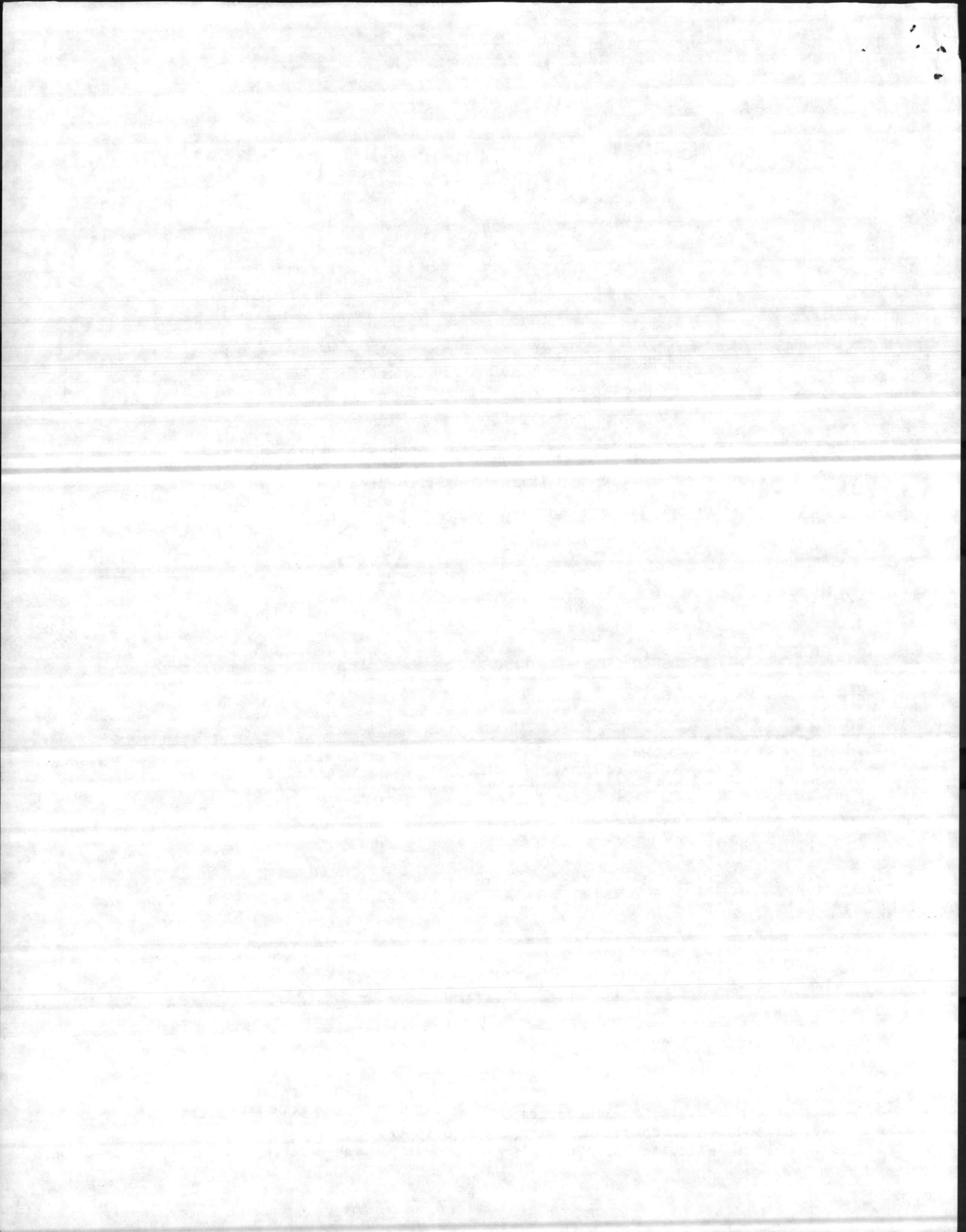


PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA):
LSD INTERFACE TRIALS
(A Special Project Addendum to the LCAC Program
Environmental Assessment of April 1984)

January 1985



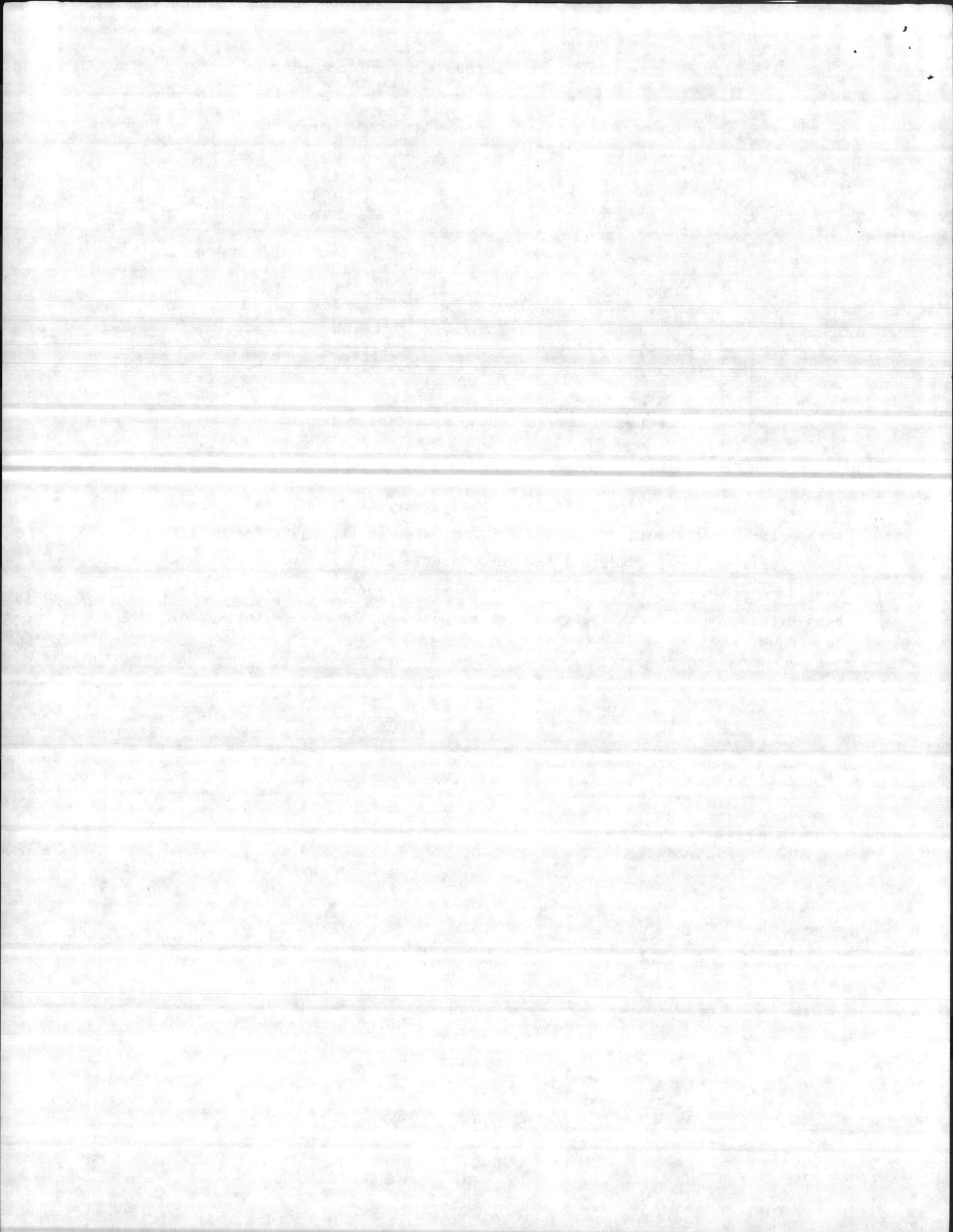
Prepared by Code 3240, Naval Coastal Systems Center, in accordance with OPNAVINST 5090.1, in compliance with Section 102(2)(c) of the National Environmental Policy Act of 1969.



STATEMENT OF FINDING NO SIGNIFICANT IMPACT

It has been determined from this Preliminary Environmental Assessment (PEA) that there should be no significant impact on the environment as a result of the proposed action, LSD Interface Trials. Accordingly, it is considered that compliance with the National Environmental Policy Act has been effected and, in this regard, the proposed action may be initiated.





SUMMARY STATEMENT

This is a Preliminary Environmental Assessment (PEA) of a proposed administrative action, designated the "Landing Ship Dock (LSD) Interface Trials," to conduct a series of tests to determine the operational suitability and effectiveness of the "LCAC", landing craft air cushion, operating from a ship (LSD) and to determine the LCAC's state of readiness for fleet introduction. This exercise, to be conducted from the Naval Coastal Systems Center (NCSC), Panama City, Florida, from late January through early March 1985, is essential to national security. This PEA is considered to be Special Project Addendum to the LCAC Program Environmental Assessment of April 1984, in which general LCAC activities from NCSC were found not to have significant impact. This PEA, therefore, focuses on environmental effects unique to the LSD Interface Trials, especially potential impact of tracked and wheeled vehicles on overland sites.

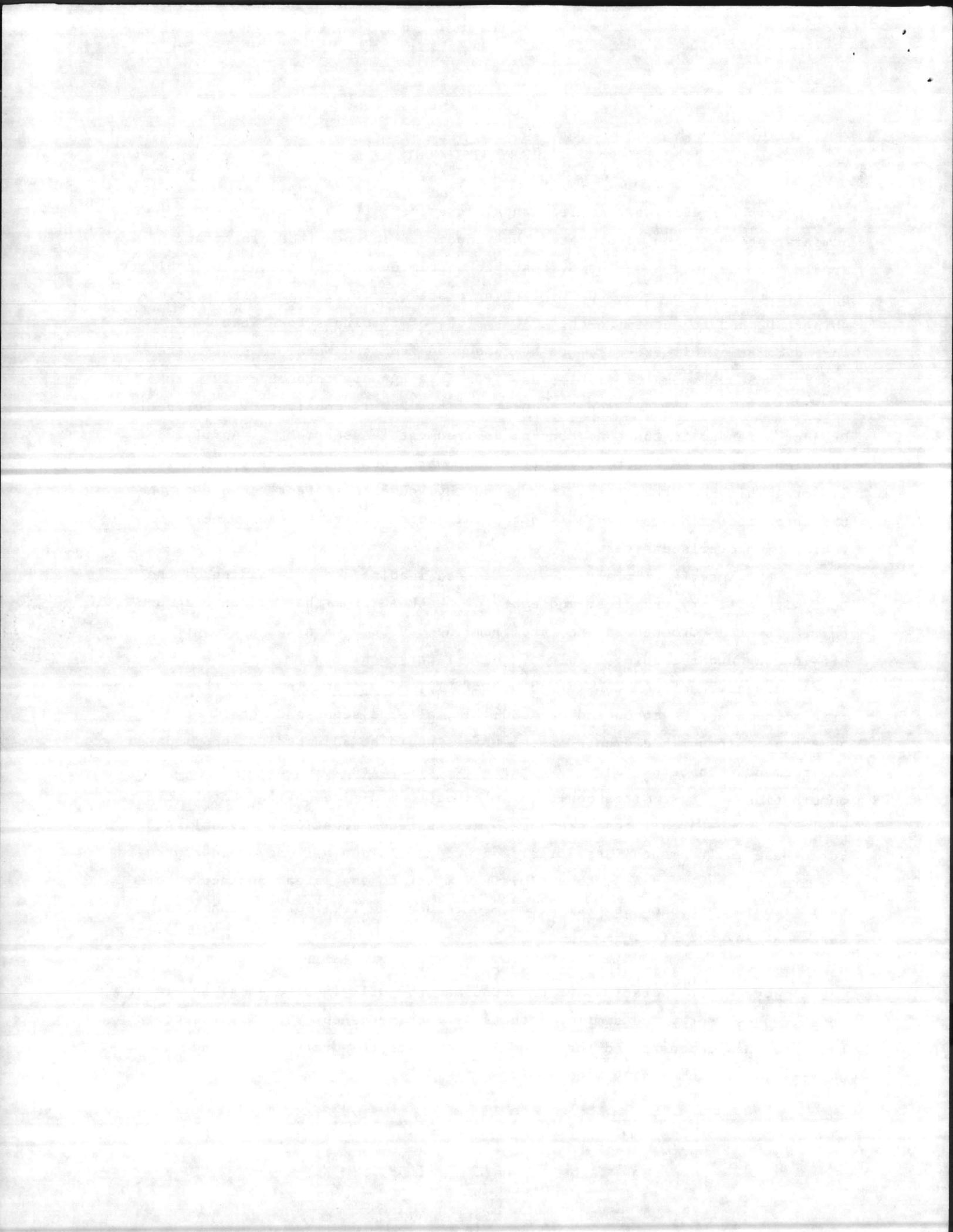
The LSD Interface Trials involves at-sea loading and off-loading of the LCAC with military vehicles; and entry of the LCAC from the Gulf onto a dune barrier system (Crooked Island) and from the bay to a mainland site for off-loading and reloading trials of the military vehicles.

