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United States Department of the Interior

FISH AND WILDLIFE SERVICE

P. O. BOX 95067

ATLANTA, GEORGIA 30347

FEB 1 1979

Brigadier General D. B. Barker
U.S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear General Barker:

This letter presents the Biological Opinion of the Fish and Wildlife Service relative to the effects of mechanized infantry training in the Camp Lejeune Mechanized Infantry Training Area upon the endangered red-cockaded woodpecker (Picoides borealis). Your letter to Regional Director Black, dated September 13, 1978, also requested consultation on the base's management plans for the red-cockaded woodpecker and sea turtles. The Biological Opinions on these two base-wide management programs will be handled separately and will follow at a later date.

This Biological Opinion is based upon field inspections and associated meetings and discussions with base personnel on December 11 and 12, 1978, and January 11 and 12, 1979, review of Fish and Wildlife Service files on past informal consultation concerning the area, review of the Draft Red-Cockaded Woodpecker Recovery Plan and other pertinent literature, and informal communication with researchers currently working with the species.

After a careful review of the findings by Fish and Wildlife personnel in the Asheville Area Office, it is our Biological Opinion that existing activities within the Mechanized Infantry Training Area are likely to jeopardize the continued existence of the red-cockaded woodpecker. This opinion is based upon the following considerations:

Field inspections revealed a commendable program in locating, marking, and designating red-cockaded woodpecker colonies, buffer zones, and support stands within the Mechanized Infantry Training Area. However, the following adverse impacts were found within designated red-cockaded woodpecker habitat: (1) cutting of pine trees for barricades, etc.; (2) mechanical damage to pines by vehicles; (3) mortality of pines, including cavity trees, from root damage by heavy tracked vehicles; (4) girdling of pines by attachment of communication wires, etc.; (5) soil disturbance from digging foxholes, garbage pits, trenches, etc.; (6) soil and plant disturbance by heavy tracked vehicles traversing general forest areas off of established roads and trails; (7) destroyed or removed signs delineating designated areas and; (8) fire damage from



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accidental fires. These impacts are thought to be a result of lack of knowledge and/or enforcement of current regulations and poor conservation attitudes regarding endangered species, especially red-cockaded woodpeckers.

The impacts observed have the effect of destruction of the habitat of the red-cockaded woodpecker, including existing nesting and roosting cavity trees, future replacement cavity trees, and foraging trees. Other effects are more subtle but equally important. The whole ecology of the area is being affected, and the habitat is gradually being changed to a type not beneficial to the red-cockaded woodpecker. Disturbance to the bird itself is also occurring and is detrimental to reproductive activities. In fact, some of the activities are considered harassment, which is included under the definition of "take" in Section 3(14) and is prohibited by Section 9(a) (1) (b) of the Endangered Species Act of 1973 (Public Law 93-205).

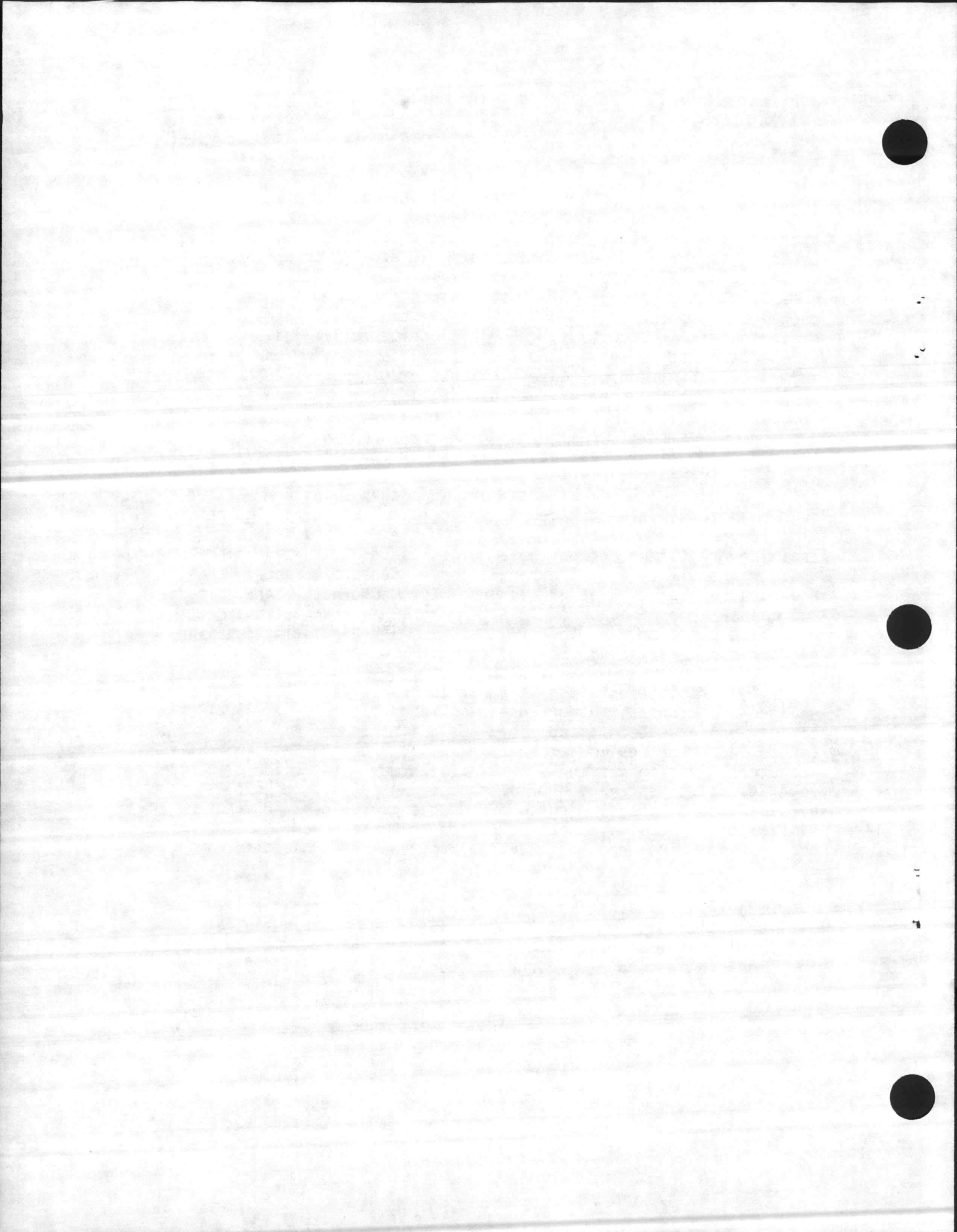
There are two identified reasonable and prudent alternatives that would eliminate jeopardy to the species. One alternative is to select another site for a Mechanized Infantry Training Area that does not contain red-cockaded woodpeckers. The second alternative is to prepare guidelines for the use of the Mechanized Infantry Training Area, incorporate these guidelines as base regulations, and stringently enforce the regulations. Because of economics and the adverse impact on other resources from alternative one, alternative two was selected and agreed to as the best alternative in a meeting with base personnel on January 11, 1979. These guidelines and/or regulations must include the following:

(1) Prohibition within the marked boundaries of red-cockaded woodpecker colonies, buffer zones and support stands of (a) all vehicle use except on established designated roads and trails (these should be designated in cooperation with the Base Natural Resources Division personnel); (b) cutting or destruction of woody vegetation; (c) excavation or digging of foxholes, trenches, garbage pits; laying underground communication lines; or other similar significant disturbance of the soil; (d) use of open burning including campfires; and (e) bivouacking or setting up command posts.

(2) Prohibition of all training, forestry activities, and similar activities creating a major disturbance within the colony sites and buffer zones, from March 1 through July 31. (This includes prohibition of firing from Gun Positions 3, 6, 10, and 21 during this time period.)

*for
RCW
Timber*

(3) Assignment of responsibility and accountability for ensuring that the use of the Mechanized Infantry Training Area is compatible with the maintenance of designated red-cockaded woodpecker habitat (colonies, buffer zones, and support stands) and that the guidelines are prepared, incorporated into base regulations, brought to the attention of all personnel, and enforced.



(4) Daily inspection of each training area containing marked red-cockaded woodpecker habitat (colonies, buffer zones and support stands) during and after each training assignment and periodically at other times to determine if violations have occurred and corrective actions taken to include disciplinary action and prosecution under the Endangered Species Act, where warranted.

