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## The 2006 Israel-Lebanese Conflict: A Case Study for Protection of the Environment in Times of Armed Conflict

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## COMMENT

### THE 2006 ISRAELI-LEBANESE CONFLICT: A CASE STUDY FOR PROTECTION OF THE ENVIRONMENT IN TIMES OF ARMED CONFLICT

*Ling-Yee Huang\**

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“[I]t is . . . a sad fact that the environment—so vividly underlined by the oil slick and the blackened, damaged coastline—is . . . a victim with all the repercussions for livelihoods, human health, economic development, ecosystems, fisheries, tourism and rare and endangered wildlife.”<sup>1</sup>

#### I. INTRODUCTION

After weeks of simmering tensions, the eight-week conflict between Israel and Lebanon erupted on July 12, 2006 when the militant group Hezbollah crossed into Israeli territory and kidnapped two Israeli soldiers

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1. U.N. Environment Programme, *Clean Up Strategy for Oiled Lebanese Coast Given Green Light* (Aug. 17, 2006) [hereinafter *Clean Up Strategy*] (quoting Achim Steiner, Executive Director of the U.N. Environment Programme), <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=484&ArticleID=5334&l=en>.

and killed three others.<sup>2</sup> On July 13, 2006, Israeli air forces struck an oil storage facility in Jiyeh, a coastal city twenty miles south of Beirut.<sup>3</sup> This first bombing released approximately 12,000 tons of oil into the sea.<sup>4</sup> Two days later, Israeli bombs struck again, spilling an additional 3,000 tons of oil.<sup>5</sup> Four of the six storage containers burned completely, while a fifth container smoldered, releasing a toxic cloud which drifted over the southern half of Lebanon.<sup>6</sup> The conflict between Israel and Lebanon continued until August 14, 2006, with the adoption of U.N. Resolution 1701.<sup>7</sup> In total, the eight-week conflict resulted in approximately 160 Israeli casualties and 1,100 Lebanese casualties.<sup>8</sup> This Comment will

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2. Joel Greenberg, *Israel Retaliates Against Lebanon after Attack by Hezbollah*, CHI. TRIB., July 12, 2006, at 1.

3. Israeli Prime Minister Ehud Olmert declared the raid “an act of war” to which Israel immediately responded by sending tanks into southern Lebanon to bomb bridges and other infrastructure to prevent the captured soldiers from being taken deeper into the country. *Id.*; see also Republic of Lebanon, Ministry of Environment, *Lebanese Oil Spill Case: Details and Request for Assistance* (Aug. 1, 2006), available at <http://www.moe.gov.lb/> [hereinafter *Lebanese Oil Spill Case*].

4. *Lebanese Oil Spill Case*, *supra* note 3. Estimates from the U.N. Environment Program put the spill between 10,000 and 15,000 tons of heavy fuel oil. U.N. Environment Program, *Lebanon: Post-Conflict Environmental Assessment*, 10 (2007) [hereinafter *UNEP Report*]. After the first bombing, the Lebanese government was able to repair the protective berm to prevent an even greater quantity of oil from spilling into the ocean. Geoffrey Lean, *Poisonous Pollution Spread in Aftermath of Israel Air Strikes*, INDEPENDENT (London), Sept. 10, 2006, at 42.

5. *Lebanese Oil Spill Case*, *supra* note 3. For a comparison, the 1989 Exxon Valdez oil spill in Prince William Sound, Alaska, amounted to 38,800 tons of oil. Exxon Valdez Oil Spill Trustee Council Frequently Asked Questions, <http://www.evostc.state.ak.us/History/FAQ.htm> (last visited Oct. 29, 2006).

6. Lean, *supra* note 4. Samples from the cloud contained high levels of mercury, lead, and polychlorinated biphenyls. *Id.*

7. S.C. Res. 1701, ¶ 1, U.N. Doc. S/Res/1701 (Aug. 11, 2006) (calling for “a full cessation of hostilities based upon . . . the immediate cessation by Hizbullah of all attacks and the immediate cessation by Israel of all offensive military operations”).

