

ENVIRONMENTAL PEACEMAKING: ENDING CONFLICT BETWEEN INDIA AND PAKISTAN ON THE SIACHEN GLACIER THROUGH THE CREATION OF A TRANSBOUNDARY PEACE PARK

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The Siachen Glacier conflict between India and Pakistan “might be thought of as just another low-intensity border war—were it not being fought between the world’s two newest nuclear powers. Their combat over a barren, uninhabited nether world of questionable strategic value is a forbidding symbol of their lingering irreconcilability. [The Siachen conflict is like] a struggle of two bald men over a comb . . . [It is] the epitome of the worst aspects of [their] relationship. These are two countries that are paired on a road to Oslo or Hiroshima, and at this point they could go either way.”¹

I. INTRODUCTION

Will India and Pakistan head toward Oslo and the normalization of relations? Or will they head toward Hiroshima and the prospect of nuclear destruction? The two nations have been embroiled in conflict since the beginning of their respective statehoods. Today, the stability of South Asia depends on the ability of India and Pakistan to overcome long-standing disputes, historic animosity, and deep mistrust rooted in nationalism. Since 1997, the nations have been locked in this very effort, engaging in ongoing conversation (the “Composite Dialogue”) aimed at making progress on the major disputes between them while assuring mutual nuclear security.²

Among the issues addressed by the Composite Dialogue is the territorial dispute and ongoing conflict over control of the Siachen

1. Stephen P. Cohen, a Senior Fellow at the Brookings Institution with a focus on India, Pakistan, and South Asian security and proliferation issues, offers this insight. Stephen P. Cohen, *South Asia Needs a Peace Process*, ASIAN WALL ST. J., June 12, 1999, cited in Defence India Report on Siachen, http://www.defenceindia.com/def_common/siachen.html (last visited Nov. 11, 2005).

2. As originally conceived in 1997, the Composite Dialogue includes discussion of (1) peace and security, (2) Jammu and Kashmir, (3) Wullar Barrage/Tulbul navigation project, (4) friendly exchanges and people-to-people contacts, (5) Siachen Glacier, (6) Sir Creek, (7) terrorism and drug trafficking, and, (8) economic and commercial cooperation. Recently the issues of prior reporting of nuclear and missile tests and the Baglihar project, as well as civilian confidence building measures like transport, communication and visas, have been taken up. See Muhammad Badar Alam, *Structural flaw: The stand off on the Baglihar Issue Highlights the Lack of Progress on the Peace Talks*, THE NEWS INTERNATIONAL (PAKISTAN), Jan. 19, 2005, available at <http://jang.com.pk/thenews/jan2005-daily/19-01-2005/oped/o3.htm>; see also *Background to the India-Pakistan Composite Dialogue*, INDIA NEWS ONLINE, June 2004, <http://news.indiamart.com/news-analysis/background-to-the-in-4504.html>. [hereinafter *India-Pakistan Composite Dialogue Background*].

Glacier. Siachen, known as the "Third Pole," is the world's highest glacier outside the North and South Poles.³ With battles regularly occurring at altitudes greater than 20,000 feet, the Siachen Glacier is the "world's highest battleground."⁴

Despite their attempts in recent years, leaders from both nations have been unable to create a framework for a lasting peace. In their struggle to find new common ground, leaders can use the Siachen Glacier as an opportunity to foster cooperation and peace. This Note explores how, instead of fighting over a land area of questionable strategic value, they can use the Siachen as a model for bilateral cooperation while achieving real gains in the protection of the environment. Section II of this Note introduces the Siachen Glacier and explores the reasons for the recent optimism in the conflict between India and Pakistan. Section II also discusses the roots of historical skepticism about bilateral cooperation and the details of the collateral damage to the environment caused by the current conflict in the Siachen.

Fundamental constitutional rights and obligations arising from treaties and customary international law give India and Pakistan significant reason to consider ending the conflict and to begin management of the Siachen ecosystem as a protected area. Section III explores these potential bases for environmental protection of the Siachen rooted in the laws of both countries.

Section IV suggests a plan for demilitarization of the Siachen and then explores how to conserve this unique ecosystem, which like all ecosystems, does not recognize national borders. The Section reviews several ecosystem protection models and concludes that management that involves transboundary collaboration between India and Pakistan, rather than management of contiguous Indian and Pakistani parks, would facilitate withdrawal of troops and the ending of active warfare in the name of environmental protection while allowing both countries to maintain their honor and dignity. Such collaborative management, especially in the context of a transboundary peace park, would also create positive momentum toward further resolution of other disputes in the Composite Dialogue in addition to protecting the ecosystem. Section IV describes the recent phenomenon of ending conflicts through collaborative

3. Siachen Glacier Operation Meghdoot, <http://www.globalsecurity.org/military/world/war/siachen.htm> (last visited Oct. 12, 2005) [hereinafter Operation Meghdoot].

4. Defence India Report on Siachen, *supra* note 1.

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transboundary ecosystem management and applies this “environmental peacemaking” model to the creation of a transboundary peace park in the Siachen.

Section V suggests that India and Pakistan are unlikely to overcome inherent barriers to ending the Siachen conflict and creating a transboundary peace park without third-party involvement at the outset, and heavy community and non-governmental organization (“NGO”) involvement in the long run. Section V also identifies the building momentum to overcome these barriers.

Section VI concludes that the protection of the Siachen ecosystem through the creation of a transboundary peace park between India and Pakistan has sound legal, political, and environmental justifications. Based on these justifications, this Note advocates for the creation of a Siachen Peace Park.

II. POLITICAL AND ENVIRONMENTAL CONTEXT OF THE SIACHEN GLACIER CONFLICT

A. *Recent Optimism in the Conflict Between India and Pakistan*

On April 25, 2005, Pakistani President General Pervez Musharraf returned from his trip to India with two positive messages for his country: First, Pakistan beat rival India in a one-day cricket match. Second, and more significantly, he announced that his “talks with [Indian] Prime Minister Manmohan Singh yielded positive results and led to a joint statement, which reflected a clear resolve to address all [outstanding] issues [between the countries] and a resolve to move towards a final settlement of the Kashmir issue.”⁵ President Musharraf concluded that, after his visit, a “‘breakthrough’ ha[d] been achieved in the peace process between the two countries.”⁶

A recent bus service between the two sides of Kashmir symbolizes this “breakthrough” in normalizing relations. On April 7, 2005, a bus carrying 31 passengers crossed the Line of Control from Muzaffarabad in Pakistan-held Kashmir to Srinagar

5. *Breakthrough in Peace With India: Musharraf*, DAILY TIMES (PAKISTAN), Apr. 25, 2005, available at http://www.dailytimes.com.pk/default.asp?page=story_25-4-2005_pg1_3 [hereinafter *Breakthrough Article*].

6. *Id.*

on the Indian side.⁷ The Washington Post reported that “amid threats of violence and tears of joy, India and Pakistan kicked off [this] historic bus service . . . across the divided Himalayan province of Kashmir, reuniting relatives who had not seen each other for decades and boosting hopes for a lasting peace between the nuclear-armed rivals.”⁸

Although violence has marred its early runs, the launch of the bus service marks a hopeful moment in the embattled history of India and Pakistan. Locked in a constant struggle since their post-colonial partition in 1947, relations between the two countries have long been characterized by strident animosity.⁹ Deep-seated nationalism has kept the two nations from discussing, much less establishing, long-term cooperative agreements.¹⁰ The person-to-person contact symbolized by this recent bus service is an important and tangible sign of improvement in an issue of major concern in the troubled bilateral relationship.

Active involvement by both nations has spurred the current optimistic atmosphere. Since 1997, India and Pakistan have been engaged in the Composite Dialogue—meetings to establish a long-term roadmap to peace through a conversation about major issues of conflict.¹¹ These meetings have often been turbulent and, until recently, have produced little measurable gain. In April 2001, for example, a summit in Agra, India, between then Indian Prime Minister Atal Bihari Vajpayee and Pakistani President General Pervez Musharraf resulted in political backlash in both nations, scarring diplomacy efforts between the nations.¹²

In April 2003, then Prime Minister Vajpayee of the Hindu Nationalist Bharatiya Janata Party (BJP) extended a “hand of friendship” to Pakistan in an effort to create a legacy of “lasting peace.”¹³ What Vajpayee started, current Indian Prime Minister

7. John Lancaster, *Kashmir Bus Link Boosts Hopes Service Bridging India-Pakistan Divide Seen as Sign of Peace*, WASH. POST, Apr. 8, 2005, at A18.

8. *Id.*

9. For a treatment of ongoing post-colonial animosity, see generally Shirin Keen, *The Partition of India*, (Spring 1998), <http://www.english.emory.edu/Bahri/Part.html> (last visited Nov. 21, 2005).

10. For a treatment of nationalism in South Asia, see generally Ian Bedford, *Nationalism and belonging in India, Pakistan and South Central Asia: Some Comparative Observations*, 7 AUSTL. J. OF ANTHROPOLOGY 104 (1996), available at http://www.findarticles.com/p/articles/mi_m2472/is_n2_v7/ai_18912022.

11. *India-Pakistan Composite Dialogue Background*, *supra* note 2.

12. *Id.*

13. Esther Pan, Council on Foreign Relations, *India-Pakistan: Peace Talks*, Feb. 20,

Manmohan Singh has continued after the win of his Congress Party in May 2004.¹⁴ Singh's peacemaking efforts since coming to power have apparently been well received by the Pakistani President. Musharraf said of his April 2005 meeting with Singh that the Prime Minister "unambiguously expressed the resolve to solve all issues including Kashmir" and noted that Singh backed his words up in the joint statement.¹⁵

President Musharraf, after surviving two assassination attempts in December 2003, has begun to consider that radical Islamists in Pakistan, long a threat to India, are also a threat to his own nation.¹⁶ After a recent visit to India, the Pakistani President told the media that he was "hopeful of progress towards a fair resolution of the Jammu and Kashmir dispute" and "optimistic" about India's sincere cooperation in working to resolve all outstanding issues.¹⁷

B. Reasons for Skepticism: The Conflict Between India and Pakistan

In the shadow of these recent successes lie several complex issues central to the India-Pakistan relationship. In early May 1998, India conducted a series of nuclear tests to demonstrate their nuclear capability.¹⁸ Two weeks later, Pakistan conducted

2004, <http://www.cfr.org/publication/7741/indiapakistan.html> [hereinafter *Peace Talks*].

14. Prime Minister Manmohan Singh rose to power in India's 2004 national elections.

Following the upset victory for the historically-dominant Indian National Congress Party led by Sonia Gandhi, Gandhi declined the post of Prime Minister in the new left-leaning United Progressive Alliance (UPA) coalition government, instead nominating her party lieutenant, Oxford-educated economist Manmohan Singh, for the job. As Finance Minister from 1991-1996, Singh was the architect of major Indian economic reform and liberalization efforts. On May 22, the widely-esteemed Sikh became India's first ever non-Hindu Prime Minister.

K. ALAN KRONSTADT, CONG. RES. SERV., INDIA'S 2004 NATIONAL ELECTIONS 2, available at <http://fpc.state.gov/documents/organization/34484.pdf>.

¹⁵ *Breakthrough Article*, *supra* note 5.

16. *Musharraf Vows to Crush Militants*, BBC NEWS WORLD ED., Dec. 12, 2003, available at http://news.bbc.co.uk/2/hi/south_asia/3347761.stm.

17. *Breakthrough Article*, *supra* note 5.

18. In a 1998 interview with PBS's Jim Lehrer, then Indian foreign minister Naresh Chandra explained India's decision to conduct nuclear tests. Speaking about China and Pakistan, he said:

[W]e have been thinking for some time that our national defense effort requires certain deterrent capability . . . We have a neighbor to our North, which has a

nuclear tests in response.¹⁹ Since then, an important point of discussion between the nascent nuclear powers has been the issue of nuclear security. At present, bilateral discussions are underway to “reduce [the] risk of accidental or unauthorized use of nuclear weapons.”²⁰ The nations have used a 1999 memorandum of understanding as the basis for discussions, but the discussions have not yet yielded long-term nuclear stability in the region.²¹

The lack of economic interdependency between the nations also poses a significant barrier to more positive bilateral relations.²² As it stands, “official bilateral trade between India and Pakistan is a trickle—a mere \$200 million, less than one percent of their global trade.”²³ In an effort to increase prosperity and security through greater bilateral trade and increased access to markets, the seven-nation South Asian Association for Regional Cooperation (SAARC), which includes both India and Pakistan, seeks to create a South Asian free trade area, modeled after the European Union, by 2006.²⁴ The emergence of a South Asian common market and single currency for the region, like the Euro, has been predicted.²⁵ India’s participation in efforts to create a South Asia free trade area are buoyed by its recent experience with China, where surging trade has improved tensions over decades-old border disputes between the nations.²⁶ Still, India and Pakistan remain only nominal trading partners.

Water sharing between India and Pakistan is also critical. At the time of partition, natural river contours of the Indus Basin were used to demarcate the independent countries, leaving

very substantial nuclear arsenal. We also have a neighbor to our West, and they have a very deep kind of relationship.

Transcript of *Growing Nuclear Family*, NEWSHOUR WITH JIM LEHRER (PBS television broadcast May 12), 1998, available at http://www.pbs.org/newshour/bb/asia/jan-june98/india_5-12.html.

19. Federation of American Scientists, *A Brief History of Pakistan’s Nuclear Program*, <http://www.fas.org/nuke/guide/pakistan/nuke/> (last visited Nov. 21, 2005).

20. *Peace Talks*, *supra* note 13.

21. Embassy of India, Washington D.C., *India’s Foreign Relations, 1998-99*, http://www.indianembassy.org/policy/Foreign_Policy/FP_1999/Neighbours_FP_98-99.html (last visited Nov. 19, 2005).

22. *Id.*

23. Stanley A. Weiss, *India and Pakistan Trade Offers a Sure Path to Peace*, INT’L HERALD TRIB., Feb. 21, 2004, available at http://www.bens.org/sw_ar022104.html.

24. *Id.*

25. *Id.*

26. *Id.*

several river systems with transboundary flow patterns, with Pakistan being the lower riparian.²⁷ Disputes over utilization of irrigation water date back to the partition, and led to the signing of the Indus Waters River Sharing Treaty in 1960 under the auspices of the World Bank, "one of [India and Pakistan's] most enduring agreements, that has held through two wars between the countries."²⁸ The Indus Treaty prohibits India from interfering with the flow of the three rivers feeding Pakistan, while allowing both nations to generate electricity from them.²⁹

As water has become more scarce, the cooperative management of water resources has become an increasingly critical issue in bilateral negotiations. For example, Pakistan currently alleges that India's plans to construct the Baghliar Dam on the Chenab river in Indian-controlled Kashmir's Jammu region violates the Indus Treaty.³⁰ Pakistani officials fear that the dam could interfere with Chenab River flows and deprive Pakistan of vital irrigation for wheat-growing.³¹ Indian officials say "the fears are groundless."³²

The most intractable conflicts between India and Pakistan, key to their nuclear security, are territorial disputes. Two particular land areas which tend to provoke the most emotional responses from nationalists are of primary concern: The first is familiar, and has largely been the subject of this Note so far: Kashmir, a mountainous region bounded by Pakistan, Afghanistan and China.³³ During partition, the fate of Kashmir was contentious, and since partition, India and Pakistan have fought two wars

27. Ramaswamy R. Iyer, *Water Issues in South Asia*, S. ASIAN J., April-June 2005, available at http://www.southasianmedia.net/Magazine/Journal/8_water_issues.htm.

