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**THE SOUTHEAST ANATOLIAN PROJECT AND MIDDLE EAST  
WATER: IMPLICATIONS FOR NATO**

**BY**

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United States Army**

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USAWC STRATEGY RESEARCH PROJECT

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## ABSTRACT

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Water shortages are acute in the Middle East due to limited supplies and growing populations, which drive a concomitant demand for water for personal, agricultural, and industrial purposes. One Middle East country, Turkey, a NATO member, has addressed these problems by building the Southeast Anatolian Project (GAP) on the Tigris and Euphrates Rivers. Downstream neighbors, Syria and Iraq, may be adversely affected by this project, especially during long dry seasons. This could eventually result in a conflict over water between these countries. If Turkey is attacked, NATO must respond in accordance with Article 5 of the North Atlantic Treaty. Therefore it is in NATO's best interest to prevent a regional conflict over water in Southeast Turkey. NATO can assist in conflict prevention by lending technical assistance and encouraging diplomatic and military contacts to improve water use and conservation, enhance confidence building and understanding, and to assist in a regional solution to water use. Although technical assistance is the preferred course of action, it is prudent that NATO continue its strong exercise program with Turkey to improve warfighting capabilities and to deter conflict.



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# THE SOUTHEAST ANATOLIAN PROJECT (GAP) AND MIDDLE EAST WATER: IMPLICATIONS FOR NATO

*"The next war in the Middle East will be over water, not politics."*

*- Boutros Boutros-Ghali, 1991*

## INTRODUCTION

Water is in short supply throughout the Middle East, and the demand for it is growing with increasing populations. Population growth has driven a concomitant growth in agricultural, industrial, and hydroelectric power requirements for water. These requirements are outstripping water supplies in many Middle East countries. Groundwater supplies have been particularly hard hit and desalinization of seawater is very expensive.<sup>1</sup> Due to the seasonal nature of precipitation, the region's rivers provide an often irregular supply of water. To address these problems some nations have built dams to impound the water needed to meet their ever growing needs.<sup>2</sup>

One such nation is Turkey, a member of the North Atlantic Treaty Organisation (NATO), which has embarked on an ambitious irrigation and hydroelectric power project on the Euphrates and Tigris Rivers called the Southeastern Anatolian Project, or, by its Turkish acronym, the GAP. When it is completed around the year 2005, the project will provide power and water to Southeast Turkey, this nation's most underdeveloped region. Syria and Iraq,

Turkey's two downstream neighbors, both of whom have dams and power stations of their own, could be severely affected by reduced flows caused by GAP construction, especially during dry seasons. Twenty-two dams and lakes and nineteen hydroelectric plants are designed to meet 19% of Turkey's irrigation needs and 22% of its power requirements.<sup>3</sup>

When these projects come on line the flow rates from Turkey, especially the flows from the Euphrates River, may be reduced by up to 50% under normal seasonal conditions.<sup>4</sup> Three nations share these rivers: Turkey, Syria, and Iraq. Although bilateral water use agreements between Turkey and Syria and between Syria and Iraq have been made, no comprehensive regional agreement has been reached between these three countries.

At many Middle East country conferences Syria and Iraq have expressed their grave concern about Turkish actions based on her control over these rivers, especially the Euphrates. An inability to achieve a three-way regional solution to water distribution has heightened tensions and could lead to a conflict between these countries. Because Turkey is a NATO member, any attack against her would require that NATO members' parliaments consider an alliance response in accordance with the provisions of Article 5 of the 1949 North Atlantic Treaty.

The NATO Alliance's 1991 Strategic Concept recognized the fundamental changes wrought by the collapse of the Warsaw Pact and the Union of Soviet Socialist Republics (USSR). Risks

associated with political, economic, and ethnic instabilities and tensions concerning resource shortages were highlighted as probable sources of conflict in NATO's area of interest. These tensions could spill over into NATO countries, directly affecting Alliance security.<sup>5</sup>

The new NATO strategy also calls for a broader approach to security. This new approach includes dialogue, cooperation, collective defense, management of crises, and conflict prevention throughout NATO's area of interest, including regions heretofore considered "out of area".<sup>6</sup> For example, NATO has formed the Mediterranean Cooperation Group, which reflects the growing importance of the Southern Mediterranean and the Middle East as cited in the 1991 Strategic Concept.<sup>7</sup> NATO is also expected to execute this new approach to strategy by maintaining a credible military capability which will deter war, promote peace and stability, and contribute to confidence building measures.<sup>8</sup>

Crisis prevention is not new to NATO, and the organization has worked in the past to resolve tensions and conflicts before such crises expand into general war. Examples include reducing tensions between Greece and Turkey over Cyprus and, most recently, in implementing the Dayton Accord's peace agreements in Bosnia. This Strategy Research Project will show that a conflict over water in Southeast Turkey is possible and that NATO can help prevent such a conflict by using its technical

and scientific, military, and diplomatic influence. By doing so, NATO can contribute to peace and security in the Middle East.

