

# Supplementary Material

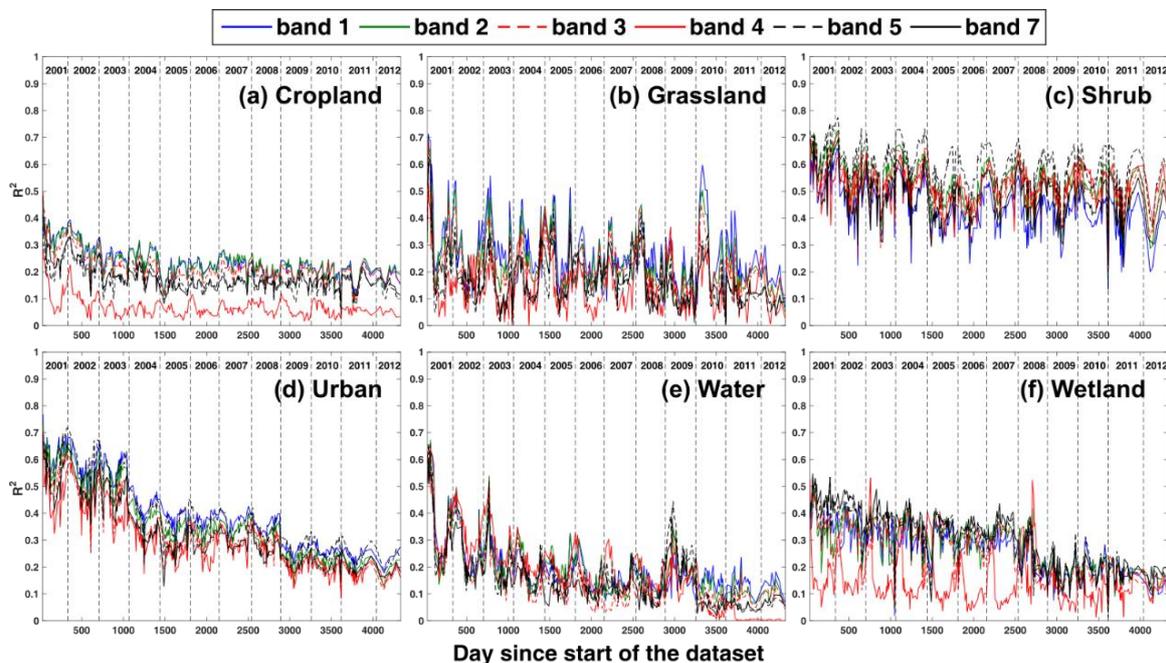
## Assessing the Effect of Temporal Interval Length on the Blending of Landsat-MODIS Surface Reflectance for Different Land Cover Types in Southwestern Continental United States

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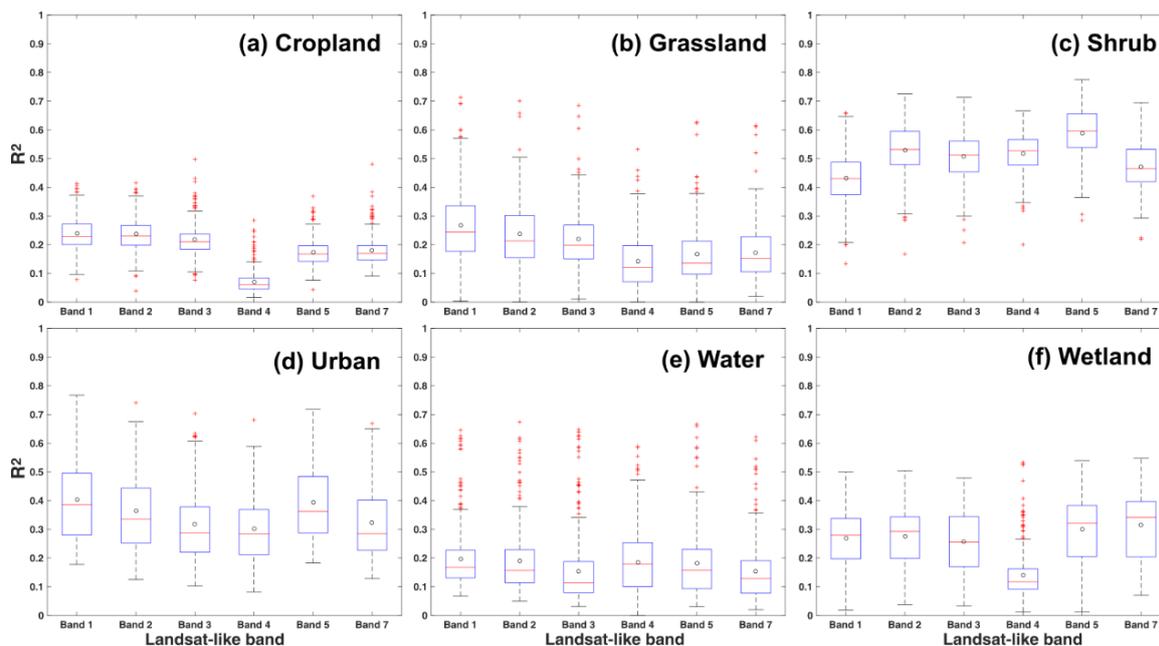
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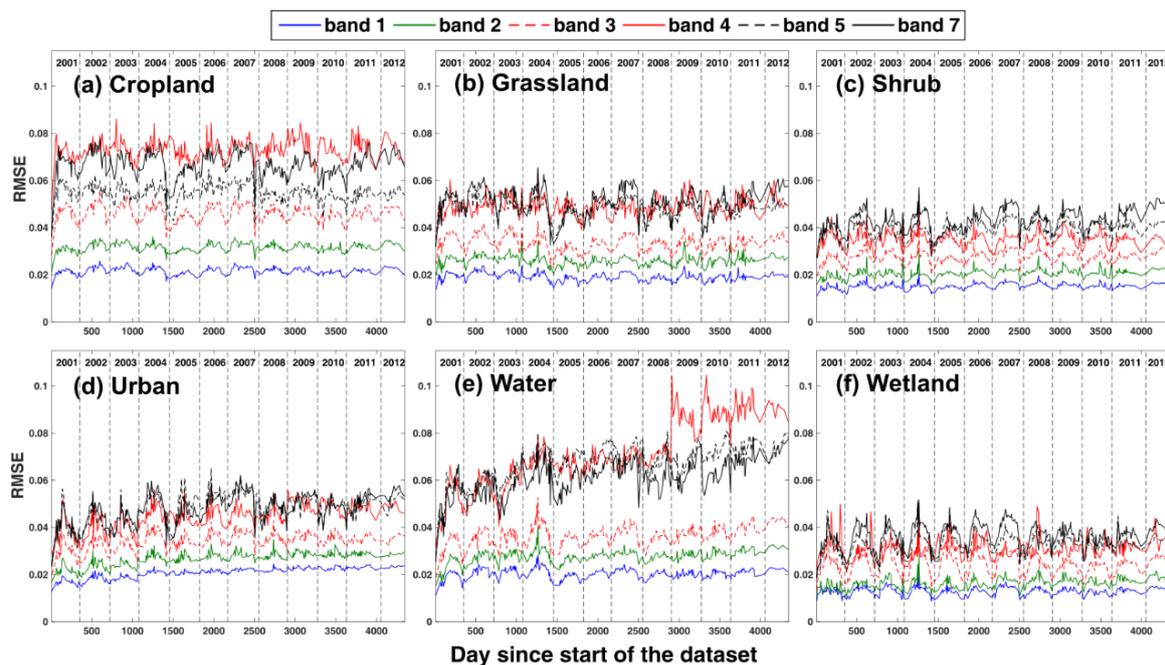
\* Author to whom correspondence should be addressed; E-Mail: zhanglf@radi.ac.cn; Tel.: +86-010-648-39450; Fax: +86-010-648-39450.



