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The Embedded Hook: Fishing as a Piece of the Security Puzzle

by

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B.A., University of Alberta, 1994

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Abstract

Fish have long provided an important source of food, trade and revenue. Overfishing thus poses a considerable threat to the national, international, and global levels of security. The threats posed by overfishing are multilevel and must be examined together. The first half of this thesis will examine the concept of security and explain the three levels of security. The second half will examine the relationship between threats to fish stocks and each level of security.

First, overfishing can have a direct impact on the national security of a state, threatening its economic health and viability by negatively affecting aspects such as employment, taxes, exports and foreign fishing license revenues. Furthermore, overfishing threatens to act as a catalyst for conflict between different social classes within the borders of a state and between states as people and countries come into conflict over the remaining resource.

Second, international security is threatened as overfishing endangers the development and maintenance of international fishing regimes through state non-compliance, re-flagging of vessels and unilateral actions.

Third, overfishing threatens global security, particularly human security (which is composed of food, economic and cultural security) and environmental security. Fish constitute a vital source of food for millions of people around the world. Furthermore, many people rely on fishing, either directly or indirectly, for employment and income. Moreover, fishing has been such an integral aspect to some societies that its loss could lead to the decline of many cultural groups. Finally, overfishing also threatens environmental security by destroying biodiversity and decreasing the chances that the remaining fish stocks will survive.
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Special thanks to Stuart Boon for his assistance and to Jane Heather, my drama professor in that course I took as a time filler, for teaching me that life without risk is stagnant and suffocating. To risk oneself is to live. To do otherwise, is to merely exist.
I dedicate my thesis and my life to my wife, Louise, and my son, Ethan, the two most important people on the face of the earth.
I believe that the cod fishery, the herring fishery, the pilchard fishery, the mackerel fishery and probably all the great sea-fisheries are inexhaustible, that is to say that nothing we can do seriously affects the numbers of fish.

- Thomas Huxley, British scientist, late 1800s (as quoted in McGoodwin, 1990: 66).
Chapter One
Introduction

Fishing has not always been seen as an issue of security, despite its long history and its importance to humanity. In the past, fish and fish products played a key role in the lives of people and governments around the world as a valuable source of food, a significant item of trade, and an abundant source of revenue. For the most part, fish seemed to be an inexhaustible resource, as people did not have the technology, capability, or desire to harvest fish in large enough quantities to have a severe impact on fish populations (McGoodwin, 1995: 12). Subsequently, when threats to the viability of this resource were detected, communities and cultures developed complex ways of limiting the potential impact of their fishing habits by changing their practices through such means as restricting access to only certain peoples, limiting the type and size of nets and gear that could be used, and allowing fishing only during certain times of the year. These methods worked successfully in most cases and were enough to ensure the continued sustainability of any given fishery (Kurien, 1993: 5).

However, as the world population grew, particularly in Europe, so too did the use of technology. The Industrial Revolution in Europe, for example, sparked increased mechanization and efficiency in many industries, including fishing. Larger vessels and nets were developed to allow people to fish further out into the vast seas and bring back much larger catches. The end of the Second World War also brought about an explosion in technology available to the fishing industry. Boats were developed that were able to spend months fishing the oceans and freezing or even canning the fish products on board, returning to port only when
the finished product was ready to be off-loaded. Soon the technology was such that it could satisfy the hunger of the world’s ever-increasing population and growing demand for fish and fish products (Joyner and De Cola, 1993: 101; McGoodwin, 1995: 12). The exploitation of this resource continued unabated until the late 1960s and early 1970s when the Atlantic herring and the Peruvian anchovy stocks collapsed. Almost overnight, the world took notice (Fairlie, Hagler, and O’Riordan, 1995: 52). Such exploitation continues today and only a handful of countries in the world recognize that a problem has developed in the world’s fish stocks. We need only look back into history to understand the fishing crisis. John Cabot, the famous English explorer, remarked in his diary that upon reaching the waters around what is now Newfoundland, he found the ocean “swarming with fish, which can be taken not only with a net, but in baskets let down with a stone” (Canada, 1991: 8-4). Since 1992, Newfoundlanders have been barred from fishing these same waters, even for recreational purposes (Krauthammer, 1992: 21).

Overfishing has a direct impact on the various social, political, economic, and environmental aspects of security at a national, international, and global level of analysis. The problems of overfishing are not specific to one level of security; they must be examined in relation to all three levels. Declining fish stocks pose a direct threat to security at each level.

Chapter Two will examine the ambiguity of the concept of security and the difficulties associated with its definition. Having grappled with the basic concept, three levels of security analysis - national, international, and global security - will be discussed in greater detail to give the reader an idea of the foundations on which the thesis rests. National security, as
traditionally defined, is far too militaristic a concept. It must be expanded to include other sorts of threats. International security is the process by which states attempt to maintain their security through cooperation with other states. Finally, global security is an emerging concept which attempts to unite the various security levels. Individual security, or the security of person, is merged with the security of the state and the international system in the hopes of coming to a holistic, workable security paradigm.

Chapter Three will examine how overfishing threatens the level of national security. First, overfishing has a direct impact on national security, threatening the economic health and viability of the state by negatively affecting such aspects as employment, taxes, exports and foreign fishing license revenues. Furthermore, conflicts between citizens within the state and conflicts with other states threaten to erupt as overfishing exacerbates (or triggers) problems between people.

Fishing and international security will be discussed in Chapter Four. International security is threatened as overfishing endangers the development and maintenance of international fishing regimes through state non-compliance, re-flagging of vessels and unilateral state actions. Participation in these regimes indicates states are conceding that sometimes to achieve security, they need to cooperate with other states.

Chapter Five will examine how overfishing threatens global security in three areas. First, overfishing threatens human or individual security, in areas such as food, economics and culture. Fish constitute a vital source of food for millions of people around the world. Furthermore, these fish also provide important employment and income opportunities to many people. Overfishing threatens this income source. Finally, fishing has become such
an integral aspect of some societies. Its loss will threaten the cultural security of many people.

The second area of global security threatened by overfishing is environmental security, or the security of the planet. Overfishing threatens the environment by destroying biodiversity and decreasing the chances that the remaining fish stocks will survive. The loss of any species has unknown implications for both humanity and nature in the future.

The concluding chapter will highlight the important findings of the thesis and discuss possible future avenues for research.

Three ideas will emerge from this discussion. First, there has been much debate over broadening the concept to security to include more diverse and "realistic" threats (Ayoob, 1995: 9; Stern, 1992: 82; Tickner, 1994: 44). With this examination, I will make a case for a balanced broadening of the concept by providing examples of where overfishing threatens not only to produce conflicts; but also to hinder economies, cooperative regimes, the environment and individual people's lives. Second, security threats are often both multi-dimensional and complex, requiring the merging of national, international and global security with an array of economic, political, anthropological, biological, developmental and environmental considerations. Finally, overfishing is an immediate environmental threat that needs to be examined more closely and with greater urgency than in the past. Unlike environmental threats such as global warming and the erosion of the ozone layer, which will play themselves out over decades, the threat of overfishing is immediate, with problems emerging today (Kurien, 1995; Jandl, 1995; Vatikiotis and Schwarz, 1995). This is not to underestimate or belittle the importance of
other environmental problems whose effects are potentially more devastating, but overfishing is an immediate crisis.

The research methodology for this thesis is limited to a review of English language material from books, academic journals, government documents and Internet sources. The literature examined comes primarily from the disciplines of Political Science, International Studies, Anthropology, Gender Studies, and Environmental Studies. Others interested in pursuing this research further should consider consulting foreign language sources and materials from other disciplines.

Moreover, there are generally four types of fisheries: subsistent; commercial; recreational; and aquacultural. This thesis will focus on the marine or oceanic subsistent and commercial fisheries. This is not to say that the other fisheries are not important, but just the opposite: as both recreational fishing and aquaculture have grown rapidly in size and importance to many fishing regions in the world. Due to constraints of time and space, the recreational and aquacultural fisheries will not be discussed here.

Conclusion:

In choosing to focus my research on what I believe is a crisis in the fishing industry, I found it closely connected with the field of International Studies. The first seminar course I attended as a graduate student was entitled, "The State of the Discipline," in which we discussed the meaning of the term International Studies. What exactly does it mean and how does it differ from International Relations? After much discussion, four ideas arose which I found particularly helpful in defining the discipline. First, International Studies concerns itself with issues that affect more than just a
small group of individuals or one particular state: they affect many people in many states in all parts of the globe. Second, unlike International Relations (which tends to focus primarily on international political and economic interactions between states), International Studies is interdisciplinary. The problems are viewed and solutions derived from a wide variety of disciplines and perspectives: Economics, Political Science, Geography, Gender Studies, Environmental Studies, Development Studies, History, and so on. Third, International Studies views the world in its holistic nature. Using the image of Helga Haftendorn’s security puzzle (Haftendorn, 1991), International Studies attempts to look at each individual piece, small groups of pieces and the complete puzzle itself, finding merit and understanding at each level. Finally, because the field of International Studies is interdisciplinary, it has a holistic outlook. A relatively young product of the twentieth century, it remains fluid and evolving. Unlike other disciplines sometimes resistant to change, International Studies is said to be continually changing its theoretical boundaries.

The topic I have chosen complies with these four ideas. First, the fishing crisis is an international problem that affects individuals around the globe. The study of this crisis also requires an interdisciplinary approach, combining economic, political, anthropological, biological, developmental, and environmental considerations. If one truly wants to understand the problem and to develop workable solutions, many variables must be discussed. My examination of fishing looks at the crisis in an holistic manner, considering global (which includes the individual), international, and national (or state) levels. Finally, by studying fishing as a security
issue, I am demonstrating that International Studies is an evolving discipline.
Chapter Two

Security

The concept of security binds together individuals, states, and the international system so closely that it demands to treated in its holistic perspective.

- Barry Buzan (1983: 245)

To begin, if overfishing threatens the various levels of security, these levels must be put into proper context. The concept of security is a frequently discussed, often disagreed upon term in International Studies theory. The following chapter is an attempt to give the concept a foundation upon which the remainder of this thesis will rest. Leading off is an examination of the security concept and a look at the problems associated with its definition. Next, each of the security paradigms - national, international, and global - will be examined and defined. The intent of the chapter is threefold: to define the relevant theories; to show that threats to security are much more than simply military threats; and to argue that threats are multidimensional in the sense that they have an impact on more than one level of security. The thesis will then move to examine the threats posed by overfishing to each of these three levels.

What is Security?

Before an examination of the various levels of security analysis can take place, the concept of security must be defined. There has been a great deal of debate over the use of the term security in the academic literature. As Peter Mangold (1991: 30) notes, security has been one of the great obsessions of the twentieth century but has attracted far more attention than rigorous academic scrutiny. The concept has remained impoverished by
the reluctance of scholars to subject it to scrutiny and sustained examination (Workman, 1993: 1). Arnold Wolfers (1965) discussed the ambiguity of national security back in 1952 and little has changed in the years since then. The continuing ambiguity and lack of cohesiveness around the concept is due in part to the failure on the part of academics to adequately define their terms. According to Paul Samson (1994: 2), "[s]ecurity is a notoriously vague concept, which, when on the rare occasion it is clearly defined, is usually taken to mean different things to different people." The phenomenon of security is hardly precise (Al-Mashat, 1985: 6).

A review of the literature reveals that most definitions of security include three factors: threats, vulnerabilities and capabilities. For an object to be insecure, it must be threatened by something. A generic definition of security is offered by Marvin Soroos (1994: 318), who states that security implies freedom or protection from serious threats to human well-being. John E. Mroz defines security as "the relative freedom from harmful threats" (as quoted in Buzan, 1983: 217). Similarly, Arnold Wolfers (1968: 44) notes that security measures the absence of threats to acquired values and Richard Ullman (1983: 133) comments that, "in some sense ... security is defined and valorized by the threats which challenge it."

Vulnerability is the second factor in the security equation. It is the vulnerability or area of weakness that heightens any sense of insecurity. Soroos (1994: 321) again offers a simple, straight-forward definition of a vulnerability: it is present "when a society [or person or state] lacks the means to limit the harmful impacts of threatening events or actions that occur." To him, insecurity is the combination of a threat and a vulnerability (Soroos, 1995: 21). Unlike Ullman, who believes that threats define security, Mohammed Ayoob (1995: 9) believes that vulnerabilities
are the defining aspect of security, remarking that security and insecurity are defined in direct relationship to vulnerabilities.

The third and final aspect to the security equation is the element of capability or capacity (Buzan, 1983: 73). Johan Galtung (1982: 77) defines capabilities as the ability to reduce outside destructive potential. Nelson (1991: 338-339) writes that security is a dynamic ratio of threats versus capacities: “Security may be enhanced by trying to lower threats from others or by enlarging one’s own capacities or both.”