### **WATER PROBLEMS IN THE MIDDLE EAST AND TURKEY**

Water supply, which is neither reliable nor plentiful, has been a problem for Middle East countries for many centuries. Nations have been struggling with this problem since the dawn of civilization in the region sometimes referred to as the Fertile Crescent. Two rivers, the Euphrates and the Tigris were vital to the early civilizations that sprung up in the area that now includes Turkey, Syria, and Iraq. The Sumerians were one of these civilizations and they began the first of many great regional "irrigation societies". The most powerful city states in the region, Ur, Uruk, and Kish, all competed for dominance of the limited farmland and water supplies, and they fought continuously between 3100 and 2300 BC to control these resources.<sup>9</sup> More recently, in the 1960s, Syria and Israel have fought, among other issues, over Syria's attempts to control the headwaters of the Jordan River.<sup>10</sup> Therefore regional conflicts over water resources spans recorded history and is nothing new in this part of the world.

Even today, control of water is so vital a sovereignty issue that some nations have gone to great lengths to ensure its availability. Libya is working on a 2000 mile long series of water tunnels (the so-called Great Man-made River) and Egypt is

constructing a canal/pipeline project from the Nile River under the Suez Canal to bring water to the Sinai.<sup>11</sup> Water and oil are key resources that drive Middle East national development plans and are vital to meeting ever increasing agricultural and industrial needs. Water availability impacts heavily on many Middle East nations' future development plans and, therefore, on their sense of independence and sovereignty. Since over half of the people in the Middle East and North Africa depend on water originating in other countries, demand for this finite resource is a constant source of regional tension.<sup>12</sup>

#### **AVAILABILITY**

In the Middle East, water is available from three primary sources: precipitation and ground water, seawater or brackish water, and surface sources such as rivers and lakes. Precipitation varies in this region, typically ranging between 642 millimeters (mm) per year in the mountains of Turkey to less than 150mm per year in the interior sections of Syria and Iraq.<sup>13</sup> Much of this precipitation falls in the form of snowfall which melts in spring, causing much flooding. In order to take best advantage of these seasonal flows many Middle East nations have, for centuries built irrigation canals and dams to divert and store water for the remainder of the year. Groundwater is available, but in limited, and ever diminishing supply, and is increasingly more expensive to pump from deep underground. Sea

and brackish water, though available in large quantities, is unsuitable for most purposes and desalination is prohibitively expensive for all but the richest of Middle East nations.<sup>14</sup> Finally, there are the region's rivers, which are the focus of this Strategy Research Project. These rivers are subject to wide, seasonally driven, variations in flow. Despite this, rivers provide the best water supply to Turkey, Syria, and Iraq.

#### DEMANDS

As Middle East countries continue to enter the Industrial Age, their populations and demand for water have also grown. Turkey, Syria, and Iraq have annual population growth rates of 2.2%, 3.8%, and 3.1% respectively (rates which are over twice that of Europe). Other estimates reveal that their populations could increase by well over 50% over the next thirty years.<sup>15</sup> In the early 1990s, industrial development and more modern agricultural techniques have increased the urban population to 61%, 50%, and 71% of the total population in Turkey, Syria, and Iraq respectively.<sup>16</sup> As these nations become more industrialized and more urban, they put more pressure on, and increase national competition for, the limited water supplies available in the region.

By the year 2015 the three-nation total water demand for the Euphrates River alone will exceed its average flow of 36 billion cubic meters (BCM) per year.<sup>17</sup> Therefore a significant shortfall

could be realized as early as 2015, even under normal seasonal conditions. The conflicting demands for Euphrates River water is the most difficult resource issue facing these three nations as each has its own vision of how best to use this river.

**NATIONAL TECHNICAL DEVELOPMENTS AND POINTS OF CONFLICT**

There are three rivers that are both a source of fresh water and a possible source of conflict in this region. These are the Orontes (Asi), the Tigris, and the Euphrates. The Orontes rises in Lebanon, passes through Syria, and flows through Turkey into the Mediterranean Sea. The Tigris rises in Turkey, flows along the Syrian border (for about 40 kms), and then through Iraq before flowing into the Persian Gulf. The Euphrates rises in Turkey and flows through Syria and Iraq before entering the Persian Gulf. The Orontes provides an average of 1.4 billion cubic meters (BCM) per year from Lebanon, the Tigris an average of 25 BCM per year from Turkey, and the Euphrates an average of 30 BCM per year from Turkey (see Table 1)<sup>18</sup>.