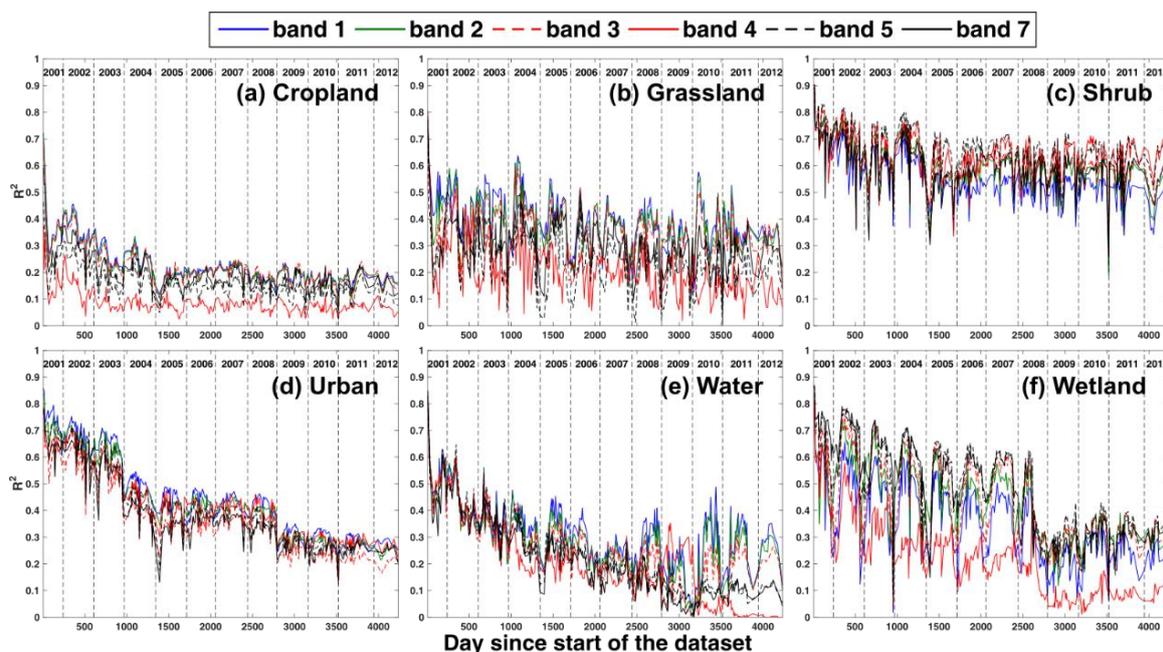
**Figure S1.** The  $R^2$  distribution of simulated surface reflectance for six land cover types with a fixed base date of 9 February 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



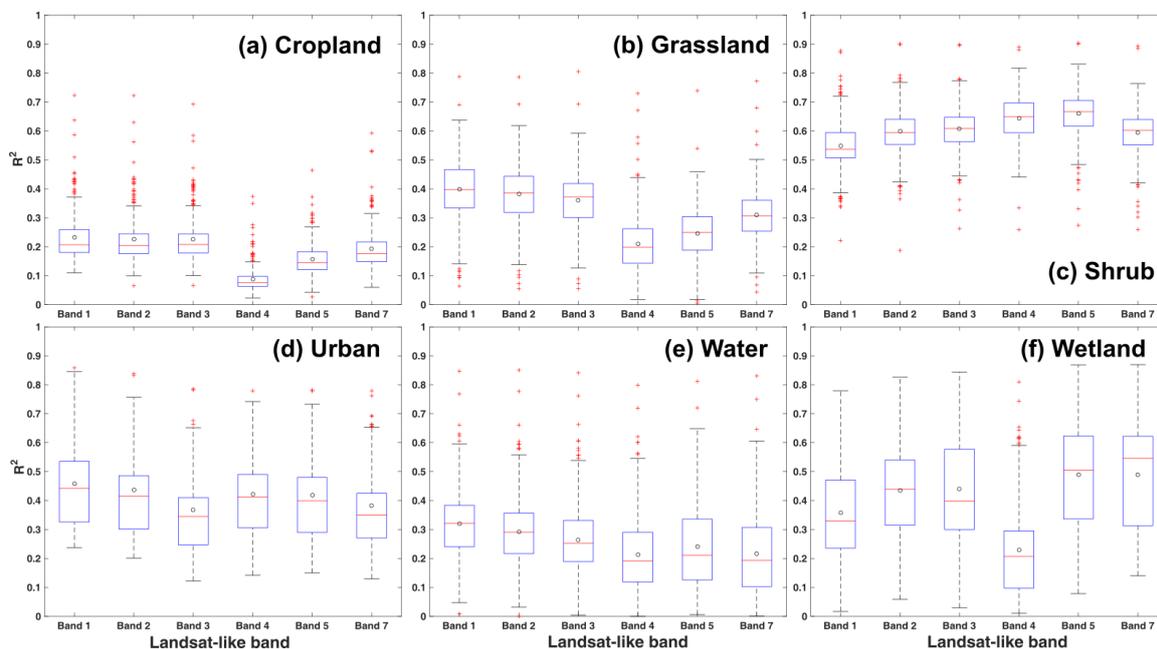
**Figure S2.** The  $R^2$  distribution box plot of simulated surface reflectance for six land cover types for a fixed base date of 9 February 2001. For each Landsat band, the five lines from the bottom upward are the minimum, first quartile (q1), median, third quartile (q3), and maximum values of  $R^2$ . The circle indicates the mean value of  $R^2$  for the corresponding Landsat band. The cross symbols indicate outliers in the  $R^2$  distribution. The  $R^2$  value are drawn as outliers if they are larger than  $q3 + 1.5 \times (q3 - q1)$  or smaller than  $q1 - 1.5 \times (q3 - q1)$ . The same for Figures S5, S9, S11 and S14 about outliers. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