Alternative actions considered were: (1), no action, in which these trials would not be conducted at NCSC; (2), altered scope and detail of operations, in which elements of the trials would be adjusted to accommodate environmental concerns; and (3) alternative test sites, in which various combinations of test sites could be selected to minimize environmental effects while allowing for all test elements. At the recommendation of Tyndall Air Force Base environmentalists, trials on Crooked Island will be concentrated in one area (Sites A and A'), thus limiting impact to that area; another alternative would have used several sites, to reduce the level of environmental stress at any one site.

Unavoidable adverse impacts of the LSD Interface Trials include:

1. Overwater operations of the LCAC and LSD will involve usual levels of noise, waves, spray and similar effects of routine maneuvers. Experience in this area has demonstrated that these impacts are temporary, minor and generally environmentally innocuous.





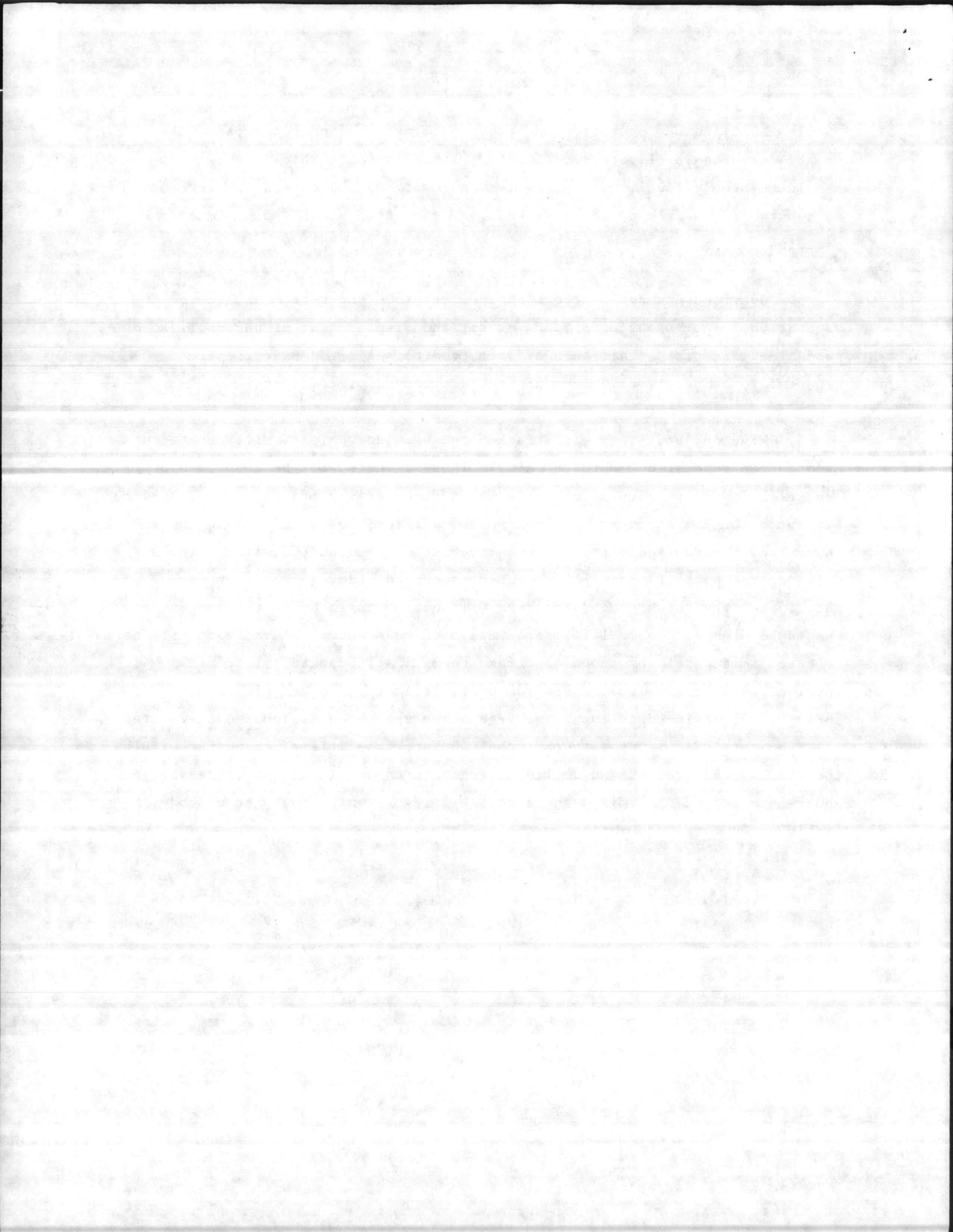
2. LCAC and LCU operations at the shoreline upon beach approach will create disturbance of bottom sediments. Increases in turbidity, however, should be highly localized, short-lived and with no appreciable shore erosion. No substantial effect on seagrass beds or associated benthic organisms is anticipated.

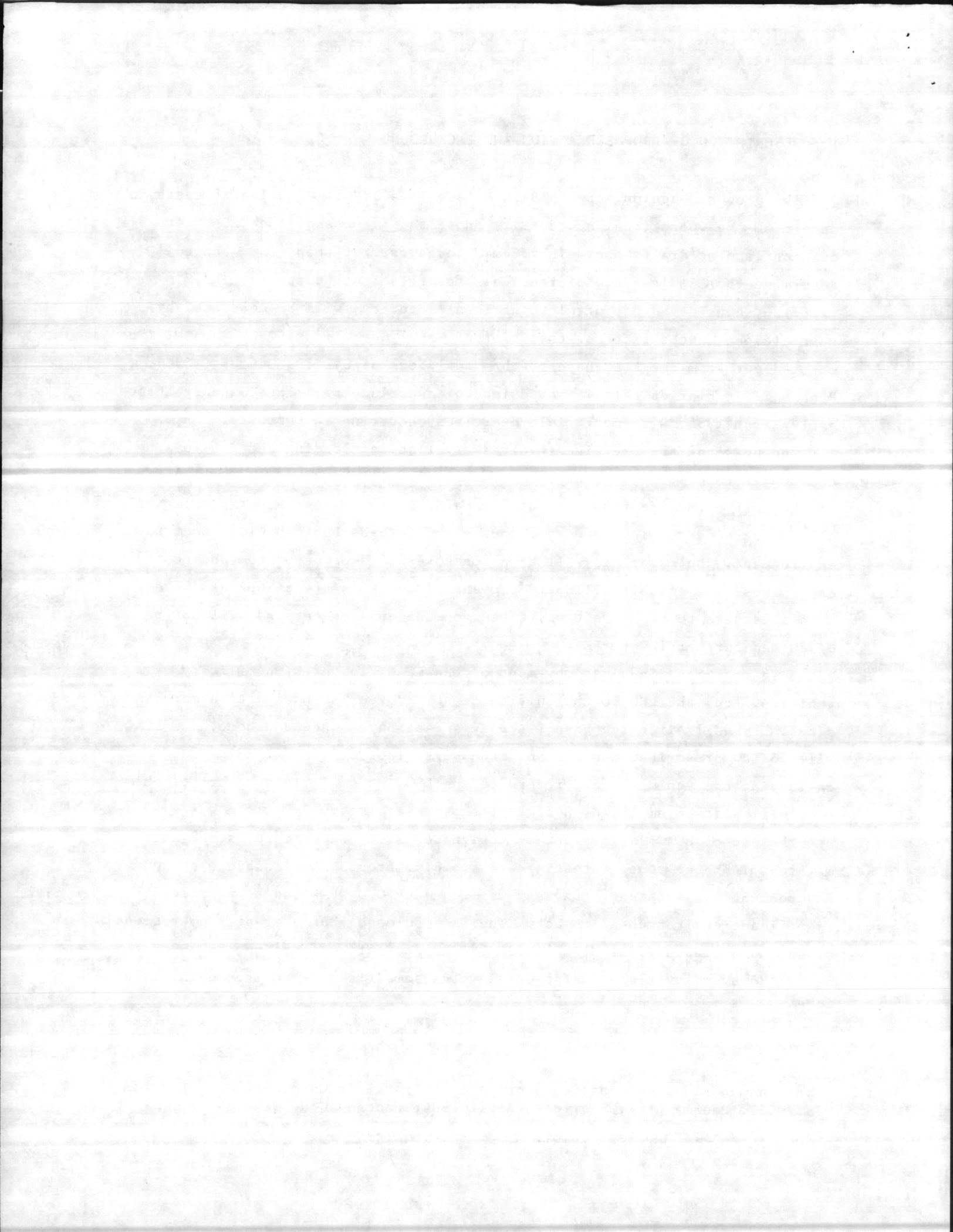
3. Overland passage of the LCAC involves some short-term damage to vegetation, minor shearing of dune crests and displacement of unconsolidated sand along its track. All such effects from this limited exercise are expected to be relatively minor and subject to prompt recovery.

4. Movement and staging of tracked and wheeled vehicles will create ruts and flatten vegetation in their paths. These effects will be countered by pre-selection of staging sites to avoid environmentally fragile areas, strict limitation of all maneuvers to loading and parking, no vehicle moving more than a few hundred feet from the LCAC; vehicles from the LCU will follow a well-defined path of minimal length from shore to staging area. It is anticipated that plant root structure will not be damaged, so that regrowth should be prompt. Topical fill and repair of ruts and similar damage will be effected immediately by shovel and rake teams. All Crooked Island areas involved will benefit from a program of fertilization to be initiated in spring 1985, designed to encourage vegetation growth on designated LCAC sites.

From this PEA, it appears that the LSD Interface Trials, conducted within the limits, constraints and ameliorative measures outlined, should result in short-term impact of limited and acceptable level, while there should be little or no long-term impact on the environment.







on dune barrier formations such as Crooked Island. Thus, the EA outlined precautionary measures and designated carefully chosen sites for specific types of operations on Crooked Island, setting forth constraints and ameliorative measures for LCAC maneuvers at each site. The selection of and constraints for each site were determined in close consultation with environmental authorities of TAFB and are an integral part of the ISSA between NCSC and TAFB for the use of LCACs on TAFB. Further, the EA called for the establishment of an appropriate site on the mainland for LCAC operations, so that operations on Crooked Island could be limited to those actions which can only be provided by that environment (e.g., beach/surf maneuvers). This was accomplished by TAFB's permission to use the Drone Recovery Area (Site L), on the mainland with access from East Bay.

