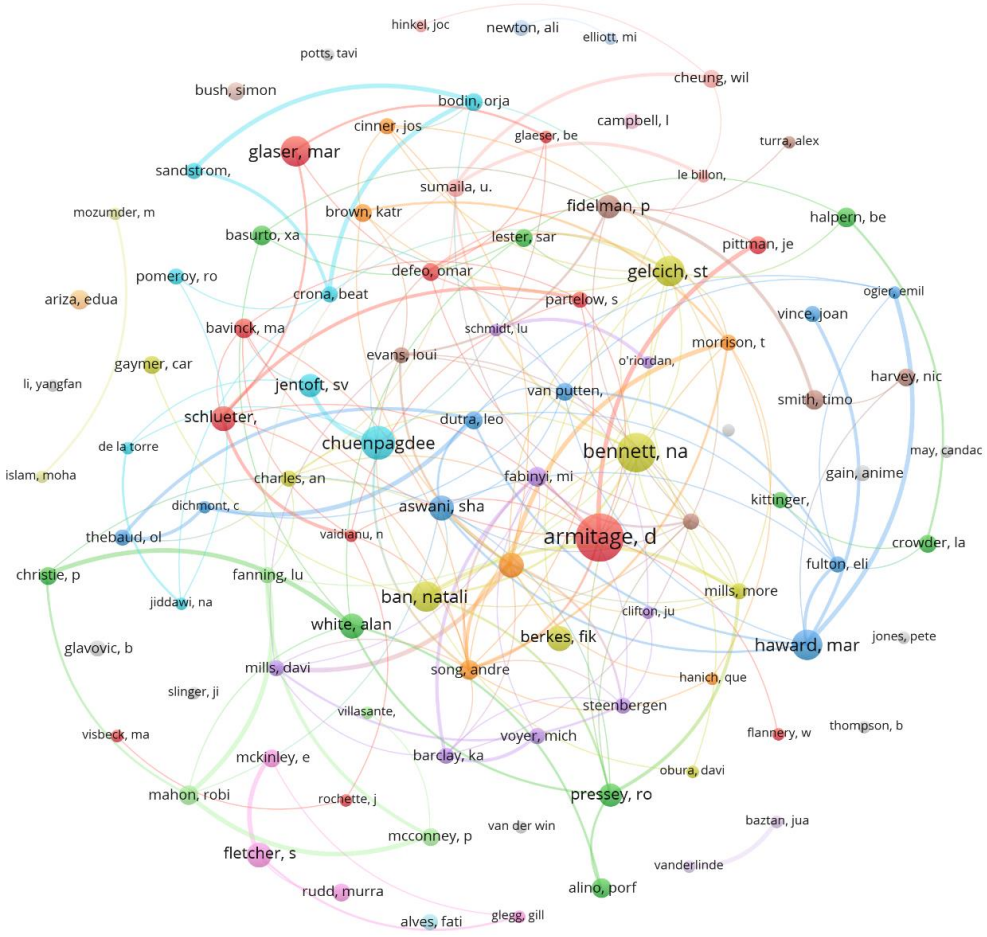

Figure 3. Co-authorship network, main researchers.

Table 3. Authors with the highest production in the co-authorship main researcher network.

Author	Network	Articles	Average Citations	Institutional Affiliation
Armitage, Derek	Red	20 *	12	Univ Waterloo, Canada
Bennett, Nathan J.	Yellow greenish	16 *	60	Univ British Columbia, Canada
Chuenpagdee, Ratana	Violet	14 *	46	Mem Univ, Canada
Ban, Natalie C.	Yellow greenish	12	25	Univ Victoria, Canada
Gelcich, Stefan	Yellow greenish	12	73 **	Pontificia Univ Católica Chile, Chile
Glaser, Marion	Red	12	21 **	Univ Bremen, Germany
Haward, Marcus	Green	12 *	27	Univ Tasmania, Australia
Aswani, Shankar	Green	10	28 **	Rhodes Univ, South Africa
Berkes, Fikret	Yellow greenish	10	39	Univ Manitoba, Canada
Cohen, Philippa J.	Orange	10 *	32	James Cook Univ, Australia
Fletcher, Stephen	Lavender	10 *	24	Univ Plymouth, England
Schlueter, Achim	Red	10	13	Jacobs Univ Bremen, Germany
White, Alan T.	Blue	10 *	66	Tetra Tech, Indonesia

* Co-author with the highest publications in their network. ** Co-author with the highest average citations compared to other co-authors in their network.

3.2. Scientific Trends in Coastal Governance Studies

Researchers from new countries are joining the discussion on coastal governance given the large number of new territorial affiliations shown in Figure 4 in yellow, orange, and red.

