FINDING OF NO SIGNIFICANT IMPACT
for
ESTABLISHING AND MAINTAINING
PERMANENT ARTILLERY TRAINING POSITIONS
MARINE CORPS BASE, CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA), Marine Corps Base (MCB), Camp Lejeune gives notice that an Environmental Assessment (EA) and Finding Of No Significant Impact (FONSI) have been prepared for the proposed action of establishing and maintaining permanent artillery positions (gun positions) aboard MCB Camp Lejeune, Onslow County, North Carolina. An environmental impact statement (EIS) will not be prepared.

Two alternatives are discussed in the EA (attached). One is the no action alternative. The no action alternative would be to continue the status quo, that is, not conduct range-wide long-term maintenance or upgrade or relocate any of the artillery positions. Training would continue under existing conditions. The no action alternative would not satisfy the purpose and need for the proposed action. Neither would it have significant environmental impacts. The other alternative is the proposed action alternative, to establish and maintain permanent artillery training positions. It is the preferred alternative because it allows the appropriate level of training, utilizes existing features and sites, and when implemented per the mitigation measures identified in the EA (attached), would not adversely impact the physical, natural, or man-made environment. The proposed action is the preferred alternative because it meets the purpose and need.

The EA identifies five mitigation measures that must be implemented to prevent significant environmental impacts. They require the action sponsor or his agent to:

(1) obtain all permits and approvals required for protection of the environment prior to beginning work and implement the conditions of those permits and approvals.

(2) coordinate with the Base wetlands specialist prior to beginning any work on artillery positions to ensure that wetlands are delineated, as required. The wetlands specialist will confirm that proposed work would be consistent with the Best Management Practices (BMP) in Appendix B of the EA. The wetlands specialist will assist the action sponsor with any Section 404 permit application requirement for work proposed in wetlands that cannot be accomplished per the BMP.

(3) coordinate with the Base archaeologist prior to beginning work to ensure any archaeological sites are avoided.

(4) implement the maintenance recommendations described in the EA to provide for the long-term use of the artillery positions by preventing significant impacts to physical and natural resources.

(5) return to natural resource management the original locations of GPs 21, 32, and a portion of GP 16 to offset impacts to the red-cockaded woodpecker as described in consultation required by Section 7 of the Endangered Species Act.

The proposed action is not expected to have any significant adverse long-term and cumulative impacts and will not cause any impacts to human health, low income or minority populations, or to children.

Based on information gathered during preparation of the EA, the Marine Corps finds that the proposed action of Establishing and Maintaining Permanent Artillery Training Positions will not significantly impact the quality of the human environment. The EA addressing this action is on file and may be reviewed by interested parties at: Commanding General, Consolidated Public Affairs Office, Marine Corps Base Camp Lejeune, North Carolina 28542-0004, Telephone: (910) 451-7440. A limited number of copies of the document are available to fill single copy requests.

APR 02 2003

Date

D. M. Mize
Major General, U.S. Marine Corps
Commanding General
Marine Corps Base, Camp Lejeune

ER-00-126

Environmental Assessment
For
Establishing and Maintaining
Permanent Artillery Training Positions

Marine Corps Base, Camp Lejeune
Onslow County, North Carolina

Responsible Officer:

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March 2003

SUMMARY

The Marine Corps Base (MCB) Camp Lejeune, North Carolina provides combat-ready forces with combined arms capabilities to serve as part of naval expeditionary forces. Presently, 34 "M-198 howitzer" gun positions (GP) and eight mortar positions (MP) exist around the G-10 impact area. However, artillery gun training is hindered due to GPs being too small as well as the presence of tall trees that compromise the safe trajectory of fired shells. Additionally, thick herbaceous, shrub, and understory species of vegetation within GPs and MPs makes maneuverability of guns and support vehicles difficult.

To improve training and to ensure the readiness of Marine Corps combat units, the Training, and Operations Department of MCB Camp Lejeune proposes to realign and maintain permanent gun positions that meet the required safety parameters. A typical artillery training exercise, occurring up to 6 times annually per gun position, would involve the placement of a battery (6) of artillery pieces along a firing line oriented into the G-10 Impact Area. The guns would be anchored in the ground and fired at an angle varying with the distance to the target. Such training would occur on each of 27 gun positions proposed in the environmental assessment for expansion, relocation, or long-term maintenance in an open field condition. As a result of the analysis, four currently recognized gun positions would be closed and relocated, with the original locations being revegetated or reforested.

Of the 34 recognized gun positions, five will no longer be utilized as artillery firing points because of their close proximity to the G-10 Impact Area. Two other positions will be abandoned based on safety or logistical issues. Of the remaining 27 artillery fire positions, 8 will be expanded at their current location, 5 will be relocated, and 14 will be treated to maintain open field conditions. Once remedied, all 27 artillery positions and an additional 8 mortar positions will be placed into a regular maintenance program to maintain open field conditions while preventing and repairing erosion problems associated with heavy utilization. Decisions to expand, relocate, or maintain current artillery firing positions were based on artillery regiment training standards pursuant to criteria set forth in MCO 3501.2626A, 1345.2.4, 1345.2.5, 1345.4.1, and 1345.6.6. . Table S-1 shows the various actions that makeup the proposed action.

Per the Marine Corps Order P5090.2A, Environmental Compliance and Protection Manual, the proposed work requires preparation of this environmental assessment (EA). This EA has been prepared in compliance with the National Environmental Policy Act (NEPA), U.S.C. §§ 4321 et seq.) and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 CFR Parts 1500-1508).

For this EA, the Training, and Operations Department and environmental experts of the Base Environmental Management Department determined that the scope of environmental resource categories to be addressed would include the physical environment (i.e., soils, floodplains, topography and surface hydrology, groundwater, water quality, air quality, noise, cultural resources, and hazardous materials management) and natural resources (i.e., threatened and endangered species, fish and wildlife,

vegetation, and wetlands). Socioeconomic categories addressed in this EA are economic impacts related to population, traffic and transportation, utilities and infrastructure, and land use.

A summary of the effects of the proposed action and a no action alternative is presented in Table S-2. The establishment and maintenance of permanent artillery training positions (proposed action) is the preferred alternative because it achieves the intended level of training, utilizes existing features and sites, and would not adversely impact aspects of the physical environment, natural environment, or socioeconomic characteristics of MCB Camp Lejeune. Environmental benefits would result from establishing routine maintenance practices including best management practices for maintenance in wetlands and from consolidating GPs by eliminating those not meeting firing requirements.

The no action alternative is considered a status quo of current operations. Inclusion of the no action alternative, prescribed by CEQ regulations, serves as a benchmark against which the potential effects of federal actions can be evaluated. Under the no action alternative, MCB Camp Lejeune would not conduct range-wide long-term maintenance, nor upgrade or relocate any of the 13 existing artillery gun positions. Subsequently, training would continue under existing conditions. The no action alternative would not satisfy the purpose and need for the proposed action.

Other alternatives were considered before selecting the preferred alternative. Alternatives considered and dismissed included: establishment of new sites, reduced number of sites, and reduced size of each site. These alternatives either would not provide the artillery training requirements or would have greater environmental impacts than the no action or proposed alternative

Table S-1: Summary of Action Items for the Proposed Action

Abandon	**Relocate**	**Expand**	**Tree Removal & Vegetation Maintenance**	**Routine Vegetation Maintenance**
4	12	2	9	1
5	19	3	13	7
6	20	10	17	23
8	21	14	18	26
11	32	15	22	27
24		16	28	31
34		25	29	33
		30		1-8 MPs
n=7	n=5	n=8	n=7	n= 7 +8MPs

Table S-2: Summary of Effects of the No Action Alternative and the Proposed Action

Resource	No Action Alternative	Proposed Action
	Environmental Consequences	Environmental Consequences
Soils	Minor impacts to soil (rutting, compaction, surface movement) Repair and monitoring of erosion points may result in overall benefits.	Minor impacts to soil (rutting, compaction, surface movement) Repair and monitoring of erosion points may result overall benefits.
Floodplains	No impacts to 100-year floodplains.	No impacts to 100-year floodplains.
Topography and Surface Hydrology	No impacts to topography or surface water. Repair and monitoring of erosion points may result in overall benefits.	No impacts to topography or surface water. Repair and monitoring of erosion points may result in overall benefits.
Groundwater	No impacts to groundwater.	No impacts to groundwater.
Water Quality	No impacts to waters.	No impacts to waters.
Air Quality	No impact to air quality.	No impact to air quality.
Noise	Short- and long-term minor adverse.	Short- and long-term minor adverse.
Cultural Resources	No impacts to National Register eligible cultural resources resulting from continued use provided no additional ground disturbance occurs. However, more suitable sites may be used more frequently and the potential for ground disturbing effects increases with use.	No impacts to National Register eligible cultural resources provided no ground disturbance occurs.
Hazardous Waste Sites	No sites affected.	No sites affected.
Threatened and Endangered Species	No significant impacts.	No significant impact. Pine planting would benefit RCW.
Fish and Wildlife	Short-term displacement during training. Disruption/displacement to terrestrial wildlife during maintenance.	Short-term disruption/displacement during construction and training. Minimal impacts resulting from long-term maintenance. Restoration replanting will result in benefits.
Vegetation	Routine maintenance not established. Impacts from clearing and maintenance dependent on scope of those activities.	Unavoidable impacts resulting from clearing and maintenance. Restoration replanting will result in benefits.
Wetlands	Routine maintenance practices not established. Impacts from maintenance may impact jurisdictional wetlands and require Clean Water Act authorizations dependent on scope of those activities.	Wetland areas avoided to maximum extent practical. Within wetlands Best Management Practices Required. No significant adverse impacts to wetlands.
Coastal Zone	No impacts to the Coastal Zone.	No impacts to the Coastal Zone.
Socioeconomics	No impacts to socioeconomic characteristics.	No impacts to socioeconomic characteristics.

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Appendices

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

MCB Camp Lejeune provides combat-ready forces with combined weapons capabilities to serve as part of naval expeditionary forces. To improve training and to ensure the readiness of Marine Corps combat units, the Training and Operations (T & O) Department of MCB Camp Lejeune proposes to establish and maintain Artillery Training Locations. Figure 1 shows the general Base vicinity and Figure 2 shows the general training locations. This consists of permanently maintained locations for individual and coordinated artillery training.

1.2 Purpose of and Need for the Proposed Action

1.2.1 Purpose

To provide and maintain operationally and environmentally sustainable mission support openings that will accommodate battery sized artillery training, helicopter tactical landing zones, and other training activities conducted in open field environments.

1.2.2 Need

The condition of existing mission support openings, specifically Gun Positions (GP) aboard Camp Lejeune have decreased utility due to size constraints, erosion problems, and spatial distribution. There is a need to establish and maintain through vegetation management mission support openings that can support operational use without impacting the sustainability of that use.

1.2.3 Environmental Review Process

Starting in January 2000, representatives from T&O, EMD, and the 10th Marines began evaluating gun positions to determine whether expansion or relocation would best accommodate the size requirements of gun positions. Alternative treatments for each of the size-constrained positions were discussed among the group with outcome analyzed as the preferred alternative of this EA. On October 30, 2001, MCB Camp Lejeune personnel held a scoping meeting to discuss the proposed project. During the meeting, the rationale for pursuing the project was presented. The 12 gun positions to be enlarged or relocated due to size constraints were discussed, and the issues (e.g., soils, fish and wildlife, cultural resources, etc.) to be addressed at each site were listed. Also discussed were sites at which vegetative clearing within an established perimeter has been determined by MCB Camp Lejeune to have no adverse environmental impacts (thereby considered routine maintenance). In addition, the need for long-term maintenance of all these sites was stressed.

Field inspections were conducted on November 20, December 4, 5, and 19, 2001, and January 14, 2002. The field inspections included the 12 GPs to be enlarged or relocated due to size constraints, the GP located on Onslow Beach that is to be relocated due to difficult access, and

the Categorical Exclusion GPs. The MPs and the remainder of the GPs that require only routine mowing were added to the project scope inspected.

2.0 ALTERNATIVES

2.1 Description of Alternatives

The parameters of each GP used in routine training operations are mandated by artillery regiment ITS stating that each position must have a firing line (aimed towards the G-10 impact area [location shown in Figure 2]) capable of supporting the six guns of a battery. Each firing line must have 50-meter spacing between guns as well as on both sides of the battery, a total of 400 meters (including the space occupied by the guns themselves). In addition, each firing line is approximately 100 meters wide, essentially the rear half of the GP. Vehicular movement and positioning is usually concentrated in this portion of the GP. Since artillery pieces are delivered to the GP by seven-ton trucks, passable roads to the gun positions are necessary. The battery is set in place along a line running the length of the position at the end farthest from the G 10 Impact Area. Temporary earthen fortifications may be erected dependent upon the training exercise, using onsite material, around each gun. Following completion of the exercise, fortifications are graded back to pre-training session elevations. To ensure safe and effective firing, the 100 meters of the position nearest the impact area must be maintained in an open state to allow for the safe clearance of rounds over vegetation. If the battery fires uphill, a longer distance of cleared vegetation is required. As a result, each GP must be a minimum of a 200-meters by 400-meters. Prior to the use of a particular GP for training, vegetation that has an unacceptable height within the GPs' defined perimeter would be bush-hogged or otherwise mowed. These parameters would also provide adequate firing positions for the new Highly Mobile Artillery Rocket System (HIMARS) that will be deployed by the Marine Corps in the near future.

During long duration training sessions, command and communication centers are occasionally set up in the periphery of the GP to provide temporary lodging and to shelter communications structures and equipment. Bivouac sites are most often set up in the periphery of the position. Temporary lodgings, tents or larger structures, field showers, field heads, and food preparation areas are part of the bivouac structures and remain in place as long as the training session lasts, possibly up to one week. Vehicles park in the trees behind the firing line or in other out-of-the-way locations. These activities are temporary and result in little to no permanent impacts to each site. Under normal training procedures, each GP is not used more than six times per year.

Mortar training involves Marines carrying and placing 60mm and 81mm mortars, while the 120mm mortars are towed to the site by vehicle. Because of the differing transport and placement of mortars, the total area of a mortar position is much smaller than that of a gun position. For a mortar position to accommodate a safe firing, a 100-meter square area must be maintained as a grassy field. Vehicular disturbance may occur, depending upon the training operation, but is on a smaller scale than that occurring at GPs. Minimal ground disturbance associated with the establishment of each mortar position would occur during training. Pre-training ground elevations would be restored following use of the MP. Occasionally, other low impacts training operations including bivouac and command-control center set-up, use, and

breakdown occur. Similar to the temporary activities that would occur during training events at the GPs, these activities are temporary and result in little to no permanent impacts to each site. Under normal training procedures, each MP is not used more than six times per year.

2.1.1 No Action Alternative

Under the no action alternative, artillery training at MCB Camp Lejeune would continue to be conducted under the existing conditions. Under current conditions, units of the 10th Marines have to deploy to Fort Bragg to meet ITS requirements for battery sized live-fire skills. This practice increases training costs and is a quality of life issue for Marines assigned to the unit. MCB Camp Lejeune would have no long-term maintenance plan for the permanent artillery firebase. In addition, there would be no expansion or relocation of the 13 GPs. These existing conditions do not meet USMC regulations and are in some instances unsafe. GP and MP maintenance would be coordinated with the state and Federal review agencies on a site-by-site/as-needed basis. Cumulative impacts would be difficult to assess. With no change in present conditions at each site, it is anticipated that those sites more suitable to training requirements would be utilized more frequently. As a result, more intensive maintenance would be required on a more frequent basis.

2.1.2 Proposed Alternative – Establishing and Maintaining Artillery Training Positions

MCB Camp Lejeune proposes establishing and maintaining permanent artillery training positions comprised of specifically identified artillery GPs and MPs at different locations around the G-10 impact area. The proposed action is the preferred alternative because it meets the purpose and need.

Of the originally designated 34 GPs, seven (GPs 4, 5, 6, 8, 11, 24, and 34) would be abandoned because they are too close to the impact area. The proposed action would encompass the remaining 27 GPs and eight MPs. The GPs have been separated into three groups based on the type and degree of work needed to attain goal conditions.

- **GP Expansion or Relocation.** The first group is 13 GPs that would be expanded or relocated. Twelve of these positions are too small to allow a battery (six guns) to fire safely.

  GPs 2, 3, 10, 14, 15, 16, 25, and 30 would be expanded at their present location (Figures 3, 5, 6, 7, and 10).

  GPs 12, 19, 21, and 32 would be relocated because the existing positions cannot accommodate a battery of artillery pieces and the site cannot be expanded due to environmental, tactical, or other reasons (Figures 5, 7, and 11). Following completion of the relocation, MCB Camp Lejeune personnel would manage the present sites of these positions for natural resources. They would be either reforested or revegetated for wildlife forage value.

