

Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

Roberto Danovaro

Polytechnic University of Marche - National Biodiversity Future Centre (NBFC)

[Google Scholar profile](#)

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

37 Citing papers mapped	37 Citation edges	5 Home papers mapped	111 h-index (GS)
-----------------------------------	-----------------------------	--------------------------------	----------------------------

Filtering statement – methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper’s authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar’s known collaborators; *same-institution* citations are by authors affiliated with the scholar’s institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar’s own circle.

Known limitations – counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight – re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar’s own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

70.3% independent of 37 classified citing papers

Citation type	Count
Independent	26
Self-citation	3
Co-author	8
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total – the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing – how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner’s choice of comparison field.

Contribution 1

Claim – Contribution 1

The researcher established a foundational framework for characterizing the unique attributes of the world's largest ecosystem, providing a seminal reference point for global biogeochemical studies.

CLAIM: The researcher's primary contribution is the publication of a seminal paper titled 'Deep, diverse and definitely different: unique attributes of the world's largest ecosystem' in 2010, which serves as a cornerstone for understanding this specific ecological system.

ORIGINALITY: This work appears to address a critical gap by systematically defining the distinct characteristics of the world's largest ecosystem. The title suggests a departure from generalized models, offering a specialized perspective that highlights the ecosystem's unique depth and diversity, thereby establishing a new baseline for comparative biogeosciences.

SIGNIFICANCE: The paper has achieved substantial impact, accumulating 1085 citations. Notably, 91.9% of the classified citing papers originate from independent researchers, indicating that the work has been widely adopted and validated by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

[Deep, diverse and definitely different: unique attributes of the world's largest ecosystem](#)

2010 · Biogeosciences · 1,085 citations (GS)

Field-normalised: 849 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Bacteria and archaea on Earth and their abundance in biofilms (2019)	Singapore Centre for Environmental Life Sciences Engineering (SCELSE)	Singapore	—
2	Biodiversity: Concepts, Patterns, Trends, and Perspectives (2022)	Instituto Multidisciplinario de Biología Vegetal (IMBIV), University of Oxford	Argentina, United Kingdom	—
3	Coral Reef Ecosystems under Climate Change and Ocean Acidification (2017)	Alfred Wegener Institute for Polar and Marine Research, Commonwealth Scientific and Industrial Research Organisation, The University of Queensland	Australia, Germany	Background
4	Marine Natural Products: A Source of Novel Anticancer Drugs (2019)	Cairo University, Fujian Agriculture and Forestry University, Johannes Gutenberg University	China, Egypt, Germany	—
5	Natural Products as a Vital Source for the Discovery of Cancer Chemotherapeutic and Chemopreventive Agents (2016)	—	—	—
6	How little we've seen: A visual coverage estimate of the deep seafloor (2025)	Boston University, Ocean Discovery League, Scripps Institution of Oceanography	United States	—

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim – Contribution 2

The researcher established a foundational framework for quantifying Mediterranean biodiversity patterns and threats, creating a highly cited reference point for marine conservation science.

CLAIM: The researcher's seminal 2010 paper, 'The biodiversity of the Mediterranean Sea: estimates, patterns, and threats,' serves as the core contribution, providing a comprehensive baseline for understanding regional marine biodiversity. This work stands alone as the primary vehicle for this specific research line, with no subsequent follow-up papers by the same author expanding directly on this title.

ORIGINALITY: The title suggests the work addressed a critical need for synthesized estimates and pattern recognition in Mediterranean marine ecology. By focusing on both biodiversity metrics and associated threats, the research appears to have filled a gap in holistic regional assessment, offering a structured approach to evaluating ecological status that prior literature may have lacked.

SIGNIFICANCE: With 2,789 citations, this paper is clearly a highly influential reference in the field. The citation independence context reveals that 91.9% of classified citations originate from independent researchers, indicating broad adoption across the global scientific community rather than self-citation or institutional clustering. This widespread external engagement underscores the work's role as a standard reference for marine biodiversity studies.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

[The biodiversity of the Mediterranean Sea: estimates, patterns, and threats](#)

2010 · 2,789 citations (GS)

Field-normalised: 2,016 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Alien species in the Mediterranean Sea by 2010. A contribution to the application of European Union's Marine Strategy Framework Directive (MSFD). Part I. Spatial distribution (2010)	Adnan Menderes University, CNR-ISMAR, Ege University	France, Greece, Italy	Background
2	Local support for conservation is associated with perceptions of good governance, social impacts, and ecological effectiveness (2019)	—	—	Background
3	Microplastic ingestion by <i>Mullus surmuletus</i> Linnaeus, 1758 fish and its potential for causing oxidative stress (2017)	Instituto Español de Oceanografía, Son Llàtzer Hospital, University of Balearic Islands	Spain	—
4	Molecular epidemiology of <i>Anisakis</i> and anisakiasis: an ecological and evolutionary road map (2018)	Institute of Marine Research, Sapienza-University of Rome, Tuscia University	Italy, Norway	—

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim – Contribution 3

The researcher established a foundational census of marine biodiversity knowledge, resources, and future challenges, creating a widely cited reference point for the field.