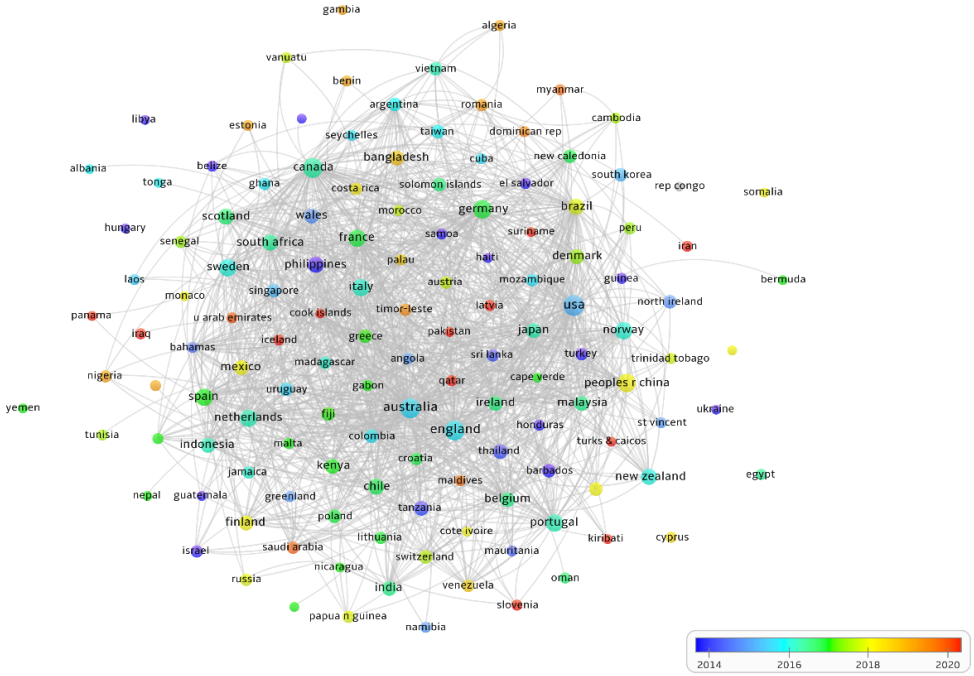

Figure 4. Temporal national co-authorship network.

For the 2974 keywords plus identified by Clarivate (WoS proprietary company), 1887 plus keywords only had one occurrence, and, in general, its exponential decrease fits a power regression (see Appendix A). There were 53 most relevant keywords plus according to Zipf's Law with 33 or more occurrences (sqrt (2974) = 54), from 33 (state, adaptive governance, and areas) to 590 (governance) occurrences. We highlighted several concepts used more recently, as shown in Figure 5 in red (values expressed in average years of publication), among them, some specific terms, such as (number of occurrences in parentheses): challenges (113), climate change (218), communities (46), ecosystem services (68), impact (56), perceptions (44), risk (49), sea-level rise (60), and vulnerability (125).

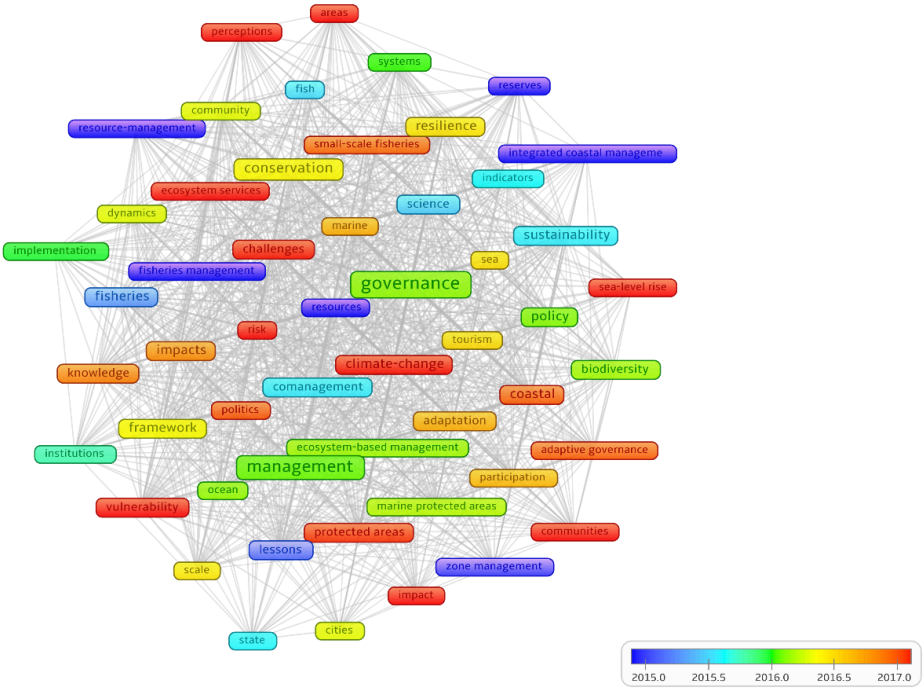

Figure 5. Keywords plus temporal co-occurrence graph.

More recently used concepts (mean publication year: 2017), such as ecosystem services (68 occurrences), communities (46), sea-level rise (60), protected areas (86), climate change (218), and a set of concepts thematically related to vulnerability (125), challenges (113), risks (56), and impacts (49), appear in the figure; the frame label size reflects the occurrence level, and the lines indicate the simultaneous use in articles or co-occurrence.

Figure 6 shows the concentration of publications on coastal governance studies between 2002 and 2021, the period in which 2008 (98%) of the 2043 articles were published, in the journals Marine Policy and Ocean Coastal Management. However, there is a notable increase in the number of publications in the fully open access journals Frontiers in Marine Science and Sustainability. Table 4 shows some of the characteristics of these four journals.

