

Managing River Catchments

[View Online](#)

1.

Gilvear, D.J., Heal, K.V., Stephen, A.: Hydrology and the ecological quality of Scottish river ecosystems. *Science of The Total Environment*. 294, 131–159 (2002).
[https://doi.org/10.1016/S0048-9697\(02\)00060-8](https://doi.org/10.1016/S0048-9697(02)00060-8).

2.

Lewin, J.: Enlightenment and the GM floodplain. *Earth Surface Processes and Landforms*. 38, 17–29 (2013). <https://doi.org/10.1002/esp.3230>.

3.

Perfect, C., Addy, S., Gilvear, D.: *The Scottish Rivers Handbook*. (2013).

4.

Werritty, A., Leys, K.F.: The sensitivity of Scottish rivers and upland valley floors to recent environmental change. *CATENA*. 42, 251–273 (2001).
[https://doi.org/10.1016/S0341-8162\(00\)00140-5](https://doi.org/10.1016/S0341-8162(00)00140-5).

5.

Werritty, A., Hoey, T.B., Scottish Natural Heritage (Agency): *Geomorphological changes and trends in Scotland: river channels and processes*. Scottish Natural Heritage, Edinburgh (2004).

6.

Syvitski, J.P.M.: Impact of Humans on the Flux of Terrestrial Sediment to the Global Coastal Ocean. *Science*. 308, 376–380 (2005). <https://doi.org/10.1126/science.1109454>.

7.

Belletti, B., Rinaldi, M., Bussettini, M., Comiti, F., Gurnell, A.M., Mao, L., Nardi, L., Vezza, P.: Characterising physical habitats and fluvial hydromorphology: A new system for the survey and classification of river geomorphic units. *Geomorphology*. 283, 143–157 (2017). <https://doi.org/10.1016/j.geomorph.2017.01.032>.

8.

Brierley, G., Hooke, J.: Emerging geomorphic approaches to guide river management practices. *Geomorphology*. 251, 1–5 (2015). <https://doi.org/10.1016/j.geomorph.2015.08.019>.

9.

Brierley, G.J., Fryirs, K.A.: *Geomorphology and river management: applications of the river styles framework*. Blackwell Pub, Malden, MA (2005).

10.

Brierley, G., Fryirs, K., Cullum, C., Tadaki, M., Huang, H.Q., Blue, B.: Reading the landscape: Integrating the theory and practice of geomorphology to develop place-based understandings of river systems. *Progress in Physical Geography*. 37, 601–621 (2013). <https://doi.org/10.1177/0309133313490007>.

11.

Brierley, G., Hooke, J.: Emerging geomorphic approaches to guide river management practices. *Geomorphology*. 251, 1–5 (2015). <https://doi.org/10.1016/j.geomorph.2015.08.019>.

12.

Fryirs, K.A., Brierley, G.J.: *Geomorphic analysis of river systems: an approach to reading the landscape*. Wiley, Chichester, West Sussex (2013).

13.

Gurnell, A.M., Rinaldi, M., Belletti, B., Bizzi, S., Blamauer, B., Braca, G., Buijse, A.D., Bussettini, M., Camenen, B., Comiti, F., Demarchi, L., García de Jalón, D., González del Tánago, M., Grabowski, R.C., Gunn, I.D.M., Habersack, H., Hendriks, D., Henshaw, A.J., Klösch, M., Lastoria, B., Latapie, A., Marcinkowski, P., Martínez-Fernández, V., Mosselman, E., Mountford, J.O., Nardi, L., Okruszko, T., O'Hare, M.T., Palma, M., Percopo, C., Surian, N., van de Bund, W., Weissteiner, C., Ziliani, L.: A multi-scale hierarchical framework for developing understanding of river behaviour to support river management. *Aquatic Sciences*. 78, 1–16 (2016). <https://doi.org/10.1007/s00027-015-0424-5>.

14.

Roni, P., Beechie, T.J.: *Stream and watershed restoration: a guide to restoring riverine processes and habitats*. Wiley-Blackwell, Chichester (2013).

15.

Wohl, E.E.: *Rivers in the landscape: science and management*. John Wiley & Sons Inc, Chichester, West Sussex (2014).

16.

Ebooks Corporation Limited: *Tools in fluvial geomorphology*. John Wiley & Sons, Chichester (2016).

