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Air Termenung (still water) after the storm: A cracked court, resilient plants, and lessons for life

Abstract

After a short, violent rain, the former badminton court in front of my ecology lab turned into *Air Termenung*, a shallow sheet of still water. By the next morning the slab had dried, yet the same plants remained anchored in hairline cracks and gravel lenses. The objective of this field note is to document that 24 hour transition, identify the likely ruderal residents, explain how they tolerate pulse flooding, and draw out practical lessons for urban ecology and public health through the FIKR (facet, insight, knowledge, and resilience) lens. The survival of the plant communities highlights basic mechanisms under waterlogging: rapid onset of root hypoxia, aerenchyma formation, adventitious roots near the waterline, and quick regrowth when light and nutrients return. Using the FIKR framework (Facet, Insight, Knowledge, and Resilience), this analysis links visual photographic observation to plant functions and memory through systematic observation, then balance ethics and practice: drain true breeding puddles to reduce dengue risk while keeping non-hazardous micro green corners that host everyday urban biodiversity. The cracked court is not a ruin. It is a small, faithful teacher and a ready-made classroom. Students can map puddle depth and track recovery days.

Keywords: waterlogging; hypoxia, urban weeds, resilience, dengue control

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Introduction

The old badminton court in front of the ecology lab (Figure 1) is now a patchwork of broken concrete and gravel that forms a shallow basin, retaining water after heavy morning rain. Locally, this ponded surface is referred to as *Air Termenung* "(still water), a Malay term for water that sits and seems to think. The apparent quiet is not empty: it contains oxygen scarcity, faint sulphidic odours, and micro-life adapted to slow respiration. When pores within the surface matrix fill with water, oxygen diffuses slowly and roots can become hypoxic within a short period.[1–3] The scene also conveys a post-storm calm and a sense of place memory, aligning with restorative landscape theory on how environments shape perception and affect.[4]

Figure 1 The old badminton court in front of Lab Ecology in the Department of Biology on 25 August 2025. The drawn box is the focus of this observation where the plants were observed. Note: AI-app manipulation is not applied in the original photo presented in this figure.

By the next morning the same places are almost dry. The plants that yesterday were ankle deep in the reflective puddle are still there. They do not complain. They do not negotiate. They just survive. Flood pulses and sudden drying are normal in our climate. The plants here are ruderals (plants are first to colonize disturbed lands) tolerate disturbance and waterlogging through well-known strategies such as aerenchyma (a soft plant tissue containing air spaces) formation, adventitious roots near the surface, ethylene mediated growth shifts, and fast regrowth after damage.[5] This is adaptation in practice, not theory.

The objective of this study is to document a 24-hour hydrological transition from ponded surface water to a completely dry substrate, identify the microtopographic controls on puddle formation, characterise dominant ruderal plant species that persist in these conditions, and interpret their survival using known physiological mechanisms of flood tolerance. The findings are designed to guide practical decision-making in urban ecological management: selectively eliminating puddles that pose dengue risks while preserving micro-greenspaces that enhance urban biodiversity and provide real-time teaching opportunities.

Methodology

Study site and timing

This observational study was conducted on the former outdoor badminton court located directly in front of the Ecology Laboratory at Universiti Putra Malaysia. The court surface consists of aged concrete characterised by micro-cracks, gravel infill, and shallow depressions that retain surface water following rainfall. A natural rainfall event occurred on the morning of 21 August 2025, ceasing at 10.27 a.m., after which field observations and photographic documentation were immediately undertaken. Follow-up observations were conducted the next day at 8.45 a.m. on 22 August 2025 after complete surface drying through drainage and evaporation.

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Photographic and microtopographic documentation

Micro sites were marked based on visible depressions and vegetated cracks. Panels A and C (Figure 2 and 3) were photographed two to three hours after rainfall cessation on 21 August 2025, capturing shallow ponded water (*Air Termenung*) under stagnant conditions. Panels B and D document the same fixed locations at 8.45 a.m. the following day, showing full drying of the surface. No artificial intelligence application or image enhancement software was applied to ensure authenticity of field observations. All images were taken using a fixed focal length to maintain consistency of scale, and annotated in the field notebook to record depth, surface reflectance, and vegetation presence.