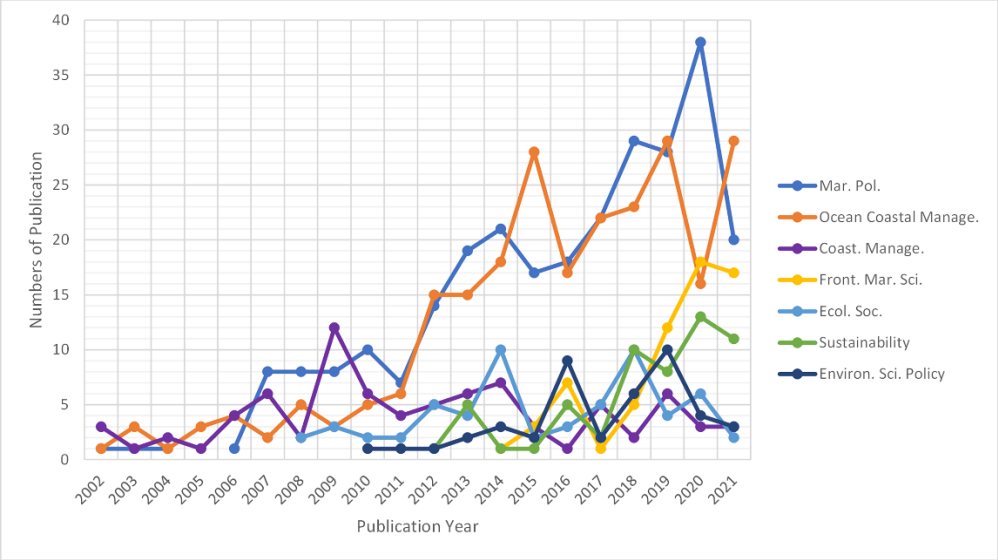

Figure 6. Journal publication trends (last 20 years).

Table 4. Journals with the highest numbers of publications in the journal trends.

Journal	WoS Categories	Publisher	IF (2020)	Best Quartile (2020)	Published Articles						
					2017	2018	2019	2020 *	2021 *	Total OA **	Total
Mar. Pol.	Environ. Stud.; Int. Relat.	Elsevier (Oxford, ENG)	4.173	Q1	23	29	28	38	40	59	158
Ocean Coastal Manage.	Oceanogr.; Water Resour.	Elsevier (Oxford, ENG)	3.284	Q1	23	23	29	16	39	30	130
Front. Mar. Sci.	Environ. Sciences; Mar. Freshw. Biol.	Frontiers Media (Lausanne, CHE)	4.912	Q1	1	5	12	18	23	59	59
Sustainability	Green Sustain. Sci. Technol.; Environ. Sci.; Environ. Stud.	MDPI (Basel, CHE)	3.251	Q2	2	10	8	13	17	50	50
Total, selection	4 journals				49	67	77	85	119	198	397
Total, journals *	441 journals				198	224	315	316	356	692	1409

* Data updated from WoS on 27 March 2022. ** Articles published with open access (reading access fees covered by the authors).

From Table 4, we can observe that these main journals that cover coastal governance studies belong mainly to the first quartile in their respective WoS categories, given that their impact factors (2020) fluctuated between 3251 and 4912, and the set of articles with open access was close to 50% of the total publications [91,92]. The highest impact factor (2020) corresponded to the journal "Frontiers in Marine Science", and thematically, the categories converged mainly to Environmental Studies and Environmental Sciences, al-

though with double indexing variants that fluctuated between science, technology, and international politics.

4. Discussion

This article allows for the analysis of coastal systems studies from a management and political decision-making perspective and is, therefore, in line with previous bibliometric work by Birch et al. [93] on coastal zone management and Chalastani et al. [94] on marine spatial planning. However, given the breadth of the term governance, it can also approximate specific bibliometric analyses on estuarine system aspects [95], flood vulnerability [96], and coastal biogeochemistry [97].

The analysis was based on a set of 2043 articles analyzed from 386 journals, and their data and metadata were above the range (318 to 1316 articles from 118 to 309 journals) of other related bibliometrics identified [94–96]; in the case of Birch et al. [93], their sampling was even broader (5461 articles from 891 journals) by covering a topic as extensive as coastal zone management. The work by Gattuso et al. [97] seems, to us, to be an exception by adding terms in an inclusive way (with OR Boolean operators) to cover the broad spectrum of 14,743 articles in coastal biogeochemistry. Moreover, the authors' coverage analyzed (6826) was higher than those reported in other papers [94,95], although this figure depends on the co-authorship customs of each discipline and journal. Finally, VOSviewer was used as data and metadata analysis software, the same choice as other related bibliometrics [94,95], although, in general, this type of analysis is supported by specialized software [94,96] or specific Rstudio packages [93,95]. Moreover, we see the use of bibliometric laws, in this case, Price [86,87], Lotka [89], and Zipf [90], as a value in favor of this article to provide a methodological contribution to coastal governance studies.

The results reported with publication time series were subjected to growth adjustments, with R2 values from 83.89% to 94.49%, showing adjustments with respect to quadratic [93,95] or exponential functions [94]; in this respect, we were inclined to an exponential adjustment reporting values in that range [98]. Moreover, the use of Lotka's law [89] allowed us to incorporate, as an additional value, objective, and replicable criteria for the selection of prolific authors, which was also achieved for the establishment of relevant plus keywords by means of Zipf's law [90]. The countries with the highest production (USA, Australia, England, and Canada) were also reflected in the results reported in other related bibliometrics [93–95,97], and in the case of the reference journals identified in Table 4, there was agreement with the case of Marine Policy [93,94], Ocean & Coastal Management [93,94], and Frontiers in Marine Science [94]. The same was also true in the temporal publications that we presented in this article, although in some cases, this information was only partial [93]. Thus, our article complements previous studies on coastal zone management and marine territorial planning by providing knowledge on coastal governance research, so far identified in bibliometric studies only at the marine governance [93,94] and ocean governance [94] levels.

5. Conclusions

From the present coastal governance bibliometric study, we can conclude that, based on the research questions and on empirical evidence gathered from three decades of study, coastal governance is evolving positively at an exponential growth rate, allowing the generation of an ever-greater volume of knowledge on this topic.

