STRATEGY RESEARCH PROJECT

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# PROTECTION OF THE ENVIRONMENT DURING WAR THE NEED FOR A CLEAR DEPARTMENT OF DEFENSE POLICY

BY

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USAWC STRATEGY RESEARCH PROJECT

# Protection of the Environment During War
# The Need for a Clear Department of Defense Policy

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The views expressed in this academic research paper are those of the author and do not necessarily reflect the official policy or position of the U.S. Government, the Department of Defense, or any of its agencies.

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# ABSTRACT

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Damage to the environment during war has been a problem for centuries. This damage has increased with each passing decade, until modern times when the potential for extensive and long-lasting damage to the environment is significant. The world community has attempted to provide protection to the environment during war through the Protocol I Additional to the Geneva Convention of 1949. Over 150 countries throughout the world abide by this treaty. Despite the United States' expressed desire to be a leader of the world in environmental stewardship, it has signed, but not ratified this agreement. This places the US in an ambiguous position and military commanders in a complex and confusing situation. Internally inconsistent guidance and doctrine from the National Command Authority through Service level complicate this issue. This paper explores this risky situation in detail and proposes a solution. The proposed solution is an Executive Order directing the military to comply with the environmental provisions of the Protocol I additions to the Geneva Convention, while reserving the right to approve military actions that would violate the terms of this treaty. This would resolve the internal consistencies that place military commanders in unnecessarily complex and risky situations and promote the US desire to be good stewards of the environment.

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# Protection of the Environment During War; The Need for A Clear Department Of Defense Policy

Today's military is under increasing pressure to refine its conduct of war. Precision engagement, increased situational awareness, and generally overwhelming combat superiority lead many people and countries to expect execution of military operations with few needless casualties or collateral damage to non-combatants or the environment. This is even more important during operations other than war, where objectives are more limited and unnecessary casualties or collateral damage is counterproductive to the usual goal of reestablishing legitimate authority and autonomy in the area. DESERT STORM "demonstrated" the US capability to meet this expectation of an antiseptic war. The swift, precise, and "complete" execution of this war encouraged the perception that war could now be more refined and civilized. A logical extension of this concept of a cleaner war is that the environment, usually a significant victim of collateral damage, can be protected during war. The concept that the environment should be protected gained even more momentum and support due to Iraqi actions directed against the environment during the same conflict. The precise war conducted by the coalition forces contrasted with the horrific environmental damage perpetrated by the Iraqi forces and provided the perfect example to promulgate this concept.

Protection of the environment during war is not a new idea, but it is gaining in importance in this country and throughout the world. It has its roots in the principal of proportionality established in the Hague Conventions of War in 1907; however, specific provisions to protect the environment during war were not established until the 1977 Protocol Additional I to the 1949 Geneva conventions.[1] In the United States the movement to protect the environment has grown over the last 30 years to reach almost moral and ethical levels. There is some validity to the claim that behind preservation of life, and freedom, protection of the environment is one the most important responsibilities we have. Both US civilian and government organizations have significantly changed peacetime methods of operations to meet this growing sense of responsible environmental stewardship, and this stewardship is clearly reflected in our country's laws. Environmental stewardship and the threats to US interests due to environmental issues are also reflected in the National Security Strategy of the United States, although there is no specific mention of protecting the environment during war.[2]

The consideration of the environment in all we do, combined with the perception of our military's capability to execute a clean and precise war, **result in an expectation** that it is entirely possible to protect the environment during war and operations other than war. Consistent policies in this area are required to achieve our political goal to be good stewards of the environment, but currently the US does not have consistent political or military policies. While the provisions of Protocol I provide international law to protect the environment during war, the United States has not ratified Protocol I amendments to the Geneva Convention, nor do we have an explicit political or DOD policy addressing the specific environmental protection provisions of Protocol I. However, the military is including references to these provisions in its doctrinal literature and appears to be **operating under the assumption that these**

**provisions are applicable.** This situation results in an ambiguous position and puts the United States at risk for international embarrassment through hypocritical or inconsistent policies. It further leaves the military commander to use their best judgement to follow or not follow international law in pursuit of US military objectives, which could cause additional problems. This paper will argue that DOD needs to establish a clear policy concerning the environmental provisions of the 1977 Protocol I additions to the 1949 Geneva Conventions to correct this deficiency.

