Supplemental file 1

Sixteen of the rapid-pool-benchland systems (RPBS) in China, USA, Australia and Africa are as follows. There are many other RPBS in the upper and lower reaches of these RPBS in the photos.

No. 1 A rapid-pool-bench land system in the upper reach of the Yangtz River in China. The square symbol: pool; the triangular symbol: rapid; the circle symbol: benchland. The same below.

No. 2: A rapid-pool-bench land system in the Jingshajiang River in China.
No. 3: A rapid-pool-bench land system in the upper Beiluo River in Shanxi Province in China.

No. 4: A rapid-pool-bench land system in the upper reach of the Yellow River in China.
No. 5: A rapid-pool-bench land system in the lower reach of the Yallow River in China.

No. 6: A disappearance of the rapid-pool-bench land system in the lower reach of the Jingsha River in China, where a dam has been built.
No. 7: A rapid-pool-bench land system in the upper reach of the Duliu River in China (a RPBS for sampling).

No. 8 A rapid-pool-bench land system in the middle reach of the Duliu River in China (a RPBS for sampling).
No. 9: A rapid-pool-bench land system in one river in USA.

No.10: Another rapid-pool-bench land system in one river in USA.
No. 11: A rapid-pool-bench land system in the Mississippi River in USA.

No. 12: A rapid-pool-bench land system in one river in Africa.
No.13: Another rapid-pool-bench land system in the river in Africa.

No.14: A rapid-pool-bench land system in the Nile River in Africa.
No.15: A rapid-pool-bench land system in one river of Australia.

No.16: A rapid-pool-bench land system in the Tarim River of China
No.17  The basic model of the rapid-pool-benchland system in a natural river