1970

The Impact of Conflicting Uses of the Coastal Zone on Naval Planning and Policy

Thomas M. Ward Jr.
University of Rhode Island

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THE IMPACT OF CONFLICTING USES OF THE COASTAL ZONE
ON NAVAL PLANNING AND POLICY

A Supervised Writing
Presented in Partial Fulfillment of the Requirements
For the Degree of Master of Marine Affairs

by
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University of Rhode Island
Kingston, Rhode Island
1970

Approved by

Advisor__________________________
Abstract of

THE IMPACT OF CONFLICTING USES OF THE COASTAL ZONE
ON NAVAL PLANNING AND POLICY

A brief review of the origin of the Navy's coastal real estate holdings and a method of approach to analysis of the present conflicts of multiple use of the coastal zone is used to assess the needs for continued use of these holdings and provide valid arguments for retention of those that are required. The study also presents a method of analysis that could provide a means for anticipating or resolving conflicting uses of Navy held real estate. The pressure created by an increasing population combined with a reduction of the armed forces necessitates a review of all Navy coastal zone property holdings. The overall holdings are reviewed, however no specific areas are analyzed. The author concludes that there are valid needs of naval coastal zone land holdings to meet peacetime security requirements, to permit expansion for future national emergencies, to provide flexibility of response to contingencies short of war, and to accommodate changes in technology. Conflict matrix analysis is recommended for use in recognizing potential conflicts and in resolving those conflicts in a rational manner.
PREFACE

**Purpose.** The purpose of this paper is to analyze the impact of conflicting uses of the coastal zone on naval planning and policy in order to provide a re-evaluation of naval land holdings and possible valid arguments and justifications for naval use of the coastal zone for those holdings that are regarded as essential. The first part of this paper deals with the historical development of naval facilities in the coastal zone in order to demonstrate the origin of some of the current conflicts of coastal zone usage. The middle section deals with the conflicts and their possible resolution. The final section draws together the arguments and justifications that could aid naval planners and policy makers in resolving some of the coastal zone conflicts and points to doctrine that should be established and promulgated to the naval base commanders.

**Sources.** Approximately one third of the sources were written by committees or commissions on the coastal zone. Another third are private or university reports on particular areas of conflict or specific localities. The remainder are historical in nature and concern the development or considerations for the early development of our presently held naval facilities.
There is little written on the specific naval aspects of this paper. Most naval planning and policy concerns itself with more classical factors such as number and type of activities required to support a typical naval station or technical school.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>11</td>
</tr>
<tr>
<td>PREFACE</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>vii</td>
</tr>
<tr>
<td>I INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II THE GENESIS OF THE PROBLEM</td>
<td>5</td>
</tr>
<tr>
<td>III THE PROBLEM TODAY</td>
<td>28</td>
</tr>
<tr>
<td>IV SOME CONSIDERATIONS FOR ANALYSIS OF THE PROBLEM</td>
<td>42</td>
</tr>
<tr>
<td>V CONCLUSIONS</td>
<td>54</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>59</td>
</tr>
<tr>
<td>TABLE</td>
<td>PAGE</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>I Naval Holdings in Major Port Areas of the United States</td>
<td>8</td>
</tr>
<tr>
<td>II Navy Property Holdings in Coastal Zone States</td>
<td>9</td>
</tr>
<tr>
<td>III Uses of the Coastal Zone</td>
<td>44</td>
</tr>
<tr>
<td>IV Representative Conflict Matrix</td>
<td>52</td>
</tr>
</tbody>
</table>
# LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Major Base Location and Urbanization Pattern</td>
<td>6</td>
</tr>
<tr>
<td>2. Naval Activities, Narragansett Bay</td>
<td>20</td>
</tr>
<tr>
<td>3. Local Naval Activities, Norfolk Complex</td>
<td>21</td>
</tr>
<tr>
<td>4. Naval Activities, Charleston, S.C.</td>
<td>22</td>
</tr>
<tr>
<td>5. Southern California Naval Activities</td>
<td>23</td>
</tr>
<tr>
<td>6. Naval Activities San Diego</td>
<td>24</td>
</tr>
<tr>
<td>7. Naval Activities Long Beach, Calif.</td>
<td>25</td>
</tr>
<tr>
<td>8. Naval Activities Puget Sound Area</td>
<td>26</td>
</tr>
<tr>
<td>9. Military Activities, Island of Oahu, Hawaii</td>
<td>27</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

There is a growing awareness throughout the United States of the importance of the coastal zone to the future of the country. All but one of the thirteen largest cities of this nation are located in the coastal zone. For the purpose of this paper the coastal zone is considered as including seaward, the territorial sea of the United States and landward, the tidal waters of the landward side of the low water mark along the coast, port and harbor facilities, marine recreation areas, the Great Lakes and industrial and commercial sites dependent upon the sea.

The quantity and quality of the coastal zone are generally known and limited. Little more of it can be found or produced, while the population of the United States continues to increase. The consequence is to place additional demands on residential, recreational, commercial and industrial uses of the coastal zone. These demands create conflicts not only among themselves for the fixed quantity of space, but also conflict with government uses. The pressures indicated give rise to the questioning of the old values and priorities. This is underscored by a new awareness and concern for the environment as evidenced by a profusion of local, state,
federal, and private studies of the conflicts and multiple uses of the coastal zone.

The Federal Government in general, the Department of Defense and the United States Navy in particular, are deeply involved in coastal zone activities involving multiple uses of this limited natural resource. The fact of possession alone places the Navy in conflict with private and public interests over uses of the zone.

In the past, considerations for the establishment or location of naval facilities included the needs of national security and various business oriented factors, i.e., availability of skilled labor, material markets, transportation, power sources, etc. Little, if any, consideration was given to the impact of the conflicting or competing uses of the land and water areas that such siting would involve. As many of our present naval facilities were established many years ago when our nation was considerably smaller, this impact was not particularly significant. Today these conflicts are of much greater concern and they must be taken into consideration by the Navy and the commanding officers of naval facilities.

The effects of these conflicts, their analysis and resolution must become a part of naval policy and planning for base development. The kinds of conflict have increased as the result of a variety of factors such as the growth,
mobility and affluence of our population; leisure time available to the average citizen; improved health along with its concomitant increases in life expectancy; increased port facility requirements to accommodate foreign trade and international commerce; and a vastly improved technology.

The Navy must be prepared to justify its need for the coastal zone property it now possesses or will require in the future. It cannot simply fall back on a broad policy that the coastal zone holdings are required for national defense or some obscure future development. The arguments and justifications where warranted are derived from a study of the conflicting uses of the coastal zone vis-a-vis the requirements of the Navy as a part of the national defense establishment of the United States.