17.

Reid, H.E., Brierley, G.J.: Assessing geomorphic sensitivity in relation to river capacity for adjustment. *Geomorphology*. 251, 108–121 (2015). <https://doi.org/10.1016/j.geomorph.2015.09.009>.

18.

Smith, M.J., Paron, P., Griffiths, J.S.: *Geomorphological mapping: methods and applications*. Elsevier, Oxford (2011).

19.

Davies, T.R.H., Lee, A.L.: *Physical hydraulic modelling of width reduction and bed level*

change in braided rivers. *Journal of Hydrology (New Zealand)*. 27, 113–127.

20.

Journal of Hydrology (New Zealand).

21.

Burt, T.P., Allison, R.J.: *Sediment cascades: an integrated approach*. Wiley-Blackwell, Chichester (2010).

22.

Davies, T.R.H., McSaveney, M.J., Clarkson, P.J.: Anthropogenic aggradation of the Waiho River, Westland, New Zealand: microscale modelling. *Earth Surface Processes and Landforms*. 28, 209–218 (2003). <https://doi.org/10.1002/esp.449>.

23.

Korup, O.: Geomorphic imprint of landslides on alpine river systems, southwest New Zealand. *Earth Surface Processes and Landforms*. 30, 783–800 (2005). <https://doi.org/10.1002/esp.1171>.

24.

Korup, O., Densmore, A.L., Schlunegger, F.: The role of landslides in mountain range evolution. *Geomorphology*. 120, 77–90 (2010). <https://doi.org/10.1016/j.geomorph.2009.09.017>.

25.

Cox et al, S.C.: GNS Science report 2014/07 : Activity of the landslide Te Horo and Te Koroka fan, Dart River, New Zealand during January 2014.

26.

Thomas et al, J.S.: GNS Science report 2009/43: 42 years evolution of Slip Stream landslide and fan, Dart River, New Zealand.

27.

CIWEM: Floods and dredging: a reality check,
<http://www.ciwem.org/wp-content/uploads/2016/02/Floods-and-Dredging-a-reality-check.pdf>, (2014).

28.

Kummu, M.: Water management in Angkor: Human impacts on hydrology and sediment transportation. *Journal of Environmental Management*. 90, 1413–1421 (2009).
<https://doi.org/10.1016/j.jenvman.2008.08.007>.

29.

Diamond, J.M.: *Collapse: how societies choose to fail or survive*. Penguin Books, London (2006).

30.

Belletti, B., Rinaldi, M., Buijse, A.D., Gurnell, A.M., Mosselman, E.: A review of assessment methods for river hydromorphology. *Environmental Earth Sciences*. 73, 2079–2100 (2015).
<https://doi.org/10.1007/s12665-014-3558-1>.

31.

J. M. Buffington: *Geomorphic classification of rivers*,
<https://www.treesearch.fs.fed.us/pubs/43354>.

32.

Ebooks Corporation Limited: *Tools in fluvial geomorphology*. John Wiley & Sons, Chichester (2016).

33.

Rinaldi, M., Gurnell, A.M., del Tánago, M.G., Bussettini, M., Hendriks, D.: Classification of river morphology and hydrology to support management and restoration. *Aquatic Sciences*. 78, 17–33 (2016). <https://doi.org/10.1007/s00027-015-0438-z>.

34.

Tadaki, M., Brierley, G., Cullum, C.: River classification: theory, practice, politics. Wiley Interdisciplinary Reviews: Water. n/a-n/a (2014). <https://doi.org/10.1002/wat2.1026>.

35.

Beechie, T., Imaki, H.: Predicting natural channel patterns based on landscape and geomorphic controls in the Columbia River basin, USA. Water Resources Research. 50, 39–57 (2014). <https://doi.org/10.1002/2013WR013629>.

36.

Brierley, G.J.: River Styles, a Geomorphic Approach to Catchment Characterization: Implications for River Rehabilitation in Bega Catchment, New South Wales, Australia. Environmental Management. 25, 661–679 (2000). <https://doi.org/10.1007/s002670010052>.

37.

River Styles, <http://www.riverstyles.com/>.

38.

Lave, R., Doyle, M., Robertson, M.: Privatizing stream restoration in the US. Social Studies of Science. 40, 677–703 (2010). <https://doi.org/10.1177/0306312710379671>.