This paper will first examine the consequences of historical attacks on the environment during war to show why environmental protection continues to become more important. A review of applicable Laws and Treaties will then show how the world community has reacted to limit this type of destruction. An in-depth examination of Protocol I environmental provisions will show where the US has now begun to deviate from the majority of the world's opinion in this area. An examination of current DOD policy, Joint and Service doctrine will identify the confusion and conflict that currently exists concerning the applicability of Protocol I. This will lay the foundation for the paper's recommendation that DOD needs to establish a clear policy concerning the environmental provisions of the 1977 Protocol I additions to the 1949 Geneva Conventions. Finally, possible options will be examined and a solution will be recommended.

## HISTORICAL EXAMPLES OF ENVIRONMENTAL IMPACTS OF WARFARE

History is full of examples of environmental devastation caused by war with the first records found in Biblical times. Samson is credited with destruction of crops, vineyards, and trees during his campaign against the Philistines (Judges 15:4-5).[3] Sowing the ground with salt was a tactic used by the Roman Legions, most notably during the capture of Carthage in Third Punic War.[4] Primarily used as siege tactics and punishment after surrender, these efforts were specifically designed to attack the resources necessary for basic survival. Environmental damage to one's own land and crops was common to deny resources to an invading enemy. Genghis Khan used these tactics on a large scale during the 1200's when the Mongols invaded Western Asia and Eastern Europe. During this invasion, Baghdad was the site of perhaps the most devastating act where "Direct attack on the irrigation system effectively toppled an entire civilization."[5] Environmental destruction of this very direct nature continued basically unchanged until the American Civil War where the main change was in scale. The most infamous examples are Sherman's march to the sea, and Sheridan's campaign through the Shenandoah Valley in 1864. Sherman's troops destroyed almost 10 million acres in Georgia alone, while the Shenandoah Valley was turned into a virtual wasteland.[6] The justification for these environmentally devastating tactics was that to end the war, the effects must directly impact the people and their will to resist, not just the combatants. This concept would play heavily in the greatly expanded environmental damage by war in the next century.

Industrial-age capabilities started to emerge after the US Civil War, and when combined with effects of increased urbanization of cities and the size of armies, set the stage for wars' ability to increase the scale and intensity of environmental devastation by orders of magnitude. Urbanization required more complex and concentrated facilities to support and sustain life. Dams, power plants, and the proliferation of fossil fuels created situations where either military necessity or political desire resulted in the destruction of these systems, thereby causing wider and more intense damage to the environment. Technological advancements increased and enhanced this destructive capability, and better methods were developed to deliver destruction at greater distance and more efficiently.

The Hague Convention of 1907 established Laws of War and the concept of proportionality, yet this did little to stop environmental damage during war. World War I increased by an order of magnitude the scope and intensity of environmental damage. For example, intense artillery fire, explosives, and the use of mustard gas affected areas in France that are basically still uninhabitable today. The forests of France took the brunt of the environmental damage during the war where over 1.5 million acres of forestland were damaged with 494,000 acres leveled.[7]

World War II followed a short 20 years later and continued to demonstrate the increased destructive ability of warfare on both the people and the environment. Fought by armies counted in the millions, the war demonstrated unprecedented capability to deliver destruction through strategic bombing campaigns, the first (and only) use of nuclear weapons, ground and sea warfare, and complete destruction of infrastructure. The allied bombing campaign in Europe used almost 2.7 million tons of bombs leaving "the principal German cities ... largely reduced to hollow walls and piles of rubble."[8] Germany was not the only country to undergo such devastation, since France, China, Russia, Great Britain, Finland, and Japan were all recipients of extensive devastation. Additionally, many fragile ecosystems were destroyed or significantly damaged during the war. The desert environment of North Africa and South Pacific Islands are excellent examples of damage from direct action as maneuver over fragile terrain destroyed almost all vegetation in certain areas. Small islands such as Kwajalein in the Marshall Islands saw such intense fighting and devastation that there was only one tree left standing on the entire island (approximately 8 miles long by one-half mile wide).[9] Even further long-lasting environmental damage was done through inadequate disposal methods of ammunition, equipment, and other hazardous supplies no longer required after cessation of hostilities.[10]

After WWII the Geneva Convention convened to try to prevent the destruction and suffering of WWII from ever happening again. However, despite some hopes, this convention did not address destruction to the environment, but focused on the protection of victims and combatants. Addressing damage to the environment would wait a few decades more.