(5) Initiation of an information/education program with full, documented support of the entire Camp Lejeune Staff to effect a change of attitude among Base personnel concerning endangered species in general and the red-cockaded woodpecker in particular.

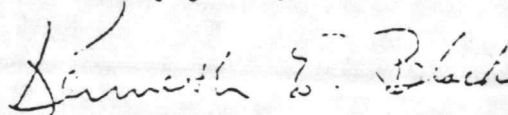
(6) Inspection at periodic (semi-annual) intervals by Fish and Wildlife Service personnel and recommendations made as to the effectiveness of the guidelines and regulations and corrective actions needed.

Please provide the Asheville Area Office with a copy of the guidelines when finalized and a copy of the resulting Base Regulations when promulgated. We would also like to be promptly informed of actions taken regarding violations.

It must be recognized that failure of alternative two to rectify the existing situation leaves only alternative one as a solution to the problem.

We would like to express our appreciation to your entire staff for their hospitality and assistance provided in this consultation process. We hope that the end results are an improvement of an already commendable program and an amicable and cooperative relationship between our agencies.

Sincerely yours,



Regional Director





United States Department of the Interior

F-4

FISH AND WILDLIFE SERVICE

P. O. BOX 95067

ATLANTA, GEORGIA 30347

APR 3 1979

Brigadier General D. B. Barker
U. S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear General Barker:

This letter presents the Biological Opinion of the Fish and Wildlife Service relative to the effects of the forestry management program at Camp Lejeune on the endangered red-cockaded woodpecker (Picoides borealis). It is in response to the request dated September 13, 1978, for formal consultation pursuant to Section 7 of the Endangered Species Act of 1973. A Biological Opinion concerning the Mechanized Infantry Training Area and the red-cockaded woodpecker population within the training area was rendered February 1, 1979. A field inspection of the Browns Island Impact Area was conducted February 27, 1979; and an opinion regarding the effects of Marine Corps training activities on Camp Lejeune's beaches upon the threatened loggerhead turtle will be finalized shortly.

This Biological Opinion is based upon field inspections and associated meetings and discussions with Base personnel on December 11-12, 1978, and January 11-12, 1979; review of the Camp Lejeune Natural Resource Management Plan and Habitat Management Guidelines for the Red-Cockaded Woodpecker; review of the draft Red-Cockaded Woodpecker Recovery Plan and other pertinent literature; and communications with researchers and managers currently working with the species. Also, a review of the draft Biological Opinion at the March 22, 1979, meeting (attendee list enclosed) at Camp Lejeune indicated no objections to the findings of this opinion. It was also indicated by the Base Forester that implementation of the opinion would cause very little disruption of the forest management activities on the Base. An administrative record is available in the Asheville Area Office.

After review of the findings by Fish and Wildlife personnel in the Asheville Area Office, it is our Biological Opinion that the present forestry management program at Camp Lejeune is likely to jeopardize the continued existence of the red-cockaded woodpecker unless one of the reasonable and prudent alternatives is implemented. The information supporting this opinion follows.



The present guidelines for habitat management of the red-cockaded woodpecker on Camp Lejeune follow guidelines set forth in an early draft of the recovery plan. These recovery plan guidelines have been changed slightly by the latest recovery plan draft. The major change is an increase in the size of the support stand provided for each colony from 100 to 200 acres. This change is based upon the approximate average home range of the species of 200-250 acres. Actually these new guidelines work out to be the same as present Camp Lejeune guidelines when analyzed. Camp Lejeune guidelines call for 100-acre support stands 40 years old or older. Where rotations are 80 years old this would equal 200 acres with an even distribution of all age classes, i.e., 100 acres over 40 years old and 100 acres under 40 years old. There is presently a conflict in Camp Lejeune guidelines in that rotations are established for the support stands but the support stands must be 40 years old or older; therefore, no regeneration is possible, and rotations are thus meaningless.

The draft recovery plan and Camp Lejeune guidelines call for 80-year rotations for loblolly pine and 100-year rotations for longleaf in support stands, thus recognizing the need for mature stands to provide adequate roosting and nesting habitat. Existing literature is consistent in pointing out this need. Mean cavity tree ages range from 72 to 126 years for longleaf, 71 to 98 years for loblolly, and 62 to 131 years for pond pine. Aging of cavity trees at Camp Lejeune would be expected to be similar. Although stand ages on Camp Lejeune are considerably younger than this, the actual cavities are probably in older relict trees, which is a common characteristic throughout the bird's range.

There are two closely related reasonable and prudent alternatives that would remove jeopardy to the species from the forestry management program at Camp Lejeune. These are:

1. Extend rotations for all pine to 100 years.
2. Extend rotations for loblolly pine to 80 years and for longleaf and pond pine to 100 years.

The difference between these alternatives is rotation for loblolly pine, the most common pine species on Camp Lejeune. At present, pine species are regulated as a group on Camp Lejeune, and this would require implementation of alternative one. However, regulation of loblolly separately would permit implementation of alternative two.

It is recognized in the alternatives presented that stands younger than rotation age must be cut to achieve a balance of age classes. However, this cutting must occur in the age classes containing more acreage than necessary to achieve balance; i.e., predominantly ages



30 to 57 on Camp Lejeune. At present only 2,594 acres are older than 60 years and thus considered suitable for meeting shelter requirement of the red-cockaded woodpecker. Therefore, there should be no cutting in age classes above 60 until 40 percent of the acreage on 100-year rotations and/or 25 percent of the acreage on 80-year rotations are 60 years old or older. Some stands must be carried past rotation age in order to achieve a balance of age classes and provide habitat for the red-cockaded woodpecker.

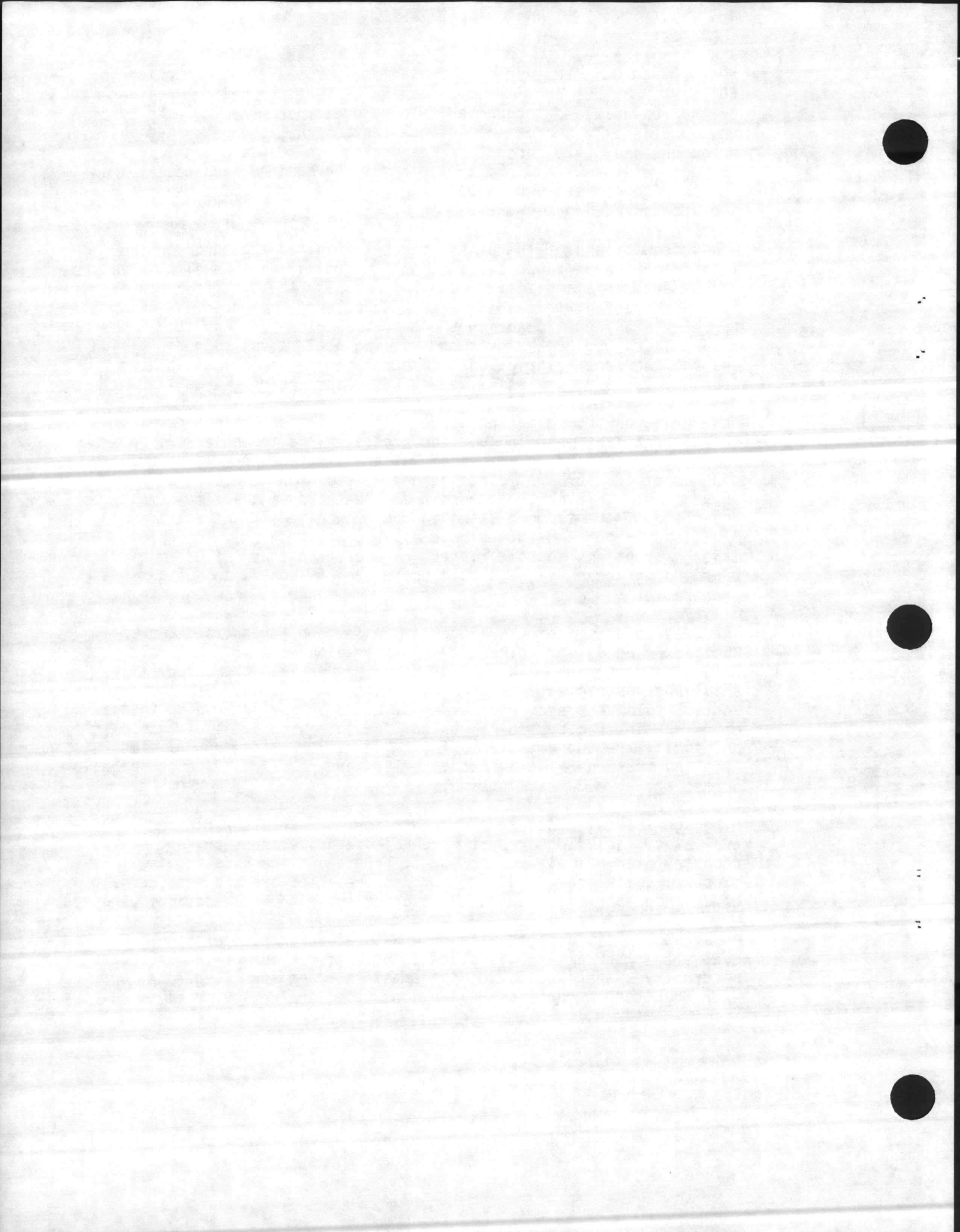
Management by one of the alternatives eliminates the need for the identification of support stands on the ground and thus simplifies management. This applies to Camp Lejeune with the exception of the Mechanized Infantry Training Area. Because of the potential of tremendous adverse impact on the overall ecology and habitat of the red-cockaded woodpecker by such training activities, support stands and the inherent restrictions addressed in the Biological Opinion of February 1, 1979, are still necessary in the Training Area.