A visual image of the three security factors - threats, vulnerabilities, and capabilities - is described by Galtung. He explores the combination of threats, vulnerabilities and capabilities and how they interact with each other, likening this interaction to a medieval joust. An armoured knight carrying a lance faces another knight of similar makeup. They stand opposing each other, poised to strike. Each knight is a threat, intent on doing damage to the other. The knight’s own armour represents his vulnerabilities. The poorer the quality of the armour, the greater his potential weaknesses. His lance, along with his experience in the joust and swordsmanship, represents his capability or capacity to neutralize, damage, or destroy his opponent (Galtung, 1982: 76-77). Although overtly militaristic and masculine in nature, the scenario offers a good picture of the relationship between threats, vulnerabilities and capabilities found in the security formula.

After examining the components to the security equation - threats, vulnerabilities, and capabilities - two important considerations must be made when examining and defining security: what is being made secure and who is making it secure? Before defining security, you must know which level of security you intend to analyze, thus Buzan’s query, “The
security of what?" (Buzan, 1983: 13). According to Buzan (1983: 13), to be successful, the concept of security needs a referent object, "for without an answer to the question, 'The security of what?', the idea makes little sense." The need for a referent object leads thus to Buzan's second query: "The security by whom?" Who is best able to deal with a threat? Only on rare occasions can a particular threat be dealt with on any one particular level (by a state or an international organization for example). In most cases, causes and solutions are found in a combination of levels. Given the nature of many security issues, this multi-layer, multi-level approach seems the most practical. As Buzan points out, the security of a referent object or level cannot be achieved in isolation from the others (Buzan, 1983: 13-14). This argument furthers my own argument that the fishing crisis is relevant not to one specific level, but to multiple levels of security and it must be dealt with accordingly. Ultimately, any final definition of security will be heavily biased toward those threats which remain paramount in the eyes of the individual who is defining the term.

Trying to offer a precise definition of security is, on one hand, commendable; on the other hand, it can also pose some serious problems. Paramount among these problems is the idea that if a definition is so precise, it is only workable in very specific cases and not broad enough to be used in a variety of settings. As Kenneth Dyson (1980: 206) writes, "The danger with formal definitions is that in the pursuit of 'correctness,' they can imply that it is possible to give a 'trouble free' description of a phenomenon; in other words, that the phenomenon in question has definite boundaries." He adds that definitions "are important, not least in order that the marginal is not confused with the central, but they need to be sufficiently loose or 'open-textured' to incorporate some complexity,
ambiguity and a chance to be filled out in a different way.” The goal of any definition, therefore, is to be as concrete as possible, all the while, paradoxically, remaining fluid and moveable to remain workable. Scholars such as Wolfers have understood that any search for a concrete and precise definition of say, national security, is a questionable endeavour (Latham, 1995: 9). Buzan has similarly argued that security cannot be defined in any general sense, but only in relation to specific cases and that any definitiveness around the concept would undermine the utility derived from its symbolic nature (Buzan, 1983: 6, 9). According to Soroos, security is a concept which remains intrinsically abstract and subject to a variety of interpretations (Soroos, 1994: 320). Others such as Patricia Stein Wrightson and Alice Ackermann (1994: 55) go as far as to argue that just of use of the term security assumes that voluntary, humane and peaceful international relations are not at hand and never will be, resulting in the inevitable desire to protect the state’s geographic, political, economic and social integrity within the menacing political system. Regardless of definition, security remains an ambiguous concept. Maybe this discussion is healthy for the field of International Studies, for as long as this vigorous debate continues, it ensures the vitality of the term security.

National Security:

The first level of analysis to be defined is national security, one of the most important levels because the study of international affairs still focuses heavily on the nation state. However, there has been a great deal of debate over the last few decades regarding the need to redefine the concept of security to better reflect the current political realities. Many argue that the traditional definition of security remains far too focused on the
militaristic, competitive nature of international relations, while dismissing those ideas or theories which cannot fit into this mold of conflict and aggression (Brown, 1977: 6; Tickner, 1994: 43-44; UNDP, 1995: 229; Workman, 1993: 9). The concept of security needs to be broadened to include a range of practical and pragmatic views. But regardless of the level of analysis chosen, some observers, such as Lawrence T. Woods, argue that the contemporary emphasis on the need to redefine security is misplaced, that International Studies scholars are merely rediscovering a conception of security lost in the horror of the Second World War. As Woods (1996: 4) comments, "[W]hat we are dealing with ... is a case of old wine in new bottles." Paul Samson (1995: 4), on the other hand, feels that security does not need to be redefined, but, in fact, a new way of examining emerging threats needs to be developed so as to avoid problems in dealing with these threats.

Despite differences of opinion, most agree that the traditional definition of national security is composed of four characteristics: threats are military; threats are external; threats are to the core values of the state; and territorial sovereignty of the state is paramount (Haftendorn, 1991: 4; Brown, 1977: 6; Wolfers, 1965: 44; Lodgaard, 1992: 11). Each of these factors can be broadened or modified in order to better represent the current political climate and will be discussed at length in the coming pages. First, threats to national security are no longer primarily military in nature. For years, most academics limited themselves to equating security with the absence of a military threat, overthrow or attack (Haftendorn, 1991: 4). A state was secure or made secure when no military threats were evident from outside its borders. This can be seen in Walter Lippmann’s classic definition of national security: “A nation is
secure to the extent to which it is not in danger of having to sacrifice core values, if it wishes to avoid war, and is able, if challenged, to maintain them by victory in such a war’ (as quoted in Wolfers, 1965: 44). National security, then, was based on the assumption that the stronger a state was militarily, the greater level of security it enjoyed. Two flaws are apparent in this argument. First, military power does not equal security and is all too often confused with it (Nelson, 1991: 338-339). Furthermore, Lippman and others fail to recognize the problem of the “security dilemma” inherent in this argument. The flaw in this approach is that the security ideals of different states tend to be mutually exclusive, the result being that one state’s security comes to be defined as another’s insecurity (Puchala, 1971: 76). The result is a security dilemma - an ever escalating desire for new and more powerful weapons in order to match the military might of the opponent in order to become secure. Dr. Suess skilfully illustrates this concept in The Butter Battle Book (1984). A state can unfortunately never be truly secure as there will always be another state attempting to increase its own military power *vis-à-vis* the state. Similarly, as Albert Einstein once wrote, “We cannot simultaneously prevent and prepare for war” (as quoted in Bandarage, 1994: 29).

Thus the need to move beyond this military focus of security is clear. As Jessica Tuchman Mathews (1989), Michael Renner (1989), and Caroline Thomas (1987, 1992) have pointed out, various environmental, economic and social issues are posing ever larger threats to the security of the state and the societies found within it. Focusing on different aspects of modern life relevant to security, some academics believe that threats to the state and societies go beyond simply organized interstate military violence (Latham, 1995: 10). Jim MacNeill, Pieter Winsemius, and Taizo Yakushiji (1991:
71) argue that if national security is defined as the ability to counter threats to the livelihood and territorial integrity and the survival of nation states, it would encompass non-military threats such as environmental pollution, the collapse of life and food support systems, and the invasion of deserts and oceans. As Michael Renner (1989: 29-30) commented in arguing for the inclusion of environmental threats at the national security level, "Environmental degradation imperils nations' most fundamental aspect of security by undermining the natural support systems on which all of human activity depends". This view has extended to the level of the United Nations Security Council, which in January 1992 declared that "[n]on military sources of instability in the economic, social, humanitarian, and ecological fields have become threats to peace and security" (Sands, 1993: 367). Therefore, there appears to be more to national security than purely military concerns.

Second, the traditional definition of national security is based on the assumption that the threats to a state's security come from other states (Brown, 1977: 6). This external approach, with a state attempting to secure itself from the military aggression of its neighbours and enemies outside its borders, does not offer a complete picture. The problem with this argument becomes clear when one moves beyond countries in the West and looks to countries in the developing world. Mohammed Ayoob (1995: 7), in his book, The Third World Security Predicament, argues that most developing states are less concerned about threats from external sources than they are with threats arising within the borders of their own states. Unlike Western countries, developing countries often have to contend with societies divided along ethnic, cultural and linguistic lines and the resulting lack of 'stateness.' Furthermore, many of the governments in the
developing world lack the approval of their peoples and, therefore, often lack any real legitimacy. In some cases, the basic nature of the state is contested (Thomas, 1987: 13). Richard Ullman (1983: 133) notes that this view of threats presupposes that external threats are somehow more dangerous than threats from within. J. Ann Tickner (1994: 44) argues that insecurity is prevalent in developed states as well. She comments that national security definitions should be extended to include issues such as unemployment, safe working conditions and threats of violence against women.

Third, traditional national security focuses on the ability to protect the core values of the state. Lippman maintains that the state is secure as long as its "core values" are not threatened (Wolfers 1965: 44). Morton Berkowitz and P.G. Bock (1968: 40) underline this point in their own definition of national security, defining it as the ability of a nation to protect its internal values from external threat. Unfortunately, as Ayoob (1995: 9) has pointed out in the case of many developing countries, the core values of the governing class - self-preservation - tend to become the core values of the state, often at extreme variance with the core values of large segments of the population. States then, particularly developing countries, have become more interested in maintaining power and privilege rather than protecting the interests of all members of society.

Finally, traditional national security deems the territorial sovereignty of the state as paramount. The objective of national security is to ensure that the sovereignty of the state is maintained (Lodgaard, 1992: 11). Peter Haas and Jan Sundgren (1993: 402) point out that the international political system has been grounded on the legal principle of national sovereignty since the Treaty of Westphalia in 1648. Territorial sovereignty continues
to play a vital role in the definition of national security; however, the sovereignty of the state is becoming increasingly diluted (Lodgaard 1992: 11). As Mathews (1989: 174) argues, "[p]ut bluntly, our accepted definition of national sovereignty as coinciding with national borders is obsolete." Borders are becoming increasingly permeable. With increased economic interdependence, extensive communication networks, transportation, immigration, and environmental issues, national sovereignty needs to be re-examined because in these areas and others there are clear challenges to the definition of national security (Independent Commission on Disarmament and Security Issues, 1982: 5; Mische, 1989: 390-391).

National security can be broadened to reflect greater diversity; however, arguments against this broadening are numerous. Critics such as Stephen Walt begin by arguing that, in redefining security and broadening it to include issues other than military/strategic ones, the concept of security is losing clarity. Walt believes that the attempt by some scholars to incorporate non-military phenomena into the security concept suggests an excessive expansion of security studies: "Defining the field in this way would destroy its intellectual coherence and make it more difficult to devise solutions to any of these problems" (as quoted in Stern, 1992: 82). Ayoob makes a similar argument. In a critique of the broadened definitions offered by Thomas and Mathews, Ayoob (1995: 9) politely points out that when these expanded definitions "are not applied with adequate discrimination, they run the risk of rendering the term [security] too elastic, thereby detracting seriously from its utility as an analytical tool". David Deudney (1991: 24) contends that if everything that causes a decline in human well-being is labeled a security threat, the term will lose any analytical usefulness. However, it can be argued that the concept of
national security has been artificially narrowed, creating a false sense of reality (Viotti and Kauppi, 1993: 62; Samson, 1995: 3). Furthermore, many of these critics have little problem including economic security under the guise of national security. Walt legitimized the inclusion of economics into national security by referring to the links between military spending and economic performance, strategic resources, and the impact of the military industrial complex (Stern, 1992: 82). It took a "neorealist revolution" to include economic factors in definitions of national security (Stoett, 1994: 127-128), maybe the current attempt to redefine national security is another sort of revolution.

**International Security:**

Scholars such as Haftendorn (1991: 8-9), argue that international security is the next level above national security in most analytical models. Whereas national security focuses on how the state defends, protects, and secures itself, international security focuses on how states interact with each other in pursuit of their own security. It is particularly concerned with how states attempt to maintain some form of order among or between themselves. To better understand international security, one must first understand that international security is not a universal security structure, but is instead composed of many smaller security paradigms or models. It must involve at least two states, but usually involves many more (Haftendorn, 1991: 5-9).

There are three important aspects to international security. First, the security of one state is closely linked to the security of other states in a particular security paradigm. As Haftendorn says, states involved in cooperating over an issue area are interdependent in their security affairs.
By interdependence, she means that the states can be affected positively or negatively by the actions or inactions of states with whom they are involved in a particular security relationship (Haftendorn, 1991: 9).

Second, international security is based on mutual interest in survival through some form of partial or temporary cooperation, with the understanding that the state, as a political unit, cannot act alone to address certain problems which beset it (Thomas, 1992: 117). All states involved in co-operating in a particular security issue area see this cooperation as important to either their existence or to the pursuance of some security interest. Cooperation can take many forms including alliances, treaties, and non-aggression pacts, where states work together to ensure a desired result.

International security, as traditionally defined, much like national security, also tends to focus almost exclusively on military based threats, issues and concerns. Two reasons lie behind this focus. First, international security evolved to its present form under the threat of nuclear war (Haftendorn, 1991: 9). Given this fact, the dominant focus on military concerns is understandable. It has only been within the last ten years that the threat of nuclear war has diminished to the point where it is no longer seen as being as serious a threat as it once was. Nonetheless, it remains a threat. Moreover, classic realist ontology, which has dominated international security for the last fifty years, implies that achieving survival for the state is of primary importance given the anarchic nature of the international system (Stern, 1992: 79). This anarchy has dictated the focus on state security. However, this "anarchic nature" need not be synonymous with the chaos and disorder which normally characterize anarchy. At this
level of analysis, anarchy can be viewed simply as the absence of a world government (Buzan, 1983: 94).