28. Prominent examples of partition-era irrigation disputes are "two important irrigation head works, one at Madhopur on Ravi River and the other at Ferozepur on Sutlej River, on which the irrigation canal supplies in Punjab (Pakistan) had been completely dependent, [but which] were left in the Indian territory." Indus Waters Treaty, India-Pak, Apr. 1, 1960, available at <http://wrmin.nic.in/international/industreaty.htm>.

29. The rivers are the Indus, Chenab, and Jhelum. Posting of Lucien LaCroix, to <http://www.worldaffairsboard.com/archive/index.php/t-4205.html> (last visited Nov. 19, 2005) (on file with author).

30. *Id.*

31. *Id.*

32. *Id.*

33. See *Guide to Understanding the War: Kashmir (Special Online Report)*, WASH. POST, <http://www.washingtonpost.com/wp-srv/world/kashmir/front.html> (last visited Nov. 21, 2005) [hereinafter *Guide to Understanding the Kashmir War*].

over the region.³⁴ The dispute continues today. India sees Kashmir as a well-settled part of India and calls Pakistani occupation in the region illegal.³⁵ Indian officials have asked Pakistan to “cease support for cross-border terrorism launched by groups that want to unite Kashmir with Pakistan.”³⁶ On the other hand, Pakistan sees the issue as far from settled.³⁷ Despite recent signs of progress, Indian and Pakistani people still disagree so fundamentally on the issue of Kashmir that an imminent resolution on this issue is unlikely.

The second dispute is over a less familiar place, the Siachen Glacier, loosely translated as “the place of roses.”³⁸ A positive outcome in resolving the Siachen conflict will serve as a confidence building measure towards the eventual resolution of the tougher territorial dispute over Kashmir. Both nations have an existing desire to negotiate the settlement of the Siachen conflict. Still, thus far, little progress on finding a workable diplomatic solution has been made.³⁹ Reports on the potential for resolution of the Siachen conflict have been less than rosy.

C. Not All Roses: The Conflict in the Siachen

Located on the dividing line between Indian-held Ladakh and the Pakistani-controlled Northern Areas of Kashmir, the Siachen Glacier region covers less than 1000 square miles—roughly the size of Rhode Island.⁴⁰ Lying between the Karakoram and Zaskar

34. See *id.* Apart from India and Pakistan’s desire to control Kashmir, a Kashmiri desire for independence predates the Partition. “In 1948 the then-ruler of the princely state of Jammu and Kashmir, Maharaja Hari Singh, who was holding out for independence, acceded to India on condition that the state retain autonomy in all matters except defense, currency and foreign affairs.” Behind the Kashmir Conflict: Abuses by Indian Security Forces and Militant Groups Continue - Background, Human Rights Watch Report (1999), <http://www.hrw.org/reports/1999/kashmir/back.htm>.

35. See *Guide to Understanding the Kashmir War*, *supra* note 32.

36. *Id.* under “What Does India Want?”

37. See *id.*

38. “Sia” means “rose” and “chen” means “place of” in the Balti language. Baltis are historical visitors of the Siachen from western Himalayan valleys. Indian Mountaineering Foundation, *A Brief History of the Siachen Glacier* (2002), <http://www.indmount.org/imfhistorysglacier.html>.

39. See Owen Bennett-Jones, *South Asia Battle in the Heavens*, BBC NEWS, Jan. 31, 1999, available at http://news.bbc.co.uk/1/hi/world/south_asia/268306.stm; Mansoor Ijaz, Op-Ed, *India and Pakistan: To Bring Peace, Focus On Kashmir’s People*, INT’L HERALD TRIB., Aug. 7, 2004, available at http://www.iht.com/articles/2004/08/07/edijaz_ed3_.php.

40. The area in dispute around the Siachen Glacier covers 2500 square kilometers

mountain ranges at the junction of Pakistan, India, and China, the Siachen Glacier is a high altitude area home to world class mountaineering sites like the second highest mountain in the world, K2.⁴¹ The Siachen has been described as “a 46-mile river of slow-moving ice surrounded by stupendous towers of snow,”⁴² where “human habitation is neither possible nor does it exist.”⁴³ The Siachen’s waters feed the Nubra River, which flows into the Shyok River, eventually joining the Indus upstream of the Skardu River.⁴⁴

Pakistan and India have both claimed the entire Siachen area. Unlike Kashmir, the Siachen Glacier does not have a native population to voice an opinion about sovereignty preference, as the climate is generally inhospitable.⁴⁵ Neither nation had a military presence in the area until 1984.⁴⁶ Since that time, however, Indian and Pakistani armies have been fighting a continual conflict in the Siachen Glacier.⁴⁷ With battles regularly taking place above 20,000 feet, the Glacier is the “world’s highest battleground.”⁴⁸

The Line of Control that India and Pakistan use to divide Jammu and Kashmir stops at a point known as NJ9842.⁴⁹ At the

(965 square miles). Rhode Island is 1045 square miles. Reducing Risk in South Asia: Managing India - Pakistan Tensions, (March 2001) <http://www.cmc.sandia.gov/links/cmc-papers/sand-980505-20/sand-98-0505-20.htm>; Rhode Island and Providence Plantations, <http://www.50states.com/rdisland.htm> (last visited Nov. 19, 2005).

41. K2, or Mount Godwin Austin, “was first described by the British colonel T.G. Montgomery in 1856 while doing a survey of the area. He named the peaks in the order he saw them, K1, K2, K3, etc. The K stands for Karakoram.” K2 shares the range with Siachen. “Today K2 is the only major mountain that still uses its surveyor’s notation name as its most common name. K2 with its height of 8,611 meters is regarded as one of the hardest to climb.” Per Jerberyd, *K2 - The Savage Mountain* (1997), <http://www.jerberyd.com/climbing/stories/k2>.

42. Defence India Report on Siachen, *supra* note 1.

43. Jatinder Singh Bedi, *World’s Highest, Biggest Junkyard*, TRIBUNE (INDIA), Aug. 29, 1998, available at <http://www.tribuneindia.com/1998/98aug29/saturday/head2.htm>.

44. *Id.*

45. *Id.*

46. *Id.*

47. Defence India Report on Siachen, *supra* note 1.

48. *Id.*

49. The Line of Control was established in 1949 under UN supervision during the initial partition and was amended in 1972 during the Simla Agreements. See generally Barry Bearak, *Vale of Tears - Special Report: Kashmir a Crushed Jewel Caught in a Vice of Hatred*, N.Y. TIMES, Aug. 12, 1999, at A1; Chronology of Kashmir Freedom Movement, http://www.infopak.gov.pk/public/kashmir/Kashmir_freedom.htm (last visited Nov.

time of demarcation, it was thought that Siachen's inhospitable climate would place it permanently beyond dispute. Thus, the Line of Control was negotiated to extend to Point NJ9842 and then to continue north into the Siachen area.⁵⁰ In time, however, advances in winter and mountain equipment and ever-strengthening relations between Pakistan and China led to the construction of the Karakoram highway, linking those two countries, and giving control of the Siachen perceived strategic importance to India.⁵¹

Hostilities in the Siachen began over mountaineering expeditions. While extensive exploration took place in the early twentieth century, Pakistan closed access to the Karakoram Range from 1962 to 1974.⁵² When it re-opened, teams of foreign climbers made numerous ascents of the peaks bordering the Siachen via the Pakistani-controlled Bilafond glacier, as there was no road in the Indian-controlled Nubra Valley that led to the mouth of the Siachen.⁵³

Indian Colonel Narinder Kumar, who led the first successful climb on Mount Everest by an Indian team, learned that Pakistan was authorizing these foreign expeditions, implying Pakistani control.⁵⁴ In response, and at the behest of the Indian government, Colonel Kumar led an expedition up the Siachen to establish posts on the glacier's higher elevations, and Indian Air Force officers flew helicopter missions to air-drop supplies.⁵⁵ According to Nanda Cariappa, one of the helicopter pilots, after that mission matters started getting heated.⁵⁶ The conflict began when Pakistan launched a fierce attack to dislodge the Indian troops.⁵⁷

The conflict zone is limited on the west by the Saltoro Range,

21, 2005).

50. Amberish K. Diwanji, *The World's Highest Battlefield*, REDIFF.COM, Aug. 5, 2004, <http://www.rediff.com/news/2004/aug/05spec2.htm>.

51. *Id.*

52. Interview with Prof. John Mock, PhD, Lecturer in Hindi & Urdu, U.C. Santa Cruz, in Santa Cruz, Cal. (July 15, 2005). "The Bullock-Workman expedition was the most famous early twentieth-century exploration of the Siachen." *Id.*

53. *Id.*

54. Interview with Nanda Cariappa, Retired Indian Air Force officer, (July 15, 2005).

55. *Id.* In 1984, India sent a team of skilled military operatives to establish posts on the Siachen high ground in military operation known as "Operation Meghdoot." Defence India Report on Siachen, *supra* note 1.

56. *Id.*

57. *Id.*

and on the east by a projected line joining NJ9842 and the Karakoram Pass.⁵⁸ The entire Siachen Glacier lies within this area and contains no internal boundaries.⁵⁹ By one account, Pakistan and India may each have over 10,000 soldiers encamped on the Siachen.⁶⁰ While both nations' soldiers operate in an extreme climate, Indian soldiers, stationed in the higher-altitude areas, operate in what are arguably the world's most difficult military conditions.

The majority of Indian-occupied territories are above 18,500 feet. The last civilian settlement is Worshi village at 13,000 feet, lying about 12 miles from the Indian military camps.⁶¹ The Indian military reports that on its encampments, "temperatures swoon to 50 [degrees Celsius] below [zero], and sudden blizzards can bury field artillery in minutes. Men sleep in ice caves or igloos and breathe air so spare of oxygen that it sends their hearts into a mad gallop. Fainting spells and pounding headaches are frequent."⁶² Frostbite is common, and the lack of fruits and vegetables has caused severe health problems.⁶³ To survive, soldiers must wear specially manufactured altitude equipment.⁶⁴ Fortunately, military hospitals have developed new techniques to treat health problems related to living at high altitude, reducing death rates among soldiers.⁶⁵ The Indian Army's medical regime is so successful that the U.S. Army is taking notice.⁶⁶

Despite such advances, the conflict comes at a great economic cost to India. The country's defense budget and foreign exchange

58. Operation Meghdoot, *supra* note 3.

59. *Id.*

60. Bedi, *supra* note 43.

61. *Id.*

62. Defence India Report on Siachen, *supra* note 1.

63. Anorectal disorders and protruding skin itches and bleeds are among the more "painful and embarrassing" disorders soldiers commonly face in the Siachen. *Siachen Troops Exposed to Anorectal Ailments: Army Medics*, OUTLOOKINDIA.COM, Feb. 4, 2005, http://www.outlookindia.com/pti_news.asp?id=277660.

64. Defence India Report on Siachen, *supra* note 1.

65. Josy Joseph, *India, US Join Hands to Make Futuristic Soldier*, REDIFF.COM, Mar. 25, 2004, <http://www.rediff.com/news/2004/mar/25josy.htm>.

66. "The Land Warrior Project is an ongoing U.S. project that looks at a soldier as a complete weapon system and looks at three components - lethality, survivability and command and control. Costing over \$2 billion and expected to be completed by 2014, the project will witness some 45,000 [pieces of] equipment tried and tested for shaping the perfect soldier of the future." *Id.* "What has been of great interest to [the U.S. Army] is [the Indian Army's] medical ability to bring down the casualty rate among soldiers in Siachen in recent years." *Id.* (quoting a senior Indian Army officer).

reserves far surpass Pakistan's, but with a daily cost of nearly one million U.S. dollars, the conflict in the Siachen strains the Indian economy.⁶⁷ Innovative medical care has not eliminated the conflict's human toll: "On average, one Pakistani soldier is killed every fourth day, while one Indian soldier is killed every other day."⁶⁸ Despite several attempts at peace on the Siachen, India and Pakistan are still locked in a battle with high economic and human costs.⁶⁹

While both nations are concerned with control over the Karakoram highway, some observers have trouble seeing why the conflict in the Siachen continues at all. Two separate theories have evolved as to why the battle over the Siachen rages on. A majority theory contends that nationalistic pride and the opportunity to exhibit national defense capabilities is driving both sides to continue the conflict.⁷⁰ A minority theory argues that India drives the conflict to deplete Pakistani resources: "Pakistan is conducting a highly successful low-cost proxy war in Kashmir, at considerable cost to India. The only theatre in which India is able to pay Pakistan back . . . is on Siachen Glacier itself, where India has a distinct tactical advantage."⁷¹ Proponents of this second theory argue that "any compromise [by India] on Siachen would relieve the pressure on Pakistan . . . and would thus be tantamount to falling into a Pakistani trap."⁷²

In any case, observers largely agree that the conflict in the Siachen is greatly affected by India and Pakistan's political

67. "Experts say that a foreign exchange reserve of \$33.5 billion, a larger and diverse economy and a defense budget in excess of \$10 billion, which is thrice the size of Pakistan's, can keep it going militarily. An external debt of \$32 billion, forex reserves to the extent of a mere \$2 billion and excessive dependence on external aid will lead to Pakistan's economy going awry." Most of India's money is spent on "air sorties, IAF helicopters and aircraft. At least four to six helicopters are deployed daily to drop ammunition and food supplies to the 108 posts at Siachen. The cost of being airborne for one hour" in areas closest to the glacier is about US \$1,000. Shrikant Rao, *The Price of War*, SUNDAY MID-DAY, July 4, 1999, at 10, available at <http://www.sacw.net/kargil/price.html>.

68. Operation Meghdoot, *supra* note 3.

69. For a treatment of the history of negotiations over the Siachen, see Humera Niazi, *The Siachen Glacier, 1984-1998*, DEFENCE J.(Jan. 1999), available at <http://defencejournal.com/jan99/glacier.htm>.

70. See Samina Ahmed and Varun Sahni, *Frozen Frontline*, HIMAL SOUTHASIAN (Dec. 1998), <http://www.himalmag.com/98Dec/frozen.htm> [hereinafter *Frozen Frontline*] (discussing military positions on Siachen).