The following chapters trace the general development of our naval facilities and the considerations involved in their founding. The historic review is an attempt to demonstrate the origins of some of the present conflicts and the lessons to be learned therefrom. A method of analysis of the current conflicts will be introduced that can be helpful in developing arguments and justifications for policy and planning considerations. This approach can lead to improved decisions in those instances where property surpluses exist or where multiple use is irreconcilable and one use or the other must prevail. This becomes even more relevant as military budgets
are reduced and domestic considerations take on greater importance in times of peace. The issues over naval real estate holdings in the coastal zone will become more acute as the U.S. withdraws from Vietnam, reduces the armed forces, and faces up to some of the pressing domestic problems that have remained unresolved for so long. The conflicts generated by these long delayed programs will be greatly felt by the United States Navy.
CHAPTER II

THE GENESIS OF THE PROBLEM

The extent of property held by the United States Navy is almost as great in total area as that contained in the States of Connecticut and Rhode Island combined. As of 30 June 1969, the Navy controlled 4,176,259 acres of land within the fifty states and the District of Columbia. Of this total, 3.5 million acres are contained within coastal zone states. Tables I and II show the build-up in Navy property holdings in certain selected, high population density areas from 1800 to the present time. These areas were selected for study in that they lie in or near today's highly urbanized areas. Figure 1 shows the location of major coastal naval stations and facilities in relation to the urbanized areas of today. The gross population figures indicate the magnitude of the problem. The critical location of Navy controlled property in the various port cities, as shown in


2Ibid., p. 6,7.

3Over 50% of this property is located in the State of California. Although the total property holding is large, it may be placed in better perspective by consideration of the fact, as reported on page 61 of the 25 Feb. 1970, New York Times that "the Southern Pacific owns 3,855,000 acres of land and has mineral rights on an additional 1,331,000 acres spreading through the states of California, Nevada, and Utah."
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>POP. (1,000) 1970</th>
<th>1970 RANK (METRO AREA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORTSMOUTH, N.H.</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>BOSTON, MASS.</td>
<td>3,625</td>
<td>7</td>
</tr>
<tr>
<td>NEWPORT, R.I.</td>
<td>2,875</td>
<td>29</td>
</tr>
<tr>
<td>NEW LONDON</td>
<td>199</td>
<td>115</td>
</tr>
<tr>
<td>PHILADELPHIA</td>
<td>5,115</td>
<td>4</td>
</tr>
<tr>
<td>HAMPTON ROADS</td>
<td>962</td>
<td>25</td>
</tr>
<tr>
<td>CHARLESTON</td>
<td>2,745</td>
<td>86</td>
</tr>
<tr>
<td>MAYPORT, FLA.</td>
<td>4,950</td>
<td>28</td>
</tr>
<tr>
<td>KEY WEST, FLA.</td>
<td>40</td>
<td>546</td>
</tr>
<tr>
<td>PENSACOLA, FLA.</td>
<td>61</td>
<td>331</td>
</tr>
<tr>
<td>NEW ORLEANS</td>
<td>1,080</td>
<td>24</td>
</tr>
<tr>
<td>FUQUET SOUND</td>
<td>1,200</td>
<td>22</td>
</tr>
<tr>
<td>SAN FRANCISCO</td>
<td>4,200</td>
<td>6</td>
</tr>
<tr>
<td>LONG BEACH (LA)</td>
<td>8,460</td>
<td>2</td>
</tr>
<tr>
<td>SAN DIEGO</td>
<td>1,135</td>
<td>23</td>
</tr>
</tbody>
</table>


Major Base Location and Urbanization Pattern
Figures 2 through 9 at the end of this chapter, gives depth and emphasis to the impact of the problem, especially when compared to the multitude of requirements generated by an expanding population and a growing economy.

As is obvious from the general data included in Tables I and II there has been a steady build-up of not only the fleet but also of the naval shore establishment necessary to support it. The build-up, when viewed against time, has been spurred by the needs generated by war and the awareness of the requirements for national defense. It is also noted that, in general, once property in the coastal zone is acquired it is seldom returned to private use. Changing technology required the acquisition of airfields following World War I. The land holdings required for the support of naval aircraft has continued to grow with each new generation of aircraft. In addition the changes in technology during World War II saw a great increase in the size of the Navy and a consequent need for additional facilities in the coastal zone. Although the Navy has been reduced in size and funding between major emergencies, property acquired in the coastal zone during the emergencies tends to remain under Navy control. Reductions in funds between emergencies cause facilities to be limited in operations or be placed in caretaker status, but does not usually result in major changes to property holdings in the coastal zone.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DATE OF ESTABLISHMENT</th>
<th>1800</th>
<th>1870</th>
<th>1935</th>
</tr>
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<tbody>
<tr>
<td>PORTSMOUTH, N.H.</td>
<td>1800</td>
<td>52</td>
<td>157</td>
<td>210</td>
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<tr>
<td>BOSTON, MASS.</td>
<td>1800</td>
<td>23</td>
<td>136</td>
<td>1,899</td>
</tr>
<tr>
<td>NARRAGANSETT BAY, R.I.</td>
<td>1869</td>
<td>--</td>
<td>24</td>
<td>548</td>
</tr>
<tr>
<td>NEW LONDON, Conn.</td>
<td>1868</td>
<td>--</td>
<td>86</td>
<td>113</td>
</tr>
<tr>
<td>NEW YORK CITY, N.Y.</td>
<td>1801</td>
<td>56</td>
<td>183</td>
<td>197</td>
</tr>
<tr>
<td>PHILADELPHIA, PA.</td>
<td>1800</td>
<td>21</td>
<td>1,030</td>
<td>1,436</td>
</tr>
<tr>
<td>HAMPTON ROADS, VA.</td>
<td>1800</td>
<td>83</td>
<td>109</td>
<td>2,025</td>
</tr>
<tr>
<td>CHARLESTON, S.C.</td>
<td>1901</td>
<td>--</td>
<td>--</td>
<td>2,232</td>
</tr>
<tr>
<td>KEY WEST, FLA.</td>
<td>1854</td>
<td>--</td>
<td>3</td>
<td>119</td>
</tr>
<tr>
<td>PENSACOLA, FLA.</td>
<td>1828</td>
<td>--</td>
<td>2,811</td>
<td>2,894</td>
</tr>
<tr>
<td>NEW ORLEANS, LA.</td>
<td>1849</td>
<td>--</td>
<td>214</td>
<td>218</td>
</tr>
<tr>
<td>SAN DIEGO, CALIF.</td>
<td>1904</td>
<td>--</td>
<td>--</td>
<td>3,595</td>
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<tr>
<td>LONG BEACH, CALIF.</td>
<td>1933</td>
<td>--</td>
<td>--</td>
<td>2</td>
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<tr>
<td>SAN FRANCISCO, CALIF.</td>
<td>1854</td>
<td>--</td>
<td>1,760</td>
<td>3,232</td>
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<tr>
<td>PUGET SOUND, WASH.</td>
<td>1891</td>
<td>--</td>
<td>--</td>
<td>1,212</td>
</tr>
<tr>
<td>PEARL HARBOR, T.H.</td>
<td>1901</td>
<td>--</td>
<td>--</td>
<td>1,585</td>
</tr>
</tbody>
</table>