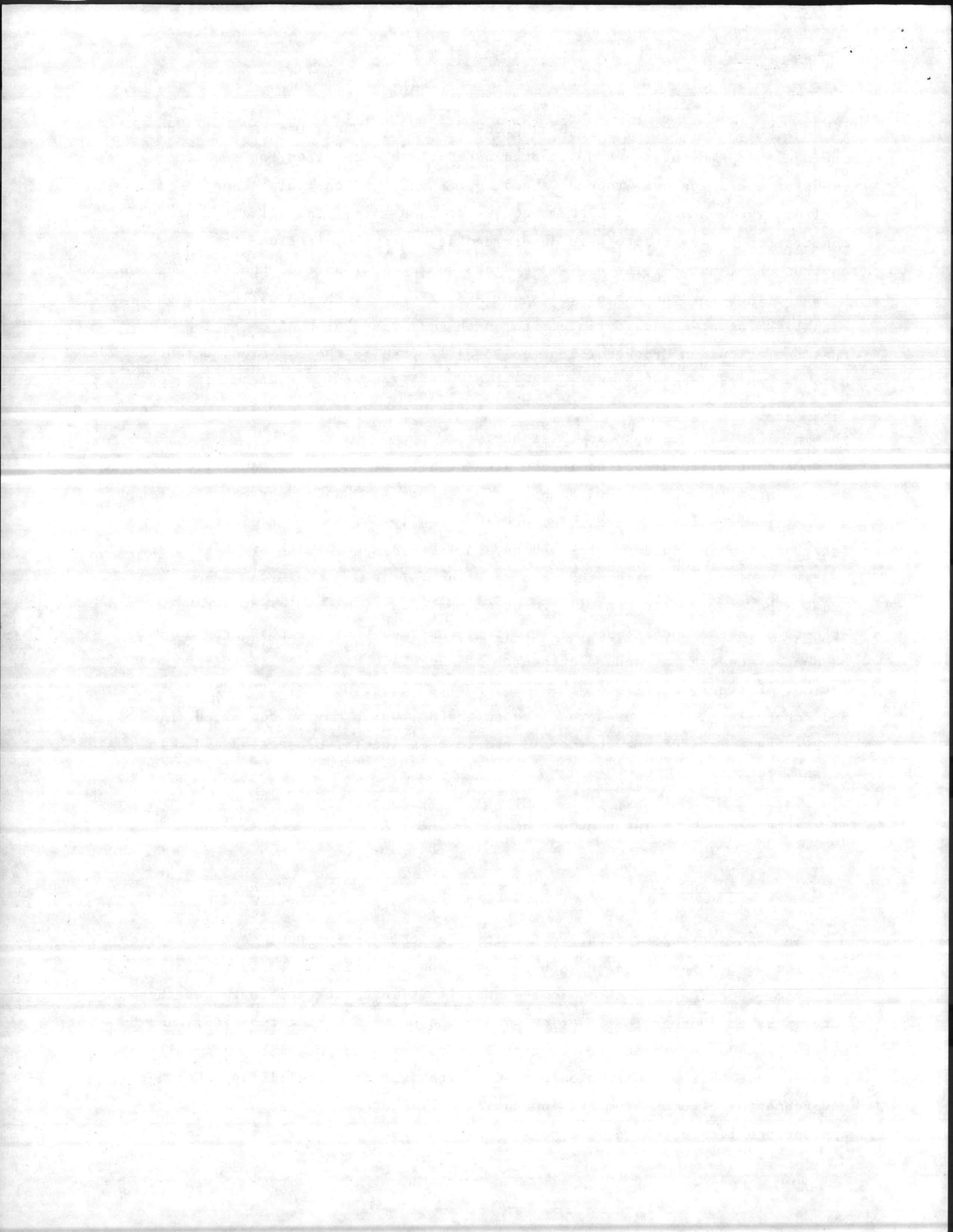
LCAC activities involved in the present action, "LSD Interface Trials," are essentially identical with those of the routine "LCAC Program" as assessed and environmentally cleared. The environmentally unique facet of the LSD Interface Trails concerns off-loading and limited maneuvering of wheeled and tracked vehicles on designated Crooked Island sites and the Drone Recovery Area. Therefore, this PEA will focus on analysis of possible environmental effects of these special activities; it is assumed that the LCAC Program EA adequately covers the general concerns of the LCAC activities in the proposed action. Further, details of the LCAC, habitat descriptions, site designations and constraints, etc., are presented in the EA, which may be consulted for these data. This PEA may be considered to be a special project addendum to the EA.



II. ALTERNATIVES TO THE PROPOSED ACTION

A. No Action.

The "no action" alternative implies that this action would not be carried out from NCSC using sites on TAFB for overland operations. For very real logistic, technical and economic reasons, it is infeasible to carry out these activities at another installation within the necessary time frame demanded by military needs. Since this operation is considered essential to national security, it must be carried out at NCSC with available facilities. Further, environmental effects from this operation would be experienced at any other appropriate locale, while NCSC has an existing record of air cushion vehicle

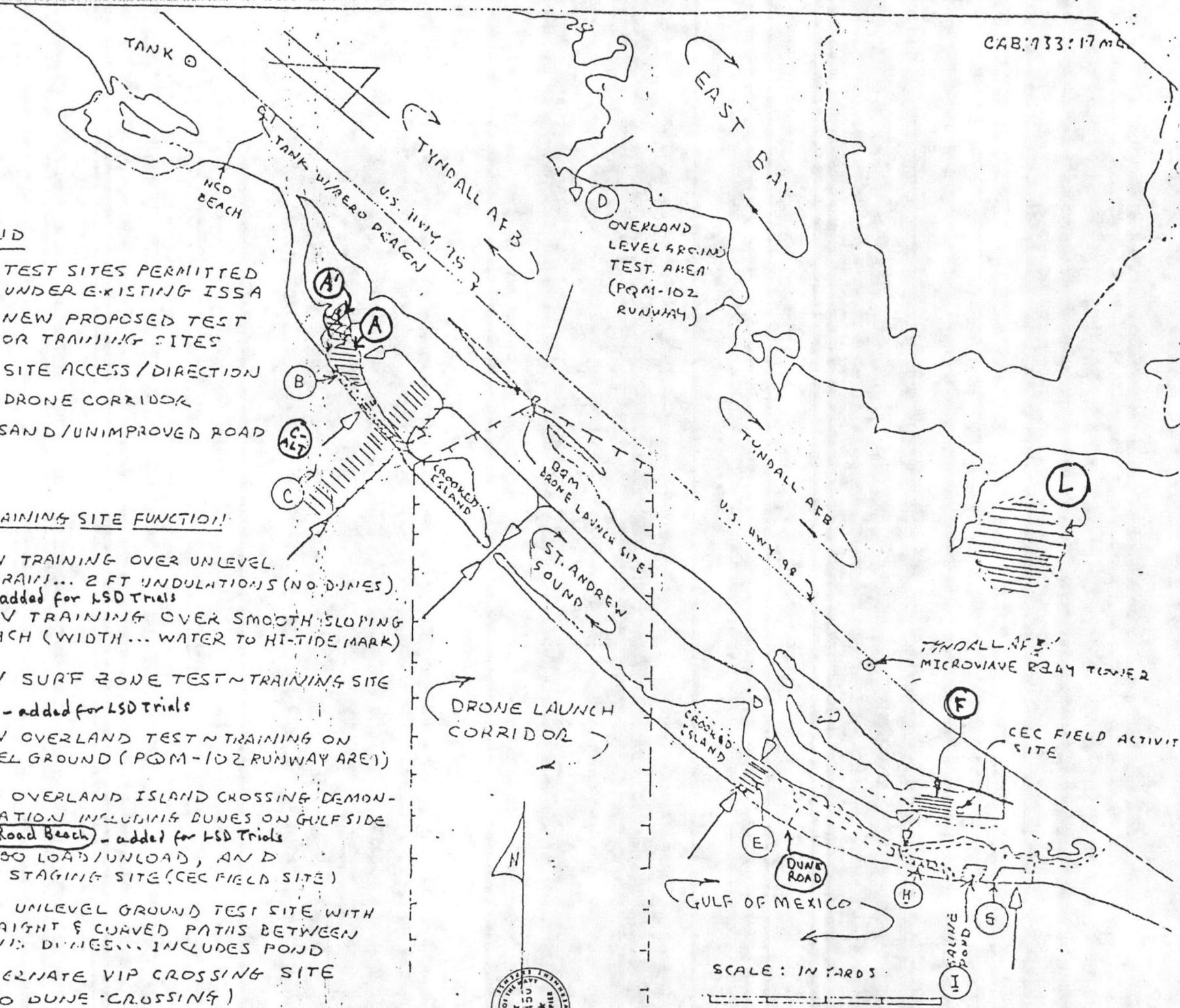


LEGEND

-  TEST SITES PERMITTED UNDER EXISTING ISSA
-  NEW PROPOSED TEST OR TRAINING SITES
-  SITE ACCESS / DIRECTION
-  DRONE CORRIDOR
-  SAND / UNIMPROVED ROAD

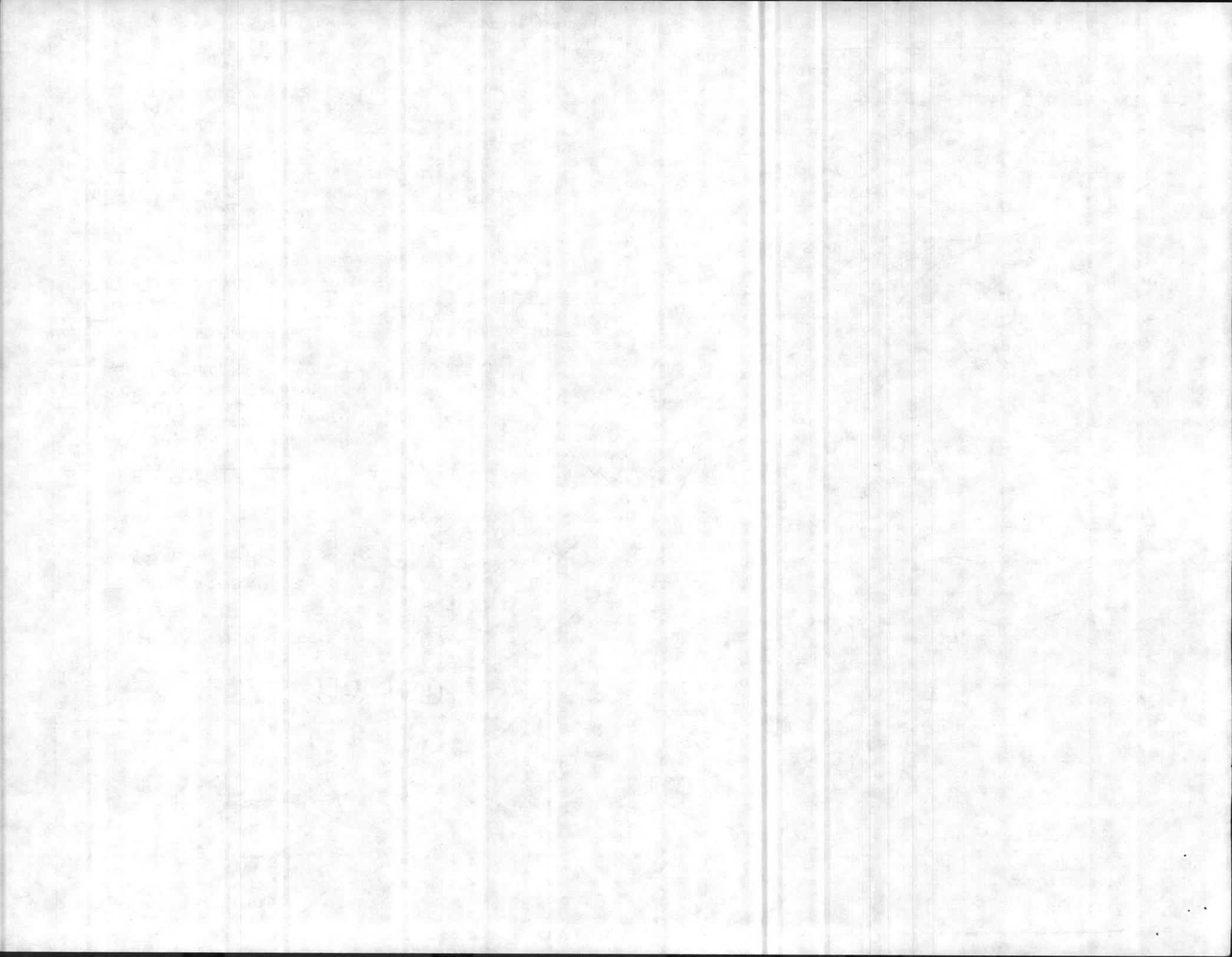
TEST-TRAINING SITE FUNCTION!!

- (A)** ACV TRAINING OVER UNLEVEL TERRAIN... 2 FT UNDULATIONS (NO DUNES).
(A') - added for LSD trials
- (B)** ACV TRAINING OVER SMOOTH SLOPING BEACH (WIDTH... WATER TO HI-TIDE MARK)
- (C)** ACV SURF ZONE TEST-TRAINING SITE
(C-ALT) - added for LSD trials
- (D)** ACV OVERLAND TEST-TRAINING ON LEVEL GROUND (PQM-102 RUNWAY AREA)
- (E)** VIP OVERLAND ISLAND CROSSING DEMONSTRATION INCLUDING DUNES ON GULF SIDE
Dune Road Beach - added for LSD trials
- (F)** CARBO LOAD/UNLOAD, AND VIP STAGING SITE (CEC FIELD SITE)
- (G)** ACV UNLEVEL GROUND TEST SITE WITH STRAIGHT & CURVED PATHS BETWEEN SAND DUNES... INCLUDES POND
- (H)** ALTERNATE VIP CROSSING SITE (NO DUNE CROSSING)
- (L)** PANI DRONE RECOVERY AREA



FIGURE





(ACV) operations which have been found environmentally acceptable. Thus, there are no apparent environmental advantages to conducting the proposed action elsewhere even if operationally feasible.