The remaining site (GP 20 [Figure 7]), located on Onslow Beach, is currently difficult to access (the road is deep loose sand). It would be moved to a more accessible location adjacent to Riseley Pier, approximately 2,000 meters to the northeast. Because of safety concerns (firing across the AIWW) and logistical problems associated with accessing a beach site, this relocated position would be used for demonstration purposes only; therefore, it would only have to be large enough for two or three guns. No more than minimal site preparation would be needed and little to no natural vegetation would have to be removed, nor would alteration of existing structures or infrastructure be required.

- **Tree Removal and Vegetation Maintenance.** The second group is seven GPs (GPS 9, 13, 17, 18, 22, 28, and 29) that MCB Camp Lejeune has determined are of adequate size but have tall trees present within the defined perimeter of the site, compromising safe firing (Figures 4, 6, 7, 8, and 9). In addition, understory and shrub species of vegetation are present within their defined perimeters, hindering maneuverability within the position. MCB Camp Lejeune has investigated all aspects of removing this vegetation and has determined that, because no adverse impacts to the site (including cultural and archaeological resources and threatened and endangered species) would occur, these sites are "categorically excluded" from requiring additional environmental review.

  GP 22 is a large position in LZ Bluebird. It is labeled A/B because the firing units can set the guns up in two different positions; one to the left on the runway and one in front of runway on the left side.

- **Routine Vegetation Maintenance.** The final group is seven GPs (GPs 1, 7, 23, 26, 27, 31, and 33) that are of satisfactory size and do not contain any trees that compromise the safe firing of rounds (Figures 3, 4, 9, 10, and 11). These GPs would require only routine mowing of shrubs and herbaceous species of vegetation prior to undertaking a training operation. No adverse environmental impacts would be expected to result from routine mowing.

  The eight mortar positions are existing positions and all have satisfactory cleared areas for training operations (Figure 12). Prior to the use of a particular MP for training, vegetation that has reached an unacceptable height within the MPs' defined perimeter would be mowed.

  Once modifications of positions are completed, all would be entered into a regular maintenance program to maintain grassy field conditions and to prevent erosion problems.

Tables 1 and 2 list the proposed actions to be undertaken at each position.

Table 1. Gun Positions and Locations

OPENING NAME / NUMBER	OPERATIONAL USES						REMEDIATION & MANAGEMENT			
	ART	TLZ	MORT	CC	AFBT	BIV	Rehab/Veg	Expand	RELOC	Wildlife Mgmt
GP-1	Y	-	-	Y	-	Y	V	-	-	-
GP-2/LZ Swan	Y	Y	-	Y	-	Y	V	Y	-	P
GP-3/LZWoodpecker	Y	Y	-	Y	-	Y	V	Y	-	P
GP-4 / MP-1	-	Y	Y	Y	-	Y	V	-	-	-
GP-5 / MP-4 LZ Tern	-	Y	Y	Y	-	Y	V	-	-	-
GP-6 / MP-5	-	-	Y	Y	-	Y	RV	-	-	-
GP-7 / LZ Crane	Y	Y	-	Y	-	Y	V	-	-	-
GP-8 / MP-7	-	-	Y	Y	-	Y	V	-	-	-
GP-9 / LZ Gull	Y	Y	-	Y	-	Y	RV	-	-	-
GP-10 / LZ Goose	Y	Y	-	Y	-	Y	V	Y	-	P
GP-11	-	-	Y	Y	-	Y	V	-	-	-
GP-12	Y	-	-	Y	-	Y	V	-	Y	P
GP-13 / LZ Falcon	Y	Y	-	Y	-	Y	RV	-	-	P
GP-14	Y	-	-	Y	-	Y	RV	Y	-	-
GP-15 / LZ Quail	Y	Y	-	Y	-	Y	RV	Y	-	P
GP-16 / LZ Dodo*	Y	Y	-	Y	-	Y	RV	Y	-	-
GP-17 / LZ Osprey	Y	Y	-	Y	-	Y	V	-	-	-
GP-18 / LZ Albatross	Y	Y	-	Y	-	Y	V	-	-	-
GP-19	Y	-	-	Y	-	Y	V	-	Y	P
GP-20	Y	-	-	Y	-	Y	RV	-	Y	-
GP-21 / LZ Heron*	Y	Y	-	Y	-	Y	V	-	Y	-
GP-22 / LZ Bluebird	Y	Y	-	Y	-	Y	RV	-	-	-
GP-23	Y	-	-	Y	Y	Y	RV	-	-	-
GP-24	-	-	-	-	-	-	-	-	-	-
GP-25 / LZ Dove	Y	Y	-	Y	-	Y	R	Y	-	P
GP-26	Y	-	-	Y	-	Y	R	-	-	-
GP-27 / LZ Canary	Y	Y	-	Y	-	Y	R	-	-	-
GP-28	Y	-	-	Y	-	Y	R	-	-	-
GP-29 / LZ Plover	Y	Y	-	Y	-	Y	R	-	-	-
GP-30 / LZ Egret	Y	Y	-	Y	-	Y	R	Y	-	E
GP-31 /LZ Sandpiper	Y	Y	-	Y	-	Y	R	-	-	-
GP-32*	Y	-	-	Y	-	Y	V	-	Y	-
GP-33 / LZ Oriole	Y	Y	-	Y	-	Y	V	-	-	P
GP-34	-	Y	-	Y	-	Y	RV	-	-	-

See legend on next page:
Y = Action included at GP; - = Action not included at GP;
R = Rehabilitation for soil erosion; V = Routine Vegetation maintenance;
P = Planned wildlife management opening; E = Existing wildlife management opening
* Existing position or portion of existing position would be reforested

Legend for Table 1

	Action Description	Impacts
ART	Up to one battery of artillery pieces (6) will delivered to the firing line of the gun position under tow by 7-ton trucks. The position should allow a maximum distance between Guns for safety and tactics. The pieces are set along a line running the length of position where they are fired into the G-10 Impact Area. The firing line includes a 100 meter deep segment of the position, at the end farthest from the impact area. Vehicular movement and positioning will be concentrated in this portion of the gun position. The nearest 100 meters of the position is maintained in an open state to allow for safe clearance of rounds over vegetation. To accommodate six artillery pieces with the appropriate safety buffer in between, a 200 x 400 meter opening is required. The GP should also allow easy access for large vehicle to enter and depart and allow all command and control functions.	Temporary soil disturbance, noise, temporary structures, and foot and vehicle traffic.
AFBT	Artillery Fire Base Training (Heavy Equipment) – Protective earthen berms (≤ feet) are constructed with bulldozers. This type of training is restricted to a single mission support opening, GP-23. Soil disturbance will be restricted to the upland portions of the site.	Soil disturbance, noise.
TLZ	Tactical Landing Zones accommodate helicopter operations for all four airframes stationed at MCAS New River. CH-53E, CH-46E, AH1-W, UH1-N helicopters execute several landing, troop insertion, and tactical maneuvers in the landing zones. TLZs should allow at minimum of two helicopters at one time to land and take off safely. The site slope should not exceed 8 degrees and free of all debris, stumps, rocks, holes and trenches.	Noise, foot traffic, potential soil disturbance (airborne).
MORT	Mortar positions accommodate 60/81/120 mm Mortars, 3 to 8 mortars are placed on each mortar position, which allow the firing of HE/ILLUM/SMOKE/WP into a common impact area. As with the Gun Positions, the nearest 100 m of the position is maintained in an open state to allow for safe operations.	Noise, foot and vehicle traffic, potential soil disturbance (Digging,airborne), temporary structures.
CC	Command and Communication Centers involve the set-up, use, and breakdown of temporary lodging and communications structures and equipment. Facilities are often erected in the periphery of the position to allow for helicopter operations while providing cover for troops.	Temporary structures, foot and vehicle traffic.
BIV	Bivouac sites within gun positions most often occur in the periphery of the opening. Similar to the Command and Communications centers, temporary lodging, tents or larger shelters are erected for periods of days to weeks. Field showers, field heads and food preparation areas are often included if an extended stay is planned.	Temporary structures, foot and vehicle traffic, soil disturbance.
Rehab/Veg	Positions in need of rehabilitation are those which show occurrence soil erosion. Rehabilitation includes grading eroded areas and planting with warm season native grasses. Those positions that have less than desirable vegetative cover will be hydroseeded using biosolids from the wastewater treatment plant as fertilizer. Vegetation maintenance will occur regularly to maintain grassy field conditions.	Soil disturbance associated with rehabilitation.
Expand	Positions to be expanded are those that cannot safely accommodate a battery of artillery pieces. Positions will be expanded to a size no greater than 200 m X 400 m.	Loss of forested habitat, temporary soil disturbance.
RELOC	Positions that cannot accommodate a battery of artillery pieces but cannot be expanded due to environmental, tactical, or other reasons are proposed for relocation. The current location of those positions to be relocated will be returned to natural resource management.	Loss of forested habitat, temporary soil disturbance.
Wildlife Mgmt.	Portions of gun positions are proposed for or contain an existing wildlife opening. These areas are planted seasonally with forage crops for the benefit of game species. Native plant selections are emphasized in managed openings for wildlife.	Periodic soil disturbance.

Table 2. Mortar Positions and Locations

MP#	Location	Description of Work
1	On GP 4 in the area of TLZ Penguin	Routine Mowing
2	Next to OP-2	Routine Mowing
3	Next to OP-3	Routine Mowing
4	On GP 5 in the area of TLZ Tern	Routine Mowing
5	On GP 6	Routine Mowing
6	On GP 8	Routine Mowing
7	Next to OP-5	Routine Mowing
8	On GP 11	Routine Mowing

Note: OP =Observation Post, a tactically situated tower used to observe training procedures and impact areas during artillery firing operations.

2.2 Alternatives Considered and Dismissed

2.2.1 Other Sites

The establishment of artillery gun positions at new sites was considered, although specific sites were not evaluated. The use of other sites would require identifying locations that meet all requirements of MCB Camp Lejeune artillery gun position location and that are situated to allow fire toward the G-10 impact zone. Access to each new location, if not already present, would have to be established and each site would have to be evaluated to include enough clearing to allow the safe use of a six-gun battery, a minimum of a 400- by 200-meter area, or a minimum of a 100-square meter area for each MP. Subsequently, potential effects resulting from work necessary to prepare each new position for use would have to be evaluated. Because these proposals were based mainly on tactical requirements, T&O/EMD and the 10th Marines reevaluated the scoping to reduce impacts to natural resources.

This alternative was discarded because impacts resulting from the creation of 13 new GPs would exceed those resulting from the proposed project.

2.2.2 Reduced Number of Sites

This alternative involved a further reduction of the number of artillery gun positions. Currently unacceptable positions would be refurbished but abandoned. A reduced number of artillery gun positions would require determining which sites should be eliminated and for what reason(s).

Positive aspects of having numerous sites available for training are the varied conditions (e.g., topographic, distance from impact zone, logistical, access) artillery teams must encounter and overcome to successfully complete training missions, and the ability for a battalion to practice coordinated, synchronized artillery firing. A reduced number of GPs would limit the variables available to artillery teams in addition to restricting the number of batteries able to coordinate simultaneous firing, subsequently resulting in adverse impacts to artillery team training. This

alternative was discarded because it does not meet the training requirements of MCB Camp Lejeune artillery regiment ITS.

2.2.3 Reduced Size of Each Site

This alternative involved reducing the size of each artillery gun position to current "footprints". This would require a determination as to how much to limit the size of each site and for what reason(s).

Reducing the size of each position would result in training conditions that are less than optimal from both an operations and a safety standpoint, similar to conditions that currently exist. The proposed size is mandated by Marine Corps Regulations for safety purposes, in addition to allowing a six-gun battery to be established and fired. A six-gun battery is the size deployed in real world situations, therefore, training using such an arrangement while incorporating appropriate safety precautions (e.g., 50 meters between guns and 50 meters on either side of the firing line), is necessary. This alternative was discarded because it does not meet the training or safety requirements of MCB Camp Lejeune artillery regiment ITS.

2.3 Evaluation of Alternatives

2.3.1 No Action Alternative

The "no action" alternative involves no change in present conditions at each existing GP and MP. It is anticipated that those sites more suitable to training requirements would be utilized more frequently. Subsequently, any effects presently occurring at more heavily utilized sites would continue to occur, likely being compounded by the increased use. In addition, artillery firebase training could not be conducted safely or in a manner sufficient to meet Marine Corps' requirements. Maintaining current conditions at existing GPs and MPs would also tend to decrease their availability for other training functions such as field exercises and use as designated landing zones for rotary winged aircraft.

2.3.2 Proposed Action Alternative - Establishing and Maintaining Permanent Artillery Training Positions

Implementing the proposed project will allow artillery training to be conducted in a safe manner and to the degree necessary to meet artillery regiment ITS while minimizing adverse environmental impacts associated with the discarded alternatives. Implementing the proposed action will also increase the available acreage for training exercises that require open field environments.

3.0 AFFECTED ENVIRONMENT

This section describes the existing environment of the area to be affected by the alternatives under consideration. See Table 3 and Table 4 in this section.

3.1 Physical Environment

3.1.1 Soils

The Onslow County soil survey, prepared by the US Department of Agriculture (USDA) contains soil unit maps for Camp Lejeune and lists 16 soil types occurring within the project area. They are: AnB – Alpin fine sand, 1 to 6 percent slopes; BmB – Baymeade-Urban land complex, 0 to 6 percent slopes; Co – Corolla fine sand; FoA – Foreston loamy fine sand, 0 to 2 percent slopes; KuB – Kureb fine sand, 1 to 6 percent slopes; Ln – Leon fine sand; Ly – Lynchburg fine sandy loam; MaC – Marvyn loamy fine sand, 6 to 15 percent slopes; Mk – Muckalee loam; Mu – Murville fine sand; NoB – Norfolk loamy fine sand, 2 to 6 percent slopes; On – Onslow loamy fine sand; Pa – Pactolus fine sand; St - Stallings loamy fine sand; To – Torhunta fine sandy loam; and WaB – Wando fine sand, 1 to 6 percent slopes. Of these, the Lynchburg (where drained), Norfolk, Onslow, and Torhunta (where drained) soil types have been identified by USDA as prime farmland soils; soils that have properties favoring the economic production and sustained high yields of food, feed, forage, fiber, and oilseed crops (Barnhill, 1992).

Some erosion has occurred on certain GPs as a result of past training operations as well as ongoing natural processes.

3.1.2 Floodplains

According to November 4, 1992 maps from the Federal Emergency Management Agency (FEMA), the 100-year floodplain boundary for much of MCB Camp Lejeune is three feet above mean sea level (msl). The maps may be erroneous and this figure should probably be closer to five-seven feet (1.5-2.1 meters) above msl (personal communication, Mr. Bobby Willis, Wilmington District US Army Corps of Engineers, January 18, 2002).

3.1.3 Topography and Surface Hydrology

The elevation of the project area ranges from approximately 5 to over 15 feet (1.5 to 4.5 meters) above msl. The project area is located in drainage basins of Bear Creek, French's Creek, Freeman Creek, the New River, the Atlantic Intracoastal Waterway, and the Atlantic Ocean.

3.1.4 Groundwater

Groundwater resources in the Camp Lejeune area are found in several different aquifers. The surficial aquifer has a high water table level of approximately 4-5 feet (Barnhill, 1992), and may be up to 100 feet deep. This aquifer occurs in undifferentiated surface sediments throughout the area and is the most susceptible to contamination (The North Carolina Department of

Environment and Natural Resources [NCDENR], 2001). All of the Base's drinking water of supplied by wells drawing from the Castle Hayne aquifer (U.S. Department of the Navy, 1984). The Castle Hayne aquifer is found at depths of around 86 feet (26.2 meters) and is overlain by sediments of the Yorktown Formation (NCDENR, 2001).

3.1.5 Water Quality

NCDENR assigns classifications to the waters of the State. The proposed project is located in drainage basins of Bear Creek, French's Creek, Freeman Creek, the New River, the AIWW, and the Atlantic Ocean.

NCDENR (2001) classifies Bear Creek, Freeman's Creek, and the AIWW as SA, HQW; French's Creek – SC, NSW; the Atlantic Ocean – SB; and the New River is classified as SC, NSW from Munford Point, at Northeast Creek to a line between Grey Point and just south of Duck Creek, and as SA, HQW from the Grey Point-Duck Creek line to the Atlantic Ocean. The water classification codes are described below:

(1) Class SC: saltwaters protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife. All saltwaters shall be classified to protect these uses at a minimum.

(2) Class SB: saltwaters protected for primary recreation that includes swimming on a frequent or organized basis and all Class SC uses.

(3) Class SA: suitable for commercial shellfishing and all other tidal saltwater uses.

The supplemental classification "Nutrient Sensitive Waters (NSW)" includes waters subject to growths of microscopic or macroscopic vegetation requiring limitations on nutrient inputs.

The supplemental classification "High Quality Waters (HQW)" includes waters which are rated as excellent based on biological and physical/chemical characteristics through Division monitoring or special studies, native and special native trout waters (and their tributaries) designated by the Wildlife Resources Commission, primary nursery areas (PNA) designated by the Marine Fisheries Commission and other functional nursery areas designated by the Marine Fisheries Commission, all water supply watersheds which are either classified as WS-I or WS-II or those for which a formal petition for reclassification as WS-I or WS-II has been received from the appropriate local government and accepted by the Division of Water Quality and all Class SA waters.