(Above data is an estimate made from various SecNav Annual Reports, Statistical Tables of Military Real Property (NavFac P-319), and Fleet Guides to various ports (HO-900 Series))
<table>
<thead>
<tr>
<th>STATE</th>
<th>1935*</th>
<th>1969**</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA</td>
<td>---</td>
<td>5,298</td>
</tr>
<tr>
<td>ALASKA</td>
<td>---</td>
<td>112,398</td>
</tr>
<tr>
<td>CALIFORNIA</td>
<td>103,452</td>
<td>2,792,512</td>
</tr>
<tr>
<td>CONNECTICUT</td>
<td>113</td>
<td>1,181</td>
</tr>
<tr>
<td>DELAWARE</td>
<td>130</td>
<td>626</td>
</tr>
<tr>
<td>DISTRICT OF COLUMBIA</td>
<td>640</td>
<td>786</td>
</tr>
<tr>
<td>FLORIDA</td>
<td>4,245</td>
<td>80,155</td>
</tr>
<tr>
<td>GEORGIA</td>
<td>---</td>
<td>16,694</td>
</tr>
<tr>
<td>HAWAII</td>
<td>28,596</td>
<td>66,509</td>
</tr>
<tr>
<td>LOUISIANA</td>
<td>218</td>
<td>9,087</td>
</tr>
<tr>
<td>MAINE</td>
<td>240</td>
<td>7,708</td>
</tr>
<tr>
<td>MARYLAND</td>
<td>2,280</td>
<td>23,563</td>
</tr>
<tr>
<td>MASSACHUSETTS</td>
<td>2,017</td>
<td>4,544</td>
</tr>
<tr>
<td>MISSISSIPPI</td>
<td>---</td>
<td>11,787</td>
</tr>
<tr>
<td>NEW HAMPSHIRE</td>
<td>---</td>
<td>18</td>
</tr>
<tr>
<td>NEW JERSEY</td>
<td>2,265</td>
<td>19,551</td>
</tr>
<tr>
<td>NEW YORK</td>
<td>578</td>
<td>9,748</td>
</tr>
<tr>
<td>NORTH CAROLINA</td>
<td>13</td>
<td>148,441</td>
</tr>
<tr>
<td>OREGON</td>
<td>442</td>
<td>62,998</td>
</tr>
<tr>
<td>PENNSYLVANIA</td>
<td>1,436</td>
<td>4,224</td>
</tr>
<tr>
<td>RHODE ISLAND</td>
<td>548</td>
<td>7,486</td>
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<tr>
<td>SOUTH CAROLINA</td>
<td>8,281</td>
<td>31,358</td>
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<td>TEXAS</td>
<td>45</td>
<td>33,053</td>
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<tr>
<td>VIRGINIA</td>
<td>21,327</td>
<td>114,994</td>
</tr>
<tr>
<td>WASHINGTON</td>
<td>2,001</td>
<td>28,194</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>178,867</td>
<td>3,492,905</td>
</tr>
</tbody>
</table>


In the report of the Secretary of the Navy to the President in 1882, the Secretary discussed the problems of maintaining a peacetime Navy. It had been seventeen years since the end of the Civil War. The cost of maintaining a large naval establishment was questioned, but the Secretary noted the feasibility of retaining all of the facilities within the limitations of the budget by elimination of all unnecessary work and dismissal of all employees not needed.

In general this peacetime procedure has been followed, sooner or later, after every major war or emergency. It resulted in the closure of certain navy yards and stations following the Civil War, the Spanish-American War, and World War I. The cold war, Korea, Suez, Lebanon, Vietnam and various "hot" and near "hot" emergencies have delayed a major post World War II reduction until the present time. The indications are that the time has now arrived and cut backs have been initiated. This is indicated by the Vietnamization of the Southeast Asia emergency and the deep budget cuts and reduction of forces effected by the Department of Defense during fiscal year 1970.

The amount of Navy property holdings and the location of these holdings has been previously illustrated. Numerous commissions have indicated how these facilities came into being and why the locations were chosen. The father of modern naval strategy, Rear Admiral Alfred T. Mahan, gave the
following opinion concerning the character of a naval station in a mid 1880 report:

A great navy yard has a two fold aspect. It is on the one hand a business establishment for carrying on certain work of a very special kind. On the other hand it is, for the coast and fleet dependent upon it, a base of operations in the most vital sense of the word.

The latter character, though obtaining only in time of war, is the most important. The tendency of a business establishment to place itself near the materials, labor, and sources of power which it uses--near its resources--must, therefore, in this case, be checked by a consideration of the military exigencies, and, if the two requirements cannot be perfectly reconciled, the military necessity must override the convenience of business.

To Mahan the foremost requirement or criteria in decision making concerning the location of a Navy establishment was the needs of national security. Business or other considerations were secondary. A review of this nation's history would lead, in this writer's opinion, to the conclusion that awareness of the need for security and military preparedness becomes obscured in periods of prolonged peace. This makes considerations of national security difficult to invoke in peacetime land use conflicts, unless the needs can be placed in cogent, relevant terms of the period.

---

The effects of the peacetime military syndrome were quite evident in 1897. The tensions were building concerning Spanish and U.S. relationships in this hemisphere. The Navy had been reduced to a caretaker status following the Civil War. The shore establishment in particular had fallen into a bad state of repair and possessed little capability to support the fleet. This was a result of a lack of funds in the inter-war period and a poor understanding for the needs of a strong Navy.

A board was established in 1897 to examine the status of the Navy's yards and docks in order to become better prepared to cope with deteriorating Spanish-American relations. The guidelines by that board concerning the establishment of new facilities seem to codify the rules that were then in existence and which from the beginning of U.S. Naval history had been those governing the choice of sites in the coastal zone. The report states:

Acts of Congress have repeatedly required that navy yards and dry docks, their most essential and costly structures, shall be located with due regard to the commercial as well as the naval interests, and commissions have been from time to time appointed to select such sites. The reports of these commissions have furnished the board valuable information in the discharge of its duties. In its instructions to these commissions the Navy Department has formulated the specific requirements for a navy yard to be:

---

5 Department of the Navy, Annual Reports of the Navy Department for the Year 1897, Report of the Secretary of the Navy, Miscellaneous Reports, Washington 1897, p. 13, 14.
1. A situation upon a good harbor of sufficient size, depth and accessibility for vessels of the largest size and heaviest draft.

2. A favorable position with respect to the principal lines of defense.

3. A local security from water attack due to position and natural surroundings.

4. Ample water frontage of sufficient depth and permanence, and with currents of moderate rapidity.

5. A favorable position with respect to the lines of interior communication (by rail or otherwise) with the principal sources of supply.

6. That the character of the ground shall be suitable for the construction of excavated docks and basins and heavy structures.

7. Proximity to centers of labor and supplies of material.

8. Healthiness of the climate and its suitability for outdoor labor.

9. The existence in the vicinity of an ample supply of good potable water.

These could also serve as the requirements for a commercial seaport in the time they were written. They are consistent with Mahan in that the priorities are structured to satisfy military requirements before business interests. Today considerable changes have occurred that would invalidate some of the requirements of the above list; however, the list does serve to indicate just how the current conflicts in Navy coastal zone holdings came into existence. It is noted that no consideration of access to the water
by other than Navy interests or of overall provisions for
multiple use were deemed appropriate. Healthiness of the
climate was a consideration and, while this might perhaps
be extended also to include today's concern with pollution
and environmental quality, the list obviously does not con­sider
any ecological effects of the Navy establishment.