As for the territorial contribution to scientific production, the 2043 articles studied were the result of the interconnected effort made by authors from 136 countries/territories; several of these were new contributors, but in total, they contributed an average of 27 articles in these thirty years, and in 10 cases, they made at least 100 contributions, with authors from the USA, Australia, England, and Canada standing out with more than 250 articles.

At the organizational level, there were 2587 contributors with 2 to 3 articles on average, but with peaks reaching 69 publications in the case of James Cook University (Australia), followed by the University of British Columbia (Canada), Stockholm University (Sweden),

and the University of Tasmania (Australia). This serves as context for the identification of 12 prolific authors with a contribution of the publication of 10 to 20 articles, some linked to the universities of James Cook, British Columbia, and Tasmania, and with links to the reference countries Australia (two cases), Canada (five), England (one), and Germany (two) but also highlighting authors from Chile, Indonesia, and South Africa.

This research was published mainly in a group of four journals, which gathered a third of the scientific production analyzed in coastal governance (683 articles), marking a growing trend in publications on this topic, a situation that is also being recognized by other contemporary bibliometrics in the marine and coastal management fields, with 50% of articles now published in open access format. New thematic trends include emerging concepts related to coastal sustainability (ecosystem services, communities, sea-level rise, protected areas, and climate change) and coastal management (vulnerability, challenges, risks, and impacts).

Potential limitations were the lack of greater depth in specific coastal governance areas, such as fisheries and policy areas, aspects that we considered in a general way. However, we opted for taking a less classical and more panoramic viewpoint in search of new trends, such as those observed.

In terms of future research, it seems relevant, from a scientometric perspective, to delve into the marked trend towards open access publications in the four most prolific journals and how this could improve their citation value rates, author prominence, and core and peripheral mobility. From the thematic implication of coastal governance, there are scale challenges in analyses at the ocean governance and port governance levels that can be explored and related to our findings. Moreover, the disciplinary interfaces with the economy in terms of the blue economy [76] and, at the geopolitical level, their impacts are other variants to be explored [99].

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/jmse10060751/s1, Table S1: CGv2.txt, Table S2: spreadsheet_CG.xlsx.

Author Contributions: Conceptualization, N.C.-B. and A.V.-M.; methodology, A.V.-M.; software, A.V.-M. and G.S.-S.; validation, N.C.-B.; formal analysis, A.V.-M. and N.C.-B.; data curation, A.V.-M.; writing—original draft preparation, L.A.-S., N.C.-B. and G.S.-S.; writing—review and editing, A.V.-M.; project administration, A.V.-M.; funding acquisition, N.C.-B., G.S.-S. and A.V.-M. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement: Not applicable.

Data Availability Statement: The analyzed dataset has been included as Supplementary Materials.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Zipf Law

This appendix presents the outcomes of fitting keyword plus usage occurrence to a power regression ($y = ax^{\beta}$).

Table A1. Model Summary *.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.970	0.940	0.940	0.228

* The independent variable is ID.

Table A2. ANOVA *.

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	2416.222	1	2416.222	46,385.232	0.000
Residual	153.406	2945	0.052		
Total	2569.628	2946			

* The independent variable is ID.

Table A3. Coefficients *.

Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
ln(ID)	−0.911	0.004	−0.970	−215.372	0.000
(Constant = a)	1006.893	30.087		33.466	0.000

* The dependent variable is ln(occurrences).