71. *Id.*

72. *Id.*

relationships with the United States and China.⁷³ Even in spite of the external political pressures from these powers, the conflict over the Siachen seems to have a greater potential for resolution than the dispute over Kashmir, considering the deep cultural and political significance of that territory to both countries. India and Pakistan should recognize the opportunity the Siachen presents and seek to curtail the enormous drain of resources the conflict in Siachen entails.⁷⁴

D. Collateral Damage: The Destruction of the Siachen Glacier Ecosystem

A unique, fragile ecosystem is caught in the middle of the conflict. Supplying the estimated 20,000 troops perched on the Siachen requires thousands of tons of food and supplies to be flown and parachuted into the Siachen each year.⁷⁵ Indian army officials have described the Siachen as “the world’s biggest and highest garbage dump, from where nothing comes back. Even retrieving human beings alive is a big gamble there.”⁷⁶ One account described the composition of the waste left behind by the one-way flow of military materials, approximately 40 percent of which are plastic and metal:⁷⁷

73. Historically, the United States has been an ally of India and has supported development of its democracy as a counterweight to China’s emerging power in the region. China, in turn, has historically allied with Pakistan to check India’s power, and, by proxy, America’s foothold in the region. Recent cooperation between Pakistan and the United States – spurred by the war on terror, the cooperative use of Pakistani airspace during the invasions of Afghanistan and Iraq, and most recently the sale to Pakistan of several F-16 fighter jets – has complicated the regional balance. Meanwhile, China and India have held several historic summits, and renewed commitment to increasing trade. In April 2005, Manmohan Singh and Chinese Premier Wen Jiabao sought to partner their nations in an effort to end border tensions. *South Asia’s Arms Race: Delayed Take-off*, *ECONOMIST*, Mar. 31, 2005, available at http://economist.com/printedition/displayStory.cfm?Story_ID=3817137; John Lancaster, *India, China Hoping to ‘Reshape the World Order’ Together: Once-Hostile Giants Sign Accords on Border Talks, Economic Ties, Trade and Technology*, *WASH. POST*, Apr. 12, 2005, at A16, available at <http://www.washingtonpost.com/wp-dyn/articles/A43053-2005Apr11.html>.

74. While both sides ought to be willing to negotiate a settlement, a resolution of the conflict may require Indian and Pakistani troops to withdraw to unequal distances from the zone of conflict because Pakistan enjoys more rapid access to the glacier from its plains. Indian troops control approximately two-thirds of the glacier, while the Pakistan-occupied area is much closer to the plains lying at the glacier’s base. *Frozen Frontline*, *supra* note 70.

75. Bedi, *supra* note 43.

76. *Id.*

77. *Id.*

[Siachen is polluted by the] remains of crashed helicopters, worn out gun barrels, splinters from gun shelling, empty fuel barrels, burnt shelters, telephone wires, skid boards, para[chute] dropping boards, edible oil containers, canisters, gunny bags, rotten vegetables, bad meat, expired tinned meat, cartons, wrappers, shoes, clothing, ration items etc. [Also included are items] damaged or lost due to misjudged para-dropping[,] . . . bodies which could not be recovered[,] . . . [thousands of potentially recoverable] parachutes . . . [and] vehicles that are declared 'beyond economic repair.'⁷⁸

Additionally, World Conservation Union's ("IUCN") World Commission on Protected Areas ("WCPA") estimates that, on the Indian side alone, over 2000 lbs. of human waste are dropped daily into crevasses.⁷⁹ Clothing used in warfare is washed at hot sulfur springs near the Indian base camp, and toxic residue flows freely into the Nubra River.⁸⁰ The Siachen lacks natural biodegrading agents, so metals and plastics simply merge with the glacier as permanent pollutants, leaching toxins like cobalt, cadmium, and chromium into the ice.⁸¹ This waste eventually reaches the Indus River, affecting drinking and irrigation water that millions of people downstream from the Siachen, both Indian and Pakistani, depend upon.⁸² Indeed, since the Siachen does not have any native population, these downstream users of the Siachen's waters will be critical citizen stakeholders in potential public interest litigation to protect the Siachen ecosystem.⁸³

Siachen has also experienced large-scale loss of plant and animal diversity as a result of the conflict. The glacial habitats of ibex, brown bears, cranes, snow leopards, and many other species are threatened.⁸⁴ The presence of these species, as well as a

78. *Id.*

79. *Siachen Peace Park Gaining Momentum*, MOUNTAINS PROTECTED AREAS UPDATE (World Comm'n on Protected Areas, Gland, Switz.), May 2005, <http://www.iucn.org/themes/wcpa/biome/mountain/news.htm>.

80. Bedi, *supra* note 43.

81. *Id.*

82. Additionally, repeated gunfire melts surrounding ice and causes tremors which affect the seismic balance of the region. Gases released by burning propellant, which would diffuse harmlessly at normal altitude, become poisonous here. Notably, the entire glacial moraine has shifted 200 yards. Bedi, *supra* note 43.; *Siachen Peace Park Gaining Momentum*, *supra* note 79.

83. See *infra* Section III: Legal Bases For Ending Conflict And Protecting The Siachen Glacier.

84. K2peacepark.org, The K-2 Siachen Peace Park: Moving from Concept to Reality, <http://www.uvm.edu/~envprog/k2peacepark/gatherforce.html> (follow "A Gathering of Forces" hyperlink) (last visited Sept. 30, 2005); Bedi, *supra* note 43.

constantly eroding glacier line, have led the World Wide Fund for Nature to designate the entire Tibetan Plateau Steppe, which encompasses the Siachen Glacier, as one of 200 areas "critical to global conservation."⁸⁵

The conflict has also eroded what little government protection the Siachen once enjoyed. Indeed, the Jammu and Kashmir Pollution Control Board, the only government agency charged with environmental protection of the area, has largely failed to prevent environmental degradation.⁸⁶ This unique ecosystem requires and deserves protection. In the absence of active conflict, the area might qualify for this protection.⁸⁷

To end the active conflict and begin protecting this unique ecosystem, the two nations could conceivably simply declare the conflict over. Yet without adequate justification, such a peace is not likely to be stable. The next Section explores several potentially compelling justifications for peace rooted in the laws of each nation, in international agreements to which both nations have acceded, and in customary international law.

III. LEGAL BASES FOR ENDING CONFLICT AND PROTECTING THE SIACHEN GLACIER

Indian and Pakistani national legislation almost exclusively takes a "command and control" approach toward environmental management.⁸⁸ In a command and control regime, governments establish polluter performance standards and enforce those standards by prohibiting pollution beyond the limits set forth in permitting and licensing schemes.⁸⁹ Command and control governments generally sanction or penalize polluters through

85. *Id.*; see also World Wide Fund, Tibetan Plateau Steppe – A Global 200 Ecoregion, http://www.panda.org/about_wwf/where_we_work/ecoregions/tibetan_plateau_steppe/index.cfm.

86. Bedi, *supra* note 43. "With the Army silent to the needs of the environment at Siachen and the J&K Pollution Control Board following suit, the famous Siachen Glacier is speeding towards the fate that Mount Everest is meeting today." *Id.*

87. See Giuliano Tallone, *Siachen Peace Park: A Case Study for the Valorisation of High Mountain Ecosystems* (September 12, 2003) (unpublished working paper for the 5th World Parks Congress), available at <http://www.tbpa.net/docs/WPCGovernance/GuilianoTallone.pdf>.

88. JONA RAZZAQUE, PUBLIC INTEREST ENVIRONMENTAL LITIGATION IN INDIA, PAKISTAN AND BANGLADESH 126 (2004).

89. *Id.*

legislative and regulatory frameworks.⁹⁰

In the case of the Siachen, the governments have no polluting industries to command and control. The primary polluters are the armies—i.e. the governments themselves. Standard Indian and Pakistani command and control techniques, created to regulate private actors, are thus not well-suited to protect the Siachen, where governmental actors are the major polluters. Because the degradation of the Siachen cannot be stopped simply by increasing sanctions or penalties for industrial pollution, traditional Indian and Pakistani environmental regulatory enforcement mechanisms break down when applied to the Siachen.

On the other hand, because the militaries are the polluting actors, the Indian and Pakistani governments do have de facto control over the future of the Siachen ecosystem. This Section will analyze the legal frameworks that might allow India and Pakistan to prioritize environmental protection over defense policy to protect the Siachen, discussing each nation's constitution and the fundamental structural protections for the environment contained therein, as well as treaty and customary international law obligations for environmental protection, both during periods of military conflict and during peace time.

A. *Constitutional Development, Parliamentary Democracy, and Federalism in India and Pakistan*

The Indian Constitution, drawn up by an elected Constituent Assembly, formed the Republic of India in 1950.⁹¹ Pakistan adopted a Constitution in 1956, abrogated and replaced it in 1962, and replaced the 1962 Constitution with the modern Pakistani Constitution in 1973.⁹² The governing document for the pre-partition areas that would become India and Pakistan was the 1935 *Government of India Act*. Both the Indian and Pakistani constitutions are modeled after this Act.⁹³ Today, in each parliamentary democracy, a president assumes many of the functions of the former British monarch and functions under the

90. *Id.* at 129.

91. See IMTIAZ OMAR, EMERGENCY POWERS AND THE COURTS IN INDIA AND PAKISTAN (2002).

92. *Id.* at 2.

93. *Id.*

advice of a cabinet, which is ultimately responsible to a parliament.⁹⁴

Before independence, provincial governments functioned with a great degree of autonomy from central control.⁹⁵ After independence, India and Pakistan maintained a system of federalism, but changed it dramatically by establishing strong central governments, in part due to concerns over aggrandized political power in the provinces.⁹⁶ Given the lack of power allocated to states in the federal systems of India and Pakistan, long-term protection of the Siachen, especially the formation of a transboundary peace park, must be a project of the national governments. To that end, this Note focuses on protection options available at the national governmental level.

B. Fundamental Rights and Protection of the Environment

A principal feature of both the Indian and Pakistani constitutions is the guarantee of several judicially enforceable "fundamental rights."⁹⁷ These fundamental rights may serve as legal justifications in their respective countries for the protection of the environment generally, and the Siachen specifically. Notably, both countries' constitutional statements of these the individual rights "is preceded by a declaration that all laws inconsistent with the fundamental rights shall be void to the extent of the inconsistency."⁹⁸ Guaranteed constitutional rights in India and Pakistan include, *inter alia*, the rights to equality;⁹⁹ freedom of speech, assembly, association, and movement;¹⁰⁰ and

94. *Id.* The 1962 Constitution of Pakistan "sought to introduce a presidential system of government, with a separation of powers between Executive and Legislature." The experiment failed and the 1973 Constitution fully restored the system of Cabinet government. *Id.* at 2-3.

95. *Id.*

96. *Id.* India and Pakistan have such strong central governments that skeptics question whether, in fact, they practice federalism at all. *Id.* at 4 n.15.

97. The Indian and Pakistani constitutions do not describe these fundamental rights in absolute terms. Instead, the rights are defined by a series of express limitations and reservations. *Id.* at 4.

98. *Id.* (quoting INDIA CONST. art. 13; THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN, 1, art. 8.)

99. INDIA CONST. art. 14-18; THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 25-27.

100. INDIA CONST. art. 19; THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 15, 16, 17, and 19.

freedom of religion.¹⁰¹ Most relevant to the protection of the Siachen is the constitutionally guaranteed and therefore non-derogable right to life and personal liberty.¹⁰²

Citizen-suit plaintiffs seeking to protect the Siachen may, in courts of competent jurisdiction,¹⁰³ challenge the destruction of its ecosystem as a breach of this fundamental constitutional right to life and personal liberty, as interpreted by each nation's courts.¹⁰⁴ Indeed, "challenging a breach of [a] fundamental right means that [citizen-suit plaintiffs] can move to the higher courts and get a judgment quicker than through other means."¹⁰⁵ Plaintiffs can avail themselves of this benefit even where their claims include both breaches of fundamental rights and of substantive law.¹⁰⁶ The substantive laws of each nation, however, hold less promise than their respective constitutions because the few substantive environmental laws that exist suffer from non-implementation.¹⁰⁷

1. *Fundamental rights and environmental protection in India.*

Indian constitutional law contains many environmental

101. INDIA CONST. art. 25-28; THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 20. Pakistan is an Islamic republic; despite its constitution providing for freedom of religion, the Government limits this freedom in practice. Bureau of Democracy, Human Rights, and Labor, U.S. Dept. of State, *Pakistan*, in INTERNATIONAL RELIGIOUS FREEDOM REPORT 2002, available at <http://www.state.gov/g/drl/rls/irf/2002/14026.htm>. However, some of the ideas of Islam may be used in favor of the creation of a peace park. See *infra* Section III.B.1, "Fundamental Rights And Environmental Protection In Pakistan."

102. INDIA CONST. art. 21 ("No person shall be deprived of his life or personal liberty except according to procedure established by law."); THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 9 ("No person shall be deprived of life or liberty save in accordance with law.").

103. Any citizen-suit plaintiffs would have to meet threshold jurisdictional requirement inherent in any public interest environmental litigation; however these requirements will not be discussed in detail in this Note.

104. Article 32 of the Indian Constitution gives its Supreme Court original jurisdiction for the enforcement of any fundamental rights. The right to move the Supreme Court for the enforcement of Fundamental Rights is itself a Fundamental Right under Article 26. See OMAR, *supra* note 91, at 5. The 1973 Constitution of Pakistan also gives its Supreme Court original jurisdiction over enforcement of fundamental rights, but only regarding a "question of public importance." *Id.* at 6.

105. RAZZAQUE, *supra* note 88, at 67.

106. *Id.*

107. Reasons for the non-implementation of laws include "conflicts between law and practices; institutional weakness and inadequacy, leading to non-enforcement and malpractice; outdated and inconsistent law; ignorance of objectivity of the law and absence of environmental quality standard[s]." *Id.*

protections.¹⁰⁸ Article 21 of the Indian Constitution states that “[n]o person shall be deprived of his life or personal liberty except according to procedures established by the law.”¹⁰⁹ Recognizing that Article 21 implied several unarticulated liberties, the Indian Supreme Court has interpreted this right to life and personal liberty to include the right to a clean environment. In *Kendra v. State of Uttar Pradesh*, the Court held that people have “the right to live in [a] healthy environment with minimal disturbance of [the] ecological balance.”¹¹⁰ In *Damodhar Rao v. The Special Officer, Municipal Corporation of Hyderabad*, the Court connected this right with Article 21, stating that the “slow poisoning . . . caused by environmental pollution and spoilation should also be treated as amounting to violation of Article 21.”¹¹¹

In *Kinkri Devi v. Himachal Pradesh*, a similar approach was applied to banning limestone mining in a district of the Indian state Himachal Pradesh based on a reading of Article 21 along with Articles 48(A) and 51(A)(g).¹¹² Article 48(A) orders “[t]he State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country”¹¹³ (emphasis added). Article 51(A)(g) imposes a similar responsibility on every citizen to “protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.”¹¹⁴ Together, these articles demonstrate the Indian Constitution’s commitment to environmental protection and improvement.¹¹⁵ The Indian judiciary has enforced these provisions against several public authorities to enhance environmental quality, and in *Koolwal v.*

108. For a treatment of Indian environmental law, including inter alia constitutional protections, see SHYAM DIVAN & ARMIN ROSENCRANZ, ENVIRONMENTAL LAW AND POLICY IN INDIA: CASES, MATERIALS AND STATUTES (2d ed. 2001).