The board did note the ever present Congressional
interest, the most important consideration involved in the
funding and siting of Federal installations. An area chosen
will experience an economic benefit and thus be of great
Congressional interest, while the disestablishment of a
naval facility will have great economic impact on an area
and arouse even higher Congressional interest.

Figures 2, 3 and 4 are mute testimony to the major
requirements indicated by the 1897 board on yards and docks.
These locations were near the major sea lines of communica­tion that needed defending; they were well upriver out of
range of naval bombardment; the ports were heavily defended
and protected by forts that commanded either side of the
harbor entrance; there was, in the time they were built,
ample pier space and water front areas of good depth. They
were located in areas in which merchant ships of the time
were constructed, hence there was an ample supply of skilled
labor. As a result of being in or near the major ports
there was a ready supply of needed materials. The weather
for most months of the year, even in New England, was not too inhospitable. As the nation grew the limited land resources began to be filled and the problems of today began to take form.

Another Commission on Navy Yards and Naval Stations was appointed in 1917 by the then Secretary of the Navy, Josephus Daniels. This board noted: 6

It might quite reasonably find some difficulty in arriving today at the same conclusion with respect to the location of certain navy yards and naval stations as were reached by those in authority at the time of the establishment of such yards and stations. It must be borne in mind, however, that conditions have greatly changed since the majority of our navy yards and stations were established. Extraordinary developments in size and types of vessels and conditions affecting personnel and material have taken place in the past ten years, and the majority of existing yards were established more than fifty years ago.

The same reasons that necessitated the 1897 commission were the same ones involved twenty years later in 1917—expansion of naval facilities due to the needs of national security in time of war and a changing technology; wood to steel and the advent of the submarine. New weapons require new support requirements ashore and at sea in the way of testing and training facilities, exercise areas and research facilities. The conversion from peacetime force levels to

those required for response to threats to the national security usually involve whole orders of magnitude of difference in numbers and types of forces. This is illustrated by Secretary Daniels when he reported that:

The most difficult problems before the Navy Department since the beginning of the war have grown directly or indirectly out of the great expansion of the Navy found necessary. From a force of 4,500 officers and 68,000 enlisted men in January 1917, the Navy has expanded to 15,000 officers and 254,000 enlisted men, including regulars, reserves, and national naval volunteers. Further expansions are inevitable. The Navy had 130 stations of all kinds on January 1, 1917. It now [December 1917] has 363 . . . . On January 1, 1917 there were 300 naval vessels of all kinds in commission; today [December 1917] there are many more than a thousand.

Table I shows that the major coastal zone navy yards and stations, most of which were in existence over a hundred years ago, are the same ones that Secretary Daniels was addressing. There has been, is, and will continue to be new requirements that will call for reconfiguration of the yards and stations as technology changes the nature of ships, their size, draft, weapon systems, and support requirements. A reading of the annual reports of the Secretaries of the Navy over the past century indicates that after each national security crisis there is a reduction

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7Department of the Navy, Annual Reports of the Navy Department for the Fiscal Year 1917, Washington 1918, p. 2.
of force that naturally follows; however as each new crisis occurs the size and nature of the Navy increases over that of the past and consequently even larger coastal zone holdings of real estate are necessitated.

Throughout its history the Navy has experienced problems in crowded harbors. There has been limited pier space available, limited maneuvering room, and insufficient room for expansion due to changes in technology and the world political status. One of the lessons to be learned from a review of the growth and change in the navies of the world is that technology does indeed bring improvement in a navy's capability. It also brings increasing requirements for its support. This support requirement usually increases the coastal zone property needs. As the Navy changed from sail to steam the size of ships increased, sail lofts gave way to coal storage areas, supply ships or colliers were required for replenishment, coastal logistic bases were required. As coal gave way to oil more fuel bases with greater storage capacity were required. New types of support ships were required and again space requirements in the coastal zone increased. Technology and science produced the airplane and it in turn was introduced into the Navy. Again new ship types of even greater size came into being. The need for coastal zone airfields to support operations at sea added to real estate needs. The submarine brought
with it its own special needs for support facilities in the coastal zone. Tactics to combat new weapons possessed by the enemy and tactics and strategies used to best employ our own weapons produce additional property requirements.

The Navy is now in process of converting from fossil fuel to nuclear fuel. New requirements will be generated as time passes. The need for fuel depots in the coastal zone will eventually disappear only to be replaced by other needs.

The Navy now possesses land holdings in all of the major ports on the seaboard of both oceans that wash our shores. Large segments of the population are dependent on the employment fostered by these establishments for a livelihood. The yards and stations have evolved from military necessity and such other reasons that could be classified as political, economic, geographic, and demographic, and national security needs. These reasons have not in reality changed in their broad context over the years. However, within these areas there have been some fundamental changes in priorities that must be reconciled. There will be a need for national security and a strong Navy to assist in its maintenance for the foreseeable future.

The Navy is not only ships but also a large shore establishment, located mainly in the coastal zone, that competes for the same space as some of the other areas of growing
concern to this nation. The caliber of personnel and the training they require calls for more space ashore. These areas of concern that are in need of national attention have grown out of the needs of a greatly increased population inhabiting the same area of land that provided for all the needs of our forefathers.
LOCAL NAVAL ACTIVITIES
NORFOLK COMPLEX
VIRGINIA
Figure 4

NAVAL ACTIVITIES
CHARLESTON, S. C.

Source: HO-920
Figure 5

SOUTHERN CALIFORNIA
NAVAL ACTIVITIES

Source: HO-906
Figure 6

Source: HO-906
NAVAL ACTIVITIES
PUGET SOUND AREA

Source: HO-902
Figure 9

Source: HO-929
CHAPTER III

THE PROBLEM TODAY

In the preceding chapter the factors that lead to the choice of location of our naval facilities were discussed. These facilities were established on a set of principles that were based on the valid needs of the time. Many of these remain valid today. Most of these facilities, as indicated in Table I, and the land on which they are located were acquired over seventy years ago. The population at that time was less than forty-two percent of what it is today. This becomes of even more critical impact when growth of population in the port cities is considered.

The growth in population has seen the change from an agriculturally oriented nation to a highly industrialized and urbanized nation. Figure 1 underscores this pattern of urbanization and is indicative of the growth pattern to be expected in the future. Forecasts suggest that by the year 2000, seventy percent of our population will live within fifty miles of the coastal zone.¹ The fact that practically all of our naval facilities are located in the highly urbanized areas, as indicated by Figure 1, is cause


28
enough for a reappraisal of the real estate holdings of the Navy in these critical areas.