As a result of these two factors - the fear of nuclear Armageddon and the anarchic nature of the system - the weight of military security issues has often over-shadowed the need to focus on other issue areas that may threaten international security (Brown, 1977: 5). The voices and, subsequently, the concerns of women, children, ecologists and others on the “fringes” of the system are usually dismissed as idealist, marginal, or radical (Tickner, 1994: 43-44). The result is a debate about the relevance of international security that remains highly exclusive and with little fruitful discussion over the merits of looking at other issues.

This focus on the protection and survival of the state also leads to a problem regarding the adherence to the notion of territorial sovereignty. J. G. Starke (1989: 157) observes that “territorial [sovereignty] is exercised by the state over persons and property to the exclusion of other states.” The international political system has been grounded on the legal principle of national sovereignty since the Treaty of Westphalia in 1648 and the emergence of the modern national state (Haas and Sundgren, 1993: 402). Adhering strictly to this principle, states have been slow to recognize the changing nature of sovereignty. As some authors have commented, our accepted definition of sovereignty is “obsolete” (Mathews, 1989: 174); it is no longer a “workable concept” (Renner, 1989: 39). The reason for these views involves the rise of environmental, economic and social issues in the international security realm that ignore these barriers. The traditional notion of national sovereignty does not account for these issues. Thus, a broader definition of territorial sovereignty is needed. This point will be discussed further in the section dealing with global security.
Global Security:

Over the past twenty years, there has been a move to not only broaden the definition of security, but also to develop a definition that considers the world from a new vantage point. Unlike national and international security, which focus on specific units, global security attempts to bridge the gaps between the other levels of security. Global security combines three principles. First, state and individual security are brought together both receiving equal treatment (Brown, 1977: 41). Second, cooperation, rather than conflict, is seen as a main goal (Commission on Global Governance, 1995: 79). Finally, sustainable development and environmental concerns underlie any discussion on the subject (Hjort af Örnas and Krokors, 1992: 1).

To fully understand global security, one must also understand six characteristics. First, global security takes a holistic approach to security, focusing not on the individual pieces of the security puzzle, but on the complete puzzle itself. It recognizes the existence and importance of each security puzzle piece, but feels the puzzle as a whole is more important. The concept of individual security will be discussed later in this chapter; however, a brief explanation is warranted at this point. Individual security focuses on the needs of the individual human being and the threats which endanger human survival. Global security merges the interests of the state, the international system, individuals, cultural groups, and the environment. By doing so, global security acknowledges the close relationship among the various levels of security and sees them as being inseparable. For practitioners of global security, neither national security nor individual security can be sensibly considered in isolation (Brown, 1977: 41). Taking aim at the traditional levels of analysis, Buzan (1983: 245) argues that this
blending cannot be avoided as "the concept of security binds together individuals, states, and the international system so closely that it demands to be treated in its holistic perspective." The traditional levels of analysis (national, international, and individual) outlined by Kenneth Waltz (1954) are not being utilized in this thesis because of my belief that the global security concept allows for a more holistic approach. The levels of analysis model leaves out such issues as the environment, culture and gender, thereby providing an incomplete picture.

Second, global security also recognizes the interdependent nature of security threats. An ever growing number of scholars have urged a broadening of the concept in order to deal with a greater multi-threat spectrum (Stern, 1992: 82). The idea that threats such as poverty, environmental degradation, population migration, debt, military conflict, and disarmament can be separated is flawed as the causes and solutions to these problems are often related (Thomas, 1995: 151). Reductionists (those who like to break concepts down and examine each piece separately) would argue that each problem must be dealt with on its own and that to attempt to do more would be to take on too much, confusing all of the issues (Viotti and Kauppi, 1993: 592). Students of global security, on the other hand, see the threats as being multi-dimensional. Dealing with each separately will give one an incomplete picture of what is really happening and any solutions offered would come up short.

Third, threats to global security are viewed differently from threats to national security. Barriers dividing high politics and low politics are removed, thereby, allowing a freer, more open examination of threats outside of military priorities. High politics is a term used to distinguish military security issues from the less important socioeconomic and
environmental issues of low politics (Viotti and Kauppi, 1993: 582). Realists and other traditional military thinkers often claim that the potential for war is a high political issue which demands greater energy and focus than something that does not immediately threaten the physical security of the state. However, there is a realization that threats to the state from ideological or national enemies are being supplanted to some degree by threats that cause the disruption of the biosphere (Porter, 1990: 333). Global security then sees an intrinsic, inherent value in non-military security issues. As Stoett (1994: 139) comments in relation to environmental threats, "[s]urely, there are other reasons to pursue conservation irrespective of whether or not resource depletion may lead to actual warfare."

Fourth, unlike traditional definitions of national security which tend to focus almost exclusively on military threats, the global security paradigm rejects a single-issue focus. Military threats are not on the whole discarded. Indeed, global security assumes that in the future contending blocs and nations will continue to threaten each other. Consequently, the abolishment of military threats is deemed unrealistic (MacNeill, Winsemius, Yakushiji, 1991: 72). Military threats remain integral aspects of global security, as do political, economic, environmental, and social issues. This said, global security contends that military security is irrelevant if the earth is no longer able to support human development (Mische, 1989: 391).

Fifth, global security, much like international security, looks to cooperation as the basis for solving problems and reducing threats rather than through competition and conflict. Traditional national security is concerned with maximizing state power vis-à-vis neighbouring states. It is
assumed that security can only be achieved at the expense of the security in these neighbouring states: one state’s security becoming another's insecurity and the result is the aforementioned security dilemma. Global security recognizes and accepts this flawed result and turns to cooperation as a solution (Commission on Global Governance, 1995: 79). The philosophy here is that the security does not have to be a zero-sum game, where one state wins while another loses. The security of the state can be increased if the security of all states is increased, thereby resulting in a positive-sum game. As Asoka Bandarage (1994: 37) points out, “[a] true sense of individual and collective security can be achieved only with a global shift from psychological and social structures of domination [and competition] to those of partnerships.”

Finally, global security also observes that the state is no longer solely able to deal with problems single-handedly. According to Patricia Mische (1989: 411), the nation state is too big to deal with some problems, just right for others, and too small for those which are global in size and complexity. In many cases, the state is incapable of dealing single-handedly with the problems. As Johan Jørgen Holst (1989: 128), the former Minister of Defense for Norway, has commented, “[i]n rather a fundamental way, our common future will depend on the ability of the world community to draw appropriate consequences from the increasing incapacity of [states] to deal with basic issues affecting the future of mankind.”

Having looked at these six features of global security approach, three elements which provide the global security foundation will now be examined: common security, human security and environmental security.
Common Security:

Prominent in the report by the United Nations-sponsored Independent Commission on Disarmament and Security Issues, common security helped shed a new light on the problem of global security. The Commission and its blueprint emerged during a long period of deterrence clouded by the threat of nuclear war and heightened tensions between East and West. In an age of nuclear weapons, security, it was argued, could only be achieved through cooperation based on the principles of equality, justice, and reciprocity (Commission on Global Governance, 1995: 79). It must be something shared between states rather than contested. We must move away from thinking about the security of our own state only. The search for global security must migrate away from confrontational alliances and bilateral agreements. We must think in terms of “security with” as opposed to “security against” (Dewitt, 1994: 5).

In 1982, the Palme Commission came forward with six principles important to common security (Independent Commission, 1982: 8-10):

- All nations have a legitimate right to security.
- Military force is not a legitimate instrument for resolving disputes between nations.
- Restraint is necessary in expressions of national policy.
- Security cannot be attained through military superiority.
- Reduction and qualitative limitations of armaments are necessary.
- ‘Linkages’ between arms negotiations and political events should be avoided.

It is imperative to create an irreversible process toward true security where all nations cooperate for their common survival (Independent
Common security reduces the military emphasis of security and turns the focus to environmental and human concerns.

**Human or Individual Security:**

Human security is the second element in the global security paradigm. It stresses the need to focus on the security of the individual in addition to the security of the state and the international system. Global security recognizes that for far too long, security has been defined on the basis of the state-centric model of international affairs. This has been done at the expense of the concerns of individual human beings. The disproportionate weight given to sovereignty and the military capability of the state far outweighed the safety or security of individual citizens. Global security accepts that neither can be focused upon to the exclusion of the other. The security of the state cannot be separated from the security of the individual, for without the security of its people, the state will never be truly secure (Commission on Global Governance, 1995: 81). The problem that often arose in the discussion of state security was that the security of the state was often at direct odds with the security of the citizens (Stern, 1992: 81). One need only examine the history of any state security agency, for example. Global security, by including human security, attempts to address this imbalance.

According to the 1994 United Nations Human Development Report (1994: 229), human security is composed of four characteristics. First, human security is a universal concern, meaning it has relevancy in every part of the globe and with every individual. Second, the components of human security are interdependent. Threats cannot be isolated from one other; nor are they confined within the borders of a single state. Famine,
environmental degradation, terrorism, and disease affect everyone, everywhere in some way. Third, human security relies on cooperation and prevention rather than conflict and intervention to solve problems that arise. Prevention and a proactive approach cost considerably less economically, socially and politically. Finally, human security is people-centered, concerning itself with how people live their lives and the threats posed against these lives.

This report goes on to outline seven types of security which are necessary if one is to obtain human security: economic, food, health, environmental, personal, community (or cultural), and political security. Four of these -- economic, food, environmental, and cultural -- are particularly important to the discussion of fishing and global security. Economic security looks at the individual and attempts to affirm that they are receiving a least an elementary income and that their employment needs are also met. Food security looks at the individual’s physical and financial ability to access basic foodstuffs, including an acceptable, equitable distribution of these foodstuffs. Environmental security outlines the need for a healthy environment, free from degradation and depletion. Finally, cultural security sees membership in an ethnic, religious, family, or community group as providing an integral aspect of identity and value maintenance (UNDP, 1994: 230-234).

**Environmental Security:**

The third element of global security is environmental security. This perspective stresses that we consider the security of the environment as well as the security of individuals and the state. Concerns about pollution, the ozone layer, de-forestation and other aspects of the environment have
grown in importance over the last few decades to such an extent that academics and politicians have been forced to deal with these topics. What was merely a theory some thirty years ago has become a reality with serious environmental degradation and depletion problems emerging around the world. Environmental security attempts to deal with these problems and the rising global environmental crisis. As conflicts between humanity and nature, between human development and the surrounding environment, continue to grow at a rapid pace, there has been a need to examine the role that the environment plays in the security of people and the planet. The environment will likely play a key role in the future development of international relations as well (Hjort af Örnas and Krokors, 1992: 1).

Like other security issue areas, environmental security is confounded by a multitude of definitions. As yet, an established definition does not exist (Schrijver, 1989: 115). Most observers agree that environmental security is a concept borne out of the war that the human species continues to wage against the planetary ecosystem in the name of development and progress. At this point, however, there is a divergence of opinion between the traditional and the alternative approaches. The traditional environmental security approach, best represented by the work of Thomas Homer-Dixon (1991, 1993, 1994), defines environmental security narrowly, linking environmental degradation, population pressures and access to natural resources closely with conflict. This definition focuses on ways in which resource scarcities and environmental degradation cause, contribute to, or are a consequence of conflict (Smith, 1993: 2; Molvær, 1992: 57; Holst, 1989: 123). The alternative approach, instead of confining the analysis to the link between environmental degradation and
conflict, attempts to access ecological developments that seriously threaten the welfare of individuals and communities around the globe, regardless of whether they contribute to conflict or not (Soroos, 1995: 21).

I have chosen to follow the alternative approach here. Although the link between environmental degradation and conflict is an important one, the more traditional definition of environmental security fails to move beyond the military factor. Much like the traditional definition of national security, the focus continues to be on the military and its relationship to environmental issues. There seems to be a belief that to make environmental security relevant, we must link it to national security and the military. An example of this can be seen in a recent article about Homer-Dixon and the rise of environmental issues in the American political sphere, in which he comments that "[by] linking environmental issues to national security, we make it harder for conservatives to dismiss them as soft, liberal concerns" (Fraser, 1996: A9). This cannot and should not be the only reason to pursue the environment as a security issue. Having said this, the link between the environment and conflict is a reality. The threats posed by declining fish stocks and resulting conflicts will be discussed in the chapter on national security and fishing.

Environmental security thus includes human-induced environmental degradation as a threat to the security of the individual, the state, and the planet. Two advantages emerge from this conception. First, environmental security is more than an extension of military security and the protection of the state; it treats environmental threats as more than military threats. Environmental degradation threatens in a fundamental way the natural support systems on which all human activity depends (Renner, 1989: 29-30). If the planet is not secure, then humanity cannot be
secure. The second advantage surrounds the recognition that environmental security cannot and should not be isolated into any one security level. The environment is a trans-boundary phenomenon (Boulding, 1991: 78) which does not respect state borders (Mische, 1989: 389).