B. Altered Scope and Detail of Operations.

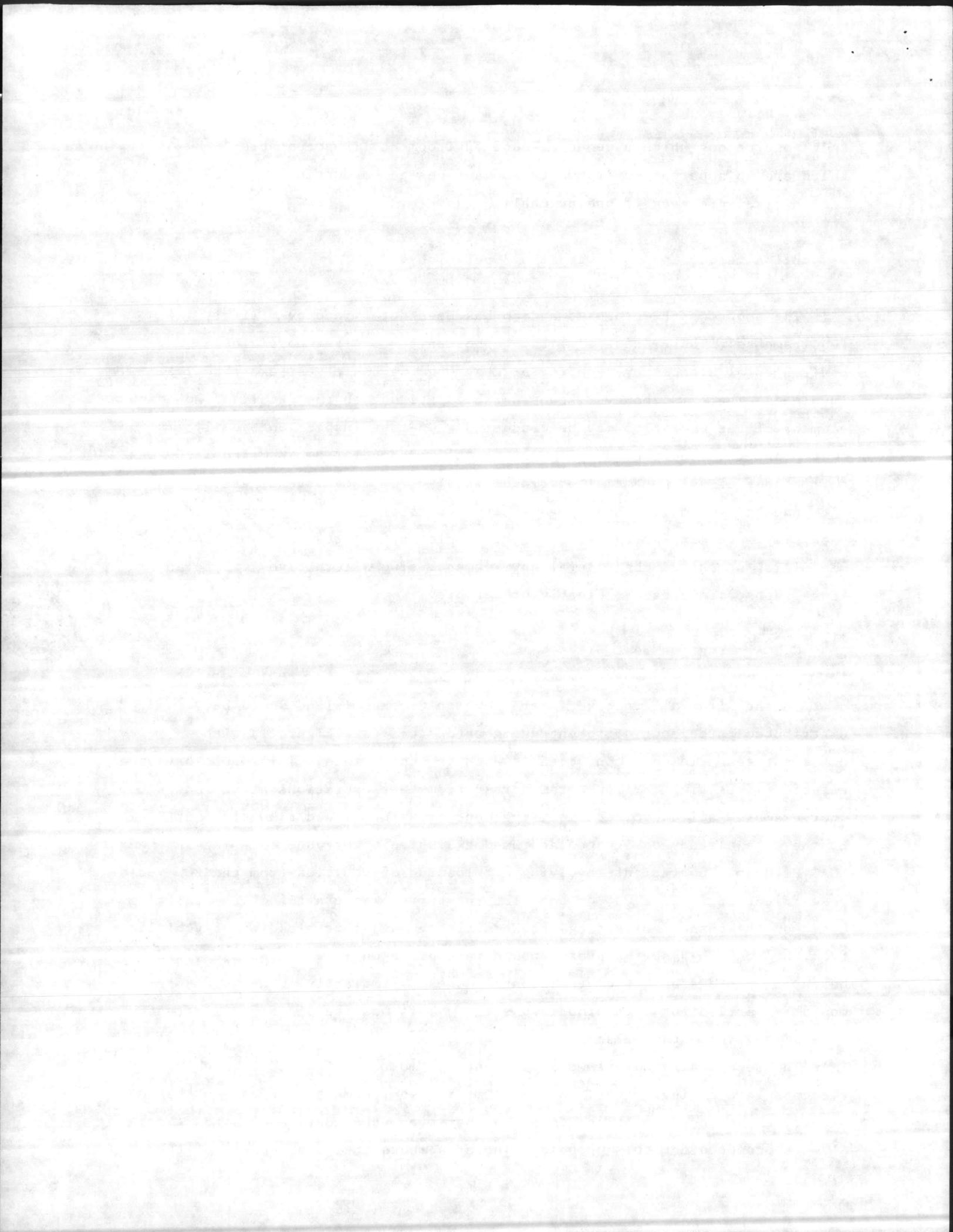
The scope of the proposed action has been determined by military requirements. Thus, there is little opportunity to alter possible environmental effects by reducing or changing the basic test exercises involved. There is, however, considerable latitude in the detail of how each element of the operation may be conducted. On-foot inspection by military test planners, accompanied by environmental personnel from NCSC and TAFB, was carried out at all potential overland sites. From this investigation, alternative procedures involving different sets of sites and activities at each site were considered, relative to completing all test elements while minimizing stress on the natural environment. Two alternatives, as follows (paragraph c), emerged as clearly preferable.

C. Alternative Test Sites.

In the first alternative, operations on Crooked Island would be distributed throughout different designated sites (see Figure 1) with different test elements conducted at each as appropriate. This would have the effect of lessening environmental stress from test operations at any one site. For example, all exercises requiring dune crossings would take place at Site E, the site already designated and used exclusively for dune crossing in the LCAC Program. Operations involving off-loading of vehicles from the LCU would be carried out at Site C', on the flat and barren western tip of the shifting beach on the channel bisecting Crooked Island. Major off-loading of vehicles from the LCAC in a surf approach would take place on Site B', an open, wide beach at safe distance from the frontal dunes. Similarly, other elements would be carried out at appropriate sites. This was the preferred alternative of NCSC environmental personnel.

The second alternative would concentrate most all Crooked Island test elements into a single zone, thereby limiting environmental stress to that one area. At the recommendation of TAFB authorities, the contiguous Sites A and A' were proposed for this purpose. The area meets the requirements of the





proposed action; and, with one exception, all test elements can be met there within usual environmental constraints for the area. That exception involves crossing over frontal dunes heretofore not permitted. However, TAFB environmental personnel identified the dune area to be crossed and stated that this new crossing, which would allow complete use of Sites A and A', was environmentally acceptable to them. This second alternative was the preferred alternative of TAFB authorities and environmentalists.

Since the test elements involving Crooked Island can be carried out quite satisfactorily from Sites A and A', the second alternative was selected for the proposed action and is discussed in following sections of this PEA.

III. DESCRIPTION OF EXISTING ENVIRONMENT

General descriptions of the overwater and overland operating areas are presented in the LCAC Program EA. There follow some details of specific sites involved in the LSD Interface Trials.

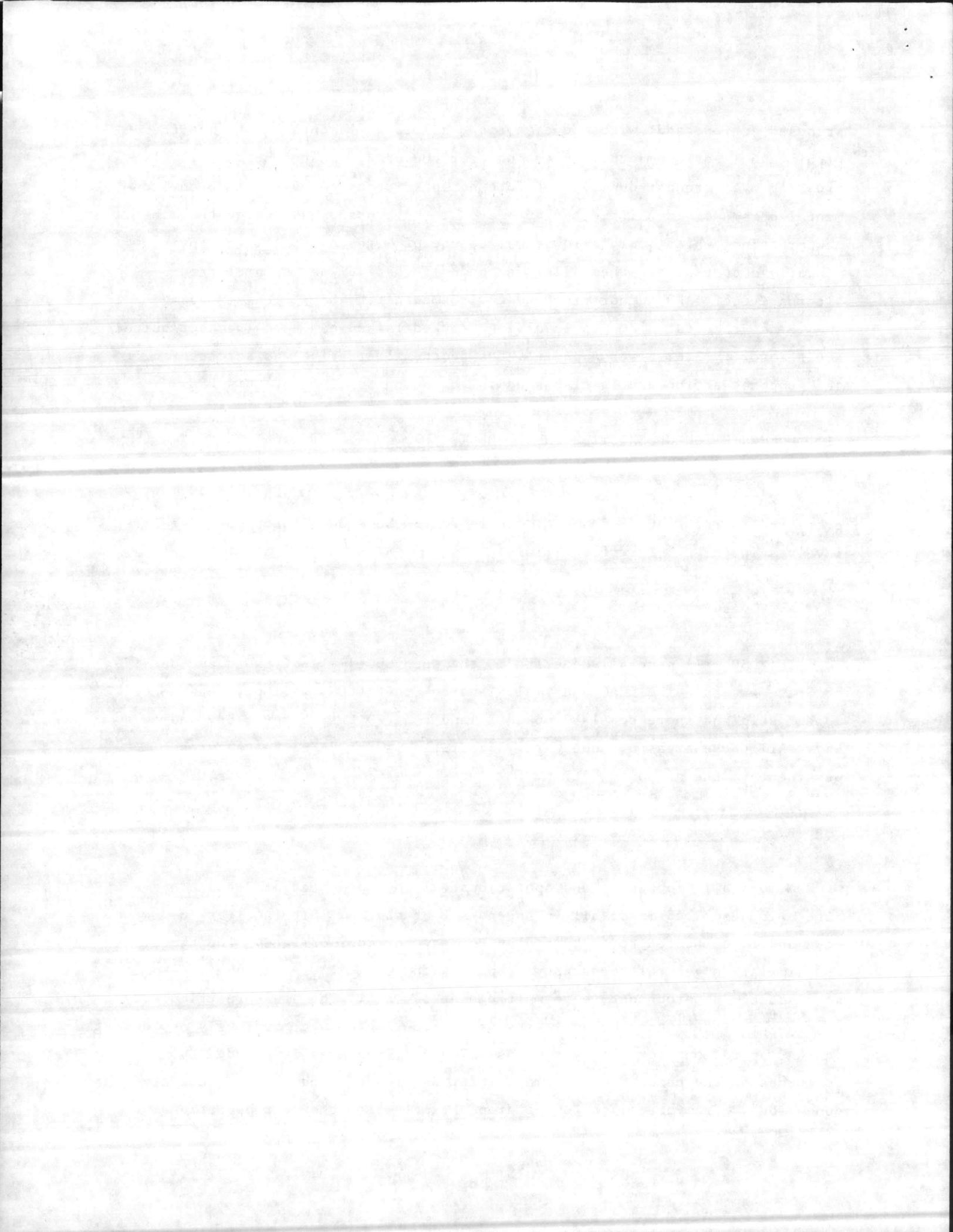
A. Overwater.

The LSD will generally operate in the open Gulf well offshore and outside of State waters. The LCAC and small landing craft (LCU) will ply between the mother ship and shore to (1) Crooked Island and (2) East Bay via St. Andrew Bay. All these areas are adequately described in the EA as to features pertinent to the proposed action.

B. Overland: Sites A and A'.

Almost all Crooked Island operations will be conducted at Sites A and A'. Site A is described in detail in Appendix B of the EA. Site A' lies just west of A and is connected to it by a flat, grassy corridor of land. The two sites are similar in general topography: open, with small (1'-3' high) hillocks of sand scattered throughout to form irregular terrain. The areas (particularly Site A) are interrupted by small stands of pine, which are studiously avoided in LCAC operations for safety reasons. Seaward, the area is bounded by foredunes on the beach face, a small inter-dunal swale and then a secondary dune ridge. From there, the dunes drop abruptly into the flat operational





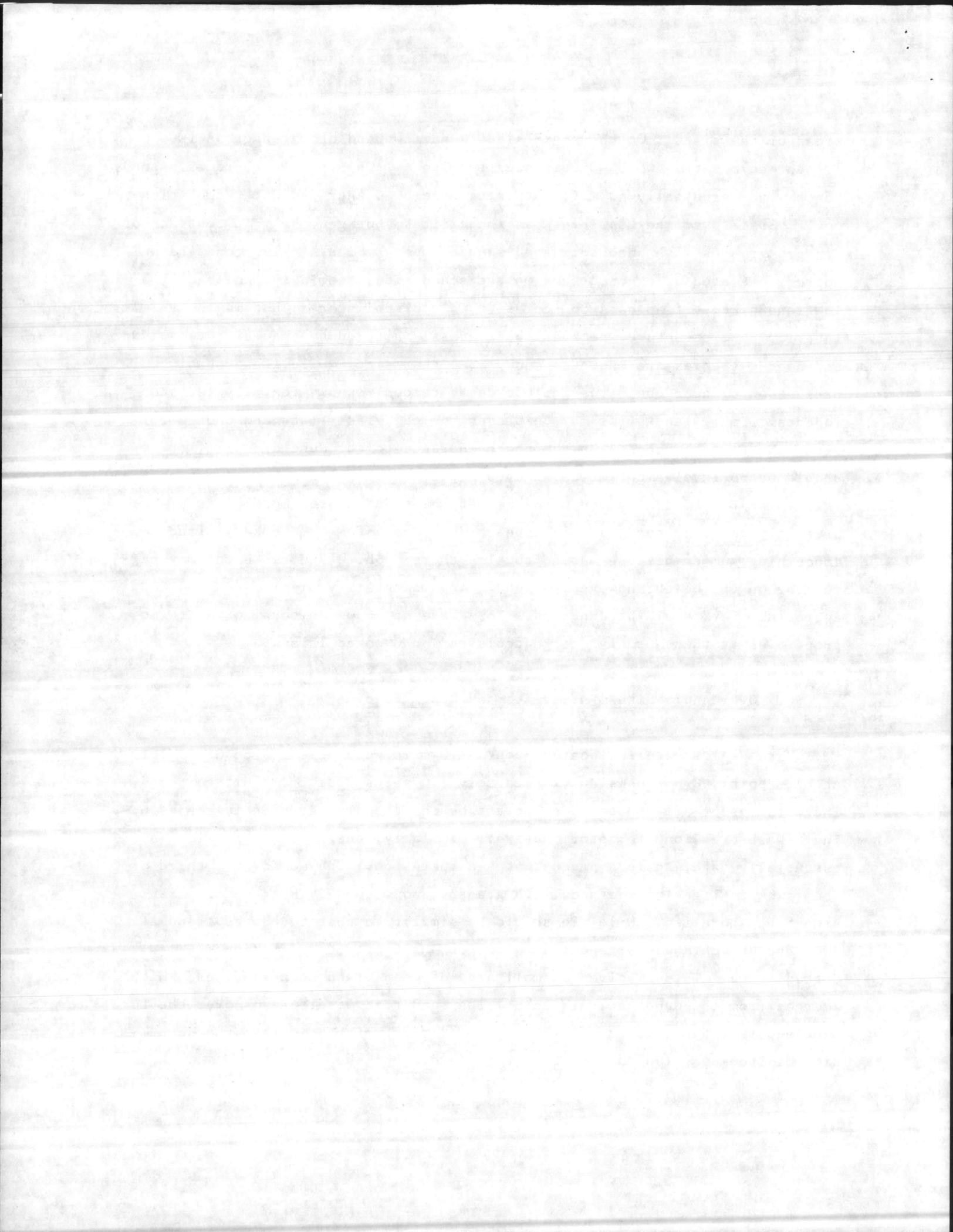
areas of the sites. On the sound side, a narrow band of marsh grass is present across the two LCAC entrances to Site A. On Site A', there is a sandy beach with essentially no marsh at the single LCAC entry point. Vegetation cover varies over the LCAC track at these sites; but generally it consists of clumped grasses with unconsolidated sand between. Site A' also contains an appreciable area of exposed sand on the sound side, seemingly enclosed by a low sand dike. It appears to represent an old spoils area, but may be an interior dune structure which has been grossly altered by natural forces. No endangered species are known to occur at either site. Wildlife probably present on or near the sites include deer, racoon, skunk, fox, coyote, and rodents. Small land birds may be present on the grass flats and shorebirds along the sound beaches. On the beach entrance to the dune crossing, there should be no involvement of endangered species during the proposed action (mid-winter). Consultation with the Office of Endangered Species is presently underway for the entire beach/dune ecosystem of Crooked Island, concerning summer-nesting marine turtles there. Shore and sea birds may be resting on the beach; however, beyond being momentarily displaced upon LCAC approach, they should be unharmed. There are no known cultural or historic properties at these or any designated sites on Crooked Island.

C. Overland: Site C-Alternate and Beach Road.

Site C-Alternate is located about 7/10 mile west of old Site C (Fig. 1). At this point, Crooked Island is scarcely 100 yards wide from gulf to sound. There is essentially no foredune on the beach, the area apparently representing a wash-over zone for storm waters. Similarly, the interior portion is essentially bare, again a product of sea intrusion. The sound-side third of the track is lightly vegetated with grasses and with only a trace of marsh along the shoreline. Wildlife should be similar to that for Sites A and A'.

The "Beach Road" site occurs about one-half mile east of Site E (Fig. 1, dotted line). This involves a small area of open beach at a sand road which emerges from the dunes at this point. The sand road itself leads over the fore dune and rear dune ridges, to an unimproved road which traverses the sound side of Crooked Island and on to a road leading to the highway.





D. Overland: Site F and Site L.

Site F (Staging Site) is near the CEC Field Station of TAFB, situated on the mainland fronting eastern Crooked Island. The area involved is highly disturbed, formerly used as a training area for heavy military equipment. It is sparsely covered with short grasses and contains a compacted oystershell hardstand. Air cushion craft approach the site from the sound across a narrow band of marsh and up a cleared grassy trail to the site.

Site L ("Drone Recovery Area") is a large tract on mainland TAFB with access from East Bay, completely cleared and leveled by TAFB for drone recovery activities. It is covered with tall grassy vegetation (e.g., broomsedge), which is routinely mowed with heavy equipment. This area was made available by TAFB to provide an area of minimal environmental fragility for most LCAC operations. Thus, Crooked Island maneuvers can be restricted to those requiring its unique features (e.g., surf/beach interface), with most routine operations carried out at Site L. Neither Site F or Site L involve endangered species and other wildlife should not be seriously disturbed. There are no known cultural or historic properties at either site.

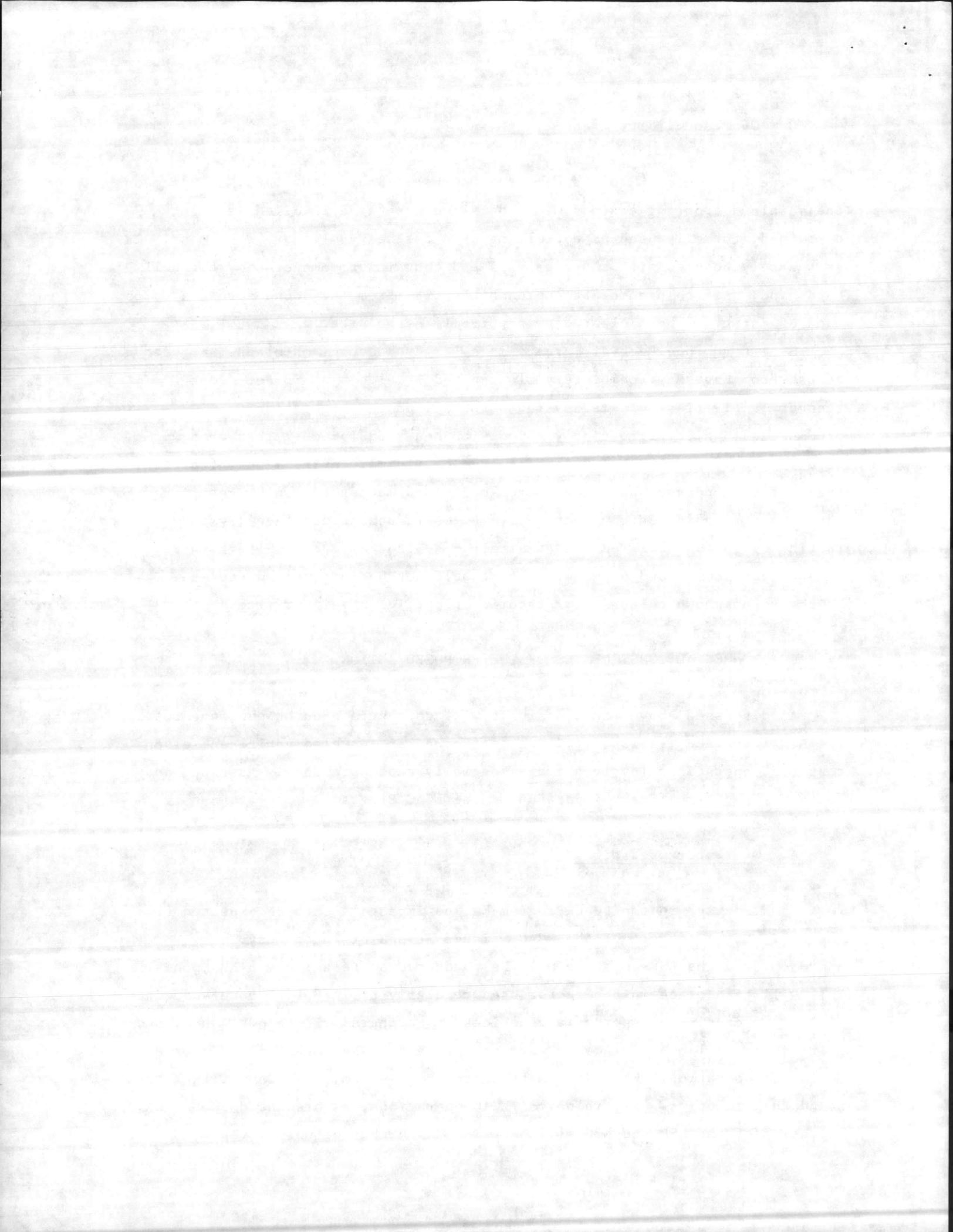
IV. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

As discussed above, this analysis will concentrate on unique features of the LSD Interface Trials (e.g., use of tracked and wheeled vehicles), given that LCAC operations involved are essentially those previously assessed and found without significant impact under the LCAC Program.

A. Overwater Operations.

As discussed in the LCAC Program EA, no impacts are to be expected from the overwater maneuvers of the LCAC, either at sea or in the bay. Its approach from the LSD to shore will be conducted at relatively high speeds. This will take place in the sector used regularly by TAFB for drone and other military operations. Appropriate notices to mariners will be published, and guard ships will be in place to warn off private vessels that might approach during an operation. While transitting the bay system, the LCAC will exercise standard precautions used in normal LCAC operations, as presented in the EA. Operation of the LSD and LCU will be essentially that of normal vessel





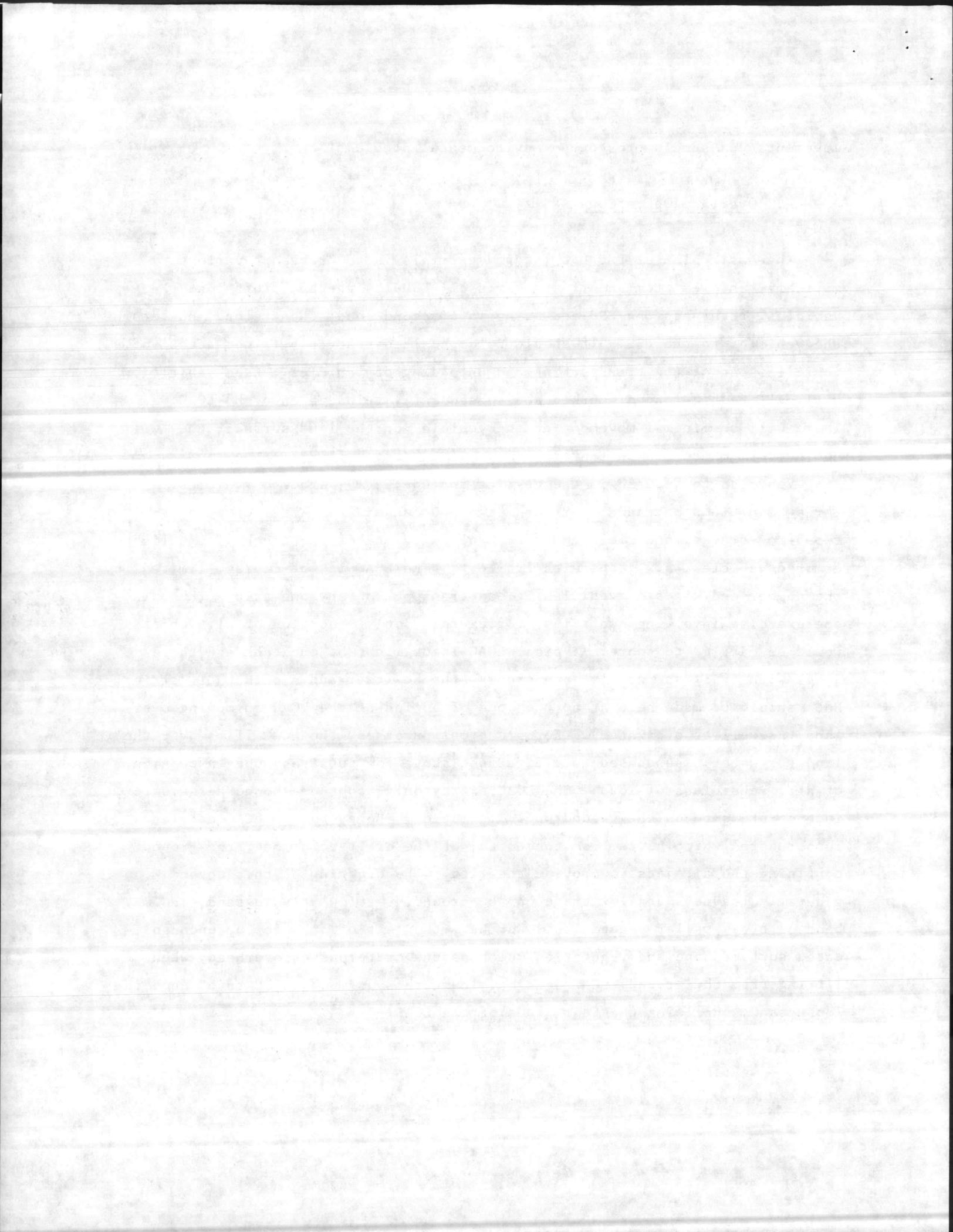
movements and should present no environmental problems.