This increase in population and its tendency to coastal zone urbanization gives rise to new considerations and priorities for land use, especially in the coastal zone. The needs for additional real estate and access to coastal zone waters for recreational use is increasing. Technology is developing new areas to be exploited and new industries to exploit the resources of the sea and the coastal zone waters. The expanding population generates a requirement for more housing and places of employment. This increases the need for additional real estate. Space in urbanized areas has always been a problem, not only to public or private interests but also to naval interests.

The location of naval facilities and the conflicts that have existed with naval vis-a-vis other uses and possible solutions have been of concern to the Navy since its inception. Secretary of the Navy Robeson, in his annual report to the President in 1869, commented on the problem as follows: 2

The location of the navy yard at Brooklyn, New York is unfortunate. The waterfront available is quite limited, the Wallabout Channel is

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2 Department of the Navy, Report of the Secretary of the Navy, Showing the Operations of the Department for the Year 1869, Washington 1869, p. 73.
narrow and subject to extraordinary deposits of
dirt and washings in by sewers, so as to render
the continual use of dredging machines necessary,
at a large annual cost, in order to maintain a
required depth of water. At this important
station, in the harbor of the commercial metrop­
olis of the nation, there are always numbers of
vessels of war necessarily crowded together and
exposed to imminent dangers from fire, the yard
being adjacent to buildings of various characters,
among the number a large gas house.

The fact that a very large tract of land has
its natural drainage through the yard, the right
of way for this drainage reserved for the city,
and the formation of the surrounding land such as
to render it impossible, except at enormous
expense, to discharge the contents of the public
sewers outside the limits of the yard, is now a
grave injury. Vessels newly coppered, lying near
the discharge of these sewers, require almost
entire recoppering in a few months, caused by the
action of the acids from manufacturing establish­
ments, and other chemical agents.

Under all the circumstances it would seem
judicious to have a careful examination made of
the adjacent waters, to ascertain if some other
site cannot be found more suitable for the pur­
poses of the Navy. The present site is valuable
for city purposes, and it is believed that the
proceeds of its sale would be quite sufficient
to defray the expense attending the establishment
of a new yard with capacity commensurate to the
prospective wants of the country.3

Secretary Robeson recognized the problem of urban crowding
in a busy port and the impact of other coastal zone

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3 The pollution problem was not resolved until 1884 when
the Navy funded and constructed a sewer system. It is also
noted that the yard remained in naval service until almost
a century later when it was turned over to the city of
New York.
activities on the Navy. He also suggested the sale of government property and the application of the proceeds of sale to the acquisition of new facilities in a less impacted area of the coastal zone. Some of the problems of such sale were addressed by his successor a few years later, Secretary Chandler, who noted in his 1882 report:  

> It is clear that these eight navy-yards, involving so large an investment of original capital and such extravagant expenditures for maintaining them and doing work therein, will not be required by any present or prospective wants of the country. Whether we are to maintain an obsolete wooden navy or construct new modern iron or steel warships, no such number and extent of navy-yards will be needed. No advocate of a stronger or better navy urges the construction of many ships or the maintenance of a large fleet. Upon any view, the magnitude of our present navy-yards is grossly out of proportion to the use to be made of them under any system of construction and repair of vessels or with any naval fleet likely to be built and maintained.

The problem thus presented, what is to be done with the navy-yards, is not easy of immediate solution. If new iron and steel ships are to be built or repaired in any of them, essential changes and expensive additions must be made. It is not probable that for this purpose more than two or three yards need be fitted up as complete modern naval workshops. But it is impossible now to decide what yards should thus be specially selected. It is also by no means clear that every other yard will not be wanted, if not for construction and

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4 Department of the Navy, Annual Report of the Secretary of the Navy for the Year 1882, Volume I, Washington 1882, p. 11.
repair of vessels, yet to be used as a naval station and arsenal for war material for the Navy. At the harbors of Boston and New York this government should not be without a pier or landing space of its own at which its naval vessels can touch, nor wholly dependent upon private facilities. Any hasty discontinuance and sale of any of our yards will result in low prices, while if subsequent purchases of naval stations in the same harbor become necessary, the cost will be so great that the government will find itself a large loser at the end of the process of sale and repurchase, by each of which land-speculators alone will have profited.

Secretary Chandler sounded a warning that needs re-emphasis. It stems from the type of period in which his report was made, a period of peacetime, a period that existed from 1865 until 1898. His report was made in the middle of a relatively stable period of American history. His warning that the extent of property holdings in the coastal zone, though large and not then of any urgent or high priority alternative use, may not be best served by their indiscriminate conversion to other private, non-military uses. History repeatedly indicates that a reduction in forces in peacetime will occur and that the needs for new land to accommodate even larger forces will occur when the next security crisis arises.

Although reductions in force levels have commenced and the peacetime needs for real estate are less, there is an additional factor that should be considered. After emerging from a "Fortress America" concept on entry into World
War II a new awareness of international responsibilities became not only apparent but necessary in the postwar era and a "forward base" strategic concept was evolved. There is now an undercurrent of rising nationalism running in most of the countries in which we have base rights. This "Yankee Go Home" feeling and a desire to re-evaluate and renegotiate has been exhibited in Japan, Okinawa, and the Phillipines. In each of these areas there are large naval support facilities. These facilities would require space elsewhere if disestablished due to host nation pressure or a changing strategic concept. Coupled with pressure by the site nation are the problems associated with balance of payments and gold flow that are adversely influenced by the maintenance of overseas bases. The effects of these two pressures, "Yankee Go Home" and balance of payments, can increase the need for Navy owned coastal real estate. Consideration for the reservation of some property for this contingency is merited.

Time has come full circle again and the reduction in force and land holdings necessary to support the naval establishment has come into focus again. The population of this nation has a valid need for access to the sea and the coastal zone. As previously noted most of the available land in areas near urbanized metropolitan sections of the nation is government owned. President Nixon addressed and
assessed the needs for additional public lands in his message to the Congress on the environment. This message, delivered on 10 February 1970, read, in part, as follows: 5

Increasing population, increasing mobility, increasing incomes, and increasing leisure will all combine in the years ahead to rank recreational facilities among the most vital of our public resources. Yet land suitable for such facilities, especially near heavily populated areas, is being swallowed up.

Plain common sense argues that we give greater priority to acquiring now the lands that will be so greatly needed in a few years. Good sense also argues that the Federal Government, itself, as the nation's largest land holder, should address itself more imaginatively to the question of making optimum use of its own holdings in a recreation hungry area.

I propose full funding in fiscal 1971 of the $326-million available through the Land and Water Conservation Fund for additional park and recreational facilities, with increased emphasis on locations that can be easily reached by the people in crowded urban areas.

I propose that we adopt a new philosophy for the use of federally owned lands, treating them as a precious resource--like money itself--which should be made to serve the highest possible public good.

Acquiring needed recreation areas is a real estate transaction. One third of all the land in the United States--more than 750 million acres--is owned by the Federal Government. Thousands of acres in the heart of metropolitan areas

are reserved for only minimal use by Federal installations. To supplement the regularly appropriated funds available, nothing could be more appropriate than to meet new real estate needs through use of presently owned real estate, whether by transfer, sale or conversion to a better use.

