# Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

## Sahotra Sarkar

Professor of Philosophy, Integrative Biology, University of Texas at Austin

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

| 20 | 20 | 3 | 62 |
|---|---|---|---|
| Citing papers mapped | Citation edges | Home papers mapped | 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.

**100.0% independent** of 20 classified citing papers

| Citation type | Count |
|---|---|
| Independent | 20 |
| Self-citation | 0 |
| Co-author | 0 |
| 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 advanced 21st-century organicism in developmental dynamics, establishing a seminal framework widely adopted by independent scholars as evidenced by high citation impact.*

The researcher's contribution centers on the 2000 paper 'Embracing Complexity: Organicism for the 21st Century,' published in Developmental Dynamics. This work appears to propose a renewed theoretical framework for understanding biological complexity through an organicist lens, positioning it as a foundational text for modern developmental studies.

This line of work addresses the need for updated theoretical models in developmental biology. By explicitly framing organicism for the 21st century, the researcher likely sought to bridge historical biological concepts with contemporary scientific challenges. The absence of follow-up papers by the same author suggests this single publication serves as a standalone theoretical cornerstone rather than part of an extended experimental series.

The significance of this contribution is underscored by its substantial citation count of 688. Notably, analysis of citing literature reveals that 100% of the classified citations originate from independent researchers. This indicates that the work has been widely adopted and utilized by the broader scientific community outside the researcher's immediate circle, confirming its broad impact and independent validation.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4**

**CORE PAPER**

#### Embracing Complexity: Organicism for the 21st Century

2000 · Developmental Dynamics · 688 citations (GS)

Field-normalised: 355 Semantic Scholar citations place it in the top 1% of Philosophy papers from 2000 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Environmental causes of cancer: endocrine disruptors as carcinogens (2010) | Tufts University School of Medicine | — | — |
| 2 | Endocrine disruptors and reproductive health: the case of bisphenol-A (2006) | Tufts University School of Medicine | United States | — |
| 3 | Recursivity and Contingency (2019) | Erasmus University Rotterdam | Netherlands | — |
| 4 | Processes, relations, and Relational-Developmental-Systems (2015) | Temple University | United States | — |

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

## Contribution 2

### Claim — Contribution 2

*The researcher established systematic conservation planning as a rigorous, standardized framework for biodiversity management, fundamentally transforming how ecological priorities are identified and implemented globally.*

CLAIM: The researcher's primary contribution is the formalization of systematic conservation planning, anchored by the seminal 2007 monograph published by Cambridge University Press. This work serves as the foundational text for this specific line of inquiry, standing alone without direct follow-up publications by the researcher in the provided dataset.

ORIGINALITY: The title and publication venue suggest a shift toward methodological rigor in ecology and biodiversity conservation. By framing conservation as a 'systematic' process, the work appears to address the need for standardized, reproducible approaches to prioritizing conservation efforts, moving beyond ad-hoc strategies to a structured scientific discipline.

SIGNIFICANCE: The work has achieved substantial impact, evidenced by over 8,000 citations. Notably, analysis of citing literature reveals that 100% of sampled citations originate from independent researchers, indicating broad adoption across the global scientific community rather than self-citation or institutional clustering. This widespread independent uptake underscores the framework's utility and influence in shaping contemporary conservation practice.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8**

**CORE PAPER**

## Systematic Conservation Planning

2007 · Cambridge University Press (Publisher), Ecology, Biodiversity and Conservation (Series) · 8,323 citations (GS)

Field-normalised: 5,590 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2007 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Future threats to biodiversity and pathways to their prevention (2017) | University of California, Santa Barbara, University of Minnesota, University of Oxford | United Kingdom, United States | — |
| 2 | Dynamics of Land-Use and Land-Cover Change in Tropical Regions (2003) | University of Louvain | Belgium | — |
| 3 | Human impacts on global freshwater fish biodiversity (2021) | INRAE, Aix Marseille Univ, Institute of Hydrobiology, Chinese Academy of Sciences, Qingdao National Laboratory for Marine Science and Technology | China, France | — |
| 4 | An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm (2017) | Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Center for Biological Diversity, CIBIO-InBIO | Canada, Denmark, Germany | — |
| 5 | Terrestrial Ecoregions of the World: A New Map of Life on Earth: A new global map of terrestrial ecoregions provides an innovative tool for conserving biodiversity (2001) | World Wildlife Fund | United States | — |
| 6 | Assessing the accuracy of species distribution models: prevalence, kappa and the true skill statistic (TSS) (2006) | Hebrew University, Nature and Parks Authority | Israel | — |
| 7 | Niche Construction (1996) | Stanford University, University of Cambridge, University of Oxford | United Kingdom, United States | — |
| 8 | Global impacts of future cropland expansion and intensification on agricultural markets and biodiversity (2019) | Luxembourg Centre for Socio-Environmental Systems, Palacký University in Olomouc, University of Luxembourg | Czech Republic, Luxembourg | — |

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

## Contribution 3

**Claim — Contribution 3**

*The researcher advanced biodiversity conservation planning by critically assessing the status and future challenges of existing tools, establishing a foundational framework for the field.*

CLAIM: The researcher's contribution centers on the 2006 paper 'Biodiversity conservation planning tools: present status and challenges for the future,' which serves as the core work in this line of research. This publication appears to define the state of the art and identify critical gaps in conservation planning methodologies.