References

1. Bremer, S.; Glavovic, B. Mobilizing Knowledge for Coastal Governance: Re-Framing the Science-Policy Interface for Integrated Coastal Management. *Coast. Manag.* **2013**, *41*, 39–56. [CrossRef]
2. Hofmeester, C.; Bishop, B.; Stocker, L.; Syme, G. Social cultural influences on current and future coastal governance. *Futures* **2012**, *44*, 719–729. [CrossRef]
3. Herbst, D.F.; Gerhardinger, L.C.; Hanazaki, N. Linking User-Perception Diversity on Ecosystems Services to the Inception of Coastal Governance Regime Transformation. *Front. Mar. Sci.* **2020**, *7*, 83. [CrossRef]
4. Scherer, M.E.G.; Asmus, M.L. Modeling to evaluate coastal governance in Brazil. *Mar. Policy* **2021**, *129*, 104501. [CrossRef]
5. Ansong, J.; McElduff, L.; Ritchie, H. Institutional integration in transboundary marine spatial planning: A theory-based evaluative framework for practice. *Ocean Coast. Manag.* **2021**, *202*, 105430. [CrossRef]
6. Barreto, G.; Di Domenico, M.; Medeiros, R. Human dimensions of marine protected areas and small-scale fisheries management: A review of the interpretations. *Mar. Policy* **2020**, *119*, 104040. [CrossRef]
7. Canovas-Molina, A.; Garcia-Frapolli, E. Untangling worldwide conflicts in marine protected areas: Five lessons from the five continents. *Mar. Policy* **2020**, *121*, 104185. [CrossRef]
8. Diedrich, A.; Stoeckl, N.; Gurney, G.; Esparon, M.; Pollnac, R. Social capital as a key determinant of perceived benefits of community-based marine protected areas. *Conserv. Biol.* **2017**, *31*, 311–321. [CrossRef]
9. Eger, S.; Doberstein, B. Shared governance arrangements and social connectivity: Advancing large-scale coastal and marine conservation initiatives in the Dominican Republic. *Int. J. Sustain. Dev. World Ecol.* **2019**, *26*, 210–225. [CrossRef]
10. Bodin, O.; Sandstrom, A.; Crona, B. Collaborative Networks for Effective Ecosystem-Based Management: A Set of Working Hypotheses. *Policy Stud. J.* **2017**, *45*, 289–314. [CrossRef]
11. Glaser, M.; Gorris, P.; Ferreira, B.; Breckwoldt, A. Analysing Ecosystem User Perceptions of the Governance Interactions Surrounding a Brazilian Near Shore Coral Reef. *Sustainability* **2018**, *10*, 1464. [CrossRef]
12. Kelly, C.; Ellis, G.; Flannery, W. Conceptualising change in marine governance: Learning from Transition Management. *Mar. Policy* **2018**, *95*, 24–35. [CrossRef]
13. Mouro, C.; Santos, T.; Castro, P. Past-present discontinuity in ecological change and marine governance: An integrated narrative approach to artisanal fishing. *Mar. Policy* **2018**, *97*, 163–169. [CrossRef]
14. Stephenson, R.; Hobday, A.; Cvitanovic, C.; Alexander, K.; Begg, G.; Bustamante, R.; Dunstan, P.; Frusher, S.; Fudge, M.; Fulton, E.; et al. A practical framework for implementing and evaluating integrated management of marine activities. *Ocean Coast. Manag.* **2019**, *177*, 127–138. [CrossRef]
15. Van Tatenhove, J.P.M. How to turn the tide: Developing legitimate marine governance arrangements at the level of the regional seas. *Ocean Coast. Manag.* **2013**, *71*, 296–304. [CrossRef]
16. Wamsler, C.; Luederitz, C.; Brink, E. Local levers for change: Mainstreaming ecosystem-based adaptation into municipal planning to foster sustainability transitions. *Glob. Environ. Chang.* **2014**, *29*, 189–201. [CrossRef]
17. Cohen, A. Rescaling environmental governance: Watersheds as boundary objects at the intersection of science, neoliberalism, and participation. *Environ. Plan. A* **2012**, *44*, 2207–2224. [CrossRef]
18. Armitage, D.; Marschke, M.; Tuyen, T.V. Early-stage transformation of coastal marine governance in Vietnam? *Mar. Policy* **2011**, *35*, 703–711. [CrossRef]
19. Bennett, E.M.; Cramer, W.; Begossi, A.; Cundill, G.; Diaz, S.; Egoh, B.N.; Geijzendorffer, I.R.; Krug, C.B.; Lavorel, S.; Lazos, E.; et al. Linking biodiversity, ecosystem services, and human well-being: Three challenges for designing research for sustainability. *Curr. Opin. Environ. Sustain.* **2015**, *14*, 76–85. [CrossRef]
20. Tallis, H.; Levin, P.S.; Ruckelshaus, M.; Lester, S.E.; McLeod, K.L.; Fluharty, D.L.; Halpern, B.S. The many faces of ecosystem-based management: Making the process work today in real places. *Mar. Policy* **2010**, *34*, 340–348. [CrossRef]

