

# Monitoring and Predicting Channel Morphology of the Tongtian River, Headwater of the Yangtze River using Landsat images and Lightweight Neural Network

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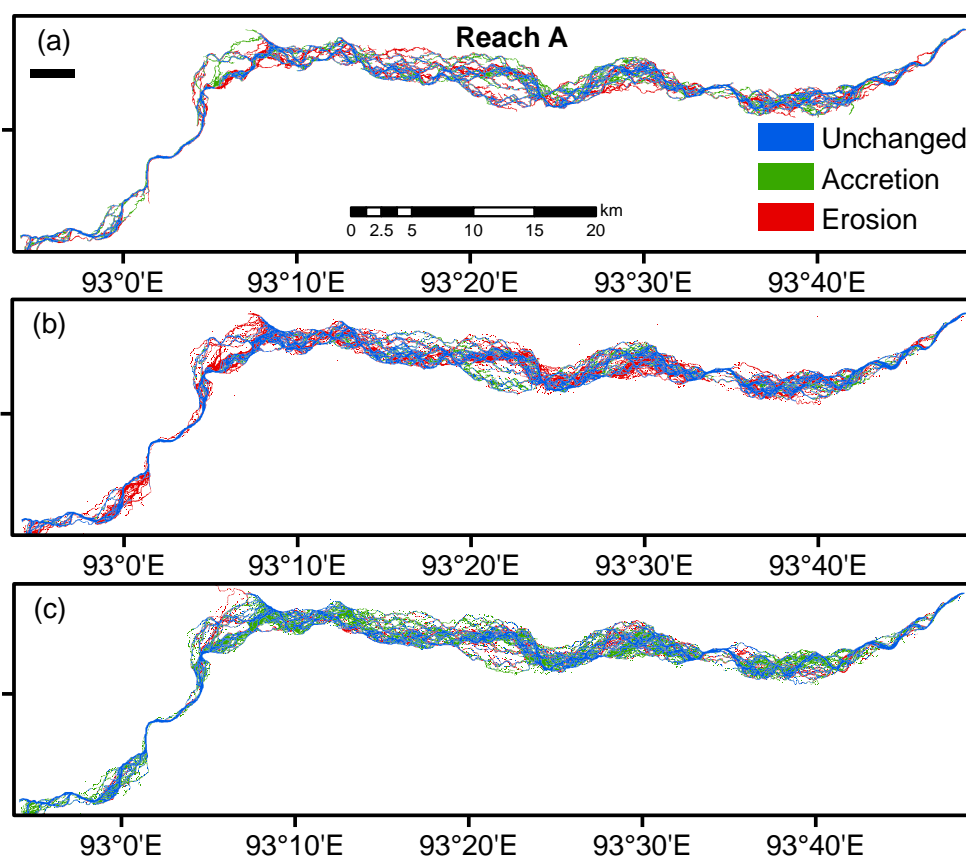
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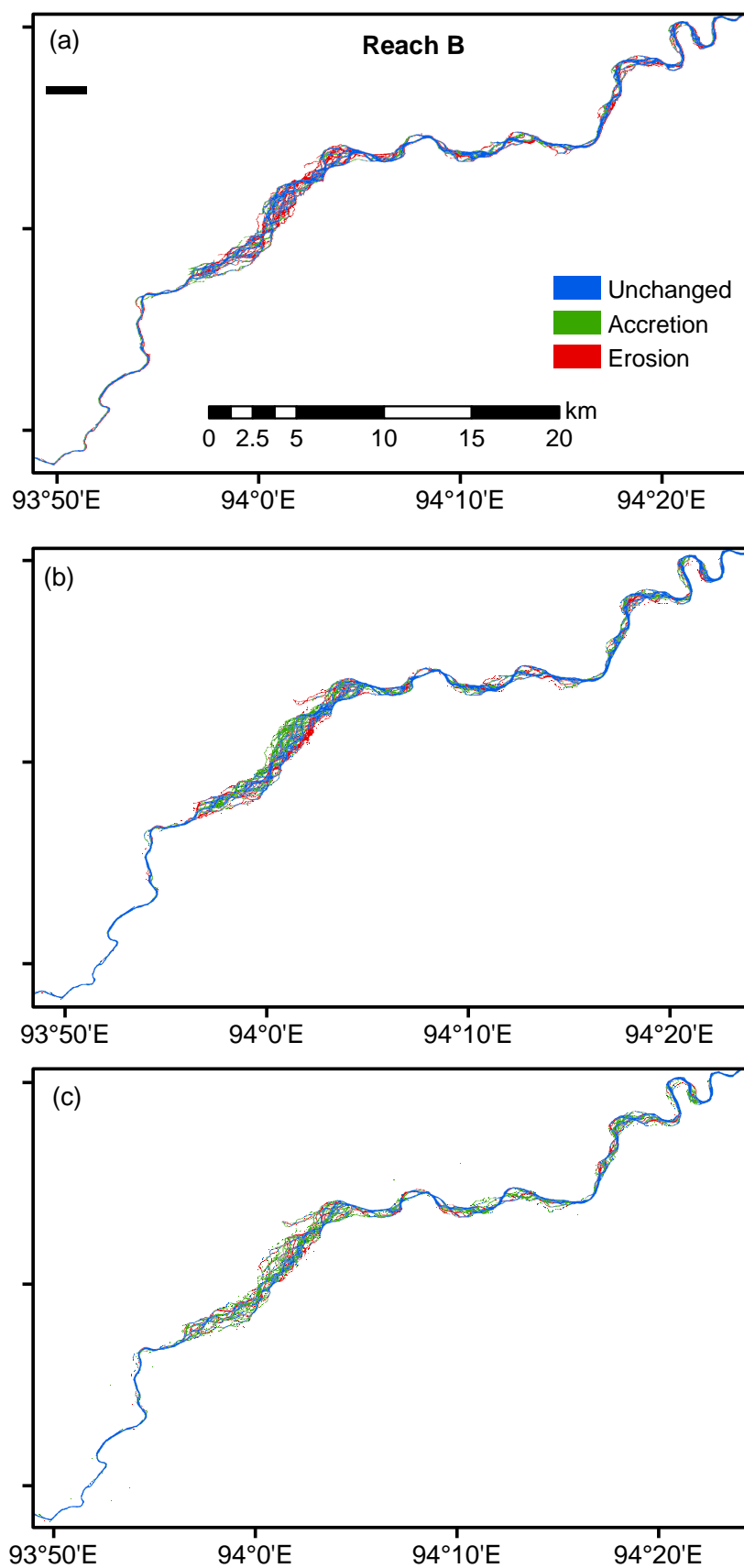
**Table S1.** Paths and rows of satellite images covered by Landsat in the study region.

