

# Occurrence, composition, sources, and ecological-health risk assessment of polycyclic aromatic hydrocarbons in Chinese water bodies: A review

## 1. Basic Reporting

1. The article use clear, unambiguous, technically correct text and it conform to professional standards. However, there are occasional cases of awkward phrasing and minor structural errors that may deter comprehension.
2. Provides a comprehensive introduction with sufficient background to establish the relevance of PAH studies in China. The review falls well within the scope of PeerJ and offers a nation-wide assessment valuable to environmental scientists, policymakers, and public health professionals. Given the scarcity of comprehensive national reviews on PAHs in Chinese waters, this manuscript is timely and justified even if the field has been reviewed before.
3. In literature review, there are no direct ethical concerns.
4. The review builds upon existing literature and consolidates findings from the past decade.
5. Relevant previous literature should be appropriately referenced.
6. Figures should be relevant to the content of the article, of enough resolution, and suitably described and labelled.
7. All appropriate raw data have been made available in accordance with data sharing rule.
8. Article content is within aims and scope of journal and article type.

## 2. Study design

1. The review highlights research that adheres to the highest ethical standards and complies with all relevant guidelines and regulations in the field.
2. The methodology is adequately detailed. Search strategies, data inclusion criteria, and the analytical framework (e.g., DRs, PMF, TEQ, ILCR) are well explained. The use of multiple analytical techniques to assess sources and risk enhances the robustness of the review. However some notable points are identified.

## 3. Validity of the Findings

The conclusions are clearly tied to the data presented. The discussion appropriately identifies patterns and trends in PAH pollution across regions and seasons. The limitations of current methodologies and future research directions are thoughtfully addressed. There is strong alignment between the research questions and the presented evidence. The review avoids over-generalization and does not make unsupported causal claims.

## 4. Suggestions

- a) Minor revision to improve sentence flow and eliminate redundancies in long paragraphs.
- b) A table summarizing regional differences in PAH levels and risks would improve clarity.
- c) Survey Methodology – Proper citations are missing.
- d) Please ensure that all methodologies referenced are supported by appropriate and credible sources.

- e) References (Serial Numbers 80 to 100) – These entries require proper and complete referencing. Kindly review and update the citations to adhere to the required referencing style.
- f) Statistical Significance (Serial Numbers 213 to 217) – Claims of significance must be backed by appropriate comparative statistical methods. Please revise these sections to include valid statistical tests (e.g., t-test, ANOVA, chi-square) and report relevant values (p-values, confidence intervals, etc.) to justify the conclusions drawn.
- g) Consider explicitly stating how bias in source selection (e.g., publication bias) was minimized.
- h) Add a short comment on the quality assessment of included studies, if applicable. The conclusion highlights several areas needing further work, such as:
  - i) Region-specific ecological thresholds
  - j) Assessment of PAH derivatives
    - Long-term monitoring frameworks
    - Integrated multimedia risk models

## 5. Confidential Notes to the Editor

This is a strong, data-rich manuscript with national relevance to China's environmental health policy. Minor language polishing and slight trimming of repetitive content would substantially improve the paper. I recommend **minor revision** before acceptance.



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