Conclusion:

The intent of this chapter was threefold. First, I have sought to define security in its national, international, and global contexts. Second, security demands to be viewed as more than simply military threats to the state. It encompasses a broad spectrum including economic, human, and environmental threats. Finally, threats to security are often multi-dimensional in that they cannot be dealt with solely at any one level. To do so would be to only deal with part of the problem. My working definition will be as follows: Security means the attainment of basic needs of the individual, states, international systems, cultures, and the environment. These needs are best understood using the global security model. The discussion will now move to examine the how overfishing threatens the security of each level.
Chapter Three

Fishing and National Security

Having discussed the theoretical aspects of the levels of security, this examination now moves on to look at the threats posed to each level by overfishing. The implications for national security will be discussed first. Overfishing directly threatens the national security of a state both economically and militarily. First, fishing plays a key role in the economic policies and practices of many states through the revenues generated from direct and indirect employment, taxes, export earnings and the sale of foreign fishing licenses. If, because of overfishing, the state loses its access to the fisheries, the economic benefits the state enjoys from fishing will be adversely affected. The state will also lose money in the form of compensation payments it must make to its citizens. Furthermore, as the loss of fish influences various social, economic and environmental factors, intranational or domestic conflicts will increasingly develop within the borders of the state. Specifically, as the small-scale fishers become increasingly marginalized from the resource on which they depend, domestic unrest will grow, often leading to conflict (McGoodwin, 1995: 13). Similarly, disagreements and open conflict will take place between states as they disagree over the resource. Conflicts between states have taken place throughout history over scarce natural resources. Fishing is a good example of how perceptions about rights to a natural resource can impact the relations between states and clearly shows that disagreements over declining or contested resources can and often do lead to direct and indirect interstate conflict (Homer-Dixon, 1993: 209; Holst, 1989: 125).
feel it is important to limit my discussion to threats posed to the economic and military elements of national security for two reasons. First, fishing does not affect every aspect of a broadened definition of national security. Second, some of the issues can be better dealt with at a different level of analysis. They will, therefore, be raised in discussions of either international or global security.

**Fishing and Economics:**

The loss of fish and the fishing industry has the very real potential to threaten the economic health and prosperity of a state or a given region within a state. Fishing is an important industry in many states and its decline threatens the security of a state by increasing unemployment and compensation programs while at the same time lowering revenues available from taxes, exports and the sale of fishing rights to foreign governments.

The initial impact of a decline or a loss of a fishery is manifest in the loss of jobs within the fishing industry. If the fish supply is so low that it cannot sustain fishers economically, then those fishers have little choice but to remove themselves from that particular fishery. The job loss would not be limited to those involved directly as fishers; others would be negatively affected as well. Lennox Hinds (1992: 396) estimates that there are up to sixteen people involved in support roles such as fish processors, net menders, and ship builders. In examples worldwide, when a fishery has dried up and closed, so too have the jobs that relied on that industry. Peter Weber (1995) estimates that 100,000 people around the world have lost their jobs in recent years due to overfishing. He adds that one hundred times this number could be put out of work in the coming decades unless the decline in the fisheries is halted. One should also reflect on the impact
that the loss of fish has on spouses and family members of fishers, especially where they are directly involved in the fishery. Regardless of their direct or indirect involvement, their security would be threatened. A gender analysis would be helpful as it would highlight some of the various problems experienced by men, women and children in fishing communities as they face the collapse of the fish stocks.¹

Spain, ranked as having the sixth largest fishing fleet in the world, is a case study of how the loss of fisheries affects the employment levels of a state economy (Benseler, 1993a). Over the past few decades this fleet has experienced severe problems as once bountiful fishing grounds utilized by Spanish fishers for centuries have closed due to stock collapse and overfishing. Already reeling from the closure of the cod fishery in the North Atlantic in 1992, the curtailing of the Spanish turbot catch in 1995 off the Canadian coast led to a further direct loss of as many as 9,000 jobs in the Galician region of Spain, where over 400,000 people rely on the fishing industry as the way of livelihood (Robinson, 1995: 36). Later that same year, these job losses were exacerbated by the banishment of European Union (EU, formerly the European Community) boats from Moroccan waters. The Moroccans claimed that their stocks were rapidly declining because of Spanish and Portuguese overfishing. As a result, 650 Spanish and Portuguese trawlers, of which 600 were Spanish, were suddenly out of work, leaving 28,800 people suddenly out of work (“Morocco and the EU,” 1995: 47). If one includes the other fishing grounds Spain has been expelled from for serious charges of overfishing, including the waters off Morocco, Namibia, Angola, and the United

¹ For a more detailed analysis of the role of women and children in a fishing community, see Gulati (1984), Nadel-Klein and Davis (1988), and Porter (1993).
Kingdom (Jandl, 1995), the result means that many Spanish fishers are out of work. Combining all their losses, Spanish fishers have been crippled by the recent loss of fish which, ironically, is due, in part, to their own fishing practices and policies.

Unlike Spain, which is dominated by the commercial fishing industry, developing countries will be more severely affected with job losses. Twenty times more fishers are employed in the artisanal fishery (small-scale fishers who fish using small boats and limited resources) which dominates the South. Moreover, these countries have more localized fisheries that are more susceptible to disruption. The loss of the fish has engulfed these local fisheries much quicker than modern high seas fishing fleets. Modern fleets have the advantage of mobility allowing them to turn to other fisheries when the situation demands it (Krauthammer, 1994: 21).

Given the job losses that occur when a fishery declines, the state is impacted directly in three important ways. First, the state no longer receives the tax revenue that once may have flowed in from the fishery. The taxes generated, both direct and indirect paid to government by these same fishers, fish processors, canners, among others can amount to a great deal of much needed revenue. In the United States, the recent closure of various fisheries in New England, long a bastion of commercial and sport fisheries, resulted in 14,000 lost jobs and $350 million in lost revenue (Cacas, 1994). In Alaska, a full one-sixth of the workforce is involved in fishing, bringing in forty-six per cent of the total American catch with a value of over $1 billion (Dogan, 1995). This is a vital source of revenue for the people and governments of Alaska and the USA. In northern Chile, fishing accounts for forty percent of the income generated, 18,000 jobs and $400 million worth of exports (Weber, 1995). Any negative impact on the
Chilean fishery would have dramatic consequences on the taxes and revenue available to the government. Iceland, an economy founded on fishing, offers a further example, where fully seventeen per cent of the national income is derived from fishing and where over twelve per cent of the population rely directly on fishing for their income (Weber, 1995).

The second impact of these job losses is the compensation or support that the state must provide to their citizens. In some states, usually those with greater economic means, the state has stepped in and paid compensation to those displaced by the fishery's closure, either through some form of unemployment payment program or through a fisheries program. When the Government of Canada, for example, closed the cod fishery off the coast of Newfoundland, it attempted to offset the loss with a social assistance package. Totaling over $1 billion, the package was announced so as to tide the 40,000 fishers over until the moratorium on cod was lifted. Originally mandated for two years, the compensation was extended for another four, costing the government even more money (Wacker, 1994: 14). However, these programs are not universal. Unlike Canada, which was able to muster the needed funds to support a compensation package, poorer countries have little or nothing to offer their displaced fishers. As Gail Robinson (1995: 37) explains, there will not be any "fishermen's dole" payments for the fishers whose livelihoods disappear in developing countries. As states around the world continue to wrestle with budget and debt problems, the impact of these job losses could potentially have severe impacts on governments. As sources of revenue dry up, some states will have little ability to support those forced out of work.
States also receive substantial revenues from the export of fish and fish products to countries all over the world. In the case of the developing world, fish exports have overtaken and surpassed coffee, tea, and rubber as a source of revenue, providing them with over $13 billion every year. In 1993, Thailand emerged as the world’s largest exporter of fish, overtaking the United States. These exports contributed over $3.4 billion to the Thai economy. The developed world, too, receives large amounts of money from fisheries exports (Robinson, 1995: 36; Loftas, 1996: 30).

Finally, the sale of fishing rights and licenses can be an economic windfall for state governments. These rights and licenses are sold under the guidelines of United Nations Convention on the Law of the Sea (UNCLOS), which declares that all species with the 200 miles Exclusive Fisheries Jurisdiction (EFJ) deemed to be under utilized, or not fished to capacity, must be made available to other fishing nations intent on their capture (Copes, 1989: 8). Rich and poor governments alike are in desperate need of new sources of income. Governments, particularly those in the developing world succumb easily to the economic potential of their offshore fisheries, often sacrificing their own citizens welfare in order to obtain the money brought in by foreign governments (Kurien, 1995: 118).

Examples of the sale of licenses to foreign states are numerous. For a number of years, India has been pursuing a policy of inviting foreign fishing fleets into its waters to harvest a variety of species (particularly shrimp), exported to Japanese, American, and other Western markets. Under the policy, India hopes to increase its export earnings to $1.3 billion by licensing foreign fleets in its waters, up from the current $800 million they are receiving (Bernier and Sundar, 1996; Victor, 1995). India has estimated that it can significantly increase the catches off its coasts and its
revenue from licenses without harming the environment. As a result, there are two fishing areas in the world where fish catches are increasing, both in the waters around India (Kurien, 1995: 118). However, unlike the enthusiasm shown by the government, most Indian fishers and fishery experts around the world have raised the alarm that the Indian government may be pursuing this source of revenue blindly with little regard for the actual fish stocks and its domestic fishing industry. François Poulin, president of the Canadian Council of Professional Fish Harvesters, has commented that "'[a]s Canadians we know how devastating overfishing can be and how quickly stocks can disappear .... The Indian government should proceed with extreme caution. The benefits from increased export earnings will only be short lived while the human costs of stock collapse are unimaginable in the Indian context'" (Bemier and Sundar, 1996). Ultimately, India is following a policy of short-term gain at the expense of a long-term, sustainable, revenue generating fishery.

Another good example of this can be seen in Angola, a coastal African state with rich, highly productive fishing grounds. The country has begun to eye its fish stocks as an important source of income, having just come recently emerged from three decades of civil war between 1961 and 1992 (APIC, 1995). The government has now released a promotional publication boasting the registration of sixteen new foreign fishing investments in the country (Morris, 1996). Although Angola has a long way to go in reaching the fishing capacity of the waters off its coast, the concern is that in Angola's rush for foreign investment and currency, it will destroy the long-term sustainability of its fisheries and hamper the efforts of the Angolan people to return to the waters they once fished. The pre-war fish catch off Angola's coast averaged about 600,000 tonnes, but
dropped to a mere 35,000 tonnes at the height of the war. It has since climbed to around 122,000 tonnes, a fraction of its former levels (Morris, 1996). Of note in this statistic is the unreported catches made by Soviet fishing vessels allowed in by the Marxist government that was ruling Angola during the civil war. The size and impact of these catches they made is not known. Most of Angolan fishers are artisanal and would suffer irreparably from this potential sell-off (Morris, 1996). Again, the loss or decline of a fish stock could potentially put an end to a valuable source of revenue.

**Fishing and Conflict:**

Conflicts over resources such as iron, oil, and land are not new; they have been taking place for thousands of years. The Trojan War, for example, may have been fought, in part, over tin (Romm, 1993: 21). Fish are part of a new development in the notion of resource conflicts. The national security of the state will be threatened as domestic and international conflicts develop between peoples and states over declining fish stocks. Domestic conflicts will develop as social, economic and environmental factors come into play over a particular fish stock. Internationally, conflicts emerge as states vie for access to the remaining scarce fish resources.

To explore the relationship between conflict and the environment, we turn to Johan Jørgen Holst, the former Minister of Defense for Norway. Holst (1989: 123) outlines the three roles environmental problems can play and their relationship to conflict and war. First, environmental degradation and depletion can become the *cause* of armed conflict and struggle. Conflict may result as a direct confrontation between
people or states over a scarce resource. Second, environmental depletion and degradation may act as a *contributing* factor to conflict by exacerbating pre-existing conflicts or stresses. Many academics believe that environmental degradation raises the level of stress within national and international society, increasing the likelihood of conflict (Homer-Dixon, 1993: 187). And while environmental factors might not trigger outright confrontation, they may help to destabilize societies in an already unstable situation (Myers, 1993: 20). Finally, environmental degradation can be a consequence or result of conflict. Although an important consideration, it will not be discussed in this examination.

Two important points must be addressed at this time. First, the relationship between environmental degradation and serious social ramifications is complex; simple, linear relationships are rare (Wallensteen, 1992: 42). For example, it is possible that environmental conflicts can emerge in other forms, masking the environmental problems that lead to the conflict in the first place. The conflict may appear as a religious, moral, or ethnic when it roots are primarily environmental in nature (Molvær, 1992: 57). In the last forty-five years, many of disputes that have taken place in the developing world were brought about, in part, by the religious and racial hatreds which may well have been aggravated by environmental destruction, poverty and economic decline. These factors also reinforce the potential for conflict in the future (MacNeill, et als., 1991: 71). Given this, we should not expect mathematical precision in assessing the relationship between environmental factors and conflict.

