

Supplementary Materials for

**Towards a cohesive understanding of ecological complexity**

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Table S1

Figures S1 – S4

Table S1.

List of review studies retrieved by the search on the Web of Science using the word “Complexity” in the “Ecology” and “Environmental Sciences” categories. The original search retrieved 23,703 manuscripts published between 2000 and 2021 (search conducted on July 14th, 2021), from which 71 were review studies.

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| **Authors** | **Article Title** | **Source Title** | **Publication Year** | **DOI** |
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**Fig. S1.** **Cumulative production of articles over time.** Cumulative production (from 1970 to 2021) between articles mentioning “complexity” in their titles and abstract considering all the scientific fields (gray line) and separately for the ecology and environmental sciences, as approximated by the search term “ecological complexity” (red line). The number of articles were log-transformed [Log10(x+1)] to ease the comparison between groups.

Calendar

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**Fig. S2.** **Importance of features to characterize *control* group and *complexity* articles.** The table reports the number of times each feature appears in each quantile (Q1–4) considering only the 1% most important terms in each article. The higher total value between groups is highlighted in bold (note that only the feature “Aggregation” appears more in the control group and some features do not appear at all in the *control* group). Graph on the right show the distribution of beta parameters for each feature without subselecting the 1% most important terms. Vertical line represents the average probability across all words.

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**Fig. S3.** **Adjacency matrix for the co-occurrence of features.** Features colored in red are significantly more related to *complexity* than to the *control* articles based on Indicator Species Analysis as shown in Fig. 4. The filling gradient in the matrix represents the weight of the connection estimated as the sum of the edge weights of the adjacent edges of the node.

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**Fig. S4.** **Adjacency matrix for the co-citation of references.** The colors in the name of the references indicate the five clusters extracted using the Louvaine algorithm as shown in Fig. 5. The filling gradient in the matrix represents the number of articles citing the pair of references simultaneously.