

A satellite photograph of the Mississippi River delta region. The river is a prominent dark blue-green line winding through a vast, arid, tan-colored landscape. The river's path is highly irregular and meandering, especially in the lower half of the image. The top of the image shows the river's mouth where it meets a larger body of water, likely the Gulf of Mexico, with a dark blue hue. The surrounding land is mostly flat and devoid of significant vegetation, with some lighter-colored patches that could be salt flats or sand dunes.

ISSUE ELEVEN : SUMMER 2018
OPEN RIVERS :
RETHINKING WATER, PLACE & COMMUNITY

PARADOXES OF WATER

<http://openrivers.umn.edu>

An interdisciplinary online journal rethinking the Mississippi
from multiple perspectives within and beyond the academy.

ISSN 2471-190X

The cover image is of The Nile River, July 19 2004. To the right of the Nile is the Red Sea, with the finger of the Gulf of Suez on the left, and the Gulf of Aqaba on the right. In the upper right corner of the image are Israel and Palestine, left, and Jordan, right. Below Jordan is the northwestern corner of Saudi Arabia. Jacques Descloitres, MODIS Rapid Response Team, NASA/GSFC.

Except where otherwise noted, this work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). This means each author holds the copyright to her or his work, and grants all users the rights to: share (copy and/or redistribute the material in any medium or format) or adapt (remix, transform, and/or build upon the material) the article, as long as the original author and source is cited, and the use is for noncommercial purposes.

Open Rivers: Rethinking Water, Place & Community is produced by the [University of Minnesota Libraries Publishing](https://www.libraries.umn.edu/) and the [University of Minnesota Institute for Advanced Study](https://www.umn.edu/institute-for-advanced-study/).

Editors

Editor:
Patrick Nunnally, Institute for Advanced Study,
University of Minnesota

Administrative Editor:
Phyllis Mauch Messenger, Institute for Advanced
Study, University of Minnesota

Assistant Editor:
Laurie Moberg, Doctoral Candidate,
Anthropology, University of Minnesota

Media and Production Manager:
Joanne Richardson, Institute for Advanced Study,
University of Minnesota

Contact Us

Open Rivers
Institute for Advanced Study
University of Minnesota
Northrop
84 Church Street SE
Minneapolis, MN 55455

Telephone: (612) 626-5054
Fax: (612) 625-8583
E-mail: openrvrs@umn.edu
Web Site: <http://openrivers.umn.edu>

ISSN 2471-190X

Editorial Board

Jay Bell, Soil, Water, and Climate, University of
Minnesota

Tom Fisher, Metropolitan Design Center,
University of Minnesota

Lewis E. Gilbert, Institute on the Environment,
University of Minnesota

Mark Gorman, Policy Analyst, Washington, D.C.

Jennifer Gunn, History of Medicine, University of
Minnesota

Katherine Hayes, Anthropology, University of
Minnesota

Nenette Luarca-Shoaf, Art Institute of Chicago

Charlotte Melin, German, Scandinavian, and
Dutch, University of Minnesota

David Pellow, Environmental Studies, University
of California, Santa Barbara

Laura Salvesson, Mill City Museum, Minnesota
Historical Society

Mona Smith, Dakota transmedia artist; Allies:
media/art, Healing Place Collaborative

CONTENTS

Introductions

Introduction to Issue Eleven By Patrick Nunnally, Editor	5
Guest Editor's Introduction to Issue Eleven: The Paradoxes of Peace and Water By Joseph B. Underhill	7

Feature

Learning from the Dakota: Water and Place By Mona Smith	14
--	----

Forum

New Orleans Was Once Above Sea Level By Richard Campanella	19
Water as a Source of Regional Cooperation in the Middle East: The Work of EcoPeace Middle East in Jordan, Israel, and Palestine By Giulia Giordano	24
Water, Conflict, and Peace By Peter Gleick	33
Meandering and Riversphere: The Potential of Paradox By Irene J. Klaver	45
The Sources of the Nile and Paradoxes of Religious Waters By Terje Oestigaard	66