Some erosion has occurred on certain GPs as a result of past training operations as well as ongoing natural processes. Water quality may be adversely impacted as a result of uncontrolled erosion.

3.1.6 Air Quality

The ambient concentrations of pollutants in Onslow County are below national standards for the following: particulates, sulfur dioxide, carbon monoxide, ozone, nitrogen oxides, and lead. The North Carolina ambient air quality standards include all the national standards, plus a standard for total suspended particulate matter (TSP). Therefore, MCB Camp Lejeune is in attainment with the Clean Air Act National Ambient Air Quality Standards for all the criteria pollutants (Personal Communication, 28 January 2002, Mr. Brad Newland, Engineer, North Carolina Department of Environment and Natural Resources, Division of Air Quality). The project is in compliance with Section 176(c) of the Clean Air Act, as amended. A conformity determination is not required because Onslow County has been designated by the State of North Carolina as an attainment area.

3.1.7 Noise

Within the project area, noise issues are not a major environmental concern for MCB Camp Lejeune because of the size and location of the Base, the location of the high noise sources well within the Base boundaries, and the noise abatement practices currently in place. The main sources of environmental noise emanate from airfields, weapons, rocket and missile firing ranges, and demolition and explosive disposal sites. The project area lies within an area of low ambient noise level (Radian Corporation, 1996).

3.1.8 Cultural Resources

A site survey to assess possible cultural resources on 15 GPs (GPs 9, 10, 13, 14, 17, 18, 19, 22, 25, 27, 29, 30, 31, 32, and 33) was conducted by TRC Garrow Associates, Inc. (TRC) between October and November 2001. A site survey was conducted on GP 12 by TRC as part of a separate project study. The surveys were conducted within the scope of work issued by the Wilmington District Corps of Engineers and MCB Camp Lejeune. In addition, the research methods follow the North Carolina Office of State Archaeology *Guidelines for the Preparation of Reports of Archeological Surveys and Evaluations*, released in 1982 and revised in 1988. The investigations also comply with other pertinent federal and state regulations, including, but not limited to, Section 106 of the National Historic Preservation Act of 1966, as amended; the National Environment Policy Act of 1969; the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic and Cultural Properties* (36 CFR 60, 800 et seq.); and the Advisory Council on Historic Preservation's *Treatment of Archaeological Properties;* and the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation,* released by the National Park Service in 1983.

3.1.9 Hazardous Waste Sites

MCB Camp Lejeune's Environmental Quality Branch (EQB) actively monitors all hazardous waste sites ("Installation Restoration Program" [IRP] or "Open Burn/Open Detonation" [OB/OD] facilities) on Base to ascertain resultant soil and/or groundwater pollution.

EQB is currently monitoring two hazardous waste sites in the vicinity of the G-10 Impact Area. These two sites are not on or directly adjacent to any of the GPs or MPs. (Personal Communication, Robert Lowder, MCB Camp Lejeune, December 18, 2001).

3.2 Natural Resources

3.2.1 Threatened and Endangered Species

Table 3 lists federally identified threatened and endangered species currently found in Onslow County that may occur in the project area.

Table 3. Threatened and Endangered Species

Common Name	Scientific Name	Status
BIRDS		
Bald eagle	*Haliaeetus leucocephalus*	Endangered
Black rail	*Laterallus jamaicensis*	FSC
Piping plover	*Charadrius melodus*	Threatened
Red-cockaded woodpecker	*Picoides borealis*	Endangered
REPTILES		
American alligator	*Alligator mississippiensis*	T(S/A)
Green sea turtle	*Chelonia mydas*	Threatened
Hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
Kemp's ridley sea turtle	*Lepidochelys kempi*	Endangered
Leatherback sea turtle	*Dermochelys coriacea*	Endangered
Loggerhead sea turtle	*Caretta caretta*	Threatened
AMPHIBIANS		
Carolina gopher frog	*Rana capito capito*	NCS2
PLANTS		
Golden sedge	*Carex lutea*	Endangered
Cooley's meadowrue	*Thalictrum cooleyi*	Endangered
Hirst's Panic Grass	*Panicum hirstii*	Candidate Species
Flaxleaf seedbox	*Ludwigia linifolia*	NCS2
Georgia nutrush	*Scleria Georgiana*	NCS2
Long beak baldsedge	*Rhynchospora scirpoides*	NCS2
Netted nutrush	*Scleria reticularis*	NCS2
Rough-leaved loosestrife	*Lysimachia asperulifolia*	Endangered
Seabeach amaranth	*Amaranthus pumilis*	Threatened
West Indies meadow beauty	*Rhexia cubensis*	NCS1

KEY:

Status	Definition
Endangered -	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened -	A taxon "likely to become endangered within the foreseeable future throughout

	all or a significant portion of its range."
FSC -	A Federal species of concern--a species that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing).
T(S/A) -	Threatened due to similarity of appearance (e.g., American alligator) a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.
NCS1-	Critically Imperiled in North Carolina because of extreme rarity or otherwise very vulnerable to extirpation in the state
NCS2-	Imperiled in North Carolina because of rarity or otherwise vulnerable to extirpation in the state

Bald eagle. The bald eagle ranges throughout eastern North Carolina. An active bald eagle nest is located adjacent the New River north of GP 32. The species feeds principally on fish.

Black rail. The black rail's habitat is salt and brackish marshes vegetated with needlerush and cordgrasses, and inland in freshwater marshes, meadows, and grain fields.

Piping plover. The piping plover is a winter resident along the beaches of North Carolina. The species is known to nest in low numbers in widely scattered localities on North Carolina's beaches.

On June 6, 2001, U.S. Fish and Wildlife Service listed critical habitat for the piping plover. Within North Carolina, critical habitat includes oceanfront beaches and lands adjacent to inlets. The proposed relocation site for GP 20 is not located in designated critical habitat.

Red-cockaded woodpecker. The red-cockaded woodpecker's habitat is open stands of pines with a minimum age of 80 to 120 years. Foraging habitat is provided in pine and pine hardwood stands 30 years old or older with foraging preference for pine trees 10 inches or larger in diameter.

Alligator. Alligators are found in marshes, swamps and streams in southeastern North Carolina. Alligators specifically are not likely to become endangered in the foreseeable future throughout all or a significant portion of its range, but are considered to be threatened due to similarity of appearance with the American crocodile, a species that is considered endangered. As such, alligators are not biologically in jeopardy and are not subject to Section 7 consultation.

Hawksbill, leatherback, Kemp's ridley, loggerhead, and green sea turtles. In North Carolina, the leatherback and hawksbill inhabit oceanic waters (Schwartz, 1977). The other species are found in both estuarine and oceanic waters of North Carolina. The hawksbill, loggerhead, green, and leatherback sea turtles are considered to be residents of North Carolina waters from the spring through the fall (Schwartz, 1977). Epperly and Veishlow (1989) report Kemp's ridley sea turtles from the sounds of North Carolina from October through December, while Schwartz (1977) reports estuarine records from as early as July. These sea turtle species feed on a wide variety of invertebrates and occasionally some plant material.

Although these species may appear in the proposed relocation site for GP 20, sea turtles don't utilize the specific site for nesting.

Carolina gopher frog. The Gopher Frog is an explosive breeder. Heavy rains from late fall through early winter trigger congregation and breeding. Fertilization is external. The female lays large clumps of eggs, which she attaches to submerged or emergent vegetation. Eggs hatch in four to five days and transform from tadpoles into frogs 2 1/2 to 3 1/2 months later.

The Gopher Frog is normally found in pine scrub and sandhill habitats adjacent to ephemeral ponds and wetland depression meadows. A breeding population is known to exist in the Weil Camp Road depression meadow (Mitchell, 2002), approximately 200 meters from GP-23. Behaviorally, Gopher frogs spend a great deal of time on land away from water in underground retreats or refugia located at varying distances from isolated wetland breeding sites. Refugia may be located as far as 165 meters or more away from breeding sites, and that some individuals move great distances (Semlitsch and Bodie, 1998).

Cooley's meadowrue. Cooley's meadowrue requires some type of disturbance to maintain its open habitat and prefers the ecotone between pine savannahs and wet hardwood or hardwood/conifer forests.

Flaxleaf seedbox. Found primarily in ditches and bogs in the coastal plain of North Carolina.

Georgia nutrush. Found primarily in savannahs and low pinelands in the coastal plain of North Carolina.

Long beak baldsedge. Found primarily on wet, sandy to peaty shores of coastal plains ponds, where the water level fluctuates enough to keep vegetation sparse.

Netted nutrush. Found primarily in meadows, pinelands, and savannahs in the coastal plain of North Carolina.

Rough-leaved loosestrife. This species generally occurs in the ecotones or edges between longleaf pine uplands and pond pine ecosystems (areas of shrub and vine growth usually on a wet, peaty, poorly drained soil, often in association with ditches) on moist to seasonally saturated sands; and on shallow organic soils overlaying sand. The plant has also been found to occur on deep peat in the low shrub community of large Carolina bays (shallow, elliptical, poorly drained depressions of unknown origin). The grass-shrub ecotone, where the species is found, is fire-maintained, as are the adjacent plant communities (longleaf pine-scrub oak, savannah, flatwoods, and pocosin). Suppression of naturally occurring fire in these ecotones results in shrubs increasing in density and height and expanding to eliminate the open edges required by the species. Drainage of these moist depressions in preparation for silvicultural or agricultural activities (corn and soybean production) has also contributed to the decline of the species.

Seabeach amaranth. Seabeach amaranth is an annual plant found on Atlantic Ocean beaches. Seabeach amaranth occurs on barrier island beaches, where its primary habitat consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach

replenishment or dredge spoil. Seabeach amaranth appears to be intolerant of competition and does not occur on well-vegetated sites. The species appears to need extensive areas of barrier island beaches and inlets, functioning in a relatively natural and dynamic manner.

West Indies meadow beauty. Wet savannahs including cutthroat seeps, flatwoods, bogs, ditches, and wet roadside in the coastal plain of North Carolina.

3.2.2 Fish and Wildlife

Wildlife typical of the coastal plain including the white-tailed deer, black bear, opossum, fox, squirrel, variety of reptiles, amphibians and songbirds can be found year-round on MCB Camp Lejeune. More information can be found in Camp Lejeune's Integrated Natural Resources Management Plan (2001).

3.2.3 Vegetation

The proposed project includes a diverse mix of habitats and vegetative species. The relocated GP 20 would be situated in a disturbed coastal position. Typical coastal vegetation, including sea oats (*Uniola paniculata*), low yaupon shrubs (*Ilex vomitoria*), Coastal Plain pennywort (*Hydrocotyle bonariensis*) wax myrtle (*Myrica cerifera*), groundsel shrub (*Baccharis halimifolia*), and marsh elder (*Iva frutescens*), greenbriars (*Smilax* spp), and poison ivy (*Toxicodenron radicans*) are species frequently found in these situations.

The remaining 12 GPs that would be expanded and relocated, in addition to the seven "Catex" GPs are located completely or partially in forested areas. These forests contain overstories that are predominantly loblolly pine (*Pinus taeda*), longleaf pine (*Pinus palustris)* and pond pine (*Pinus serotina*). The remainder of the overstory is a mix of oaks (*Quercus spp.*), red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), and sweetgum *(Liquidambar styraciflua*). The midstory is vegetated with species including the overstory species listed above, American holly (*Ilex opaca*), sweetleaf (*Symplocus tinctora*), and flowering dogwood (*Cornus florida*); and the understory/groundcover including greenbriars, pepperbush *(Clethra alnifolia)*, grape vines (*Vitis spp.*), blackberry (*Rubus argutus*), bracken fern (*Pteridium aquilinim*), partridge berry (*Mitchella repens*), wire grass (*Aristida stricta*) and panicgrass (*Panicum spp.*).

Wetland areas are present on nine GPs. These wetlands are vegetated with a mix of overstory species including pond pine, red maple, and black gum. Mid story species include red maple, black gum (*Nyssa sylvatica*), willow (*Salix* spp), sweet bay (*Magnolia virginiana*), and red bay (*Persea palustris*). Understory/shrubs and groundcover species include wax myrtle, sweet bay, red bay, wax myrtle, titi (*Cyrilla racemiflora*), inkberry (*Ilex glabra*), and fetterbush (*Lyonia lucida*). Cane (*Arundinaria gigantea*), greenbriar and poison ivy are also found in these habitats. Where the canopy is open enough, the herb stratum can be variable and may contain fern species such as cinnamon fern (*Osmunda cinnamomea*), royal fern (*O. regalis*), or netted chain fern (*Woodwardia areolata*), as well as numerous sedges (*Carex* spp.) and broomsedges (*Andropogon* spp.)

The GPs and MPs presently located on grassy areas are vegetated with a myriad of herbaceous species including broomsedge (*Panicum* spp *and Dicanthelium* spp), blackberry, wiregrass, panic grass, bracken fern, honeysuckle (*Lonicera japonica*), and fescue (*Festuca* spp).

The forest to be cut within the project area contains timber that is marketable. MCB Camp Lejeune Forestry personnel would arrange harvest of marketable timber. MCB Camp Lejeune Training and Operations Department personnel would arrange cutting of non-marketable timber.

3.2.4 Wetlands

During onsite inspections, wetlands subject to US Army Corps of Engineers' regulatory jurisdiction, in accordance with the *United States Army Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers Waterways Experiment Station, 1987), were identified by the presence of wetland vegetation, hydric soils, and wetland hydrology. Within the defined perimeters of GPs 3, 12, 14, 15, 16, 19, 23, 25, and 30, jurisdictional wetlands are present such that training maneuvers must be specifically designed to avoid adverse impacts. The remainder of the GPs and all eight MPs do not have wetlands within their perimeters, other than possibly on the fringes. If present, these fringe wetland locations would not adversely compromise artillery or mortar training.

3.2.5 Coastal Zone

The project area is located in Onslow County, which is one of the 20 coastal counties under the CAMA jurisdiction. The policies and objectives of CAMA are designed as guidelines for the use and development of the coastal zone. Federal activities that affect any land or water use or natural resource of the coastal zone must be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of the approved State management programs. The proposed action would require a consistency determination and concurrence from the NCDENR, Division of Coastal Management if federal authorizations are required.

3.3 Socioeconomic Characteristics

Camp Lejeune is a military complex located entirely in Onslow County, NC. Bordered on the northeast by the City of Jacksonville, Camp Lejeune is centered in a rapidly growing region. It is approximately 50 miles (80 km) from New Bern, Morehead City, and Wilmington. Jacksonville is the only incorporated city routinely affected by land-based activities at Camp Lejeune, but water based training can affect port facilities in other areas, such as Morehead City and Wilmington (United States Marine Corps, 1987).

Since its purchase in 1940, Camp Lejeune has become the center not only for amphibious warfare training and operations, but also for development of new weapons systems and vehicles. The latter function has resulted in the inland areas of Camp Lejeune and the accompanying air spaces being filled with new training ranges and facilities.

Marine Corps Base, Camp Lejeune and New River Air Station are home to the largest concentration of Marines and Sailors in the world. The current total active-duty population of the complex is 41,507 officers and enlisted personnel. On-Base civilian employees contribute an additional 4,786 personnel. While nearly 53,400 dependents of active-duty personnel reside on

the Base, approximately 42,000 retirees and dependents reside in the Jacksonville area (United States Marine Corps, 1998).

3.3.1 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations." The Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from proposed actions and to identify alternatives that might mitigate such impacts. Consideration of environmental justice concerns includes race and ethnicity and the poverty status of populations.

3.3.2 Protection of Children

Executive Order 13045, "Protection of Children from Environmental Health and Safety Risks," requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. The order, dated April 21, 1997, further requires federal agencies to ensure that their policies, programs activities, and standards address these disproportionate risks. The order defines environmental health and safety risks as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest." Historically, children have been present at Camp Lejeune as residents and visitors (e.g., family housing, schools, users of recreational facilities, and so forth). On such occasions, the Marine Corps has taken precautions for their safety by a number of means, including, but not limited to, the use of fencing, limitations on access to certain areas, and provision of adult supervision.