Path	Row
134	37
135	36
135	37
136	36
136	37
137	36
137	37

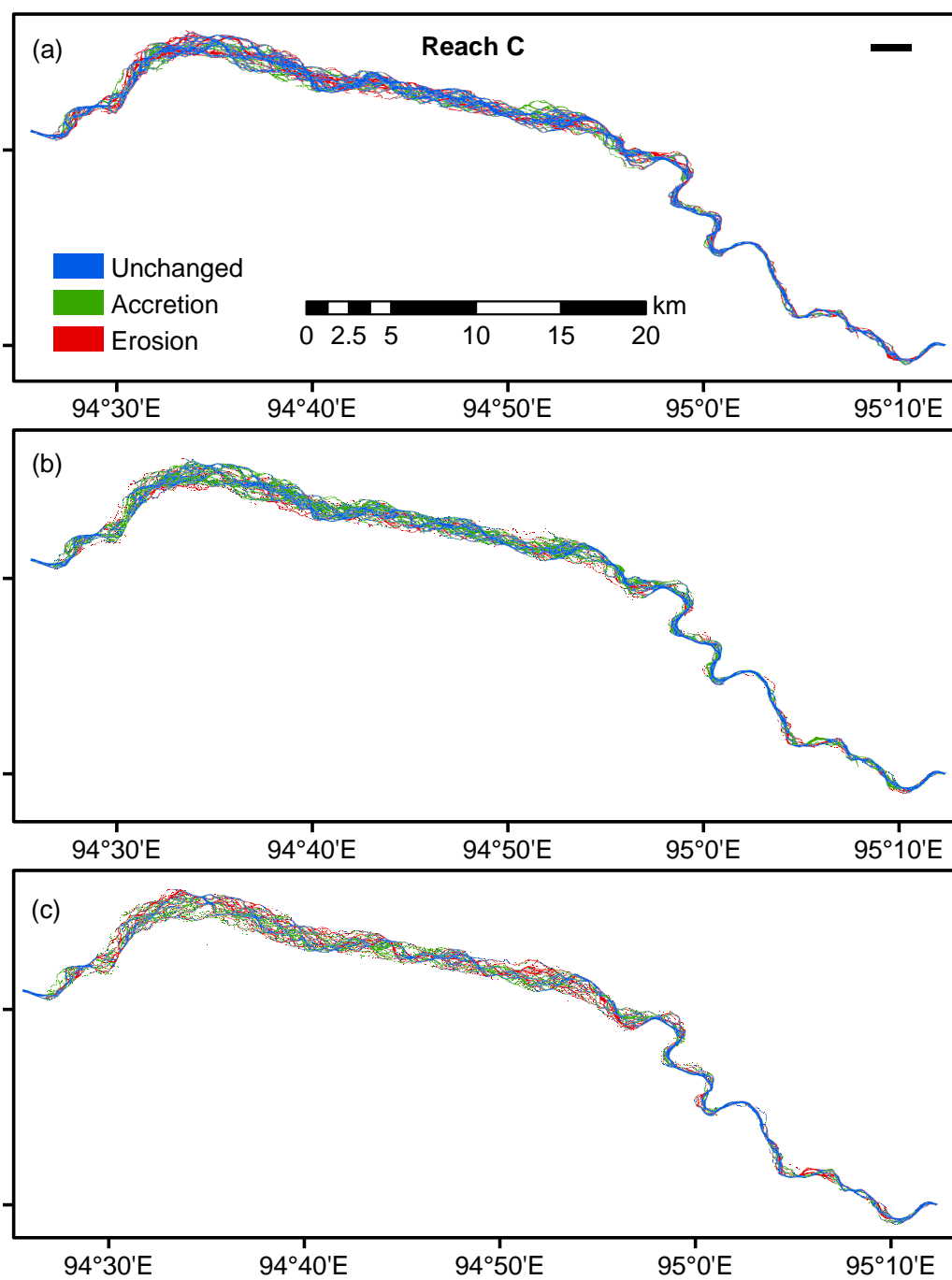
**Table S2.** Product description of remote sensing data.

Data Product	Time Span	Number of images
Landsat4-5 TM	1987.12-1999.07	223
Landsat7 ETM SLC-on	1999.07 -2013.06	526
Landsat8 OLI_TIRS	2013.06 -2021.12	359