Feature

Writing the River By Leslie Thomas	86
---	----

Primary Sources

Paradoxes of Water: A Reading List By The Editors of <i>Open Rivers</i>	110
--	-----

Perspectives

An Endangered River: The Mississippi River Gorge By Olivia Dorothy	119
---	-----

Teaching and Practice

Paradise Lost: The Struggle to Preserve the Pongola River and its Inhabitants
By Shira Lanyi 126

Geographies

Water Unifies Us All
By Kristi Achor Pursell 142

In Review

A Tour of the Mississippi River Visitor Center
By Joanne Richardson 149

FORUM

WATER AS A SOURCE OF REGIONAL COOPERATION IN THE MIDDLE EAST: THE WORK OF ECOPEACE MIDDLE EAST IN JORDAN, ISRAEL, AND PALESTINE

By Giulia Giordano

Water is at the core of sustaining all life on earth, and the people who have inhabited the arid and semi-arid lands of the Middle East and North Africa (MENA) region throughout the centuries know this very well. Scarcity of water in the region has shaped its history and geopolitics, including into the present day, with climate change and population growth putting more pressure on already scarce water resources (World Bank 2018).

Due to their geographical location, most MENA countries are characterized by arid conditions, low rainfall, and high levels of evaporation, leading to limited natural water resources. In addition, the region suffers from inefficient water usage, antiquated water infrastructure and networks, lack of institutional frameworks for managing transboundary water resources, and

pollution. The situation is further aggravated by climate change, which is projected to cause higher temperatures, less precipitation, extreme weather events such as droughts and floods, and sea level rise.

The region draws its water resources from rainwater, rivers, and underground water sheets. Declining precipitation has had unprecedented effects in the region, having an impact on the flow of surface water and the replenishment of several important aquifers. In addition, increased temperatures produce higher rates of evaporation, leading to further water loss. The rising of the Mediterranean Sea, induced by climate change, is expected to affect coastal aquifers, which already suffer from seawater intrusion due to over-exploitation.



In the Water-Energy Nexus, solar energy produced in Jordan would be exchanged for desalinated water from Israel and Palestine. Image courtesy of EcoPeace Middle East.

The Role of Water Security

Recent literature highlights the central role of water security in ensuring sustainability, economic development, and political stability (Bar and Stang 2016, European Council 2008, Gleick 1993, OSCE 2015, Vitel 2011). According to the definition of water security advanced by the UN Water Program, water must be able to support health, livelihoods, socio-economic development, and ecosystems, which is why social, economic,

and political factors play an important role in shaping the ability of water to be properly served to the population. Conditions of water insecurity can trigger social tensions, and even lead to uprisings, and therefore pose a threat both domestically and to bordering states, regionally. This is particularly relevant in the case of a water-scarce and conflict-prone region like MENA, where a lack of adequate clean water has already



Figure 1. The Jordan River is shared by Israel, Jordan, Palestine, and Syria. Holy to Christian, Jewish, and Muslim communities, today the Lower Jordan River has been heavily diverted for agricultural and domestic uses and is polluted by saline water and untreated sewage. Image courtesy of EcoPeace Middle East.

led to food shortages, outbreaks of epidemic disease, mass migration, and political instability. Several commentators have underlined that one of the catalysts behind the social discontent that led to the uprisings known as the “Arab Spring” in Syria, as well as in Egypt and Yemen, was, to varying degrees, the water shortage experienced in the last few years due to a long period of drought (Dimsdale and Mabey 2018; Werrel, Femia, and Slaughter 2013).

As the state of water security across the region worsens, it is likely that new crises will occur in the near future, with potential implications at the regional and international level. The

United Nation’s first Water Development Report defined the water crisis as “essentially a crisis of governance and societies,” suggesting that issues of water security can be solved by enhancing water governance mechanisms and developing means of water diplomacy. The concept of water diplomacy is based on the assumption that management problems rather than scarcity of water are at the core of water security. Water diplomacy applies to bilateral and multilateral dialogue on water issues among people and states, by initiating processes at different political scales and levels in order to enhance water governance and cooperation, regional integration, development, security, and stability (Vetter, 2016).