Table 4. Summary of Affected Environments for each Gun Position

Gun Position	Predominant Soils	Surrounding Forest Type	Wetlands Present	Known Arch. Site Present	Shortest distance to T&E site (mi.)	Nearest Species
1	BmB, On	Mature longleaf, 20 year old longleaf/loblolly mix.	N	N	<0.1	RCW
2	BmB, St	Mature longleaf/loblolly mix, <5 yr & 20 y. Longleaf plantations.	N	N	<0.1	RCW
3	Ln, On, To	Mature longleaf, and longleaf/loblolly mix forest.	Y	N	<0.1	RCW
4	BmB	Mature longleaf/loblolly mix.	N	N	0.00	RCW
5	Kub, Ln	Mature loblolly, <30 yr. Loblolly/longleaf mix.	N	N	0.30	RCW
6	BmB, On	<2 acres mature longleaf/loblolly	N	N	0.15	RCW
7	Wab	<50 yr. Loblolly, 2 yr. longleaf plantation	Y	Y	0.85	RCW
8	Kub	Mature loblolly, longleaf	N	N	0.30	RCW
9	AnB, MaC, Wab	Mature longleaf & loblolly, <5 yr. Plantations	N	Y	1.20	RCW
10	BmB, Mk	Mature hardwood, mature loblolly	N	N	0.75	RCW
11	BmB, Wab	Mature harwood, <5 yr. plantations	N	N	0.80	RCW
12	Pa, Wab	<5 yr longleaf plantations, 50 yr. Loblolly and Pond pine.	Y	N	1.00	RCW
13	Ln, Mu, Wab	Mature hardwood, mature loblolly, <5 yr. Longleaf plantations	N	N	1.60	RCW
14	BmB, To	Mature loblolly, <5 yr longleaf plantations	Y	N	0.65	RCW
15	Mu, Wab	Mature harwood, loblolly-hardwood mix.	Y	Y	1.60	RCW
16	Kub, Ln	Mature longleaf/pond pine mix.	Y	N	0.10	RCW
17	BmB, Ln	<30 yr loblolly, slash plantations, mature hardwood	N	N	0.65	RCW
18	Wab	Mature and <30 yr. Loblolly-hardwood mix.	N	N	1.20	RCW
19	Wab	Mature loblolly-hardwood mix, mature hardwood	Y	Y	0.80	RCW
20	Co	Sand beach	N	N	1.60	RCW
21	BmB, Ku	<30 yr. plantations, mature longleaf	Y	N	0.32 0.45	RCW RLL
22a/b	Pa, Wab	Mature loblolly/hardwood mix, mature hardwood, <5 yr. longleaf plantations	N	Y	1.00	RCW
23	NoB, On	<30 yr. plantations, mature loblolly-hardwood mix	Y	N	0.75	RCW RLL
25	KuB, MaC, Mu	<30 yr. plantations, mature hardwood, mature pond pine/hardwood mix.	Y	N	0.35	RCW
26	BmB, Ln, MaC	Mature hardwood, <30 yr. plantations, mature loblolly mix.	N	N	0.55	RCW
27	Wab, MaC, Mk	Mature hardwood, mature loblolly/hardwood mix	N	Y	1.10	RCW
28	Ly, On	Mature loblolly, <30 yr. loblolly	N	N	1.25 1.5	RCW RLL
29	On, MaC	Mature loblolly, <30 yr. loblolly plantations, <5 yr. plantations	N	N	0.75 1.1	RCW RLL
30	BmB, Mu, FoA, To	Mature pond pine, mature loblolly, loblolly-hardwood mix.	Y	N	0.95	RCW
31	WaB, MaC	Mature loblolly-hardwood mix	N	N	2.25 1.35	RCW Eagle
32	BmB, MaC	<30 yr. Loblolly plantation, mature loblolly	N	Y	0.80	Eagle
33	On, MaC	50 yr. loblolly, <10 yr. loblolly	N	N	0.60	Eagle
34	Ln, Mu	Mature Longleaf, 40 yr. Pond pine.	N	N	<0.10	RCW

RCW (Red-cockaded woodpecker) = Buffered (200ft) RCW Cluster Site
RLL (Rough-leaved loosestrife) = Buffered (100ft) RLL Site
Eagle (Bald eagle) = Location of Eagle Nest
Soil Types are defined in Barnhill, 1992. Also see Section 3.1.1

4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the environmental consequences of implementing each alternative not previously discarded and forms the basis for the comparisons presented in the alternatives section.

4.1 Physical Environment

4.1.1 Soils

4.1.1.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Due to the temporary nature of the training activity, no significant adverse impacts to soils presently occur, although existing minor impacts to soils (rutting, compaction, surface movement resulting from heavy equipment, etc.) would continue.

Areas of severe erosion and their causes have been identified and are presently being repaired under contract or by MCB Camp Lejeune personnel. Where possible, causes of the erosion are being corrected.

Impacts to soils identified by USDA as Prime Farmland Soils are not significant because these areas are not presently used for agricultural purposes and are not likely to be farmland in the future.

4.1.1.2 Proposed Action Alternative

Upon implementation of the preferred alternative, little change in type, severity, or duration of soil impacts would occur due to the temporary nature of the training activity and because no permanent structures are associated with the preferred alternative.

Some positions have sustained severe erosion from heavy use, unsatisfactory post-project restoration, traffic, or natural causes. Proposed rehabilitation includes grading eroded areas and planting with warm season native grasses. Minor realignment of road intersections bordering the positions may occur if it is determined that existing conditions at a particular intersection (i.e., skewed roads) are resulting in traffic-caused erosion.

In identified areas of severe erosion, implementation of the preferred alternative would allow MCB Camp Lejeune personnel to complete the repair of these areas as well as correct the causes of the erosion. Implementation of the preferred alternative will include periodic inspections of each GP and MP, intended to identify and address any types of problems (environmental, logistical, etc.). As such, potential impacts to soils resulting from future operations on the GPs and MPs would be avoided.

Impacts to soils identified by USDA as Prime Farmland Soils would not be significant because these areas are not presently used for agricultural purposes and would not likely be used as farmland in the future.

4.1.2 Floodplains

4.1.2.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Presently, no impacts to floodplains occur as a result of normal training practices. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to floodplains would be addressed.

4.1.2.2 Proposed Action Alternative

Upon implementation of the preferred alternative, no change in existing impacts to floodplains would occur. As there are no permanent structures or alterations to the existing landscape other than removal of vegetation associated with the preferred alternative, no future floodplain impacts would occur.

Implementation of the preferred alternative would include periodic inspections of each GP and MP, intended to identify and address any types of problems (environmental, logistical, etc.). As such, potential impacts to floodplains resulting from future operations on the GPs and MPs would be avoided.

4.1.3 Topography and Surface Hydrology

4.1.3.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. As a result, no impacts to existing topography or surface hydrology would occur. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to topography and surface hydrology would be addressed.

Areas of severe erosion and their causes have been identified and are presently being repaired under contract or by MCB Camp Lejeune personnel. Where possible, causes of the erosion are being corrected.

4.1.3.2 Proposed Action Alternative

Upon implementation of the preferred alternative, no permanent change to topography would occur. At the proposed relocation site for GP 12, approximately 300-500 feet of the existing powerline adjacent to Freeman Road would be buried. No permanent change in topography would occur as a result of this burial.

Implementation of the preferred alternative would incorporate periodic inspections of each GP and MP, intended to identify and address any types of problems (environmental, logistical, etc.). As such, potential impacts to topography or surface hydrology resulting from future operations on the GPs and MPs would be avoided.

In identified areas of severe erosion, implementation of the preferred alternative would allow MCB Camp Lejeune personnel to complete the repair of these areas as well as correct the causes of the erosion. Implementation of the preferred alternative will include periodic inspections of each GP and MP, intended to identify and address any types of problems (environmental, logistical, etc.). As such, potential impacts to soils resulting from future operations on the GPs and MPs would be avoided.

There are no permanent structures associated with the preferred alternative.

Some positions have sustained severe erosion from heavy use, unsatisfactory post-project restoration, traffic, or natural causes. Proposed rehabilitation includes grading eroded areas and planting with warm season native grasses. Minor realignment of road intersections bordering the positions may occur if it is determined that existing conditions at a particular intersection (i.e., skewed roads) are resulting in traffic-caused erosion.

As a result of the above, no adverse impacts to topography or surface hydrology would occur.

4.1.4 Groundwater

4.1.4.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. No adverse impacts to groundwater presently occur and no additional impacts would be anticipated as a result of continued training practices.

4.1.4.2 Proposed Action Alternative

Implementation of the preferred alternative would not adversely impact groundwater.

4.1.5 Water Quality

4.1.5.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Because present training operations do not involve permanent structures or impacts, or any discharge, no adverse impacts to water quality would occur. Existing erosion problems that contribute to water quality degradation have been identified and the majority of these identified areas are being repaired. Under the no action alternative, those sites that would be repaired as a result of the preferred alternative would have to be addressed separately by Base personnel.

4.1.5.2 Proposed Action Alternative

Implementation of the preferred alternative would not result in additional water quality impacts as no permanent structures or impacts or discharges are proposed.

In identified areas of severe erosion that contribute to water quality degradation, implementation of the preferred alternative would allow MCB Camp Lejeune personnel to complete the repair of these areas as well as correct the causes of the erosion. In addition, periodic inspections of each GP and MP would allow prompt identification of erosion problems, thereby allowing for repair efforts to be undertaken before the problem becomes severe thus promoting water quality improvements.

4.1.6 Air Quality

4.1.6.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. No adverse impacts to air quality presently occur and no impacts would occur as a result of continued training and Base practices.

4.1.6.2 Proposed Action Alternative

Implementation of the preferred alternative would not involve actions that contribute to air quality degradation such as burning or the emission of hazardous air pollutants. In addition, MCB Camp Lejeune is in an attainment area and a conformity determination pursuant to the Clean Air Act is not required. Therefore, the preferred alternative would not result in adverse impacts to air quality.

4.1.7 Noise

4.1.7.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur.

4.1.7.2 Proposed Action Alternative

Within the project area, noise issues are not a major environmental concern for MCB Camp Lejeune because of the size and location of the Base, the location of the high noise sources well within the Base boundaries, and the noise abatement practices currently in place. The main sources of environmental noise emanate from airfields, weapons, rocket and missile firing ranges, and demolition and explosive disposal sites (Radian Corporation, 1996).

Implementation of the preferred alternative would result in noise impacts during times of artillery training from those positions located near residential areas. Due to limited use throughout the year, noise impacts are not anticipated to be significant.

4.1.8 Cultural Resources

4.1.8.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. No known cultural resource sites are present on the firing lines of existing GPs. Therefore, adverse impacts to cultural resources as a result of normal training operations would not be anticipated. Specific site maintenance, conducted on an as-needed basis and coordinated site-by-site, would be conducted in such a manner as to avoid ground disturbance, until surveys have been conducted or until oversight of maintenance work by MCB Camp Lejeune archaeologists is possible.

4.1.8.2 Proposed Action Alternative

Implementation of the preferred alternative would be undertaken in such a manner so as to avoid impacts to cultural resources. TRC has conducted surveys for possible archaeological and cultural resources on those GPs that either require more than minimal (routine mowing) site preparation or those sites that, as a result of perusing historic records as well as past surveys, would appear to have the greatest likelihood of containing such resources. Surveys for these resources have not been conducted on the remaining GPs or MPs. On those sites not surveyed, no ground-disturbing activity would occur, and all vegetation cutting would be conducted above ground.

As a result of TRC surveys, four GPs of the 16 investigated (15 sites investigated as part of this specific study, one investigated as part of a separate study) yielded substantial artifact deposits within intact contexts and may meet the criteria for inclusion in the National Register of Historic Places (NRHP). TRC recommended that these sites be avoided and preserved in place. However, since long-term management considerations and military operations are likely to impact these sites, additional investigations are recommended prior to any ground-disturbing activities to determine if these sites contain significant archaeological deposits that would make them eligible for the NRHP. These deposits were found on the initial relocation sites for GPs 12, 19, and 32, and on the existing GP 22 site (for which only routine long-term maintenance is proposed). Alternative relocation sites for GP 12, 19, and 32 have been located and these sites have been surveyed for cultural resources. No deposits making these sites eligible for the NRHP were found; therefore, no adverse impacts to cultural resources would occur as a result of the expanded and relocated sites. Additionally, the existing GPs 12 and 32 contain one each potentially eligible National Register archeological sites. These GPs will be restored and managed for natural and cultural resources by Camp Lejeune Environmental Conservation Branch staff.

As stated above, only routine, long-term maintenance is proposed for GP 22. No ground-disturbance would occur during these operations. Ongoing training practices would potentially result in significant adverse impacts to cultural resources over time. MCB Camp Lejeune is investigating this issue and would address measures to be undertaken at GP 22 during routine training events to avoid these impacts. The two alternative positions (A/B) identified for this GP are aligned to avoid the cultural resource sites located on the northeastern portion of the site.

On GPs and MPs that have not been surveyed for cultural resources, long-term maintenance would be conducted in such a manner as to avoid ground disturbance, until surveys have been conducted or until oversight of maintenance work by MCB Camp Lejeune archaeologists is possible. Coordination with the NC SHPO regarding the TRC investigations and the proposed action is in progress.

4.1.9 Hazardous Waste Sites

4.1.9.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. There are no hazardous waste sites, as identified by MCB Camp Lejeune's EQB, on any of the GPs or MPs, therefore, no impacts would occur.

4.1.9.2 Proposed Action Alternative

There are no hazardous waste sites, as identified by MCB Camp Lejeune's EQB, on any of the existing or proposed GPs or MPs, therefore, implementation of the preferred alternative would not result in any impacts to hazardous waste sites. (Personal Communication, Robert Lowder, MCB Camp Lejeune, December 18, 2001).

4.2 Natural Resources

4.2.1 Threatened and Endangered Species

4.2.1.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to threatened and endangered species would be addressed. The no action alternative would not impact threatened and endangered species.

4.2.1.2 Proposed Action Alternative

The proposed action has been reviewed for compliance with the Endangered Species Act of 1973, as amended.

MCB Camp Lejeune has entered into informal consultation with the US Fish and Wildlife Service regarding potential impacts to federally listed threatened and endangered species.

Bald Eagle. - The Fish and Wildlife Service's *Habitat Guidelines for Bald eagle in the Southeast* (1987) provides for an exclusion buffer of 1500 feet (455 meters) where no permanent changes can be made. An active bald eagle nest is located adjacent the New River north of GP 32. This known nesting site is well away from the proposed project areas, and all proposed expansion will occur at distances of greater than 0.60 mile. This distance will provide an adequate forested

buffer so as not to disrupt eagle breeding. The proposed project would not affect fish stocks; therefore, the availability of prey fishes would not be significantly affected. The frequency and duration of artillery fire is sporadic and not of a duration that would cause abandonment. For these reasons, it has been determined that the project as currently proposed would not likely adversely affect the bald eagle.

Black rail.- The black rail's habitat is salt and brackish marshes vegetated with needlerush and cordgrasses, and inland in freshwater marshes, meadows, and grain fields. The proposed project would not impact black rail habitat. Therefore, the project as currently proposed would not likely adversely affect the black rail.

Piping plover. – The proposed project, specifically the relocation of GP 20 aspect of the project, involves construction of a small GP located over 100 feet from the ocean beach in a disturbed area used for vehicle parking. Therefore, the project as currently proposed is not likely to adversely affect the piping plover or its designated critical habitat.

Red-cockaded woodpecker. - Potential adverse impacts can occur to red-cockaded woodpeckers if a proposed action occurs within a ½-mile radius of a cluster (single or group of nesting cavity trees) site. However, the USFWS has revised the RCW recovery plan, focusing less on the ½-mile radius and concentrating more on the "best quality" foraging habitat fallings within the ½-mile as being the area of interest. Both methods of foraging habitat analysis were undertaken to determine potential effects of the project. A total of seven active foraging clusters may be affected by the proposed work. However, only three of these clusters (04, 07, and 29) are currently deficient in pine stems greater than 10-inches DBH (diameter at breast height-a measurement defining the size and age at which a pine tree becomes usable by RCWs). Following completion of the proposed project, only two clusters (04 and 07) would remain below 2/3 the recommended stocking levels for a ½-mile radius foraging area.

GP 16 (adjacent to and part of DZ Dodo) is located to the southwest of Cluster 04. The proposed final location of GP 16 was finally arrived at following wetland identification. This final location would involve the removal of sparse pond pine and longleaf pine averaging 60 years of age. The removal of this timber would not be expected to significantly affect Cluster 04 because the area to be cleared is not regarded as high quality habitat and RCW monitoring shows that the foraging habitat to the east of the proposed site is more heavily used.

Cluster 07 is located in the same area as Cluster 04 and some of the ½-mile foraging circle extends to the area that would become the new GP 16. However, RCW monitoring shows that the birds do not use the area that would be affected.

The proposed relocation of GP 21(adjacent to LZ Heron) would occur in an area clearcut in 1998 to remove a slash pine plantation. While most of the new position would be located within the clearcut area, approximately 3.5 acres of mixed longleaf, loblolly, and pond pine forest would be cleared. Because of the location of the area to be cleared in relation to existing nonforested areas, the relocation of GP 21 would not introduce any new obstacles to or significant reductions in quality foraging habitat for Cluster 07.

The proposed relocation of GP 21 would also fall within the ½-mile foraging circle for Cluster 29. However, because this acreage has been cleared of timber for the last three nesting seasons, Cluster 29 would not be significantly affected by the proposed relocation.

The MCB Camp Lejeune Mission Compatible, Long Range RCW Management Plan addresses future recruitment sites (stands designated for future cavity provisioning). None of the expansion or relocation GP sites remove or significantly affect MCB Camp Lejeune's ability to provide for future recruitment sites.