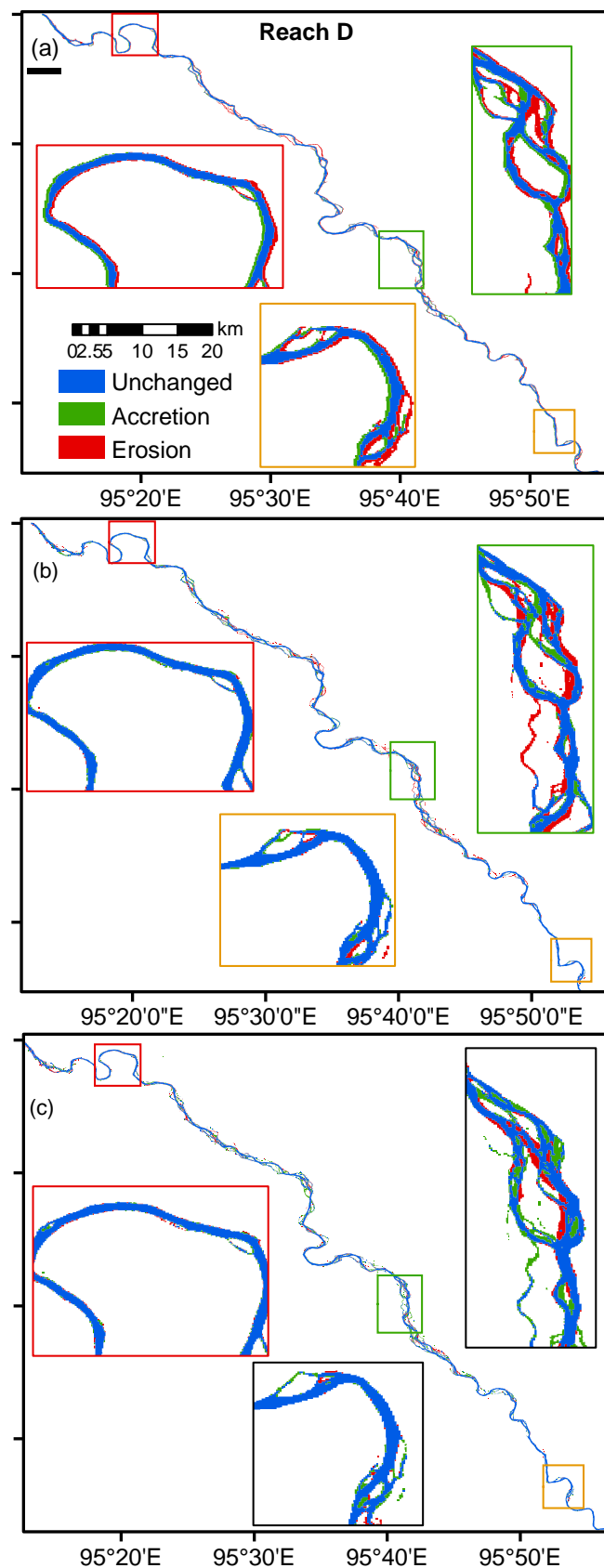
**Figure S1 .** Maps showing channel morphology dynamics for the main braided Reach A of the Tongtian River during three periods, i.e., 