B. Overland Operations.

The basic plan of the LSD Interface Trials is to transport various military vehicles from an off-shore vessel (LSD) by the LCAC, off-load the vehicles, return to the LSD and bring in a second load; then reload and return the vehicles to the LSD. It should be emphasized that this is not a test of vehicles, but of the transporting and unloading of vehicles. Each vehicle will only be off-loaded, parked and subsequently reloaded onto the LCAC. There will be minimal movement of the vehicles on the land surface; they will not perform maneuvers on shore.

Vehicles to be used in the testing include: (1) Tracked vehicles: three amphibious personnel carriers, two M60 tanks; (2) Wheeled vehicles: two 5-ton trucks, one field howitzer (pulled by one of the trucks), six light armored vehicles, six jeeps with trailers. The LCAC is, of course, limited in the number and kinds of vehicles it can transport on any one trip. Thus, in one exercise involving two trips, for example, only a portion of all vehicles would be carried to shore. Typical LCAC loads might be one tank and three jeeps with trailers, or else two trucks, the howitzer and a personnel carrier. Note should be made here as to the mode of action of the LCAC in moving overland (as well as overwater). For practical purposes, the LCAC flies over the land (or water), suspended some five feet above the substrate upon a cushion of air, regardless of load. The LCAC exerts only about one pound per square inch of pressure on the ground while in motion. However, the LCAC carries a rubber apron which hangs from the bottom of the craft to or near the ground, confining the air jets to provide the lift. The dragging of this apron generally leaves a shallow trace on the ground, particularly in sand, and may bend or break taller vegetation. Further, the jets of air blow up unconsolidated surface sand and vegetation mulch as the craft passes overhead. When lifting from the ground, LCAC jets may leave ruts as much as 3" to 6" deep in loose sand, outlining the four sides of the LCAC.





1. Site A, Gulf Side

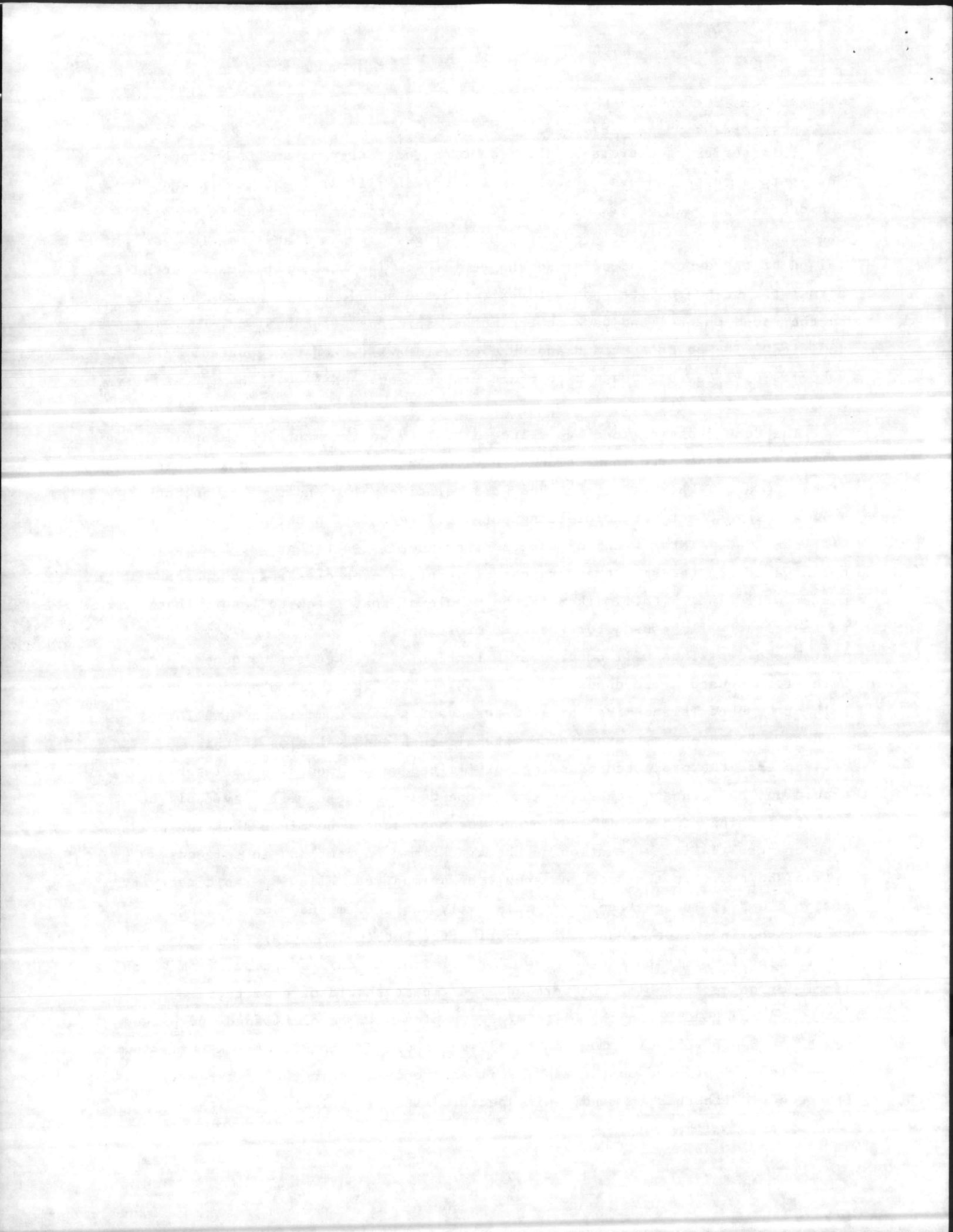
This series of exercises is designed to test entry of an LCAC through surf onto a beach and over dunes for delivery of military vehicles inland of the dunes. On each of six days the LCAC will approach from the Gulf, cross the beach and pass directly over the dune ridge to grass flats some 100 yards inland of the dunes, and off-load the vehicles. The LCAC will then depart across the standard Site A path to exit via the sound, returning to the Gulf by the sound channel and back to the mother ship for a second load of vehicles. The beach approach and dune crossing will then be repeated. All vehicles will be reloaded and returned via the sound passage. Thus, dune crossings will be limited to two on each day of exercises.

The dune crossing zone was selected by TAFB environmental personnel following a joint site inspection by environmental and military authorities from NCSC and TAFB. Here, the dunes are relatively low and sloping on both gulf and inland margins, minimizing potential technical problems of crossing with the LCAC. Total width of the crossing zone is such that the LCAC will not have to use the same track repeatedly. After each crossing, the beachmaster will place a tall marker in the middle of that track to insure that another spot will be used for the next crossing.



These crossings will occur over a section of Crooked Island dunes heretofore unused. The dunes must be crossed here in order to conduct the bulk of Crooked Island missions at Sites A and A', in compliance with TAFB's request. Based on past experience with air-cushioned vehicles in this environment, the projected crossings of limited number and alternating tracks should not cause unacceptable stress on the dunes. There will inevitably be some flattening of the Gulf and sound-side approaches and minor shearing of dune crests. Taller vegetation on the tracks may be bent and in some cases broken; however, root structures should be unimpaired, allowing rapid recovery of the clumps. These effects are relatively short-term and minor. Since there is no intention to use this crossing for future LCAC operations, environmental stress to the dunes will be limited to this exercise, from which little or no appreciable long-term adverse impact should be expected.

Once the LCAC is on the flats, the vehicles will be off-loaded and parked nearby. Though vehicular movements will be held to a minimum, tracks will certainly be imprinted on the sandy soil and vegetation in the tracks will be flattened. With this in mind, this specific site was selected for its



relative environmental hardiness. Though possessing important environmental values in its own right, the area presents few features that would be seriously affected by this type of stress. Existing vehicular tracks on these flats are readily evident; however, they show little evidence of having created serious damage and vegetation has survived or recovered in those old tracks.

Ameliorative steps to be taken include: (a) careful selection and limitation of the loading and parking zone, minimizing vehicular movement and keeping it in an area least subject to harm; (b) topical repair and restoration of the traffic area with shovel and rake by military personnel immediately after each day's exercise; and (c) fertilization of the entire site in spring (and subsequent fall and spring seasons as required) to stimulate vegetative growth in this area. In case of substantial unforeseen damage, specific restoration measures will be taken as required.

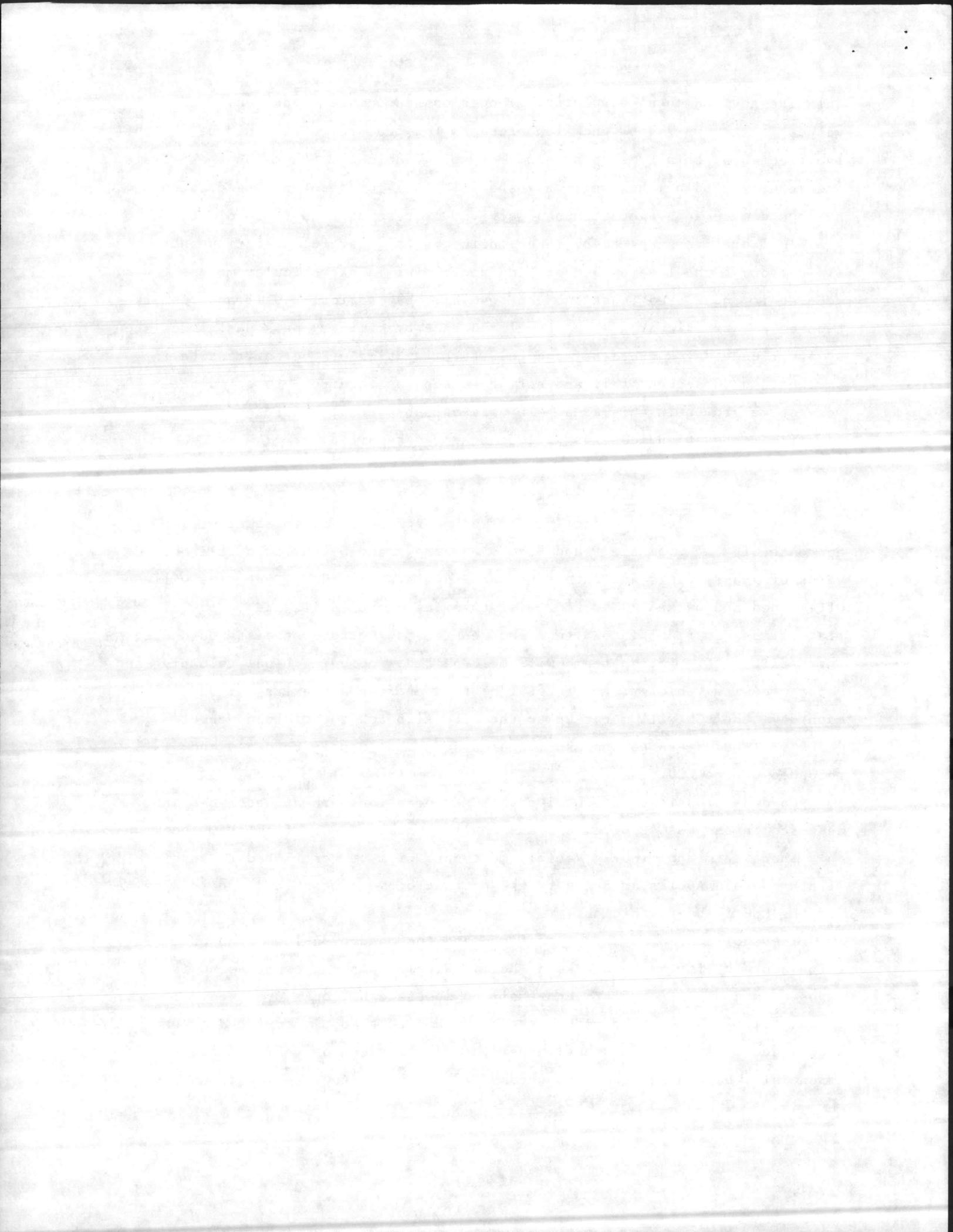
2. Sites A' and A, Sound Side

For this series of exercises, on each of three days, the LCAC will approach Site A' from the sound, cross a narrow sand beach, transit about 50 yards of grassy flats and enter the sand spoils area. Here, vehicles will be off-loaded and parked. The LCAC will then leave the spoils area, move along a flat, grassy corridor into Site A and reenter the sound on the standard Site A entry/exit path. This pattern will be repeated, including final reloading and departure with vehicles, for a total of five entries and exits per day. On each day, the LCU will motor up to the Site A' beach to off-load vehicles, which will be driven to the spoils area and subsequently returned and reloaded on the LCU.