**TABLE 1: EUPHRATES, TIGRIS AND ORONTES RIVER WATER FLOWS  
PROJECTED WATER FLOW AND CONSUMPTION IN 2005  
(in billion cubic meters per year)**

<b>EUPHRATES RIVER</b>	<b>TIGRIS RIVER</b>	<b>ORONTES RIVER</b>
Originating in Turkey..32	.....25	Originating in Leb...1.4
Consumed by Turkey.....16	.....7	Consumed by Leb.....0.2
Flowing into Syria.....16	.....18	Flowing into Syria...1.2
Originating in Syria....4	.....0	Consumed by Syria...1.0
Available to Syria.....20	.....18	Available to Turkey..0.2
Consumed by Syria.....11	.....3	Total Flow.....1.4
Flowing into Iraq.....9	.....15	
Originating in Iraq.....0	.....23	
Available to Iraq.....9	.....38	
Total Flow.....36	Total Flow.....48	

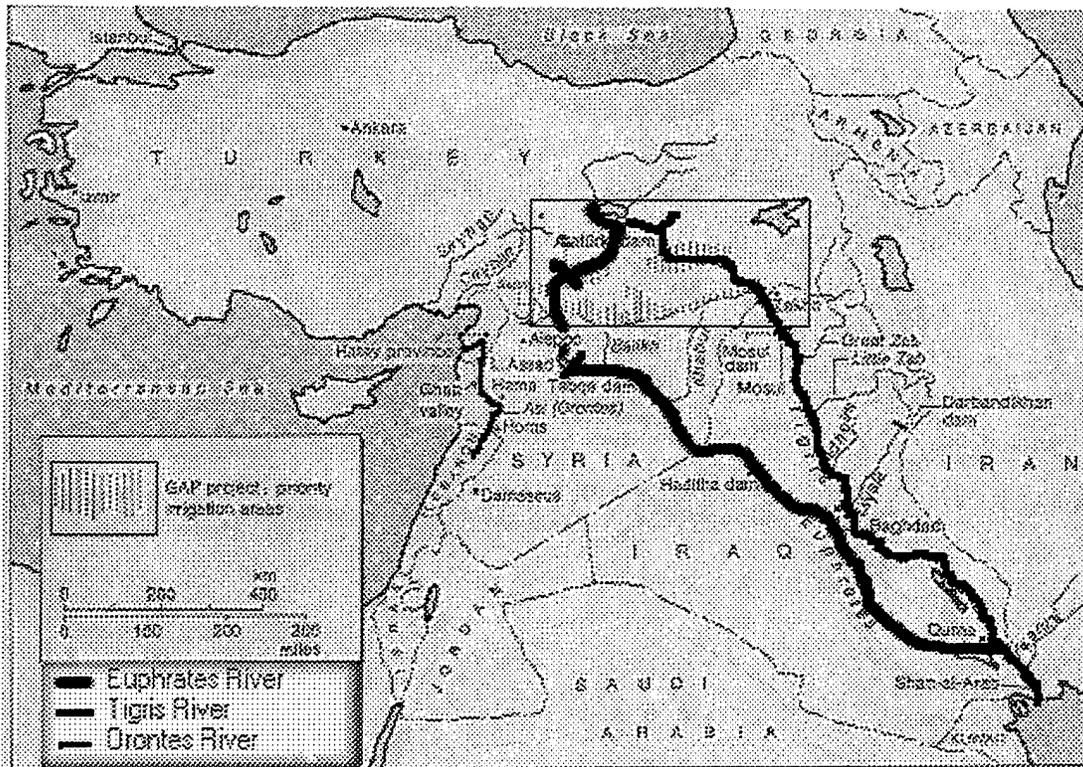


Figure 1 Tigris and Euphrates River Basin

Turkey has embarked on a major water development project, the Southeast Anatolian Project (Güneydogu Anadolu Projesi), or the GAP (see Figure 1).<sup>19</sup> The GAP, which could ultimately cost Turkey over \$30 billion, is designed to meet Turkey's fresh water, irrigation, and hydroelectric requirements in one of its most underdeveloped areas. When it is completed, sometime after the year 2005, the project's twenty-two dams and lakes and its nineteen hydroelectric plants (located on both the Euphrates and the Tigris Rivers) are designed to meet 19% of Turkey's irrigation needs and 22% of its power requirements.<sup>20</sup> Already

completed in 1990, the largest GAP project is the Ataturk Dam and Lake. It is the eighth largest rock filled dam in the world and spans the Euphrates River about 60 miles north of the Turkish-Syrian border (see Figures 2 and 3).

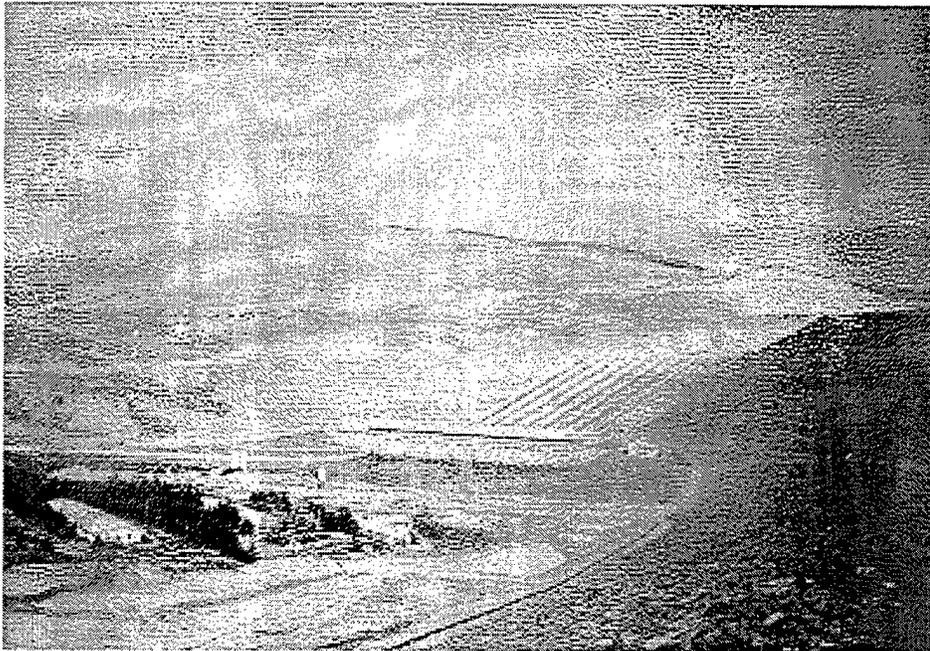


Figure 2 Ataturk Dam taken by the author in 1995.

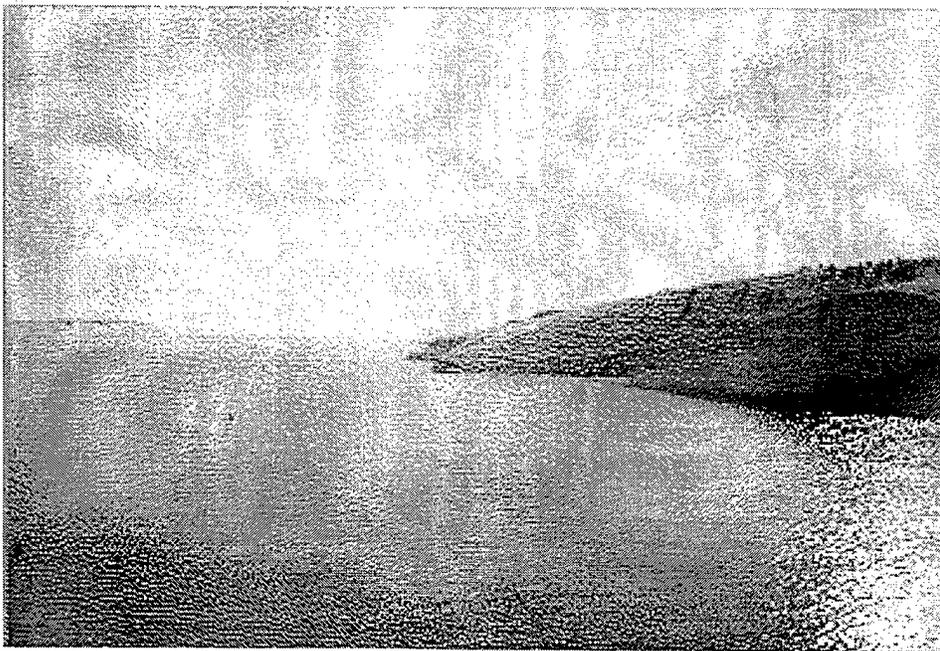


Figure 3 Ataturk Lake taken by the author in 1995.

Turkey's GAP projects on the Euphrates River have reduced the flow to Syria by about 50%, which could be reduced even further in periods of severe drought. For example, when Ataturk Dam was completed on the Euphrates in 1990, Turkey severely reduced the downstream flows to fill the dam's reservoir. Syria and Iraq both objected to this action, despite the fact that Turkey had released additional water in the months prior to the impoundment of Ataturk Lake.<sup>21</sup> Although normal flow was restored within a month, Syria and Iraq both felt vulnerable to Turkish control of the Euphrates.

Syria has also constructed a major hydroelectric and irrigation project, the Tabqa Dam and Lake Assad (see Figure 1). Completed in 1975 this project provides 60% of Syria's electrical needs and the vast majority of its irrigation requirements.<sup>22</sup> This project is not without controversy of its own, since when it was built and the reservoir was being filled, water to its downstream neighbor, Iraq, was severely reduced. Iraq, claiming its rightful share of Euphrates flow to be 16.1 BCM per year, blamed Syria for the failure of 70% of its winter crop. Only intervention by Saudi Arabia and the Soviet Union prevented an armed conflict between these two neighbors over this issue.<sup>23</sup> Syria has also constructed other projects, and plans more, on the Orontes River in western Syria (see Figure 1). These projects currently allow only a little over 10% of that river's flow to enter Turkey.<sup>24</sup>

Finally, Iraq, fearful of its loss of control of Euphrates River flows, has completed a new addition to its many dams, reservoirs, and canals. This project, sometimes called the "Third River", was completed in December 1992, and is designed to improve the use of the Tigris River. This "Third River" also diverts some of the Tigris flow into the Euphrates in an effort to reduce the salinity of that river. Euphrates River salinity levels have become an increasing problem in Iraq as agricultural and industrial water use in Turkey and Syria has grown.<sup>25</sup>

Increasing demands for water have led Turkey, Syria, and Iraq to build projects to take advantage of their respective river sources. However, about 98% and 45% of the flow of the Euphrates and Tigris Rivers, respectively, originate in Turkey.<sup>26</sup> Turkey intends to use about 16 billion cubic meters (BCM) of Euphrates River flow annually, or about 50% of the flow, while Syria claims to need no less than 11 BCM per year. On average this leaves about 9 BCM available to Iraq, which has insisted that its rightful, or "historical", annual share is 16.1 BCM.<sup>27</sup> Since the future stated annual Euphrates River requirement of 43 BCM (16 BCM, 11 BCM, and 16 BCM respectively for Turkey, Syria, and Iraq) exceeds the average annual flow rate of 36 BCM, an already tense situation could erupt into conflict.

## ATTEMPTS AT REGIONAL SOLUTIONS

As discussed above, disagreements over water nearly resulted in a war between Syria and Iraq in 1975. Tensions between Turkey and its downstream neighbors were heightened by the filling of Ataturk Lake in 1990, so the potential for a regional conflict over water is real. However, from a legal perspective, Turkey has a different view of the Euphrates than does Syria and Iraq. Turkey's legal interpretation is that the Euphrates is a "transnational" river, which means that each nation has the right to control that portion of the river that falls within its boundaries, albeit that neighbors' needs is an important consideration.<sup>28</sup> Turkey sees Euphrates River water use as primarily a sovereignty issue. National sovereignty, considering Turkey's long historical experience with loss of territory during the Ottoman period, is an understandably sensitive one.

Syria's and Iraq's interpretation, which coincides more closely with the international legal definition, is that the Euphrates is an "international" river. This implies that all nations have the right to an "equitable and reasonable" use of a watercourse.<sup>29</sup> They also cite their historical (or "acquired") right to use both the Tigris and the Euphrates Rivers as precedent for present and future needs as well. The problem is that these nations cannot agree on what an "equitable and reasonable" share of these rivers should be. Furthermore, Syria appears to want the international legal interpretation applied to

the Euphrates (and hence to Turkey), but does not apply this interpretation to its use of the Orontes River, where only a little over 10% of the flow is being made available to its downstream neighbor, Turkey. This perception of Syrian unfairness pertaining to the Orontes (and to the Euphrates vis-a-vis Iraq) has presented an obstacle to solving the use of the Euphrates River.

These three nations have made numerous efforts to resolve the Euphrates River problem. All three are members of a Joint Technical Commission, which was established in 1983, and whose purpose was to address water use on a regional basis. So far, this commission has failed to reach an agreement acceptable to all three parties. Despite Turkey's estimate that there is sufficient water in all the region's rivers to meet everyone's needs, Syria and Iraq have not been able to reach consensus on this point.

Unable to achieve a tripartite agreement, Turkey and Syria signed a bilateral agreement, the 1987 Protocol of Economic Cooperation. In this document Turkey agreed to release 500 cubic meters per second (or 15.75 BCM per year) of Euphrates water to Syria and, if flows fall below this level, to make up the difference the following month.<sup>30</sup> Furthermore, Syria agreed in 1990 to provide Iraq 58% of its Euphrates annual flow.<sup>31</sup> Despite this, Iraq continues to ask for higher allocations from Syria, citing acquired and historical use as precedent.<sup>32</sup>

Additionally, Syria continues to claim that it needs 11 BCM per year, but by its current agreements with Turkey and Iraq, can only retain 6.8 BCM. Therefore, Syria wants Turkey to renegotiate the 1987 protocol, which Turkey has not agreed to do. To date, all bilateral agreements have held, but the projected demands on the Euphrates is driving these countries toward greater competition for this water, and to increased tensions as well.

#### **ADDITIONAL CONSIDERATIONS**

Three other problems have hampered the ability of these nations to reach a comprehensive water use agreement. First, it is well known that despite an April 1992 security agreement between Turkey and Syria, the latter continues to support the Kurdistan Worker's Party (PKK) insurgency in Southeast Turkey.<sup>33</sup> Syrian compliance with, if not outright support for, PKK activities may be its only "weapon" in trying to force Turkey to negotiate more favorable water distribution agreements. Significant Kurdish refugee flow from Iraq into Southeast Turkey exacerbates Turkey's Kurdish problem and relations with Iraq. Turkey has made it clear that, although it does not intend to use water as a weapon, it will not seriously pursue water use negotiations until the PKK and Kurdish refugee problems are addressed.<sup>34</sup> Meanwhile, it appears that Syrian "leverage" may

be diminishing, as Turkey is beginning to gain the upper hand in its struggles with the PKK<sup>35</sup>.

Second, Syria and Turkey disagree over the Turkish Haytay Province. This region, formerly known as Alexandretta during French colonial Syria, was ceded to Turkey by France in 1939. Although it has been part of Turkey for nearly 60 years, Syria still claims this region. There is evidence that recent PKK activity in Haytay is receiving tacit, if not explicit, support from Syria.<sup>36</sup> Syrian attempts to pressure Turkey by linking Haytay's political status to water negotiations have not been conducive to achieving a regional water use agreement.

Finally, Turkey has recently improved relations with Israel. This has had a negative impact on Turkey's relations with the entire Arab community, but especially with Iraq and Syria. Syria views the recent Turkish-Israeli military cooperation agreement as a threat, and in June 1997 improved its relations with Iraq.<sup>37</sup> These shifting relationships only make it more difficult to reach a regional water use agreement.

#### **CONSEQUENCES FOR NATO**

Turkey has been a NATO member since 1952. It has always been important due to its geostrategic position vis-a-vis the former Soviet Union. Since the collapse of the Soviet Union and the Gulf War (1991), Turkey's importance has actually increased, from a NATO perspective.<sup>38</sup> This is due primarily to two reasons.

First, Turkey is a secular bulwark against Islamic extremism, which is on the rise and threatens the stability of the Middle East. Second, Turkey provides a bridge to the emerging Turkic republics in Central Asia and to the Middle East where most of Europe's oil originates. NATO, and much of the world, is dependent on Middle East oil, thus enhancing Turkey's geostrategic position in the post Cold War world.

Between Turkey's growing economy (enhanced by the GAP), recent successes in quelling the PKK insurgency, and its budding relationship with Israel, its relative importance to NATO continues to grow.<sup>39</sup> This enhanced position is further reflected in Supreme Allied Commander, Europe (SACEUR) operational planning guidance which makes Southeast Turkey a high priority NATO planning requirement.<sup>40</sup> An attack on Turkey will result in a conflict with NATO which, in accordance with Article Five of the 1949 Washington Treaty, must treat such an action as an attack on all alliance members.

#### **CONFLICT PREVENTION - A NEW ROLE FOR NATO?**

NATO's 1991 new strategic concept recognized risks and tensions associated with political, economic, ethnic instabilities, and with resource shortages that could directly affect NATO alliance security.<sup>41</sup> The new NATO strategy also recognized the impact of trans-national environmental issues on NATO members.<sup>42</sup> In light of this new situation NATO developed

programs, such as the Partnership for Peace (PfP) and the Marshall Peace Institute, to reach out to non-NATO nations for the purpose of increasing mutual confidence, and reducing tension and misunderstanding between participating nations and NATO. Furthermore, NATO has had a long-standing interest in improving scientific and technical exchange between its members, and more recently with partners outside the Alliance.

Finally, NATO has recognized the increased importance of the Mediterranean and the Middle East to regional security. This region's new priority is manifested in NATO's formation of the Mediterranean Cooperation Group whose purpose is to strengthen confidence-building and cooperation along NATO's southern flank.<sup>43</sup> The North African, or Mahgreb nations (less Libya), and Jordan are the first ones to be involved in this group, which will enhance security by addressing NATO "out of area" issues of mutual interest and concern. Similarly, NATO should consider the steps needed to reduce tensions between its key southern flank ally, Turkey, and its neighbors, Syria and Iraq.

### CONCLUSIONS

Conflict over water in the Middle East is nothing new, and the potential for conflict over this precious commodity between Turkey, Syria, and Iraq is a real possibility. Rising demands for this finite resource is increasing tensions between these nations, which, coupled with other long standing disputes, could

result in war. Such a conflict would involve NATO due to Turkey's membership in the alliance. Turkey's membership has become even more important in recent years because of its geostrategic position vis-a-vis Central Asia and the Middle East. Therefore it is in NATO's interest, and supported by its new strategy, to enhance regional security, by preventing conflict in Southeast Turkey, and in other than "traditional" ways.

### **RECOMMENDATIONS**

Since NATO could be drawn into a conflict over water in Southeast Turkey, it is clearly in NATO's interest to work now to prevent a war before it occurs. NATO must take a proactive approach to the water disputes between its ally, Turkey, and its downstream neighbors, Syria and Iraq. There are three ways in which NATO could reduce tensions, prevent conflict, and facilitate the establishment of a regional water agreement. In summary, these are: (1) Use its scientific and technical expertise; (2) Use its military resources; (3) Use its diplomatic influence. The focus of these efforts would be to assist these nations in ultimately achieving a peaceful regional water use agreement. NATO could accomplish this by using the Mediterranean Cooperation Group and the Partnership for Peace (PfP) programs as models in approaching this problem.

First, NATO should offer technical and scientific assistance to Turkey, Syria, and, when appropriate, to Iraq through the

office of the NATO Assistant Secretary General for Scientific and Environmental Affairs. This effort would focus on how these nations, both individually and collectively, could improve water use, enhance conservation, and reduce pollution/salinity, with a goal of maximizing existing water supplies in a cooperative way.

Second, NATO, with AFSOUTH as the lead headquarters, should continue a strong military exercise program in Turkey. This program, coupled with requisite infrastructure, will deter aggression and ensure Alliance preparedness to respond to a crisis in Southeast Turkey. NATO's continued commitment to alliance territorial integrity, a fundamental principle of the North Atlantic Treaty, will promote peace and deter regional conflicts. This program will further enhance NATO's security and its influence in the Middle East.

Finally, NATO should exercise its diplomatic influence, using the Mediterranean Cooperation Group and Partnership for Peace programs as models, to improve confidence building measures and improve cooperation between these countries. With NATO's Military Committee as the lead agency, this initiative could include military-to-military contacts and dialogue concerning issues of mutual concern. This might ultimately lead to further exchanges and/or to exercises, similar to PfP, but entitled "Water for Peace" (WfP). NATO recommended, and mutually agreed to, water use improvement and/or repair projects could be jointly implemented by these nations' militaries, with advice and

assistance from NATO as needed. These WfP exercises would initially focus on humanitarian operations and disaster relief, with expanded exercises to follow as relations improve. Like the PfP program, the WfP would focus on cooperation, exchange and understanding, but WfP would not be construed as a precursor to NATO membership.

These efforts should improve understanding and reduce tensions and could ultimately lead to the achievement of a mutually acceptable water use agreement between Turkey, Syria, and Iraq. This proactive approach to crisis resolution on its southern flank will enhance NATO's security and its influence in the Middle East. Failure to take action soon may result in NATO being drawn into a regional dispute. When one considers that such a conflict might involve the use of weapons of mass destruction by either Iraq or Syria, this is a situation NATO should work now to avoid.

Word count: 5,503

## ENDNOTES

<sup>1</sup> Jad Isaac, "The Dwindling Resource," Middle East Insight, March/April 1993, 18.

<sup>2</sup> Daniel Hillel, Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East (Oxford University Press, 1994) and Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 29.

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<sup>4</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 3.

<sup>5</sup> North Atlantic Treaty Organisation, NATO Handbook (NATO Office of Information and Press, 1992), 149.

<sup>6</sup> Ibid., 152-154.

<sup>7</sup> Ibid., 149.

<sup>8</sup> Ibid., 156-160.

<sup>9</sup> John Keegan, A History of Warfare (Alfred A. Knopf, New York, 1993), 133.

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<sup>11</sup> Marie Colvin and Matthew Cambell, "2,000 miles of pipe may hide Libya arsenal," Sunday Times, 7 December 1997, sec. 1, p. 20. and Anthony Shadid, "Egyptians: Beyond the Nile," Richmond Times Dispatch, 28 December 1997, sec. A, p. 4.

<sup>12</sup> Gary Hoch, "The Politics of Water In the Middle East," Middle East Insight, March/April 1993, 17.

<sup>13</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 29, 32, 34.

<sup>14</sup> Jad Isaac, "The Dwindling Resource," Middle East Insight, March/April 1993, 18.

<sup>15</sup> Barbara Crossette, "Water-Shy Earth: New Outlook," New York Times International, sec. A, p. 10.

<sup>16</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 73.

<sup>17</sup> Daniel Hillel, Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East (Oxford University Press, 1994), 103.

<sup>18</sup> Ibid, 29 and International Energy Outlook - TABLES, <<http://www.eia.doe.gov/oiaf/ieo95/front.html>>, accessed 2 Sep 97.

<sup>19</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 28.

<sup>20</sup> G.A.P. Home Page, G.A.P. Project; available from <<http://www.turkey.org/groupe/gap.htm>>; Internet; accessed 13 November 1997.

<sup>21</sup> Gulnur Aybet, Turkey's Foreign Policy and its Implications for the West: A Turkish Perspective (Royal United Services Institute for Defence Studies, 1994), 52.

<sup>22</sup> Daniel Hillel, Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East (Oxford University Press, 1994), 107.

<sup>23</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 40.

<sup>24</sup> Ibid, 29.

<sup>25</sup> "The Turkish Projects," Military Geography of Turkey (Central Intelligence Agency, n. d.), 6, 7.

<sup>26</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 29.

<sup>27</sup> Daniel Hillel, Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East (Oxford University Press, 1994), 108.

<sup>28</sup> "The Turkish Projects," Military Geography of Turkey (Central Intelligence Agency, n. d.), 6.

<sup>29</sup> "Report of the International Law Commission on the work of its forty-sixth session 2 May-22 July 1994" General Assembly Official Records Forty-ninth Session Supplement No. 10 (A/4./10) (United Nations, New York, 1994): 218.

<sup>30</sup> Natasha Beschorner, Adelphi Paper 273 Water and Instability in the Middle East, (Adelphi, 1992), 40.

<sup>31</sup> Daniel Hillel, Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East (Oxford University Press, 1994), 103.

<sup>32</sup> Kurt D. Volkan, "Ankara Pools Its Resources," Middle East Insight Special Double Issue, May-August 1996, 55.

<sup>33</sup> Robert Olson, "Turkey-Syria Relations Since the Gulf War: Kurds and Water," Middle East Policy, May 1997, 171.

<sup>34</sup> Ibid, 173.

<sup>35</sup> Maryann Bird, "A Turkish Turning Point," Time Atlantic, 7 April 1997, 46.

<sup>36</sup> Kurt D. Volkan, "Ankara Pools Its Resources," Middle East Insight Special Double Issue, May-August 1996, 55.

<sup>37</sup> Murhaf Jouejati, "The Syrian-Iraqi Rapprochement: Is it a tactical or strategic alliance?," Middle East Insight, November-December 1997, 7.

<sup>38</sup> Edward B. Atkeson, "NATO Expansion," Army, November 1997, 22.

<sup>39</sup> Daniel Pipes, "The Birth of a new Middle East alliance," Washington Times, 2 January 1998, sec. A, p. 17.

<sup>40</sup> Based on author's experience, Chief Engineer Branch, NATO Headquarters LANDSOUTHEAST, Izmir, Turkey, July 1995-June 1997.

<sup>41</sup> North Atlantic Treaty Organisation, NATO Handbook, (NATO Office of Information and Press, 1992), 149.

<sup>42</sup> Kent H. Butts, NATO Contributions to European Environmental Security (Strategic Studies Institute U. S. Army War College), 37.

<sup>43</sup> "Meeting of the North Atlantic Council in Defence Ministers Session held in Brussels on 2nd December 1997 Final Communique," 2 December 1997; available from <<http://www.nato.int/docu/pr/1997/p97-149e.htm>>; Internet; accessed 12 January 1998.



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