1990-2000 (a), 2000-2010 (b), 2010-2020 (c).



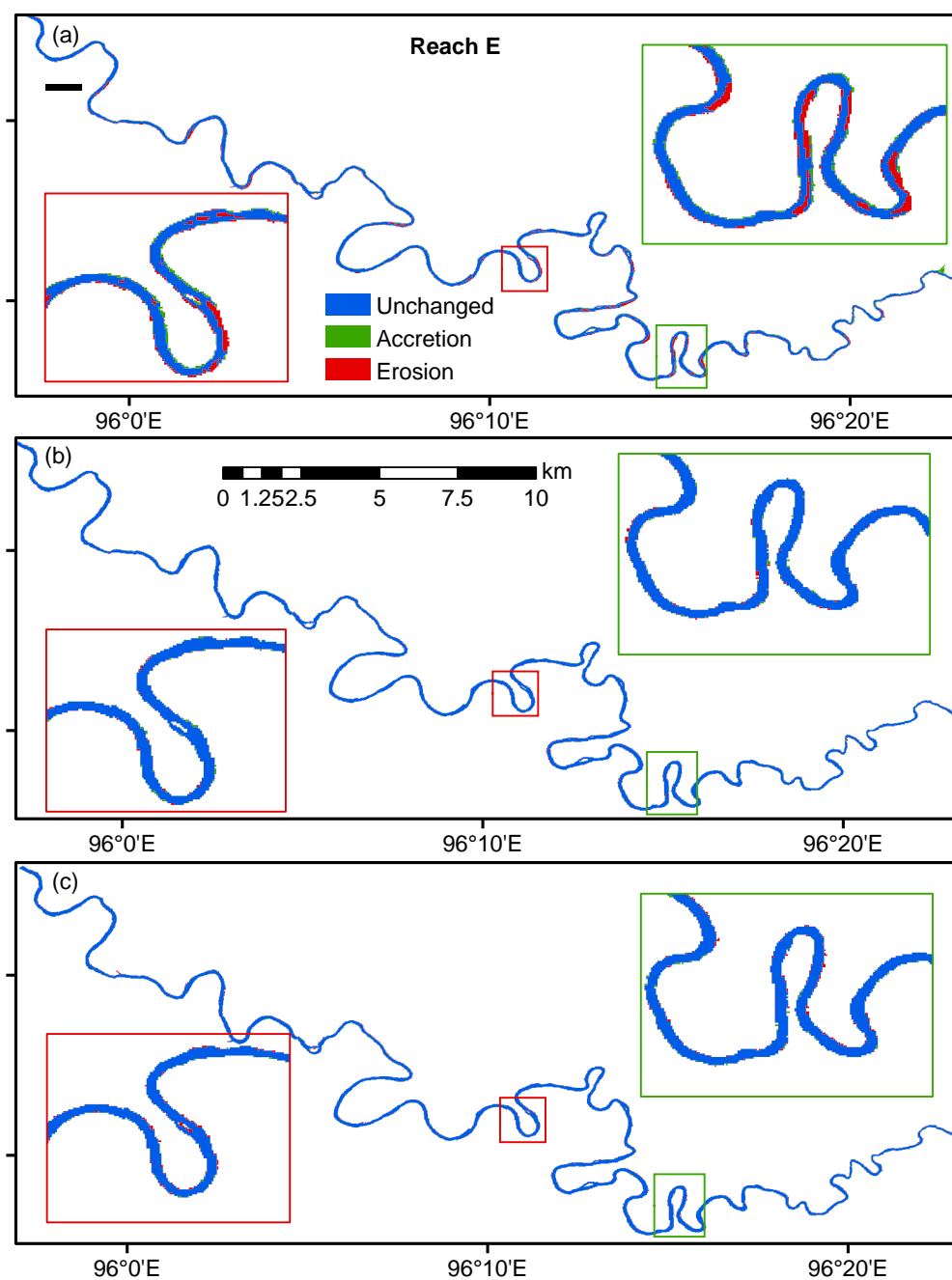
**Figure S2.** (a-c) The same as Figure S1, but for the main braided Reach B.



