

1 **Title: Supplements of “The influence of riparian evapotranspiration on stream hydrology**
2 **and nitrogen retention in a subhumid Mediterranean catchment”**

3 **Authors**

4 Anna Lupon¹, Susana Bernal^{1,2}, Sílvia Poblador¹, Eugènia Martí², Francesc Sabater¹

5 **Affiliations**

6 ¹ Department d’Ecologia, Facultat de Biologia, University of Barcelona, Av. Diagonal 643,
7 08028, Barcelona, Spain.

8 ² Integrative Freshwater Ecology Group, Center for Advanced Studies of Blanes (CEAB-
9 CSIC), Accés a la Cala Sant Francesc 14, 17300, Blanes, Girona, Spain.

10 **Corresponding author:** Anna Lupon. alupon@ub.edu

11 **Table S1.** Annual precipitation (P), annual potential evapotranspiration (PET), P/PET ratio,
12 and riparian water depletion (RWD) for different catchments across climatic regions.

13

Climate	P (mm yr ⁻¹)	PET (mm yr ⁻¹)	P/PET	RWD (%)	Source
Arid	250	2280	0.11	33	Dahm et al., 2002
Arid	300	1800	0.17	36	Doble et al., 2006
Arid	400	1400	0.29	22	Contreras et al., 2011
Arid	255	693	0.37	20	Goodrich et al., 2000
Arid	570	900	0.63	13	Springer et al., 2006
Mediterranean	1296	1911	0.68	9	Scott, 1999
Mediterranean	780	1055	0.72	12	Folch and Ferrer, 2015
Mediterranean	850	1170	0.73	7	Wine and Zou, 2012
Mediterranean	750	990	0.77	5	Sabater and Bernal, 2011
Mediterranean	925	1100	0.84	3.6	Present Study
Temperate	1780	1400	1.27	4	Dunford and Fletcher, 1947
Temperate	858	590	1.45	3	Petrone et al., 2007
Temperate	1523	1011	1.51	2.5	Salemi et al., 2012
Temperate	1800	900	2.00	1.2	Dunford and Fletcher, 1947
Tropical	4370	1825	2.39	1.4	Cadol et al., 2012

14

15 **References**

16 Cadol, D., Kampf, S. and Wohl, E.: Effects of evapotranspiration on baseflow in a tropical
17 headwater catchment, *J. Hydrol.*, 462–463, 4–14, 2012.

18 Contreras, S., Jobbág, E. G., Villagra, P. E., Nosedo, M. D. and Puigdefábregas, J.: Remote
19 sensing estimates of supplementary water consumption by arid ecosystems of central
20 Argentina, *J. Hydrol.*, 397(1-2), 10–22, 2011.

- 21 Dahm, C. N., Cleverly, J. R., Coonrod E. Allred, J., Thibault, J. R., McDonnell, D. E. and
22 Gilroy, D. J.: Evapotranspiration at the land/ water interface in a semi-arid drainage basin,
23 Freshw. Biol., 47(4), 831–844, 2002.
- 24 Doble, R., Simmons, C., Jolly, I. and Walker, G.: Spatial relationships between vegetation cover
25 and irrigation-induced groundwater discharge on a semi-arid floodplain, Australia, J. Hydrol.,
26 329(1-2), 75–97, 2006.
- 27 Dunford, E. G. and Fletcher, P. W.: Effect of removal of stream-bank vegetation upon water
28 yield, Am. Geophys. Union, 28(1), 105–110, 1947.
- 29 Folch, A. and Ferrer, N.: The impact of poplar tree plantations for biomass production on the
30 aquifer water budget and base flow in a Mediterranean basin., Sci. Total Environ., 524-525,
31 213–24, 2015.
- 32 Goodrich, D. C., Scott, R., Qi, J., Goff, B., Unkrich, C. L., Moran, M. S., Williams, D.,
33 Schaeffer, S., Snyder, K., MacNish, R., Maddock, T., Pool, D., Chehbouni, a., Cooper, D. I.,
34 Eichinger, W. E., Shuttleworth, W. J., Kerr, Y., Marsett, R. and Ni, W.: Seasonal estimates of
35 riparian evapotranspiration using remote and in situ measurements, Agric. For. Meteorol.,
36 105(1-3), 281–309, 2000.
- 37 Petrone, K., Buffam, I. and Laudon, H.: Hydrologic and biotic control of nitrogen export during
38 snowmelt: A combined conservative and reactive tracer approach, Water Resour. Res., 43(6),
39 W06420, 2007.
- 40 Sabater, F. and Bernal, S.: Keeping healthy riparian and aquatic ecosystems in theMed-
41 iterranean: challenges and solutions through riparian forest management., in Water for Forests
42 and People in the Mediterranean, edited by M. Boiro, Y., Gracia, C., Palahí, pp. 151–155., 2011.

- 43 Salemi, L. F., Groppo, J. D., Trevisan, R., Marcos de Moraes, J., de Paula Lima, W. and
44 Martinelli, L. A.: Riparian vegetation and water yield: A synthesis, *J. Hydrol.*, 454-455, 195–
45 202, 2012.
- 46 Scott, D. F.: Managing riparian zone vegetation to sustain streamflow: results of paired
47 catchment experiments in South Africa, *Can. J. For. Res.*, 29, 1149– 1157, 1999.
- 48 Springer, A. E., Amentt, M. a., Kolb, T. E. and Mullen, R. M.: Evapotranspiration of two
49 vegetation communities in a high-elevation riparian meadow at Hart Prairie, Arizona, *Water*
50 *Resour. Res.*, 42(3), 1–11, 2006.
- 51 Wine, M. L. and Zou, C. B.: Long-term streamflow relations with riparian gallery forest
52 expansion into tallgrass prairie in the Southern Great Plains, USA, *For. Ecol. Manage.*,
53 266(2012), 170–179, 2012.