109. INDIA CONST. art. 21.

110. Michael R. Anderson, *Individual Rights to Environmental Protection in India in HUMAN RIGHTS APPROACHES TO ENVIRONMENTAL PROTECTION* 199, 216 (Alan E. Boyle & Michael R. Anderson eds. 1996) (quoting Rural Litigation and Entitlement *Kendra v. State of Uttar Pradesh* A.I.R. 1985 S.C. 652, 656).

111. *Damodhar Rao v. The Special Officer, Municipal Corporation of Hyderabad*, A.I.R. 1987 (A.P.) 171, 181.

112. *Kinkri Devi v. State of Himachal Pradesh*, A.I.R. 1988 (H.P.) 4.

113. INDIA CONST. art. 48A.

114. INDIA CONST. art. 51A(g).

115. *Id.*

Rajasthan extended the 51(A)(g) duty to Indian state agencies.¹¹⁶

In *Charan Lal Sahu v. Union of India*, the Indian Supreme Court further established the link between environmental quality and the right to life.¹¹⁷ In this 1990 case, the Indian Supreme Court interpreted the Article 21 right to life to include the right to a wholesome environment.¹¹⁸ The following year, in *Subhash Kumar v. Bihar*, the Court interpreted Article 21 to include “the right [to the] enjoyment of pollution-free water and air for full enjoyment of life,” further codifying the right to a wholesome environment expounded in *Charan Lal Sahu*.¹¹⁹ In the case of the Siachen, a violation of this right to pollution-free water might be alleged by Indian downstream water users.

The most recent development in Indian right-to-life jurisprudence is the common law development of the public trust doctrine.¹²⁰ According to this doctrine, “the State is under an obligation to see that forests, lakes, wildlife, and environment are duly protected.”¹²¹ The Indian public trust doctrine serves two purposes: It mandates affirmative state action for effective management of resources, and it empowers citizens to question ineffective management of natural resources.¹²² Indian public trust doctrine is entrenched in the Indian courts, as its application in three recent cases suggests.¹²³ As the doctrine further develops, it might also be used to help protect the part of the Siachen ecosystem under Indian control.

2. Fundamental rights and environmental protection in Pakistan.

Article 9 of the Pakistani Constitution states that “no person shall be deprived of life or liberty, save in accordance with

116. *Koolwal v. Rajasthan*, A.I.R. 1988 (Jaj..) 2.

117. *Charan Lal Sahu v. Union of India*, A.I.R. 1990 S.C. 1480, 1491.

118. *Id.*

119. *Subhash Kumar v. State of Bihar*, A.I.R. 1991 S.C. 420, 420; A 1988 case, *M.C. Mehta v. Union of India*, also hinted at the government’s affirmative role in improving the environment. A.I.R. 1988 S.C. 1037, cited in RAZZAQUE, *supra* note 88, at 114. See also Anderson, *supra* note 110, at 199.

120. RAZZAQUE, *supra* note 88, at 97.

121. *Id.*

122. *Id.*

123. *M.C. Mehta v. Kamal Nath and Others* (1997) 1 S.S.C. 388; *Th. Majra Singh v. Indian Oil Corporation* A.I.R. 1999 (J&K) 81; *M.I. Builders Pvt. Ltd v. Radhey Shyam Sahu* A.I.R. 1999 S.C. 2468.

law.”¹²⁴ The Pakistani Supreme Court, in *Shehla Zia and Others v. Wapda*, interpreted Article 9 to include “all such amenities and facilities which a person born in a free country is entitled to enjoy with dignity, legally and constitutionally.”¹²⁵ Article 14 of the Pakistani Constitution states, in relevant part, that “the dignity of man . . . shall be inviolable.” *Shehla Zia* interpreted Article 14 to provide citizens with protection from electromagnetic fields because of the negative health and environmental effects of those fields.¹²⁶ Read together, the fundamental right to preserve and protect the dignity of people under Article 14 and the right to life under Article 9 set forth Pakistani individuals’ rights to a clean environment.¹²⁷ Decided in 1994, *Shehla Zia* was a groundbreaking Pakistani case: For the first time, Pakistani courts discussed environmental issues in detail, sought expert environmental opinions, and consulted relevant Indian case law.¹²⁸ Also in 1994, *Salt Miners* established the right to have water free from pollution and contamination as a part of the right to life.¹²⁹ In the case of the Siachen, a violation of this right to pollution-free water might be alleged by Pakistani downstream water users.

Pakistan is an Islamic Republic, and its Supreme Court’s interpretation of fundamental rights incorporates Islamic values through the Objectives Resolution, Article 2A of the 1973 Constitution.¹³⁰ The Objectives Resolution states that the values of Islam should serve as guiding principles for running the affairs of the State, including those of the judiciary.¹³¹ Through the Objectives Resolution, Pakistan has made an affirmative decision to incorporate Islamic religious values into the laws of the Republic.¹³²

124. THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 9.

125. *Shehla Zia and Others v. Wapda*, P.L.D. 1994 S.C. 693, 712.

126. *Id.*

127. THE CONST. OF THE ISLAMIC REPUBLIC OF PAKISTAN art. 9, 14. Although Art. 14 by itself seems to refer to private rights, when read with the “all such amenities and facilities” clause of Art. 9, it seems to apply to public rights as well, like the right to a potential protected area. *Id.*

128. MENSKI, ET AL., PUBLIC INTEREST LITIGATION IN PAKISTAN 93 (2000).

129. *West Pakistan Salt Miners Labour Union (CBA) Khewara, Jhelum v. The Director, Industries and Mineral Development*, 1994 S.C.M.R. 2061, cited in RAZZAQUE, *supra* note 88, at 114, n.173.

130. RAZZAQUE, *supra* note 88, at 83.

131. *Id.*

132. *Id.*

In the 1993 case, *Zaheeruddin and Others v. The State and Others*, the Pakistani Supreme Court held that in case of any conflict between fundamental rights and the Objectives Resolution, the latter would receive priority.¹³³ However, later that same year, in *Mst. Kaneez Fatima v. Wali Muhammad*, the Court said that the Objectives Resolution, though substantive, cannot invalidate any other portion of the Constitution.¹³⁴ While these two views are difficult to reconcile, the modern view is that the Objectives Resolution, having equal force, "could restrict the courts' interpretation of fundamental rights in environmental cases."¹³⁵ Importantly, scholars have suggested that although "the [Koran] does not provide any right to a clean and healthy environment . . . 500 of its verses refer to the relationship between man and the environment. . . . Islamic rules may be used to develop various environmental rights."¹³⁶ So, Islamic rules, in light of certain fundamental constitutional rights as interpreted by recent case law, may also serve as the legal basis to protect the part of the Siachen ecosystem under Pakistani control.

3. *Fundamental environmental rights and the protection of the Siachen.*

The right to a healthy environment is deeply rooted in the constitutions of both India and Pakistan and modern jurisprudence has further articulated this right.¹³⁷ In India, the current conditions in Siachen violate the spirit of the public trust doctrine, which obligates government agencies to manage the land and its resources effectively, and may be in violation of Article 21 read together with Article 48(A) and Article 51(A)(g) duties to protect the environment. In Pakistan, the current conditions in Siachen may violate various environmental rights based on both Articles 9 and 14 of the Pakistani constitution and Islamic principles incorporated through the Objectives

133. *Zaheeruddin and Others v. The State and Others*, 26 SCMR (S.Ct.) 1718 (1993).

134. *Mst. Kaneez Fatima v. Wali Muhammad*, P.L.D. 1993 S.C. 901.

135. RAZZAQUE, *supra* note 88, at 84.

136. RAZZAQUE, *supra* note 88, at 84 n.68 (citing M. Lau, *Islam and Judicial Activism: Public Interest Litigation and Environmental Protection in the Islamic Republic of Pakistan*, in HUMAN RIGHTS APPROACHES TO ENVIRONMENTAL PROTECTION, *supra* note 110, at 285-86, 293-94).

137. *See supra* Sections III.B.1-III.B.2.

Resolution.¹³⁸

Of specific importance to the protection of the Siachen, citizens in both countries have a fundamental right to pollution-free water. However, since there is no native population in the Siachen, violations of this right will likely have to be challenged through citizen suits by downstream users of the Siachen's waters. More generally, since there is no native Siachen population, any citizen-suit plaintiff trying to enforce a right to a clean environment in the Siachen will have to meet threshold jurisdictional requirements in their respective countries.

Given the appropriate case or controversy to decide the matter, Indian and Pakistani courts still retain enough discretion to interpret their constitutions explicitly so as to avoid the obligation to protect the Siachen's environment. Moreover, some policymakers may claim that the courts are without power to mandate environmental protection of this transboundary area as a fundamental right, as doing so would be arguably conducting international affairs, an area generally reserved for other branches of government in both countries.

However, given the current political climate, both nations have a chance to use existing constitutional obligations to protect the Siachen environment. If leaders view potential constitutional justifications for protecting the Siachen in light of current political realities, they could conclude that the ongoing conflict in the Siachen is a basic violation of both the spirit and the letter of existing domestic laws.

C. Bases in Treaties and Customary International Law for Environmental Protection

Several existing provisions of international law place responsibility upon India and Pakistan to protect important environmental areas, specifically during conflict and also more generally outside the context of the conflict. First, international humanitarian law creates obligations for both India and Pakistan while the conflict in the Siachen continues. A declaration of the 1992 Earth Summit states that "[w]arfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development,

138. RAZZAQUE, *supra* note 88, at 83.

as necessary.”¹³⁹ The International Court of Justice relied on this declaration in ordering that “States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives.”¹⁴⁰

Combatants are specifically regulated by the Hague Conventions, the Geneva Conventions and its Protocol I, and the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD).¹⁴¹ Customary international law prescribes the four fundamental principles that armed conflicts must follow: necessity, proportionality, selectivity, and humanity.¹⁴² Until active conflict in the Siachen ends, these state and individual combatant obligations are important for India and Pakistan to keep in mind in order to prevent further needless deterioration of the Siachen.¹⁴³

139. U.N. Conference on the Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Report of the United Nations Conference on the Environment and Development*, Principle 24, U.N. Doc A/CONF.151/26 (Vol. I) (Aug. 12, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> [hereinafter Rio Declaration].

140. Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 242 (July 8) (“Respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality.”) (citing Rio Declaration, *supra* note 139, Principle 24) available at <http://www.icj-cij.org/icjwww/icasas/iunan/iunanframe.htm> (follow “ADVISORY OPINION OF 8 JULY 1996” hyperlink).

141. The conduct of combatants is regulated by the Geneva Conventions. Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, Aug. 12, 1949, 6 U.S.T. 3114, 75 U.N.T.S. 31; Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea, Aug. 12, 1949, 6 U.S.T. 3217, 75 U.N.T.S. 85; Geneva Convention Relative to the Treatment of Prisoners of War, Aug. 12, 1949, 6 U.S.T. 3316, 75 U.N.T.S. 135; Geneva Convention Relative to the Protection of Civilian Persons in Time of War, Aug. 12, 1949, 6 U.S.T. 3516, 75 U.N.T.S. 287 [hereinafter Geneva Conventions]. Weapons are regulated by the Hague Conventions. Convention (IV) Respecting the Laws and Customs of War on Land, Oct. 18, 1907, 36 Stat. 2277, 1 Bevans 631. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, Dec. 10, 1976, available at <http://www.icrc.org/ihl.nsf/FULL/460?OpenDocument>.

142. For a detailed treatment of necessity and proportionality, see Judith Gardam, *Necessity and Proportionality in Jus ad Bellum and Jus in Bello*, in INTERNATIONAL LAW, THE INTERNATIONAL COURT OF JUSTICE, AND NUCLEAR WEAPONS 275 (Laurence Boisson de Chazournes & Philippe Sands eds., 1999).

143. For a detailed treatment of customary and conventional sources of the law governing the *ius in bello*, i.e. the conduct of combatants (Geneva Conventions) and permitted weapons (Hague Conventions), see Marcos Orellana, *Criminal Punishment For Environmental Damage: Individual And State Responsibility At A Crossroad*, 17 GEO. INT’L

Several treaty and customary international law justifications also exist for the protection of the Siachen outside the context of active warfare. Both nations have ratified the United Nations Educational, Scientific and Cultural Organization (“UNESCO”) World Heritage Convention, which encourages the “identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage,” considered to be of outstanding value to humanity.¹⁴⁴ The Convention encourages state parties to nominate sites within their national territory for inclusion on the World Heritage List and to establish management plans and reporting systems. The Convention also assists in the safeguarding of World Heritage properties by providing technical assistance and training. India currently has twenty-six properties on the list, while Pakistan has six.¹⁴⁵ While neither country is under any obligation to list more sites, they are encouraged to protect sites of particular ecological value, like the Siachen, for future generations. A discussion of several potential models for protecting the Siachen, including designating it as a World Heritage site, follows in the next Section.¹⁴⁶

The 1972 Stockholm Declaration provides an international framework for environmental protection applicable to both India and Pakistan.¹⁴⁷ The Declaration embraced principles of sustainable development, and it also established a precautionary principle for environmental decisionmaking.¹⁴⁸ India and

ENVTL. L. REV. 673 (2005).

144. Conference of the U.N. Educ., Sci., & Cultural Org. [UNESCO], Paris, France, Oct. 17 – Nov. 21, 1972, *Convention Concerning the Protection of the World Cultural and Natural Heritage*, available at http://whc.unesco.org/world_he.htm. India ratified the World Heritage Convention in 1977, Pakistan in 1976. State Parties – UNESCO World Heritage Centre, <http://whc.unesco.org/pg.cfm?cid=246> (last visited Nov. 8, 2005).

145. UNESCO World Heritage Centre – World Heritage List, <http://whc.unesco.org/en/list/> (last visited Nov. 8, 2005).

146. See *infra* Section IV.E: Survey of Collaborative and Contiguous Management Models to Protect the Siachen.

147. U.N. Conference on the Human Environment, Stockholm, Sweden, June 5-15, 1972, *Final Declaration*.

148. The precautionary principle is embodied in Principle 15, which states that “[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Principle 15, United Nations Conference on Environment and Development, Declaration of Principles (1992), quoted in ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY 1039 (4th ed. 2003). For an exposition of the precautionary principle, see Robert V. Percival, *Who’s Afraid of the*

Pakistan ratified the 1989 Basel Convention, and India has also adopted domestic legislation implementing Basel to manage the hazardous substances that regularly pollute the Siachen.¹⁴⁹ Both nations also ratified the Convention on International Trade in Endangered Species (CITES) and the 1992 Convention on Biological Diversity, which obligate them to protect endangered species like the snow leopard of the Siachen.¹⁵⁰

India and Pakistan are also parties to other international environmental treaties that do not directly apply to the Siachen but nonetheless demonstrate a commitment to resolving international environmental issues: Both nations are non-Annex I parties to the United Nations Framework Convention on Climate Change, which recognizes that less developed countries have a limited capacity to respond to climate change and adapt to its adverse impacts,¹⁵¹ and both nations also recently ratified the Kyoto Protocol.¹⁵²

Although relatively few substantive environmental laws have been passed by India, some legislation incorporating these and other international treaty and customary international law obligations has been enacted. This legislation includes the Environmental Protection Act of 1986,¹⁵³ the Air (Prevention and

Precautionary Principle?, 23 PACE ENVTL L. REV. (forthcoming 2006), abstract available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=831824.