Figure 2. Israeli, Palestinian, and Jordanian mayors jump into the Jordan River in 2010, highlighting the importance of the river and its rehabilitation for all peoples and all three religions in the region. Image courtesy of EcoPeace Middle East.

Environmental Peacebuilding

Lack of regional cooperation in the MENA, mostly due to political conflict, has prevented the implementation of measures required to increase resilience to the detrimental impact of climate change on water, energy, and food security. While governments in the region seem to underestimate such menaces, subordinating them to more conventional military threats, voices are being raised from people across the region, demanding a more sustainable and peaceful future for the generations to come. The multi-award winning non-governmental organizations (NGO) EcoPeace Middle East is one of the most vocal environmental group in the region. Founded 24 years ago by a group of visionary environmentalists with the objective to promote sustainable regional development as a pathway to peace, EcoPeace has offices in Jordan, Israel, and Palestine. The three countries are among the world's lowest in terms of renewable fresh water supplies per capita, and share surface and groundwater resources.

Even in the midst of one of the longest and most controversial conflicts of the region, EcoPeace has proved that by developing means of

environmental peacebuilding and water diplomacy, regional cooperation can help resolve existing political strife and prevent further conflict from developing over scarce resources. By combining bottom-up community engagement activities with a top-down advocacy strategy, EcoPeace has relentlessly worked to find shared solutions to the common water problems affecting the three countries, and has helped advance concrete answers with an impact on national policies and real benefits to people on the ground. EcoPeace has had many achievements over the years. EcoPeace has contributed to stopping the construction of the Israeli separation barrier from being built in the ancient terraced agricultural landscape around the Palestinian town of Battir; has advocated for the release of fresh water from the Sea of Galilee into the lower Jordan River; has leveraged over \$500 million worth of investments in projects related to water supply and sanitation solutions in Palestine, Jordan, and Israel; and has led important changes in policies related to increased water and electricity supply to Gaza, to name a few.

A Master Plan for the Jordan Valley

The environmental degradation of the Jordan River and the state of underdevelopment of the surrounding communities are examples of how ineffective and unilateral management of shared resources is harmful to Jordanian, Israeli, and Palestinian populations. Political boundaries divide the river; instead of seeing the river as a single transboundary watershed, the riparian states have raced to capture the greatest possible share of the valley's water. Holy to Christians, Jews, and Muslims, the river has seen its cultural and natural heritage sites decimated. Of the 1,300

million cubic meters of water that would naturally flow down the River Jordan to the Dead Sea each year, approximately 95 percent is diverted for domestic and agricultural uses by the riparian states. EcoPeace estimates that Israel diverts about half of the river's average annual flow, while Syria and Jordan take about a quarter each. Due to Israeli military restrictions, Palestinians do not receive water directly from it. What little water remains is polluted with agricultural runoff, saline water and untreated sewage. Residents, as well as tourists, have limited access to the

river. In 2015, EcoPeace released the first-ever integrated Regional Jordan Valley Master Plan, a comprehensive plan for the rehabilitation and sustainable development of the Jordan Valley, in Jordan, Israel, and Palestine. The river cannot be sustainably managed through a process of

competition; therefore, advancing the strategy detailed in the master plan can serve as the engine for regional cooperation, rehabilitate the Jordan River, and create opportunities of shared prosperity.

Developing a Water-Energy Nexus

Recently, EcoPeace has embarked on an ambitious project to explore the concept of developing a regional community of water-energy among

Jordan, Israel, and Palestine. The proposed Water-Energy Nexus (WEN) would create a relationship of interdependency whereby Israel



Figure 3. Youth and alumni of EcoPeace Middle East gather at the baptism site on both the Israeli and Jordanian sides of the Jordan River in order to campaign for the river's rehabilitation. Image courtesy of EcoPeace Middle East.

and Palestine would produce desalinated water and supply it to Jordan, while Jordan would use its vast open spaces to supply Palestine and Israel with renewable energy, thereby enabling each partner to harness their comparative advantage in the production of renewable energy and water.