The Vietnam War highlighted, and even enhanced, America's emerging conscience and concern with respect to the environment. The unusual combination of the focused attention to the environmental impacts of military operations and anti-war sentiment provided a rallying point for anti-war protesters and fueled their rhetoric concerning the evils of war.[11] The US military used three environmentally destructive

tactics to conduct operations in this war. First, land clearing and deforestation became very efficient through the use of Rome plows as they cleared nearly 750,000 acres by the end of the war.[12] Second, herbicides, such as Agent Orange, were widely used to defoliate the countryside and "by one estimate, approximately one tenth of South Vietnam was sprayed during the war."[13] Many areas of the country still have not recovered from the damage done by these two methods.[14] The third new method of operation actually attempted to directly modify the environment and use its effects as a combat enhancer. Cloud seeding was designed to lengthen the rainy season, increase soil run-off and decrease trafficability.[15]

The public and international outcry from this war resulted in two significant environmental actions. First, the Environmental Modification (ENMOD) Conference banned the use of the environment **as a weapon**. Specifically, manipulation of forces of Mother Nature (tides, earthquakes, tidal waves, weather or climate) was outlawed. Second, a conference to address numerous issues, including protection **of the environment** during war, resulted in the 1977 Protocol I additions to the Geneva Convention. Specific provisions of this Protocol will be provided in later discussion.

The latest and biggest international outcry against environmental damage during war occurred during DESERT STORM. The greatest outcry was directed against environmentally destructive Iraqi tactics ordered by Saddam Hussein. For example, Iraq deliberately released oil into the Arabian Gulf creating the third largest oil spill in history (6 to 8 million barrels, or 20 to 30 times the amount spilled in the Exxon Valdez oil spill).[16] Secondly, Iraq caused the largest oil spill in history (on the land in Kuwait) by deliberately damaging over 750 oil facilities (with over 600 oil wells were set on fire). A global level environmental disaster from the smoke was averted only by fortunate wind and temperature conditions. China and Bangladesh claimed regional disasters (severe weather and floods) resulted from those oil well fires. The scope of deliberate environmental damage may have surpassed any done in the past.

This quick review of the damage **to the environment** from war shows that damage of this type continues to increase in intensity and scale, and there has been a sustained international effort to provide protection to the environment through international treaties and conventions. Further, the possible damage to the environment continues to increase with the destructiveness of the weapons available combined with the increasing urbanization of the world's population and their reliance on larger life-support systems. This has reached the level where many nations want to codify this protection through international law, specifically through the Protocol I additions to the Geneva Convention. While the US professes to be a leader in environmental stewardship, it has not agreed with the majority of the world to follow Protocol I additions. The specific international laws and treaties will now be examined.

## EXISTING LAWS AND TREATIES

There are three basic treaties that the United States has signed and ratified which form the basis of environmental consideration in war. Two of these are the Hague Convention of 1907 and the Geneva Convention of 1949. The Hague Treaty provides for the principle of proportionality which states: "the

anticipated loss of life and damage to property incidental to attacks must not be excessive in relation to the concrete and direct military advantage expected to be gained."[17] In effect, this means excessive collateral damage to non-military targets is unacceptable and is prosecutable under international law. Although one can extrapolate this to imply that specific attacks on the environment **that do not directly relate to military objectives** are illegal, there is no specific **protection of the environment** in these treaties. As mentioned earlier, the Geneva Convention of 1949 provides for protection of combatants and victims of war, it does not specifically address the environment. The third basic treaty, i.e., the 1977 Environmental Modification Convention (ENMOD), is the only international treaty that the United States has signed and ratified that directly addresses the environment and war. This treaty specifically restricted using the environment as a weapon, however, it did not prohibit attacks **on the environment.**[18] Stephen Dycus, a professor of Law and noted writer on the topic of National Defense and the Environment states: "Despite the convention's broad language, its framers understood it to apply only to the creation of phenomena such as earthquakes, tsunami, cyclones, and changes in weather patterns, climate, and ocean currents."[19]

Although a first step, many nations felt that the language in the ENMOD treaty was not strong enough to provide the necessary protection for the environment. To accomplish this, language was drafted specifically to **protect the environment** during war, and this language was included in the Protocol I Additional to the Geneva Convention in 1977.

## PROTOCOL I ENVIRONMENTAL PROVISIONS

The main purpose of Protocol I additions to the Geneva Convention is to provide more protection for non-combatants during war. There are 84 Articles in this document that provide protection for non-combatants.[20] The other four Articles address protection of the environment. Articles 35, 55, & 56 are specifically worded to protect the environment; while Article 54 implies protection of the environment by prohibiting destruction of agricultural areas, crops, water installations and supplies, etc.

The United States has signed, but not ratified Protocol I.[21] The President has not sent Protocol I to the Senate for ratification,[22] which places us in an ambiguous position with regard to this treaty. By signing it, we have acknowledged that, at least at one point, we considered the provisions of the treaty valid and worthwhile. However, until Senate ratification it is not legally binding for the US.