149. See Environment Canada, Transboundary Movement Branch, The Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal, http://www.ec.gc.ca/tmb/eng/tmbbasel_e.html (last visited Nov. 21, 2005). Examples of Indian domestic legislation to manage the hazardous substances include the Bio-Medical Waste (Management and Handling) Rules of 1998, http://dpcc.delhigovt.nic.in/act_bmw.htm, and the Hazardous Waste (Management and Handling) Rules of 1989, http://www.indialawinfo.com/bareacts/r_hazwas.html, cited in RAZZAQUE, *supra* note 88, at 130 n.21.

150. Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 993 U.N.T.S. 243, 12 I.L.M. 1085 (entered into force July 1, 1975), <http://www.cites.org/eng/disc/text.shtml>; Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818, available at <http://www.biodiv.org/convention/articles.asp>; RAZZAQUE, *supra* note 88, at 131. In India, biological diversity and wildlife are regulated, in part, by the Wildlife (Protection) Act of 1972, the Wildlife (Protection) Amendment Act of 1991, and the Forest (Conservation) Act of 1980. RAZZAQUE, *supra* note 88, at 130.

151. U.N. Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107 (1992), available at <http://unfccc.int/2860.php>.

152. Kyoto Protocol To The United Nations Framework Convention On Climate Change, U.N. Doc. FCCC/CP/1997/L.7/Add.1 (Dec. 10, 1997), available at <http://unfccc.int/resource/docs/convkp/kpeng.html>. See <http://unfccc.int/resource/conv/ratlist.pdf> for a list of countries that have ratified the Kyoto Protocol.

153. Environmental (Protection) Act of 1986, No. 29, Acts of Parliament, 1986, available at <http://dpcc.delhigovt.nic.in/actenv.htm>.

Control of Pollution) Act of 1981,¹⁵⁴ and the Water (Prevention and Control of Pollution) Act of 1974.¹⁵⁵ Pakistan's most relevant incorporation of treaty and customary international law obligations is the Pakistan Environment Protection Act of 1997.¹⁵⁶

D. Summary of Legal Bases for Environmental Protection of the Siachen

While the command and control regulatory framework fails in protecting the Siachen, India and Pakistan are still able to control the fate of the Siachen ecosystem. Although active conflict in the Siachen provides ample justification for both nations' consistent failures to prosecute environmental damage to the ecosystem, both nations still have legal responsibilities to protect Siachen. In addition to a responsibility to protect the environment during active warfare, India and Pakistan are also obligated to safeguard the Siachen outside the context of active warfare.

International treaty obligations, customary international laws, domestic environmental legislation and the constitutions of both countries provide legal justifications to end the conflict and protect the Siachen. The environmental devastation from conflict in the Siachen has the governments at odds with their legal obligations to protect it. Given this context, India and Pakistan have compelling reasons to consider protection of the Siachen ecosystem.

IV. ENVIRONMENTAL PEACEMAKING IN THE SIACHEN:
ENDING CONFLICT THROUGH CREATION OF A
TRANSBOUNDARY PEACE PARK

The previous Section discussed potential legal frameworks that support environmental protection of the Siachen. The Section begins with a brief proposal for demilitarization of the Siachen

154. Air (Prevention and Control of Pollution) Act of 1981, No. 14, Acts of Parliament, 1981, *available at* <http://www.indialawinfo.com/bareacts/airact.html>.

155. Water (Prevention and Control of Pollution) Act of 1974, No. 6, Acts of Parliament, 1974, *available at* <http://www.indialawinfo.com/bareacts/wpcpa.html>.

156. Government of NWFP, Pakistan Environment Protection Act, No. 34, Acts of Parliament, 1997, *available at* <http://www.environment.gov.pk/act-rules/envprotact1997.pdf>. Generally, the Act is designed "to provide for the protection, conservation, rehabilitation and improvement of environment, for the prevention and control of pollution, and promotion of sustainable development." Pakistan Environment Protection Agency Website, <http://www.environment.gov.pk> (last visited Nov. 26, 2005).

and then suggests that creating a protected area and having both nations collaboratively manage it might facilitate such demilitarization. The Section examines current arrangements between India and Pakistan for managing contiguous parks and presents a case study of past cooperation for species protection. The Section then offers a survey of several protection models that may be adapted to the Siachen, including collaborative transboundary models and contiguous but independently managed models. The Section concludes that a collaboratively managed transboundary peace park is the most appropriate model for protecting the Siachen.

A. Demilitarization of the Siachen

Buoyed by recent diplomatic talks and the resulting surge in cooperation, both India and Pakistan are well-positioned to consider demilitarization of the Siachen. To do so, Siachen Peace Park advocates suggest “both sides [should] recognise each other’s claims, agree not to change the status quo by force and agree not to introduce [irregular elements that might derail the process].”¹⁵⁷ The following three-step phased approach to demilitarization of the Siachen has been proposed to allow public opinion time to adapt: First, India and Pakistan should “end fighting without disengaging or redeployment” and let the Siachen conflict “recede from the public mind” for a period of 2-3 years; second, the nations should negotiate reductions in forces by introducing “technical means of monitoring and surveillance” of the Siachen; third, after this reduction in forces, the parties should “work out a complete . . . plan” for demilitarization of the Siachen.¹⁵⁸

A complete demilitarization plan such as the one suggested is essentially an agreement to cooperatively disengage, and its success depends on mutual confidence between the two nations. The creation of a transboundary protected area, rather than contiguous nationally protected areas, will serve as a tool for disengagement. The collaborative management of such a protected area might help to build both sides’ confidence in bilateral relations.

Ideally, a transboundary protected area would constitute a

157. Tallone, *supra* note 87, at 3.

158. *Id.*

demilitarized zone that would prohibit weapons of any sort, as discussed above. However, the long history of conflict may make absolute and immediate demilitarization unrealistic in the Siachen. Instead, existing military outposts could gradually disarm and transition into lending logistical support for conservation management. Soldiers might serve as park rangers helping with management of the protected area and as peacekeepers helping with security. Soldiers might further provide logistical support in helping to implement sound conservation plans in the high altitude terrain. This approach could serve two purposes: First, it might allay fears on both sides about border stability and the difficulties of managing such high altitude terrain. Second, it would provide a means for militaries on both sides to work together for constructive purposes—thereby building camaraderie, friendship, and mutual confidence.

An approach involving active military in the management of the Siachen instead of complete demilitarization has its detractors. Asad Hakeem, a former Pakistani military official, warned that employing soldiers as rangers might be difficult because the two sides might be wary of trusting one another.¹⁵⁹ The retired brigadier proposed, in light of this concern, a more central role for retired or otherwise inactive military personnel with knowledge about the Siachen. Specifically, former military personnel could lead a bi-national committee of rangers, whose work could be supplemented with cooperative aerial monitoring activities.¹⁶⁰

Framers of the transboundary protected area must also address the question of visitor access. A realistic approach would allow visitors from either India or Pakistan to enter on their entry visas from either country, while not allowing for crossover into the other country beyond the protected area borders.¹⁶¹

Another aspect of demilitarization is border delimitation.

159. Interview with Retired Pakistani Brigadier Asad Hakeem, Visiting Research Scholar at Sandia National Laboratories in Albuquerque, N.M. (July 15, 2005). In 1998, various specialists under the umbrella of the Cooperative Monitoring Centre, Sandia National Laboratories proposed a Siachen Science Centre for cooperation in the area and a military disengagement on the Siachen Glacier. With input from Indian and Pakistani technicians, the same organization also explored how Cooperative Aerial Monitoring could be used in the demilitarization of the India-Pakistan border. *Id.*

160. *Id.*

161. A similar visitor access border policy has worked in the internal border maintained by China with respect to Hong Kong and Macau. *Id.*

Since the external borders of a transboundary protected area would generally respect existing spheres of control, no new external boundaries would need to be defined in its creation.¹⁶² Advocates of a transboundary protected area suggest internal border delimitation occurring in gradual phases to “promote trust between parties,” and suggest that in light of current military positions, in the initial phase “a substantial majority of the park area would be within territory occupied by Pakistan, with the smaller eastern portion occupied by India.”¹⁶³ While such an asymmetrical arrangement might be a source of conflict, the importance, and thus the conflict potential, of internal boundaries is diminished in a transboundary protected area. This is one of many advantages provided by the transboundary management approach.

B. *Transboundary Peace Parks and Environmental Peacemaking*

Until a viable demilitarization plan is implemented in the Siachen, the environmental conditions there will continue to deteriorate. Such transboundary environmental problems have often raised tensions between nations and have even led to war.¹⁶⁴ In an effort to resolve this tension and bring nations closer

162. *The K-2-Siachen Peace Park*, *supra* note 84 (follow “Overcoming Challenges” hyperlink) (last visited Oct. 5, 2005).

A joint commission to monitor the impact of tourists and also to provide a mechanism for approving research projects within the park boundaries would be needed. Involving China in a commission of this kind would be advisable even at the outset, given the strengths of the Chinese Academy of Sciences, and the access that researchers and visitors may need from the Chinese side of the border. Such a commission would also provide a forum for direct collaboration among scientists in India, Pakistan and China.

Id.

163. *Id.*

The initial phase would extend the boundary of the Central Karakoram National Park eastward in the area north of grid reference point NJ9842 to encompass the Siachen Glacier area. . . . While this asymmetric arrangement might be viewed as problematic by India, there are compelling reasons why both India and Pakistan would find it advantageous. Demilitarization of a large part [] of the Karakoram region would enhance the security of both countries; and the joint peace-building measure would greatly reduce military expenditure in a very costly and essentially pointless military struggle. Later phases of the park might include further expansion into Ladakh to the east, and the Khunjerab region to the west.

Id.

164. Mark Clayton, *Environmental Peacemaking*, CHRISTIAN SCI. MONITOR, Mar. 4,

together through collaborative ecosystem management, “environmental peacemaking” reframes otherwise divisive transboundary strife as an opportunity for potentially unifying cooperation.¹⁶⁵ In effect, environmental peacemaking attempts “to turn the whole issue [of transboundary environmental conflicts] on its head.”¹⁶⁶ Put simply, environmental peacemaking envisions transboundary ecosystem problems, like the one in the Siachen, as opportunities for cooperation and mutual gain.

In recent years, disputed territories throughout the world, such as land on the China-Vietnam border and land between Peru and Ecuador, have helped bring peace to their regions instead of catalyzing conflict.¹⁶⁷ Support is growing for the idea that collaborative protection of the environment can be a critical step towards creating enduring peaceful relations between formerly hostile neighboring nations.¹⁶⁸

A primary instrument of environmental peacemaking is the creation of a transboundary protected area. A transboundary protected area is

an area of land and/or sea that straddles one or more borders between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means.¹⁶⁹

When also dedicated “to the promotion of peace and cooperation,” transboundary protected areas are called transboundary peace parks.¹⁷⁰ As envisioned by the WCPA, transboundary peace parks promote biodiversity, conservation, and sustainable use across politically divided ecosystems; encourage transboundary collaboration in management; and promote exchanges of experience and information.

There are many examples of successful transboundary peace

2004, available at <http://www.csmonitor.com/2004/0304/p14s03-stss.html>.

165. *Id.*

166. *Id.*

167. *Id.*

168. *Id.*

169. Global Transboundary Protected Areas Network Website, <http://www.tbpa.net/> (last visited Nov. 25, 2005).

170. Clayton, *supra* note 164.

parks. The Waterton-Glacier International Peace Park, formed by the merger of the Canadian Waterton Lakes and U.S. Glacier National Parks in 1932, is the world's first international peace park.¹⁷¹ This park was intended to symbolize the harmonious relations between the United States and Canada.¹⁷² The Beringia Heritage International Park in the Bering Strait, which highlights the shared heritage of Russians and Americans of the area, "has led to frequent international exchanges among native communities, joint monitoring of polar bears and walruses, and flickers of economic life" in an otherwise economically depressed area.¹⁷³ In Central America, Costa Rica and Panama declared La Amistad National Park an international park in 1988.¹⁷⁴ Other cross-border peace parks have been established between Panama and Colombia, Mexico and Guatemala, and Guatemala, Honduras, and El Salvador.¹⁷⁵

Some "peace parks" are actually contiguously managed parks in neighboring nations, while others are transboundary protected areas created either to commemorate long-standing peaces or as ex post facto memorials well after hostilities have ceased.¹⁷⁶ However, "in a growing number of instances [these transboundary peace parks] are themselves the catalyst for peace."¹⁷⁷ The Cordillera del Condor Peace Transborder Reserve ("Cordillera Reserve"), formed in 1998 by Peru and Ecuador, is an example of such a transboundary park.¹⁷⁸ The Cordillera Reserve

171. Waterton-Glacier International Peace Park, http://whc.unesco.org/pg.cfm?cid=31&id_site=354 (last visited Nov. 8, 2005).

172. National Park Service, Glacier National Park, <http://www.nps.gov/glac/>.

173. James Brooke, *Japan and Russia Turn to Nature to Bridge Vast Chasm in the Sea*, N.Y. TIMES, Nov. 25, 2003, at F2.

174. Juan J. Castro et al., *The La Amistad Biosphere Reserve in*, CONSERVATION OF BIODIVERSITY AND THE NEW REGIONAL PLANNING, (Richard E. Saunier & Richard A. Meganck eds. 1995), available at <http://www.oas.org/osde/publications/Unit/oea04e/ch12.htm>.

175. Beth M. Clark & Karen Perry, *The Protection of Special Areas in Antarctica*, in INTERNATIONAL LAW FOR ANTARCTICA 306 n.46 (Francesco Francioni & Tullio Scovazzi eds., 2d ed. 1996).

176. Clayton, *supra* note 164. An example of a proposed "peace park" that may really be a set of contiguously managed parks between peaceful nations is a project linking Big Bend National Park in the United States and the Maderas del Carmen and Cañon de Santa Elena protected areas in Mexico. See generally National Park Service, Partners in Protection of the Chihuahuan Desert, <http://www.nps.gov/bibe/mexico/mexareas.htm>.

177. *Id.*

178. *Id.*

is an archetypal transboundary peace park; it is an example of how a shared goal of environmental protection can encourage peace and economic development between conflicting nations.¹⁷⁹ In the case of the Cordillera Reserve, instead of continuing a two decade-long dispute over this border land, Peru and Ecuador now jointly manage a peace park.¹⁸⁰

Nations need not necessarily surrender sovereignty to establish transboundary peace parks. Egypt, Israel and Jordan jointly manage the marine ecosystem near the Sharm-al-Shaikh region on the Sinai Peninsula in Egypt as a peace zone, agreeing to cease hostilities in that area.¹⁸¹ In the case of the Sharm-al-Shaikh, although visas are not required to enter the region, "sovereignty has not been relinquished" yet "conservation has been positively embraced."¹⁸²

In some cases, transboundary peace parks need not even be negotiated between sovereigns. In 2001, the Revolutionary Armed Forces of Colombia ("FARC") and the Colombian government agreed to cease hostilities in several protected areas that FARC controlled and to jointly manage those protected areas.¹⁸³ FARC did not have the resources to manage the areas alone yet did not want to neglect them, and so it agreed to establish a peace park.¹⁸⁴ While unusual, the FARC example shows the flexibility of the transboundary peace park as an ecosystem protection instrument.