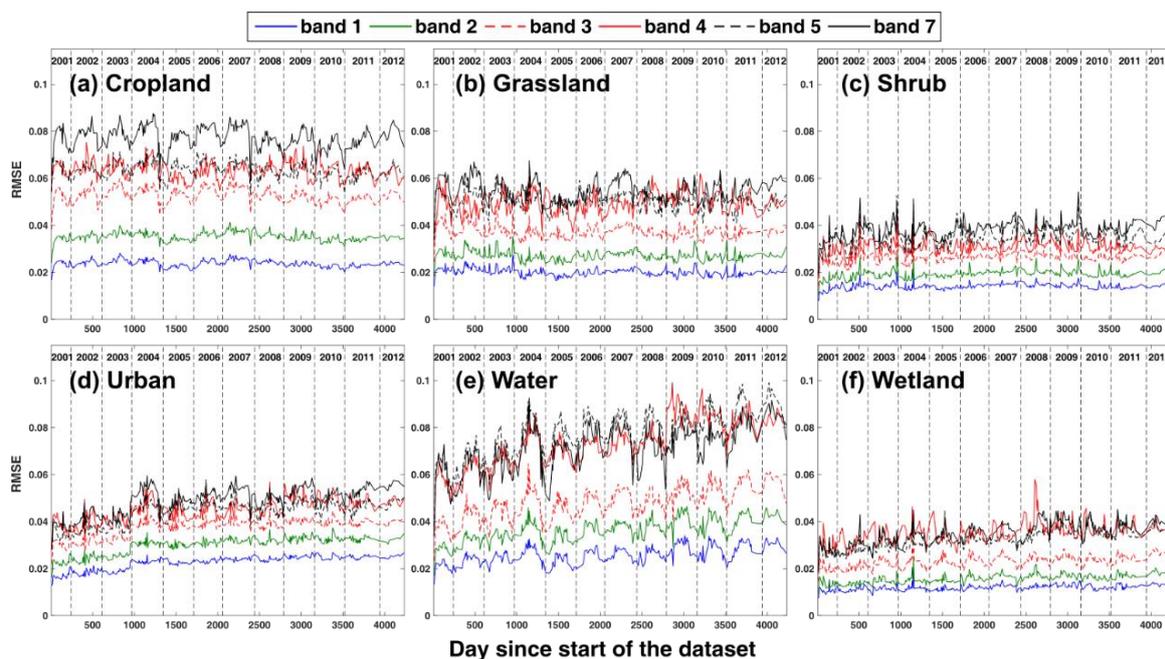
**Figure S3.** The RMSE distribution of simulated surface reflectance for six land cover types with a fixed base date of 9 February 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



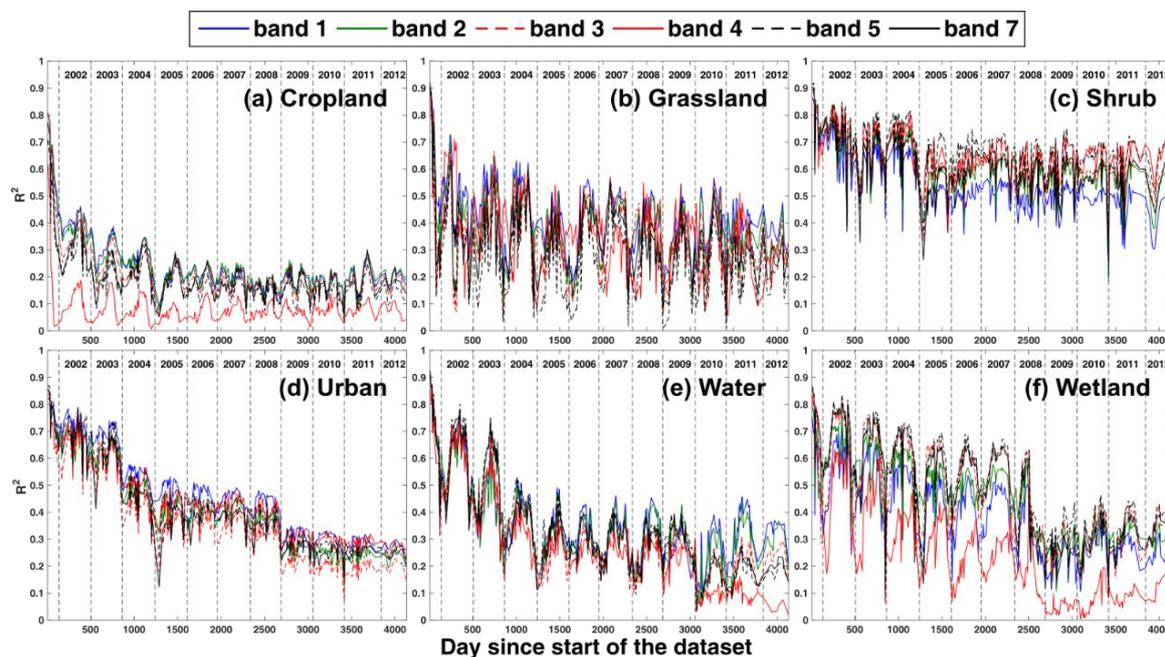
**Figure S4.** The  $R^2$  distribution of simulated surface reflectance for six land cover types with a fixed base date of 16 May 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



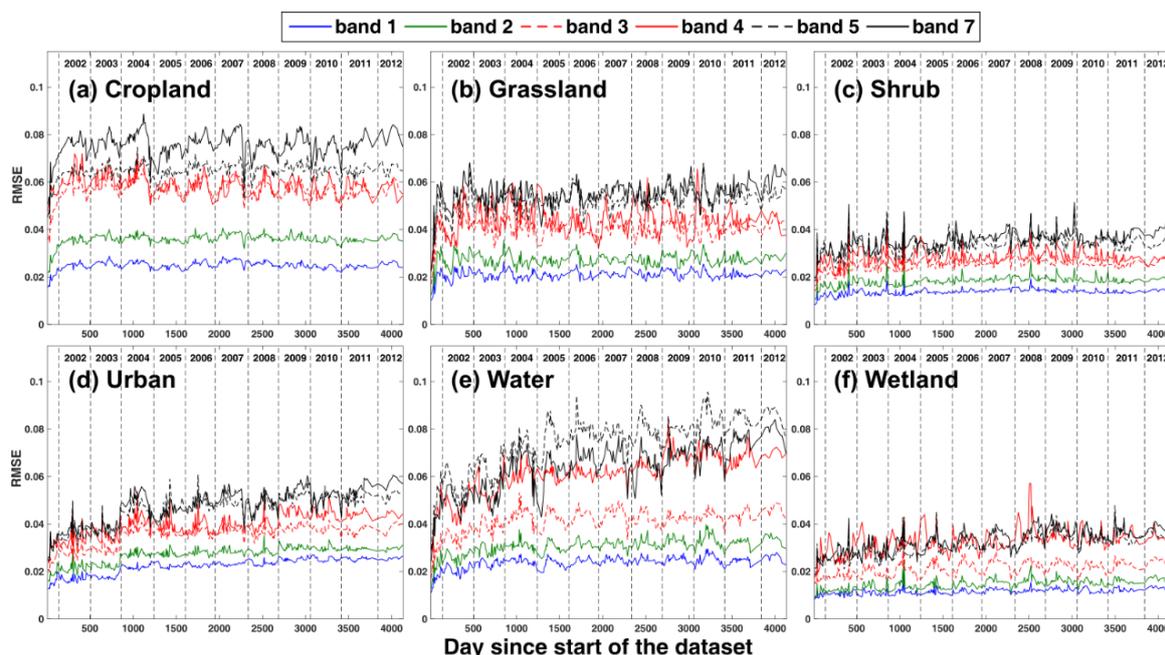
**Figure S5.** The  $R^2$  distribution box plot of simulated surface reflectance for six land cover types for a fixed base date of 16 May 2001. For each Landsat band, the five lines from the bottom upward are the minimum, first quartile, median, third quartile, and maximum values of  $R^2$ . The circle indicates the mean value of  $R^2$  for the corresponding Landsat band. The cross symbols indicate outliers in the  $R^2$  distribution. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