8. Israel Ministry of Foreign Affairs, *Hizbullah Attacks Northern Israel and Israel's Response* (July 12, 2006), <http://www.mfa.gov.il/MFA/Terrorism-+Obstacle+to+Peace/Terrorism+from+Lebanon-+Hizbullah/Hizbullah+attack+in+northern+Israel+and+Israels+response+12-Jul-2006.htm> (last visited Mar. 6, 2008); U.S. Agency for International Development, *Situation Report #4, Lebanon Humanitarian Emergency* (Oct. 27, 2006), available at [http://www.usaid.gov/locations/asia\\_near\\_east/middle\\_east/](http://www.usaid.gov/locations/asia_near_east/middle_east/). However, estimates on total casualties vary. See *infra* note 9. Both Israel and Hezbollah have been condemned by human rights' groups for committing war crimes. See, e.g., Israel/Lebanon: Hizbullah's Attacks on Northern Israel, <http://web.amnesty.org/library/Index/ENGMDE020252006> (last visited Mar. 6, 2008); Lebanon: Deliberate Destruction or “Collateral Damage”? Israeli Attacks on Civilian Infrastructure [hereinafter *Deliberate Destruction*], <http://web.amnesty.org/library/index/engmde180072006>, (last visited Mar. 6, 2008).

examine the oil spill<sup>9</sup> from the recent Israeli-Lebanese conflict as a case study for the application of humanitarian law principles—humanity, discrimination, military necessity, and proportionality—to protection of the environment during times of armed conflict.

## II. PRINCIPLES OF INTERNATIONAL HUMANITARIAN LAW

### A. Protection of the Environment in Peacetime

A full discussion of peacetime environmental protection conventions and their applicability during times of armed conflict exceeds the scope of this Comment. However, one specific treaty will be briefly mentioned.<sup>10</sup> The 1982 U.N. Convention of the Law of the Sea, which recognized the oceans as part of the common heritage of mankind, represents a high level of direct support for the marine environment.<sup>11</sup> Article 145 requires parties to adopt appropriate measures for the protection and preservation of the marine environment from pollution and other hazards.<sup>12</sup>

Moreover, two fundamental protections for the environment form the basis for application of international humanitarian law.<sup>13</sup> First, states are obligated to prevent environmental damage beyond their borders.<sup>14</sup> As

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9. This comment will focus solely on the oil spill despite the vast amount of environmental damage to both countries during the course of the conflict. In Lebanon, the UNEP cites nearly 1,200 casualties, 4,400 injured civilians, and more than 900,000 internally displaced persons. UNEP Report, *supra* note 4, at 10. Moreover, the conflict resulted in severe damage to infrastructure, with “wide-spread destruction” of major roads and transportation conduits. *Id.* Hezbollah fired nearly 4,000 rockets into Israel, often indiscriminately and resulting in the death of 55 Israelis and approximately 1,500 injuries of varying severity. Human Rights Watch, *Civilians Under Assault: Hezbollah’s Rocket Attacks on Israel in the 2006 War* 4 (2007), available at <http://hrw.org/reports/2007/iopt0807/>.

10. See, e.g., Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 (1992), and the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, Feb. 2, 1971, 11 I.L.M. 963 (1971).

11. U.N. Convention on the Law of the Sea, art. 136, Dec. 10, 1982, 21 I.L.M. 1261 (1982) [hereinafter UNCLOS]. Israel is not a party to UNCLOS; Lebanon became a party on Jan. 5, 1995. For further discussion of UNCLOS and applicability to war, see Thomas A. Mensah, *Environmental Damages under the Law of the Sea Convention*, in THE ENVIRONMENTAL CONSEQUENCES OF WAR 226 (Jay E. Austin & Carl E. Bruch eds., 2000).

12. UNCLOS, *supra* note 11, art. 145(a) & (b).

13. 1 JEAN-MARIE HENCKAERTS & LOUISE DOSWALD-BECK, CUSTOMARY INTERNATIONAL HUMANITARIAN LAW 147, 151 (2005).