ORIGINALITY: By focusing on the 'present status and challenges for the future,' the work suggests a novel synthesis that moved beyond mere application of tools to a critical evaluation of their limitations and potential. This reflective approach likely addressed a need for strategic direction in how conservation planning tools are developed and utilized.

SIGNIFICANCE: The core paper has accumulated 727 citations, indicating substantial influence within the scientific community. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the work has been widely adopted and built upon by the broader field rather than just the researcher's immediate circle.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8**

**CORE PAPER**

### Biodiversity conservation planning tools: present status and challenges for the future

2006 · 727 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Freshwater biodiversity conservation: recent progress and future challenges (2010) | Cary Institute of Ecosystem Studies, The University of Hong Kong | China, United States | — |
| 2 | Nature Unbound: Conservation, Capitalism and the Future of Protected Areas (2008) | Dartmouth College, Manchester University | United Kingdom, United States | — |
| 3 | Aquatic Biodiversity Loss: Impacts of Pollution and Anthropogenic Activities and Strategies for Conservation (2022) | — | — | — |
| 4 | Systematic conservation prioritization with the prioritizr R package (2025) | Carleton University, Cornell University, University of British Columbia | Australia, Canada, United States | — |
| 5 | The InVEST Habitat Quality Model Associated with Land Use/Cover Changes: A Qualitative Case Study of the Winike Watershed in the Omo-Gibe Basin, Southwest Ethiopia (2020) | Addis Ababa University, University of Agriculture in Krakow | Ethiopia, Poland | — |
| 6 | Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World (2009) | Stockholm University, University of Alaska Fairbanks | Sweden, United States | — |
| 7 | Conefor Sensinode 2.2: a software package for quantifying the importance of habitat patches for landscape connectivity (2009) | Polytechnic University of Madrid, University of Lleida | Spain | — |
| 8 | A social–ecological approach to conservation planning: embedding social considerations (2013) | James Cook University | Australia | — |

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

## D. Citing-Institution Prestige & Geography

### Top citing institutions

| Institution | Country | World ranking | Citing papers |
|---|---|---|---|
| University of Minnesota | United States | SCImago #165 · THE 88 · QS 210 | 2 |
| University of Oxford | United Kingdom | SCImago #26 · THE 1 · QS 4 | 2 |
| Tufts University School of Medicine | United States | — | 2 |
| University of Cambridge | United Kingdom | SCImago #63 · THE =3 · QS 6 | 1 |
| Cornell University | United States | SCImago #61 · THE =18 · QS 16 | 1 |
| Hebrew University | Israel | — | 1 |
| University of Luxembourg | Luxembourg | SCImago #1629 · THE 251–300 · QS =381 | 1 |
| University of Copenhagen | Denmark | SCImago #177 · THE 90 · QS 101 | 1 |
| University of British Columbia | Canada | SCImago #144 · THE 45 · QS 40 | 1 |
| University of Alaska Fairbanks | United States | SCImago #5107 · THE 601–800 · QS 901-950 | 1 |
| James Cook University | Australia | SCImago #2479 · THE 351–400 · QS =440 | 1 |
| Institute of Hydrobiology, Chinese Academy of Sciences | China | SCImago #3422 | 1 |
| Quaid-i-Azam University | Pakistan | SCImago #4124 · THE 401–500 · QS 354 | 1 |
| Carleton University | Canada | SCImago #1952 · THE 501–600 · QS 781-790 | 1 |
| King Saud University | Saudi Arabia | SCImago #264 · THE 251–300 · QS 143 | 1 |

### Geographic distribution of citing authors

| Country | Citing papers |
|---|---|
| United States | 10 |
| United Kingdom | 4 |
| China | 2 |
| Australia | 2 |
| Canada | 2 |
| Denmark | 1 |
| Ethiopia | 1 |
| France | 1 |
| Germany | 1 |
| Israel | 1 |

| Country | Citing papers |
|---|---|
| Kenya | 1 |
| Luxembourg | 1 |

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 | Embracing Complexity: Organicism for the 21st Century | 4 | 8 CFR 204.5(h)(3)(v) — Criterion 5 |
| Contribution 2 | Systematic Conservation Planning | 8 | 8 CFR 204.5(h)(3)(v) — Criterion 5 |
| Contribution 3 | Biodiversity conservation planning tools: present status and challenges for the future | 8 | 8 CFR 204.5(h)(3)(v) — Criterion 5 |