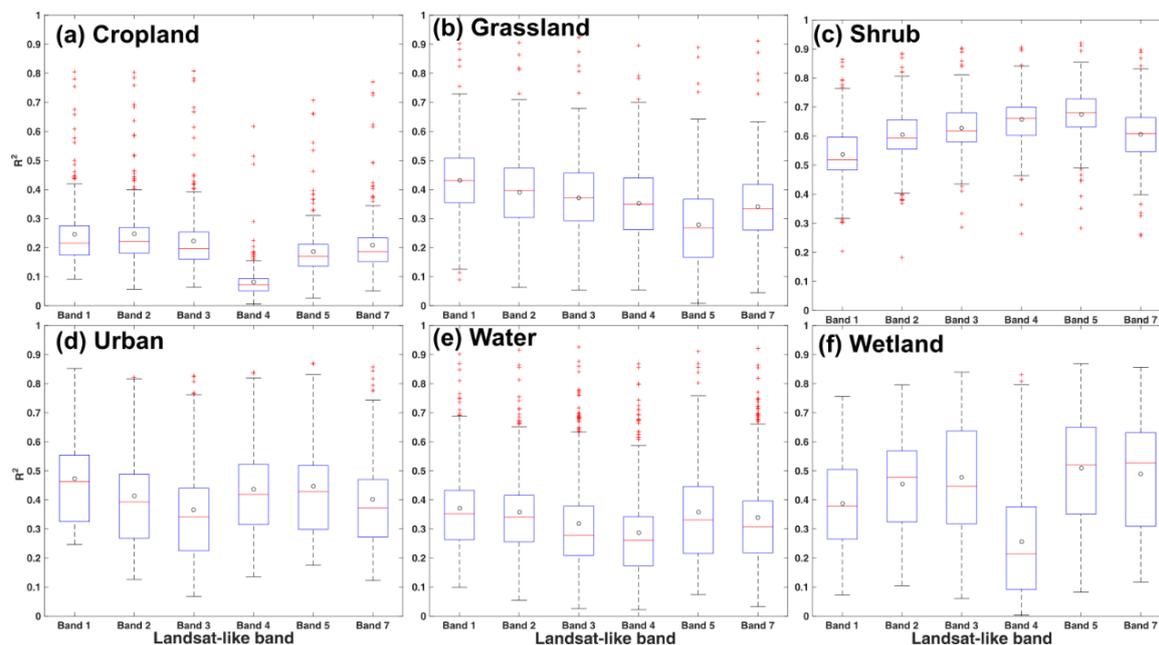
**Figure S6.** The RMSE distribution of simulated surface reflectance for six land cover types with a fixed base date of 16 May 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



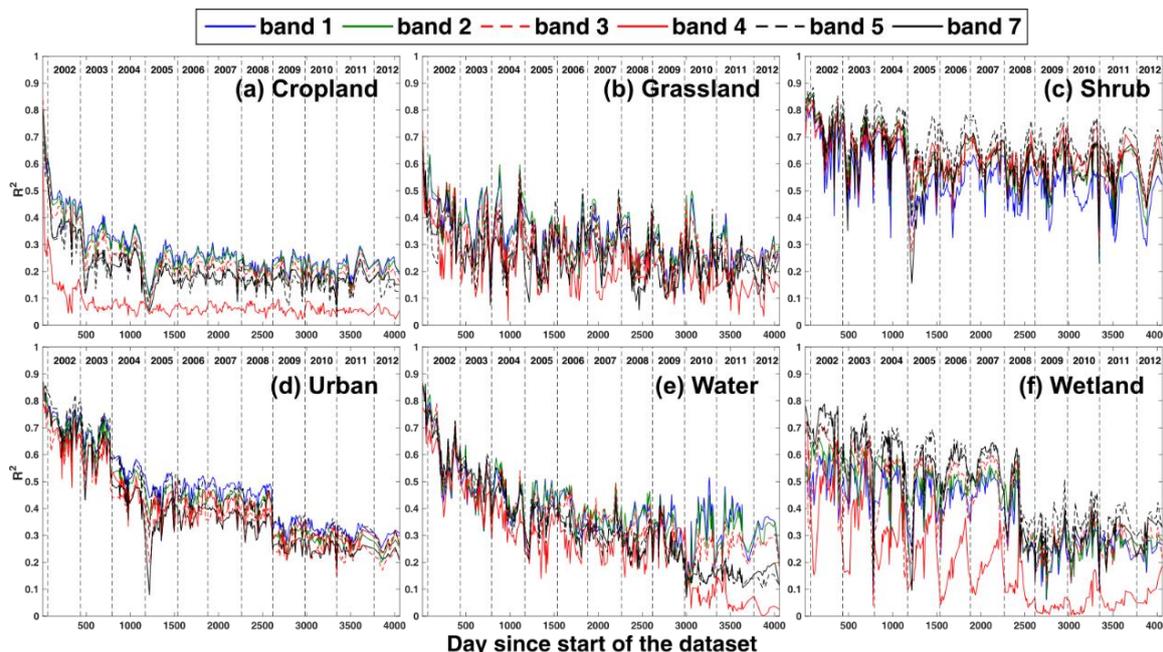
**Figure S7.** The  $R^2$  distribution of simulated surface reflectance for six land cover types with a fixed base date of 28 August 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