However, even though marked support stands per se are not necessary, the alternatives must include the provision that colonies are not isolated by cutting on all sides but are always connected to a minimum of 200 acres of contiguous pine and/or pine-hardwood stands 20 years old or older. No more than one-third of the compartment, or one-third of the support stand in the Mechanized Infantry Training Area, should be in 0-20 year age classes at any time. To prevent major disruptions to home ranges, regeneration stand sizes immediately surrounding colony sites should not exceed 50 acres, and 30 acres is preferable.

The Camp Lejeune Habitat Management Guidelines for the Red-Cockaded Woodpecker needs some other revisions as discussed with Natural Resources personnel. The buffer zones, as well as the colony sites, should be restricted from road construction. The colonies and buffer zones should be prescribed burned at 2- to 3-year intervals, instead of 5-year intervals. To the extent feasible with available manpower and funds, the support stands in the Mechanized Infantry Training Area and the general pine habitat elsewhere should also be prescribed burned at 2- to 3-year intervals.

Although several management concepts for the species were carefully evaluated, including present Camp Lejeune guidelines, present draft recovery plan guidelines, and U. S. Forest Service existing and proposed guidelines, the alternatives presented are the most certain of all concepts to ensure the conservation of the red-cockaded woodpecker.

As agreed in discussions with Base Natural Resources personnel, we evaluated other alternatives based on modifications of the presented alternatives that would exclude certain acreage from long rotations where habitat is marginal and/or unoccupied and not believed to be



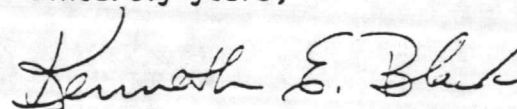
needed in the foreseeable future for expansion of present red-cockaded populations. However, consideration of seven different alternatives resulted in excluded acreages ranging from 4,889 to 6,940 acres. In discussions with the Base Forester, it was agreed that this small acreage would not justify the added effort, difficulty, and cost of regulating separately. Therefore, these alternatives are not presented but are a part of the administrative record on this Biological Opinion filed at the Asheville Area Office.

We certainly recognize that existing management of the red-cockaded woodpecker at Camp Lejeune was based on the best information and recommendations available at the time, and this interest and initiative in conservation of endangered species is commended. Unfortunately, continued analysis of data and new information indicates a necessity to do more. The cumulative effects of shorter rotations than those presented in the alternatives for public lands, which contain approximately 90 percent of present red-cockaded woodpecker populations, is believed extremely detrimental when added to the trend to shorter pulpwood rotations on private lands over which we have no control, the decreasing availability of southern pine sawtimber across the southeast, and the restriction of the species to a very small percent of its original habitat.

Current research on the species should shed more light on essential habitat requirements of the species. Such new information would, of course, be one basis for reinitiating consultation, if Camp Lejeune so desired. Along these lines, we would certainly recommend that data be collected on Camp Lejeune regarding cavity tree ages stratified by species of tree, stand forest type, site index, and start trees versus existing cavities. This would provide input on age of trees selected for cavities on Camp Lejeune, age of trees when cavity excavation begins, and the effect of site index on selection of cavity trees by age.

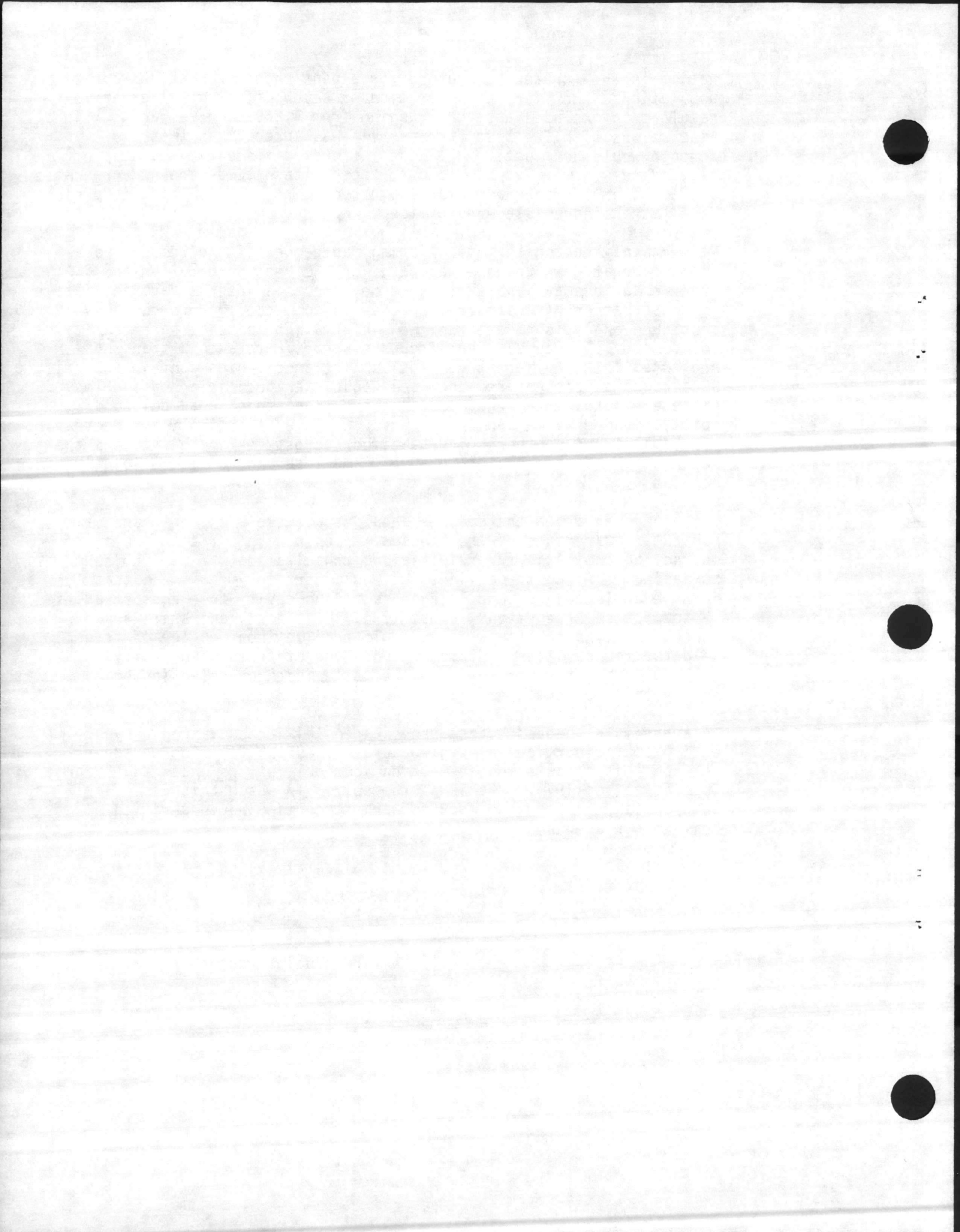
We appreciate the assistance provided in this consultation by your entire staff, particularly the Natural Resources Division personnel. We hope this assists you in meeting your obligations under the Endangered Species Act of 1973, as this is the spirit in which this Biological Opinion is rendered. We look forward to continuing cooperation between our agencies.