14. Antoine Bouvier, *Protection of the Natural Environment in Time of Armed Conflict*, 285 INT’L REV. RED CROSS 567 (1991).

such, states have a general obligation to minimize or avoid incidental damage to the environment.<sup>15</sup> Second, states are obliged to respect the environment in general.<sup>16</sup> This principle translates into the humanitarian law custom that the “[m]ethods and means of warfare must be employed with due regard to the protection and preservation of the manual environment.”<sup>17</sup>

### B. *Humanity*

The principle of humanity is a basic prohibition against inhumane means of warfare,<sup>18</sup> which implies that parties to a conflict are limited in their ability to choose the means and methods of warfare.<sup>19</sup> This principle is measured from a utilitarian, anthropocentric perspective.<sup>20</sup> Violations are often intuitively recognized as conflicting with the “dictates of public conscience.”<sup>21</sup> Regarding the environment, the conduct of humane warfare excludes the use to methods which are intended or are “expected to cause widespread, long-term, and severe damage to the natural environment.”<sup>22</sup>

### C. *Discrimination*

The second widely accepted principle of war is that military operations must discriminate between civilian objects and military targets.<sup>23</sup> Inflicting indiscriminate and wanton attacks is considered a war crime by the Rome Statute of the International Criminal Court.<sup>24</sup> This principle is

15. HENCKAERTS & DOSWALD-BECK, *supra* note 13, at 151.

16. Bouvier, *supra* note 14.

17. *Id.* at 147.

18. Michael N. Schmitt, *Green War: An Assessment of the Environmental Law of International Armed Conflict*, 22 YALE J. INT'L L. 1, 61 (1997).

19. Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of International Armed Conflicts art. 35(1), June 8, 1977, 16 I.L.M. 1391 [hereinafter Protocol I].

20. Schmitt, *supra* note 18, at 61.

21. *Id.* Protocol I, *supra* note 19, art. 1(2).

22. *Id.* art. 35(3). These terms are used in articles 35 and 55 of Protocol I as well as article 1 of the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, Dec. 10, 1976, 31 U.S.T. 333, 1108 U.N.T.S. 152 [hereinafter ENMOD]. Under Protocol I, “widespread” was defined on the scale of several hundred square kilometers; “long-term” was defined by several months; and “severe” was defined to include serious harm to human life and the natural environment. MICHAEL BOTHE ET AL., *NEW RULES FOR VICTIMS OF ARMED CONFLICTS* 347 (1982).

23. BOTHE ET AL., *supra* note 22, at 675-78.

24. Rome Statute of the International Criminal Court art. 8(2)(iv), July 17, 1998, 37 I.L.M. 1998. Although neither Israel nor Lebanon are parties to the Rome Statute, state practice and

supplemented by the rule prohibiting attacks of “works or installations containing dangerous forces.”<sup>25</sup> Protocol I prohibits all attacks against such targets if the attack “may cause the release of dangerous forces and consequent severe losses among the civilian population.”<sup>26</sup> However, an exception applies where the works or installations are a source of significant support and attack is “the only feasible way” to terminate such support.<sup>27</sup> Although this rule is limited to dams, dykes, and nuclear electrical generating stations,<sup>28</sup> the ICRC suggests that this rule should also include installations such as oil refineries and chemical plants, which contain inherently dangerous substances.<sup>29</sup> State practice, however, has often made oil refineries targets of attack.<sup>30</sup>

#### D. Military Necessity and Proportionality

The remaining two principles are often considered together. The principle of military necessity prohibits destructive or harmful acts unless required by imperative military necessity.<sup>31</sup> Qualified targets are those that make “an effective contribution to military action” and “whose partial or total destruction, capture, or neutralization . . . offers a definite military advantage.”<sup>32</sup> Extensive damage unwarranted by military necessity is considered a grave breach under the Fourth Geneva Convention.<sup>33</sup>

Even if an attack on a particular target is considered a military necessity, the attack must also be evaluated under the principle of proportionality. This test weighs the incidental damage to the natural environment against the anticipated military advantage to be gained.<sup>34</sup> Proportionality, a nebulous and unquantifiable principle, exists along a

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statements indicate that general support exists for the prohibition of intentional, indiscriminate attacks on civilian objects. See HENCKAERTS & DOSWALD-BECK, *supra* note 13, at 37-45.