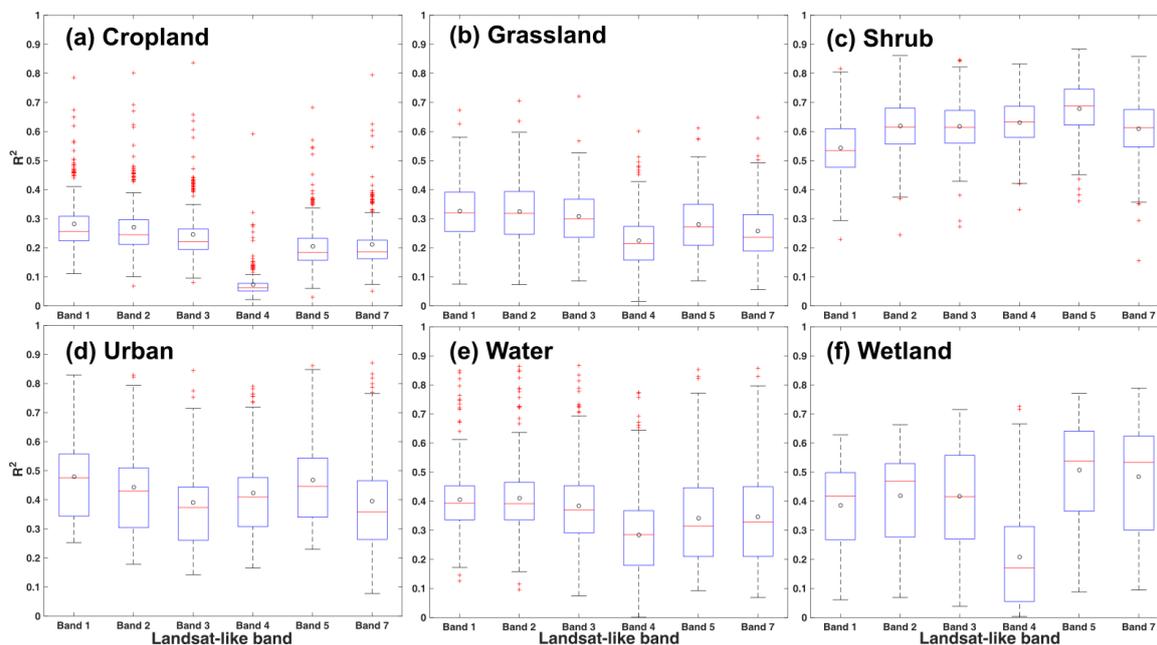
**Figure S8.** The RMSE distribution of simulated surface reflectance for six land cover types with a fixed base date of 28 August 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) (Water); (f) Wetland.



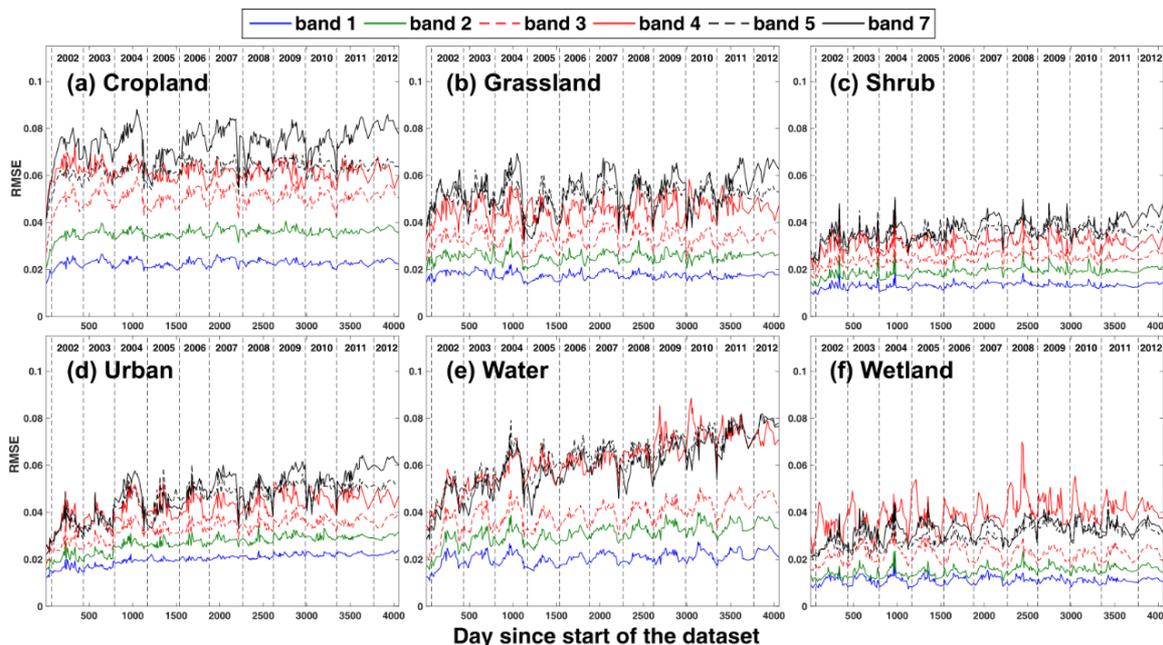
**Figure S9.** The  $R^2$  distribution box plot of simulated surface reflectance for six land cover types for a fixed base date of 28 August 2001. For each Landsat band, the five lines from the bottom upward are the minimum, first quartile, median, third quartile, and maximum values of  $R^2$ . The circle indicates the mean value of  $R^2$  for the corresponding Landsat band. The cross symbols indicate outliers in the  $R^2$  distribution. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



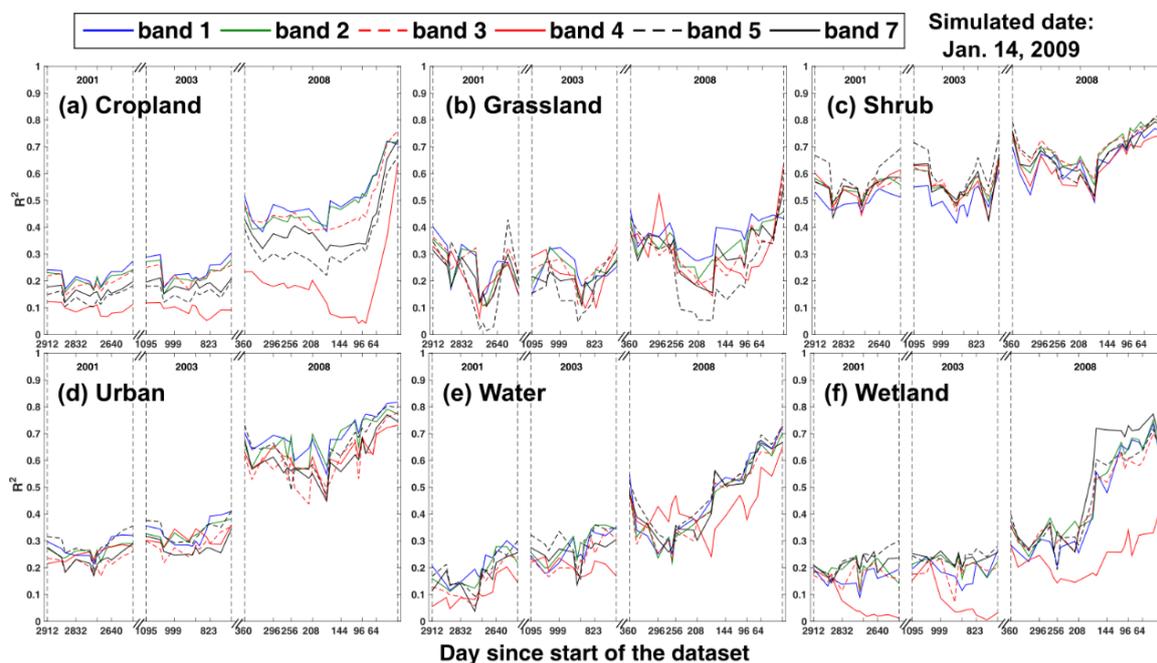
**Figure S10.** The  $R^2$  distribution of simulated surface reflectance for six land cover types according to fixed base date of 8 November 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