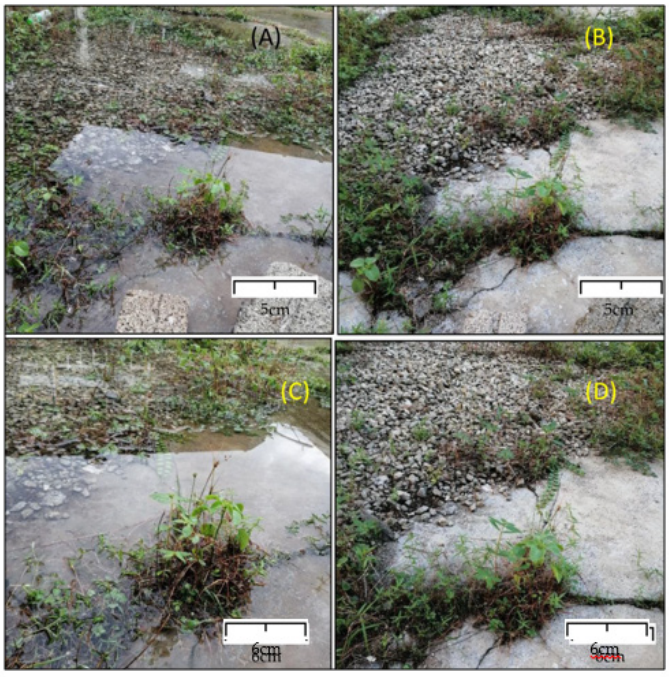

Figure 2 Comparison of ponded surface water after a morning cloudburst and the same micro sites the next day on the former badminton court in front of the ecology lab. Panels A and C show shallow stagnant water approximately two to three hours after the rain stopped at 10.27 a.m. on 21 August 2025. Panels B and D show the same locations after surface drying at 8.45 a.m. on 22 August 2025. Note: AI-app manipulation is not applied in the original photos presented in this figure.

Characterisation of ruderal vegetation

Persistent plant clumps emerging from surface cracks and gravel lenses were provisionally identified as ruderal taxa based on their rapid colonisation ability and morphological adaptations to alternating waterlogged and dry conditions. Figure 3 provides close-up views of these clumps under wet (Panels A and C) and dry (Panels B and D) conditions. Root exposure, presence of adventitious structures, and leaf turgor were visually assessed to infer physiological tolerance. These observations were framed against classical mechanisms of flood resilience such as aerenchyma formation and root metabolic adjustment.[1,2,5]

Framing under the FIKR framework

The methodology is intentionally designed as a teachable and replicable ecological reading activity under the FIKR (Facet, Insight, Knowledge, Resilience) personality framework.[6–9] Facet. Begin with visual photographic observation. The images resolve fine-scale surface features that govern where water lingers, how oxygen diffuses, and where seedlings establish. Facet is demonstrated in direct sensory engagement with the environment; Insight is cultivated through recognition of hydrological-vegetation relationships; Knowledge is applied through classical waterlogging literature; and Resilience is interpreted through the persistence of ruderal taxa as biological models of adaptation.[10–14] This framing transforms a small field site into a living ecological classroom.

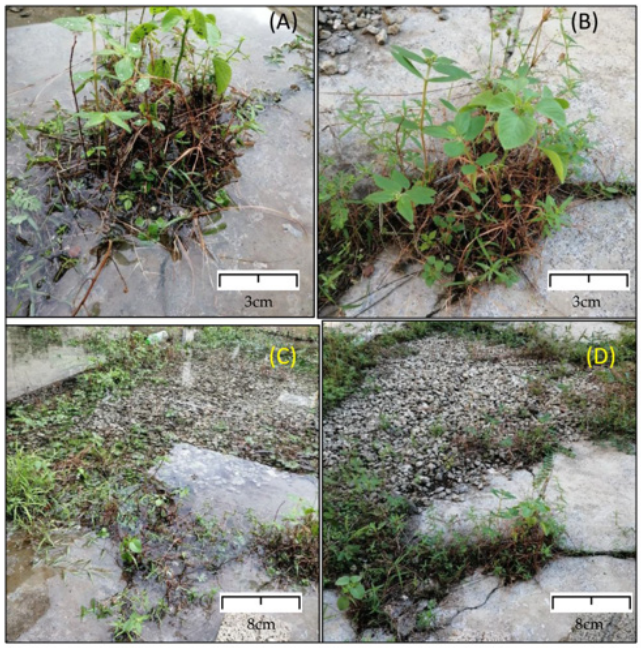

Figure 3 Close views of the same plant clumps under wet and dry conditions. Panels A and C show rooted tufts standing in still water at 10.27 a.m. on 21 August 2025. Panels B and D show the same clumps at 8.45 a.m. on 22 August 2025 after drainage and evaporation. Note: AI-app manipulation is not applied in the original photos presented in this figure.

Discussion

Who lives in the cracks: field descriptions at the court

Species were identified through visual photographic observation, using habit, leaf morphology, and position on the concrete substrate. These determinations reflect expert judgment based on the site photographs and contextual field information (Figure 2 and 3). Dominant taxa include *Tridax procumbens*, *Evolvulus nummularius, Phyllanthus* sp., *Euphorbia* sp. and others.[15,16] These four are the main characters in my photographs. Tiny prostrate herbs resembling juvenile *Phyllanthus* are also visible among the cracks and gravel, suggesting early colonization by stress-tolerant ruderal species. They will reveal themselves with time. What matters for the story is that each of these species is built for pulses. They take a flood, make new roots near the surface, exploit a short window of moisture, set seed, and wait.