39.

Montgomery, D.R.: Channel-reach morphology in mountain drainage basins. GSA Bulletin. 109, 596–611 (1997).

40.

Rosgen, D.L.: A classification of natural rivers. CATENA. 22, 169–199 (1994). [https://doi.org/10.1016/0341-8162\(94\)90001-9](https://doi.org/10.1016/0341-8162(94)90001-9).

41.

Modular River Survey, <http://modularriversurvey.org/>.

42.

Rinaldi, M., Gurnell, A.M., del Tánago, M.G., Bussettini, M., Hendriks, D.: Classification of river morphology and hydrology to support management and restoration. *Aquatic Sciences*. 78, 17–33 (2016). <https://doi.org/10.1007/s00027-015-0438-z>.

43.

Smith, S.M., Prestegard, K.L.: Hydraulic performance of a morphology-based stream channel design. *Water Resources Research*. 41, n/a-n/a (2005). <https://doi.org/10.1029/2004WR003926>.

44.

Kasprak, A., Hough-Snee, N., Beechie, T., Bouwes, N., Brierley, G., Camp, R., Fryirs, K., Imaki, H., Jensen, M., O'Brien, G., Rosgen, D., Wheaton, J.: The Blurred Line between Form and Process: A Comparison of Stream Channel Classification Frameworks. *PLOS ONE*. 11, (2016). <https://doi.org/10.1371/journal.pone.0150293>.

45.

Scottish Environmental Protection Agency: Supporting guidance (WAT-SG-21): Environmental Standards for River Morphology, https://www.sepa.org.uk/media/152194/wat_sg_21.pdf.

46.

Pender, G., Faulkner, H.: Flood risk science and management. Wiley-Blackwell, Chichester (2011).

47.

Cabinet Office: National Flood Resilience Review, <https://www.gov.uk/government/publications/national-flood-resilience-review>, (2016).

48.

Burt, S., McCarthy, M., Kendon, M., Hannaford, J.: Cumbrian floods, 5/6 December 2015. *Weather*. 71, 36–37 (2016). <https://doi.org/10.1002/wea.2704>.

49.

Ferranti, E., Chapman, L., Whyatt, D.: A Perfect Storm? The collapse of Lancaster's critical infrastructure networks following intense rainfall on 4/5 December 2015. *Weather*. 72, 3–7 (2017). <https://doi.org/10.1002/wea.2907>.

50.

Marsh et al, T.: The winter floods of 2015/2016 in the UK.

51.

Cabinet office: The Pitt Review: Lessons learned from the 2007 floods, http://webarchive.nationalarchives.gov.uk/20100807034701/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.html.

52.

Thorne, C.: Geographies of UK flooding in 2013/4. *The Geographical Journal*. 180, 297–309 (2014). <https://doi.org/10.1111/geoj.12122>.

53.

National River Flow Archive: Occasional Reports, <http://nrfa.ceh.ac.uk/occasional-reports>.

54.

Gregory, K.J., Goudie, A.: *The SAGE handbook of geomorphology*. SAGE, London (2011).

55.

Slater, L.J., Singer, M.B., Kirchner, J.W.: Hydrologic versus geomorphic drivers of trends in flood hazard. *Geophysical Research Letters*. 42, 370–376 (2015).

<https://doi.org/10.1002/2014GL062482>.

56.

Slater, L.J.: To what extent have changes in channel capacity contributed to flood hazard trends in England and Wales? *Earth Surface Processes and Landforms*. 41, 1115–1128 (2016). <https://doi.org/10.1002/esp.3927>.

57.

Olsen, J.R.: Climate Change and Floodplain Management in the United States. *Climatic Change*. 76, 407–426 (2006). <https://doi.org/10.1007/s10584-005-9020-3>.

58.

Schottler, S.P., Ulrich, J., Belmont, P., Moore, R., Lauer, J.W., Engstrom, D.R., Almendinger, J.E.: Twentieth century agricultural drainage creates more erosive rivers. *Hydrological Processes*. 28, 1951–1961 (2014). <https://doi.org/10.1002/hyp.9738>.

59.

Alfieri, L., Bisselink, B., Dottori, F., Naumann, G., de Roo, A., Salamon, P., Wyser, K., Feyen, L.: Global projections of river flood risk in a warmer world. *Earth's Future*. (2017). <https://doi.org/10.1002/2016EF000485>.