Furthermore, as Homer-Dixon notes, the environmental threshold for the collapse of the world’s fisheries has not been reached; the environmental critical mass has not yet been attained (Homer-Dixon, 1993:
As a result, conflict over fish has not reached a level of high intensity and continuous conflict. However, as the scarcities worsen, so too will the conflicts.

Deudney, a critic of environmental security, has claimed that a new type of conflict has emerged due to environmental stress is to ignore the resource conflicts of the past (Deudney, 1990: 470-471). Gwynne Dyer (1991: 25) argues that there are endless causes of conflict and environmental aspects are merely extensions of classic disputes over the allocation of scarce resources. He goes further to say that it is important that environmentalists not be seduced into giving priority to this military agenda. Useful though his points are, Dyer fails to recognize that conflicts over scarce resources in the past often involved non-renewable resources, or resources with a finite supply, such as oil, coal, and other fossil fuels. Conflicts over renewable resources, or those with a supposed infinite supply such as trees, water and fish, are increasing in number and by degrees of severity. Ironically, it is these supposedly renewable resources which most environmental analysts believe are endangered, not the non-renewable fossil fuels (Stoett, 1994: 132). I recognize that by broadening the concept of security there is a risk that it will be used to validate certain approaches over others (i.e. the pursuance of military strategies under the guise of environmental threats).

**Fishing and Domestic Conflict:**

Domestic conflicts will increase as the loss of fish influences various social, economic and environmental factors. Numerous types of fisheries conflicts may develop within a state, but there are few that will threaten a state’s internal security as seriously as a conflict which develops between
various classes of fishers. Those that have pitted traditional, small scale-fishers against the relatively new, large-scale, politically-powerful commercial interests have the potential to seriously harm institutions within the state. In most, if not all, fishing states around the world, a socio-economic foundation has already been laid that has set the stage for serious conflict (McGoodwin, 1995: 12).

Since the onset of the Industrial Revolution in the late eighteenth century, fishing has undergone a shift from community-based, small-scale fisheries to global, highly competitive, commercial juggernauts. The process, begun first in what is now the Western world, shifted to the developing world in the late 1950s and now has a firm grip on the fishing polices of these nations (McGoodwin, 1995: 12). These large-scale interests are threatening the livelihood of the artisinal fisher (Loftas, 1996: 31) as the small-scale fishers are becoming, alienated economically, nutritionally and politically from the resource on which they depend (Kocherry and Achary, 1989: 32). In almost every corner of the globe, the intrusion into local fishing territory by large, technologically advanced, highly efficient trawlers has reduced the amount of fish available to the small-scale fisher. The perception, and in most cases the reality is that their source of food and money is threatened, not to mention their livelihood and culture (Loftas, 1996: 31). Furthermore, as these fishers turn to their respective governments for political assistance and protection, they watch these same governments try to reduce their fisher's supposedly inefficient, labour-intensive, and costly industry, and encourage the very type of fishing that will destroy their livelihood. Many governments are pursuing these policies at the expense of a significant number of their
citizens. Frustration amongst these groups of fishers is growing and tensions are on the rise (Kurien, 1995: 115-118).

An example of this clash between two socio-economic classes can be seen in the Indian province of Kerala, where frequent conflicts have broken out between artisinal and commercial fishing crews. The Kerala fishery had been a sustainable fishery for thousands of years, dominated primarily by caste-specific, artisinal fishers. These fishers, who are governed by the hereditary of social classes in Hinduism which restricts the occupations of members and their association with members of different castes, adhered strictly to local policies and guidelines set up to control the fishery (Kurien, 1995: 5). Over the last decades, the Indian government, with assistance from foreign governments, has attempted to increase the efficiency of the industry through technological advances. As a result, the industry has been flooded with fishers and improved technology, causing the once sustainable fishery off the Kerala coast to begin to decline rapidly, as a result of severe overfishing (Kocherry and Achary, 1989: 33). Conflicts between the two interests have broken out, often resulting in damaged equipment and casualties (Kurien, 1995: 5). Recently, a UN-sponsored advisory group predicted that these clashes will only increase in number and severity as the increased technology further reduces the abundance of fish available to the traditional, artisinal fisher (Kocherry and Achary, 1989: 32).

Similar examples of conflicts between artisinal and commercial fishers have taken place in countries around the world. Mexico has been experiencing problems as their artisinal fishers are being forced out of the shrimp industry by larger commercial interests (McGoodwin, 1987).
Similarly, Yemen experienced problems when clashes erupted between small and large scale fishers in the Red Sea (Thomson, 1980).

State concern is two-fold. First, domestic conflicts within the state disrupt order, consume time and resources, and lead to general social disharmony. Second, as Ayoob (1995: 7) notes, domestic conflict can sometimes spill over to bordering states, resulting in larger conflicts. Moreover, to placate the divided internal parties, states tend to attribute responsibility for environmental decline to other states (MacNeill, Winsemius, and Yakushiji, 1991: 57). The potential for this spillover is remote; however, as tensions between peoples within states rise, the potential that this frustration will be turned against foreign fleets is very real.

**Fishing and External Conflict:**

In only rare cases does one state's EFJ not come into contact with that of another state. This has led to considerable consternation and problems. Often territories are disputed as the waters are claimed by more than one state. Examples of these territorial claims include disagreements by Canada and the United States over how to define the ocean boundaries along the west coast of North America (Copes, 1989: 10-11) and territorial disagreements between East and the South-East Asian countries (Snyder, 1997; Vatikiotis and Schwarz, 1995: 16). Given the nature of these overlapping claims, conflicts and casualties inevitably result.

An example of this is the Gulf of Thailand. The Gulf is surrounded on almost all sides by Thailand, Vietnam, and Cambodia. All claim territory within the Gulf and their respective claims often overlap with the claims of their neighbours. On 31 May 1995, Vietnam and Thailand
clashed over disputed fisheries jurisdiction. Six Thai fishing vessels were attacked by Vietnamese coastal patrol boats for fishing in waters claimed by Vietnam. At least one Thai naval vessel entered the fray and in the end one Thai and two Vietnamese sailors were killed. Five of the six Thai vessels were confiscated by Vietnam along with their crews of sixty-two men (Vatikiotis and Schwarz, 1995: 16). A similar incident involving the same countries occurred eighteen months later (Zimmermann, 1996: 59-60). The Thai military has been on record as saying that hostilities between the two states could break out over just such an issue. This was reflected in a Thai Defense Ministry policy paper which cited overlapping economic zones as a possible cause of conflict between countries in the region. As a Western military attaché commented, "[t]he incident was not unlike others of this kind. They happen more frequently than people think" (Vatikiotis and Schwarz, 1995: 16).

Nor are these types of incidents confined to that area of the world. In 1995, Estonia and Latvia came close to conflict over contested fishing grounds in the Gulf of Riga ("Estonia PM Hopes," 1995: 1). In the fall of 1994, British and French warships clashed with Spanish trawlers in the Bay of Biscay (Koring and Cox, 1995: A1). Bulgaria and Turkey sparred in 1992 over contested territory in the Black Sea. Bulgaria, in a letter of protest to the Turkish government, clearly stated that they would protect Bulgarian waters including the use of weapons if necessary (Nikolaev, 1992: 1).

Often disputes such as these are more than just fishing disputes. As McGoodwin (1995: 16) points out, fishers and fishing disputes may become pawns in broader conflicts. An example of this can be found in the problems that have surrounded the Spratly Islands in the South China Sea.
Six countries - China, Taiwan, Vietnam, the Philippines, Brunei and Malaysia - have laid claim to the ownership or partial ownership of this small island group. The surrounding waters are rich in fish, and the seabed is estimated to contain large quantities of oil. More importantly, however, the islands are situated in important militarily strategic location (Snyder, 1996-97: 142). Numerous disputes have broken out over these islands in the past, some involving fishing, but all of them based on the ownership question.

Conflicts between states do not always have to involve the use of violence. Canada and the United States have been fighting over contested fishing grounds and salmon stocks for a good part of this century (Roos, 1991: 42; Twitchell, 1989: 409-412). In 1994, Canada, in an effort to protect the endangered salmon stocks on the Pacific coast, implemented tolls for American fishers passing through Canadian waters under the Coastal Fisheries Protection Act (Canada, 199b). In 1996, after negotiations failed yet again, Canada, in an effort to force the Americans back to the Pacific Salmon Treaty table, implemented the hail-in and gear storage requirements for foreign fishers entering Canadian waters (Canada, 1996). In June 1997, Canada seized four American trawlers for not checking in with Canadians authorities before passing through Canadian waters (“Fishers apply pressure with ads,” 1997: A13). Threats and rhetoric have escalated on both sides of the border, with good relations between the two nations being hampered.

Conflicts can also take place over actual fish stocks. The clearest and most recent involved a disagreement between Canada and Spain over the turbot stocks off Canada’s east coast. To grasp the nature of this conflict, one must first understand the dynamics of the continental shelf off Canada’s...
east coast. Most of the shelf, and thus the fishing grounds, are covered by Canada’s EFJ, except for two small pieces entitled the "Nose" and the "Tail" of the Grand Banks. These two relatively small areas are fish spawning habitat for cod, turbot and other groundfish. Turbot is a straddling stock which ignores Canada’s EFJ and spends time outside Canada’s fishing zone.

In the early 1990s, cod stocks off Canada’s Atlantic coast collapsed, sending the Spanish and Canadian fisheries into a tailspin. Both countries looked to other types of fish in order to replace the lost cod. Fishing increased dramatically to the point where restricted quotas had to be implemented in order to curb overfishing. Spain and the EU rejected the quotas they had been given, claiming that they could not feed their families on the set quotas. They continued to fish for turbot (Jandl, 1995). Canada openly condemned the actions of the EU and warned that further action would be taken against overfishing by the Europeans, particularly the Spanish. In early March 1995, Canada pursued, fired on and arrested a Spanish fishing vessel, the Estai. Tensions and rhetoric between the two nations quickly escalated with both sides mobilizing several warships to patrol the area and watch each other’s activities ("Firepower for a war of words,” 1995: A15). The political and military posturing continued for a number of weeks until, through diplomatic channels, a solution was reached. Although direct armed confrontation between the Canadian and Spanish navies did not occur, the potential for serious conflict was there.

Conclusion:

Overfishing has a direct impact on the national security of the state economically and militarily. Disappearing stocks play a direct role in the
decline of the economic potential of many states. Declining stocks affect the revenues available to the state and increase the amount of compensation that must be paid out to citizens. Furthermore, overfishing is increasing the chance of conflict between citizens of states in some countries as they fight to have access to the remaining resource. Interstate conflicts will also increase as states disagree on fishing jurisdiction and the actual fish stocks. In some situations, these low-political conflicts will lead to serious military engagements between states. The focus now moves to a discussion of how states attempt to cooperate in managing these fisheries through international regimes.
Chapter Four

Fishing and International Security

“What is common to the greatest number gets the least amount of care.”
- Aristotle from his work Politics (as quoted in Ophuls, 1977: 145)

Fishing on the high seas by its very nature is an international issue. Fish do not respect the international political boundaries set by governments, instead relying on their biological instincts which have evolved over thousands of generations. As a result, fish continually cross into the fishing jurisdictions of various states and conflicts over the ownership and access to these fish are inevitable. Rather than pursuing national security on their own, states recognize the need to pursue international security with the assistance of others. States pursue this policy of cooperation through international fishing regimes to manage access and ownership. However, overfishing threatens the development and maintenance of these international fishing regimes through increased state noncompliance with regime restrictions, unilateral action of member states and even conflicts between states. The North Atlantic Fisheries Organization (NAFO) will be examined as a case of a regime threatened by overfishing. Fishing regimes such as NAFO are meant to foster cooperation and further international security by managing access and regulating quotas.

Fishing and International Regimes:

International fishing regimes have evolved from a desire of states to have effective regulatory bodies managing access to fish stocks and limiting the quantity of fish taken from the oceans. They can provide a forum for
discussion, assist in the exchange of scientific information, and provide a formula for equitable distribution among member states (Peterson, 1993: 299). States involved in a regime believe that they have more to gain by maintaining the regime than proceeding on their own (FAO, 1992).

Overfishing problems were first recognized in the 1880s. By the turn of the century, these problems began to force co-operative action among the fishing states involved (Peterson, 1993: 250). States realized that fishing was inherently an international issue given the trans-boundary nature of fish and, therefore, would have to be dealt with through state-to-state regulation of the fisheries and the fishers working in the industry. Efforts were made to deal with the problems and various bodies were formed, including the International Whaling Commission (IWC) and the International Commission for the Northwest Atlantic Fisheries (ICNAF) (Peterson, 1993: 250).