Reading the moment with FIKR

FIKR provides a practical lens that links observation to action through four steps: Facet, Insight, Knowledge, and Resilience. It begins with clear attention to what is present, moves to grounded causal interpretation, consolidates established and newly learned information, and concludes with a committed response suited to real conditions. Applied to the small flooded court, FIKR structures the reading of the scene as follows.

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Facet. Attend to what is visible through visual photographic observation of plant form and surface features. Shallow bowls in the slab retain water, while gravel patches drain more quickly; a few centimeters of height determine which species persist.

Insight. Infer the governing processes. Oxygen diffuses far more slowly in water than in air, so waterlogged roots become hypoxic within short periods. This single constraint explains observed stress, occasional sulphidic odours after ponding, and the advantage conferred by root air spaces.[1–3]

Knowledge. Draw on plant physiological evidence. Flood-tolerant herbs induce aerenchyma, develop adventitious roots near the waterline, slow root respiration, and shift allocation from growth to survival. Many ruderal species also maintain seed banks, ensuring recolonization after episodic floods.[2,5] This approach aligns with prior applications of FIKR across metals research, biomonitoring, and environmental learning, where seeing clearly, reasoning carefully, and acting responsibly are joined in sequence.[6–14]

Resilience. Translate synthesis into practice. Plants persist without proclamation; that quiet persistence models recovery. In urban settings, resilience appears in species that tolerate heat, drought, salinity, compaction, and fragmentation. Evidence shows that wild ornamentals such as *Pancratium maritimum* and *Artemisia herba-alba* can stabilize substrates, maintain greenery, and function across wet–dry cycles and disturbance pulses.[17] More broadly, urban vegetation persists through trade-offs and adaptive strategies including conservative water use, plastic rooting, and phenological adjustment, enabling reassembly after disturbance and the maintenance of ecosystem functions in cities.[18] Resilience here is a disciplined practice of absorbing change, reorganizing, and carrying lessons into the next growth phase.

Proverbs, psychology, and ethics around Air Termenung

Peribahasa reminds me that appearances deceive. *Air yang tenang jangan disangka tiada buaya* (Still water is not safe water). My *Air Termenung* can become a breeding ground for *Aedes* if we forget our public duty. *Alah bisa tegal biasa* speaks to competence built through repeated trials. These plants have become good at living with flood pulses because their lives have trained them for it. English gives me Still waters run deep and after the storm comes the calm, both fitting. Chinese wisdom brings 滴水穿石 which says that dripping water can wear through stone. The mood of the court after rain holds all these lines at once. There is also a clear ethical line. We should drain true breeding puddles, clear blocked gutters, and remove containers that hold water to protect people from dengue. At the same time we can keep small living corners that are not hazardous. This is everyday conservation. It is an urban biodiversity lesson that stands next to public health, not against it.

Berhenti hujan berkilau laman,
Pagi menyapa jiwa berseri;
Air termenung tenang di laman,
Mengajak aku menilai diri.
(The rain stops and the yard shimmers,
Morning greets a brightened heart;
Still water lingers in the yard,
Inviting me to take stock of myself.)

Facet kupandang retak di lantai,
Insight dan ilmu menuntun hati;
Resilience tumbuh, langkahku santai,
Kita jaga alam sambil insan mengerti.
(I read the facets in the cracked court,
Insight and knowledge steady the heart;
Resilience grows and my pace is calm,
We care for nature as people learn.)

What this little court teaches

The site now carries layered meaning. Once used by students, it now serves as a living classroom where observation becomes reflection. The flooded court illustrates that disturbance is inherent to ecological systems, adaptation follows distinct pathways, and recovery remains achievable. Interpreted through the FIKR framework, each detail functions as a teaching instrument. The plants express their narratives through form and timing, embodying the principles of resilience and renewal. The scene concludes as a quiet lesson that unites ecological understanding with the broader rhythm of life.

Conclusion

This small court teaches a complete lesson in ecology and life. A heavy rain aerenchyma creates *Air Termenung*. Oxygen becomes scarce around roots. Ruderals answer with aerenchyma, new surface roots, and quick growth once the water recedes. The plants show how adaptation works in pulses of wet and dry. Seen through FIKR, the facets of the site lead to insight, knowledge, and a grounded form of resilience. The scene carries the wisdom of our proverbs without romanticising neglect. Coupling targeted source reduction with the deliberate retention of harmless microhabitats lowers *Aedes* risk while preserving accessible outdoor classrooms where students and residents can learn ecology, practise public-health vigilance, and cultivate stewardship of urban nature. The practical call is clear. We should remove true breeding puddles and blocked containers to reduce dengue risk, while keeping safe micro green patches that sustain everyday urban biodiversity and offer quiet places for observation and learning. This balance is both ethical and useful. It protects people and preserves small living classrooms for students and citizens. A cracked court becomes a faithful teacher when we pause, look closely, and allow science, memory, and care to guide what we do next.