There are several reasons why Protocol I has not been sent to the Senate. The principal reason is not environmental, but a concern that irregular forces would be granted combatant status even if they do not distinguish themselves from the civilian population and otherwise comply with the law of war.[23] The principal objection to the environmental language in this document is that it could restrict the flexibility of the commander during conflict by specifically restricting some facilities from being legitimate targets. It is useful to examine the specific language of the Protocol I environmental articles the US objects to. The

areas of the provisions highlighted by bold text (authors emphasis added) show the restrictions that would be placed on a military commander if these provisions were applicable.

> Article 35 – Basic Rules (parts 1 & 2 are omitted as the US agrees to these provisions).
> 3. It is prohibited to employ methods or means of warfare which are intended, or may be expected, to ***cause widespread, long-term and severe damage to the natural environment.***
>
> Article 55 – protection of the Natural Environment, states:
> 1. Care shall be taken in warfare to protect the natural environment ***against widespread, long-term and severe damage***. This protection includes a prohibition of the use of methods or means of warfare which are ***intended or may be expected to cause such damage to the natural environment*** and thereby to prejudice the health or survival of the population.
> 2. Attacks against the natural environment by way of reprisals are prohibited
>
> Article 56. Protection of works and installations containing dangerous forces
> 1. ***Works or installations containing dangerous forces***, namely dams, dykes and nuclear electrical generating stations, ***shall not be made the object of attack, even where these objects are military objectives***, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.[24] (The remainder of this article is provided in the endnote).

From a review of the highlighted portions of these articles, the argument that ratification of this treaty (or at least the environmental protection Articles) would restrict the military commanders ability to conduct a campaign seems to have validity. It could eliminate several currently valid military targets; eliminating environmentally damaging options that could bring a conflict to a quicker end with less casualties. Thus, our stated policy and desire for good environmental stewardship could be seen to contradict our official position of not following the provisions of this Protocol. However, because our current military actions and some perceptions have us *de facto* complying with the environmental provisions of this Protocol, we are faced with an even more confusing situation. While we officially do not recognize this Protocol's environmental provisions as binding, research has shown that we in effect follow the provisions and have many in our military believing the provisions apply, while at the same time do not want our commanders formally restricted to actions demanded by it. The inconsistencies in this situation are risky for US policy and the conduct of military operations. Let's examine why our actions following this Protocol are disconnected from official policy and if it really results in confusion and conflict?

## CURRENT SITUATION

Our official policy in this area begins with the National Security Strategy of 1999, which states, "protecting the global environment from grievous harm" is an important national interest.[25] While not specifically a policy to protect the environment during war or military contingency operations, it conveys quite clearly a commitment to good stewardship of the environment and the importance we attach to this responsibility. The National Military Strategy continues this trend of mentioning the importance of the environment, but it does not mention specific protection of the environment during war. Department of

Defense Directive on Environmental Security (4715.1, 1996) provides the first statement of military environmental policy. Of the 14 numbered directive statements in this policy, there are only two that can reasonably be interpreted to cover actions during war or contingencies. They state, "it is DOD Policy to display environmental security leadership by:

1. Ensuring that environmental factors are integrated into DOD decision making processes that may have an impact on the environment...
2. Complying with ***applicable US statutes, regulations, Executive orders, binding international agreements***...[26] (emphasis added).

The remaining 12 directive statements, as with the rest of this Directive, other Environmental Security Directives, Instructions, and Executive Orders, all concern peacetime operations.[27] The singular lack of specific policy guidance for operations in war and contingencies results in Military Commanders having to rely on their interpretation (along with their legal staff) of the source documents listed in DODD 4715.1 above, specifically the conventions and treaties already mentioned. Normally, this is not an undue burden on commanders, as they are often put in positions where they have to interpret International Conventions (such as the Hague and Geneva Conventions of War) as applied to a specific situation. For example, proportionality of response would proscribe using weapons that have effects causing more collateral damage than the military objective is worth. This is the responsibility and duty of the commanders in the field, and as long as the guidance is clear, there is no problem. However, as we will see the possibility for significant confusion exists in this area that DOD policy does nothing to clarify.

