



## **Lack of seasonal hypoxia in spite of high nitrogen enrichment in the Pearl River estuary and adjacent coastal waters**

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The Pearl River is the 2nd largest in China, and discharges into the northern South China Sea. The Pearl River is highly enriched in nitrogen (N), comparable to the Mississippi River. However, bottom dissolved oxygen is not low as expected from N enrichment. There has been lack of seasonal hypoxia in the Pearl River estuary and adjacent waters, but episodic events of hypoxia did occur in late summer. Evidence suggests that estuarine coastal circulation induced by monsoon and river discharge plays an important role in regulating the seasonal formation of hypoxia, and local winds were important in regulating the episodic formation of hypoxia. However, low P appeared to limit consumption of dissolved oxygen and therefore, a longer period of weak winds for a stable water column is required for dissolved oxygen to be consumed to the hypoxic level.