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Conflicts of interest

The author declares there is no conflict of interest.

References

1. Ponnamperuma FN. The chemistry of submerged soils. *Advances in Agronomy*. 1972;24:29–96.
2. Jackson MB, Campbell DJ. Ethylene and responses of plants to soil flooding and waterlogging. *Annual Review of Plant Physiology*. 1985;36:145–174.
3. Neira J, Ortiz M, Morales L, et al. Oxygen diffusion in soils: Understanding the factors and processes. *Chilean Journal of Agricultural Research*. 2015;75(3):331–341.
4. Kaplan R, Kaplan S. *The experience of nature: A psychological perspective*. Cambridge University Press. 1989.
5. Bailey-Serres J, Voesenek LACJ. Flood adaptive traits and processes: An overview. *New Phytologist.* 2015;206(1):57–73.
6. Yap CK, Leow CS, Leong WSV. The usage of FIKR facet, insight, knowledge and resilience personality assessment tool for biomedical personnels—A literature review and synthesis. *Biomedical Journal of Scientific & Technical Research*. 2024a;56(5):48656–48662.

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7. Yap CK, Leow CS, Leong WSV. The use of FIKR (Facet, Insight, Knowledge, and Resilience) personality as an effective assessment tool to select the best leadership in an organization. *Igmin Research*. 2024b;2(4):261–265.
8. Yap CK, Leow CS, Leong WSV. Deployment of Industry 4.0 into the agricultural food industry: A focus on Facet, Insight, Knowledge, and Resilience (FIKR) personality traits and AI-powered inventory management. *Food Science and Engineering*. 2024c;337–347.
9. Yap CK, Leow CS, Leong WSV. Identifying suitable social worker candidates for counselling using Holland RIASEC model and FIKR (Facet, Insight, Knowledge, Resilience) profiling. *ASEAN Social Work Journal*. 2025;13(1):64–77.
10. Yap CK, Leow CS, Leong WSV. Integrating personality traits in AI-driven business leadership: The role of emotional intelligence, achievement orientation, analytical thinking, and structured leadership using the FIKR personality assessment tool. *Journal of Comprehensive Business Administration Research*. Advance online publication. 2024d.
11. Yap CK, Leow CS, Leong WSV. Exploring the impact of personality traits on managerial skills using FIKR (Facet, Insight, Knowledge and Resilience) personality assessment tool: Implications for manager selection and development. *Pakistan Journal of Life & Social Sciences*. 2024e;22(2):5514–5524.
12. Yap CK, Leow CS, Leong WSV. The perceiver trait in leadership as an important FIKR (Facet, Insight, Knowledge, and Resilience) personality profiling: A review from the literature. *Igmin Research*. 2024f;2(5):268–275.
13. Yap CK, Leow CS, Leong WSV. Integrating ESG considerations into leadership development: The role of personality traits in enhancing leadership effectiveness using the FIKR (Facet, Insight, Knowledge, and Resilience) assessment tool. *Pakistan Journal of Life & Social Sciences*. 2024g;22(2):5582–5590.
14. Yap CK, Leow CS, Leong WSV. Applying the Holland RIASEC model using FIKR (Facet, Insight, Knowledge and Resilience) profiling assessment tool to optimize talent placement in the petrochemical industry. *Progress Petrochemical Sciences*. 2024h;6(4).
15. Chormanski T, Marble C, Gettys L. *Biology and management of long-stalked Phyllanthus in ornamental crop production* (ENH1257/EP518). University of Florida IFAS Extension. 2015;5.
16. Chua KS. New record of the creeping plant *Evolvulus nummularius* in Singapore. *Singapore Biodiversity Records.* 2016;161.
17. Goda RA, Fakhry AM, Bidak LMM, et al. Promoting biodiversity in urban spaces: Exploring the resilience of two wild plants, *Pancratium maritimum* L. and *Artemisia herba-alba* Asso, in landscaping. *BMC Plant Biology*. 2025;25(1):1197.
18. Kisvarga SZ, Horotán K, Neményi A, et al. The ecology of urban vegetation: Trade-offs, stressors, and adaptive strategies. *Environmental and Sustainability Indicators*. 2025;28:100887.

Citation: Yap CK. *Air Termenung* (still water) after the storm: A cracked court, resilient plants, and lessons for life. *Int J Hydro.* 2025;9(4):148–151.
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