25. Protocol I, *supra* note 19, art. 56(1).

26. *Id.*

27. *Id.* art. 56(2)(c).

28. *Id.* art. 56(1).

29. HENCKAERTS & DOSWALD-BECK, *supra* note 13, at 142.

30. See, e.g., Thomas G. Mahnken, *Energy and War*, SAISPHERE 42 (2005), available at <http://www.sais-jhu.edu/pubaffairs/publications/saisphere/winter05/mahnken.html>.

31. Protocol I, *supra* note 19, art. 52(2).

32. *Id.*; HENCKAERTS & DOSWALD-BECK, *supra* note 13, at 29 (discussing the U.S. Army adoption of the principle of necessity).

33. Geneva Convention Relative to the Protection of Civilian Persons in Time of War art. 147, Aug. 12, 1949, 6 U.S.T. 3516 [hereinafter Fourth Geneva Convention]. Both Israel and Lebanon are parties to this Convention.

34. HENCKAERTS & DOSWALD-BECK, *supra* note 13, at 145; Protocol I, *supra* note 19, art. 51(5)(b).

continuum between military objectives and humanitarian values.<sup>35</sup> First, the operation should be viewed for both immediate benefits and benefits in relation to the military operation as a whole.<sup>36</sup> Second, the military advantage must have a specific and causal relationship to the attack that causes incidental environmental damage.<sup>37</sup> Finally, a judgment must also be made as to the likely level of damage to the environment.<sup>38</sup>

### III. THE ENVIRONMENTAL CONSEQUENCES OF THE OIL SPILL AT JIYEH

The oil slick along the coast has caused some of the most disastrous environmental damage in the history of Lebanon, a country known in the Middle East for its unspoiled beaches.<sup>39</sup> Nearly 100 kilometers of the Lebanese coast have been affected by the spill, as well as parts of the Syrian coast and other countries along the Mediterranean sea.<sup>40</sup> The Israeli naval blockade delayed immediate clean-up and assessment efforts for three weeks, a critical delay which many environmentalist groups say has exacerbated the damage.<sup>41</sup>

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35. Schmitt, *supra* note 18, at 55.

36. *Id.* at 54-55.

37. BOTHE ET AL., *supra* note 22, at 365.

38. Schmitt, *supra* note 18, at 57.

39. During the eight week conflict between Israel and Lebanon, the environment became a casualty as thousands of acres of forest burned from rocket attacks and water sources became polluted from damage to sewage drains and run-off. Hassan M. Fattah, *Casualties of War: Lebanon's Trees, Air and Sea*, N.Y. TIMES, July 29, 2006, at A1; Dina Kraft, *Dry Forests in Northern Israel are Damaged as Hezbollah's Rocket Attacks Ignite Fires*, N.Y. TIMES, Aug. 8, 2006, at A8. However, the threshold to trigger legal regulation of environmental damage is far higher than the threshold to qualify as scientific damage. KAREN HULME, WAR TORN ENVIRONMENT: INTERPRETING THE LEGAL THRESHOLD 17 (2004).

40. Fattah, *supra* note 39, at A1.

41. Henry Meyer, *Cleanup Barely Makes Dent in Lebanon Oil Spill*, SEATTLE TIMES, Sept. 24, 2006, at A16. The oil spill clean-up is already complicated by the morphological features of the Lebanese coastline: the porous limestone make-up of the rocky shore; the presence of copious amounts of floating debris; and the constant exposure of beaches to wave action. U.N. Environment Programme, Regional Marine Pollution Emergency Response Center for the Mediterranean Sea, Expert Working for Lebanon, *Lebanon Marine and Coastal Oil Pollution International Assistance Action Plan*, at 4, available at [http://www.imo.org/includes/blastDataonly.asp/data\\_id%3D15098/Finalactionplan.pdf](http://www.imo.org/includes/blastDataonly.asp/data_id%3D15098/Finalactionplan.pdf) (last visited Mar. 6, 2008).