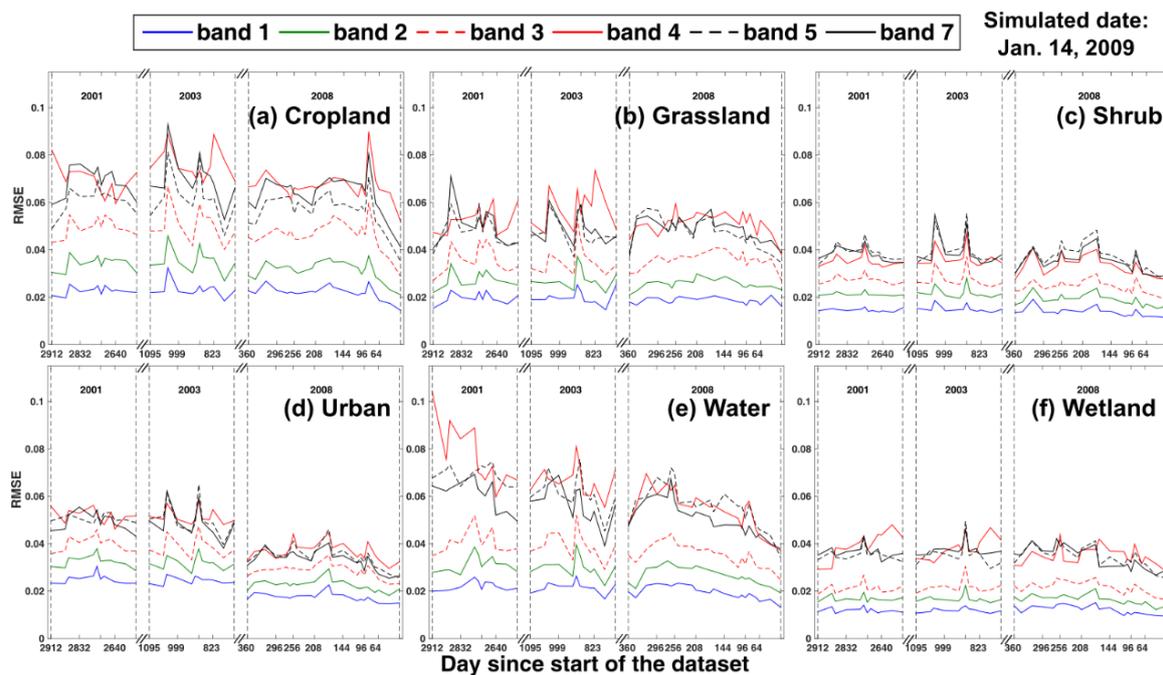
**Figure S11.** The  $R^2$  distribution box plot of simulated surface reflectance for six land cover types for the base date of 8 November 2001. For each Landsat band, the five lines from the bottom upward are the minimum, first quartile, median, third quartile, and maximum values of  $R^2$ . The circle indicates the mean value of  $R^2$  for the corresponding Landsat band. The cross symbols indicate outliers in the  $R^2$  distribution. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



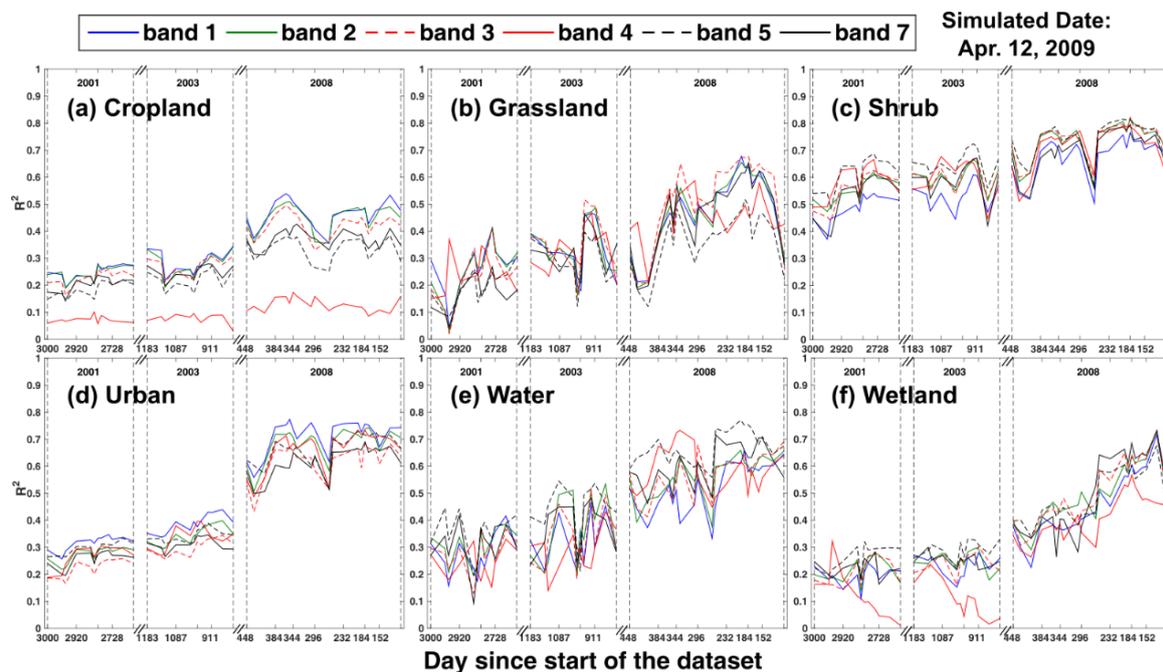
**Figure S12.** The RMSE distribution of simulated surface reflectance for six land cover types according to fixed base date of 8 November 2001. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