60.

Jongman, B., Ward, P.J., Aerts, J.C.J.H.: Global exposure to river and coastal flooding: Long term trends and changes. *Global Environmental Change*. 22, 823–835 (2012). <https://doi.org/10.1016/j.gloenvcha.2012.07.004>.

61.

Jongman, B., Hochrainer-Stigler, S., Feyen, L., Aerts, J.C.J.H., Mechler, R., Botzen, W.J.W., Bouwer, L.M., Pflug, G., Rojas, R., Ward, P.J.: Increasing stress on disaster-risk finance due to large floods. *Nature Climate Change*. 4, 264–268 (2014). <https://doi.org/10.1038/nclimate2124>.

62.

Hirabayashi, Y., Mahendran, R., Koirala, S., Konoshima, L., Yamazaki, D., Watanabe, S., Kim, H., Kanae, S.: Global flood risk under climate change. *Nature Climate Change*. 3, 816–821 (2013). <https://doi.org/10.1038/nclimate1911>.

63.

United Nations Office for Disaster Risk Reduction: Global assessment report on disaster risk reduction 2015, <https://www.unisdr.org/we/inform/publications/42809>.

64.

United Nations Office for Disaster Risk Reduction, Centre for Research on Epidemiology of Disasters: The human cost of weather-related disasters 1995-2015, <https://www.unisdr.org/we/inform/publications/46796>.

65.

Scotland & Northern Ireland Forum for Environmental Research: A handbook of climate trends across Scotland (SNIFFER project CC03), https://www.south-ayrshire.gov.uk/documents/sniffer%20partnership_climate%20change%20trend%20handbook%20june%2006.pdf.

66.

Jenkins, G.J.: The climate of the United Kingdom and recent trends, http://www.ukcip.org.uk/wp-content/PDFs/UKCP09_Trends.pdf, (2007).

67.

Future flooding, <https://www.gov.uk/government/publications/future-flooding>.

68.

Pall, P., Aina, T., Stone, D.A., Stott, P.A., Nozawa, T., Hilberts, A.G.J., Lohmann, D., Allen, M.R.: Anthropogenic greenhouse gas contribution to flood risk in England and Wales in autumn 2000. *Nature*. 470, 382–385 (2011). <https://doi.org/10.1038/nature09762>.

69.

Schaller, N., Kay, A.L., Lamb, R., Massey, N.R., van Oldenborgh, G.J., Otto, F.E.L., Sparrow, S.N., Vautard, R., Yiou, P., Ashpole, I., Bowery, A., Crooks, S.M., Haustein, K., Huntingford, C., Ingram, W.J., Jones, R.G., Legg, T., Miller, J., Skeggs, J., Wallom, D., Weisheimer, A., Wilson, S., Stott, P.A., Allen, M.R.: Human influence on climate in the 2014 southern England winter floods and their impacts. *Nature Climate Change*. 6, 627–634 (2016). <https://doi.org/10.1038/nclimate2927>.

70.

Beven, K.J.: *Rainfall-runoff modelling: the primer*. Wiley-Blackwell, Chichester, West Sussex (2012).

71.

O'Connell, P.E., Ewen, J., O'Donnell, G., Quinn, P.: Is there a link between agricultural land-use management and flooding? *Hydrology and Earth System Sciences*. 11, 96–107 (2007). <https://doi.org/10.5194/hess-11-96-2007>.

72.

Beven, K.J., Chappell, N., Lamb, R., Shaw, E.M.: *Hydrology in practice*. Spon Press, London (2011).

73.

Arnell, N.W., Halliday, S.J., Battarbee, R.W., Skeffington, R.A., Wade, A.J.: The implications of climate change for the water environment in England. *Progress in Physical Geography*. 39, 93–120 (2015). <https://doi.org/10.1177/0309133314560369>.

74.

Dixon, S.J., Sear, D.A., Odoni, N.A., Sykes, T., Lane, S.N.: The effects of river restoration on catchment scale flood risk and flood hydrology. *Earth Surface Processes and Landforms*. 41, 997–1008 (2016). <https://doi.org/10.1002/esp.3919>.

75.

Environment Agency: *How to model and map catchment processes when flood risk*

management planning,

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/523456/Ho_w_to_model_and_map_catchment_processes_-_report.pdf, (2016).