Several other transboundary peace parks have been proposed,

179. *Id.*

180. *Id.*

181. Saleem Ali, *Siachen: Ecological Peace between India and Pakistan*, SANCTUARY ASIA, Feb. 2005, at 76, available at <http://www.uvm.edu/~envprog/k2peacepark/siachen.pdf>.

182. *Id.*

183. T.V. Padma, *Achieving Peace In The Himalayan Peaks: A Transboundary Park*, TERRAGREEN, Sept. 30, 2003, available at <http://www.teriin.org/terragreen/issue45/feature.htm>. FARC (aka Fuerzas Armadas Revolucionarias de Colombia) is a militant guerrilla group in Colombia, established in 1966 as the military wing of the Colombian Communist Party. Today, FARC is estimated to have up to 12,000 members and maintains presence mostly in the jungles of southeastern Columbia and the plains at the base of the Andes mountains. FARC's revenues (an estimated \$300 million annually) come from "taxing coca growers and other agricultural interests." Revolutionary Armed Forces of Colombia Organization and Leadership, <http://www.military.com/Resources/ResourceFileView?file=FARC-Organization.htm>; see also Homepage of the Revolutionary Armed Forces of Colombia: People's Army, at http://www.farcep.org/pagina_ingles/.

184. Padma, *supra* note 183.

including one involving disputed territory on the Bering Strait between Russia and Japan¹⁸⁵ and a park throughout the demilitarized zone (“DMZ”) between North Korea and South Korea.¹⁸⁶ Without human activity for over 50 years, the DMZ “has seen idle rice paddies [between razor wires] morph into wetlands, now home to rare birds and small animals like the red-crowned crane and yellow-necked marten.”¹⁸⁷ These proposed peace parks highlight the fact some ecologically rich, potentially irreplaceable areas deserving of legal protection, have yet to be protected. The Siachen is one of these areas.

The United Nations Environment Program World Conservation Monitoring Centre maintains a list of all 169 current transboundary protected areas.¹⁸⁸ The WCPA has noted that between 1988 and 2001, the number of transboundary protected areas increased almost three fold from 59 to 169, now including parks in 113 countries.¹⁸⁹ Of these, several are “strict nature reserves” in conflict areas.¹⁹⁰ In total, there are thirty-three transboundary “strict nature reserves,” which are areas protected mainly for science that include territory from two or more nations.¹⁹¹ Several of them lie in undeveloped regions of the world, such as the Sundarbans National Park in Bangladesh and India.¹⁹² To protect the untrammled nature of Antarctica for scientific research, NGOs have lobbied for the creation of a “World Park,” to make it, in many respects, the ultimate strict

185. Brooke, *supra* note 173.

186. Clayton, *supra* note 164.

187. *Id.* The DMZ provides “habitat for 46 species of birds such as the spot-billed duck and black-tailed gull, as well as other rare flora and fauna, like fresh water turtles, terrapins and butterflies.” *Korea No Man’s Land: The DMZ*, PILOT GUIDES, http://www.pilotguides.com/destination_guide/asia/korea/dmz.php (last visited Oct. 26, 2005).

188. Dorothy C. Zbicz, *Transfrontier Ecosystems and Internationally Adjoining Protected Areas 1* (1999) (unpublished manuscript, on file with Duke University), available at http://www.unep-wcmc.org/protected_areas/transboundary/adjoining.pdf.

189. Clayton, *supra* note 164.

190. Zbicz, *supra* note 188, at 5-11.

191. *Id.*

192. Other examples of nature reserves in conflict areas include: Mont Nimba Strict Nature Reserve in Ivory Coast/Guinea/Liberia; Khankaiskiy Zapovednik in China/Russia; Polesky Nature Reserve in Belarus/Ukraine; Kopački Rit Special Reserve in Croatia/Hungary; Babia Hora National Nature Reserve in Poland/Slovakia; Rosca-Buhaiova National Reserve in Romania/Ukraine; Río Indio-Maiz Biological Reserve in Costa Rica/Nicaragua. Clayton, *supra* note 164.

nature reserve.¹⁹³

As reserves dedicated largely to science, these parks demonstrate the ability of potential scientific research to serve as a means for establishing transboundary environmental protection regimes, and are indicative of the current trend toward regional efforts at environmental protection. This trend comes as optimism for international accords generated by the Rio Earth Summit wanes.¹⁹⁴ Political scientist Ken Conca warns that at the grassroots level, people generally believe that “global... institutional intergovernmental cooperation will not be forthcoming anytime soon. [As a result] people at the grass roots are looking for more practical approaches on a more regional rather than global scale.”¹⁹⁵ Citizens of India and Pakistan might agitate for their governments to undertake such a regional effort, following the lead of many nations with active conflict areas, by establishing a transboundary peace park in the Siachen. If India and Pakistan were to collaboratively manage a transboundary peace park, it would be the first of its kind. It would not, however, be the first example of cooperative management involving these nations.

C. Indian and Pakistani Jointly Managed Parks and Cooperative Species Protection

India and Pakistan currently cooperatively manage contiguous parks together in a non-conflict area: the Indian Kutch Desert Sanctuary and the Pakistani Rann of Kutch Wildlife Sanctuary. In addition to these parks, India cooperatively manages the Sundarbans Park, discussed above, with a contiguous park in Bangladesh.¹⁹⁶ India and Pakistan also contiguously manage several other parks with their South Asian neighbors.¹⁹⁷

193. Clark & Perry, *supra* note 175, at 294.

194. Clayton, *supra* note 164.

195. *Id.* (quoting Ken Conca, director of the Harrison Program on the Future Global Agenda at the University of Maryland in College Park).

196. Zbicz, *supra* note 188, at 12.

197. Parks currently existing between India and its South Asian neighbors include: India's Katarniaghat Sanctuary/Dhudhwa National Park & Nepal's Royal Bardia National Park; India's Valmiki Sanctuary/Sohagibarwa Sanctuary/Udaipur Sanctuary & Nepal's Royal Chitwan National Park; India's Manas Sanctuary/Buxa Sanctuary/Buxa National Park & Bhutan's Royal Manas National Park/Black Mountain National Park. Parks existing between Pakistan and its South Asian neighbors include: Pakistan's

In addition to managing contiguous parks in non-conflict areas, India and Pakistan have been able to cooperate on issues of biodiversity and species protection on at least one previous occasion, in the case of the Asian vulture. In the words of journalist Rachel J. Dickinson:

Only a decade ago, millions of Asian vultures lived in Pakistan, India, and Nepal. These enormous raptors provided an effective method of removing dead livestock, preventing the spread of diseases. They played a similar role with human corpses, ritualized in the "sky burials" of the Parsi religion. Then huge numbers of these birds began dying mysteriously starting about a decade ago. They're now teetering on the edge of extinction. No one knew why until [May 2003], when a veterinarian with the Peregrine Fund discovered the culprit: a pain-relief medication routinely administered to cattle. Birds that ate dead cattle treated with the drug were dying in massive numbers. [Officials] warned that if nothing is done, these species could be extinct in months.¹⁹⁸

Officials from India and Pakistan, along with Nepalese officials and environmental NGOs, collaborated successfully to protect the vulture by changing cattle management practices.¹⁹⁹ This collaboration may serve as precedent for future collaboration. In the case of the Asian vulture, Indian and Pakistani officials put aside longstanding differences in a collaborative effort to prevent potentially irreversible ecosystem harm. They could do so again the case of the Siachen. There are several advantages to such cooperative management. Section V examines how and under what conditions a transboundary peace park could exist in the Siachen.

D. Politics and Mechanics of a Siachen Transboundary Protected Area

Indian and Pakistani leaders face extensive cultural, ideological, religious, and social barriers when negotiating the status of disputed land such as the Siachen. Transboundary peace park advocate Dr. Saleem Ali notes that "parties in protracted conflicts . . . tend to feel that too much time and too heavy a price has been paid and that any sign of compromise is unacceptable

Khunjerab National Park & China's Ta Shi Ku Er Gan Nature Reserve. *Id.*

198. Rachel J. Dickinson, *In Divided Area, a Drive to Save Vultures*, CHRISTIAN SCI. MONITOR, Mar. 4, 2004, available at <http://www.csmonitor.com/2004/0304/p17s01-stss.html> (last visited Oct. 5, 2005).

199. *Id.*

and would in any event by tantamount to losing face.”²⁰⁰ Encouraging negotiators from India and Pakistan to use environmental protection as a scientific reason to withdraw from the Siachen might allow leaders to save face and avoid political backlash.²⁰¹ By emphasizing scientific reasons for withdrawal, environmental peacemaking can help remove cultural, ideological, religious, and other social barriers to cooperation; increased cooperation on issues of sustainability and environmental protection may foster peace in the Siachen on nearly apolitical terms.²⁰²

The Siachen, which has less historical, cultural, and political significance than Kashmir to both countries, provides an opportunity for a truly constructive dialogue on border disputes and a realistic opportunity for resolution. While extremists in either country may never be wholly placated, scientific justifications for peace are likely to compel most people.²⁰³ Establishing a transboundary protected area in the Siachen would allow India and Pakistan to withdraw their military presences based on scientific justifications and would facilitate the Siachen demilitarization plan discussed earlier.²⁰⁴ Such a protected area would benefit animals such as the ibex and snow leopard, as well as unique flora like the wild rose.²⁰⁵ Ending the conflict might also allow Indian and Pakistan to invite the United Nations Environment Programme’s Post-Conflict Assessment Unit to the Siachen to detail environmental damages and begin the process of ecosystem restoration.²⁰⁶ Over time, peace in the Siachen may lead to helicopter-based trash removal and the installation of new, on-site incinerators to dispose of trash that now litters the ecosystem.

200. Aamir Ali, *A Siachen Peace Park: The Solution to a Half-Century of International Conflict?* 22 MOUNTAIN RES. & DEV. 316 (2002) (Presented at the 5th World Park Congress, Durban, SA, September 2003), available at <http://www.sanctuaryasia.com/features/siachen.pdf>.

201. See Douglas M. Johnston, *Environmental Law as “Sacred Text”: Western Values and Southeast Asia Prospects*, in COMPARATIVE ASIAN ENVIRONMENTAL LAW ANTHOLOGY, 34, 36-37 (Alexander J. Bolla & Ted L. McDorman eds., 1999).

202. *Id.*

203. *Id.*

204. See *supra* Section IV.B on Demilitarization of the Siachen.

205. Ali, *supra* note 200, at 76.

206. For a complete overview on the work of the United Nations Post-Conflict Assessment Unit, see <http://postconflict.unep.ch>; see also Remarks of Pekka Haavisto, Post-Conflict Assessment Unit Chair, 17 GEO. INT’L ENVTL. L. REV. 570 (2005).

In addition to the environmental benefits, a transboundary protected area would reduce bilateral tensions and achieve great military and economic savings. A Siachen transboundary protected area might also serve as a low-stakes “backdoor” to cooperation between the nations, thereby building confidence about the possibility of resolving more difficult issues between India and Pakistan in the Composite Dialogue.²⁰⁷

The conflict in the Siachen is a recognized as a drain on both nations’ resources.²⁰⁸ Indeed, as discussed earlier, some suggest that neither country has a genuine desire for the underlying territory and that the conflict rages to provide a theater for each nation to display its defense capabilities.²⁰⁹ However, the parties do appear to have a genuine desire to end the conflict. In settling the Siachen dispute, a key issue will be choosing the best post-conflict protection model for the glacier. India and Pakistan could create a park based on a variety of models, several of which are surveyed below.

E. Survey of Collaborative and Contiguous Management Models to Protect the Siachen

While this Note has thus far described the instruments that may be used to end conflict and begin ecosystem protection in the Siachen and has introduced the concept of transboundary protected areas and transboundary peace parks, it has not surveyed other potential models for ecosystem protection. International conventions allow the Siachen to be protected collaboratively through transboundary management, either through the peace park model detailed above, through a UNESCO World Heritage site listing, or through both.²¹⁰ The Siachen can also be protected through the creation of two parks,

207. Clayton, *supra* note 164.

208. *Frozen Frontline*, *supra* note 70.

209. *Id.*; see also *supra* Section II.C: Not All Roses: The Conflict in the Siachen

210. The Siachen may be also listed as a UNESCO Biosphere Reserve. “Biosphere Reserves are not covered by an international convention but must simply meet a set of criteria allowing them to fulfill properly their three functions,” which are fostering conservation of ecosystems, sustainable economic and human development, and “to provide [logistical] support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.” Frequently Asked Questions on Biosphere Reserves, <http://www.unesco.org/mab/nutshell.htm#BR?> (last visited Dec. 3, 2005). This Note will not consider this protection option in detail.

one Indian and one Pakistani, managed contiguously. The determination of which model ought to be chosen or adapted to protect the Siachen is an important one; the proper model must be feasible, scientifically sound, and politically palatable. The following is an adaptation of a survey of ecological protection models conducted by researchers Clark and Perry in advocating for the protection of special areas in Antarctica.²¹¹ In the case of the Siachen, this Note suggests that collaborative management through a transboundary peace park is the superior collaborative model and that collaborative models are generally superior to contiguous management models.

1. *Collaborative management based on IUCN transboundary peace park categorization.*

Any World Conservation Union categorization would bring to bear the full management resources of the IUCN to aid Indian and Pakistani national authorities in ecosystem protection.²¹² The IUCN World Commission on Protected Areas, discussed above, is best suited for protecting the Siachen. The WCPA has at its disposal a worldwide network of experts, many of whom have been working on a Peace Parks Initiative through the Working Group on Transboundary Protected Areas (“Working Group”).²¹³ The Working Group has published “Best practice guidelines for Transboundary Protected Areas for Peace and Cooperation” which highlight “the benefits of such areas and [provide] an

211. See generally Clark & Perry, *supra* note 175.

212. The IUCN has defined a series of protected area management categories, differentiated by primary management objective. IUCN Categories include: CATEGORY Ia (Strict Nature Reserve)—protected area managed mainly for science; CATEGORY Ib (Wilderness Area)—protected area managed mainly for wilderness protection; CATEGORY II (National Park)—protected area managed mainly for ecosystem protection and recreation; CATEGORY III (Natural Monument)—protected area managed mainly for conservation of specific natural features; CATEGORY IV (Habitat/Species Management Area)—protected area managed mainly for conservation through management intervention; CATEGORY V (Protected Landscape/Seascape)—protected area managed mainly for landscape/seascape conservation and recreation; CATEGORY VI (Managed Resource Protected Area)—protected area managed mainly for the sustainable use of natural ecosystems. United Nations Environment Programme World Conservation Monitoring Centre, Protected Areas and World Heritage, http://www.unep-wcmc.org/protected_areas/categories/ (last visited Nov. 7, 2005).