The area to be affected by the GP3 expansion has an experimental RCW recruitment site adjacent to it. The standard is that firing lines should be greater than 200m from the nearest cavity tree. As this is an experimental site, MCB Camp Lejeune will be collecting data as a part of the Military Impacts Study; therefore the proximity to the firing line is not a concern.

The frequency and duration of artillery fire is sporadic and not of a duration that would cause abandonment of any cavity tree or foraging area within MCB Camp Lejeune.

American Alligator. – The proposed project would not impact alligator habitat, nor would it directly affect any waters. Therefore, it has been determined that the project as currently proposed would not likely adversely affect the alligator.

Hawksbill, leatherback, Kemp's ridley, loggerhead, and green sea turtles. – The proposed project, specifically the relocation of GP 20 aspect of the project, involves construction of a small GP located over 100 feet from the ocean beach. In addition, MCB Camp Lejeune personnel monitor Onslow Beach between March 1 and November 15 of every year for sea turtle activities. Should any sea turtle nests be found on the relocated position, the nest would be protected from human intrusion and prior to any training operation, coordination with USFWS would be conducted. Therefore, the project as currently proposed would not likely adversely affect sea turtles.

The proposed project would not result in any changes to hydrology or soil disturbance. Isolated wetland depressions within GP23 will be monitored for Carolina Gopher Frog due to proximity to a known breeding site within a depression pond approximately 200 meters away. In addition, the **Carolina gopher frog, flaxleaf seedbox, Georgia nutrush, long beak baldsedge, netted nutrush**, and **West Indies meadow beauty** are found at other locations on MCB Camp Lejeune; therefore, these species would not be adversely impacted by the proposed project (Personal communication, Karen Ogden, Wildlife Biologist, MCB Camp Lejeune, January 14, 2002).

Rough-leaved loosestrife. - Presently, there are no known rough-leaved loosestrife sites present on any of the GPs or MPs. However, because of rough-leaved loosestrife's ability to lie dormant for years until ecological conditions are optimum, if, following clearing of the sites, potential habitat becomes occupied, MCB Camp Lejeune will protect the site with signs and manage it with prescribed fire. In some cases, MCB Camp Lejeune may actually be enhancing suitable RLL habitat. For the purpose of the Endangered Species Act, if no rough-leaved loosestrife is presently found within the project site, then the project as currently proposed would not adversely impact the species.

Seabeach amaranth. MCB Camp Lejeune personnel presently monitor Onslow Beach for presence of the species. Because the portion of the beach where GP 20 is to be relocated is heavily impacted as a result of training maneuvers, there have been no plants found in this area. Nevertheless, MCB Camp Lejeune personnel would inspect the GP prior to use for presence of the species. Should this inspection find plants growing, the plants would be posted and possibly "caged" to protect them from damage. Based on the above, the project as currently proposed would not adversely impact seabeach amaranth.

Pursuant to the above findings, in addition to final consultation with USFWS, by letter dated March 19, 2002 (Appendix A), the USFWS concurs that the proposed project is not likely to adversely affect red-cockaded woodpeckers, rough-leaved loosestrife, other federally listed species, formally designated critical habitat, or species currently proposed for Federal listing under the Endangered Species Act, as amended.

4.2.2 Fish and Wildlife

4.2.2.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to fish and wildlife would be addressed.

4.2.2.2 Proposed Action Alternative

With the proposed alternative, 143 acres of forested habitat will be cleared. The remaining acreage is already non-forested and providing forage and habitat for a variety of species. Removal of vegetation, site preparation, routine training, and site maintenance would directly disturb wildlife in the immediate project vicinity. Species such as amphibians and reptiles may suffer individual mortality, but the impacts are not anticipated to affect population level dynamics. Highly mobile species would experience a shift in distribution. Highly mobile species could migrate out of the project area to compete for food and cover elsewhere while less mobile species would suffer direct mortality.

Routine training presently occurs throughout the Base on a year-round basis, therefore, impacts to wildlife would not be great as most species are already adjusted to operations on existing GPs and MPs. The majority of the impacts to wildlife would occur on the expanded and relocated sites. However, each GP and MP is rarely used more than six times per year. Routine, long-term maintenance would occur on an as-needed basis and would usually entail only bush-hogging herbaceous and small shrub species of vegetation.

Following completion of the project, the prompt revegetation of disturbed areas, with forage and native grass species, would help remaining wildlife adjust to the changed conditions.

Portions of many of the positions are proposed for, or already contain, a wildlife opening. These areas are planted seasonally with forage crops and native plant selections for the benefit of game

species. In addition, mitigation areas would be planted with forage crops and native plant selections for the purpose of compensating for vegetative impacts associated with the proposed project and other activities on Base as well as a means of benefiting wildlife.

Long-term maintenance of GPs and MPs would involve bush-hogging herbaceous and shrub species of vegetation. No ground disturbance would occur. Impacts associated with maintenance, as well as subsequent routine training practices, would be similar to impacts currently experienced by wildlife and thus would not be significant.

The proposed project would not affect waters (creeks, streams, rivers, or tidal waters), therefore, no impacts to fish are anticipated. Present erosion problems have been identified and are being addressed and repaired. In addition, periodic inspections of each GP and MP would allow prompt identification of erosion problems, allowing for repair efforts to be undertaken before the problem becomes severe, thereby avoiding future indirect impacts to fish.

The proposed project would not result in adverse impacts to either fish or wildlife.

4.2.3 Vegetation

4.2.3.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to vegetation would be addressed.

4.2.3.2 Proposed Action Alternative

The proposed alternative will remove the forested canopy from 143 acres while removing the midstory and shrub layer from the remaining acreage. Following these activities, the gun positions will be maintained as grassy fields.

MCB Camp Lejeune proposes clearing vegetation within each 400-meter by 200-meter gun position and beyond, as necessary, in the 12 gun positions proposed for expansion or relocation. This would be done for safe artillery firing and vehicle operation. On these GPs, within areas identified as wetlands, MCB Camp Lejeune would delineate or otherwise mark timber stands located in these wetlands. MCB Camp Lejeune Forestry personnel would differentiate all existing timber stands to be impacted into two categories (marketable and non-marketable). Stands identified as marketable would be contracted to private firms and would be cut at ground level and removed. Any marketable timber in wetlands would be cut using hand-held equipment only. MCB Camp Lejeune personnel would cut non-marketable timber at ground level (hand-held equipment would be used for timber located in wetlands) and felled timber, if located in wetlands, would be left in place; if on high ground, would be chipped in place. Timber cutting would involve no ground disturbance or stump grinding.

Timber to be cut is predominantly pine (loblolly, longleaf, and/or pond).

MCB Camp Lejeune Forestry personnel would determine the amount of marketable timber to be harvested. The harvest of marketable timber would be contracted out and best management practices (Appendix D) would be followed when timber is cut. (Personal communication, Danny Marshburn, Forestry, Environmental Conservation Branch, MCB Camp Lejeune, January 30, 2002). In terms of the timber harvests in the project area, MCB Camp Lejeune provides 40 percent of revenues from timber sales to the Onslow County School System.

Non-marketable timber would be cut by MCB Camp Lejeune Training Division personnel and, when located in wetlands, would be left on the ground. When located on high ground, cut timber would be chipped on site. Implementing the proposed action would provide only one timber harvest from the project area sites.

Within areas identified as wetlands, vegetation would be cut in accordance with Best Management Practices adopted by MCB Camp Lejeune. These practices are listed in Appendix B.

GPs 1, 7, 23, 26, 27, 31, and 33, and all eight MPs require only routine mowing of herbaceous and short shrub species.

Outside the areas identified as wetlands, provided no archaeological or cultural resources have been identified, vegetation would be cleared by the most practicable equipment available, followed by "grubbing" (removal of stumps and roots) using gang-disks pulled by tractors and/or by bulldozer-mounted root-rakes to break up roots and slow the regeneration of shrub layer and under- and overstory vegetative species. Each site would be planted with native grass species. No importation of fill would occur, nor are improvements to existing road access necessary. Upon the completion of proposed clearing at any particular site, if less than desirable vegetative cover exists, MCB Camp Lejeune would hydro-seed the site with native plant species, using biosolids from the Base's wastewater treatment plant.

Long-term maintenance of existing GPs and MPs involves the removal of vegetation within the established boundaries of the position on an as-needed basis. Following the initial timber harvest, maintenance would impact primarily herbaceous and shrub species of vegetation.

The positions that are to be abandoned would be maintained as open areas and used for various training operations, primarily as landing and drop zones, but would be planted with native grasses and herbaceous species. The existing GP 21 site, located adjacent to LZ Heron, would be planted with 18 acres of longleaf pines. A 4.5-acre area just north of GP 3 (adjacent to LZ Woodpecker) would be planted with longleaf pines. A 13-acre area south of GP 16/LZ Dodo would be planted with longleaf pines and vehicular access would be restricted. Finally, the old sites for GPs 12 and 19 would be planted with either longleaf pines or managed as fields. These efforts would compensate for vegetative impacts associated with the proposed project and other activities on Base.

The proposed action would result in impacts to vegetation, but these impacts would be minimal in scope. Following completion of the project, impacted sites would be revegetated with grass

and herbaceous species to further minimize these impacts and to control erosion and site degradation.

4.2.4 Wetlands

4.2.4.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. Necessary maintenance for each GP and MP would be conducted on an as-needed basis, at which time specific impacts to wetlands would be addressed.

4.2.4.2 Proposed Action Alternative

Implementation of the preferred alternative involves the initial cutting of vegetation, long-term maintenance efforts, and routine training operations on GPs and MPs. Corps of Engineers personnel identified wetlands that could compromise training on nine of the GPs. MCB Camp Lejeune personnel would delineate wetlands on each of these GPs prior to the beginning of any work. Within identified wetlands, vegetation would be cut in accordance with Best Management Practices adopted by MCB Camp Lejeune. These practices are in Appendix B.

The remainder of the GPs and all eight MPs either do not contain wetlands or have wetlands on the peripheries of the sites, such that their presence would not compromise training.

MCB Camp Lejeune personnel would see that the least invasive equipment available would be used to cut understory, shrub layer, and herbaceous vegetation above the ground surface. Rutting and ground disturbance would be avoided or minimized to the maximum extent practicable. No fill material of any kind would be placed in wetlands, and no grading or ground disturbance would occur in wetlands following the cutting of vegetation. In addition, wetlands would be clearly marked to prevent the occurrence of any ground disturbance resulting from preparation of the remainder of the site or during training operations. In addition, wetlands would be avoided during training operations.

GP 23 presently contains numerous small wetland features, including small ponds. These would be delineated by MCB Camp Lejeune personnel, marked in the field, and avoided during maintenance and training operations. Presently, only small trees are growing in these wetlands. The height of these trees is not currently detrimental to the safety of training. Removal of these trees while they are small would have less impact to wetlands than if they were allowed to become a safety hazard to training. Isolated wetland depressions within GP 23 will be monitored for Carolina Gopher Frog due to proximity to a known breeding site within a depression pond approximately 200 meters away.

GP 16 was originally designated as a relocation position. Due to the presence of extensive wetlands within the proposed relocation site, MCB Camp Lejeune determined that the existing site should be expanded. Wetlands of varying environmental degrees are still present within the expanded site. In an effort to avoid the higher quality wetlands, the firing line has been reduced in size to 200 to 250 meters long, enough to accommodate three to four guns. Any greater

reduction would severely limit the effectiveness of the GP as a training site, and the presence of habitat for the Federally endangered red-cockaded woodpecker precludes any further movement of the site's perimeter. Wetlands present within the reduced site have been impacted by training operations, primarily rutting by vehicular traffic and are considered low quality.

As a result of the above practices, the preferred alternative would not adversely impact wetlands. However, permit authorization from the US Army Corps of Engineers and the North Carolina Division of Water Quality, and a consistency determination from the North Carolina Division of Coastal Management would be required prior to MCB Camp Lejeune commencing work in wetlands.

4.2.5 Coastal Zone

4.2.5.1 No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. As no impacts to the Coastal Zone presently occur, no impacts are anticipated as a result of continued use.

4.2.5.2 Proposed Action Alternative

Implementation of the proposed action would be consistent with the North Carolina Coastal Management Program and local land use plans. The North Carolina Division of Coastal Management concurred with this determination by letter dated December 20, 2002 (Appendix C).

4.3 Socioeconomic Characteristics including Environmental Justice and Protection of Children

4.3.1. No Action Alternative

Under the no action alternative, no change in present operating and training practices would occur. As no impacts to socioeconomic characteristics including environmental justice and protection of children, presently occur, no impacts are anticipated as a result of continued use.

4.3.2 Proposed Action Alternative

Implementation of the preferred alternative would not impact, either increase or change, socioeconomic characteristics (i.e., population, traffic and transportation, utilities and infrastructure, and land use). Additionally, existing land uses would not change. No impacts would be made to environmental justice or protection of children because the artillery positions are remote from any residential areas.

In terms of the timber harvests in the project area, MCB Camp Lejeune provides 40 percent of revenues from the sale of timber to the Onslow County School System. Implementing the proposed action would provide only one timber harvest from the project area sites.

4.4 Cumulative Impacts

Cumulative impacts are defined in 40 CFR 1508.7 as impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. The NEPA process requires that these connected, similar action impacts be analyzed.

Other past, present, and reasonably foreseeable actions in the geographic areas of the gun and mortar positions are as follows. Silvicultural activities such as prescribed burning and timber sales are ongoing since the 1940's. Since 1999, Base personnel have applied biosolids (Class A Residuals) generated from the advanced wastewater treatment plant to several hundreds of acres of training ranges. The nutrients in the pasteurized biosolids provide vegetation with small amounts of nitrogen and phosphorous that stimulate growth. This plant growth helps reduce erosion impacts to soils in high traffic areas. Maintenance of these sites in early successional stages favors species that are adapted to more open site conditions and are tolerant of frequent fire events. Adverse impacts to vegetation and to soils are not expected to occur. The Base Environmental Staff did not identify any activities that would add to the impacts of the proposed action.