Sincerely yours,



Regional Director

Enclosure



ENVIRONMENTAL IMPACT CONFERENCE
Camp Lejeune, North Carolina
March 22, 1979

Mary Margaret Goodwin

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APR 1 1979

Brigadier General D. G. Barker
U. S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear General Barker:

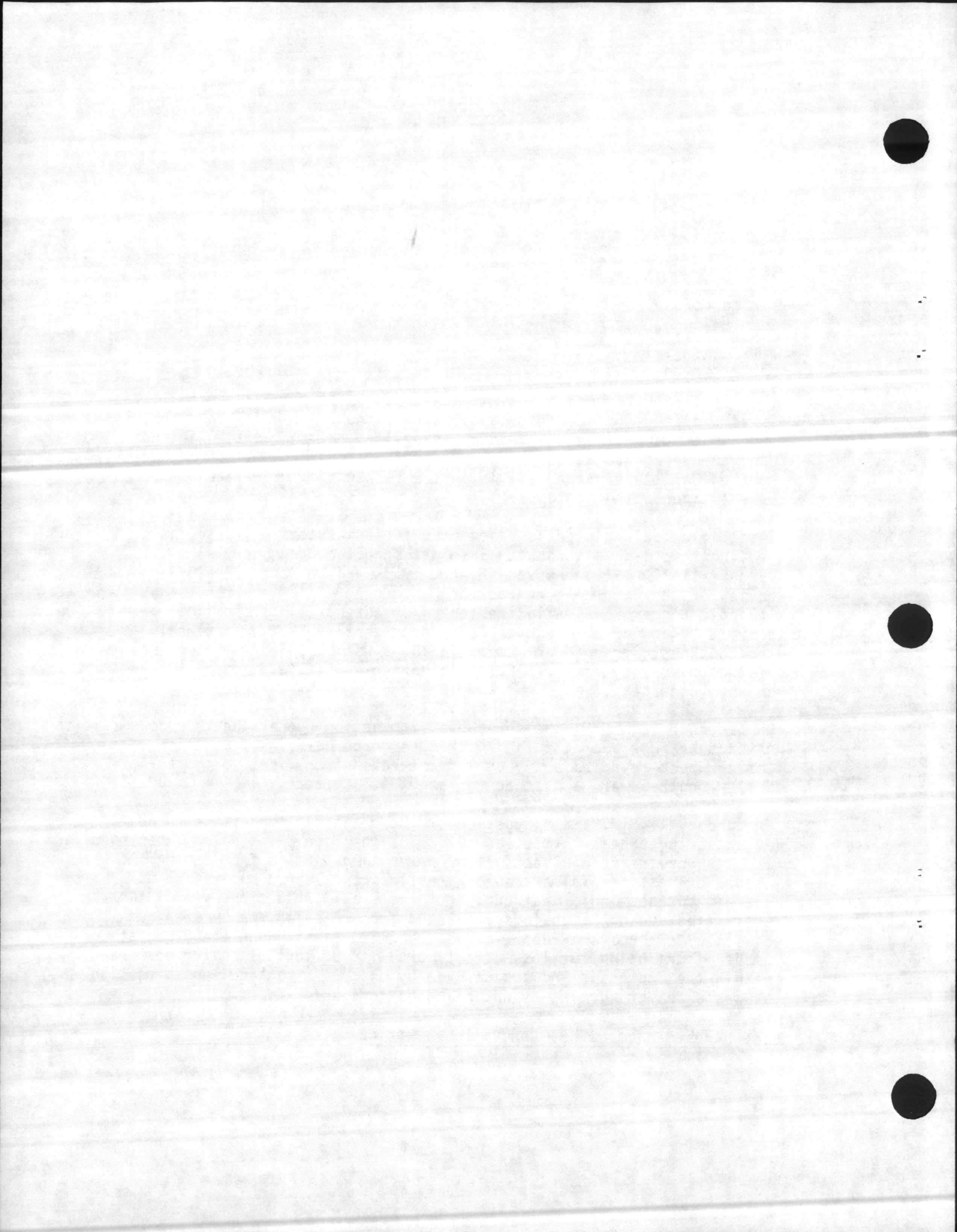
This letter represents the Biological Opinion of the Fish and Wildlife Service on the possible effects of the Marine Corps amphibious training program on Camp Lejeune's beaches as well as the Sea Turtle Habitat Management program at Camp Lejeune for the threatened Atlantic loggerhead turtle (Caretta caretta). This letter responds to your request for consultation dated September 13, 1978.

This Biological Opinion is based upon field inspections, associated meetings and discussions with Base personnel on December 11-12, 1978, January 11-12, 1979, February 27-28, 1979, and on March 22, 1979; review of the Camp Lejeune Habitat Management Guidelines for the Atlantic Loggerhead Turtle; review of pertinent literature, including a draft "Plan for the Recovery and Management of Marine Turtles in the Southeast Region;" and communications with Dr. Frank J. Schwartz of the University of North Carolina Marine Institute, a noted authority on the loggerhead.

On December 12, 1978, the threshold examination concerning this consultation on Camp Lejeune was discussed with Base personnel. An inspection of Onslow Beach revealed heavy use of the beach from Riseley Pier to Onslow South Tower, a distance of about 1.5 miles.

On January 11, 1979, a discussion of the potential impacts to the Atlantic loggerhead turtle was held with the Base personnel. Those specific impacts were: training activities preventing turtles from coming ashore or nesting (false crawls - turtles come ashore but return to sea without nesting), destruction of nests and/or turtles by training activities, young hatchlings prevented from reaching sea by deep ruts caused by tracked and rubber-tired vehicles, lighting on the beach at night disorienting turtles, direct mortality of turtles and/or nests within the Browns Island Impact Area by exploded ordnance, and predation of nests and/or turtles by natural predators and man.

cc: Area Manager, FWS, Asheville, North Carolina (SE)



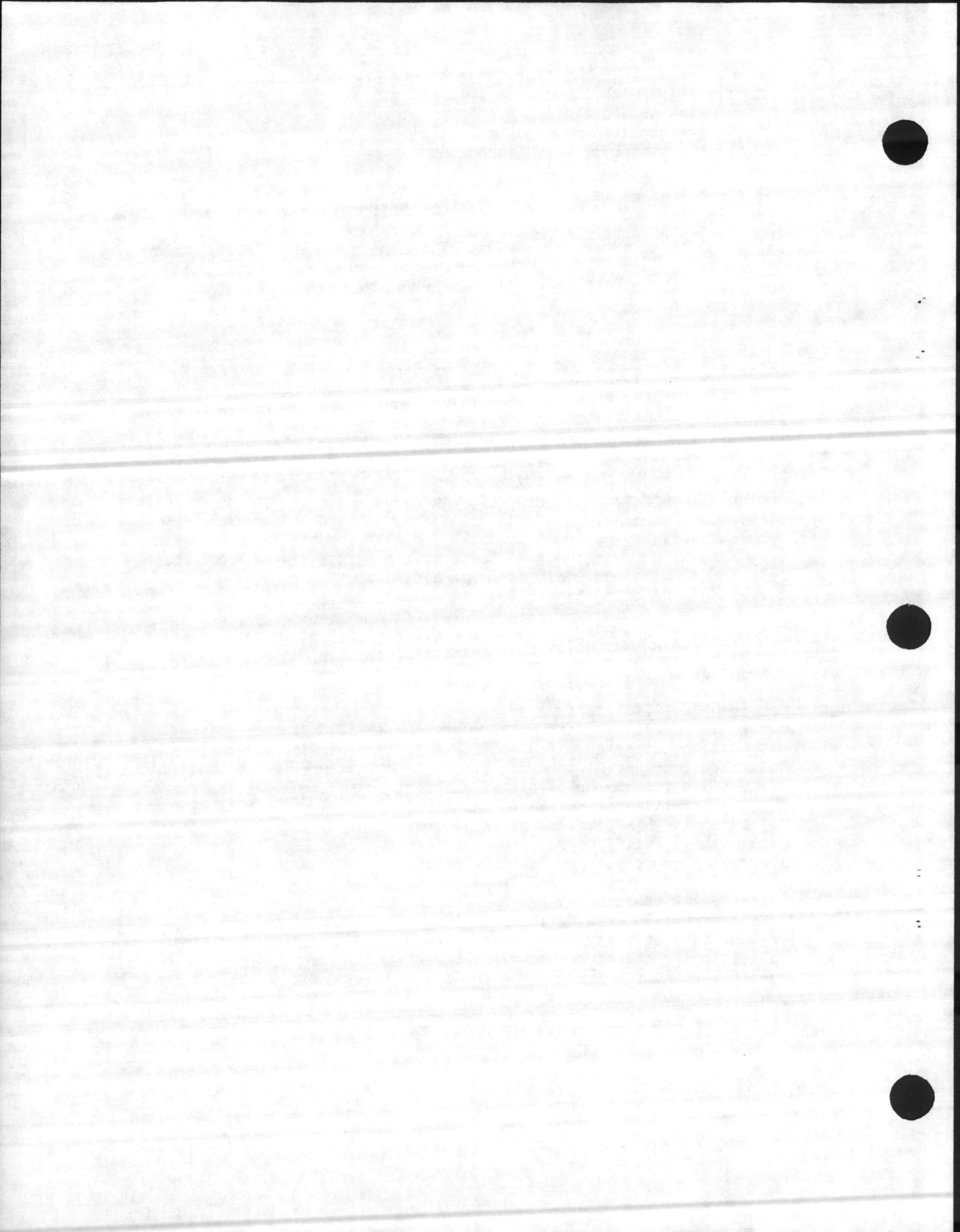
During this discussion, your training officer stated that 300 meters along the beach was sufficient for training; use of the rest of the beach area could be restricted as necessary; and these restrictions could be enforced. Actions by the Marine Corps would include marking the areas by signs or some other means, promulgating regulations preventing (1) nighttime use of the beaches during the nesting season (May-August), (2) vehicular traffic parallel to the beach outside tidal zones, and (3) disturbance of turtles or nests. Nests within the area of training use would be relocated by Natural Resource personnel to other areas. It was also agreed that tank traps would be prohibited and the causeways needed to facilitate movement would be coordinated with Base Natural Resources personnel, who will take into account the needs of the turtles.