However, following the Second World War, two factors contributed to the realization that increased levels of cooperation were needed in order to deal with the newly emerging fisheries management problems. First, the war had brought about dramatic advancements in technology, significantly affecting the fishing industry. Larger, more sophisticated boats could now circumnavigate the globe searching out fish stocks to harvest. The gear available to fishers changed also, allowing them to catch much greater quantities of fish. Second, these technological advances encouraged more players to enter into the fishing industry and gain access to the various fisheries around the world. Some states realized that they were now no longer constrained to fishing along their immediate coasts; but they could traverse the globe in search of fish. This resulted in the creation of distant-water fishing fleets. Countries such as Japan, the USA, the former Soviet
Union, South Korea and Taiwan emerged as large players on the fishing stage. These states, now called Distant Water Fishing Nations (DWFNs), began to have a large impact on the fish stocks off the coasts of other states and on the stocks of the high seas. The actions of these DWFNs, along with the new technology available, encouraged coastal states, particularly in newly-decolonized Asia and Africa, to nurture their own fishing industries further (Joyner and De Cola, 1993: 102).

Furthermore, with fishing fleets now traversing the globe, other states, particularly those in the developing world, began to feel that they were losing a valuable economic resource off their coasts to these DWFNs. The future economic potential of their infant fishing industries was being threatened. As a result, states all over the world began to extend their jurisdiction to 200 miles (Joyner and De Cola, 1993: 101-102). Eventually by 1977, almost all coastal states subscribed to the idea of a 200-mile extended sea jurisdiction which came to be known as the Exclusive Economic Zone (EEZ) (Peterson, 1993: 250). Under international law, states do not have absolute sovereignty over this adjacent sea zone; however, they do have limited sovereignty for the purpose of exploring, exploiting, conserving and managing the resources found within (Starke, 1989: 269). This extension of jurisdiction transformed the political boundaries of the high seas, as up to ninety percent of all the sea harvest now came under the jurisdiction of the coastal states (Munro, 1992: 289).

Consequently, as a result of the technological advances in fishing, the increased number of fishing states around the world, and the extension of fisheries jurisdiction, there was a substantial increase in the total global marine fish catch. The catch rose from a mere 20 million tonnes in 1950 to just over 65 million by the end of 1969 and to around 89 million in 1989.
States now had to cooperate with each other more than ever to manage the various fisheries around the world. Completed in 1982, the United Nations Law of the Sea Convention (UNCLOS) was negotiated to deal with almost of oceanic issues, including the management of living resources. Regional fishery regimes were set up under the guidance of UNCLOS and were mandated to regulate access and manage fish harvest levels (Peterson, 1993: 250).

Problems have arisen with these fishing management regimes in the last twenty years which could threaten to render them irrelevant, thus disabling any international cooperation over the management of the world's fisheries and further compounding an already tenuous fishing industry. Fish found on the high seas are a difficult resource to manage because of their trans-boundary nature and the belief that they are part of a global commons to be shared equally by everyone (Munro, 1992: 290; Peterson and Teal, 1986: 119).

The Case of NAFO:

An example of a regime threatened by overfishing is NAFO. Fishing has been a way of life and an industry in the Northwest Atlantic for centuries. With technological developments and their dramatic effects on the fishing industry, many of the states involved with fishing in this region believed that there needed to be some form of cooperative management. The ICNAF was set up in 1950 and ran until 1979 (Peterson, 1993: 253). By the late 1970s, with the global extensions of EEZs to 200-miles, ICNAF member states deemed that the regime was not longer able to effectively manage the fisheries in the region and it was disbanded (Emery, 1990: 3-4; Joyner and De Cola, 1993: 103). In 1979, NAFO emerged. It now
includes members from Bulgaria, Canada, Cuba, Denmark, Estonia, the EU (Spain and Portugal in particular), Iceland, Japan, Latvia, Norway, Poland, Romania, and Russia (Claude, 1992: 9). The regime manages the high seas just beyond Canada’s EFJ, including three important areas called the “Nose,” the “Tail” and the “Flemish Cap” of the Grand Banks. Although these three areas only represent a fraction of total shelf within Canada’s jurisdiction, they are considered vital nursery areas for fish, including northern cod and turbot (Singh, Kumar, and Kumar, 1992: 561).

In the early 1990s, two problems emerged to threaten the NAFO regime. First, overfishing of northern cod by member states, primarily Spain, was disrupting the workings of the regime (Emery, 1992: 6-7; Munro, 1992: 306). Second, overfishing of the same stock by non-member states was exacerbating the already present internal problems within NAFO (Emery, 1990: 7; Joyner and De Cola, 1993:103).

Overfishing by member states seriously jeopardized the effectiveness of the regime to adequately manage the stock and, likewise, seriously compromised its existence. For the first few years, NAFO did not have problems with overfishing and cod quotas as the harvests were abundant. But with Spanish and Portuguese admittance to the EU in 1986, that situation changed. Overnight, the EU saw a doubling of its fishers and a seventy-five percent overall increase in its fishing capacity (Emery, 1992: 6). Suddenly the quotas that had been given to the EU were no longer sufficient. The EU began to set their own quotas which far exceeded those allotted to them by NAFO (Munro, 1992: 306). For the period from 1986 to 1993, the EU exceeded the NAFO allotted quotas by almost 600,000 tonnes. Moreover, these self-granted quotas were constantly surpassed even by the EU’s own admission, with the official and the actual rates
differing by up to sixty percent (Wells, 1995: A17). This excessive overfishing caused open disagreements between member states.

Overfishing by non-member states further compromised the ability of NAFO to manage the stocks. States, such as the USA, South Korea and Panama, continued to harvest fish in the NAFO regulated sea area, circumventing NAFO’s conservation and enforcement measures (Joyner and De Cola, 1993: 103). In a five year period, non-members took more than 165,000 tonnes of fish from off the coast of Canada, fish to which they were not entitled (Emery, 1990: 7). Until 1986 and its entrance into the EU, Spain was also a fishing non-member as it had refused to join NAFO, on the grounds that it was being excluded from the Canadian EFJ (Munro, 1992: 305). Some member states, not happy with their quota allotments, have been known to re-register or reflag their boats to circumvent NAFO restrictions. Reflagging is a policy by which fishing vessels from one state are registered in another country and given a new name. They fly the flag of the new non-member state. Spain, still not satisfied with their EU quotas, was a willing supporter of this policy and re-flagged many of its fishing vessels in Panama (Canada, 1992: 1). These vessels were then able to fish in NAFO territory, but did not have to comply with NAFO restrictions or regulations.

As a result of these factors, the regime was threatened. First, with so much fishing taking place in excess of the set quotas, fish stock levels were severely depleted (FAO, 1992). The quotas were set at levels which, were supposed to ensure a sustainable fishery. But by 1992, a complete moratorium on cod fishing was imposed across most of NAFO territory and in Canada’s EFJ (Emery, 1995: 13). Although overfishing beyond the
200-mile EFJ by member states was not the only factor involved in the management of the fishery, it did play a prominent role.

Second, the benefits of the conservation measures were diluted and the viability of the fisheries management arrangements were threatened. If the quotas set by NAFO were ignored, the conservation measures were in vain, as the resulting closure of the fishery indicates. Furthermore, the loss of fish resulted in diminished quotas and further encouraged states to ignore or circumvent the restrictions placed on their activities by NAFO (FAO, 1992). States either exceeded their quotas or turned to non-member states to fill their holds.

Third, Canada took unilateral action that further raised tensions with the EU causing disruptions in the regime. In 1994, the Canadian Parliament passed legislation that allowed the federal government to take enforcement action in order to protect straddling stocks outside Canada’s EFJ (Canada, 1995: 2). The impact of this policy was not felt directly in relation to the northern cod fishery until three years later when an almost identical situation took place over turbot. The Act was a serious source of contention between the two states (Emery, 1995: 13-15).

Conclusion:

If the raison d’être of this regime is to act as a forum for interstate cooperation around fishing, the actions of most member states do not encourage continuation and success. This problem is not unique to NAFO and is being experienced by other fishing regimes including the IWC, the Pacific Salmon Commission (Twitchell, 1989) and the EU’s Common Fisheries Policy (Churchill, 19993: 56). The effectiveness of these regimes will ultimately depend on the extent to which states are willing to cede
sovereignty in the establishment, monitoring, and enforcement of international standards (Sands, 1993: 388). However, as Peter Weber (1993: 43) has noted, "[c]ountries cooperate on gathering and sharing information, but they have been reluctant to enter into binding international agreements." Given that cooperation is pursued through these regimes, the loss or even decline of these regimes would not further international security as states would no longer have a forum mandated to discuss these issues. As the recent conflicts between states over fish have shown, these regimes are important in heading off serious conflicts. Without them, fish wars would be far more common. In the following chapter, the thesis will examine how overfishing threatens the global security, in particular the security of individual people, cultures and the environment.
Chapter Five
Fishing and Global Security

The discussion now moves to the connection between fishing and global security. Fishing has a large impact on various aspects of human security. My working definition of international security has highlighted the need to move beyond a conception of national security to a conception of common security. This perspective is a central element to global security and will not be revisited. However, fishing has a large impact on aspects to human security. Of particular concern is the impact that fishing has on food, economic and cultural security. The loss of fish presents a clear and direct threat to individuals around the globe and their ability to feed themselves. Furthermore, fishing is critical in employing millions of people and providing them with an vital income, an income they may not be able to obtain elsewhere. Moreover, fishing constitutes an integral aspect of a fisher’s culture and identity. Finally, environmental security is similarly compromised by the loss of fish. Biodiversity, quality and quantity all suffer greatly as a result of current fishing practices and trends.

**Fishing and Food Security:**

[What] has taken 6,000 years to do on land -- industrialization of the natural resources -- has been accomplished in only three or four decades on the sea. It all comes down to greed, simple greed.
- Mike Hagler, Greenpeace, 1994 (as quoted in Wacker, 1994: 14)

Food security includes both the physical and financial ability to access basic foodstuffs. The security of millions of people around the world is threatened by the fishing crisis. Foremost, fish and fish products
are an extremely important source of protein for people on almost every continent and the loss of this protein source threatens their nutritional diets. More importantly, fish are vital to countries in the developing world and the world’s most economically disadvantaged peoples. Unfortunately, due in part to overfishing, the price of fish is rising, pushing it beyond the reach of the world’s poor (UNDP, 1995: 231).

Fish are a vital source of protein, an important ingredient in the diets of millions of people around the world. It is believed that over sixteen percent of the world receives its animal protein from fish (WRI, 1996: 301). However, there is a discrepancy between the developed and developing worlds as to their reliance on this food source. Only ten percent of the industrialized world views fish as a main source of protein ("Fisheries Management," 1995: 1), with many of these people found in Iceland, Norway, Spain, Portugal and Japan (Peterson and Teal, 1986: 117). Forty-nine of the top fifty countries in which fish are the main source of protein are found in the developing world (FAO, 1995: 1). Overall, twenty-nine percent or one billion people in Asia, twenty percent of Africans and eight percent of Latin Americans receive their protein from fish (PANOS, 1995: 1; Robinson, 1995: 37). For many of these same people, fish provide a source of protein that would otherwise be unobtainable. In the Philippines, for example, over fifty per cent of animal protein available comes directly from fish (FAO, 1992).

Furthermore, this protein is particularly important to those people of low economic status. Fish was once known as the "the food of the poor" because it was far cheaper than other sources of protein such as beef, pork or chicken (Fairlie, Hagler, and O’Riordan, 1995: 48). This adage is no longer true as fish is rapidly becoming the delicacy of the rich and
increasingly inaccessible for those at the bottom of the socio-economic hierarchy. Three factors have contributed to this problem. First, global overfishing and poor management practices have led to reduced commercial catches, reducing the amount of fish available in local and international markets. As some species have disappeared from fishers’ nets, the price of other species has risen (Broadus and Vartanov, 1994: 53).

Second, there has been an overall growth in the demand for fish in all regions of the world. This is partly due to an increase in the global population, which lowered the per capita catch in only one year by 200 grams, from 18.2 kilograms in 1993 to 18.0 in 1994 (Jandl, 1995). Moreover, this per capita decrease is the result of the growth in the amount of fish consumed by people in the developed world, not as a vital source of animal protein but as a supplement to an already balanced diet (Weber, 1995). Japan, for example, has doubled its per capita fish consumption since the Second World War ("Introduction," 1995: 42). Overall fish consumption in developed countries has increased to the point where, on average, an individual here consumes three times as much as their counterpart in a developing country (Weber, 1995).

The third factor contributing to the inaccessibility of fish to a growing portion of the world’s population is the growing percentage of the total fish catch - now upwards of thirty per cent - that is being converted into fishmeal to be used to feed chickens and pigs in the developed world. Much of the fish used in this way comes from developing countries, reducing the amount available to local markets and consumers (Fairlie, Hagler, and O’Riordan, 1995: 48).

These three factors have resulted in the steady increase in the overall price of fish, pushing it beyond the reach of the people who need it most.
(Hinds, 1992: 394). As a result, fish will probably never return to be known as "poor man's protein" ("World's natural fish stocks," 1996: 1). Rising prices have reduced the local supply, leading to hunger, conflict and the disruption of cultural and social institutions (FAO, 1995: 6). As fish stocks continue to decline from overfishing, the food security of many people will continue to be threatened.

Fishing and Economic Security:

According to the UNDP, an individual's economic security is maintained with adequate employment that provides at least an elementary source of income (UNDP, 1995: 230). Since almost the beginning of human existence, fishing has provided a source of employment and income to many people. However, as fish stocks decline and the efficiency of those working in the industry increases as a result of improved technology, fishers will continue to lose their sources of livelihood.