My research shows that the US military is *de facto* already abiding by the environmental provisions of the Protocol I provisions, despite no official policy or reason to follow them. There are four components of this *de* facto compliance. First, there is an evaluation by Department of Defense officials that some provisions of Protocol I already apply to military operations. In the report to Congress on coalition operations during DESERT STORM, General Powell (then Chairman Joint Chiefs of Staff) "explained that the provisions of Additional Protocol I, for the main part, applied as if they constituted customary law."[28] The Operational Law Handbook lists 55 Protocol I Articles as "legally binding as customary international law or acceptable practice though not legally binding", and 2 others in the same list are acceptable ***except for certain sub-paragraphs of the articles*** (this refers to part 3 of Article 35 as shown earlier).[29] During a panel discussion on Environmental Law of War it was noted we are already in a state of "virtual compliance".[30]

Second, there are numerous confusing references in Service and Joint doctrine that specifically discuss the Protocol's environmental provisions.[31] The Army Operational Law Handbook discusses this Protocol and its provisions in some detail, clearly stating that the US has not ratified this Protocol. However, it then delineates the parts that the US views as binding and the parts that it does not.[32] . While identified clearly, the long list and the inconsistent application can cause confusion. Protocol I is mentioned in Joint Publication 4-04(Joint Engineer Operations) (DRAFT) with no specific statement

showing the US has not ratified this Protocol, nor even the type of statement made in the Operational Law Handbook noting some parts are applicable, while other parts are not.[33] This confusion continues to permeate other manuals as well. A Joint Army/Marine Corps manual (FM20-400/MCRP 4-11B Military Environmental Protection (DRAFT)) discusses Protocol I and notes that it "places restrictions on environmental warfare ... requires combatants to 'protect the natural environment against widespread, long-term, and severe damage.'"[34] Note this quote is from Article 55, an article that the US specifically objects to. Numerous other examples can be found.

Third, our military **culture** to protect the environment reinforces the **inaccurate** perception that the environmental provisions of this Protocol are binding. It is a logical conclusion by many military members that, if we protect the environment through the elaborate measures we take in peacetime, the same protection may be required in wartime. Once our doctrine starts mentioning the type of protection proscribed in Protocol I, it can be looked at as binding law – because our doctrine should be consistent with the law. This adds to the growing confusion that is embedding itself into our actions over the exact application of the provisions of Protocol I.

Finally, our own legal doctrine is confusing despite its specific delineation of the articles of the Protocol we should follow and those we do not have to. This confusion begins when definitions for the terms ***widespread, long-term and severe*** used in the Protocol are examined. According to the Operational Law Handbook long-term is measured in decades (twenty to thirty years), widespread probably means hundreds of square kilometers, and severe implies actions that "prejudice[s] the health or survival of the population."[35] All three of these criteria must be met before a violation of Protocol I occurs. To put this in perspective, the Operational Law Handbook notes "there is little doubt that the majority of carnage caused during World Wars I and II (with the possible exception of the two nuclear devices exploded over Japan) would **not have met** this threshold requirement"[36] (emphasis added). Today it is hard to believe that the extent of damage in WWII (minus nuclear weapons) was **not environmentally damaging** to the point of violating the Protocol provisions.

The interpretation in our legal doctrine is on one end of the scale, and there are many examples of the other end of the scale. Prevalent in many of the journal articles reviewed, and specified by Dycus in numerous locations throughout his book National Defense and the Environment, is the theme that any unnecessary attacks on the environment, (or attacks on dams, nuclear power plants, oil tankers, or other objects that contain or restrain "dangerous forces") are not allowed.[37] Comparing this to Article 35 and 56 above, it is clear that these authors are implying that the provisions of the Protocol I additions are applicable. Dycus even quotes the Air Force and Navy legal manuals to support his case.[38]

Based on the preceding discussions, it is easy to see how the commander of a current military operation could be confused. While not officially having to follow the environmental provisions of Protocol I (not ratified by Congress, etc.) he may feel compelled to do so by *de facto* conditions. Should a situation arise where this commander must choose between a course of action with more casualties to the members of his command in order to avoid damage to the environment and one with few probable

casualties that causes significant environmental damage, the decision is entirely his. He has no clear statement of policy which to review for guidance. In fact he may even be confused by the references in doctrinal manuals and the varied opinions of his own staff.

This confusion would be especially true in a combined or multi-national operation. The US position on the Protocol I additions does not identify the vast majority of countries in the world which have already ratified the treaty. Over 150 of the 187 members of the United Nations have ratified the treaty[39] to include several of our customary allies such as Australia, Canada, Germany and Korea.[40] Therefore, commanders must be aware of the provisions of Protocol I, because the treaty may bind many of our partners in a multi-national operation. Some targets are legitimate for some members of a multi-national coalition but not for others, creating a very complex and confusing situation. This situation requires resolution. Now we can examine the best way to resolve this complex issue.