On February 27, 1979, the training restrictions agreed upon on January 11, 1979, were reviewed. At this time the 300 meters previously agreed upon was determined to be inadequate for training. To accommodate the full scope of amphibious training, your command identified an area of approximately 1 1/2 miles between Risley Pier and the Onslow South Tower as fully adequate for this purpose. It was agreed that vehicle use could be restricted to the tidal zone except for needed egress routes between the beach and the road behind the dunes. While discussions centered around four major egress routes as important to the training mission, a later inspection revealed an additional eight minor egress routes as important to the training mission. We agreed that only nests found within or adjacent to the egress routes would need relocation, with the possibility of a few exceptions when noted, such as nests found below high tide.

Arrangements were made to inspect the Browns Island impact area on February 27, 1979. No adverse impacts were identified during this inspection.

On March 22, 1979, this consultation and the draft Biological Opinion was reviewed with you and members of your staff. At this meeting it was stated that restricting vehicle use during training exercises to the tidal zone except for egress routes would hamper training and that, since the number of nests occurring in the area was few (approximately six), all nests in the training area would be relocated. We have no objection to this plan of action as long as all nests that occur within the identified exercise area (from Risley Pier to Onslow South Tower) are relocated to safe areas elsewhere.

After review of the findings by Fish and Wildlife Service personnel in the Asheville Area Office, it is our Biological Opinion that present ongoing activities on Camp Lejeune's beaches are not likely to jeopardize the continued existence of the Atlantic longhead sea turtle. However, we offer the following recommendations to enhance your conservation efforts for this species. These efforts should be made to the maximum extent possible consistent with the training mission and objectives of Camp Lejeune.



1. Schedule training exercises during the period May through October outside the peak full moon period of each month. This peak nesting period each month is centered around the peak of the full moon, plus and minus three days, for a total of seven days per month.
2. Confine training exercises, using the minimum amount of the beach necessary to complete training objectives. This area has been identified through consultation as an area approximately 1 1/2 miles long running from Risley Pier to about the Onslow South Tower.
3. Egress routes from the beach to the road behind the dunes should be kept to a minimum. Four major and eight minor passes through the dunes were identified.
4. All vehicular travel on the beaches should be restricted to the tidal zone except within the identified exercise area, providing all turtle nests have been removed from that area prior to any landings.
5. Tank traps on the beaches should be prohibited.
6. During the period May through October, night landings for training purposes should be eliminated or reduced to a minimum level.
7. Night lighting during training exercises (May-October) should be at a minimum level or eliminated.
8. Other nighttime use of the beaches (recreation, etc.) from May through October should be restricted to those uses not requiring artificial lighting or fires.
6. Other activities with potential impacts not addressed in this opinion should be coordinated with the Base Natural Resource personnel and referred to the Fish and Wildlife Service for consultation if adverse or beneficial impacts are perceived as being possible.
9. Close monitoring of nesting activities should be continued to detect any long-term trends. The Fish and Wildlife Service would appreciate receiving this data.

We appreciate the cooperation of your personnel in this consultation and commend Camp Lejeune for its conservation efforts for the Atlantic loggerhead. We hope this will help you fulfill your obligations under the Endangered Species Act.

Sincerely yours,

J. J. Lanford

Regional Director

Director, FWS, Washington, D. C. (AFA/OES)
 Area Manager, FWS, Asheville, North Carolina (SL)





United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

F-12

In Reply Refer To:
FWS/OES 375.4

JUN 1 - 1979

Honorable Mitzi M. Wertheim
Deputy Under Secretary of the Navy
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Washington, D.C. 20350

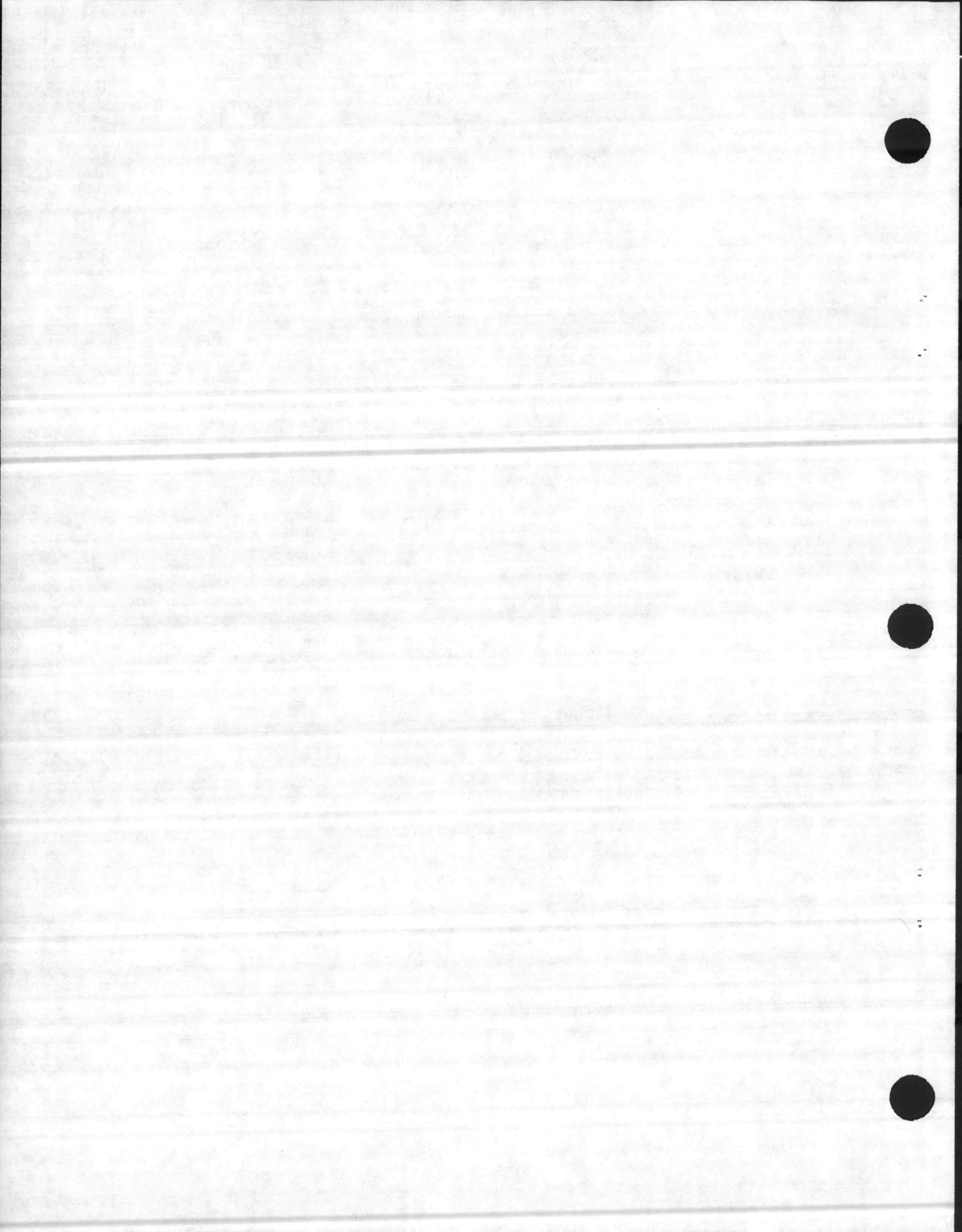
Dear Ms. Werthiem:

This responds to your letter of March 30, 1979, requesting reinitiation of consultation on the impacts of existing use patterns of the Mechanized Infantry Training Area on Camp Lejeune Marine Corps Base on the Endangered red-cockaded woodpecker. A biological opinion on the use of this area was issued by our Regional Director in Atlanta, Georgia, on **February 1, 1979.** A copy of that opinion is a part of the administrative record for this consultation. This correspondence serves as an amendment to the February 1 opinion and, therefore, should be read in conjunction with that earlier opinion.

By letter of April 2, 1979, I agreed to reinitiate consultation at the Washington Office level and appointed a Service consultation team. Your letter of April 3, 1979, acknowledged our reinitiation of consultation and appointed Ms. Mary Margaret Goodwin as your team leader. On April 24, 25, and 26, 1979, meetings were conducted at Camp Lejeune by the consultation teams, including the Commanding Generals of the Camp Lejeune Marine Corps Base and the Second Marine Division and members of their respective staffs.

Field investigations conducted by the teams revealed that red-cockaded woodpecker habitat was being adversely impacted by the training activities previously described in paragraph 4 of the February 1, 1979, opinion, i.e.: (1) cutting of pine trees for barricades, etc.; (2) mechanical damage to pines by vehicles; (3) mortality of pines, including cavity trees, from root damage by heavy tracked vehicles; (4) girdling of pines by attachment of communication wires, etc.; (5) soil disturbance from digging foxholes, garbage pits, trenches, etc.; (6) soil and plant disturbance by heavy tracked vehicles traversing general forest areas off of established roads and trails; (7) destroyed or removed signs delineating designated areas and; (8) fire damage from



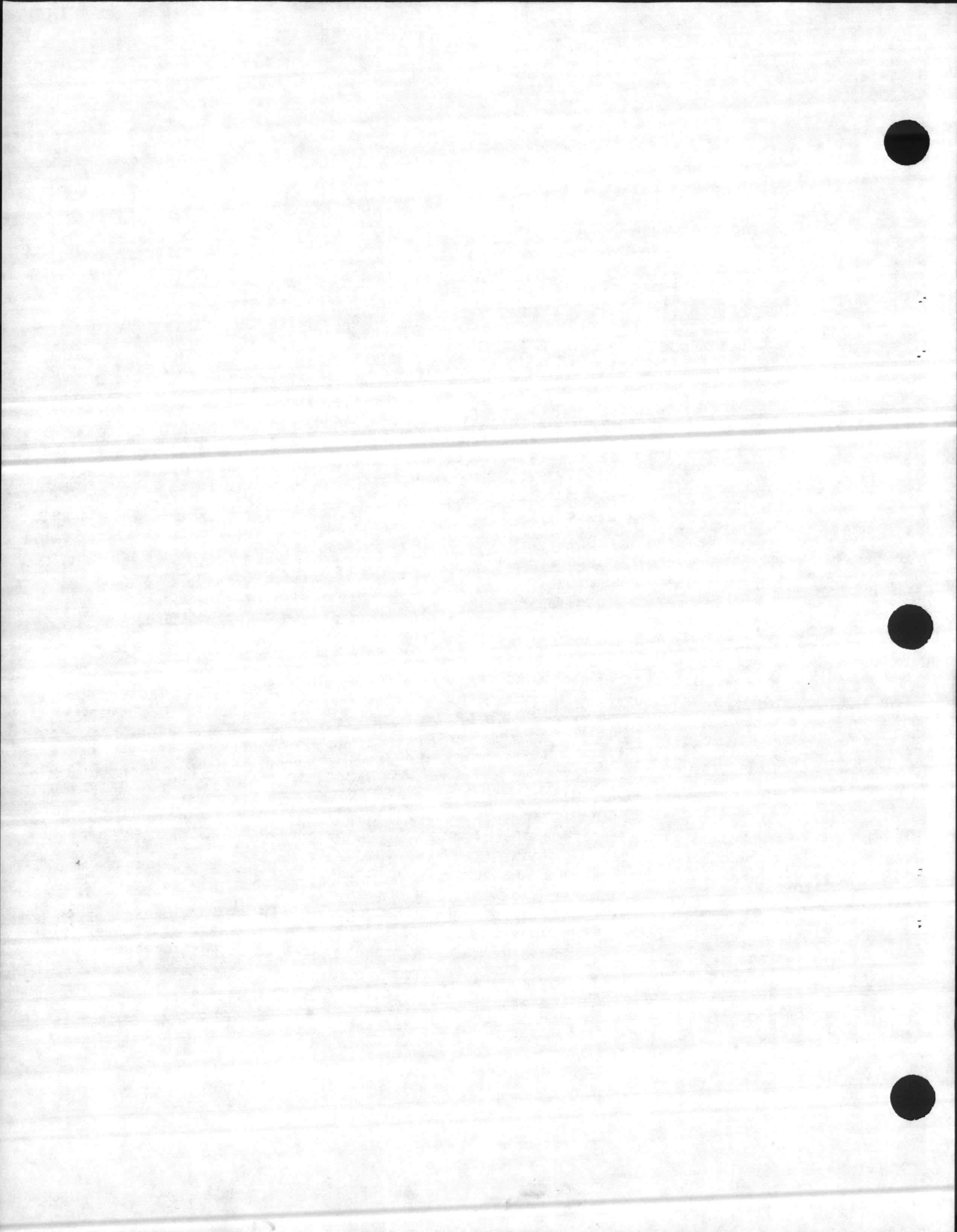


accidental fires. It was found that continued use of the Mechanized Training Area at existing levels is likely to result in the complete destruction of the forest habitat.

During the course of the consultation, the team reviewed the literature on the red-cockaded woodpecker and discussed the bird's biology and the training activities on Camp Lejeune with red-cockaded woodpecker Recovery Team members and other authorities knowledgeable of this species. The administrative record for this consultation is maintained in the Office of Endangered Species, U.S. Fish and Wildlife Service, Suite 500, 1000 N. Glebe Road, Arlington, Virginia.

The red-cockaded woodpecker's habitat is mature southern pine forests containing some trees having red heart disease. Red heart disease does not begin to occur naturally until the trees are "over mature," at approximately 60 to 80 years-of-age. Because much of the private timber lands in the South are intensively managed for pulp wood production and the amount of saw timber grown is decreasing rapidly, little suitable red-cockaded woodpecker habitat remains on these private lands. Private timber forests usually are on a 40 to 60-year rotation, which will eventually (perhaps by 2010) result in the nearly complete eradication of this woodpecker on such lands. Only the pine forests managed by Federal and some State agencies can be expected to maintain a longer timber rotation that may preserve forests attractive to the red-cockaded woodpecker. In the last decade no documentation of the establishment of any new woodpecker colony has been found anywhere in the range of the species. With the anticipated loss of all private forest habitat for this woodpecker, and the lack of expansion into now "over mature" forests, the outlook for the red-cockaded woodpecker is poor. Those habitats found in highway rights-of-way, parks, refuges, game management areas, public forests, and, as in this case, military installations may save this species from extinction.

Public forest lands administered by the Forest Service and the Departments of Defense and Interior now contain stands of mature trees and will ultimately comprise the majority of forested lands with suitable red-cockaded woodpecker habitat. However, current timber practices on these lands are reducing the numbers of mature pine trees upon which the red-cockaded woodpecker depends. The cumulative effects of actions on both private and public forest lands are adversely affecting the species to such an extent that the loss of the colonies found in the Mechanized Training Area is likely to jeopardize the continued existence of the species. Therefore, it is my biological opinion that the present activities conducted within the Mechanized Training Area are likely to jeopardize the continued existence of the red-cockaded woodpecker; however, a prudent and reasonable alternative is available which would avoid such jeopardy.