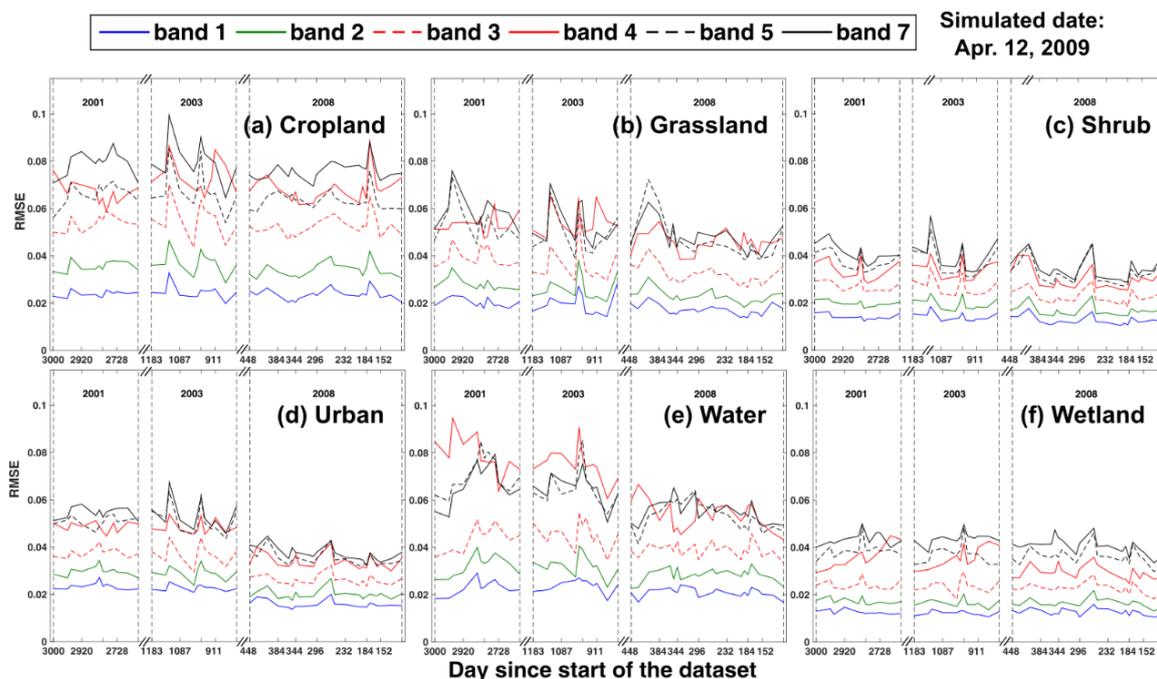
**Figure S13.** The  $R^2$  value distribution of simulated surface reflectance for specific simulation date of 14 January 2009. For each land cover type, the simulated surface reflectance for each Landsat band on the simulation date had 44 corresponding base date (12 base dates for 2001 and 2003, and 20 base dates for 2008). The same for Figures S14, S15, S16, S17, S18, S19 and S20. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



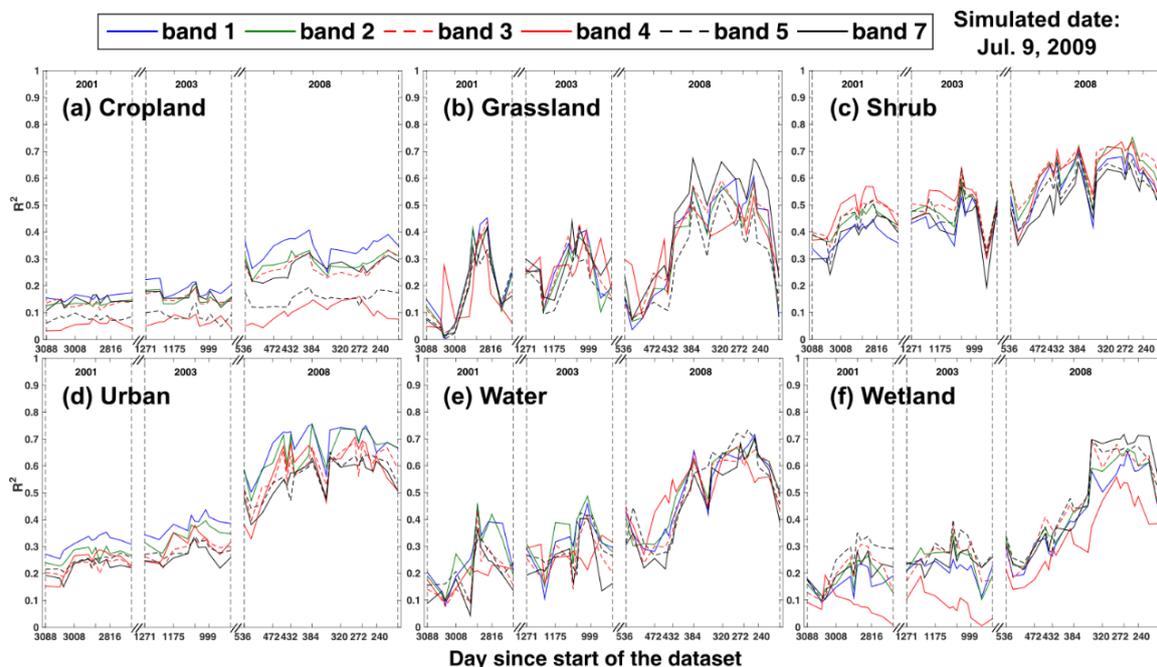
**Figure S14.** The RMSE value distribution of simulated surface reflectance for specific simulation date of 14 January 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



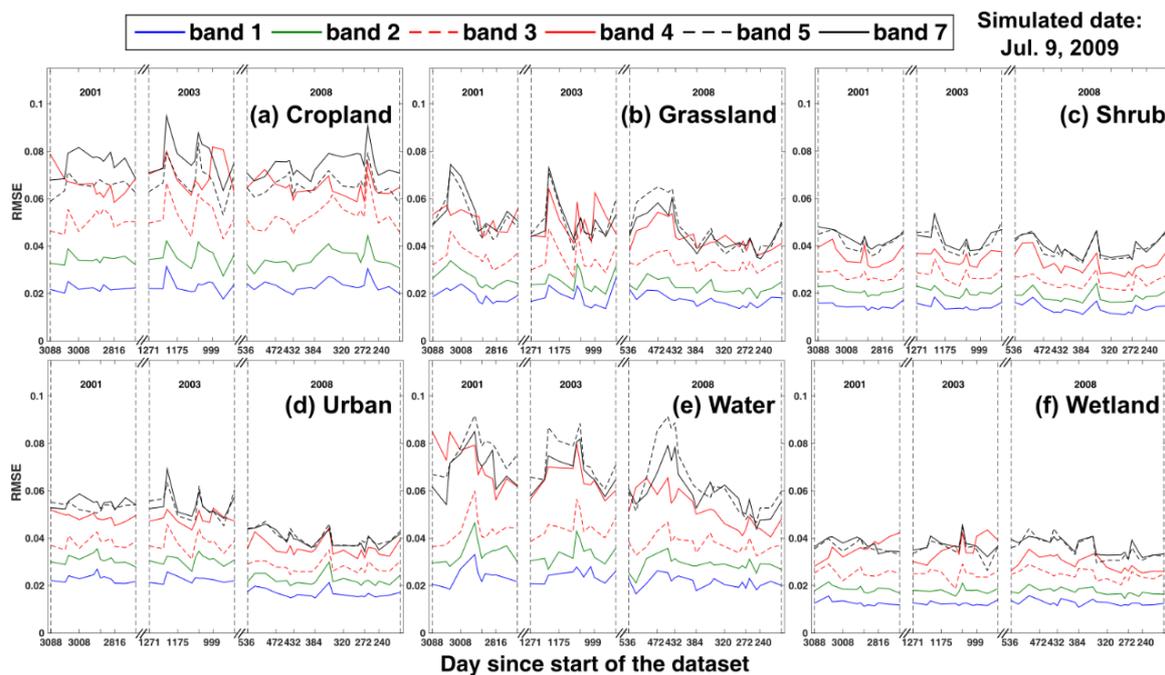
**Figure S15.** The  $R^2$  value distribution of simulated surface reflectance for specific simulation date of 12 April 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



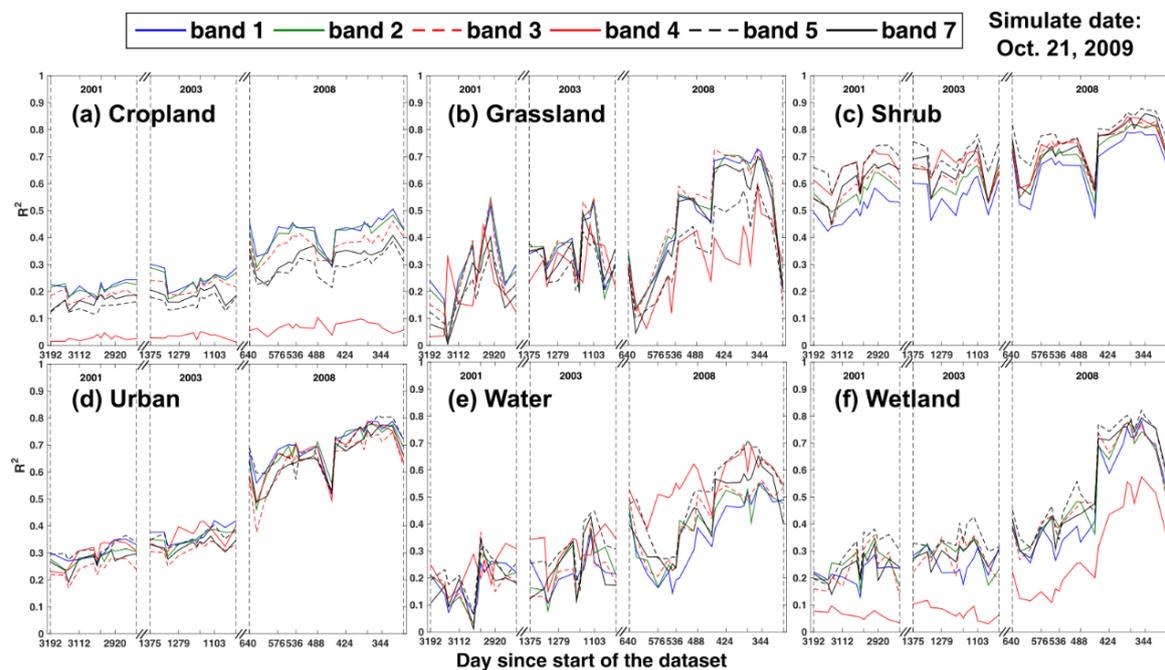
**Figure S16.** The RMSE value distribution of simulated surface reflectance for specific simulation date of 12 April 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



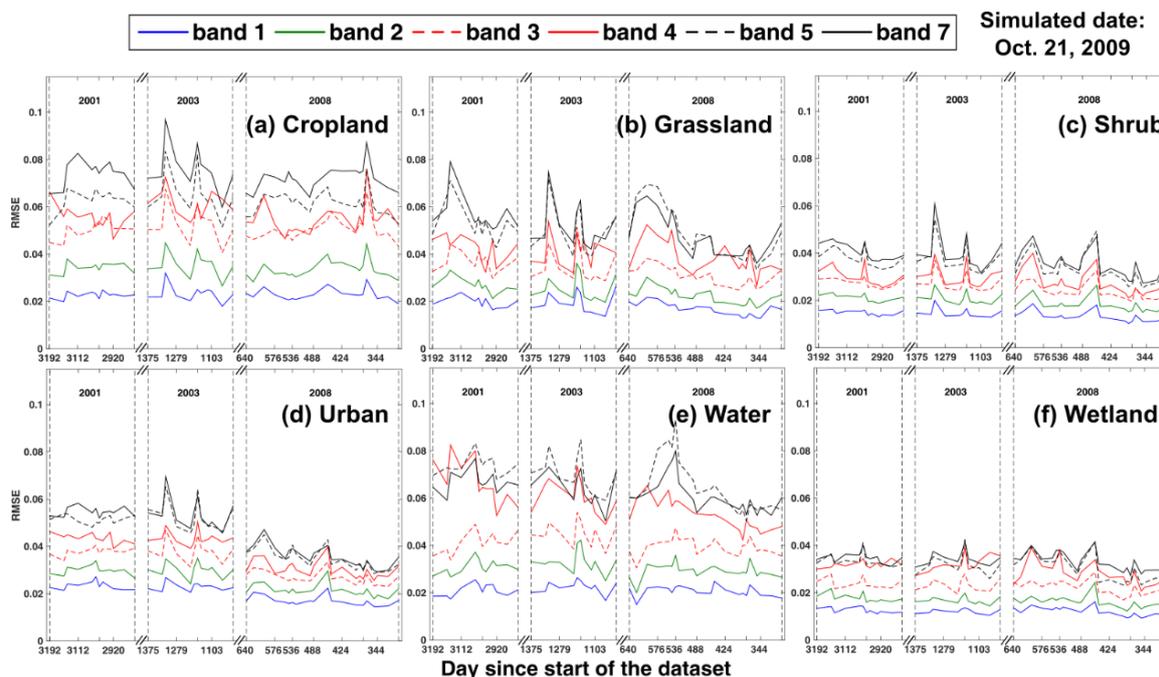
**Figure S17.** The  $R^2$  value distribution of simulated surface reflectance for specific simulation date of 9 July 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



**Figure S18.** The RMSE value distribution of simulated surface reflectance for specific simulation date of 9 July 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



**Figure S19.** The  $R^2$  value distribution of simulated surface reflectance for specific simulation date of 21 October 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.



**Figure S20.** The RMSE value distribution of simulated surface reflectance for specific simulation date of 21 October 2009. (a) Cropland; (b) Grassland; (c) Shrub; (d) Urban; (e) Water; (f) Wetland.

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