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Figures

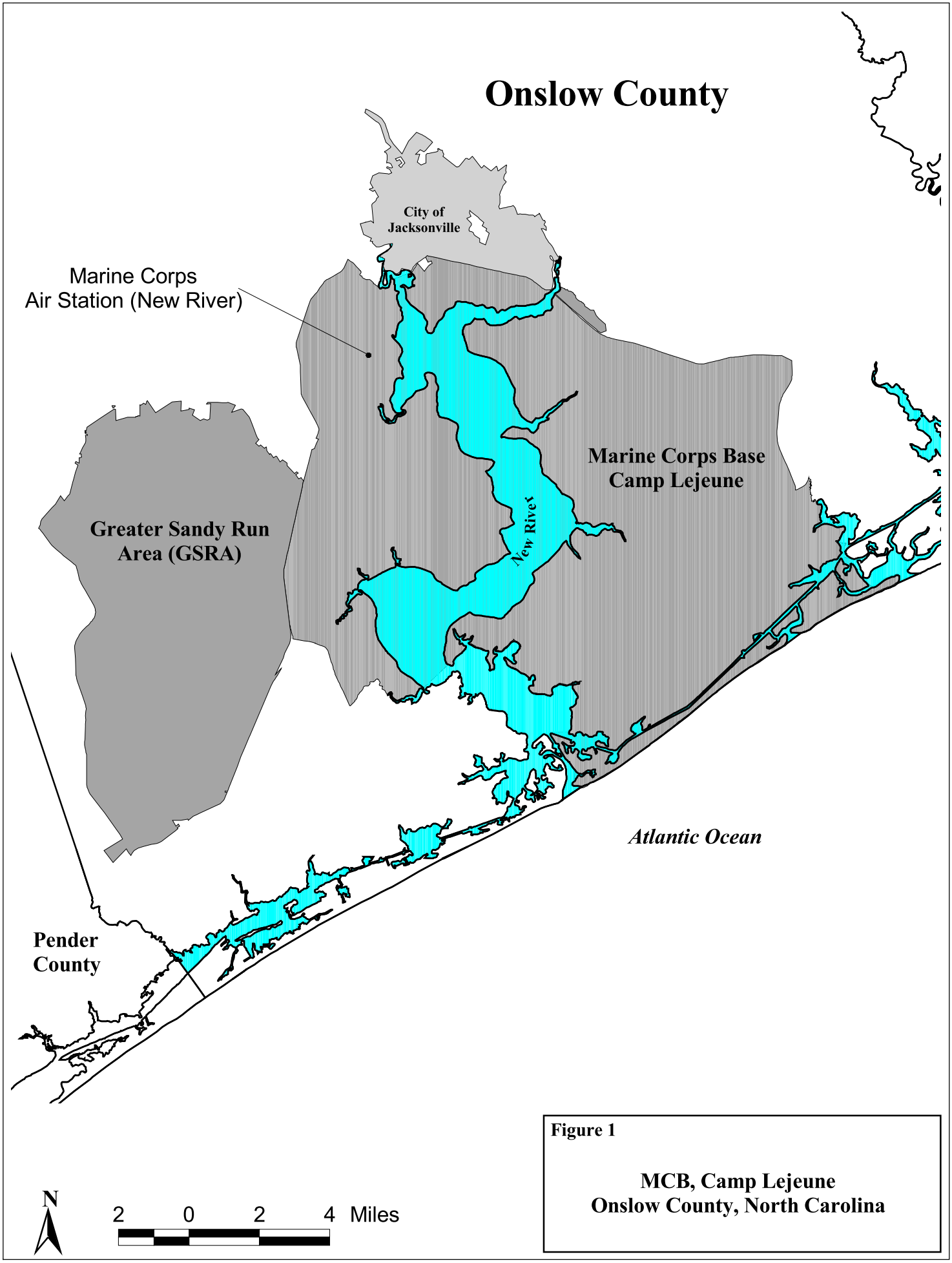
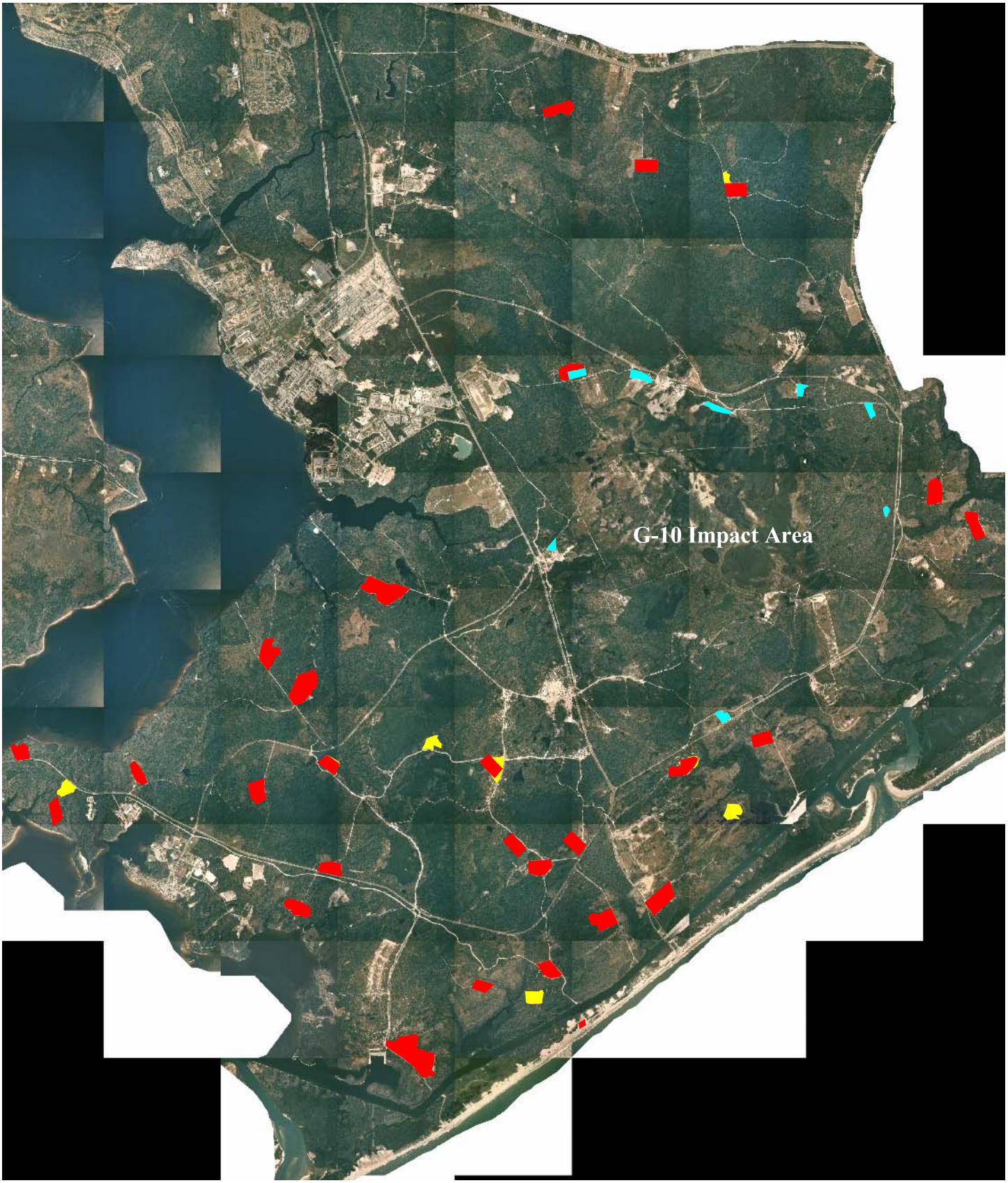