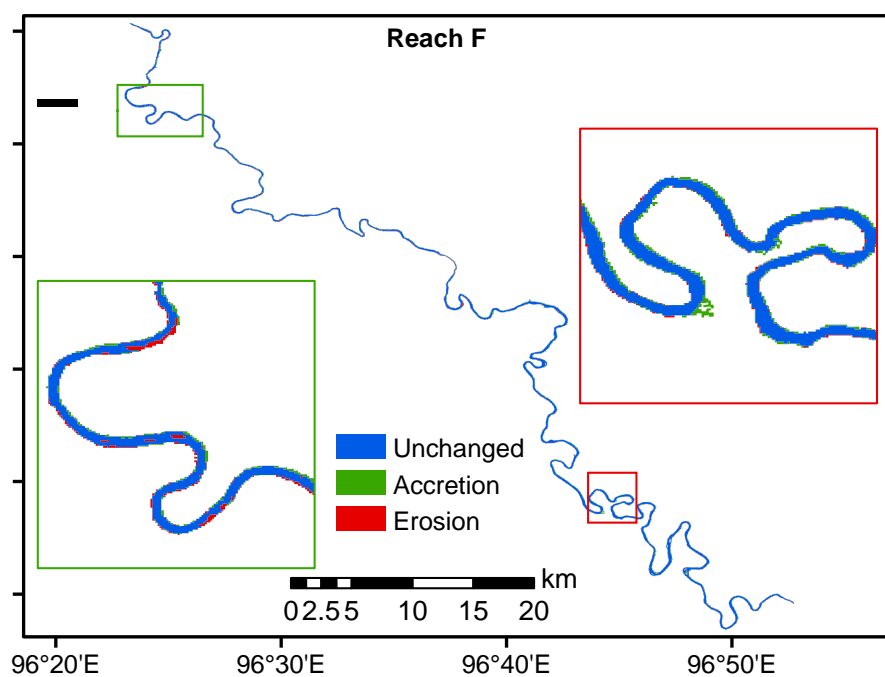
**Figure S3.** (a-c) The same as Figure S1, but for the main braided Reach C.