Water desalination has been practiced for more than 50 years in the region and has become the primary response to water shortage in Israel. Indeed, in the last decade, the country has invested extensively in the research and development of new water technologies. Today Israel has become one of the world leaders in desalination, water treatment and reuse, including sophisticated agricultural technologies that reduce the

consumption of water. As of today, both Palestine and Jordan buy water from Israel to meet their increasing demands. Desalination is an energy intensive process, and thus, wide-scale desalination, a primary climate adaptation strategy for the region, could end up being a major source of greenhouse gases (GHGs). Israel, Jordan, and Palestine have all signed the 2015 Paris Climate Accords and are committed to reducing GHGs. While all three have goals for increasing the share of energy supplied by renewable sources, currently renewables represent a small percentage of total energy consumption in any of the countries. The links between water and energy are increasingly recognized across businesses, governments, and the public. Thinking about water and energy



Figure 4. In the Water-Energy Nexus, solar energy produced in Jordan would be exchanged for desalinated water from Israel and Palestine, establishing an interdependent relationship in which each of the parties involved would become more water and energy secure within a framework of broader regional cooperation. Image courtesy of EcoPeace Middle East.

in an integrated way is essential if the region is to reach water security and foster overall stability.

EcoPeace has released a prefeasibility study of the WEN initiative, which explored the viability of the proposed exchanges. Results show that these exchanges are technically feasible and potentially offer substantial economic, environmental, and geo-political benefits to each of the parties that would provide strong incentives for sustained cooperation. Jordan would become a major exporter of green energy, providing the revenue needed to purchase desalinated water

from Israel and Palestine. As a result, Palestine would become less dependent on Israel for both water and energy. Israel would meet its Paris climate commitments at the cheapest cost and see regional cooperation strengthened. Supplying water via desalination within the context of the aforementioned water-energy exchanges would allow for significant reduction to the environmental impacts of water supply, reducing not only greenhouse gases, but local air pollutants, as well. The broader international community and all concerned parties who fear that climate change and water insecurity will further threaten



Figure 5. Jordanian, Palestinian, and Israeli youth canoe down the Jordan River. The Jordan River is a valuable part of the shared environmental heritage of the region, and proves the importance of cooperation over transboundary water resources. Image courtesy of EcoPeace Middle East.

regional stability would see water and energy security advanced in a manner that creates healthy interdependencies. WEN's potential impact also goes beyond Jordan, Israel, and Palestine. In the broader Middle East, it could expand to include additional countries, and be a model for optimizing natural resource management via collaboration between hinterland and coastal areas.

As the history of Europe exemplifies, regional integration emerged from the ashes of WWII as a response to the devastation and death caused by the war. From the visionary declaration pronounced by French Foreign Minister Robert Schuman on May 9, 1950, six European governments, determined to prevent another

war, established the European Coal and Steel Community, which would—in the words of the declaration—make war between historic rivals France and Germany “not merely unthinkable, but materially impossible.” That pioneering institution evolved into the present-day European Union. Therefore, cooperation in the Middle East is necessary, not in spite of the existing conflicts, but as a response to them. Riddled by years of conflicts, endemic poverty, and environmental degradation, the governments of the region need to identify their natural resources as a shared heritage, which could generate mutual benefits and shared prosperity. As Schuman explained, “World peace cannot be safeguarded without the making of creative efforts proportionate to the dangers which threaten it.”

For Further Reading

Bar, Ido, and Gerald Stang. 2016. “Water and insecurity in the Levant,” *European Union Institute for Security Studies* (EUISS), April 2016.

Dimsdale, Taylor, and Mabey, Nick. 2018. “MENA Stability in a Changing Climate – A Transatlantic Agenda on Preventative Investment.” *E3G*, March 2018. <https://www.e3g.org/library/mena-stability-in-a-changing-climate-a-transatlantic-agenda-on-preventative>.