**OPTIONS**

This paper will propose six specific courses of action to resolve the problem of DOD environmental policy during war. They are:

1. Do nothing. Keep the status quo and accept the risks discussed.
2. Ratify Protocol I making the environmental protections our official policy.
3. Reject Protocol I and instruct the Department of Defense to remove any and all language similar to Protocol I from their service doctrine.
4. Reject Protocol I and submit a counter-proposal that provides a more concise statement of what we desire our environmental protection policy to be.
5. Publish a clear and unambiguous DOD policy on this area, specifically addressing the environmental provisions of Protocol I.
6. Publish an Executive Order directing the military to comply with all environmental provisions of Protocol I.

The first two options are listed for completeness, but clearly are not viable options for the following reasons. Option one (Do nothing) is untenable because it continues to allow confusion and conflict to seep into our doctrine, and places military commanders in more difficult positions than necessary when conducting military operations. These risks are not acceptable. Option 2 (Ratify Protocol I) will not occur because US objections to the other non-environmental articles prohibit pursuit of this option. The US is clearly against granting irregular forces combatant status if they do not distinguish themselves from the civilian population and comply with other laws of war. We cannot ratify only those areas we agree on.

The other four options are viable and will be evaluated using the following criteria:

1. Reduction of risk to US by following US Policy of good Environmental Stewardship
2. Flexibility for military options
3. Clarity of position for military commanders.
4. Ease/timely implementation

Option 3 (Reject Protocol I and remove all references from doctrine) is a step backwards in environmental stewardship. This option does not satisfy criteria 1, because it would overtly eliminate any statement or implication in policy designed to protect the environment in war. Our Gulf War experience showed that we are more sensitive to the environment than in the past. Our overall claim to be good stewards of our environment, along with the culture change in the military over the past two decades promoting responsible environmental practices, is what the American people demand of our military. Criteria 2 is met because this gives us the maximum flexibility in military options. This option also meets criteria 3, since it provides a clear and unambiguous position for military commanders. As we will undoubtedly work in multi-national operations with some members recognizing Protocol I as binding, it is necessary to address our specific position and policy in our doctrine for combined and multi-national operations. This option meets criteria 4, as it would be easy and quick to direct and implement.

Option 4 (Reject Protocol I and submit counter-proposal) would reassert our desire to be a good steward of the environment, both in peace and war, so it clearly meets criteria 1. Criteria 2 is met again, because it provides for sufficient flexibility in our military options. Criteria 3 would also be met because of the clear position it would give US commanders operating alone or in concert with our allies or the United Nations, concerning the methods we would use in military operations with respect to attacks on the environment. This option fails to meet criteria 4, because it would be difficult to implement. It would require a long laborious political battle where the US must convince the 150 nations that have already signed Protocol I that our proposal is better than the Protocol I environmental provisions.

Option 5 (Publish clear DOD policy on Protocol I). This solution requires DOD to publish a definite position on protection of the environment during war. It is not clear just what this position would be. It is very likely that it would follow the structure used in the Operational Law Handbook and specify Article by Article which provisions of the Protocol to follow. It should also contain some guidance on application during war and military operations other than war, and additional guidance for multi-national operations. This would partially meet criteria 1. While it would not be a complete acceptance of the environmental provisions, it would reduce risk of exposure due to inconsistent policy and action. This would allow for reference to this document in subsequent Joint and Service doctrinal manuals thereby reducing confusion and inconsistency. Criteria 2 is met, because no loss of flexibility in military operations is lost. Criteria 3 is met. Although it may remain a complex situation, the policy will be set and written references available for use. Criteria 4 is met because a DOD policy can be written and implemented quickly and effectively if desired.

Option 6 (Publish an Executive Order directing the military to comply with all environmental provisions of Protocol I). This Executive Order would direct that the military will comply with the environmental provisions of Protocol I, but reserve the right to approve more flexible operations outside the bounds of Protocol I. There is precedent for this type of arrangement as shown by the implementation of use of herbicides and riot control agents (RCA) through Executive Order 11850. This

prohibited the use of these agents in war in the absence of national command authority authorization *as a matter of policy.*[41]