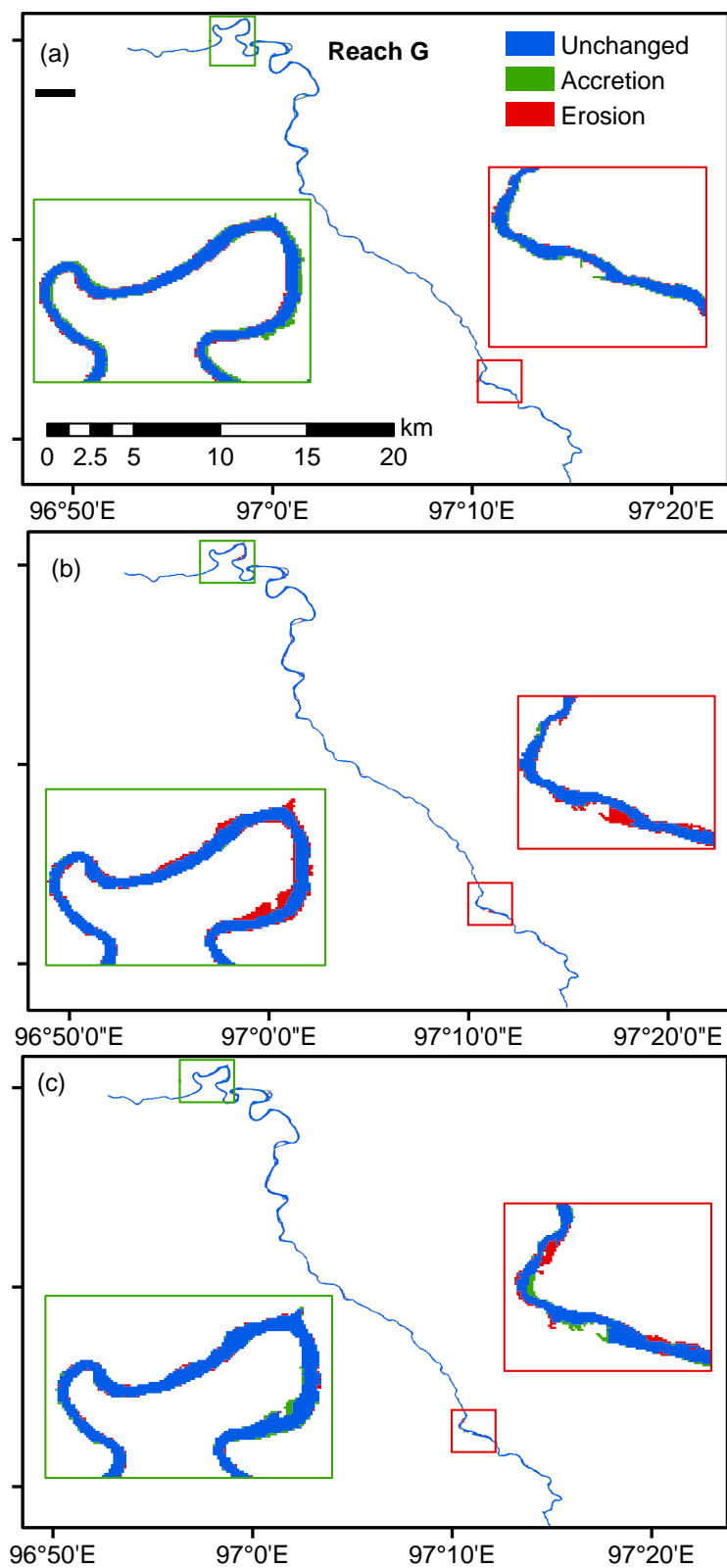
**Figure S4.** (a-c) The same as Figure S1, but for the minor braided Reach D. A local part highlighted in a colored rectangle is enlarged in an inserted map with a rectangle in the same color.



**Figure S5.** (a-c) The same as Figure S4, but for the main meandering Reach E.



**Figure S6.** The same as Figure S4, but for the main meandering Reach F. Only the map during 1990-2000 is shown here.



**Figure S7.** (a-c) The same as Figure S4, but for the minor meandering Reach G.