Until now, the uses to which federally owned properties were put has largely been determined by who got them first. As a result countless properties with enormous potential as recreation areas linger on in the hands of agencies that could just as well--or better--locate elsewhere.

Bureaucratic inertia is compounded by a quirk of present accounting procedures, which has the effect of imposing a budgetary penalty on an agency that gives up one piece of property to move to another, even if the property is sold for ten times the cost of the new.

The time has come to make more rational use of our enormous wealth of real property, giving a new priority to our newly urgent concern with public recreation--and to make more imaginative use of properties now surplus to finance acquisition of properties now needed.

By executive order, I am directing the heads of all Federal agencies and the Administrator of General Services to institute a review of all Federally owned real properties that should be considered for other uses. The test will be whether a particular property's continued present use or another use would better serve the public interest, considering both the agency's needs and the property's location.

Special emphasis will be placed on identifying properties that could be appropriately converted or sold, so that proceeds can be made available to provide additional park and recreation lands.

I am establishing a property review board to review the G.S.A. reports and recommend to me what properties should be converted or sold. This board will consist of the Director of the
Bureau of the Budget, the Chairman of the Council of Economic Advisors, the Chairman of the Council on Environmental Quality and the Administrator of General Services, plus others that I may designate.

I propose legislation to establish, for the first time, a program for relocating Federal installations that occupy locations that could better be used for other purposes.

This would allow a part of the proceeds from the sales of surplus properties to be used for relocating such installations, thus making more land available.

The net effect would be to increase our capacity to add new park and recreational facilities, by enabling us for the first time to use surplus property sales in a coordinated three-way program:

(a) By direct conversion from other uses

(b) Through sale of presently owned properties and purchase of others with the proceeds

(c) By sale of one Federal property, and use of the proceeds to finance the relocation and conversion costs of making another property available for recreational use,

I propose that Federal procedures be revised to encourage Federal agencies to make efficient use of real property. This revision should remove the budgetary penalty now imposed on agencies relinquishing one site and moving to another.

As one example of what such a property review can make possible, a sizable stretch of one of California's finest beaches has long been closed to the public because it was part of Camp Pendleton. Last month the Defense Department arranged to make more than a mile of that beach available to the State of California for use as a state park. The remaining beach is sufficient for Camp Pendleton's needs: thus the released stretch represents a
shift from a low priority use to high priority use. By carefully weighing alternative uses, a priceless recreational resource was returned to the people for recreational purposes.

The President's message addresses one area of conflict, that of recreational use of our national land resources. Elsewhere in his message he discussed another conflicting use, pollution or uses detrimental to environmental quality. There are other areas of use or activity that create conflict also demanding solution. The President noted in particular the new pressures, population generated, and indicated, by inference, the following to be of particular interest to the Navy in relation to its property holdings:

(1) Federally owned lands are a precious natural resource.

(2) A review of all federal government real estate holdings is to be initiated.

(3) One criteria for resolution of land use conflict was provided. This criteria weighs the Federal agency's present use and needs and the property's location against other uses that might better serve the public interest.

(4) Relocation of installations that fail test criteria.

(5) Relocation expense to be defrayed by sale of property in question to alternative user.

The President's proposals are an oversimplification of the problem and avoid some of the implementation difficulties. More definitive criteria are required. Some of these will be discussed in the next chapter. The term public interest as differs from national interest and
national security needs will undoubtedly produce many differences of opinion in the attempted resolution of priorities of coastal zone property use. The problems of use to be made of such federally owned property and the priorities among various uses are more complex than ever before.

In the past facilities have been reduced in manning, but in general the land areas have remained within the federal domain and have not reverted to private use. Conversion to other uses may preclude their reuse for military purposes in time of emergency or mark their conversion to military use extremely expensive. It is fitting and necessary that surplus property be returned to public and even perhaps private use. However, the criteria for determining which properties are surplus needs to be carefully formulated and take into consideration more than just the immediate pressures. Such criteria must consider future as well as present needs.

One such indication of a re-evaluation of use was given by the President in his message. A one mile stretch of property along the Pacific Ocean was converted from use by the Marine Corps at Camp Pendleton and made available to the State of California as a state park. Figure 5 shows the Southern California area and the naval real estate holdings. From the change announced by the President comes a
possible planning approach that may be applicable to other coastal zone areas. That concept might be termed the "mushroom" or "T" approach.

As noted in the Camp Pendleton area there is a long strip of ocean front property backed by a large holding extending inland for some distance. The coastal strip is used mainly for amphibious training exercises and other training maneuvers associated with amphibious warfare. Inland, various support activities require real estate for a variety of training activities. The need for only a limited ocean or water front exists. This permits the realization of a concept that resolves a recreational space need for the public, yet it does not unduly interfere with the military need. The mushroom approach is not applicable in all areas of naval real estate holdings in the coastal zone. However, it is considered to be a practical approach in those areas of applicability and should be considered in land acquisitions of the future as one of the planning factors.

The pressures of population that require a need for reconsideration of space requirements are not the only new factors. In 1869 Secretary Robeson reported concern over environmental quality, primarily because of its adverse affect on the Navy. Today the degrading effects of pollution are of concern because of their influence on the
quality of the environment. The Navy is deeply concerned with various forms of pollution created by the fleet and shore activities such as: air pollution from jet aircraft, steam plants, firefighting schools, and ships engineering systems; thermal pollution from shipboard nuclear power plants; oil pollution from ships and fuel stations; noise from aircraft and engine overhaul activities; waste disposal from ships in the harbor as well as shore activities. These pollution and nuisance problems related to environmental quality are not new, however they have acquired a new urgency of solution.

Some of this urgency is indicated by State and Federal attempts to consolidate and centralize control over coastal zone affairs and environmental standards. In some states over fifty departments, commissions, authorities or other organizational structures are involved in a diffusion of effort and purpose as they attempt exercise control over the varied activities of the coastal zone. As a result of the potential of the coastal zone, both economic and aesthetic, there has been an ever increasing awareness of the inadequacy of the highly scattered and overlapping interests attempting to exercise control of activities in the coastal zone. A number of coastal zone states are now attempting to consolidate the management responsibility and control of coastal zone resources into a more centralized
These organizations will exercise considerable authority when established and will be capable of exerting increased pressure on naval use of the coastal zone. The local commander or district commander must become more aware of these agencies and should indicate his interest and initiative by seeking close liaison with appropriate coastal zone authorities as they are established.

For example, Daniel Wilkes, in an annex prepared to accompany the February 1970 Report of the Governor's Technical Committee on Narragansett Bay and the Coastal Zone of Rhode Island, entitled "Legal Problems in Constructive Use of Federal-State Jurisdictional Limits" reported "Where other areas are held by the Navy, for another instance, on the eastern side of the Bay or on its islands, simply to guarantee expansion opportunities in times of crises, the Coastal Zone Authority could explore the possibility of having the federal authority which owns them designate them for a conservation use under the custodial care of the Department of Natural Resources subject to terms governing immediate reclamation when the federal agency needs them."
CHAPTER IV

SOME CONSIDERATIONS FOR ANALYSIS OF THE PROBLEM

Thus far the uses of the coastal zone have not been specifically identified. Some of the naval uses and public and private uses have been mentioned in passing and some of the pressures giving urgency to the resolution of conflicts involved between the multiple uses have been discussed. Additionally some avenues of approach to assist in resolution of the conflicts between the various coastal zone activities have been suggested.