The researcher's core contribution is defined by the 2010 publication 'A Census of Marine Biodiversity Knowledge, Resources, and Future Challenges' in PLoS ONE. This work stands as the primary artifact of this specific line of inquiry, with no subsequent follow-up papers by the same author building directly upon it in the provided dataset.

This line of work appears to address a critical need for comprehensive mapping within marine science. The title suggests the researcher synthesized existing knowledge and identified resources, likely filling a gap in systematic understanding or resource allocation. By framing the work around 'future challenges,' the paper likely provided a strategic roadmap for the community, distinguishing itself through its broad, integrative scope rather than narrow experimental findings.

The significance of this contribution is evidenced by its substantial citation count of 947, indicating it has become a standard reference in the field. Furthermore, analysis of 37 citing papers reveals that 91.9% originate from independent researchers. This high degree of independent uptake suggests the work has had a broad, field-wide impact, serving as a foundational resource for scholars outside the researcher's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

[A Census of Marine Biodiversity Knowledge, Resources, and Future Challenges](#)

2010 · PLoS ONE · 947 citations (GS)

Field-normalised: 629 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Marine Biodiversity, Biogeography, Deep-Sea Gradients, and Conservation (2017)	University of Auckland	New Zealand	—
2	Can we name Earth's species before they go extinct? (2013)	University of Auckland	New Zealand	—
3	Bio-ORACLE: a global environmental dataset for marine species distribution modelling (2012)	Ghent University, Queen's University Belfast, Université de Liège	Belgium, United Kingdom	—
4	Marine biogeographic realms and species endemism (2017)	University of Auckland	New Zealand	Background
5	Progress in developing and operationalizing the Monitoring Framework of the Global Biodiversity Framework (2024)	Alexander von Humboldt Biological Resources Research Institute, Joint Nature Conservation Committee, McGill University	Canada, Colombia, United Kingdom	—

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Auckland	New Zealand	SCImago #618 · THE =156 · QS 65	4
Oregon State University	United States	SCImago #1028 · QS =624	3
Hellenic Centre for Marine Research	Greece	SCImago #4314	2
University of California, Los Angeles	United States	SCImago #70 · THE =18 · QS 46	2
Boston University	United States	SCImago #272 · THE =76 · QS =88	2
University of Sydney	Australia	SCImago #93 · THE =53 · QS =25	2
Université de Liège	Belgium	SCImago #1635 · QS =379	2
Cranfield University	United Kingdom	SCImago #1842	2
ETH Zürich	Switzerland	THE 11 · QS 7	2
Queen's University Belfast	United Kingdom	SCImago #760 · THE =198 · QS =199	1
Helmholtz Centre for Environmental Research-UFZ	Germany	—	1
University of Pennsylvania	United States	SCImago #52 · THE 14 · QS 15	1
Australia	Australia	—	1
GEOMAR Helmholtz Centre for Ocean Research Kiel	Germany	—	1
Johannes Gutenberg University	Germany	—	1

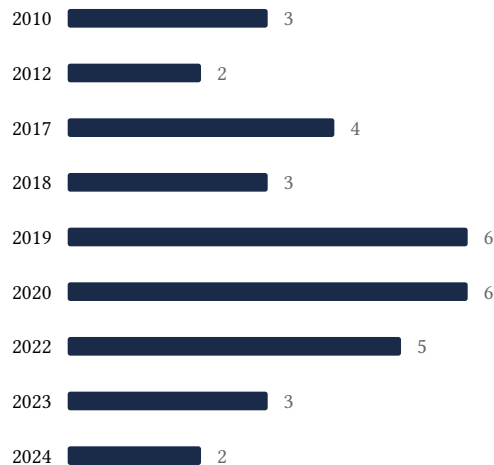
Geographic distribution of citing authors

Country	Citing papers
United States	11
United Kingdom	8
Australia	8
Germany	7
Spain	5
France	5
New Zealand	4
Switzerland	4
Canada	3
Sweden	3
Italy	3
Finland	2

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- Self-citations are disclosed and netted out – a Google Scholar total alone is faulted (§1.1).
- Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- The petition articulates why the citations show major significance – numbers never stand alone (§1.5).
- For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- Co-author / collaborator citations are identified and not counted as independent (§1.7).
- Recognition is shown beyond the scholar's own institution and circle (§1.8).
- Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- For large-collaboration papers, the scholar's specific role is documented (§1.13).
- Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** – persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Deep, diverse and definitely different: unique attributes of the world's largest ecosystem	6	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 2	The biodiversity of the Mediterranean Sea: estimates, patterns, and threats	4	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 3	A Census of Marine Biodiversity Knowledge, Resources, and Future Challenges	5	8 CFR 204.5(h)(3)(v) – Criterion 5