In Lebanon, the affected areas include the historic town of Byblos<sup>42</sup> and the ecologically-sensitive Palm Islands Nature Reserve.<sup>43</sup> Harm to birds and mammals results from physical contact with the spilled oil, toxic contamination from inhaled vapors, destruction of food sources and habitat, and future reproductive problems.<sup>44</sup> The United Nations Environment Program concluded that, while most of the oil either spilled into the sea or burned in the wake of the attacks, “a significant portion” most likely seeped into the underlying porous rock.<sup>45</sup> The dense characteristic of the oil caused it to sink onto the seabed, smothering marine organisms.<sup>46</sup> UNEP estimates that the sunken oil covers an area extending several hundred meters from and along the shoreline.<sup>47</sup> Bio-accumulation and resurfacing of sunken toxins will continue to inhibit ecosystem recovery and regeneration for years.<sup>48</sup>

#### IV. APPLICATION AND ANALYSIS

Despite the environmental damages, Israel most likely did not violate the principle of humanity in the attack on the fuel storage station in Jiyeh. The attack resulted in immediate infrastructure and environmental damages but little loss of civilian life.<sup>49</sup> While devastating to the environment, the attack probably did not violate the fundamental dictates

42. The oil spills have also spoiled objects and property with historical and cultural significance to Lebanon. Zeina Karam, *Postwar Cleanup to Begin on Ancient Sites*, CHI. TRIB., Oct. 5, 2006, at 14.

43. The Reserve is a regular summer nesting site for the endangered Loggerhead turtle and a winter visiting site for critically endangered Green and Leatherback turtles and Monk seals. In addition, the reserve is an important habitat for migratory birds and spawning grounds for the local fishing industry. Information Sheet on Ramsar Wetlands, pt. 1 (Apr. 14, 2001), available at <http://www.wetlands.org/RSDB/default.htm>.

44. U.S. Environmental Protection Agency’s Oil Program Center, *Understanding Oil Spills and Oil Spill Response* 8 (Dec. 1999), available at <http://www.epa.gov/emergencies/content/learning/pdfbook.htm>.

45. UNEP Report, *supra* note 4, at 46. Oil trapped underground has the potential to continue both leaking into the sea as well as leaking into wells and groundwater supplies. *Id.*

46. UNEP Report, *supra* note 4, at 140. UNEP studies in the area revealed low to moderate presence of fish at several test sites and overall chronic stress along the Lebanese coastline from human activities independent of the oil spill. *Id.*

47. *Id.* at 134.

48. The Impact of the Oil Spill (July 27, 2006), [http://www.oilspilllebanon.org/articles/Environmental\\_impact-final.pdf](http://www.oilspilllebanon.org/articles/Environmental_impact-final.pdf); Lebanon Oil Spill Threatens Migrant Birds and Marine Life (Aug. 25, 2006) [hereinafter Lebanon Oil Spill], [http://www.iucn.org/en/news/archive/2006/08/pr\\_lebanon\\_oil\\_spill.htm](http://www.iucn.org/en/news/archive/2006/08/pr_lebanon_oil_spill.htm).

49. See, e.g., Deliberate Destruction, *supra* note 8.



of the public conscience from an anthropocentric perspective. However, the attack will produce long-term and severe effects on the marine environment, human health, and economic resources of the region and of Lebanon.<sup>50</sup> These effects raise the issue of humanity, but whether an evaluation of the principle of humanity extends beyond the immediate impact of the attack is unclear.

The principles of discrimination, military necessity, and proportionality revolve around the fundamental question of whether the oil storage facility at Jiyeh was a legitimate military target that provided regular and direct support to Hezbollah.<sup>51</sup> The Israeli Ministry of Foreign Affairs, in public statements, made only general references to the strategic nature and military advantage of this attack.<sup>52</sup> The local Lebanese who live around Jiyeh said that the area has “few ties” to Hezbollah and accuse Israel of striking the fuel storage facility as a punitive measure and to compel the Lebanese government to take action against Hezbollah.<sup>53</sup> Moreover, the armed faction of Hezbollah does not use massive quantities of fuel because it relies on missile launches.<sup>54</sup> The fuel itself at Jiyeh probably did not provide significant support to Hezbollah’s operations during the conflict, and thus the storage facility should not have been considered a legitimate military target.