76.

Environment Agency: Working with natural processes to reduce flood risk: science report, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338437/SC130004_R2.pdf, (2014).

77.

Gao, J., Holden, J., Kirkby, M.: The impact of land-cover change on flood peaks in peatland basins. *Water Resources Research*. 52, 3477–3492 (2016).
<https://doi.org/10.1002/2015WR017667>.

78.

JBA: Nature-based approaches for catchment flood management: an online catalogue, http://www.jbatrust.org/wp-content/uploads/2016/02/W15-0603-Nature-Based-approaches-to-Catchment-Improvements-Sept-2015-FINAL_v0.1.pdf, (2015).

79.

SEPA: Natural flood management handbook, <http://www.sepa.org.uk/media/163560/sepa-natural-flood-management-handbook1.pdf>, (2015).

80.

Natural Water Retention Measures, <http://nwrn.eu/>.

81.

Working with natural processes to reduce flood risk : JBA Trust - Interactive map, <http://www.jbatrust.org/news/working-with-natural-processes-to-reduce-flood-risk/>.

82.

Grill, G., Lehner, B., Lumsdon, A.E., MacDonald, G.K., Zarfl, C., Reidy Liermann, C.: An index-based framework for assessing patterns and trends in river fragmentation and flow regulation by global dams at multiple scales. *Environmental Research Letters*. 10, (2015). <https://doi.org/10.1088/1748-9326/10/1/015001>.

83.

Lehner, B., Reidy Liermann, C., Revenga, C., Vörösmarty, C., Fekete, B., Crouzet, P., Döll, P., Endejan, M., Frenken, K., Magome, J., Nilsson, C., Robertson, J.C., Rödel, R., Sindorf, N., Wisser, D.: High-resolution mapping of the world's reservoirs and dams for sustainable river-flow management. *Frontiers in Ecology and the Environment*. 9, 494–502 (2011).

84.

Zarfl, C., Lumsdon, A.E., Berlekamp, J., Tydecks, L., Tockner, K.: A global boom in hydropower dam construction. *Aquatic Sciences*. 77, 161–170 (2015). <https://doi.org/10.1007/s00027-014-0377-0>.

85.

World Commission on Dams: Dams and development: a new framework for decision-making, https://www.internationalrivers.org/sites/default/files/attached-files/world_commission_on_dams_final_report.pdf, (2000).

86.

Magilligan, F.J., Nislow, K.H.: Changes in hydrologic regime by dams. *Geomorphology*. 71, 61–78 (2005). <https://doi.org/10.1016/j.geomorph.2004.08.017>.

87.

Sambrook Smith, G.H.: Braided rivers: process, deposits, ecology, and management. Blackwell Pub, Malden, MA (2006).

88.

Kondolf, G.M.: Hungry Water: Effects of Dams and Gravel Mining on River Channels. *Environmental Management*. 21, 533–551 (1997). <https://doi.org/10.1007/s002679900048>.

89.

Kondolf, G.M., Rubin, Z.K., Minear, J.T.: Dams on the Mekong: Cumulative sediment starvation. *Water Resources Research*. 50, 5158–5169 (2014).
<https://doi.org/10.1002/2013WR014651>.

90.

Luo, X.X., Yang, S.L., Wang, R.S., Zhang, C.Y., Li, P.: New evidence of Yangtze delta recession after closing of the Three Gorges Dam. *Scientific Reports*. 7, (2017).
<https://doi.org/10.1038/srep41735>.

91.

Magilligan, F.J., Nislow, K.H.: Changes in hydrologic regime by dams. *Geomorphology*. 71, 61–78 (2005). <https://doi.org/10.1016/j.geomorph.2004.08.017>.

92.

Yang, S.L., Milliman, J.D., Li, P., Xu, K.: 50,000 dams later: Erosion of the Yangtze River and its delta. *Global and Planetary Change*. 75, 14–20 (2011).
<https://doi.org/10.1016/j.gloplacha.2010.09.006>.

93.

Lessard, J., Murray Hicks, D., Snelder, T.H., Arscott, D.B., Larned, S.T., Booker, D., Suren, A.M.: Dam Design can Impede Adaptive Management of Environmental Flows: A Case Study from the Opuha Dam, New Zealand. *Environmental Management*. 51, 459–473 (2013). <https://doi.org/10.1007/s00267-012-9971-x>.