213. News Release, IUCN, Climber with No Hands or Feet Collects Award for Mountain Peace Project; Geneva Summit Promotes Peace Through Tourism and Sport at 3, available at <http://www.iucn.org/themes/wcpa/pubs/pdfs/SwisssummitFeb06.pdf> (last visited Nov. 7, 2005) [hereinafter Swiss Summit Press Release].

approach for establishing peace parks.”²¹⁴ While there are at present no official internationally-agreed upon criteria for designating such areas, the Working Group has begun to develop an international certification process that may help guide a potential Siachen Peace Park designation.²¹⁵ The Working Group is familiar with the Siachen, and already has an ad-hoc group devoted to the development of a Siachen Peace Park.²¹⁶

An official IUCN peace park categorization has the advantage of being a globally understood and respected designation for active conflict areas. Indeed, an IUCN peace park categorization is best-suited of all surveyed models for protecting areas in active conflict, as this categorization may carry significant symbolic value, indicating commitment from both nations to a stable peace, and may itself increase the chances of a stable peace. Obtaining IUCN categorization as a peace park would place the Siachen in an elite category of conservation areas worldwide, while allowing India and Pakistan to collaboratively manage the Siachen ecosystem as one transboundary park.

2. Collaborative management based on UNESCO World Heritage listing.

A prominent alternative or supplemental designation to making the Siachen an IUCN peace park is listing it on the UNESCO World Heritage List. This option is available to both India and Pakistan because they are members of the World Heritage Convention.²¹⁷ Such a listing is appealing, as forty-two transboundary World Heritage sites already exist around the world, and India and Pakistan already have multiple UNESCO designations within their borders.²¹⁸ However, most protected sites are monuments, ruins, gardens, or buildings.²¹⁹ Moreover,

214. *Id.*; see also Transboundary Protected Areas for Peace and Co-operation Best Practice Protected Area Guidelines, Series 7, available at http://www.tbpa.net/docs/pdfs/IUCN_TBPA_guidelines1.pdf [hereinafter Best Practice Guidelines] (last visited Nov. 25, 2005).

215. Best Practice Guidelines, *supra* note 214, at 5.

216. Swiss Summit Press Release, *supra* note 213.

217. For more information on World Heritage Sites, see UNESCO World Heritage Website, <http://whc.unesco.org> (last visited Nov. 8, 2005).

218. India has twenty-six World Heritage sites and Pakistan has six. See UNESCO, World Heritage List (Results by Country), <http://whc.unesco.org/en/list> (last visited Nov. 8, 2005).

219. *Id.*

while India does manage six World Heritage sites designated as parks or sanctuaries, Pakistan does not manage any such sites.²²⁰ Given the disparity in experience that India and Pakistan have with the detailed management requirements of such sites, the UNESCO requirement that national authorities manage World Heritage sites presents a barrier to truly collaborative management.²²¹

Despite the barriers to a successful UNESCO park or sanctuary in the Siachen, several aspects of the UNESCO mission suggest hope. UNESCO helps countries like India and Pakistan manage World Heritage sites and its management training would likely take account of any initial disparities in experience. UNESCO “help[s] States Parties safeguard World Heritage properties by providing technical assistance and professional training; support[s] States Parties’ public awareness-building activities for World Heritage conservation; [and] encourage[s] participation of the local population in the preservation of their cultural and natural heritage.”²²² Additionally, UNESCO pledges to “encourage international cooperation in the conservation of our world’s cultural and natural heritage.”²²³

If the Siachen were to be listed as a World Heritage park or sanctuary, the institutional backing of UNESCO would be invaluable in creating a stable, collaboratively managed transboundary protected area. The major drawback to listing the Siachen exclusively as a UNESCO World Heritage site is that this designation may not carry the same symbolic value for creating a lasting peace in active conflict sites as does an IUCN transboundary peace park categorization. The two listings are not mutually exclusive, however. IUCN and UNESCO are historically partners,²²⁴ and some peace parks, like Waterton-Glacier

220. *Id.*

221. *Id.*

222. UNESCO, World Heritage, <http://whc.unesco.org/en/about> (last visited Nov. 8, 2005).

223. *Id.*

224. “In 1948, IUCN was created and UNESCO was one of its founders. The two organizations subsequently worked effectively together, developing the basis for much of today’s conservation efforts, in particular the World Heritage Convention and the World Network of Biosphere Reserves.” IUCN-UNESCO Partnership for Science, Conservation and Sustainability: Historic Links and Future Alliance? A Conservation Platform, at 1, available at <http://www.unesco.org/mab/news/IUCNplatform.pdf> (last visited Dec. 5, 2005).

International Peace Parks, are also World Heritage sites.²²⁵

3. *Contiguous management of parks based on U.S. models.*

If India and Pakistan seek to avoid one of the above mechanisms for collaborative transboundary management, they can choose to contiguously manage two national protected areas. In deciding whether to select a contiguous management model, India and Pakistan might consider specifically the experience of the United States managing one National Wildlife Refuge “primarily dedicated to preservation or conservation” that is contiguous with a Canadian Park.²²⁶ The two adjoining protected areas are the Arctic National Wildlife Refuge (“Arctic Refuge”) established by the United States in 1964, and Northern Yukon Park, established by Canada in 1984.²²⁷ Together, these parks comprise the world’s largest protected area, and the United States and Canada manage their contiguous portions independently.²²⁸

Would-be framers of contiguously managed Siachen parks in India and Pakistan should note that such parks are very different from collaboratively managed transboundary protected areas. Independent management is subject to the political winds of each country. For instance, some members of the U.S. Senate have tried to designate a portion of the Arctic Refuge as wilderness, “to

225. See The Canadian Commission for UNESCO, UNESCO and the World Heritage List, <http://www.unesco.ca/en/activity/culture/heritagesites.aspx> (last visited Dec. 3, 2005).

226. Clark & Perry, *supra* note 175, at 300. According to the Fish and Wildlife Programs Improvement and National Wildlife Refuge System Act of 2000, “the US National Wildlife Refuge System is comprised of more than 93,000,000 acres of Federal land managed by the United States Fish and Wildlife Service in more than 532 individual refuges.” Pub. L. No. 106-408 § 302(a)(2) (2000), available at <http://www.refugenet.org/new-pdf-files/centennial-act-2000.pdf>.

227. Clark & Perry, *supra* note 175, at 307 n.48.

228. *Id.* Environmentalists note that ANWR protects an Indigenous People, the Gwich’in, as well as 130,000 porcupine caribou and over 200 other animal species, including 125 bird species migrating to the coastal plain from four continents, every province in Canada and every state in the United States. During a two-week period at the beginning of June, 40,000 caribou calves are born on the coastal plain. In addition to the caribou, the refuge also contains large populations of moose, musk oxen, wolves, foxes, hares, lemmings, grizzlies, and polar bears. Millions of migratory birds, such as snow geese, snowy owls, terns, eagles, spectacled and steller’s eiders, king eiders, yellow-billed loons, and numerous shorebirds use the refuge as nesting and breeding grounds. In the offshore waters, walrus, sea otters, endangered bowhead whales, belugas, and three species of seal rear their young. All Things Arctic, *The Arctic National Wildlife Refuge (ANWR)*, www.allthingsarctic.com/arc_nwr/index.aspx (last visited Nov. 8, 2005).

protect forever the Arctic National Wildlife Refuge from oil exploration and other potentially harmful development” and to “bequeath, undisturbed, the vital heart of America’s greatest, most pristine wilderness ecosystem and wildlife sanctuary to future generations.”²²⁹

Still, provisions to open the Refuge to oil and gas exploration, which some U.S. policymakers might describe as potentially harmful to the ecosystem, are being actively considered in the U.S. Congress. Indeed, the current U.S. administration’s budget request for Fiscal Year 2006 includes anticipated revenue of nearly \$3.2 billion from oil development in the Arctic National Wildlife Refuge.²³⁰ Regardless of the eventual fate of the Arctic Refuge, framers of a potentially contiguous Siachen parks should consider potential pitfalls of such a model illustrated by it.

In contemplating whether to open the Arctic Refuge to drilling, the U.S. Congress did not need to, nor did it, consult Canada or take into account its management policy, as the two countries manage their contiguous portions independently. Similar issues might arise in India and Pakistan’s contiguous management of two national Siachen parks. Significant action on the part of one actor might undercut the confidence of the other, and result in increased animosity. The current boundary demarcation issues would still exist and would require a separate accord. The major objectives of Indian and Pakistani officials in deciding the fate of the Siachen should be building mutual confidence and engendering peace; the Arctic Refuge-Northern Yukon Park contiguous management example calls into question the suitability of the contiguous management model to meet these objectives.

In addition to the U.S. National Wildlife Refuge model, the National Parks and Wilderness Area models are available for India and Pakistan to adapt in their creation of contiguously

229. When introducing S. 411, Senator Lieberman decried drilling proposals to the Committee on Environment and Public Works as “offer[ing] the Refuge as a quick fix for our country’s energy woes and a long-term solution to our debilitating dependence on foreign oil. It is neither.” 147 Cong. Rec. S1703-4 (daily ed. Feb. 28, 2001) (statement of Sen. Lieberman).

230. Press Release, S. Comm. on Energy & Natural Resources, Domenici Praises Bush on Anticipation of ANWR Receipts, Vows to Fight for ANWR Instructions in Budget Resolution (Feb. 7, 2005), available at http://energy.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=231666&Month=2&Year=2005&Party=1.

managed nationally protected areas. In addition to being designated for preservation or conservation, National Parks, another United States model of wilderness protection, “are also designated for tourism and recreation.”²³¹ However, if India and Pakistan were to adapt designations similar to the U.S. National Park model, it might create an expectation in both countries of active recreational use inappropriate for an ecosystem in the immediate aftermath of military conflict. While granting reciprocal park use rights might pose a problem in any contiguous management model, reciprocal use is particularly problematic in designations with high recreational use expectations. Such a designation could potentially allow citizens of one country to degrade the protected area of the neighboring country while claiming fair recreational use, and such degradation holds the risk of sparking political or military conflict.

Alternatively, if India and Pakistan were to adapt the U.S. Wilderness Area model, they might avoid overuse and degradation problems. However, development actions of one nation might undercut the preservation actions of the other under a contiguous Wilderness Area arrangement. Wilderness Areas, like National Wildlife Refuges, are “primarily dedicated to preservation or conservation.”²³² The U.S. Wilderness Act of 1964 sets forth preservation guidelines for Wilderness Areas, defining wilderness as “an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions.”²³³ If both nations adopted legislation similar to the U.S. Wilderness Act and one nation were to enforce that legislation stringently, preventing permanent improvements or human habitation, the other risks damaging mutual confidence with even a slight slip in enforcement, or by allowing any activity that it does not consider “improvement” or “habitation” but which the other nation does.

4. *Contiguous management of parks based on other national models.*

India and Pakistan may also draw lessons from the national

231. Clark & Perry, *supra* note 175, at 300.

232. *Id.* at 300.

233. Wilderness Act of 1964, 16 U.S.C. § 1131(c) (2000).

systems of ecosystem protection of Ecuador and the Galapagos Archipelago, New Zealand, and Australia. The Galapagos Archipelago ecosystem has many similarities to the Siachen ecosystem.²³⁴ The problems that Ecuadorian officials have encountered while implementing their National Protected Areas System to regulate tourist flow are instructive.²³⁵ Under this system, tourism in the Galapagos was, in theory, to be “restricted to cruise ships to provide lodging, restaurants, and other visitor necessities, with regulated numbers of visitors coming ashore at widely dispersed sites.”²³⁶ However, in practice, the developments of an airport and other facilities have had the effect of concentrating and exacerbating the impacts of tourism.²³⁷ In the Siachen, placement of airports or other tourism facilities in an area unfavorable to one nation might upset interests in the other nation and lead to new conflicts. The shortcomings of the Ecuadorian system also underscore the fact that tourism in the Siachen under any protection model must be tightly restricted, perhaps to aerial visits and tightly regulated mountaineering; limits must be imposed and strictly enforced regarding how many tourists enter the area, where they go, and what they do.

New Zealand’s national protection model provides a more successful preservation-oriented approach. Parks in New Zealand are supposed to be “preserved in perpetuity . . . for the benefit and enjoyment of the public,” and they are to be kept “as far as possible in their natural state.”²³⁸ New Zealand’s National Parks Authority restricts public access as needed to protect “the welfare in general of the Parks.”²³⁹ New Zealand authorities describe their balancing policy with respect to conducting research at the expense of park welfare as follows: “Scientific knowledge of the parks and their resources will be sought constantly but must never be obtained to the detriment of their conservation.”²⁴⁰

234. Like the Galapagos before large scale tourism began, the Siachen had a virtually unaltered state before military activity began. Siachen has enormous scientific value, like the Galapagos, for its unique flora and fauna. The Siachen also evokes a sense of wonder and awe, inspiring tourism. Indeed, the Siachen, like the Galapagos, is an ideal location for scientific research and tourism.

235. Clark & Perry, *supra* note 175, at 301.

236. *Id.*

237. *Id.*

238. *Id.* at 302 n.27, quoting New Zealand National Parks Authority, *New Zealand’s National Parks – National Parks Authority General Policy*, 1978.

239. *Id.*

240. *Id.* at 302 n.28.

Several protected areas on Sub-Antarctic islands under New Zealand's control have geographic and climactic similarities to the Siachen, and their protection models may also be instructive. New Zealand generally closes its Sub-Antarctic protected areas, with the exception of "legitimate scientific teams" and "limited tourism," where tourists are accompanied by government officials.²⁴¹ A similarly strict policy in the Siachen could possibly avoid the overuse problem faced by Ecuadorian officials, but might prove difficult to enforce under a contiguous management regime. Ideally, under the New Zealand model, all tourists would be physically accompanied by officials keeping track of where they go and what they do. In contiguously managed Siachen parks, problems might arise when choosing which country's officials accompany which tourists and to whom the ultimate reports of any tourist activities might go, especially if tourists from one of the two countries seek to be accompanied only by officials from their own country while visiting the protected area under the other country's control.

Another potentially instructive part of New Zealand's outlying islands management is its use of an experienced local management body.²⁴² The Outlying Islands Reserves Committee, "a body composed of personnel with a range of expertise and involvement in Sub-Antarctic and island matters," advises and informs the management process.²⁴³ A similar body in the Siachen could be composed of experienced and retired or otherwise inactive military personnel from both countries. Such an advisory board could complement the bi-national committee of rangers discussed earlier.²⁴⁴ Adapting a New Zealand model, former military personnel with years of on-the-ground knowledge of the Glacier could provide valuable insights to policymakers and park managers, in addition to serving as rangers. In a contiguous management regime, the most likely scenario is that former military personnel staff from each nation would staff their respective country's protected area, as allowing personnel from one nation to be a ranger in the other's national protected area

241. *Id.* at 303.