Figure 1

MCB, Camp Lejeune
Onslow County, North Carolina

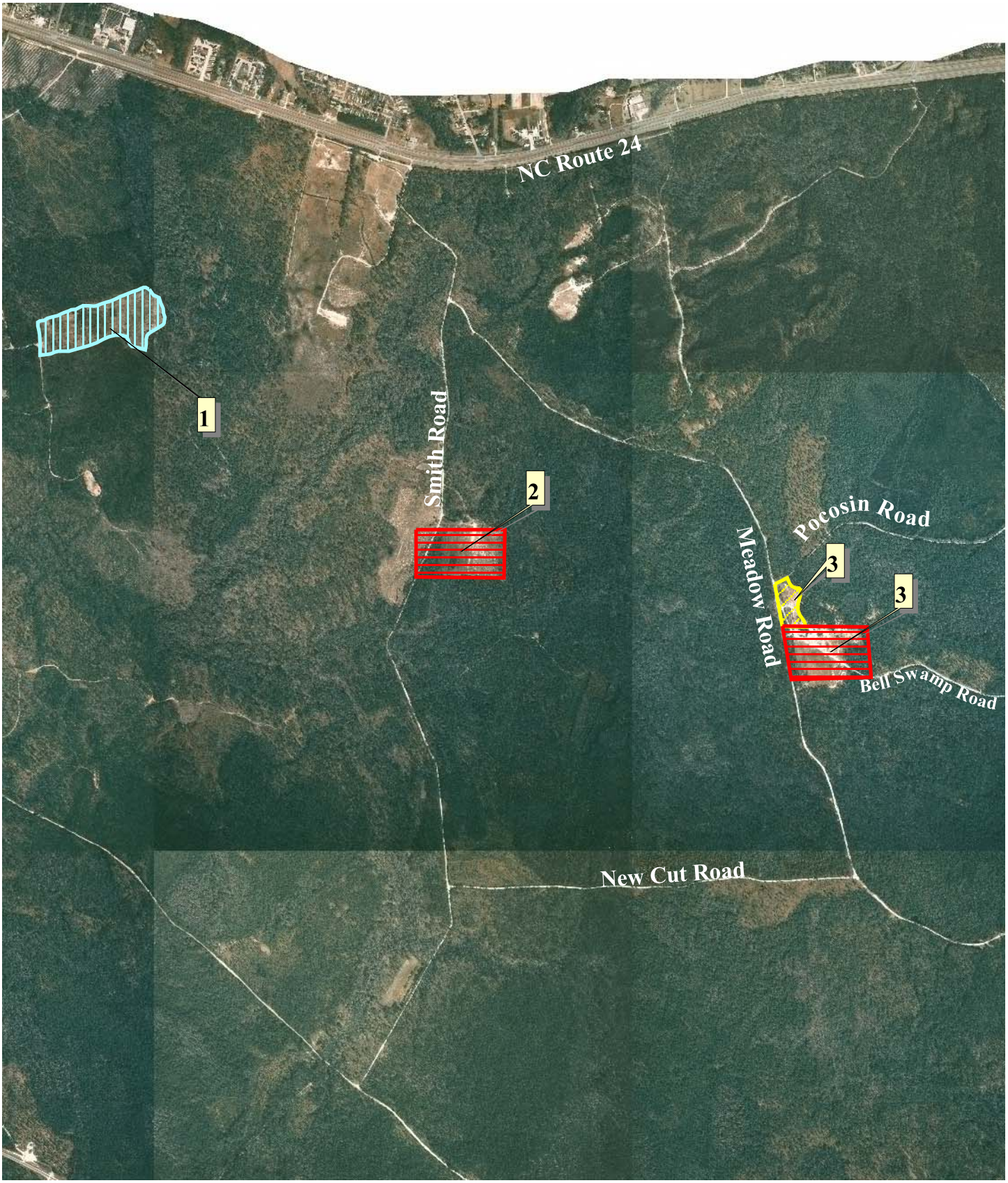


Mortar Positions
Gun Positions
Area to be Restored

N

Figure 2

General Site Locations for Gun Positions and Mortar Positions



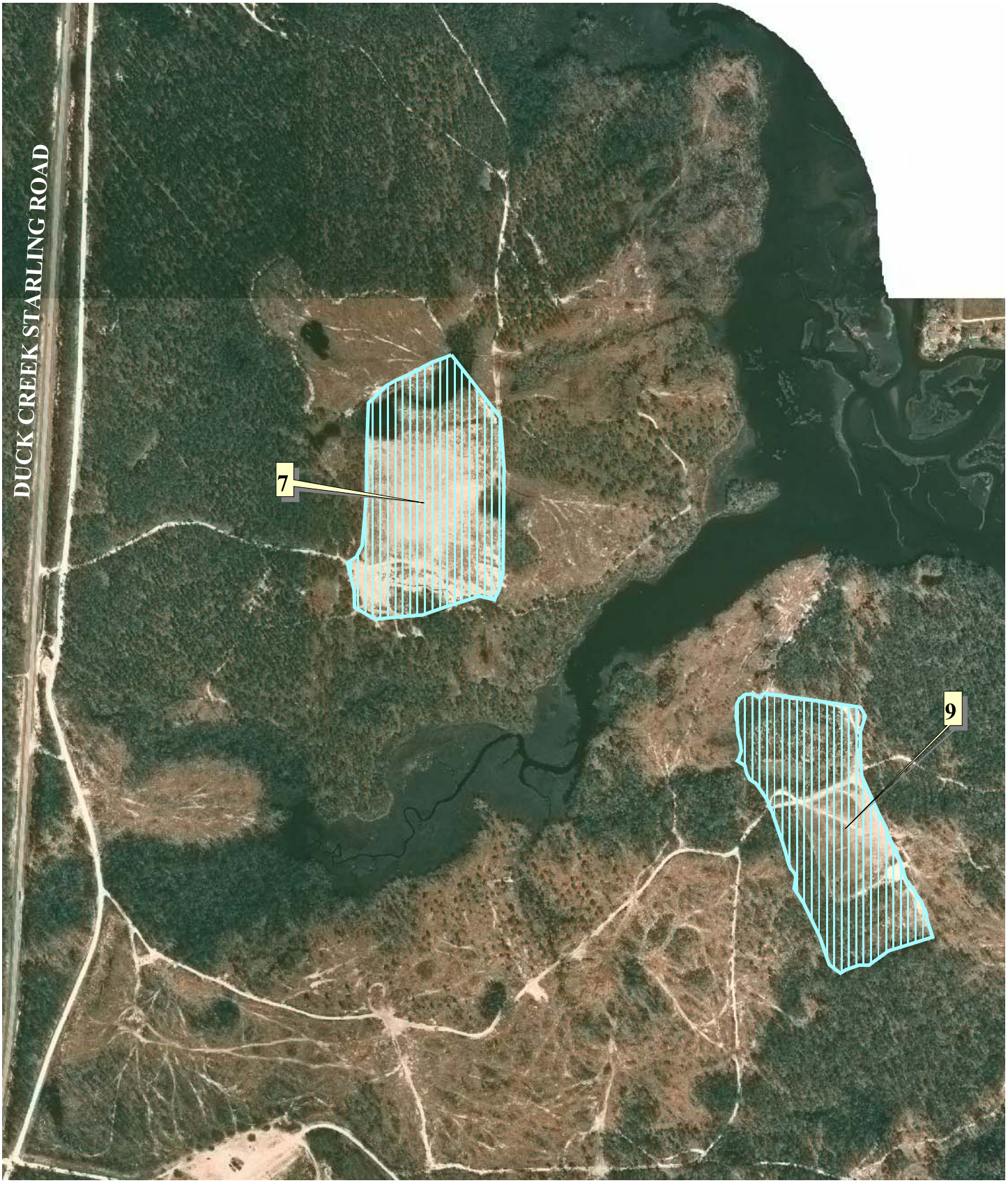
Gun Positions

- Expansion
- Maintenance
- Areas to be Restored

N

Figure 3

Gun Positions 1, 2 and 3

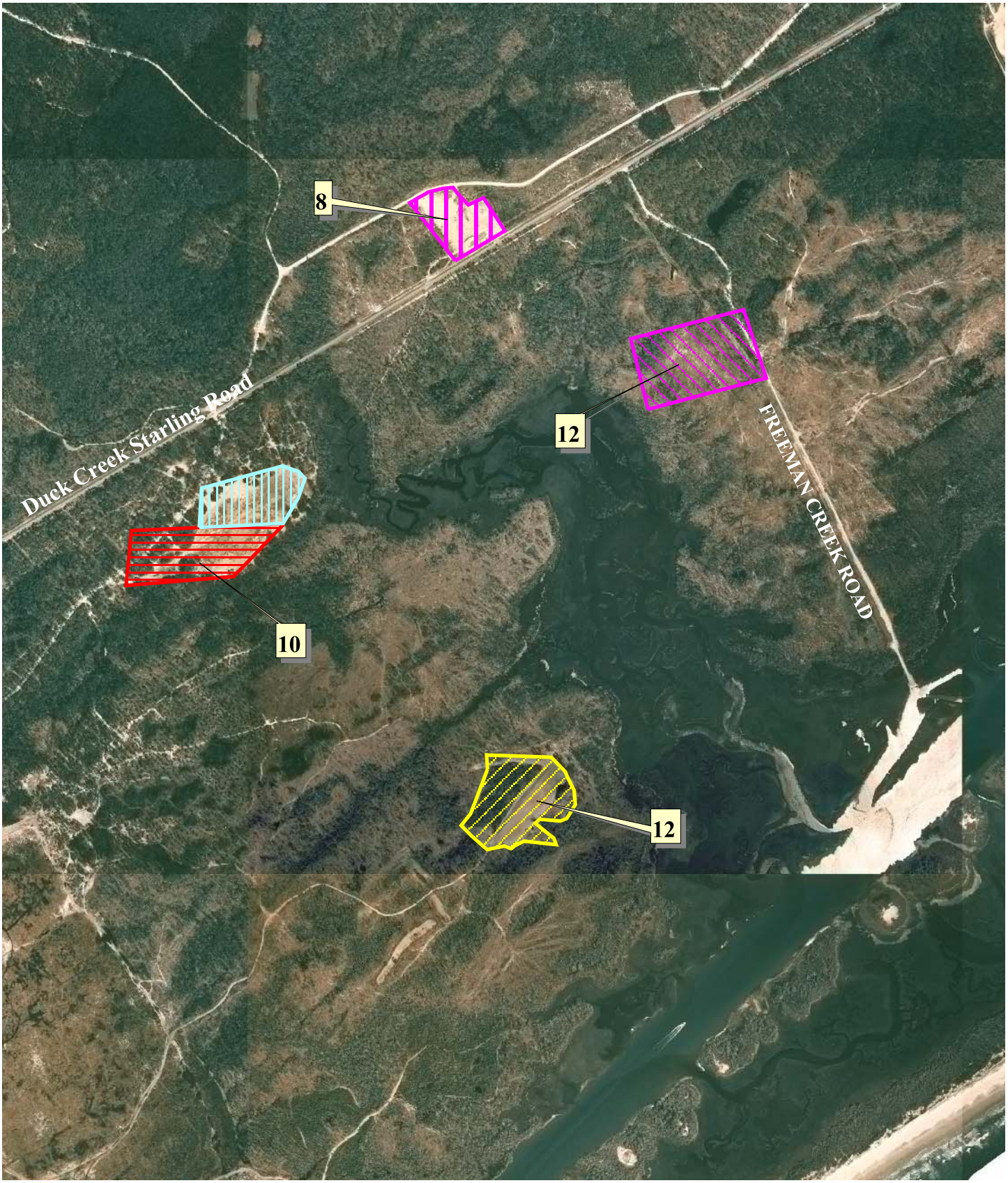


Gun Positions
Maintenance

N

Figure 4

Gun Positions 7 and 9



Mortar Positions

Gun Positions

Expansion

Maintenance

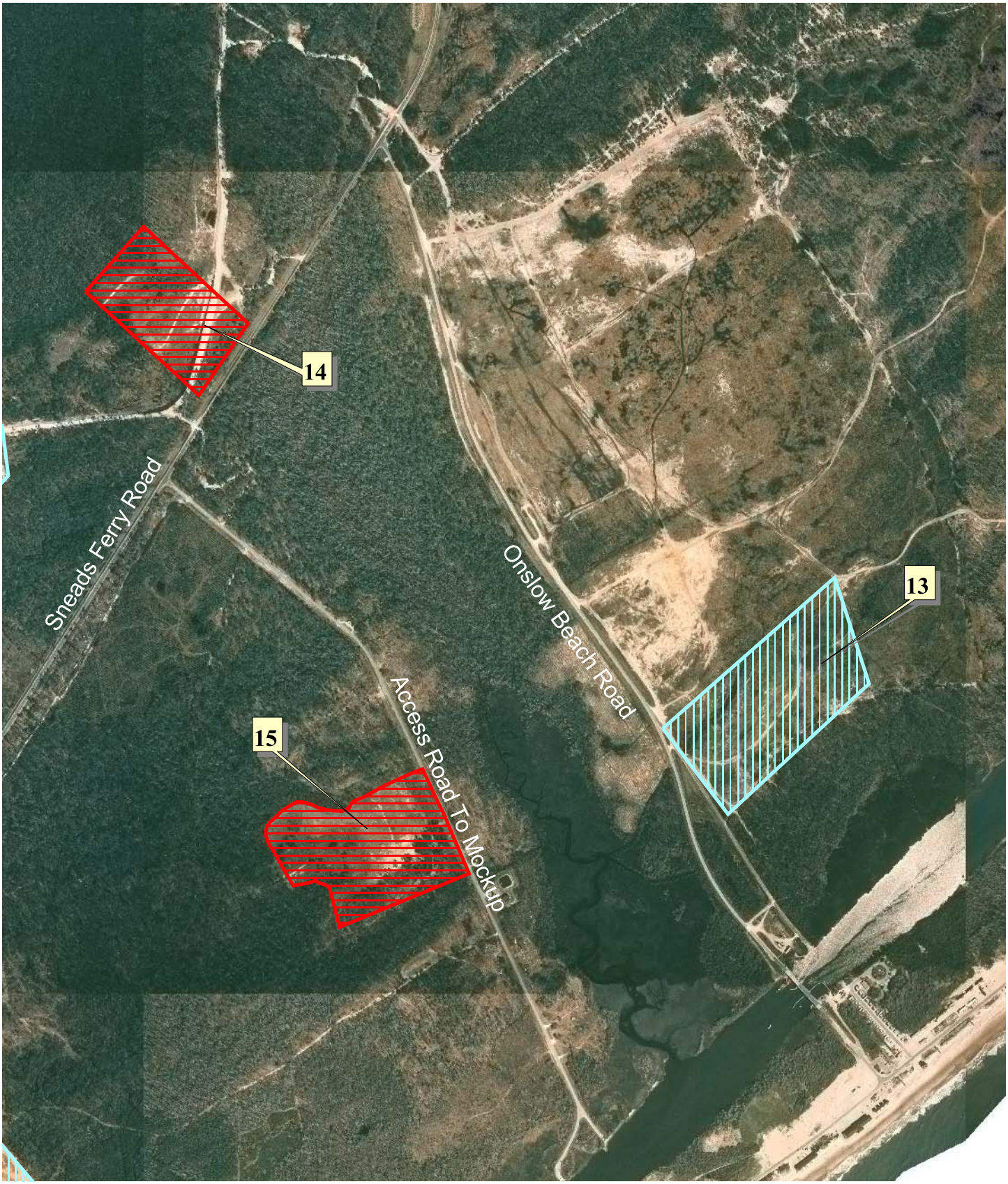
Relocation

Area to be Restored

N

Figure 5

Gun Positions 10 and 12, and Mortar Position 8



Gun Positions

Expansion

Maintenance

N

Figure 6

Gun Positionss 13, 14, and 15

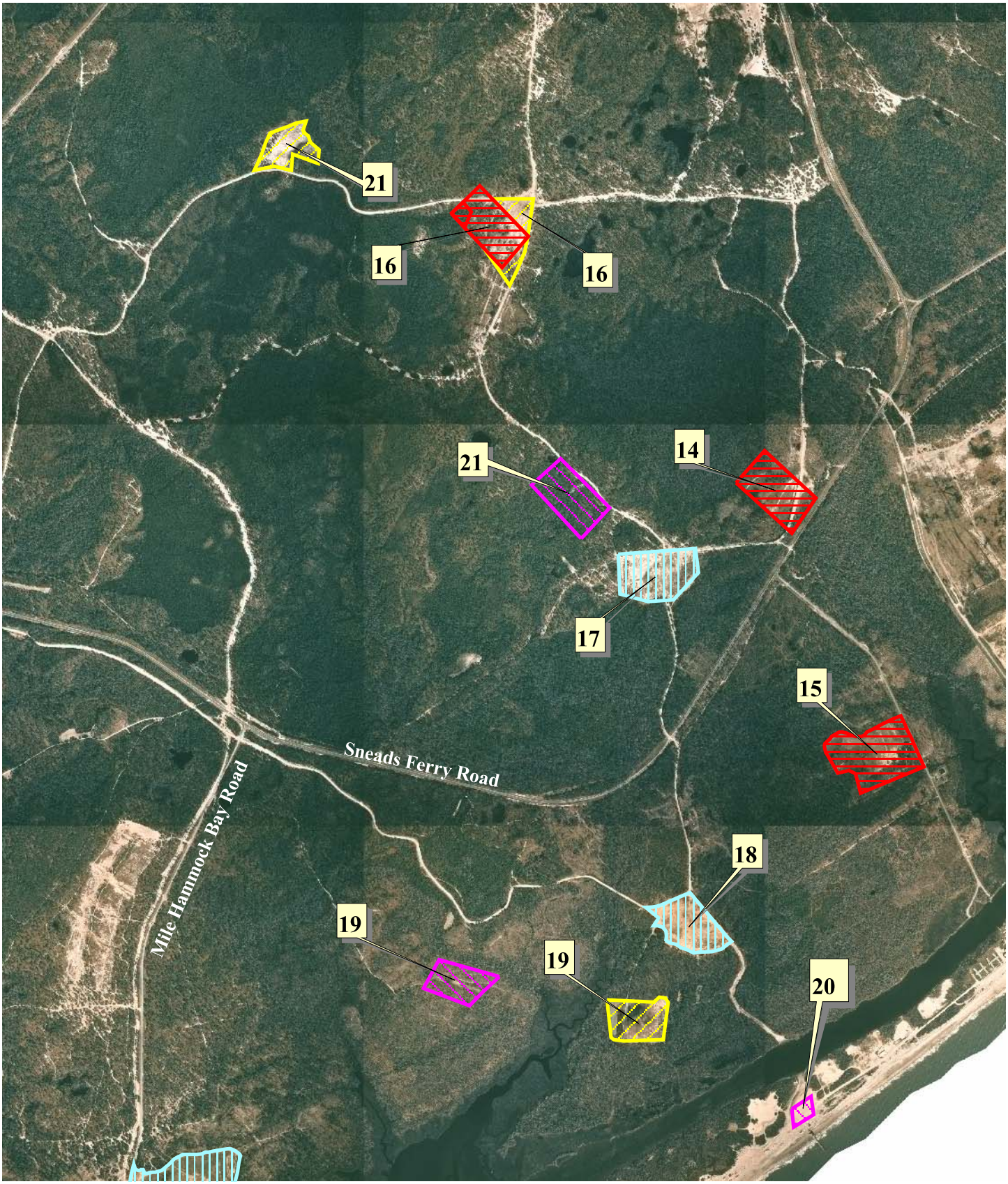


Figure 7

Gun Positions 16, 17, 18, 19, 20, and 21

Gun Positions

Maintenance

Relocation

N

Figure 8

Gun Positions 19 and 22a/b

Gun Positions

Maintenance

N

Figure 9

Gun Positions 23, 28 and 29

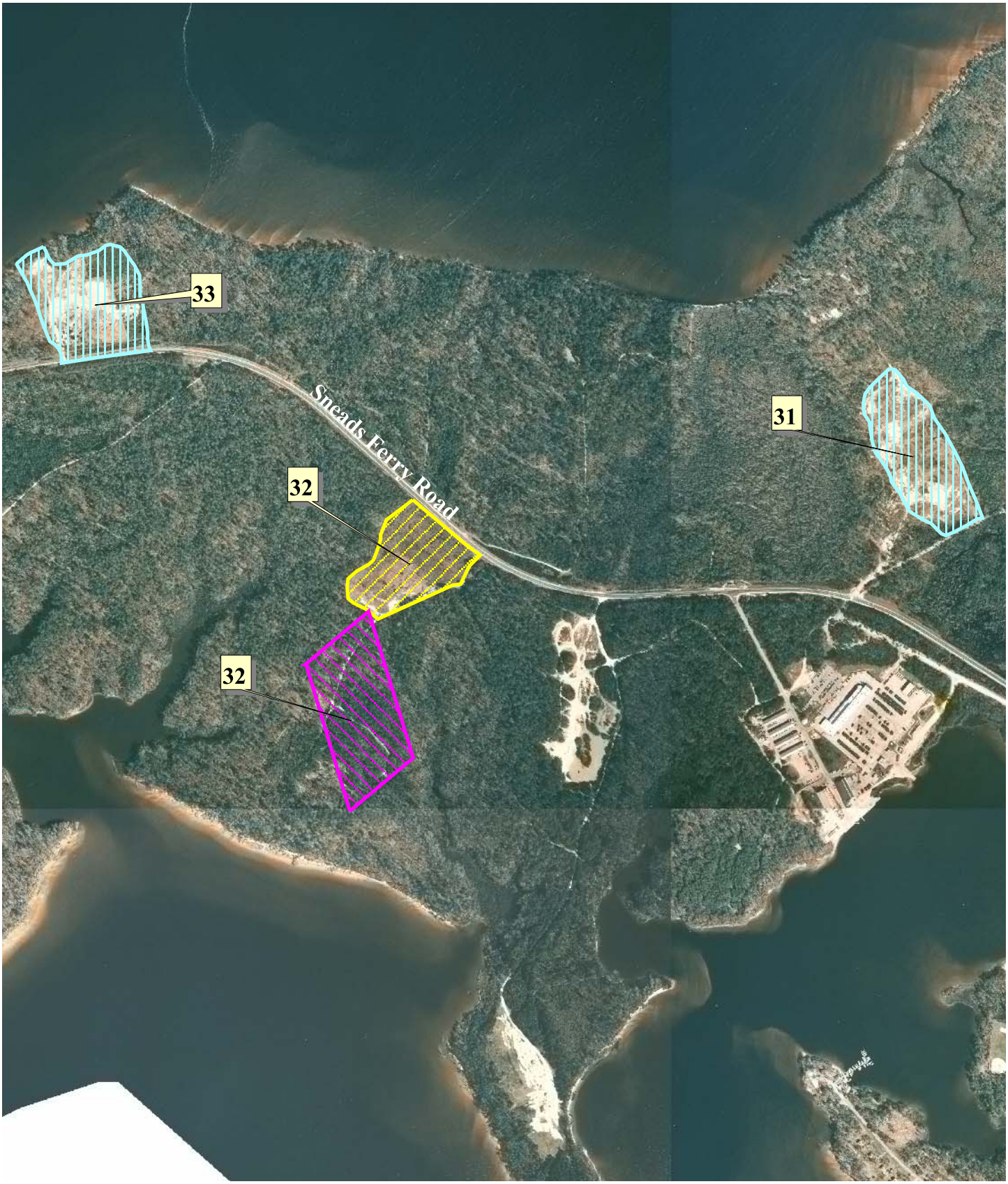
Gun Positions

- Expansion
- Maintenance
- Area to be Restored

N

Figure 10

Gun Positions 25, 26, 27 and 30



Gun Positions

- Maintenance
- Relocation
- Area to be Restored

N

Figure 11

Gun Positions 31, 32, and 33

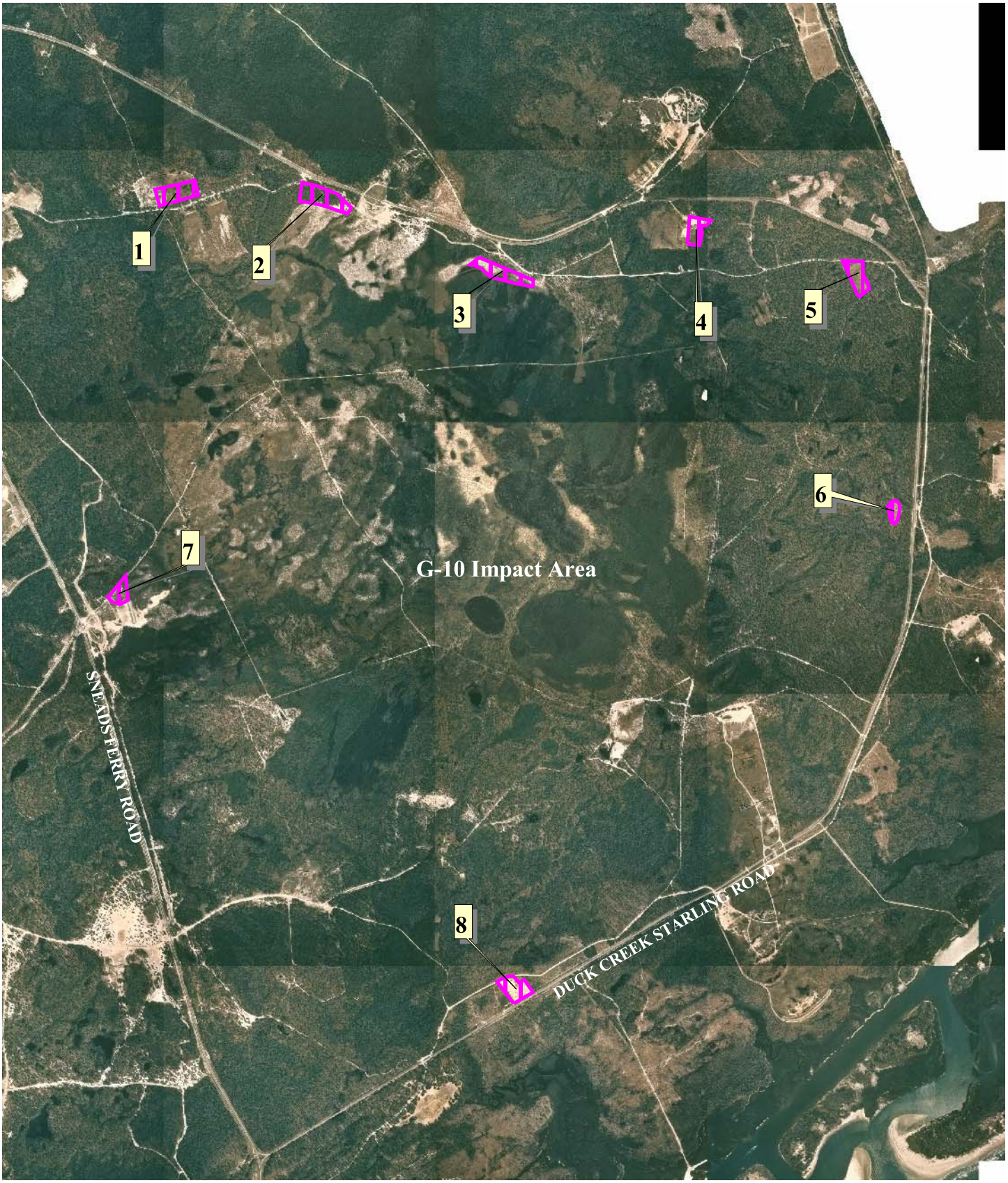


Figure 12

Mortar Positions

Mortar Placements

N

Appendix A

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

March 19, 2002

Mr. Scott A. Brewer, PE
Director, Environmental Management Division
Marine Corps Base
PSC 20004
Camp Lejeune, North Carolina 28542-0004

Dear Mr. Brewer:

The U.S. Fish and Wildlife Service (Service) has reviewed your letters of November 16, 2001 and February 12, 2002 regarding the proposed expansion of six gun positions located within foraging habitat of the federally listed red-cockaded woodpecker (*Picoides borealis*; RCW) on Marine Corps Base, Camp Lejeune, in Onslow County North Carolina. Our comments are provided in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 USC 1531 et seq.).

Your November 16, 2001 letter indicates that foraging habitat for seven active RCW clusters may be affected by the proposed gun position expansions: Clusters 04, 07, 09, 29, 58, 62p and 66p. Of these, Clusters 09, 58, and 66p will retain foraging substrate in terms of pine stocking above the Service's foraging habitat guidelines contained in the Bluebook (USFWS 1989). Although Gun Position 21 is to be expanded within the foraging partition and known foraging territory for Cluster 29, the clearing will be within a recently cut 15-acre slash pine stand and will not involve the removal of mature trees.

Cluster 62p will retain approximately 7,346 square feet of pine basal area (86 % of the bluebook standard for pine basal area) and 6,196 pine stems $\geq$ 10 inches diameter-at-breast-height (dbh)(97% of the bluebook standard for pine stems $\geq$ 10 inches dbh). Since the nesting and foraging habitat for this cluster will be managed in accordance with the installation's Mission-Compatible, Long Range Red-cockaded Woodpecker (*Picoides borealis*; RCW) Management Plan (1999 RCW Management Plan), the effects of removing this substrate within this foraging partition is expected to be short-term and minimal.