94.

East, A.E., Pess, G.R., Bountry, J.A., Magirl, C.S., Ritchie, A.C., Logan, J.B., Randle, T.J., Mastin, M.C., Minear, J.T., Duda, J.J., Liermann, M.C., McHenry, M.L., Beechie, T.J., Shafroth, P.B.: Large-scale dam removal on the Elwha River, Washington, USA: River channel and floodplain geomorphic change. *Geomorphology*. 228, 765–786 (2015).
<https://doi.org/10.1016/j.geomorph.2014.08.028>.

95.

Gartner, J.D., Magilligan, F.J., Renshaw, C.E.: Predicting the type, location and magnitude of geomorphic responses to dam removal: Role of hydrologic and geomorphic constraints. *Geomorphology*. 251, 20–30 (2015). <https://doi.org/10.1016/j.geomorph.2015.02.023>.

96.

Church, M.A., Biron, P., Roy, A.G., Ashmore, P.: *Gravel-bed rivers: processes, tools, environments*. Wiley-Blackwell, Chichester, West Sussex (2012).

97.

Magilligan, F.J., Nislow, K.H., Kynard, B.E., Hackman, A.M.: Immediate changes in stream channel geomorphology, aquatic habitat, and fish assemblages following dam removal in a small upland catchment. *Geomorphology*. 252, 158–170 (2016). <https://doi.org/10.1016/j.geomorph.2015.07.027>.

98.

Major, J.J., O'Connor, J.E., Podolak, C.J., Keith, M.K., Grant, G.E., Spicer, K.R., Pittman, S., Bragg, H.M., Wallick, J.R., Tanner, D.Q., Rhode, A., Wilcock, P.R.: *Geomorphic Response of the Sandy River, Oregon, to Removal of Marmot Dam*: U.S. Geological Survey Professional Paper 1792, <https://pubs.usgs.gov/pp/1792/>, (2012).

99.

O'Connor, J.E., Duda, J.J., Grant, G.E.: 1000 dams down and counting. *Science*. 348, 496–497 (2015). <https://doi.org/10.1126/science.aaa9204>.

100.

Pizzuto, J.: Effects of dam removal on river form and process. *BioScience*. 52, 683–691.

101.

Engineering geology for society and territory: Volume 3: River basins, reservoir sedimentation and water resources. Springer International Publishing, Cham, Switzerland (2015).

102.

Ryan Bellmore, J., Duda, J.J., Craig, L.S., Greene, S.L., Torgersen, C.E., Collins, M.J., Vittum, K.: Status and trends of dam removal research in the United States. *Wiley Interdisciplinary Reviews: Water*. 4, (2017). <https://doi.org/10.1002/wat2.1164>.

103.

Young, S.M., Ishiga, H.: Environmental change of the fluvial-estuary system in relation to Arase Dam removal of the Yatsushiro tidal flat, SW Kyushu, Japan. *Environmental Earth Sciences*. 72, 2301–2314 (2014). <https://doi.org/10.1007/s12665-014-3139-3>.

104.

Marmot Dam Removal, <https://www.youtube.com/watch?v=i1NI2ia3nDw>, (30)AD.

105.

Elwha River following dam removal, <https://www.youtube.com/watch?v=VipVo8zPH0U>, (2)AD.

106.

Elwha River Restoration Project - videos,
<https://walrus.wr.usgs.gov/elwha/products.html#videos>.

107.

Snake River, <https://www.youtube.com/watch?v=DK5nUXkrz8o>, (7)AD.

108.

CIRIA: River weirs - Design, maintenance, modification and removal,
[http://www.cpwf.co.uk/C763%20River%20weirs.%20Design,%20maintenance,%20modification%20and%20removal%20\(web\)%20\(1\).pdf](http://www.cpwf.co.uk/C763%20River%20weirs.%20Design,%20maintenance,%20modification%20and%20removal%20(web)%20(1).pdf), (2016).

109.

Hawley, S.: Recovering a lost river: removing dams, rewilding salmon, revitalizing communities. Beacon Press, Boston, Mass (2012).

110.

Lichatowich, J.: Salmon without rivers: a history of the Pacific salmon crisis. Island Press, Washington, D.C. (1999).

111.

Mapes, L., Ringman, S.: Elwha: a river reborn. The Mountaineers Books, Seattle, WA (2013).