242. *Id.*

243. *Id.* at 304 n.33 (citing Clark & Dingwall, *Conservation of Islands in the Southern Ocean: A Review of the Protected Areas of Insulantarctica*, IUCN Commission on National Parks and Protected Areas (1985)).

244. *See supra* Section IV.A.

might be politically problematic. In any case, such isolated use of former military personnel would not likely build mutual confidence in the same way that collaborative management might.

A relevant Australian model is that of the sub-Antarctic Macquarie Island. Named a "Nature Reserve," Macquarie Island is afforded protection similar to protected areas in New Zealand's outlying islands.²⁴⁵ Australian Nature Reserves each receive detailed management plans for protection of "all wildlife and natural features," which limit entry to those with permits.²⁴⁶ Permitted activities tend to involve scientific research or "management activities to eradicate human introduced species."²⁴⁷ In the Siachen, detailed management plans will be essential.

Notably, Australia provides that any change to the status of the reserve area would require approval of both Houses of Parliament.²⁴⁸ This bureaucratic safeguard prevents Australian Nature Reserves from being dissolved by any one political faction. Such a safeguard applied to each nation in a contiguously managed protected areas regime would help assure that factions within either government could not repudiate the existence of its protected area. This safeguard is, however, not unique to a contiguous management regime. In fact, bureaucratic safeguards are likely to be part of any joint management agreements adapted in a collaborative management regime.

5. *The case for protecting the Siachen ecosystem as a transboundary peace park.*

India and Pakistan may adapt U.S. or other national legislation for their own use if they select a contiguous management regime. However, each model has its shortcomings, as discussed above. Moreover, while the contiguous management model might adequately protect the Siachen in the short term, it leaves the area vulnerable to political pressure in either country, which could lead to the removal of protection. Additionally, each

245. Clark & Perry, *supra* note 175, at 305.

246. TASMANIAN NATIONAL PARKS AND WILDLIFE ACT OF 1978, *cited in* Clark & Perry, *supra* note 175, at 305.

247. *Id.*

248. *Id.*

of the national models surveyed for use in contiguous management leaves unaddressed the serious issues of boundary demarcation and reciprocal recreational use rights and lacks the confidence-building advantages of collaborative implementation. The national models should be treated as instructive, but none are likely to protect the Siachen as adequately as a transboundary collaborative management model.

While each of the above protection models provides historical lessons and practical guidance, the most effective models are those backed by the international conventions emphasizing collaborative ecosystem management. India and Pakistan should apply a collaborative management model such as the WCPA or the UNESCO World Heritage List. The UNESCO World Heritage List could be a familiar protection model for India and Pakistan and would provide institutional backing to facilitate the endeavor. While the UNESCO listing is capable of supporting transboundary protected areas, listing the Siachen exclusively as a World Heritage site may lessen its symbolic value as a gesture for peace. An IUCN peace park designation for active conflict areas such as the Siachen may show a greater symbolic commitment from the nations to creating a stable peace.

The most appropriate protective framework, then, is a transboundary peace park under the auspices of IUCN's WCPA, the largest world network of protected areas experts. An official IUCN categorization would bring to bear the full resources of these experts and has the advantage of being globally understood and respected. Obtaining IUCN categorization would build more mutual confidence than contiguous management, may carry more symbolic value for creating a stable peace than a UNESCO World Heritage site designation, and would place the Siachen in an elite category of conservation areas worldwide.

IUCN experts have been working on a Peace Parks Initiative for many years, through the Working Group on Transboundary Protected Areas.²⁴⁹ In moving forward with the IUCN Peace Park designation, the Working Group's ad-hoc group for a Siachen Glacier Peace Park is the most appropriate body to develop the plans for the Park. Members of the Working Group should involve third parties, NGOs and the broader community in the planning process if they are to build momentum and interest for

249. See Swiss Summit Press Release, *supra* note 213, at 3.

the Siachen Peace Park. The following Section discusses the growing momentum for a Siachen Peace Park and makes recommendations for developing it successfully.

V. BUILDING MOMENTUM FOR THE CREATION OF A SIACHEN TRANSBOUNDARY PEACE PARK

In addition to the work of the ad-hoc committee, a dedicated group of professors, former ambassadors, businessmen, and policy advocates met in Burlington, Vermont in 2003 to organize efforts and increase exposure for making a potential Siachen Peace Park a reality.²⁵⁰ The report from this meeting describes the hopeful status of a Siachen Peace Park:

The idea for a [Siachen] Peace Park . . . was brought up at a workshop of the WCPA held in Dhaka in June 2003. As a follow-up, an ad hoc working group has been formed and an electronic petition forum was started by the Mumbai-based environmental group Sanctuary Asia. A formal presentation in favor of the Siachen Peace Park was also presented at the [Fifth] World Parks Congress held [in September 2002 in Durban, South Africa].²⁵¹

In addition to Sanctuary Asia, other advocacy groups, such as the World Wildlife Fund in Pakistan and World Wildlife Fund in India, are deeply involved in the fight to protect the Siachen through the peace park instrument.²⁵² Advocates say there is “palpable warmth” amongst Indian NGOs towards peace-building with Pakistan.²⁵³ Rotary International has been a strong proponent of peace parks in North America and would be a natural partner in the fight to create an transboundary peace park in the Siachen.²⁵⁴

In light of the success of a transboundary peace park allowing access to Mount Everest, the Sagarmatha International Peace Park between China and Nepal, mountaineers have also become avid supporters of the Siachen Peace Park idea.²⁵⁵ Indian and Pakistani mountaineers have undertaken joint climbs to support a Siachen

250. K2PeacePark.org, *supra* note 84.

251. *Id.*

252. Ali, *supra* note 181, at 77.

253. *Id.* at 77.

254. I Love Parks .Com, U.S./Mexico International Parks: Rotary Districts 5520/4110 U.S.-Mexico International Park Initiative, <http://www.iloveparks.com/peaceparks> (last visited Nov. 20, 2005).

255. K2PeacePark.org, *supra* note 84.

Peace Park, modeled after past peace climbs in Switzerland and in South Africa.²⁵⁶ The World Parks Congress organized a climb at Maloti-Drakensberg Mountains Peace Park between Lesotho and South Africa and coordinated the signing of the Didima Declaration on September 7, 2003, after the climb.²⁵⁷ Delegates from twenty-seven nations signed the pact, urging nations “to strive for a just world which secures our shared resources for the benefit of all people through peaceful cooperative efforts which transcend national boundaries.”²⁵⁸ The signatories to the Didima Declaration are also natural allies in creating a Siachen Peace Park.

The International Institute for Peace through Tourism (“the Institute”) also supports the Siachen Peace Park, as safe access to this unique region would further its interest in bringing mountaineers to the region.²⁵⁹ The Institute “is willing to share knowledge gained from the experiences of other economically driven tourism ventures that have led to peace initiatives.”²⁶⁰ Its institutional knowledge and ability to recruit more international support of mountaineers will be an important part of creating a Siachen Peace Park. Additionally, several scientists have publicly supported the idea of a Siachen Peace Park to allow for an international community of scientists to safely conduct research projects.²⁶¹

Given the recent easing of tensions between India and Pakistan, the Siachen Peace Park proposal is at an important juncture. However, a third party may be necessary to facilitate further discussions between the two generally hostile neighbors. Involving a third party mediator is an option that has worked in similar situations, such as Pope John Paul II’s successful mediation of the 1984 Beagle Channel Dispute between Chile and Argentina.²⁶² More recently, arbitration settled the 1994 Languana

256. *Id.*

257. Didima Declaration from the Delegates of the Mountain Workshop (Sept. 7th, 2003), <http://www.uvm.edu/~envprog/k2peacepark/didima.html>.

258. K2PeacePark.org, *supra* note 84.

259. *Id.*

260. *Id.*

261. The Karakoram Science Project, initiated in 2003, is supported by many scientists and glaciologists who want to study the Siachen’s high altitude, rocky, glaciated environment. *Id.*

262. BETH A. SIMMONS, TERRITORIAL DISPUTES AND THEIR RESOLUTION: THE CASE OF ECUADOR AND PERU 6 (1999), available at <http://www.usip.org/>

del Desierto border dispute between Chile and Argentina, and 1998 mediations between Ecuador and Peru helped form a peace park there.²⁶³

Choosing a mediator with credibility and without unilaterally vested interests is an important element to a successful mediation. In the case of the Siachen, the United States and China both have good relations with India and Pakistan and credibility around the South Asian region. However, both have seemingly unilaterally vested interests, diminishing their efficacy as mediators. European Union nations, which have credibility but no obviously unilaterally vested interests, may be better mediators. Similarly, the seven-nation SAARC might provide a highly credible mediator, as could the United Nations, given the variety of national interests represented in those organizations.

India and Pakistan may face difficulties in initiating settlement discussions about the Siachen, as some nationalists might view the initiation of such discussions as a sign of weakness. NGOs have the opportunity to play a critical role here: creating political pressure, mobilizing public opinion, and encouraging leaders to negotiate a settlement. Indeed, beyond the negotiation process itself, one of the biggest factors in the successful implementation of a Siachen Peace Park is community and NGO involvement.

While there is no native Siachen population, there are several adjoining communities that would benefit most directly from the cessation of the conflict and could become involved as stakeholders. Grassroots organizing in communities surrounding the Siachen could help form the strong links between NGOs and affected communities needed for such a major project and would also help obtain vital stakeholder input on the practical challenges to the development of a Peace Park.

NGOs can also provide guidance in developing resource management plans²⁶⁴ to protect the resources within the ecosystem, as well as to ensure the long-term availability of water

pubs/peaceworks/pwks27.pdf.

263. *Id.* at 1, 20. Third party involvement is not always as successful, as evidenced, *inter alia*, by the failed 1965 US attempt to resolve a dispute between Britain and Guatemala when deciding boundaries of newly independent Belize. *Id.* at 6.

264. For detailed treatment of transboundary park management plans and potential International NGO roles in assisting management, see EYAL BENVENISIT, *SHARING TRANSBOUNDARY RESOURCES: INTERNATIONAL LAW AND OPTIMAL RESOURCE USE* (2002).

to Siachen's downstream users. The process of cooperatively developing such management plans is part of the environmental peacemaking process and calls for collective discussion and action by concerned governments, NGOs, and local populations in the surrounding areas.²⁶⁵

If current news is any indication, training and implementation of effective park management will be a critical role for international NGOs to play; poachers recently stole the entire remaining tiger population from the Sariska Tiger Reserve in Rajasthan, one of India's most prestigious national parks.²⁶⁶ The thefts prompted international wildlife conservation experts to order an emergency census of India's tigers and led to allegations of government corruption and negligence over tiger protection in India.²⁶⁷ This event highlights the lack of an integrated environmental management and development plan in India and underscores the need for NGO involvement in developing and implementing such plans in a potential Siachen Peace Park.

A successful Siachen Peace Park must also receive proper financial support. While the legislatures are willing to strain their economies to fund a territorial conflict, they might be less likely to put resources into a park for ecological protection. A peaceful Siachen would be partially self-sufficient through projected tourism revenues, but because of tourism limits inherent in the Siachen's remote location and its status as a recent conflict area, a successful Siachen Peace Park will require financial support from outside organizations. Indeed, the prospect of a Siachen Peace Park could even stimulate additional funds from international donors to help with the administration of the ensuing peace process,²⁶⁸ but it will require strong financial support in the near term. Third party, NGO, and community involvement will be invaluable in securing such support.

265. *Id.*

266. Peter Foster, *Poachers Empty Indian Wildlife Park of Tigers*, TELEGRAPH (UK), Apr. 9, 2005, at 15, available at <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2005/04/09/wtiger09.xml&sSheet=/news/2005/04/09/ixworld.html>.

267. *Id.*

268. The Cordillera Reserve between Peru and Ecuador, discussed earlier, attracted donors pledging more than US \$1 billion in assistance for the long-term peace process. Press Release, Inter-American Development Bank, International Donors Pledge More Than \$1 Billion To Support Peru-Ecuador Peace Process (Feb. 4, 1999), available at http://www.iadb.org/NEWS/Display/PRPrint.cfm?PR_Num=27_99&Language=English.

Finally, the most critical legal role NGOs can play is to organize stakeholders to file citizen suits in both countries. Availing themselves of fundamental rights to a clean environment, citizen suit plaintiffs may be able to obtain direct relief from Indian and Pakistani courts. In particular, downstream users of the Siachen's waters stand the greatest chance at successfully alleging violations of these rights.

VI. CONCLUSION

Citizen suit plaintiffs may allege that the collateral damage to the environment caused by the Indian and Pakistani armies violates their constitutional rights, international treaty and customary international law obligations. The successful application of legal protections is, of course, subject to hurdles in both countries. Regardless of their outcome, such citizen suits could bring national, and even international, attention to environmental degradation caused by the war in the Siachen.

In time, these citizen suits may change public opinion, and may even force the Indian and Pakistani governments to address the rapidly deteriorating state of the Siachen ecosystem. Perhaps the governments will even be motivated to end their longstanding conflict and to establish a transboundary protected area in the Siachen. If they chose to do so, the governments would have compelling legal, political, and environmental justifications for ending the conflict and for creating a transboundary protected area in the Siachen. The creation of a transboundary peace park in the Siachen may even inspire other governments worldwide to embrace proposed peace park projects or consider, in the first instance, the peace park as an instrument for ending their active conflicts and establishing transboundary protected areas.

The peaceful resolution of the conflict in the Siachen is possible, indeed necessary, to protect the fragile and unique Siachen ecosystem, which, like all ecosystems, does not recognize national borders. India and Pakistan have several models to choose from in protecting the Siachen, none better suited for the long-term management of an ecosystem recently recovering from military conflict than an IUCN transboundary peace park. The UNESCO World Heritage park or sanctuary designations also offer an opportunity for creation of a transboundary protected area. Whether through an IUCN transboundary peace park, a UNESCO site, or both, use of a collaborative management

approach to protect the Siachen could be instrumental in bringing peace to this area of active conflict.

Developing a plan for a collaboratively managed transboundary Siachen Peace Park administered by both countries would offer scientific reasons for both nations to withdraw on virtually apolitical terms from an otherwise highly politicized and destructive conflict. Implementing that plan successfully offers opportunity for mutual confidence building. The involvement of NGOs, communities, and other third parties will also be critical to the successful creation and implementation of a Siachen Peace Park.

If the Siachen Peace Park becomes a reality, it will save both nations the financial and human costs of conflict, improve bilateral relations, and build mutual confidence for addressing other issues in the Composite Dialogue, especially the conflict over Kashmir. A Siachen Peace Park could play a historic role in the process of peace in this war-torn region. Given the recent optimism in the India-Pakistan relationship and the ever increasing need for stability and security, these nuclear neighbors must act on their current momentum to protect the Siachen. Now is the time to cease fighting over land of questionable strategic value and to take steps to increase nuclear stability. India and Pakistan should seize this opportunity to move toward normalized relations, for the sake of the soldiers dying for the Siachen, and to protect this truly unique and spectacular ecosystem.