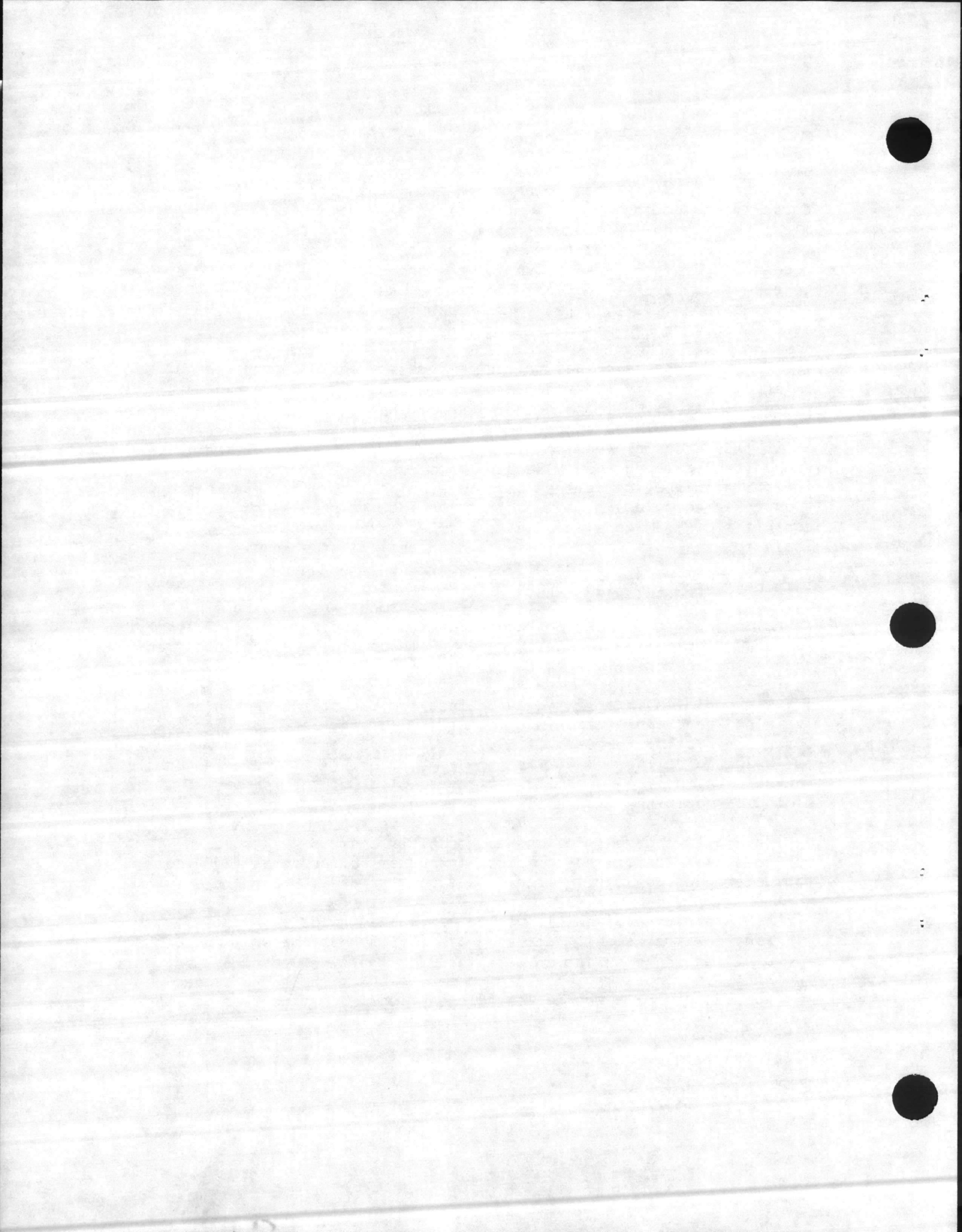
A review by the Marine Corps of the two alternatives offered in the February 1, 1979, opinion indicated that neither was acceptable to the training requirements of the Marine Corps. In their review of the first alternative (an alternative area for the mechanized training) the Marine Corps indicated that the selection of an alternative site is not practical because of the need for contiguous uninterrupted travel of troops, vehicles, and equipment between the ocean landing beaches and the Mechanized Training Area. Due to the configuration of the land at Camp Lejeune and the existing land use (e.g., ordnance impact areas) there are no alternative sites which meet the specific training requirements associated with both mechanized training and beach assaults.

The Marine Corps felt that the guidelines presented in the second alternative (modify use and management within present training area) would effectively eliminate their use of the Mechanized Training Area. In-depth discussions resulted in a better understanding of training activities and the types of actions which need to be conducted in the Mechanized Training Area. Because this area is essential for meeting the training requirements at Camp Lejeune and contains nine known woodpecker colonies (plus two others on the periphery) the Service's consultation team considered alternative use patterns for the Mechanized Training Area that would allow training activities which would be compatible with the conservation of the woodpecker. Although this was the intended purpose of the second alternative described in the February 1 opinion, discussions with Marine Corps personnel at Camp Lejeune revealed that there was some confusion and misunderstanding of the February 1 guidelines. These in-depth discussions provided a better understanding for all.

It is my opinion that if the guidelines for use of the Mechanized Training Area, enumerated in alternative 2 of the Service's Regional Office opinion of February 1, 1979, are deleted and replaced with the following guidelines, the likelihood of jeopardy would be eliminated. The conclusion (i.e., jeopardy to the species) of the February 1 biological opinion will remain as written.

1. The following restrictions and prohibitions apply only to the marked boundaries of red-cockaded woodpecker buffer zones (200-foot radius around each cavity tree) and support stands:

- a. Restrict all vehicle use to designated roads and trails (any new trails shall be designated by the Base Natural Resources Division in consultation with the Base Training Department and shall be consistent with the conservation of the red-cockaded woodpecker) with the following exceptions: command tracked vehicles