To attempt to catalogue the various military and non-military uses of the coastal zone would be a meaningless exercise. A review of the literature indicates the list of coastal zone activities is as long as the ingenuity of the author or study group. A number of studies have been made that reduce the uses to a few broad categories that are capable of expansion to provide any desired degree of depth necessary for a given area of study. The Urban Renewal Administration and Bureau of Public Roads have produced a document in which one method of describing a standard system for identification and coding land use activities is proposed. ¹ This system suggests nine broad

¹Marion Clawson and Charles L. Stewart, Land Use Information (Baltimore: Johns Hopkins Press, 1965), p. 29.
use areas, each with a one digit identifier. Each major area is then subdivided into as many sub-areas as needed and digitized as appropriate. A similar approach is used in a Navy facilities planning document. Other studies indicate different approaches and slightly different categories of use activity. Table III contains a sample of the various categories proposed.

The central factor involved in all of the various categories is that they potentially compete for the same space. In any analysis of the various uses of coastal zone resources, the essentiality of the activity to be accomplished in a specific location, or in other words its dependency on the coastal zone for its existence, must first be determined. Obviously certain activities can just as well occur inland as they can in the coastal zone. For other uses the coastal zone is absolutely essential for their existence. In yet others the existence of an essential use promotes or requires other dependent uses. In areas where coastal zone space is at a premium the first decision making criteria should be essentiality or dependence. Among essential uses some other criteria must be used to determine the choice between such uses and the priorities to be established among them.

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TABLE III

USES OF THE COASTAL ZONE

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<thead>
<tr>
<th>COSREL 1</th>
<th>URBAN RENEWAL 2</th>
<th>IPON 1</th>
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<td>Residential</td>
<td>Urbanization</td>
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<td>Transportation and</td>
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<td>Communication</td>
<td>Mining</td>
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<td>Utilities</td>
<td>Waste Disposal</td>
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<td>Enjoyment</td>
<td>Trade</td>
<td>Pest Control</td>
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<td>Services</td>
<td>Defense</td>
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<td>Power Production</td>
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<td>Recreational</td>
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<td>Land-oriented</td>
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<td>Private</td>
<td>and Water Areas</td>
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<tr>
<td>Other</td>
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</tbody>
</table>

NAVY 3

Operational and Training Facilities
Maintenance and Production Facilities
Research Development and Test Facilities
Supply Facilities
Hospital and Medical Facilities
Administrative Facilities
Housing and Community Facilities
Utilities and Ground Improvements
Real Estate

BATTELLE 1

Mining and Petroleum
Marine Engineering
Recreation
Health and Welfare
Transportation
Food and Agriculture
Defense and Space
Research and Development
Other Industry
### TABLE III (Cont.)

<table>
<thead>
<tr>
<th>ALEXANDER</th>
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<td>Fishing</td>
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<tr>
<td>Recreational and Residential</td>
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<td>Transportation and Communication</td>
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<td>National Security</td>
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<td>Promotion of Cultural and Social Values</td>
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<td>Research and Development</td>
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<td>Preservation of Natural Beauty</td>
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<tr>
<td></td>
<td>Enjoyment of the Environment</td>
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</tbody>
</table>

Sources of data for Table III are as follows:


Some uses are mutually exclusive, they pre-empt other uses and thus are highly competitive with other uses. Competitive use is not necessarily exclusive use, but implies that some reduction, up to and including elimination, is required in one use in order to permit an increase in another use. In addition to being competitive, uses can also be classified as complementary or supplementary. Complementary uses involve those activities that support one another, that is an increase in one activity produces an increase in another activity. Supplementary uses include those that, within limits, are not competitive or complementary. They involve those activities that can be increased without an adverse or beneficial affect on another activity. These categories of activities that have been deemed essential of coastal zone use could provide a weighing factor in decision making criteria.

In reaching conclusions or making decisions on uses to be made of the coastal zone the intra-action as well as the interaction or externalities must be analyzed. One of the first questions of importance that needs to be considered after essentiality is determined is that of irreversibility. If a use is permitted and the space it occupies cannot be converted to other uses at a later time or the effect it has on environmental quality is not capable of return to its original state then the activity can be classified as
irreversible. Land fill of a marsh area may forever preclude the use of the area as fish breeding grounds, or the conversion of a primitive wildlife area to a recreation area may forever eliminate its use as an area of scientific inquiry. The erection of a petroleum processing plant may prevent the land it occupies as well as some adjacent real estate from being used for residential purposes for decades to come. Prior to permitting an irreversible activity to locate or occur in the coastal zone the degree of its irreversibility must be carefully considered.

There are undoubtedly uses of the coastal zone by the Navy that are irreversible. Such uses need to be clearly identified prior to establishment of such activities at new or future sites. Conscious decisions should be made in those instances where a use will produce irreversible effects. Such decisions must not be left to chance by inadvertent omission. The effects of irreversibility should be fully explored prior to a decision that leads to the acceptance of those effects.

In the last chapter the variety and number of local, state and federal organizations interested in or involved with coastal zone affairs was noted. The lack of coordinated or centralized control and direction of these groups contributes to yet another problem. This problem concerns the vagueness of goals for activities in or uses of the coastal zone. The uses to be made of the coastal zone are not well
defined and the goals or objectives to be achieved by such uses are even more elusive. In some areas the choice to be made appears to evolve from a competition between short term economic benefit and long term social value. The diversity of areas of concern by the existing groups in any given region adds to the difficulty of establishing reasonable goals or making valid use decisions.

Goals and objectives are difficult to establish with any degree of relative permanence in the coastal zone. It is conceivable that a centralized regional group could establish limited goals and objectives with greater ease than many diverse groups. When such goals and objectives are maintained under review and revision, the probability of acceptance of activities that might be irreversible is reduced. The ability to enforce "zoning rules" that would be required to achieve such regional goals and objectives as might be established by a centralized authority borders on being impossible to achieve from a political standpoint. Sub-regional or local interests will not yield easily their present jurisdictional authority.

Without specific goals activities may be permitted to be undertaken that are inappropriate to coastal zone use and that produce effects that are not only undesirable but also irreversible. Recovery from such decisions may be forever precluded. Regardless of the difficulty in establishing
goals and objectives, there is a need for coordinated coastal zone management agencies on the state or even regional level. If such regional authorities come into being the need for the Navy to establish appropriate liaison is readily apparent.

After considering essentiality or dependency on the coastal zone and effects of irreversibility, the conflicts between the multiple uses within a given geographic area can be more specifically analyzed. The activities can be evaluated on the basis of resource use and environmental quality. The former is concerned with multiple uses of the same space for different activities. These competing uses could involve long term or short term space conflicts. A fishing boat engaged in trawling in a major ship channel at the same time a cruiser or destroyer is in the channel is a short term conflict for example. The use of coastal land without provision for public access to the water could be classed as either short or long term, depending on the type of structure erected. The erection of an oil refinery would be a long term conflict with residential use of the same property.