21. Dannenberg, A.L.; Frumkin, H.; Hess, J.J.; Ebi, K.L. Managed retreat as a strategy for climate change adaptation in small communities: Public health implications. *Clim. Chang.* **2019**, *153*, 1–14. [CrossRef]
22. Vince, J.; Hardesty, B.; Wilcox, C. Progress and challenges in eliminating illegal fishing. *Fish Fish.* **2021**, *22*, 518–531. [CrossRef]
23. Cinner, J.; Adger, W.; Allison, E.; Barnes, M.; Brown, K.; Cohen, P.; Gelcich, S.; Hicks, C.; Hughes, T.; Lau, J.; et al. Building adaptive capacity to climate change in tropical coastal communities. *Nat. Clim. Chang.* **2018**, *8*, 117–123. [CrossRef]
24. Gopalakrishnan, S.; Landry, C.; Smith, M. Climate Change Adaptation in Coastal Environments: Modeling Challenges for Resource and Environmental Economists. *Rev. Environ. Econ. Policy* **2018**, *12*, 48–68. [CrossRef]
25. Thompson, B.; Friess, D. Stakeholder preferences for payments for ecosystem services (PES) versus other environmental management approaches for mangrove forests. *J. Environ. Manag.* **2019**, *233*, 636–648. [CrossRef]
26. Fabinyi, M. Environmental fixes and historical trajectories of marine resource use in Southeast Asia. *Geoforum* **2018**, *91*, 87–96. [CrossRef]
27. Aswani, S.; Albert, S.; Love, M. One size does not fit all: Critical insights for effective community-based resource management in Melanesia. *Mar. Policy* **2017**, *81*, 381–391. [CrossRef]
28. Loury, E.; Ainsley, S.; Bower, S.; Chuenpagdee, R.; Farrell, T.; Guthrie, A.; Heng, S.; Lunn, Z.; Al Mamun, A.; Oyanedel, R.; et al. Salty stories, fresh spaces: Lessons for aquatic protected areas from marine and freshwater experiences. *Aquat. Conserv. Mar. Freshw. Ecosyst.* **2018**, *28*, 485–500. [CrossRef]
29. Gorris, P. Mind the gap between aspiration and practice in co-managing marine protected areas: A case study from Negros Occidental, Philippines. *Mar. Policy* **2019**, *105*, 12–19. [CrossRef]
30. Rice, W.; Sowman, M.; Bavinck, M. Informing a conservation policy-praxis disjuncture: A 'commons' perspective to tackling coastal-marine community-conserved area implementation in South Africa. *Biol. Conserv.* **2021**, *261*, 109296. [CrossRef]
31. Pittman, S.; Rodwell, L.; Shellock, R.; Williams, M.; Attrill, M.; Bedford, J.; Curry, K.; Fletcher, S.; Gall, S.; Lowther, J.; et al. Marine parks for coastal cities: A concept for enhanced community well-being, prosperity and sustainable city living. *Mar. Policy* **2019**, *103*, 160–171. [CrossRef]
32. Ricart, S.; Rico-Amoros, A. Water for food, water for birds: How to manage conflicting rural-natural interfaces? Deepening on the socio-ecological system of El Hondo Natural Park (Alicante, Spain). *J. Rural Stud.* **2021**, *86*, 24–35. [CrossRef]
33. Quintana, A.; Basurto, X. Community-based conservation strategies to end open access: The case of Fish Refuges in Mexico. *Conserv. Sci. Pract.* **2021**, *3*, e283. [CrossRef]
34. Tilley, A.; Hunnam, K.; Mills, D.; Steenbergen, D.; Govanu, H.; Alonso-Poblacion, E.; Roscher, M.; Pereira, M.; Rodrigues, P.; Amador, T.; et al. Evaluating the Fit of Co-management for Small-Scale Fisheries Governance in Timor-Leste. *Front. Mar. Sci.* **2019**, *6*, 392. [CrossRef]
35. Partelow, S.; Glaser, M.; Arce, S.; Barboza, R.; Schluter, A. Mangroves, fishers, and the struggle for adaptive comanagement: Applying the social-ecological systems framework to a marine extractive reserve (RESEX) in Brazil. *Ecol. Soc.* **2018**, *23*, 19. [CrossRef]
36. Partelow, S.; Seara, T.; Pollnac, R.; Ruiz, V. Job satisfaction in small-scale fisheries: Comparing differences between Costa Rica, Puerto Rico and the Dominican Republic. *Mar. Policy* **2020**, *117*, 103949. [CrossRef]
37. Rakotomahazo, C.; Ravaoarinorotsihoarana, L.; Randrianandrasaziky, D.; Glass, L.; Gough, C.; Boleslas Todinanahary, G.; Gardner, C. Participatory planning of a community-based payments for ecosystem services initiative in Madagascar's mangroves. *Ocean Coast. Manag.* **2019**, *175*, 43–52. [CrossRef]
38. Qiu, W.; Zhu, X.; Zheng, M.; Liu, Y. Lessons from initiation to implementation of ICM programs in Xiamen: Key drivers and enabling environment for achieving social, environmental and economic sustainability. *Ocean Coast. Manag.* **2021**, *207*, 104600. [CrossRef]
39. DeRoy, B.; Darimont, C.; Service, C. Biocultural indicators to support locally led environmental management and monitoring. *Ecol. Soc.* **2019**, *24*, 21. [CrossRef]
40. Taljaard, S.; van Niekerk, L.; Weerts, S. The legal landscape governing South Africa's coastal marine environment-Helping with the 'horrendogram'. *Ocean Coast. Manag.* **2019**, *178*, 104801. [CrossRef]
41. Goncalves, L.; Oliveira, M.; Turra, A. Assessing the Complexity of Social-Ecological Systems: Taking Stock of the Cross-Scale Dependence. *Sustainability* **2020**, *12*, 6236. [CrossRef]
42. Gissi, E.; Fraschetti, S.; Micheli, F. Incorporating change in marine spatial planning: A review. *Environ. Sci. Policy* **2019**, *92*, 191–200. [CrossRef]
43. Retzlaff, R.; LeBleu, C. Marine Spatial Planning: Exploring the Role of Planning Practice and Research. *J. Plan. Lit.* **2018**, *33*, 466–491. [CrossRef]
44. Eger, S.; Stephenson, R.; Armitage, D.; Flannery, W.; Courtenay, S. Revisiting Integrated Coastal and Marine Management in Canada: Opportunities in the Bay of Fundy. *Front. Mar. Sci.* **2021**, *8*, 439. [CrossRef]
45. Pinsky, M.; Rogers, L.; Morley, J.; Frolicher, T. Ocean planning for species on the move provides substantial benefits and requires few trade-offs. *Sci. Adv.* **2020**, *6*, eabb8428. [CrossRef]
46. Fonner, R.; Bellanger, M.; Warlick, A. Economic analysis for marine protected resources management: Challenges, tools, and opportunities. *Ocean Coast. Manag.* **2020**, *194*, 105222. [CrossRef]
47. Pittman, J.; Armitage, D. Network Governance of Land-Sea Social-Ecological Systems in the Lesser Antilles. *Ecol. Econ.* **2019**, *157*, 61–70. [CrossRef]