EcoPeace Middle East / Konrad-Adenauer-Stiftung. 2017. “Water Energy Nexus. A Pre-feasibility Study for Mid-East Water-Renewable Energy Exchanges,” edited by David Katz and Arkady Shafran. Amman, Jordan: http://www.kas.de/wf/doc/kas_51857-1522-2-30.pdf?180319121412.

EcoPeace Middle East and Royal Haskoning DHV. 2015. “Regional NGO Master Plan for Sustainable Development in the Jordan Valley.” http://foeme.org/uploads/Regional_NGO_Master_Plan_Final.pdf.

Eran, Oded, Institute for National Security Studies (INSS), Gidon Bromberg, and Giulia Giordano, EcoPeace Middle East. 2018. “Israeli Water Diplomacy and National Security Concerns.” *EcoPeace Middle East*, January 2018.

European Council. 2008. “Climate Change and International Security: Paper from the High Representative and the European Commission to the European Council.”

European Union. “The Schuman Declaration—9 May 1950.” European Union website. https://europa.eu/european-union/about-eu/symbols/europe-day/schuman-declaration_en.

Gleick, Peter H. 1993. "Water and Conflict. Fresh Water Resources and International Security." *International Security*, Vol. 18, No. 1, Summer 1993.

Office of the Coordinator of OSCE Economic and Environmental Activities (OSCE). 2015. "Water governance in the OSCE area—Increasing security and stability through co-operation." *Compilation of Consolidated Summaries*, 23rd OSCE Economic and Environmental Forum.

United Nations University; UNU-INWHE Institute for Water, Environment, and Health; and United Nations Economic and Social Commission for Asia and the Pacific. 2013. "Water Security & the Global Water Agenda," UN-Water Analytical Brief. *United Nations University*, October 2013. <http://www.unwater.org/publications/water-security-global-water-agenda/>.

World Water Assessment Programme. 2003. "Water for People Water for Life: The United Nations World Water Development Report," March 2003. http://www.un.org/esa/sustdev/publications/WWDR_english_129556e.pdf.

Vitel, P. 2011. "Food and Water Security: Implications for Euro-Atlantic Security." Report to the Sub-Committee on Energy and Environmental Security of the NATO Parliamentary Assembly, November 2011.

Vetter, Thomas 2016. "Water Connects: A Short Guide to Preventative Water Diplomacy" Berlin, Adelphi.

Werrell, Caitlin E., Francesco Femia, and Ann-Marie Slaughter. 2013. "The Arab Spring and Climate Change: A Climate and Security Correlations Series." *Center for American Progress, Stimson and The Center for Climate and Security*, February 2013. <https://cdn.americanprogress.org/wp-content/uploads/2013/02/ClimateChangeArabSpring.pdf>.

World Bank. 2018. "Beyond Scarcity: Water Security in the Middle East and North Africa." *MENA Development Report*. <http://www.worldbank.org/en/topic/water/publication/beyond-scarcity-water-security-in-the-middle-east-and-north-africa>.

Recommended Citation

Giordano, Giulia. 2018. "Water as a Source of Regional Cooperation in the Middle East: The Work of EcoPeace Middle East in Jordan, Israel, and Palestine." *Open Rivers: Rethinking Water, Place & Community*, no. 11. <http://editions.lib.umn.edu/openrivers/article/the-work-of-ecopeace-middle-east/>.

About the Author

Giulia Giordano is the International Affairs Manager at EcoPeace Middle East, a trilateral organization based in Israel, Jordan, and Palestine. Formerly she was a visiting researcher at the Hebrew University of Jerusalem and a fellow lecturer at Al-Quds University in East Jerusalem, where she taught two courses in Human Rights and International Environmental Law. She received her PhD in Cooperation for Peace and Development from the University 'Stranieri' of Perugia. Her research interests are Middle Eastern studies, the Israeli-Palestinian conflict, and environmental diplomacy.