112.

CIWEM: Integrated Water Management,
<http://www.ciwem.org/wp-content/uploads/2016/02/Integrated-Water-Managment-Report.pdf>, (2011).

113.

defra: Making space for water: Taking forward a new Government strategy for flood and coastal erosion risk management in England,
<http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/flooding/documents/policy/strategy/strategy-response1.pdf>, (2005).

114.

Institute for European Environmental Policy: The potential policy and environmental consequences for the UK of a departure from the European Union,
<http://www.ieep.eu/news/2016/08/the-uk-referendum-what-it-means-for-the-environment-and-for-ieep>.

115.

Kallis, G.: The EU water framework directive: measures and implications. Water Policy. 3, 125-142 (2001). [https://doi.org/10.1016/S1366-7017\(01\)00007-1](https://doi.org/10.1016/S1366-7017(01)00007-1).

116.

Royal Geographical Society: Water policy in the UK: the challenges,
https://www.rgs.org/NR/rdonlyres/4D9A57E4-A053-47DC-9A76-BDBEF0EA0F5C/0/RGSIBGPo-licyDocumentWater_732pp.pdf, (2012).

117.

RSPB: Flooding in focus,
https://www.rspb.org.uk/Images/flooding-in-focus_tcm9-386202.pdf, (2014).

118.

SEPA: Supporting Guidance (WAT-SG-21) : Environmental Standards for River Morphology,
https://www.sepa.org.uk/media/152194/wat_sg_21.pdf, (2012).

119.

SEPA: Scotland River Basin District : Characterisation and impacts analyses required by article 5 of the Water Framework Directive,
https://www.sepa.org.uk/media/37505/rbmp_scotland_characterisation-impacts-analysis_article5.pdf, (2005).

120.

SEPA: Significant water management issues in the Scotland river basin district,
https://www.sepa.org.uk/media/37765/significant-water-management-issues_scotland.pdf, (2007).

121.

SEPA: Flood Risk Management Strategies and Local Flood Risk Management Plans,
http://www.sepa.org.uk/media/42632/frm_strategies_and_lfrm_plans.pdf, (2011).

122.

Beven, K.J., Chappell, N., Lamb, R., Shaw, E.M.: Hydrology in practice. Spon Press, London (2011).

123.

Maddock, I., Harby, A., Kemp, P., Wood, P.J. eds: Ecohydraulics: an integrated approach. Wiley Blackwell, Chichester, West Sussex (2013).

124.

Coaker, T.H.: Advances in applied biology: Vol. 6: edited by T.H. Coaker. Academic Press, London (1981).

125.

Moir, H.J., Pasternack, G.B.: Relationships between mesoscale morphological units, stream hydraulics and Chinook salmon (*Oncorhynchus tshawytscha*) spawning habitat on the Lower Yuba River, California. *Geomorphology*. 100, 527–548 (2008).
<https://doi.org/10.1016/j.geomorph.2008.02.001>.

126.

Moir, H.J., Gibbins, C.N., Soulsby, C., Youngson, A.F.: PHABSIM modelling of Atlantic salmon spawning habitat in an upland stream: testing the influence of habitat suitability indices on model output. *River Research and Applications*. 21, 1021–1034 (2005).
<https://doi.org/10.1002/rra.869>.

127.

Moir, H.J., Gibbins, C.N., Soulsby, C., Webb, J.: Linking channel geomorphic characteristics to spatial patterns of spawning activity and discharge use by Atlantic salmon (*Salmo salar* L.). *Geomorphology*. 60, 21–35 (2004). <https://doi.org/10.1016/j.geomorph.2003.07.014>.

128.

Beechie, T.J., Sear, D.A., Olden, J.D., Pess, G.R., Buffington, J.M., Moir, H., Roni, P., Pollock, M.M.: Process-based Principles for Restoring River Ecosystems. *BioScience*. 60, 209–222 (2010). <https://doi.org/10.1525/bio.2010.60.3.7>.

129.

Brierley, G., Hooke, J.: Emerging geomorphic approaches to guide river management practices. *Geomorphology*. 251, 1–5 (2015).
<https://doi.org/10.1016/j.geomorph.2015.08.019>.

130.