48. Lagabrielle, E.; Lombard, A.; Harris, J.; Livingstone, T. Multi-scale multi-level marine spatial planning: A novel methodological approach applied in South Africa. *PLoS ONE* **2018**, *13*, e0192582. [CrossRef]
49. Fortnam, M. Forces opposing sustainability transformations: Institutionalization of ecosystem-based approaches to fisheries management. *Ecol. Soc.* **2019**, *24*, 33. [CrossRef]
50. Zietsma, C.; Lawrence, T.B. Institutional Work in the Transformation of an Organizational Field: The Interplay of Boundary Work and Practice Work. *Adm. Sci. Q.* **2010**, *55*, 189–221. [CrossRef]
51. Marin, A.; Gelcich, S.; Castilla, J.C.; Berkes, F. Exploring Social Capital in Chile's Coastal Benthic Comanagement System Using a Network Approach. *Ecol. Soc.* **2012**, *17*, 1. [CrossRef]
52. Linke, S.; Bruckmeier, K. Co-management in fisheries-Experiences and changing approaches in Europe. *Ocean Coast. Manag.* **2015**, *104*, 170–181. [CrossRef]
53. Nalau, J.; Preston, B.L.; Maloney, M.C. Is adaptation a local responsibility? *Environ. Sci. Policy* **2015**, *48*, 89–98. [CrossRef]
54. Tompkins, E.L.; Few, R.; Brown, K. Scenario-based stakeholder engagement: Incorporating stakeholders preferences into coastal planning for climate change. *J. Environ. Manag.* **2008**, *88*, 1580–1592. [CrossRef]
55. Lichtenberg, E.; Ding, C.R. Local officials as land developers: Urban spatial expansion in China. *J. Urban Econ.* **2009**, *66*, 57–64. [CrossRef]
56. Lin, G.C.S.; Yi, F. Urbanization of capital or capitalization on urban land? Land development and local publica finance in urbanizing China. *Urban Geogr.* **2011**, *32*, 50–79. [CrossRef]
57. Qian, Z. Land acquisition compensation in post-reform China: Evolution, structure and challenges in Hangzhou. *Land Use Policy* **2015**, *46*, 250–257. [CrossRef]
58. Morrison, T.H.; Adger, W.N.; Brown, K.; Lemos, M.C.; Huitema, D.; Hughes, T.P. Mitigation and adaptation in polycentric systems: Sources of power in the pursuit of collective goals. *Wiley Interdiscip. Rev. Clim. Chang.* **2017**, *8*, e479. [CrossRef]
59. Milligan, J.; O'Riordan, T.; Nicholson-Cole, S.A.; Watkinson, A.R. Nature conservation for future sustainable shorelines: Lessons from seeking to involve the public. *Land Use Policy* **2009**, *26*, 203–213. [CrossRef]
60. Vince, J.; Hardesty, B.D. Plastic pollution challenges in marine and coastal environments: From local to global governance. *Restor. Ecol.* **2017**, *25*, 123–128. [CrossRef]
61. Rudd, M.A. Scientists' perspectives on global ocean research priorities. *Front. Mar. Sci.* **2014**, *1*, 36. [CrossRef]
62. Lee, K.H.; Noh, J.; Khim, J.S. The Blue Economy and the United Nations' sustainable development goals: Challenges and opportunities. *Environ. Int.* **2020**, *137*, 105528. [CrossRef] [PubMed]
63. Howlett, M.; Vince, J.; del Rio, P. Policy Integration and Multi-Level Governance: Dealing with the Vertical Dimension of Policy Mix Designs. *Politics Gov.* **2017**, *5*, 69–78. [CrossRef]
64. Wesley, A.; Pforr, C. The governance of coastal tourism: Unravelling the layers of complexity at Smiths Beach, Western Australia. *J. Sustain. Tour.* **2010**, *18*, 773–792. [CrossRef]
65. Van Assche, K.; Hornidge, A.K.; Schluter, A.; Vaidianu, N. Governance and the coastal condition: Towards new modes of observation, adaptation and integration. *Mar. Policy* **2020**, *112*, 103413. [CrossRef]
66. Newton, A.; Weichselgartner, J. Hotspots of coastal vulnerability: A DPSIR analysis to find societal pathways and responses. *Estuar. Coast. Shelf Sci.* **2014**, *140*, 123–133. [CrossRef]
67. Glavovic, B.C.; Boonzaier, S. Confronting coastal poverty: Building sustainable coastal livelihoods in South Africa. *Ocean Coast. Manag.* **2007**, *50*, 1–23. [CrossRef]
68. Gelcich, S.; Cinner, J.; Donlan, C.J.; Tapia-Lewin, S.; Godoy, N.; Castilla, J.C. Fishers' perceptions on the Chilean coastal TURF system after two decades: Problems, benefits, and emerging needs. *Bull. Mar. Sci.* **2017**, *93*, 53–67. [CrossRef]
69. Sousa, L.P.; Sousa, A.I.; Alves, F.L.; Lillebo, A.I. Ecosystem services provided by a complex coastal region: Challenges of classification and mapping. *Sci. Rep.* **2016**, *6*, 22782. [CrossRef]
70. Kullenberg, C.; Kasperowski, D. What Is Citizen Science?—A Scientometric Meta-Analysis. *PLoS ONE* **2016**, *11*, e0147152.
71. Mikhaylov, A.; Mikhaylova, A.; Hvaley, D. Knowledge Hubs of Russia: Bibliometric Mapping of Research Activity. *J. Sci. Res.* **2020**, *9*, 1–10. [CrossRef]
72. Alexandridis, G.; Kavussanos, M.G.; Kim, C.Y.; Tsouknidis, D.A.; Visvikis, I.D. A survey of shipping finance research: Setting the future research agenda. *Transp. Res. Part E Logist. Transp. Rev.* **2018**, *115*, 164–212. [CrossRef]
73. Ducruet, C.; Panahi, R.; Ng, A.K.Y.; Jiang, C.M.; Afenyo, M. Between geography and transport: A scientometric analysis of port studies in Journal of Transport Geography. *J. Transp. Geogr.* **2019**, *81*, 102527. [CrossRef]
74. Munim, Z.H.; Saeed, N. Seaport competitiveness research: The past, present and future. *Int. J. Shipp. Transp. Logist.* **2019**, *11*, 533–557. [CrossRef]
75. Vega-Muñoz, A.; Arjona-Fuentes, J.M.; Ariza-Montes, A.; Han, H.; Law, R. In search of 'a research front' in cruise tourism studies. *Int. J. Hosp. Manag.* **2020**, *85*, 102353. [CrossRef]
76. Vega-Muñoz, A.; Salazar-Sepúlveda, G.; Contreras-Barraza, N. Identifying the Blue Economy Global Epistemic Community. *Water* **2021**, *13*, 3234. [CrossRef]
77. Williams, R.; Wright, A.J.; Ashe, E.; Blight, L.K.; Bruintjes, R.; Canessa, R.; Clark, C.W.; Cullis-Suzuki, S.; Dakin, D.T.; Erbe, C.; et al. Impacts of anthropogenic noise on marine life: Publication patterns, new discoveries, and future directions in research and management. *Ocean Coast. Manag.* **2015**, *115*, 17–24. [CrossRef]