Fishing plays a huge economic role in the lives of men, women, and children around the world. There is some discrepancy as to how many people actually earn a living as fishers. Lennox Hinds (1992: 396) suggests that 12.5 million are actual fishers, while Peter Weber (1995) suggests the number may be as high as twenty million. Either way, a substantial number of people view fishing as their livelihood. Furthermore, if one includes the dependents of these fishers, some 40 million people are directly dependent on the fishery for their livelihoods. A further 150 million are involved with services associated with the industry such as net mending, ship building, and fish processing (Hinds, 1992: 396). Of the total number of people dependent on the industry, 100 million fall under the title of the world's poorest, barely eking out a subsistent living from
their fishing activities (Robinson, 1995: 37). In total, the industry employs directly or indirectly over 200 million people, with well over half of these living in developing countries (Hinds, 1992: 396).

Of these fishers, over ninety percent are considered artisinal or small scale (Weber, 1995). James R. McGoodwin (1995: 5) provides a detailed explanation of the traditional, community-based fishery. He defines the artisinal fishing industry using a variety of different terms including artisinal, small-scale, tribal, inshore, peasant or subsistent fishers. Artisinal fishers are distinguishable from their larger counterparts by their smaller capital commitments and levels of production. Furthermore, they almost always conduct their fishing close to their communities and catch only a limited number of species. Consequently, these fishing practices are deeply ingrained into their society and the cultural traditions of their communities. Moreover, there is a generally deep-seeded understanding of the local fishery and how it affects the surrounding ecosystem. It is understood that the depletion or destruction of the fish within this ecosystem would result in their own ruin. Many of these fishers involve themselves in both the subsistent and commercial fishery to some degree and it is this degree which separates them into the aforementioned sub-categories. They provide the backbone to the fishing industry in most countries, particularly in developing countries, contributing a significant amount to the local economy and to employment numbers. Artisinal fishers catch fish for their families and the local market. Furthermore, family members of the artisinal fisher are usually employed in either the actual catch or the sale of the fish. Often it is the male members of the household that catch the fish, while it is the responsibility of the women and children to sell it in the local markets (McGoodwin, 1990: 24-25).
Large-scale commercial fishers, numbering between 200,000 and 300,000 (Weber, 1995), differ from their small-scale counterparts in many respects. First, they are capital intensive, using larger boats, fewer crews and more expensive equipment to catch much larger quantities of fish. Second, they are devoted almost entirely to fishing for commercial purposes. As a result, these fishers are able to traverse the globe in search of a variety of species. Because they do not rely on any one particular fishing ground or species, little thought is given to the need to conserve or protect a particular fish stock as it is assumed there will always be other fisheries to exploit. The environmental conscience is often missing, replaced by a need to remain competitive and profitable in the global economy. Finally, given the global scale of the fishing industry, foreign ownership plays an ever larger role in the development of multi-national fishing companies that seem to care little for the environment (McGoodwin, 1995: 6).

Artisinal fishers dominate the fishing industry’s employment numbers world wide. Developing countries account for twenty-five percent of the total world catch and over forty percent of the fish caught for human consumption (FAO, 1992). Unfortunately, governments around the world are following a policy of increasing the efficiency of their respective fleets (Weber, 1993: 10). More and more, it is the artisinal fishers who are losing their jobs at the expense of the much more efficient, technologically-advanced, commercial fishing industry. This employment discrepancy between the two industries can best be seen in a comparison of the fishing industries of China and Japan. China has 3.8 million fishers, while Japan, the world’s leading fish producer, employs only 200,000 commercial fishers. However, the Japanese catch twice as much fish as the
A further example of this discrepancy can be seen in John Kurien's (1995: 119) description of a fish catch in the hold of a Soviet commercial boat docked in the Indian port of Cochin in 1994. The ship's hold contained 2,000 tonnes of snapper and perch, which was the equivalent to the catch of 1,000 hook and line Indian fishers.

Another example of how overfishing threatens employment is the 1992 cod fishery closure off the east-coast of Canada left upwards of 40,000 fishers displaced and unemployed in Newfoundland alone (WRI, 1996: 304). This number does not include the tens of thousands of people laid off in other businesses as a result of these direct job losses. Shortly before the ban on cod was imposed, total job losses were estimated at around 38,000 people, which included an equal number of fishers and others relying on the industry (Benseler, 1993b). This was a gross underestimation of the extent and severity of the problem as just the number of fishers laid off was more than this total number.

Overfishing has put many fishers' livelihoods at risk. Their economic security is threatened by the loss of fish and as the stocks continue to decline, this threat could lead to conflict.

**Fishing and Cultural Security:**

Fishing is an important aspect of the social makeup of many communities and societies. As McGoodwin (McGoodwin, 1990: 24) notes, where fishing is the main occupation of a community, "it is interwoven throughout the fabric of the local culture," defining the local identity, pervading local rituals, influencing local economic and social institutions, and inspiring myths, folktales, and history. In essence, fishing has evolved into not only an occupation but a way of life. A disruption of this way of
life would severely jeopardize the social balances and traditions within the society in question, impacting all those involved. A way of life is threatened with extinction and with it the knowledge of the local fishery that has been gleaned from the history of the community.

The culture of fishing communities has evolved over centuries to the point where it is the only way of life that many people really know and understand. In Newfoundland, for example, many coastal communities date back to the founding of the cod fishery over 400 years ago, their locations having been partly determined by the convenience of conducting the cod fishery. Until only a few years ago, the sole basis for their existence had been this fishery (Singh, Kumar, and Kumar, 1992: 562). The loss of cod devastated many individuals and communities in Canada, leaving about 500 communities and villages from Newfoundland to Nova Scotia negatively affected to some degree by the closure (Wacker: 1994: 14).

This phenomenon is by no means isolated to Canada. Communities in North America that were founded on fishing have had a relatively short existence compared to fishing communities in other parts of the world. Some fisheries and the communities which have relied on them over time date back hundreds, if not thousands, of years. When the primary basis for economic, social and cultural existence is suddenly gone, the effects are sure to be devastating. In extreme cases, one might see the disappearance of a distinct fishing culture altogether as happened to some indigenous fishing peoples in Mexico (McGoodwin, 1995: 7). Ultimately, fishers and their communities see the loss of fish as a threat not only to their economic well-being, but to the sustainability of their cultures as well (McGoodwin, 1995: 2)
Although fishers may be hardy people, having to fight nature at every turn to reap even the smallest reward, the loss of fish can disrupt the social makeup of the community. As the once abundant and plentiful stocks decline and disappear, the people in these remote communities are forced to make difficult changes. Of the numerous examples of the impact of the loss of fish, I will discuss three. First, members of the community, both men and women, are often forced to move to other locations or to gain other forms of employment. Second, a serious disruption in the fish stocks can seriously disrupt the roles within the family unit. On the surface, this may seem to be somewhat suspect in relation to security matters. It could be argued that a stable and healthy family unit is the key to a stable and healthy culture, although some have observed that an abundant fishery can have adverse effects on various members of society, especially women and children (Nadel-Klein and Davis, 1988; Porter, 1993). Those who suggest that there is a link between the health of fisheries, families and cultures claim that men and women have grown accustomed to the roles they play in many patriarchal societies, with men tending to catch the fish, while the women to market it, run the household, and further the economic and social development of the community. If there are no longer fish to catch, these roles are seriously disrupted (McGoodwin, 1990: 35). This disruption can be either positive or negative. Leela Gulati argues that the technological disruption that occurred in the Kerala fishery actually had many positive impacts on the lives of women, including increased wages and jobs, better health care, and more educational opportunities (Gulati, 1988: 155).

As the loss of fish destroys the local way of life and the livelihood of peoples and communities, it also destroys the knowledge and the
understanding about the surrounding aquatic environment that has been gained over the centuries. This knowledge and understanding of how the local fish stocks endure, what type of gear and nets are most effective in maintaining a sustainable fishery, and how various species interact is being seriously threatened. In the Indian province of Kerala, for example, where fishers have been fishing the waters for thousands of years, traditional fishing communities have evolved a keen understanding of the local aquatic ecosystem and have developed fishing methods, craft and gear appropriate to the fish in the local region (Kurien, 1993: 5; Kocherry and Achary, 1989: 32). The current trends in fisheries management in many ways devalue this local knowledge, ignoring it and believing local communities to be an obstacle to progress (“Introduction,” 1995: 42; Fairlie, Hagler, and O’Riordan, 1995: 47). Most of what is known and understood about fisheries comes not from biologists and scientists, but from the fishers involved in the industry at the local level (Steinhart, 1995: 31). By removing a connection between the people and the fish that has been established over centuries and generations, important knowledge may be forever lost. Local fishers often have a sense of their roots and a commitment to future of that ecosystem and their communities. They know that their children have an important stake in the fisheries’ ecological health (Mische, 1989: 414).

Fish have also become an integral part of some cultures, influencing a peoples’ outlook on life. For example, fish has dominated the lives and culture of the First Nations people on the west coast of North America. For thousands of years, First Nations economies on this Pacific slope have centered on marine resources; the sea and coastal rivers were at least as important as the land (Newell, 1993: 3). These people harvested large
quantities of aquatic resources, particularly salmon, which they processed and used for subsistence, trade, and ceremonial purposes. The salmon fishery was to the Pacific coast First Nations what the corn crop was to the English, the potato crop was to the Irish, and the Buffalo hunt was to the indigenous peoples on the Prairies (Newell, 1993: 28-29). For First Nations fishers, fish resources transcend their commercial and subsistence values, being regarded as part of their cultural identity along side history, oral tradition, mythology, folklore, and legends (McGoodwin, 1995: 7). The importance of salmon to the First Nations peoples is evident in other aspects of their culture such as in art, totem poles and carvings (Craft and Burtsin, 1996).

Fish are vital in defining who some people are, how they think and interact with the society around them. The loss of fish from overfishing is having severe social and cultural impacts on peoples around the world.

**Fishing and Environmental Security:**

Unlike rhinos, tigers and bears, when you deplete fish populations, you’re threatening the survival of humanity.


The overall health and security of the oceanic environment has been and continues to be threatened by past and current fishery practices, pollution problems, and coastal economic development around the globe. If the oceanic environment is to be sustained, it must be seen as having some intrinsic or inherent value in and of itself. Too often, humanity only values something when it is of military/strategic or economic importance. Global fishing practices are threatening the sustainability of the aquatic
ecosystem by compromising biodiversity and the ability of the fish stocks to maintain safe reproductive levels.

Biodiversity, or the diversity of species which inhabit the oceans, is easily threatened by overfishing and poor management practices. First, the fish stocks themselves are seriously threatened. The United Nations Food and Agriculture Organization (FAO) estimates that all of the seventeen major fishing grounds around the world have either reached or exceeded their capacity, with nine of them being in serious decline (Weber, 1993: 34). Within these grounds, almost all of the 200 different fisheries monitored by FAO are fully exploited, with one in three being overexploited (Krauthammer, 1994: 21). A number of these same species are threatened with either extinction or limited extinction - meaning that for the foreseeable future, they are not expected to recover to any stable level. No one really knows if fish stocks are able to recover from such a rapid decrease in their numbers over such a short period of time. And even if they are able to recover, there is no guarantee that they will return to their former levels (Hagler, 1995: 74). An example of this took place in the early 1970s, when the Peruvian anchovy catch, then the largest fish catch in the world, collapsed from 12 million tonnes to 2 million. It has only been recently that the stock has shown any signs of recovery, 25 years after it was first decimated (Weber, 1993: 32).

This threat to biodiversity can take two forms: the decline in the quantity of fish as a result of growth overfishing and the decline in the quality of fish from recruitment overfishing. Both complicate the ability of fish to reproduce and remain plentiful at sustainable levels. Growth overfishing results from fishers taking a smaller size fish. As fishers continually remove the large fish from the stock, they turn their efforts to
smaller size fish, lowering the overall size of the average fish taken (Peterson, 1993: 256). Recruitment overfishing involves taking such a large number of fish that much less fish are left to reproduce, reducing the total population even further (Peterson, 1993: 257). When one examines global fishing management methods, it becomes clear that if too much of the biomass - the sum of all living material in a given environment (Kaufman and Franz, 1993: G-2) - is removed, the stocks ability to recover is hindered. In other words, you end up removing the capital instead of the interest of your investment (Krauthammer, 1994: 21).

An example of this can be seen in the cod fishery in the North West Atlantic. In one region of the Atlantic, the total biomass for cod dropped from 3 million tonnes in 1952 to just over 500,000 tonnes in 1977. Since then, there has been a further rapid decrease in the total biomass. If one compares the total cod catch, there is a correlation between this reduction in biomass and the decline in the fishery (Canada, 1991: 113).