This solution meets criteria 1 by reducing the risk to the US by showing good environmental stewardship. It follows the critical environmental guidelines of Protocol I with the obvious exception of nuclear weapons, which is directed at the NCA level. This solution would not restrict military commanders as much as it might seem thereby meeting criteria 2. The emerging US way of war with precision weapons and effects makes this previous level of devastating collateral damage unnecessary. The specific objection to the level of damage causing "severe loss among the civilian population" versus the current standard of excessive incidental injury or damage is problematic. Media coverage driving world opinion and reaction *de facto* restricts us from actions that would ***only*** cause the lesser level of "severe loss among the civilian population". This solution would resolve many of the issues causing confusion today so it meets criteria 3. Although restricting options to operate outside the bounds of Protocol I environmental provisions, standard doctrine, procedures, and plans could be implemented for almost all situations so military operations are conducted within the bounds of Protocol I. This keeps us synchronized with all possible allies (or held to a stricter standard) in multi-national operations. Ultimately no flexibility in operations is lost because the NCA retains the prerogative to approve operations not allowed by Protocol I. This option meets criteria 4, as it would be easy and quick to direct and implement.

**RECOMMENDATION**

The table below summarizes the above discussion:

| | CRITERIA | | | |
|---|---|---|---|---|
| **OPTION** | **1- RISK** | **2- FLEXIBILITY** | **3- CLARITY** | **4 - IMPLEMENTATION** |
| **3** | **NO** | **YES** | **YES** | **YES** |
| **4** | **YES** | **YES** | **YES** | **NO** |
| **5** | **PARTIAL** | **YES** | **YES** | **YES** |
| **6** | **YES** | **YES** | **YES** | **YES** |

Table 1. Summary of option evaluation.

As shown in table 1, options 5 and 6 meet all criteria, although option 6 does this more completely by routinely following all of the environmental provisions of Protocol I. An Executive Order clarifying the policy and applicability is the most efficient and effective way to accomplish this without losing flexibility in military operations. This would be relatively simple to accomplish and allow the promulgation of policy into doctrine with clarity and completeness. The ultimate effect would be a clearer vision of US policy on the issue, a step forward in the US's leadership in world environmental stewardship, less risk for US international embarrassment, easier interoperability with coalition members during multi-national operations, and simpler and clearer guidelines for the military commander in charge of operations.

## CONCLUSION

This paper has shown that the confusion surrounding the applicability of the Protocol I additions to the Geneva Convention is substantial and permeates much of our military thought and doctrine. Our official position on this Protocol is counter-intuitive to the increased environmental awareness that has been inculcated into military culture over the past 30 years. The current situation is risky and complicated by a lack of clear directive guidance from all levels; the Executive, DOD, confused Joint and Service doctrine, and down to the military commander in charge of operations. It clearly calls for a resolution.

An Executive Order directing that the military comply with the environmental provisions of Protocol I, but reserving the right to approve more flexible operations outside the bounds of Protocol I, is the best option. It clearly is easy to implement and provides the clarity for commanders without undue restriction on military options. It fulfills our goals of good environmental stewardship and reduces the current confusion and risk. Protecting the environment during war is a noble cause that matches our political goal and policy to execute good environmental stewardship. We can best do this through this type of Executive Order.

Word Count: 5906

## ENDNOTES

[1] Many of the sources examined for this paper made this specific point. Harlow & McGregor made it clearest and have the most expertise in this area. Harlow & McGregor, International Environmental Law Considerations During Military Operations Other than War", Protection of the Environment During Armed conflict, US Naval War College International Law Studies VOL 69, (Naval War College, Newport, Rhode Island, 1996) p.318.

[2] William J. Clinton, A National Security Strategy for a New Century (Washington, D.C.: The White House, 1999), p 1.

[3] Susan D. Lanier-Graham, The Ecology of War, (Walker Publishing Company, Inc., New York) p.3.

[4] Ibid, p.4.

[5] Ibid, p.5.

[6] Ibid, p. 15.

[7] Ibid. p.19.

[8] U.S. Army War College, "The United States Strategic Bombing Survey", Course 2 Text "War, National Policy & Strategy", Volume IV, (Carlisle Barracks, PA), pp 172-173.

[9] Personal observations of photographs in the headquarters of the United States Army Kwajalein Atoll.

[10] Significant amounts of equipment from vehicles, planes, etc. were literally dumped into the sea at points, as was ammunition and supplies. Other supplies such as petroleum products were piled in ravines and left to the mercy of the weather. Authors personal knowledge from many areas in the Pacific.

[11] Michael N. Schmitt, Green War: An Assessment of the Environmental Law of International Armed Conflict (Naval War College, Newport, RI. 1996), p. 12.

[12] Ibid. p. 11.

[13] Ibid. p. 10-11.

[14] Lanier-Graham, p. 32.