Furthermore, even if the oil storage facility was a legitimate target, bombing the facilities and spilling the oil into the Mediterranean was unlikely to result in a definite military advantage. Destroying oil facilities

50. Robert F. Worth, *Wake of War Idles Lebanon’s Fleet, and Its Fishermen*, N.Y. TIMES, Aug. 28, 2006, at A4.

51. Protocol I, *supra* note 19, art. 56(2).

52. The Israeli Ministry of Foreign Affairs stated that:

Terrorist activity is dependent, inter alia, on a regular supply of fuel without which the terrorists cannot operate. For this reason a number of fuel depots which primarily serve the terrorist operations were targeted. From intelligence Israel has obtained, it appears that this step has had a significant effect on reducing the capability of the terrorist organizations.

Government of Israel, Ministry of Foreign Affairs, *Responding to Hizbullah Attacks from Lebanon: Issues of Proportionality* (July 25, 2006) [hereinafter *Responding to Hizbullah Attacks*], <http://www.mfa.gov.il/MFA/Government/Law/Legal+Issues+and+Rulings/Responding+to+Hizbullah+attacks+from+Lebanon+-+Issues+of+proportionality+July+2006.htm> (last visited on Mar. 6, 2008).

53. Meyer, *supra* note 41, at A16.

54. Nouveaux Droits de l’Homme International and Association Libanaise pour l’Education et la Formation, Second Report, *International Humanitarian Law Violations in the Current Conflict Opposing Hezbollah (Lebanon) to the State of Israel*, at 6 (Aug. 14, 2006).

has two potential benefits: to produce visual obscurants to impair the other party; or to deprive the other party of an important source of fuel. The first benefit was discounted by the U.S. Department of Defense in its report on the First Gulf War, a report that could apply equally to Israel's actions in targeting this particular oil facility.<sup>55</sup> The report concluded that:

[T]he oil well destruction had no military purpose, but was simply punitive destruction at its worst . . . [O]il well fires to create obscurants could have been accomplished simply through the opening of valves; instead, Iraqi forces [acted] . . . to ensure the greatest possible destruction and maximum difficulty in stopping each fire . . . . [These acts] . . . had little effect on Coalition offensive combat operations.<sup>56</sup>

A similar logic is applicable to Israel's attack on the oil storage facility at Jiyeh because Hezbollah did not use air strikes and thus would not have been impaired by visual obscurants.<sup>57</sup>

Israel's motive was therefore limited to depriving the militant group of fuel supplies.<sup>58</sup> However, in relation to Israel's military response as a whole, this early strike did not seem to handicap Hezbollah forces as their endurance surprised many analysts.<sup>59</sup> In fact, the cumulative bombing of Lebanon's fuel storage facilities resulted in a greater humanitarian tragedy by depleting fuel to power hospitals and other relief infrastructure.<sup>60</sup> A spokesman for the government of Israel, said it was "unclear that Israel was directly responsible" for the oil slick and insisted that the Israeli army "did not intentionally attack the oil containers."<sup>61</sup> The latter statement, if

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55. This comparison is limited solely to the attack of the oil facility at Jiyeh and does not purport to compare Iraq's belligerent and aggressive acts with Israel's military measures.

56. U.S. Department of Defense, *Final Report on Congress on the Conduct of the Persian Gulf War*, app. O, The Role of the Law of War, 31 I.L.M. 636 (Apr. 10, 1992), in 2 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW 853 (Jean-Marie Henckaerts & Louise Doswald-Beck eds., 2005).

57. *Id.*

58. *Responding to Hizbullah Attacks*, *supra* note 52.

59. Edward Cody & Molly Moore, *Hezbollah Battlefield Resilience Stems from Zeal*, *Military Science, Money*, WASH. POST, Aug. 14, 2006, at A1. Lebanese analysts, who strongly oppose Hezbollah, say that the militant group's intense indoctrination and steady flow of Iranian money sustains the organization. *Id.*

60. World Health Organization, News Release, *Fuel Shortages in Lebanon a Grave Threat to People's Health*, Aug. 7, 2006, <http://www.who.int/mediacentre/news/releases/2006/pr36/en/index.html>.