As stated in your November 16, 2001 letter, the proposed project was expected to impact the best available 125 acres of foraging habitat available to Clusters 04 and 07. However, according to your February 12, 2002 letter, the proposed location for Gun Position 16 has been moved to minimize wetlands impacts and to better accommodate training. The relocation of Gun Position 16 from the originally proposed site to the now-preferred location appears to lessen potential impacts to Clusters 04 and 07.

Presently, the foraging partition for Cluster 04 contains 66% of the recommended pine basal area and 57% of the recommended number of pine stems ≥ 10 inches dbh. Cluster 07's foraging area contains 90% of the recommended basal area and 62% pine stems ≥ 10 inches dbh. As stated in the February 12, 2002 letter, approximately 150 pine trees will be removed from a seven-acre area. Approximately 1/3 of these are ≥ 10 inches dbh, and 1/4 are ≥ 14 inches dbh. Cluster 04 would be left with 63% recommended basal area and 55% recommended number of stems ≥ 10 inches dbh. Cluster 07 would retain 82% recommended basal area and 61% pine stems ≥ 10 inches dbh. These two clusters, along with Cluster 03, will continue to have between 155 and 175 independently-occupied acres of good quality nesting and foraging habitat, post-project. The stands that comprise the territories for these three groups are composed of pure longleaf pine (*Pinus palustris*) > 70 years old and are burned on a two to three year cycle. Based on half-day and day-long home range follows, described in your February 12, 2002 letter, it appears that the tree removal will have a minimal impact on RCW use of foraging substrate adjacent to the proposed location for Gun Position 16.

The proposed new location for Gun Position 16 extends approximately 90 meters north of the TLZ Dove-Dodo tank trail and encompasses 0.9 acres of the marked buffer zone for Cluster 03. No vehicles would be used within this portion of the gun position, but some pine timber would need to be cut to provide adequate clearance for weapons use. No trees within this area are ≥ 10 inches dbh, and only three are greater than 20 feet tall. This part of the marked buffer zone for Cluster 03 is peripheral to the actual cluster site. The project will not require the removal of any potential cavity trees within the cluster.

This portion of the gun position also falls within the 100 foot buffer zone of a rough-leaved loosestrife (*Lysimachia asperulaefolia*; RLL) site. Creation and maintenance of the gun position will take place on the upland Kureb soils and are not expected to affect the RLL site. Camp Lejeune will survey any suitable habitat for RLL adjacent to the gun position during the growing season to ensure that no RLL would be affected by vehicular traffic along the firing line. Although there may be a need for vehicles to access the northeast portion of the proposed gun position for prescribed vegetation control, we recommend that the area within the marked buffer zone in general remain off limits to vehicles.

Based on the information provided in your November 16, 2001 and February 12, 2002 letters, the Service believes that this project is not likely to adversely affect the RCW or rough-leaved loosestrife, other federally listed species, their formally designated critical habitat, or species currently proposed for federal listing under the Endangered Species Act, as amended. We believe that the requirements of section 7(a)(2) of the Act have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action.

If you have any questions regarding this matter, please contact Mr. John Hammond at (919) 856-4520 (Ext. 28). Thank you for your continued cooperation with our agency.

Sincerely,

Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: Ralph Costa, FWS

Literature Cited:

U. S. Fish and Wildlife Service. 1989. Guidelines for preparation of biological assessments and evaluations for the red-cockaded woodpecker. U. S. Fish and Wildlife Service, Atlanta, GA. 13 pp. (the Bluebook)

FWS/R4:JHammond:3-18-02:919.856.4520extension28
C:\My Documents\JHammond\Gun Positions.wpd

Appendix B

BEST MANAGEMENT PRACTICES

VEGETATION CUTTING IN WETLANDS

1. Work is limited to the cutting and/or removal of vegetation above the ground. To avoid soil disturbance, chain saws, tree shears, tree pinchers, mowers, rotary cutters or similar equipment should be used to cut above the ground surface while leaving the soils and roots intact.

2. All heavy equipment should be mounted on rubber tired vehicles, high flotation tired vehicles, or placed on mats.

3. If necessary, cut vegetation should be lifted (not pushed) into windrows provided this activity does not result in more than a de *minimus* (incidental) discharge or redeposition of excavated material.

4. Chipping or mulching is acceptable provided the biomass does not impede or divert natural drainage patterns and does not result in effectively filling the wetland area with chipped or mulched material. Chipped or mulched material may be placed in containers for removal to an upland disposal site. Stockpiling and/or mechanical spreading of chipped or mulched material must receive prior approval by a Department of the Army (DA) Section 404 permit from the Corps of Engineers.

5. Burning of woody debris is acceptable with appropriate state or local authorization.

6. Mechanized pushing, dragging, or other similar activity that redeposits soil material may require authorization by DA permit. A permit may be needed for using equipment that scrapes along the surface of the ground or that is pushed into the ground and moved through the soil such as (but not limited to) brushrakes, rootrakes, chunkrakes, disc harrows, root plows, rippers, bulldozer plows, shearing blades or other equipment.

7. All work should be conducted during dry periods to minimize disturbance to natural wetland contours and elevations.

ADDENDUM TO THE BEST MANAGEMENT PRACTICES VEGETATION CUTTING IN WETLANDS

Within the 35.3 acres of wetlands, vegetation encroaching on airspace safety clearances would be removed using best management practices (BMP's) for vegetation cutting/removal in wetlands (Appendix A). These practices minimize impacts to wetlands, particularly those associated with soil redeposition and hydrology integrity. Using the BMP's, an Individual Department of the Army, Section 404 Permit is not required. These BMP's were reviewed by representatives of the North Carolina Department of Environment and Natural Resources, Division of Coastal Management in light of any adverse impacts to coastal wetlands. Coastal wetlands are defined "as any saltmarsh or other marsh subject to regular or occasional flooding by tides..." and "coastal wetlands contain some but not necessarily all, of the following marsh plant species: (1) Cord Grass (*Spartina alterniflora*)..." The determination was made that these BMP's would not adversely impact coastal wetlands if item number 3 in the BMP's was modified to read that "no cut vegetation would be placed or windrowed in any coastal wetlands" (Personal Communication, 19 July 1999, Mr. Charles Jones, Assistant Director, North Carolina Division of Coastal Management).

Appendix C

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Coastal Management
Michael F. Easley, Governor | **Donna D. Moffitt, Director** | William G. Ross Jr., Secretary

December 20, 2002

Mr. Scott A. Brewer
Director, Environmental Management
Marine Corps Base
P.S.C Box 20004
Camp Lejeune, NC 28452-0004

REFERENCE: CD02-29 EA Establish Permanent Artillery Positions

Dear Mr. Brewer:

Pursuant to 15 CFR 930 Subpart C, Consistency for Federal Activities, the Division of Coastal Management has reviewed the referenced document and consistency determination for the proposed establishment and maintenance of permanent artillery training positions at scattered locations throughout Marine Corps Base Camp Lejeune, Onslow County, NC. Based upon our review of the document, we agree with your determination that the proposed activity is consistent with the North Carolina Coastal Management Program, provided that all other state and local authorizations are obtained prior to construction of the project. These authorizations include, but may not be limited to, a 401 Water Quality Certification from the Division of Water Quality, and approval of a Sedimentation and Erosion Control Plan by the Division of Land Resources.

Per your request, we agree to waive the 90 day waiting period per 15 CFR 930.41. If you have any questions about our finding or conditions, please contact Caroline Bellis at (919) 733-2293, extension 249. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

Donna D. Moffitt

cc: Ted Tyndall, Division of Coastal Management
Rick Shiver, Division of Water Quality
Dan Sams, Division of Land Resources

1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: www.nccoastalmanagement.net

ROUTING AND TRANSMITTAL SLIP
MCBCL 5210/3

QTA 1. Date 31 MAR 2003

2. Operation Code
X - Office Affixing Routing Sheet
A - Appropriate Action
B - Guidance
C - Signature
D - Comment
E - Recommendation
F - Concurrence
G - Information
H - Return to EMD
I - Initial
J - Disposition
K - Decision
L - Retention
O - Other_____
P - Review

3. Subject

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

4. Routing	5. Op Code	6. Addresses	7. Date In	7. Date Out	8. Initials Concur	8. Initials Nonconcur
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2	F,I,H	AC/S, I&E	3/28/03	3/28	(3)	
3	F,I	COS			OK	
4	H F,I,C,	CG			DMM	
Concurrent Routing						
1	F, I	AC/S, T&O	See Attached			
1	F, I	SJA	See Attached			
1	F, I	CO MCAS NR	See Attached			

9. Nature of Action Required	Originator's Initials	Due Date
ROUTINE	THB 3/27/03	
URGENT		

10. Reference Held By (Name, Rank, Section, Ext.)
Tom Barbee, GS-12, Environmental Conservation Branch, 451-5063

11. Remarks and Signature

Subj: NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MCBCL

Ref: (a) MCO P5090.2A
(b) 40 CFR 1500-1508

Encl: (1) Finding Of No Significant Impact (FONSI) and Environmental Assessment For Establishing and Maintaining Permanent Artillery Training Positions, MCBCL

COS, CG

1. An EA has been prepared for the subject project in accordance with references (a) and (b). A FONSI for the EA was recommended by the Environmental Impact Working Group (EIWG). The EA and FONSI are provided as the enclosure.

2. The proposed action in the EA is to realign, establish, and maintain artillery (gun) positions (GPs) and mortar positions (MPs) around the G-10 Impact Area so that Marines can accomplish more of the published artillery training standards. Activities such as tree cutting and vegetation maintenance would increase the quality of training available at these artillery positions. The environmental impacts of these activities are evaluated in the EA: relocation of four GPs; expansion of nine GPs; tree removal and routine maintenance in 14 GPs; routine maintenance plans for 27 GPs and eight MPs; and use of seven GPs as mission support openings (but not as GPs).

3. Implementation of the proposed action would not adversely affect endangered and threatened species, cultural resources, air or water quality, wetlands, or the coastal zone. No impacts would be made to human health, low income or minority populations, or to children.

4. The EA and FONSI comply with the requirements outlined in references (a) and (b). Accordingly, EIRB members recommend that the EIRB Chairman (COS) concur and the CG approve and sign the FONSI.

Very respectfully,

SCOTT A. BREWER

ROUTING AND TRANSMITTAL SLIP
MCBCL 5210/3

1. Date 19 MAR 2003

2. Operation Code
X - Office Affixing Routing Sheet
- Appropriate Action
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4. Routing	5. Op Code	6. Addresses	7. Date In	7. Date Out	8. Initials Concur	8. Initials Nonconcur
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3	F,I	COS				
4	F,I	CG				
Concurrent Routing						
1	F, I	AC/S, T&O		3.24.03	mgb	
1	F, I	SJA				
I	F, I	CO MCAS NR				

9. Nature of Action Required	Originator's Initials	Due Date
ROUTINE	THB JM	
URGENT		

10. Reference Held By (Name, Rank, Section, Ext.)
Tom Barbee, GS-12, Environmental Conservation Branch, 451-5063

11. Remarks and Signature

Subj: NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MCBCL

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(b) 40 CFR 1500-1508

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2. The proposed action in the EA is to realign, establish, and maintain artillery (gun) positions (GPs) and mortar positions (MPs) around the G-10 Impact Area so that Marines can accomplish more of the published artillery training standards. Activities such as tree cutting and vegetation maintenance would increase the quality of training available at these artillery positions. The environmental impacts of these activities are evaluated in the EA: relocation of four GPs; expansion of nine GPs; tree removal and routine maintenance in 14 GPs; routine maintenance plans for 27 GPs and eight MPs; and use of seven GPs as mission support openings (but not as GPs).

3. Implementation of the proposed action would not adversely affect endangered and threatened species, cultural resources, air or water quality, wetlands, or the coastal zone. No impacts would be made to human health, low income or minority populations, or to children.

4 The EA and FONSI comply with the requirements outlined in references (a) and (b). Accordingly, EIRB members recommend that the EIRB Chairman (COS) concur and the CG approve and sign the FONSI.

Very respectfully,

SCOTT A. BREWER

ROUTING AND TRANSMITTAL SLIP
MCBCL 5210/3

1. Date **19 MAR 2003**

2. Operation Code

X - Office Affixing Routing Sheet

A - Appropriate Action	H - Return to EMD
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3. Subject

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

4. Routing	5. Op Code	6. Addresses	7. Date In	7. Date Out	8. Initials Concur	8. Initials Nonconcur
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2	F,I	AC/S, I&E				
3	F,I	COS				
4	F,I	CG				
Concurrent Routing						
1	F, I	AC/S, T&O				
1	F, I	SJA				
1	F, I	CO MCAS NR	3/24/03 MW			

9. Nature of Action Required	Originator's Initials	Due Date
ROUTINE	TGB JMG	
URGENT		

10. Reference Held By (Name, Rank, Section, Ext.)
Tom Barbee, GS-12, Environmental Conservation Branch, 451-5063

11. Remarks and Signature

Subj: NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MCBCL

Ref: (a) MCO P5090.2A
(b) 40 CFR 1500-1508

Encl: (1) Finding Of No Significant Impact (FONSI) and Environmental *Assessment For Establishing and Maintaining Permanent Artillery* Training Positions, MCBCL

1. An EA has been prepared for the subject project in accordance with references (a) and (b). A FONSI for the EA was recommended by the Environmental Impact Working Group (EIWG). The EA and FONSI are provided as the enclosure.

2. The *proposed action in the EA* is to realign, establish, and maintain artillery (gun) positions (GPs) and mortar positions (MPs) around the G-10 Impact Area so that Marines can accomplish more of the published artillery training standards. Activities such as tree cutting and vegetation maintenance would increase the quality of training available at these artillery positions. The environmental impacts of these activities are evaluated in the EA: relocation of four GPs; expansion of nine GPs; tree removal and routine maintenance in 14 GPs; routine maintenance plans for 27 GPs and eight MPs; and use of seven GPs as mission support openings (but not as GPs).

3. Implementation of the proposed action would not adversely affect endangered and threatened species, cultural resources, air or water quality, wetlands, or the coastal zone. No impacts would be made to human health, low income or minority populations, or to children.

4. The EA and FONSI comply with the requirements outlined in references (a) and (b). Accordingly, EIRB members recommend that the EIRB Chairman (COS) concur and the CG approve and sign the FONSI.

Very respectfully,

Scott A. Brewer

SCOTT A. BREWER

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL | # of pages ▸ 1

To K... | From T...

ROUTING AND TRANSMITTAL SLIP
MCBCL 5210/3

1. Date **19 MAR 2003**

2. Operation Code
X - Office Affixing Routing Sheet
A - Appropriate Action H - Return to EMD
B - Guidance I - Initial
C - Signature J - Disposition
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3. Subject

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

4. Routing	5. Op Code	6. Addressee	7. Date In	7. Date Out	8. Initials Concur	8. Initials Nonconcur
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2	F,I	AC/S, I&E				
3	F,I	COS				
4	F,I	CG				
Concurrent Routing						
1	F,I	AC/S, T&O				
1	F,I	SJA	25Mar	25Mar	HJG	
1	F,I	CO MCAS NR				

9. Nature of Action Required	Originator's Initials	Due Date
ROUTINE	THB JH	
URGENT		

10. Reference Held By (Name, Rank, Section, Ext.)
Tom Barlow, GS-12, Environmental Conservation Branch, 451-5063

11. Remarks and Signature

Subj: NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION FOR ESTABLISHING AND MAINTAINING PERMANENT ARTILLERY TRAINING POSITIONS, MCBCL

Ref: (a) MCO P5090.2A
(b) 40 CFR 1500-1508

Encl: (1) Finding Of No Significant Impact (FONSI) and Environmental Assessment For Establishing and Maintaining Permanent Artillery Training Positions, MCBCL

1. An EA has been prepared for the subject project in accordance with references (a) and (b). A FONSI for the EA was recommended by the Environmental Impact Working Group (EIWG). The EA and FONSI are provided as the enclosure.

2. The proposed action in the EA is to realign, establish, and maintain artillery (gun) positions (GPs) and master positions (MPs) around the C-10 Impact Area so that Marines can accomplish most of the published artillery training standards. Activities such as tree cutting and vegetative maintenance would improve the quality of training available at these artillery positions. The environmental impacts of these activities are evaluated in the EA. Alternatives of four GPs; expansion of nine GPs; tree removal and routine maintenance in 14 GPs; routine maintenance plans for 27 GPs and eight MPs; and use of seven GPs as mission support openings (but not as GPs).

3. Implementation of the proposed action would not adversely affect endangered and threatened species, cultural resources, air or water quality, wetlands, or the coastal zone. No impacts would be made to human health, low income or minority populations, or to children.

4. The EA and FONSI comply with the requirements outlined in references (a) and (b). Accordingly, EIWG members recommend that the ERD Chairman (COS) concur and the CO approve and sign the FONSI.

Very respectfully,

SCOTT A. BREWER

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▸ 1

To Capt Gawthorp	From Twyford
Dept./Agency	Phone #
Fax #	Fax # 451-1187

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION