Asian Deans' Forum 2026

THE RISING STARS

Women in Engineering Workshop

SEP 13 – 15 | HKUST, Hong Kong

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Climate stress and ecosystem resilience

Forests · Watersheds · Cities

Remote sensing · Time-series analysis · Process modelling

2013–2018 · Bachelor's
Shandong Jianzhu University

2018–2025 · PhD (Engineering)
Beijing Forestry University

2025–present · Postdoctoral researcher
Tsinghua University

2 Grants as principal investigator
NSFC Young Scientists Fund–Type C
China Postdoctoral Science Foundation · General Program

5 First-author papers
5 invention patents · Co-inventor
12 publications in total

15 Research projects
National + commissioned
Contributor; coordinated
31-member student team

17 Awards and honours
Excellent Doctoral Dissertation, Beijing Forestry University · 2025
First Prize, Huaxia Construction Science and Technology Award · 2024
Second Prize, Excellent Paper Award, Chinese Society of Landscape Architecture · 2024
Second Place, International Federation of Landscape Architects Student Competition · 2024

01 Hydroclimatic stress and ecosystem stability

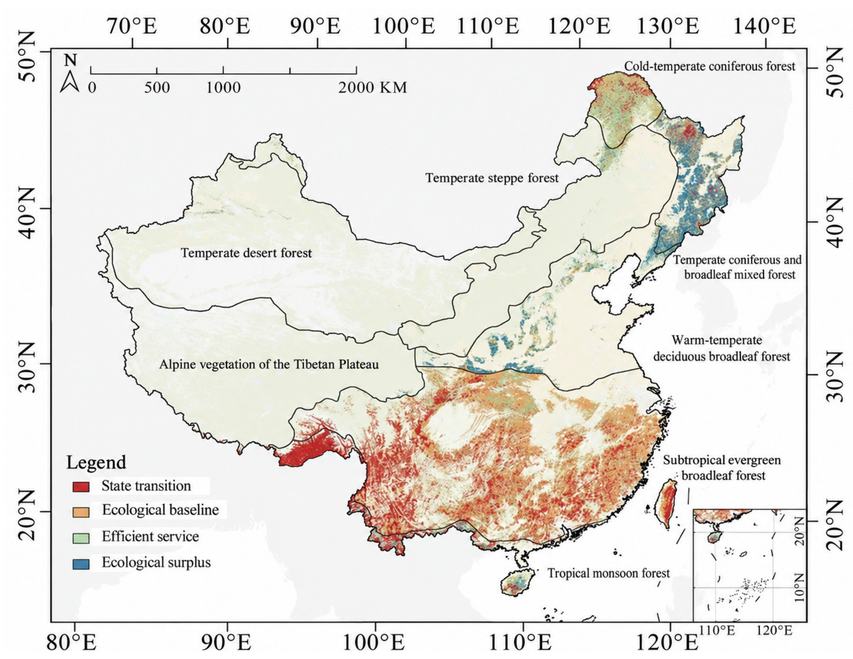
Forest resistance, recovery and legacy · Soil-moisture organisation and instability risk

Forest resilience under climate stress

China's forests · Spatial patterns and state changes

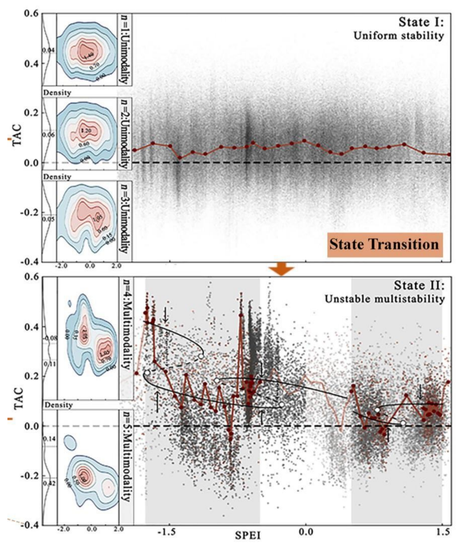
57.47% forests with declining productivity resilience

24.58% uniform stability → unstable multistability

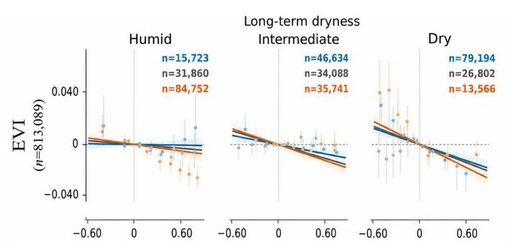


Resilience–service zoning

Resilience-state transitions



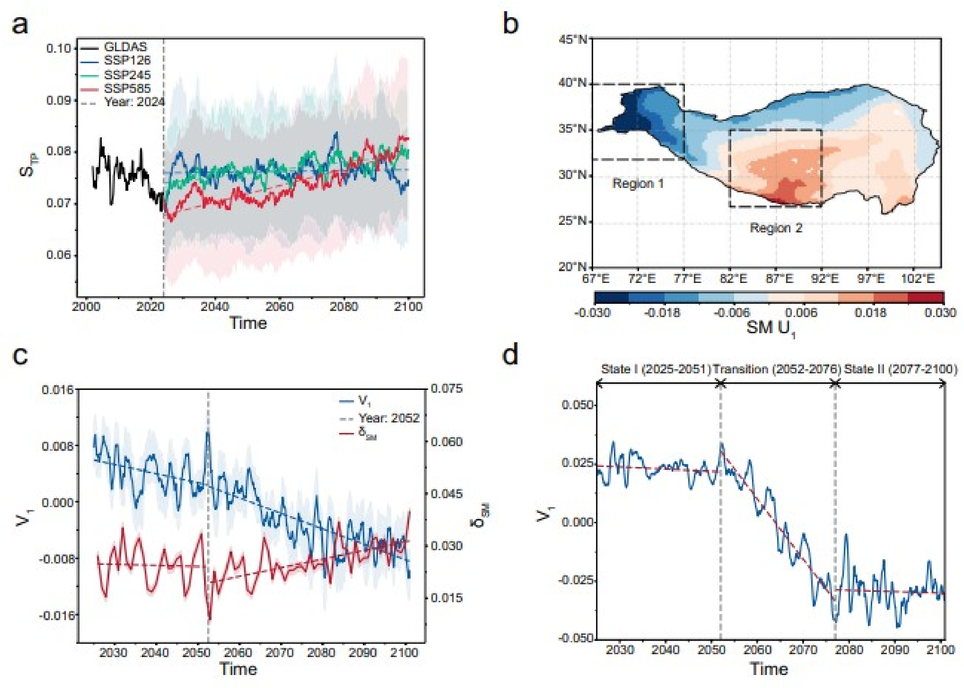
Functional traits and climate



PC1: higher = more conservative leaf traits

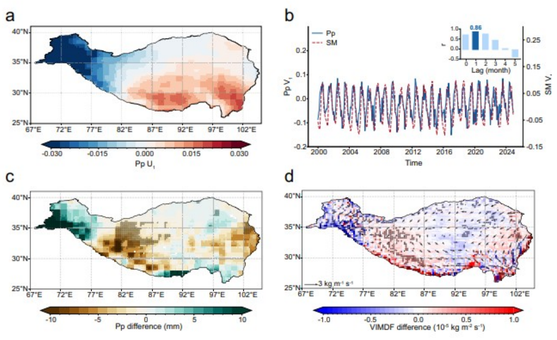
Soil moisture in the Asian Water Tower

Nature Communications (2026) · Co-author



Historical decline, projected increase in entropy

2000–2024: regional wetting accompanied lower entropy.
2025–2100: all three scenarios project rising entropy.



Precipitation–soil moisture coupling

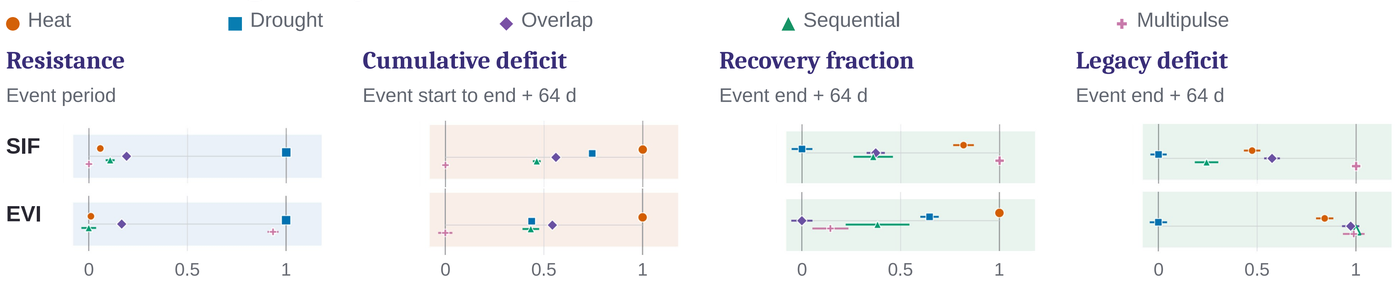
Historical spatial patterns and seasonal co-variation.

Upper panels:
12 CMIP6 models · 3 scenarios
Shading: standard errors.

Xie et al. (2026), Figs. 4–5

Event rankings vary across response metrics

● Heat ■ Drought ◆ Overlap ▲ Sequential + Multipulse

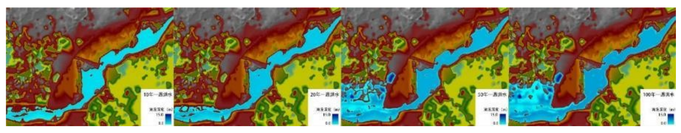


OLS-adjusted ranks within each metric and product: 0 least → 1 most adverse.
SIF: solar-induced fluorescence; EVI: enhanced vegetation index.

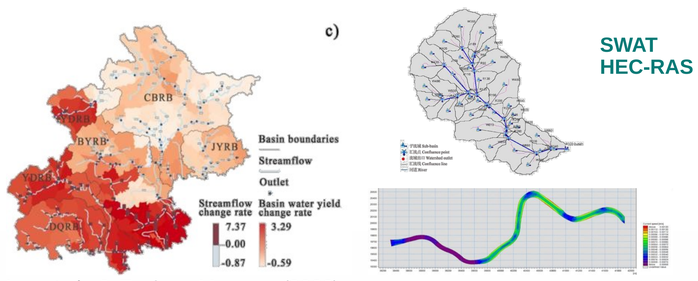
02 Carbon–water assessment

Hydrological modelling · LiDAR · Life-cycle accounting

Streamflow and flood scenarios



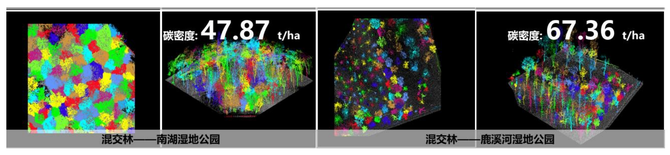
10–100-year flood scenarios



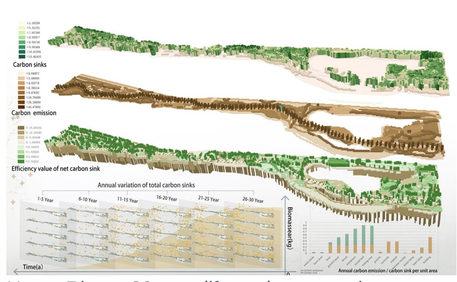
Lyu et al., J. Environ. Manage. (2023)

SWAT
HEC-RAS

Vegetation structure and carbon



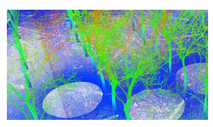
Nanhu and Luxihe wetland communities



Hutuo River · 30-year life-cycle accounting

Life-cycle carbon accounting

Field LiDAR



Landscape performance evaluation

5 modules · 17 factors · 111 indicators

PROJECT / PLATFORM REACH

9
provinces and municipalities

~600,000
hectares assessed

55
organisations supported

My role: methods · platform planning · field coordination · reporting

03 Ecological planning

Decision support · Public-sector collaboration

Organizers

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNSW SYDNEY

SEOUL NATIONAL UNIVERSITY

NUS National University of Singapore

臺灣大學 NTU

UTokyo

清華大學 Tsinghua University