Moreover, once a species has become scarce through over-exploitation and mismanagement, the common practice among fishing nations is to turn their attention to other types of fish, usually fish that only a few short years before were seen as waste. An example of this is the turbot (or Greenland halibut) stocks off the east coast of Canada. The fish was not caught in any significant numbers by fishers as they instead preferred to pursue more economically valuable stocks such as cod and flounder. However, when these stocks plummeted and all but disappeared, countries such as Canada and Spain turned their attention to the turbot. In a five year period between 1990 and 1995, the Spanish catch of turbot increased from 4,000 to 60,000 tonnes (Jandl, 1995). The pressure on the stock increased dramatically and within a few short years, the catch had to
be severely trimmed back. Now that a severe limit has been placed on the total turbot catch, countries will turn their attention to other types of fish and continue the process of destroying these stocks. As ever greater numbers of depleted stocks follow in the wake of the cod and the turbot, pressure on those remaining will further threaten aquatic biodiversity.

The removal of a species from the food chain can also have serious effects on other species in the aquatic ecosystem. Granted, periodic changes in the aquatic ecosystem as the result of natural changes in ocean currents, oxygen levels, and water temperature have a definite impact on the stock levels (Kocherry and Achary, 1989: 31). However, human intervention through increased technology and fishing levels can have a dramatic, detrimental effect on stock levels. Given that both plant and animal life in the ocean ecosystem are linked in a huge, complex food web, a fluctuation in the level of one may have dire consequences for others. Sudden changes in the numbers of one species can trigger unpredictable effects in the life around it ("Fisheries Management," 1995: 1).

For example, the Alaskan pollock fishery in the North Pacific area known as the Donut Hole has undergone a similar rapid decline in quality and quantity of fish due to the massive scale of overfishing that has taken place by the American, Russians, Poles, Japanese, Taiwanese, and North and South Koreans. Negative effects have included changes in the size of pollock taken by predators, a decline in the predatory populations that rely on pollock, and substantial rises in the level of zooplankton have occurred as their main predator, the pollock, no longer has the numbers to keep that population in check (Broadus and Vartanov, 1994: 58-59). The exact extent of the problem may not be fully known or understood for many years.
Similarly, the loss of the sand eel had a significant impact on nesting bird populations in the Shetland Islands off the coast of Scotland in the mid to late 1980s. Arctic terns, puffins and other nesting birds preyed upon the sand eel, a small shoaling fish caught for fish meal and oil. The sand eel populations collapsed dramatically as a result of severe overfishing. The result on the nesting birds was devastating. The eel was normally fed to the bird’s young chicks, but as there were few sand eels left, the birds lost their broods. Not enough research has gone into fully understanding the effects of this problem (Weber, 1993: 35).

Conclusion:

Overfishing threatens the environmental security of people and the planet. As the fish stocks decline from poor management, consequences will spread through the ecological system, exacerbating the problem. Humans must recognize that the environment has intrinsic value in and of itself, regardless of the price we put on it. If, as Patricia Mische (1989: 393) speculates, humans fail to see the world as an holistic, living system, with human security dependent upon the viability of the larger earth system of which they are a part, the result could be the death of the human race.

Overfishing is a growing global security threat. It impacts states, people, and the environment at local, national and international levels. States are increasingly warming to the notion of common security. Their security is tied to the security of other states. At the same time, overfishing is emerging as a threat to human security. Fish continue to be a vital component of the protein needs of people in all parts of the world. More significant, however, is the fact that fish are far more important to people found in the developing world and the economically disadvantaged.
The loss of fish threatens these peoples very existence. As stocks continue to decline and fish become increasingly scarce, millions of jobs are at risk in many different areas. Furthermore, fishing provides a source of cultural identity to many peoples and societies around the globe. The loss of fish would severely impact this aspect of their existence. Finally, overfishing threatens the environmental security of the planet. The loss of biodiversity further threatens the viability of humanity.
Chapter Six
Conclusion

"Man marks the earth with ruin -- his control stops with the shore."
- Lord Byron (as quoted in Steinhart, 1994: 2)

Fish have provided an important source of food, trade and revenue throughout history. For centuries, fish were seen as an inexhaustible resource. People did not have the technology, capability, nor the desire to harvest fish at levels that even approached their maximum capacity. When communities sensed that threats to the fish populations in the local area were imminent, control measures were put in place to ensure that the stock remained viable. This approach worked effectively for thousands of years. However, with the onset of the Industrial Revolution, the mindset changed. The increased mechanization and efficiency of the fisheries was encouraged. The Second World War brought about dramatic improvements in the technology available to fishers. They could now fish further away from their communities for larger quantities of fish. With this increased technology and availability of fish came an explosion in the demand for fish and fish products. Even then, the oceans were still thought to be inexhaustible.

Humanity has now realized that the oceans are exhaustible. Around the world, fish stocks are declining and fishing grounds are being closed at a dramatic pace. FAO has estimated that of a majority of the world's major fishing grounds and fish stocks are in decline or near depletion (Weber, 1993: 34). The per capita fish catch available for human consumption is also declining. It is clear that our current fishing and
management practices are extremely destructive. These overfished stocks and the emerging crisis directly threaten security at the national, international and global levels. To have discussed the impact of fishing on any one of these levels without engaging in a similar discussion of the impact at the other levels would be to have ignored the multidimensional nature of the crisis.

Fishing has a direct impact on national security, threatening the economic health of states and acting as a catalyst for conflict. Some states rely heavily on the economic benefits the fishing industry provides: employment, tax revenue, export earnings and license fees. The loss of these revenues or potential revenues directly harms the economic viability of the state. Declining fish populations also increase tensions within the state, often exacerbating pre-existing problems, which can and do lead to conflict between different societal groups and interests. Externally, the world has seen a growing number of conflicts between states as they enter into serious and potentially explosive confrontations over fish.

Next, international security is threatened by overfishing as endangers the development and maintenance of international fishing regimes. These regimes were set up by states interested in cooperating over the management of fish stocks on the high seas, each believing that they had more to gain by maintaining the regime than preceding on their own (FAO, 1992). Unfortunately, these agreements are experiencing problems as states are ignoring their rules and regulations. By ignoring the quotas allotted to a state, circumventing the regime by re-flagging their vessels, or taking unilateral action, states are endangering the usefulness and viability of these regimes.
Finally, global security is threatened by the loss of fish because of the impact on human and environmental considerations. First, fish constitute a vital food source for millions of people around the world, particularly for people in developing countries and amongst the world's poorest. The threatened loss of fish would severely impact the diets of these people. Second, many of these same people rely heavily on the fisheries to provide direct or indirect employment. However, as technology increases efficiency, the artisan, small-scale fishers are being pushed out of the industry. Given that a majority of fishers are small-scale, their occupations are definitely in peril. Third, for some, the loss of fish directly threatens their culture. Fishing is often "interwoven throughout the fabric of the local culture," defining the local society, pervading rituals, and influencing social and economic institutions (McGoodwin, 1995: 68). Finally, global security is further threatened by the degradation of the environment through the loss of biodiversity. The oceanic environment has intrinsic value in and of itself. By compromising its security, we undoubtedly risk our own existence.

The intent of this examination was threefold. First, this discussion surrounding the overfishing crisis is an example of why the concept of security needs to be broadened beyond its traditional military focus. For far too long the concept has revolved almost solely around military concerns. Many of these concerns, including nuclear war and foreign invasion, are still important to many people and states, but they no longer pose as great a danger as they once did. The move beyond this traditional security focus is an attempt to provide a more inclusive range that recognizes the diversity of threats that now impact people, states, the international system, cultures and the environment. Examining a threat
such as overfishing offers us a concrete example of why there is a need to redefine or rediscover security and how this can be done. As overfishing directly threatens security in the areas of economics, the environment, culture, food, and regime development, the traditional definition of security would be far too constraining, providing or highlighting a mere fraction of these impacts. Again, I recognize there is a danger that a broadened concept of security will be used to validate military strategies under the guise of threats to aspects of global security.

Second, threats to the various security levels are often multidimensional and complex, requiring a multilevel and interdisciplinary perspective. States must recognize the significance of these interdisciplinary links. By disregarding this interdisciplinary approach, any political solutions offered will always neglect some areas or interests and make the solutions unworkable. Without these holistic considerations, overfishing will continue to threaten people and states around the world.

Finally, overfishing presents an immediate crisis that needs to be examined more closely by the international community. It is possible that in a few years, the world stocks, already in decline, will collapse leaving the world without an important food, economic and environmental resource. If this crisis is not recognized now and serious efforts are not made to ease the situation, the results will be devastating.

Issues for Further Research:

The problem of overfishing raises a number of questions. Mische (1989: 393) has commented that if we fail to see the world as an holistic, living system, with human security dependent upon the viability of the larger earth system of which they are a part, our existence is at risk. What
does this mean for our common future? Can we rectify a situation already in crisis? Can we ensure that the security of people and states at each level is reached and maintained?

Fortunately, steps are being taken to rectify the situation:

- As the research presented in this thesis suggests, states, both individually and in cooperation with others, are recognizing the need to better understand the overall problem of the declining fish stocks. Why is the problem occurring? What political, social, economic, and cultural factors are influencing the decisions that are being made along the way? Governments are making some efforts to look into these questions as they attempt to find solutions to this far reaching problem.

- Some states are increasingly willing to accept responsibility for the decline of the fisheries. States and their citizens all too often see foreigners as the culprits in the decline of a particular resource (MacNeill, Winsemius, and Yakushiji, 1991: 57). In the past, they have failed to examine their own actions. Slowly, however, states are beginning to accept their own culpability (Hayashi, 1991: 343). This is a positive step toward finding workable solutions to the problem of overfishing and other environmental problems.

- States are gradually becoming more willing to cede some of their authority to international regimes, thus ensuring that the resource can be adequately protected through international cooperation. A recent example took place in 1996 with the signing of the Convention on the Conservation and Management of Straddling Fish Stocks on the High
Seas and Highly Migratory Fish Stocks on the High Seas. The Convention sets out, *inter alia*, stricter enforcement and conservation measures for these stocks and a dispute settlement mechanism (Canada, 1996a: 2). There is one thing that will hinder this move toward increased cooperation: the concept of territorial sovereignty. States have defended this concept, but maybe the time has come to seriously re-evaluate it because of the growing number of environmental problems that ignore state borders. As Mische (1989), Mathews (1989), and Renner (1989) have discussed, our accepted definition of territorial sovereignty is obsolete. Global environmental change is expected to alter radically the present geopolitical picture, increasing dependence among states and altering power relations between states (MacNeill, Winsemius, and Yakushiji, 1991: 73). As Richard Falk pointed out almost three decades ago, "A world of sovereign states is unable to cope with endangered-planet problems ... such a system exhibits only a modest capacity for international cooperation and coordination" (as quoted in Stoett, 1994: 135). This move to relinquish some state sovereignty to regimes is a positive development. Environmental problems like overfishing are having a strong influence on this progression.

- Globally, the outlook is not as bright in the short term. People will continue to suffer as the crisis plays itself out. Those most seriously threatened are at the bottom of the socio-economic-political ladder and thus have little power or control over the fisheries. Continued disregard for these people will only intensify the problem. However, if states continue to adapt their behaviour as noted above, there is a
distinct possibility that many of the concerns affecting these same people can be alleviated.

Two other questions are raised by this examination. First, the problems surrounding fish are an example of the discrepancy between the “haves” and the “have nots,” be it between individuals, peoples, communities, states or regions. The widening gap is a serious concern. Globally, these discrepancies will increase as the drive toward technology and efficiency increases. As the commercial industry turns to larger boats and fewer fishers to try and deal with the problem, those left out of the process will lose further access to the resource which is so important to them. This alienation is not restricted to this issue and should be viewed as a piece of a much larger puzzle. The following question arises: Are technological advancements in efficiency really assisting human advancement?

Lastly, the inability to accept the declining fish stocks as a threat to security brings forth another concern. Humanity is alienating itself from the surrounding environment on both a small and large scale. David Suzuki, the Canadian geneticist and environmentalist, argues that we are increasingly living in a society groomed for human convenience, a society which is slowly losing its connection with nature through urbanization and technological advancements which are breeding an overall disdain for Mother Earth. Inherent in this disdain is the assumption that human beings are different from other animals and exist outside the realm of the natural environment. By failing to retain a spiritual connection with nature, are we distancing ourselves from the very foundation that supports us, the Earth (Suzuki, 1989: 185-186)?
Ultimately, given the different security paradigms discussed, problems such as overfishing will be best dealt with using the global security model. Still, some scholars such as Waltz believe that global security is nothing more than an impossible utopia that would require radical system change (Haftendorn, 1991: 11). Haftendorn argues that "change will only take place if states realize that they will maximize their gains with cooperative, not dissociative strategies" (Haftendorn, 1991: 12). The change that is currently underway (i.e., acceptance of responsibility, increased cooperation, ceding of state sovereignty) is not radical, but it is progressive. Radical change is not realistic. Just the inclusion of environmental security in a state’s thinking represents a breakthrough (Porter, 1990: 333). This research has shown that a slow, hesitant movement towards a global security paradigm is taking place. Global security is no longer a utopia. It is a very real, albeit distant, possibility.

To conclude, fish are important to people and states around the world. The loss of fish has had and will have potentially devastating effects on millions of people. The actions that we take over the next decade will determine the fate of the fish and ourselves. Fishing is a piece of the security puzzle.
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