No dune crossings are involved. LCAC operations are as described and assessed in the LCAC Program EA, and environmental effects from them should be only short term and minor. Vehicle movements will be restricted to staging within the old spoils area and to the pathway between beach and spoils area for the LCU load of vehicles.

The spoils area is sharply defined and enclosed by a low mound of dunes which appears similar to a dike or berm. Within this enclosure, sand is exposed in a series of flats and small to moderate hillocks or dunes. There is very little vegetation within the area, and that mostly confined to the slopes and crests of the dunes. The flat zone chosen for vehicle staging is essentially barren and the sand unconsolidated. The spoils area is highly





disturbed and probably is artificial; if a natural feature, it has been highly disrupted by natural forces. Patently, operation of the LCAC and vehicles within this area can hardly cause meaningful adverse impact. Nonetheless, vehicular movements there will be limited and confined to pre-selected spots of minimal vegetation and relief, and LCAC maneuvers will follow standard environmental constraints and precautions for overland operations.

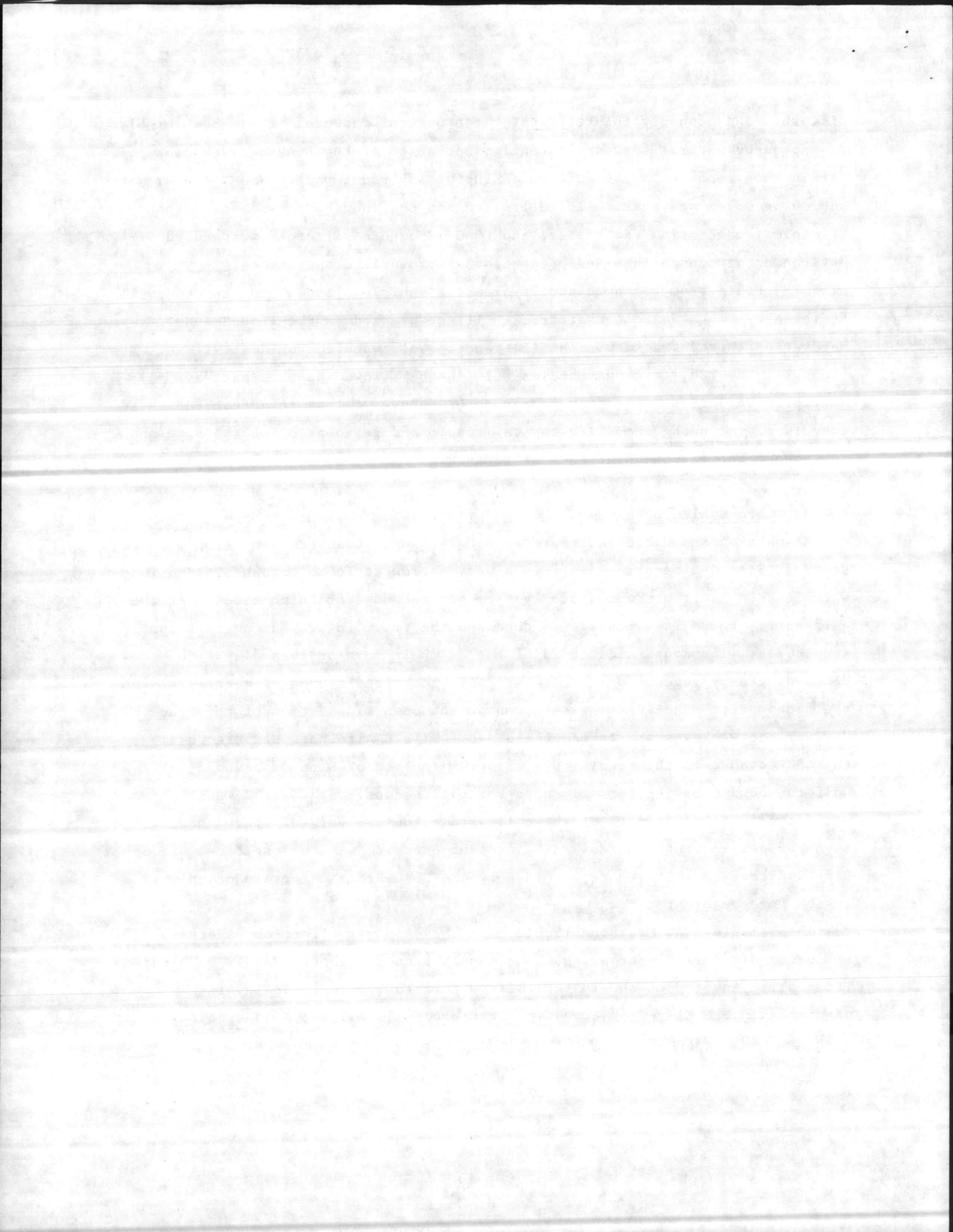
The route from beach to spoils area for vehicles landed from the LCU will be impacted to the extent that tracks will be pressed in the ground and vegetation in the tracks will be flattened. Only wheeled vehicles will be brought in by LCU; tracked vehicles will not be allowed on this pathway. Ameliorative actions listed in paragraph (1) above will be in effect for these exercises, including immediate topical repair and restoration of the site and subsequent fertilization of the entire area.

3. Site C-Alternate

As part of one exercise, there will be a single LCAC crossing from Gulf to sound at Site C-Alternate. This is a very narrow strip on Crooked Island into which the sea intrudes occasionally from storms and extra high tides. At the gulf entry, there is virtually no dune and the track inward has no tall dune structures. The sound-side third of the track is more or less flat with clumped, grassy vegetation. There are only scattered clumps of marsh/grass on the sound exit. The LCAC may set down on the open mid-section of the track. However, no vehicles are to be off-loaded. Site C-Alternate has been assigned to NCSC for use in the regular LCAC Program in lieu of Site C, a duneless Gulf-to-sound crossing formerly used for rapid crossings. Site C was withdrawn from use as part of the policy to allow recovery of sites showing signs of environmental stress. The present exercise will be the first use of Site C-Alternate. There are no plans by the LCAC Program for use of this site in the foreseeable future.

This single LCAC crossing should have only minimal effect on vegetation (minor bending, little breaking), and dune structures should hardly be altered if at all. Any impact should fall well within low, acceptable levels predicted in the EA and observed in the field for similar LCAC operations.





4. Road Movements of Vehicles.

The most intensive use of LCAC and vehicles will occur at the Drone Recovery Area (Site L) on TAFB mainland, described in the next section (5). Vehicles must be moved to that site from the LSD offshore. This can be effected most efficiently and environmentally soundly by driving them overland from the Crooked Island area to the site.

All tracked vehicles and the howitzer and a truck for towing it will be carried by LCAC to the hardstand area of Site F. In this semi-developed, non-fragile mainland area, no meaningful impact can be expected. From here, the vehicles will proceed up a paved road to the highway and travel from there to the secondary road leading to the Drone Recovery Area. Rubber treads will be placed on the tracked vehicles for use on paved roads.

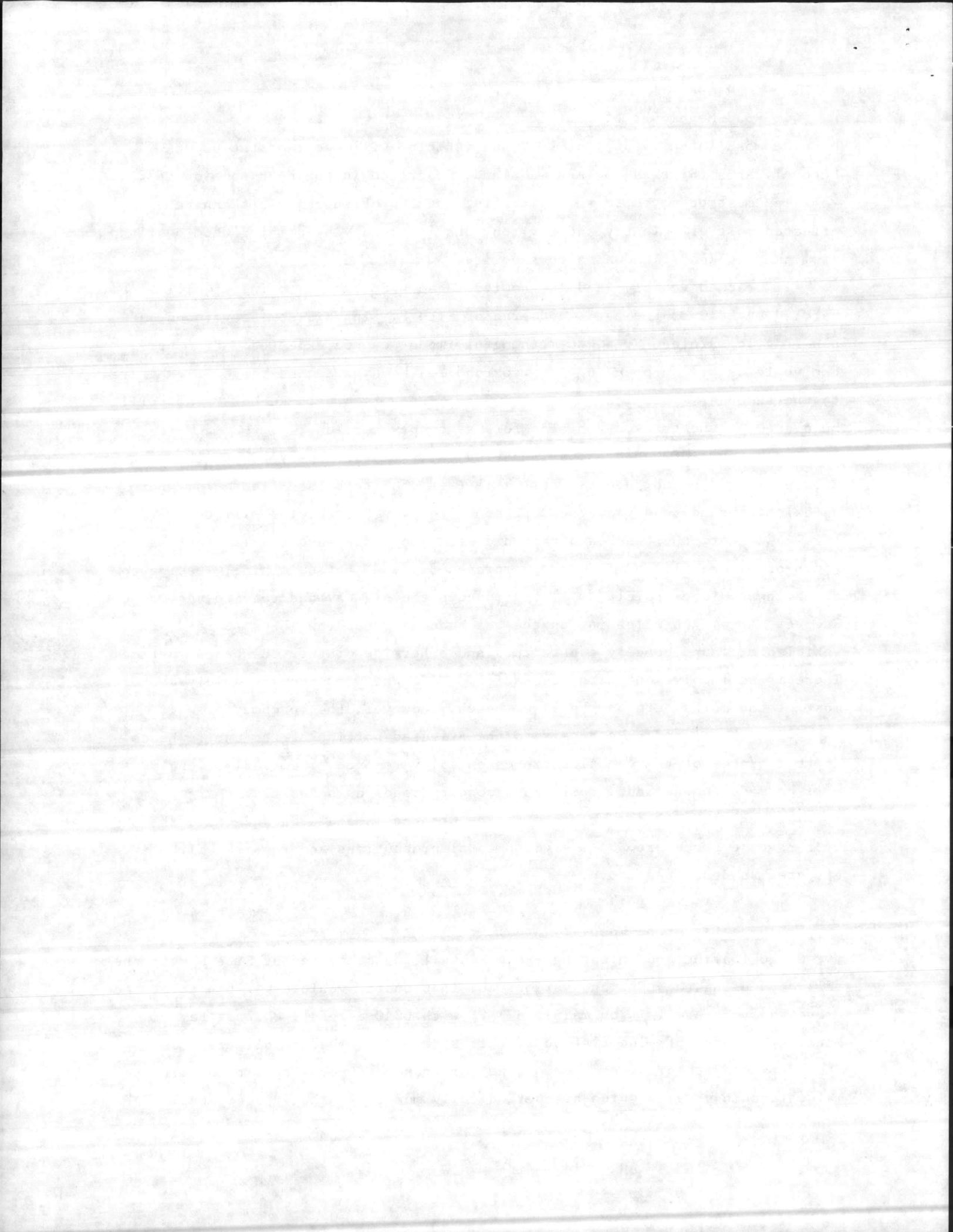
The balance of vehicles, all wheeled, will be carried by LCU to the Crooked Island beach, about a half mile east of Site E (see figure 1), where an existing sand road traverses the dune ridge. The vehicles will be off-loaded onto the beach and driven directly up this sand road and across the width of Crooked Island onto an unimproved road on the sound side, leading to the highway. The vehicles will continue up the highway and road to the Drone Recovery Area. At unloading on the beach and approaching the sand road, these vehicles will undoubtedly create ruts and otherwise disturb the beach surface. There is no involvement with vegetation. Tide and wind should rapidly restore most of the marks left on the lower beach. However, the beachmaster will supervise shovel and rake repair to the affected portion of the entire beach so that traces of the vehicles are essentially removed. Similarly, repairs will be made to the sand trail and secondary roads as necessary.