78. Aksnes, D.W.; Browman, H.I. An overview of global research effort in fisheries science. *ICES J. Mar. Sci.* **2016**, *73*, 1004–1011. [CrossRef]
79. Lang, D.; Doh, S.; Choi, Y. Networks of international co-authorship in journal articles about Antarctic research, 1998–2015. *Polar Res.* **2020**, *39*, 3647. [CrossRef]
80. Vazquez, R.M.M.; Garcia, J.M.; Valenciano, J.D. Analysis and Trends of Global Research on Nautical, Maritime and Marine Tourism. *J. Mar. Sci. Eng.* **2021**, *9*, 93. [CrossRef]
81. Borja, A.; Marques, J.C.; Olabarria, C.; Quintino, V. Marine research in the Iberian Peninsula: A pledge for better times after an economic crisis. *J. Sea Res.* **2013**, *83*, 1–8. [CrossRef]
82. Vega-Muñoz, A.; Arjona-Fuentes, J.M. Social Networks and Graph Theory in the Search for Distant Knowledge in the Field of Industrial Engineering. In *Advanced Applications of Graph Theory in Modern Society*; Pal, M., Samanta, S., Pal, A., Eds.; IGI-Global: Hershey, PA, USA, 2020; pp. 397–418. [CrossRef]
83. Price, D. A general theory of bibliometric and other cumulative advantage processes. *J. Assoc. Inf. Sci.* **1976**, *27*, 292–306. [CrossRef]
84. Dobrov, G.M.; Randolph, R.H.; Rauch, W.D. New options for team research via international computer networks. *Scientometrics* **1979**, *1*, 387–404. [CrossRef]
85. Van Eck, N.J.; Waltman, L. Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics* **2010**, *84*, 523–538. [CrossRef] [PubMed]
86. Lotka, A.J. The frequency distribution of scientific productivity. *J. Wash. Acad. Sci.* **1926**, *16*, 317–321.
87. Nazarenko, A.; Zweigenbaum, P.; Bouaud, J.; Habert, B. Corpus-based identification and refinement of semantic classes. *Proc. AMIA Annu. Fall Symp.* **1997**, 585–589.
88. De Looze, M.A.; Lemarié, J. Corpus relevance through co-word analysis: An application to plant proteints. *Scientometrics* **1997**, *39*, 267–280. [CrossRef]
89. Wijewickrema, M.; Petras, V.; Dias, N. Selecting a text similarity measure for a content-based recommender system: A comparison in two corpora. *Electron. Libr.* **2019**, *37*, 506–527. [CrossRef]
90. Zipf, G.K. *Selected Studies of the Principle of Relative Frequency in Language*; Harvard University Press: Cambridge, MA, USA, 1932.
91. Evans, J.A.; Reimer, J. Open Access and Global Participation in Science. *Science* **2009**, *323*, 5917. [CrossRef]
92. Jahn, N.; Matthias, L.; Laakso, M. Toward transparency of hybrid open access through publisher-provided metadata: An article-level study of Elsevier. *J. Assoc. Inf. Sci. Technol.* **2021**, *73*, 104–118. [CrossRef]
93. Birch, T.; Reyes, E. Forty years of coastal zone management (1975–2014): Evolving theory, policy and practice as reflected in scientific research publications. *Ocean Coast. Manag.* **2018**, *153*, 1–11. [CrossRef]
94. Chalastani, V.I.; Tsoukala, V.K.; Coccossis, H.; Duarte, C.M. A bibliometric assessment of progress in marine spatial planning. *Mar. Policy* **2021**, *127*, 104329. [CrossRef]
95. Olisah, C.; Adams, J.B. Analysing 70 years of research output on South African estuaries using bibliometric indicators. *Estuar. Coast. Shelf Sci.* **2021**, *252*, 107285. [CrossRef]
96. Cho, S.Y.; Chang, H. Recent research approaches to urban flood vulnerability, 2006–2016. *Nat. Hazards* **2017**, *88*, 633–649. [CrossRef]
97. Gattuso, J.P.; Dawson, N.A.; Duarte, C.M.; Middelburg, J.J. Patterns of publication effort in coastal biogeochemistry: A bibliometric survey (1971 to 2003). *Mar. Ecol. Prog. Ser.* **2005**, *294*, 9–22. [CrossRef]
98. Tague, J.; Beheshti, J.; Rees-Potter, L.K. The Law of Exponential Growth: Evidence, Implications and Forecasts. *Libr. Trends* **1981**, *30*, 125–149. Available online: http://www.ideals.illinois.edu/bitstream/handle/2142/7181/librarytrendsv30i1k_opt.pdf (accessed on 28 March 2022).
99. Demir, K.A. Coastal Geopolitic Importance of Black Sea for Turkey. *J. Secur. Strateg.* **2019**, *32*, 573–604. Available online: https://www.ceeol.com/search/article-detail?id=818571 (accessed on 28 March 2022).