James, L.A.: Designing forward with an eye to the past: Morphogenesis of the lower Yuba River. *Geomorphology*. 251, 31–49 (2015).
<https://doi.org/10.1016/j.geomorph.2015.07.009>.

131.

Newson, Malcolm.D., Large, A.R.G.: 'Natural' rivers, 'hydromorphological quality' and river restoration: a challenging new agenda for applied fluvial geomorphology. *Earth Surface Processes and Landforms*. 31, 1606–1624 (2006). <https://doi.org/10.1002/esp.1430>.

132.

Raven, E.K., Lane, S.N., Bracken, L.J.: Understanding sediment transfer and morphological change for managing upland gravel-bed rivers. *Progress in Physical Geography*. 34, 23–45 (2010). <https://doi.org/10.1177/0309133309355631>.

133.

Wohl, E., Merritts, D.J.: What Is a Natural River? *Geography Compass*. 1, 871–900 (2007).
<https://doi.org/10.1111/j.1749-8198.2007.00049.x>.

134.

Bernhardt, E.S.: Ecology: Synthesizing U.S. River Restoration Efforts. *Science*. 308, 636–637 (2005). <https://doi.org/10.1126/science.1109769>.

135.

Beechie, T.J., Sear, D.A., Olden, J.D., Pess, G.R., Buffington, J.M., Moir, H., Roni, P., Pollock, M.M.: Process-based Principles for Restoring River Ecosystems. *BioScience*. 60, 209–222 (2010). <https://doi.org/10.1525/bio.2010.60.3.7>.

136.

Downs, P., Kondolf, G.M.: Post-Project Appraisals in Adaptive Management of River Channel Restoration. *Environmental Management*. 29, 477–496 (2002).
<https://doi.org/10.1007/s00267-001-0035-X>.

137.

Gilvear, D.J., Casas-Mulet, R., Spray, C.J.: Trends and issues in delivery of integrated catchment scale river restoration: Lessons learned from a national river restoration survey within Scotland. *River Research and Applications*. 28, 234–246 (2012).
<https://doi.org/10.1002/rra.1437>.

138.

Koebel, J.W., Bousquin, S.G.: The Kissimmee River Restoration Project and Evaluation Program, Florida, U.S.A. *Restoration Ecology*. 22, 345–352 (2014).
<https://doi.org/10.1111/rec.12063>.

139.

Morandi, B., Piégay, H., Lamouroux, N., Vaudor, L.: How is success or failure in river restoration projects evaluated? Feedback from French restoration projects. *Journal of Environmental Management*. 137, 178–188 (2014).
<https://doi.org/10.1016/j.jenvman.2014.02.010>.

140.

Palmer, M.A., Menninger, H.L., Bernhardt, E.: River restoration, habitat heterogeneity and biodiversity: a failure of theory or practice? *Freshwater Biology*. 55, 205–222 (2010).
<https://doi.org/10.1111/j.1365-2427.2009.02372.x>.

141.

Podolak, C.J.P.: A visual framework for displaying, communicating and coordinating a river restoration monitoring project. *River Research and Applications*. 30, 527–535 (2014).
<https://doi.org/10.1002/rra.2651>.

142.

Simon, A., Bennett, S.J., Castro, J.M., American Geophysical Union: Stream restoration in dynamic fluvial systems: scientific approaches, analyses, and tools. American Geophysical Union, Washington, DC (2011).

143.

Smith, B., Clifford, N.J., Mant, J.: Analysis of UK river restoration using broad-scale data sets. *Water and Environment Journal*. 28, 490–501 (2014). <https://doi.org/10.1111/wej.12063>.

144.

Wohl, E., Lane, S.N., Wilcox, A.C.: The science and practice of river restoration. *Water Resources Research*. 51, 5974–5997 (2015). <https://doi.org/10.1002/2014WR016874>.

145.

The River Restoration Centre, <http://www.therrc.co.uk/>.

146.

ECRR website, <http://www.ecrr.org/>.

147.

Ashmore, P.: Towards a sociogeomorphology of rivers. *Geomorphology*. 251, 149–156 (2015). <https://doi.org/10.1016/j.geomorph.2015.02.020>.

148.

Dufour, S., Piégay, H.: From the myth of a lost paradise to targeted river restoration: forget natural references and focus on human benefits. *River Research and Applications*. 25, 568–581 (2009). <https://doi.org/10.1002/rra.1239>.