The vehicles will be returned to the Crooked Island area and on to the LSD by a reverse procedure. All environmental precautions and repairs will be effected as described above.

5. Site L - Drone Recovery Area:

Cargo loading and unloading exercises will be conducted at Site L over one full day, using the LCAC and various combinations of vehicles. This site, the Drone Recovery Area, is on mainland TAFB with LCAC access from East Bay. Natively an area of pine flatwoods, this site was cleared of all trees and stumps by TAFB to provide an open zone for drone recovery activities. It is maintained in grasses which are periodically mowed with heavy equipment. TAFB





has provided this area for standard LCAC use precisely because it presents environmentally resilient conditions on which adverse impacts would be virtually nil. The LCAC Program now uses Site L for overland operations not requiring specific conditions met only on Crooked Island. Similarly, this present exercise places the most intensive use of vehicles and LCAC in the Drone Recovery Area. There should be minimal short-term and essentially no long-term effect on the environment from this exercise.

V. SUMMARY OF UNAVOIDABLE ADVERSE IMPACTS

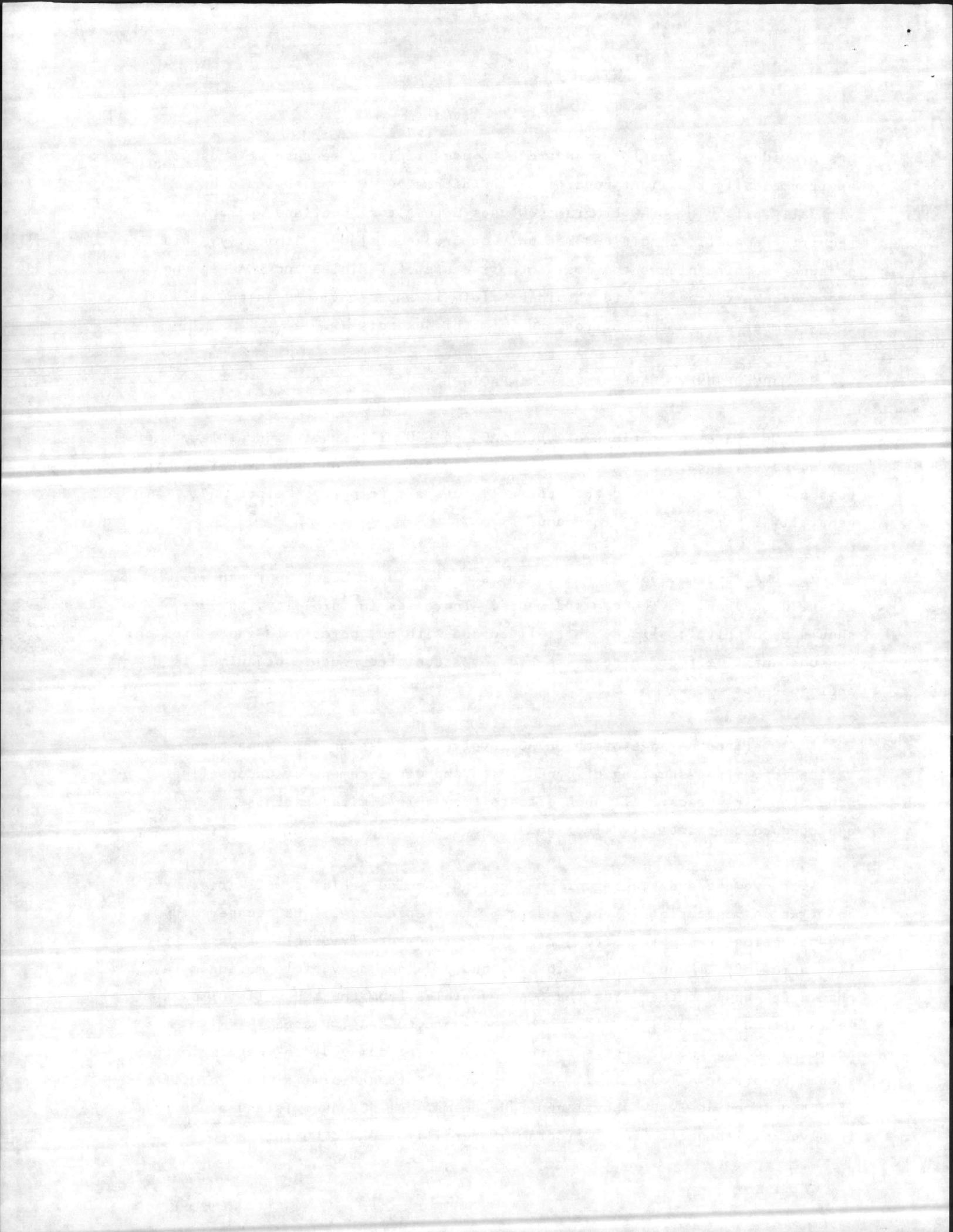
1. Overwater operations of the LCAC and LSD will involve usual levels of noise, waves, spray and similar effects of routine maneuvers. Experience in this area has demonstrated that these impacts are temporary, minor and generally environmentally innocuous.

2. LCAC and LCU operations at the shoreline upon beach approach will create disturbance of bottom sediments. Increases in turbidity, however, should be highly localized, short-lived and with no appreciable shore erosion. No substantial effect on seagrass beds or associated benthic organisms is anticipated.

3. Overland passage of the LCAC involves some short-term damage to vegetation, minor shearing of dune crests and displacement of unconsolidated sand along its track. All such effects from this limited exercise are expected to be relatively minor and subject to prompt recovery.

4. Movement and staging of tracked and wheeled vehicles will create ruts and flatten vegetation in their paths. These effects will be countered by pre-selection of staging sites to avoid environmentally fragile areas, strict limitation of all maneuvers to loading and parking, no vehicle moving more than a few hundred feet from the LCAC; vehicles from the LCU will follow a well-defined path of minimal length from shore to staging area. It is anticipated that plant root structure will not be damaged, so that regrowth should be prompt. Topical fill and repair of ruts and similar damage will be effected immediately by shovel and rake teams. All Crooked Island areas involved will benefit from a program of fertilization to be initiated in





spring 1985, designed to encourage vegetation growth on designated LCAC sites.

VI. PROTECTED SPECIES AND OTHER WILDLIFE CONSIDERATIONS

The LSD Interface Trials field work will take place in mid-winter (February) 1985. At this season, there is no involvement with nesting sea turtles or with bird or mammal reproductive activities. Turtles will not be encountered on the beach. Sea birds may be feeding and resting on the shore, but these will not be molested beyond their taking flight upon the approach of the LCAC. On shore, the LCAC and vehicles may disturb small land birds and mammals but none should be harmed. Any small burrows within the path of vehicles may be damaged, though these should be very few if any.

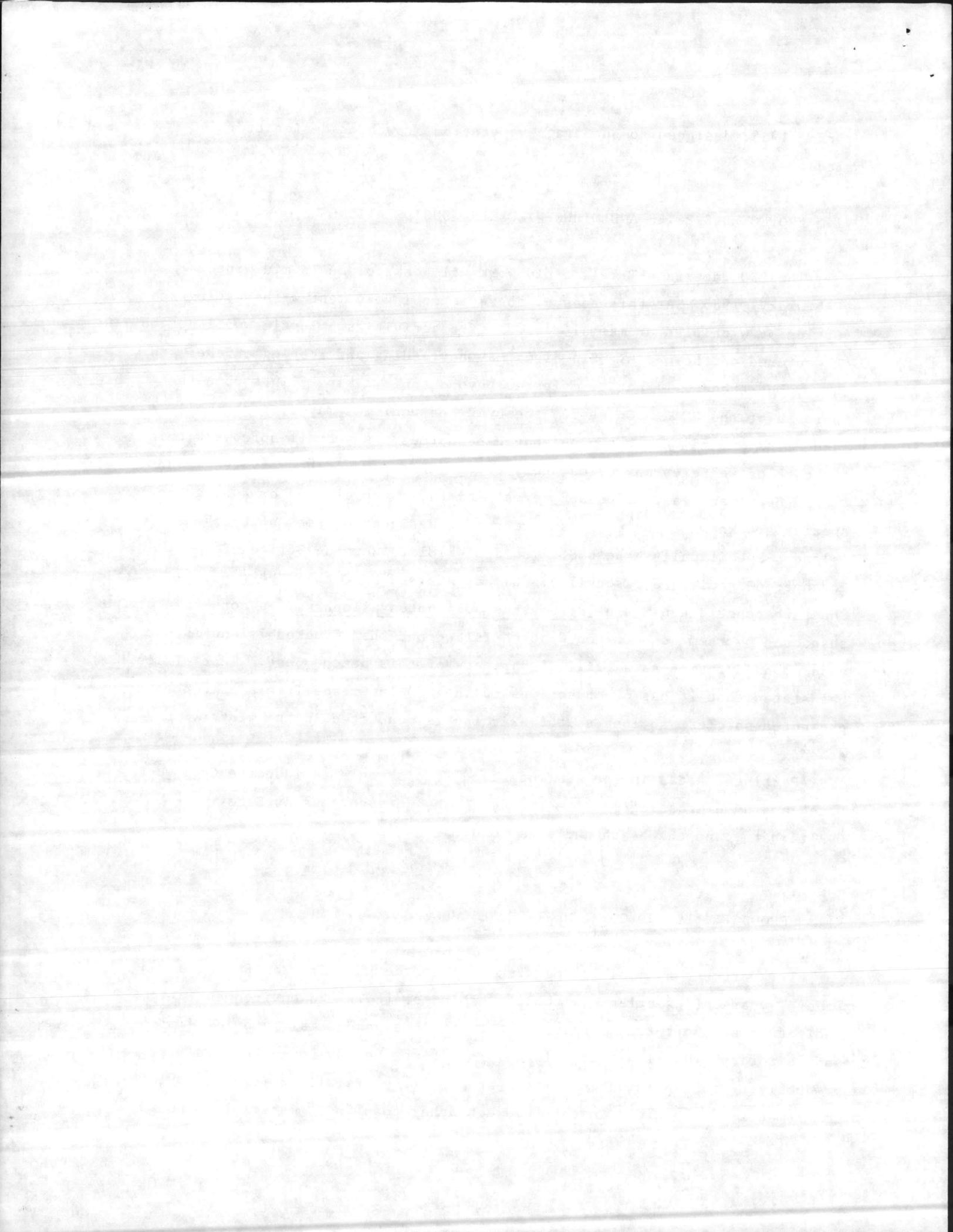
Other than sea turtles and certain birds, no threatened or endangered species are known to occur at any season on designated sites of Crooked Island. Specifically, the U.S. Fish and Wildlife Service Office of Endangered Species, Jacksonville, FL, has advised NCSC that the Choctawhatchee Beach Mouse (Peromyscus polionotus allopnyrs) is not known or suspected by them to occur on Crooked Island and that Crooked Island is not under consideration as a critical habitat for this beach mouse. That office has stated that it has no objections to the LSD Interface Trials as concerns protected species, so long as the exercise is conducted in the winter season.

Pertinent areas in the LSD Interface Trials would include the Gulf beach and dune crossing at Site A, the beach and dune pass at Site C-Alternate, and the beach and dune road east of Site E.

VII. PRODUCTIVITY AND COMMITMENT OF RESOURCES

This present analysis along with that of the LCAC Program EA, based on several years of experience with air cushion craft in the environment, indicate that short term effects of the LSD Interface Trials should be minor and temporary. No significant long-term effects on environmental quality or productivity are anticipated. There are no irreversible or irretrievable commitments of resources in this project other than fuel, material, manpower or





and other logistical expenditures.

VIII. CONSISTENCY WITH OTHER PROGRAMS; CONTACTS WITH OTHER AGENCIES

From its own investigations and from comments received from state and Federal agencies for the LCAC Program and for this special project, NCSC has determined that the LSD Interface Trials is planned and will be conducted in a manner consistent with pertinent state and Federal environmental management and protection programs.

Officials of the Florida Game and Fresh Water Fish Commission, Florida Department of Environmental Regulation, U.S. National Marine Fisheries, U.S. Fish and Wildlife Service and Tyndall Air Force Base have been consulted in the preparation of the PEA.

IX. PREPARATION

This PEA was prepared by Dr. Horace Loftin, Ecologist, Code 3240, Naval Coastal Systems Center, Panama City, Florida 32407-5000, telephone (904) 234-4183. Comments and requests for copies should be addressed to Dr. Loftin.