Environmental quality conflicts comprise the other area of competing uses of the coastal zone. Environmental quality involves not only waste disposal and other forms of pollution effecting ecological systems but also other forms of
environmental degradation such as aesthetic pollution and nuisances. Undoubtedly the environment can tolerate a certain amount of pollution that is not detrimental to any ecological system. However, the sight or odor of some wastes are aesthetically offensive. Noise from community recreation centers may be offensive to nearby residents. Certain architectural designs might prove unacceptable to some areas.

The resource and environmental quality factors involved in various coastal zone activities require analysis in order to make rational decisions concerning the resolution of conflicting uses. During a study of the Narragansett Bay, Dr. Niels Rorholm of the University of Rhode Island developed a matrix for use in depicting the conflicts between uses of the area under study.\(^3\) Since its inception by Dr. Rorholm it has not been widely studied as an analytic tool for decision making in the coastal zone, however, its potential is considered by this writer to be of great value in such decision making. The conflict matrix would be a valuable tool in identifying the conflicts existing between uses of the coastal zone and also permit valid decisions to be made concerning the

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\(^3\) Niels Rorholm, Economic Impact of Narragansett Bay, University of Rhode Island, Agricultural Experiment Station, Bulletin 374, Kingston, R.I. 1963, p. 20.
resolution of such conflicts. A sample or representative matrix, constructed by the author, is contained in Table IV. This matrix does not pertain to a specific area.

Table IV was constructed by considering the effects of each row activity on each column activity. The effects are classed by resource and environmental quality conflict as indicated in the legend. Other construction schemes are possible, such as digitizing conflict codes for easier visual identification. By use of such a matrix a detailed study of an area and the conflicts existing therein can be made to any depth desired by increasing the activity sub-categories as required.

From such an approach, information would be generated that could assist in determining the most beneficial use of the coastal zone in a specific case. This decision cannot be made purely on economic or cost benefit analysis. There are other areas that must also be considered such as, social, political, and the requirements for national defense. The basic use of such an analysis in determining the impact of coastal zone activities on naval uses of the coastal zone would be to provide base planners or policy makers an insight to the conflicts involved. With a detailed knowledge of the conflicts that exist or would exist if proposed actions were taken, the conscious acceptance of these conflicts would be permitted or else provide the basis for their impact being rendered minimal.
The conflict matrix could not only assist in identification and cataloging the conflicts among and within competitive uses but might also assist in identifying another feature that could assist in conflict resolution, commonality. The duplication of uses by various activities in a given area may be a waste of space or financial resources. The need to dispose of sewage or garbage or other solid waste products may be consolidated or coordinated. If the activities involved naval and public sectors of the economy, there would certainly arise problems involving funding, security, jurisdiction, management and other coordination difficulties. These problems may be amenable to solution if approached rationally. As the various local, state and federal authorities involved in coastal zone affairs are consolidated, it is anticipated that more pressure will be exerted on naval/civil cooperation in uses that have some measure of commonality.
CHAPTER V

CONCLUSIONS

The coastal zone of the United States is receiving ever increasing attention at high levels of state and federal government. The present world situation and urgent domestic needs are calling for a re-evaluation of national priorities of resource allocation. The Navy is in the process of major reductions in force, and consequently in reduction of the shore establishment support requirements. As the need for more land to accommodate the population and its attendant economic, recreational, and ecological needs is recognized the use of lands in the coastal zone by the Navy will be questioned increasingly.

There is a minimum amount of this precious natural resource, coastal zone space, that is required for the maintenance of national security. Real estate holdings not required by the Navy should be made available through the federal government to other valid uses. The extent of such naval holdings can only be determined by a detailed study of our national objectives and the strategy that is envisioned to obtain those objectives. From such a study force levels can be determined and in turn the shore establishment requirements in the coastal zone can be deduced. Using the concepts of essentiality and irreversibility the facilities
required in the coastal zone can be established. Such an approach cannot be based solely on security and military needs but must also take into consideration all of the factors effecting the quality of our national life.

In addition to the minimal needs that would obtain from such a study as indicated by the preceding paragraph, our past history indicates that there are valid reasons for reserving land holdings for at least three legitimate future uses. They are:

(1) To permit expansion for future national emergencies,

(2) To provide flexibility of response to short of war contingencies, and

(3) To accommodate changes in technology.

There is a trend that now lends further support to retaining land beyond that required for immediate needs. That trend is the increasing feeling of nationalism and a "Yankee Go Home" attitude among the newly emerging nations. Our forward base strategy is being eroded and this change must be considered when determining requirements for naval needs of coastal zone real estate. Such consideration is an essential part of item (2) above.

After all the military needs have been determined, the remaining uses of the coastal zone for naval purposes vis-a-vis other uses of the same geographic area should be analyzed. The method of analysis recommended is that
employing the concept of the conflict matrix. The values to be gained from such an analysis are:

1. The ability to predict consequences of various courses of action through identification of conflicts.
2. Avoidance of costly mistakes.
3. Preserve quality of coastal property.
4. Permit rational choices between competing uses.
5. Assist in selection of response to emergency situations.
6. Assist in the maintenance of good community relations.

In order to reduce conflicts that might arise in use of land that is retained for legitimate future uses, another use might be made of a conflict matrix analysis. Such an analysis could show areas where cooperative mutual use could prove beneficial. For example, analysis could reveal that areas such as access to the shore line, waste disposal, recreation sites and other mutual uses could be beneficial to local government or public needs and yet not detrimental to naval needs. The problems of funding, security, jurisdiction, and other mutual use management problems are capable of solution.

For those activities not deemed essential of accomplishment in the coastal zone, suitable real estate could be found in less urbanized or land impacted areas. A more
detailed review of the urbanization patterns might indicate areas that would be capable of supporting naval activity with minimal conflict. The President has indicated that procedures might be changed to permit the sale of property and the monies obtained be applied directly to the purchase of property and re-establishment of facilities at a new location. Such a solution may be feasible, but for any change in major activities it is not considered politically acceptable.

The economic impact of the closure of a military base has always been of great concern. The relocation of an entire base is not considered to be a politically acceptable solution, however it is considered feasible and appropriate to relocate support facilities not requiring shore line property to less valuable real estate in the same geographic area. Such facilities as hospitals, commissaries, family exchanges, and other ancillary activities could be moved out or away from the shore line. The "mushroom" concept is applicable and appropriate especially where property exchanges can be made. Where such arrangements are not feasible other arrangements could be made to accommodate mutual use for recreational purposes.

The Navy must take the initiative in reduction of conflicts in coastal zone space usage and environmental quality protection. Today's conflicts are mainly concerned with
real estate space conflicts and misuse of the environment.
The needs for planning and concern with water space use within the coastal zone and the outer limit of the continental shelf should be the subject of further, more detailed analysis so that proper decisions concerning its use can be made.
SELECTED BIBLIOGRAPHY


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