61. Meyer, *supra* note 41, at A16.

true, raises questions as to why the facility was struck if not intentionally.<sup>62</sup> Examination of the possible motives and Israeli statements suggest that the attack on the oil storage facility at Jiyeh failed to meet the requirements of a military necessity and did not significantly or definitively handicap Hezbollah forces.<sup>63</sup>

Turning to the question of proportionality, the attacks provided no clear military advantage and the incidental environmental damages were highly disproportionate to the attack. The fuel storage facilities were a mere twenty-five meters from the shoreline, which should have been apparent from satellite photos and aerial views.<sup>64</sup> That a high level of environmental damage could be expected from an attack on a facility storing hazardous fuels is clear, based on past state practice and basic environmental considerations. The spill at Jiyeh further jeopardized threatened and endangered species of sea turtles, migratory birds, and seals.<sup>65</sup> Recovery and restoration of the marine ecosystem may take up to a decade.<sup>66</sup>

In addition, the impacts on human health and economic effects are disproportionate. Inhalation of the toxic fumes and carcinogenic contaminants from the smoldering containers is likely to have adverse

62. In September 2006, the Israeli Government appointed a committee to investigate the political, security, and military actions taken during the 34-day conflict. In January 2007, the committee released an interim version of the Winograd Report, which heavily criticized the Israeli Government. The Report cited “very serious failings” in decision-making and placed primary responsibility on Prime Minister Ehud Olmert, Defense Minister Amire Peretz, and Israeli Defense Forces Chief of Staff Dan Halutz. Yossi Verter et al., *Lebanon War Probe Accuses Olmert of “Severe Failure,” Blasts Halutz, Peretz*, HA’ARETZ (Jan. 5, 2007), available at <http://www.haaretz.com/hasen/spages/853705.html>. The Winograd Report concluded that “the decision to respond with an immediate, intensive military strike was *not* based on a detailed, comprehensive and authorized military plan” and that “a meticulous examination . . . would have revealed [that]: the ability to achieve military gains having significant political-international weight was limited; [and] an Israeli military strike would inevitably lead to missiles fired at the Israeli civilian north.” *The Main Findings of the Winograd Partial Report on the Second Lebanon War*, HA’ARETZ (Jan. 5, 2007), available at <http://www.haaretz.com/hasen/spages/854051.html>. The committee further concluded that Prime Minister Olmert made hasty decisions without consulting other high-level government officials with military experience and failed to account for known factors on the ground. *Id.*

63. For example, between July 13 and July 18, Hezbollah fired over 700 Katyusha rockets into Israel. Government of Israel, Ministry of Foreign Affairs, *Hizbullah’s Attacks Northern Israel and Israel’s Response*, <http://www.mfa.gov.il/MFA/Terrorism+Obstacle+to+Peace/Terrorism+from+Lebanon+Hizbullah/Hizbullah+attack+in+northern+Israel+and+Israels+response+12-Jul-2006.htm#pdf> (last visited Mar. 6, 2008).

64. *Lebanese Oil Spill Case*, *supra* note 4, at 1.

65. *Lebanon Oil Spill*, *supra* note 48.

66. *Id.*

health effects in the future for local residents.<sup>67</sup> On an economic scale, the United Nations Environment Program estimates that clean-up costs will exceed \$65 million,<sup>68</sup> with high estimates at \$130 million.<sup>69</sup> Because of the lack of military advantage gained from this attack and the high environmental devastation, the disproportionate effects of this attack outweighed the military advantage gained by Israel.

## V. CONCLUSION

The attack on the oil storage facility in Jiyeh is an appropriate and timely case study for the protection of the environment during times of armed conflict. It illustrates both the applicability of the principles of humanity, discrimination, military necessity, and proportionality to protection of the environment as well as the obstacles to application during the conflict itself. The environment has historically been a casualty of human conflict, but increasing critical review of military operations may force greater consideration of environmental damages.

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67. *Id.*

68. *Clean Up Strategy*, *supra* note 1.

69. *Id.* The government of Lebanon estimates the cost of lost income and damages to exceed \$6 billion. *Debt and Destruction*, *ECONOMIST*, Sept. 2, 2006, at 35.