[15] Schmitt, p. 11.

[16] John R. Luce, "Environmental Impacts of the Gulf War Oil Spill and Oil Well Fires", (Unpublished research paper submitted to fulfill requirements for an MSCE in Environmental Engineering, University of Alaska, Anchorage, 1991), p. 4.

[17] Richard M. Whitaker, Operational Law Handbook (Judge Advocate General's School, Charlottesville, VA, 1998), p 5-4.

[18] Stephen Dycus, National Defense and the Environment, (University Press of New England, Hanover and London) p. 141.

[19] Ibid.

[20] Protocol I Additional to the Geneva Convention; available from <www.iric.org.eng>; Internet; accessed 14 December 1999.

[21] Waldo Brooks <waldo.brooks@js.pentagon.mil>, "RE: Research Paper." Electronic mails message to LTC John R. Luce <john.luce@carlisle.army.mil>. 15 Dec 99.

[22] Ibid.

[23] As referenced in Waldo Brooks <waldo.brooks@js.pentagon.mil>, "RE: Research Paper." Electronic mails message to LTC John R. Luce <john.luce@carlisle.army.mil>. 15 Dec 99.

[24] The other two paragraphs are:

2. The special protection against attack provided by paragraph 1 shall cease:

(a) for a dam or a dyke only if it is used for other than its normal function and in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(b) For a nuclear electrical generating station only if it provides electric power in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(c) For other military objectives located at or in the vicinity of these works or installations only if they are used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.

3. In all cases, the civilian population and individual civilians shall remain entitled to all the protection accorded them by international law, including the protection of the precautionary measures provided for in Article 57. If the protection Ceases and any of the works, installations or military objectives mentioned in paragraph 1 is attacked, all practical precautions shall be taken to avoid the release of the dangerous forces.

4. It is prohibited to make any of the works, installations or military objectives mentioned in paragraph 1 the object of reprisals

5. The Parties to the conflict shall endeavor to avoid locating any military objectives in the vicinity of the works or installations mentioned in paragraph 1. Nevertheless, installations erected for the sole purpose of defending the protected works or installations from attack are permissible and shall not themselves be made the object of attack, provided that they are not used in hostilities except for defensive actions necessary to respond to attacks against the protected works or installations and that their armament is limited to weapons capable only of repelling hostile action against the protected works or installations.

6. The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces.

7. In order to facilitate the identification of the objects protected by this article, the Parties to the conflict may mark them with a special sign consisting of a group of three bright orange circles placed on the same axis, as specified in Article 16 of Annex I to this Protocol [Article 17 of Amended Annex]. The absence of such marking in no way relieves any Party to the conflict of its obligations under this Article.

Copied from: Protocol I Additional to the Geneva Convention; available from <www.iric.org.eng>; Internet; accessed 14 December 1999.

[25] William J. Clinton, A National Security Strategy for a New Century (Washington, D.C.: The White House, December 1999), p. 3, 13-14.

[26] John P. White, Environmental Security, DODD4715.1, (Washington D.C.: Office of Secretary of Defense), p.2.

[27] There are many places where these documents are found, but perhaps the most succinct description and cataloging of them are found in a DRAFT Army and Marine Corps Field Manual (FM20-400/MCRP 4-11B) in Appendix A.

[28] Dr. Dieter Fleck, "Protection of the Environment During Armed Conflict and Other Military Operations: The Way Ahead", Protection of the Environment During Armed conflict, US Naval War College International Law Studies VOL 69, (Naval War College, Newport, Rhode Island, 1996) p.533.

[29] Whitaker 5 p. 2.

[30]This term was used by Mr. William M Arkin as quoted in a panel discussion on "The environmental Threat of Military Operations", Protection of the Environment During Armed conflict, US Naval War College International Law Studies VOL 69, (Naval War College, Newport, Rhode Island, 1996) p.178.

[31] There are several sources used which provided this data. The predominant sources were LtCol Schmitt (p.49-51), FM 20-400 (App A), JP 4-04(Draft) p VI-7, and Dycus (p 141).

[32] Whitaker p 5-2

[33] Joint Pub 4-04 Joint Doctrine for Civil Engineering Support (DRAFT) Chapter VI p.7.

[34] FM 20-400 p. A-13.

[35] Whitaker , 5-8

[36] Whitaker 5-8.

[37] Dycus, p. 142. Schmitt, p. 51.

[38] Dycus, p. 142-143.

[39] Whitaker, workshop desk reference CPT 7 p 2.

[40] Schmitt, p. 45.

[41] Whitaker p7-23.

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