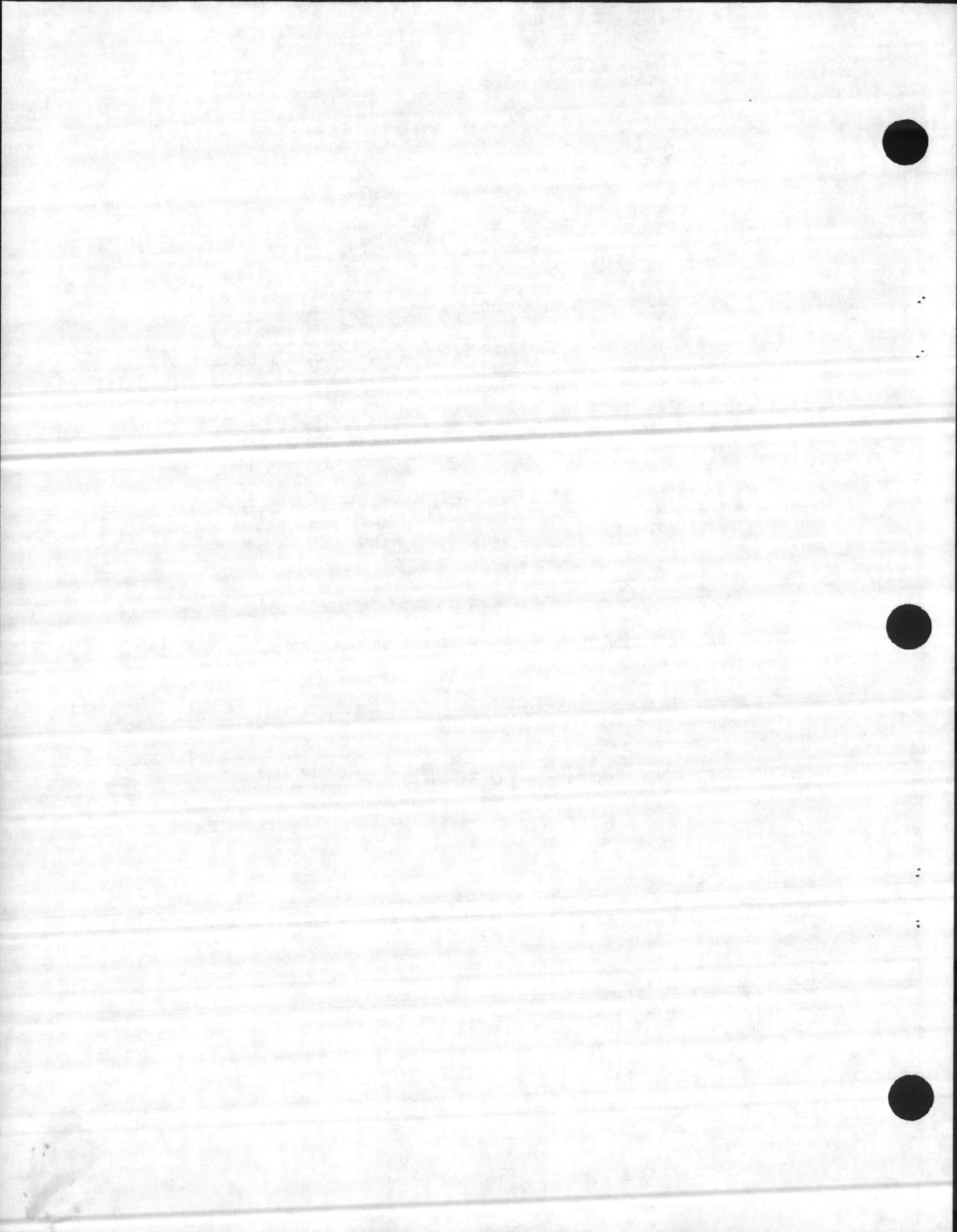


may utilize a single, predesignated, ingress/egress route to each preselected command post site in red-cockaded woodpecker support stands, and wheeled vehicles may be used in the immediate vicinity of the bivouac and preselected command sites in red-cockaded woodpecker support stands. All vehicles operating within the support stands are prohibited from causing destruction or injury to tree roots or bark. No vehicles shall be allowed at any time within the buffer zones except for bona fide emergencies (fire or injured personnel) or on trails already designated as of April 26, 1979.

b. Prohibit indiscriminate cutting or destruction of woody vegetation. Only vegetation that has been specifically marked for cutting within a support stand may be cut for camouflage material, wood fires, barricades, etc. Such trees will be marked in advance only by the Base Natural Resources personnel and in a manner consistent with the conservation of the woodpecker. Should additional woody material be needed, it will be obtained outside the boundaries of the support stands of the Mechanized Training Area and brought into these areas for use.

c. Prohibit any excavating or digging that would result in the destruction of woody vegetation, including damage to root systems. Troops should be encouraged to utilize existing fox holes, trenches, etc.

2. Prohibit the establishment of command posts and bivouacs in any buffer zones.
3. Prohibit the firing of artillery within 200 meters of a red-cockaded woodpecker cavity tree.
4. Increase the prescribed burning program in the Mechanized Training Area to reduce the potential for wildfires.
5. Initiate a program to at least annually survey the Mechanized Training Area and remove wires that are girdling trees.
6. Utilize other areas on the Base outside the Mechanized Training Area for more of the routine training by field units not requiring the specific features (e.g., landing zones, Combat Town) and tracked vehicles in the Mechanized Training Area.
7. The Mechanized Training Area will be inspected at periodic intervals by the U.S. Fish and Wildlife Service. Recommendations will then be made as to the effectiveness of the Base guidelines and regulations.



Inspections will determine if significant violations have occurred and insure that proper actions have been taken to correct any violations. Included in these inspections would be an annual color infrared aerial photo of the Mechanized Training Area. This photograph is to be provided by the Marine Corps at a scale suitable to detect the death of individual large trees (over 1 foot DBH).

In order to greatly facilitate the implementation and effectiveness of the above guidelines, we suggest that the following actions should be taken at Camp Lejeune:

- A. An information/education program should be initiated and maintained to effect a change of attitude among all personnel utilizing Camp Lejeune concerning natural resources management, in general, and the Endangered red-cockaded woodpecker, in particular.
- B. A responsibility and accountability program should be developed at all levels to insure that the use of the Mechanized Training Area is compatible with the maintenance of the red-cockaded woodpecker buffer zones and support stands.
- C. Base regulations and guidelines should be prepared which are brought to the attention of all personnel using Camp Lejeune and these should be effectively enforced.
- D. The Base should also develop a monitoring program to insure that the protective measures instituted from this opinion are having the desired effect of maintaining the support stands and buffer zones as viable habitat for the woodpecker.

In summary, I would like to point out that the major thrust of the February opinion has not been changed. There is an imperative need to protect the habitat of the red-cockaded woodpecker and provide ample replacement vegetation for the future needs of the bird. This can best be accomplished by the implementation of appropriate Base regulations incorporating the above guidelines and, most importantly, the stringent enforcement of these regulations. Implementation of the regulations will not only provide protection for the red-cockaded woodpecker, but will also insure that the natural vegetation cover is maintained for the continued training needs of the Marine Corps.

I would like to thank you, your Special Assistant, and the Commanding Generals and their respective staffs of the Camp Lejeune Marine Corps



Base and the Second Marine Division for cooperating with my consultation team and for the genuine interest shown in natural resources management and the Endangered Species Program. Your assistance made this consultation proceed very smoothly and successfully.

Should this action, as now planned, be modified or altered or should new species be listed that may be affected, you must reinitiate consultation.

Sincerely yours,

Harold J. O'Connor

Acting Director

cc: ~~CG, Camp Lejeune MCB~~
~~CG, Second Marine Division~~
Regions 2, 4, and 5
Mr. Jim Baker, Jacksonville Area Office
Mr. Wendell Neal, Jackson Area Office





United States Department of the Interior

FISH AND WILDLIFE SERVICE

75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

F-18

MAR 12 1980

Brigadier General D. B. Barker
U.S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Re: 4-2-80-F-80

Dear General Barker:

This letter presents the Biological Opinion of the Fish and Wildlife Service relative to the effects of Camp Lejeune's proposed southern pine beetle control project on the endangered red-cockaded woodpecker (Picoides borealis), as requested by letter of January 29, 1980. Field inspections and meetings with Camp Lejeune personnel and entomologists of the U.S. Forest Service (State and Private Forestry, Forest Insect and Disease Management) and North Carolina State University were conducted on January 28-30, 1980, following notification of the problem by telephone on January 14, 1980.

It is the Biological Opinion of the Fish and Wildlife Service that control efforts for the southern pine beetle, as discussed and agreed upon January 28-30, 1980, and outlined herein, are not likely to jeopardize the continued existence of the red-cockaded woodpecker.

Assessment of the problem began with a meeting wherein the following was presented:

1. An overview of the current situation on Camp Lejeune - a total of 155 infestation spots have been recorded,
2. Information on the life history of the southern pine beetle and recommended control measures, and
3. Details concerning beetle infestations within the marked boundaries of red-cockaded woodpecker habitat, including a map of the habitat and a description of the number and types of trees involved.

Beetle infestations are currently recorded in eleven red-cockaded woodpecker sites, three of which involve cavity trees. Field inspections of the three sites involving cavity trees with infestations and other infestation sites were made following the meeting.



It was determined that infestations are limited to stressed trees, many of which have been injured. The potential for a major outbreak this summer is evident and, thus, early control efforts are important. Mortality of infested trees is inevitable from either girdling by beetles or prevention of translocation by blue stain fungus introduced by beetles. Normal beetle control measures involve treating infested trees as well as a 70-foot buffer of trees around the head of the infestation. Control is by salvage removal, cut and burn, cut and spray with pesticides, or cut and leave (in the summer only). Trees from which the beetles have emerged usually contain populations of predatory insect species and should not be treated. If not controlled, infestations will destroy red-cockaded woodpecker nesting and foraging habitat and could have a significant adverse impact on the species. In red-cockaded woodpecker habitat, modifications of control measures are necessary. The modifications discussed and agreed upon are as follows:

1. Within colonies and buffer zones, each infested tree will be inspected individually and decisions made as to control measures for that tree; buffers of non-infested trees will not be treated,
2. Active cavity trees will not be cut or sprayed,
3. Dead or apparently live cavity trees from which beetles have emerged will not be cut,
4. Inactive cavities (dead, enlarged by other species, etc.) will not be cut unless a minimum of four cavity trees (active and inactive) per colony remain to provide shelter for a breeding pair of birds and up to two helper birds for the interim period necessary for excavation of new replacement cavities,
5. Spraying with presently approved pesticides (Lindane - a chlorinated hydrocarbon, Dursban - an organophosphate) will not be conducted within colonies and buffers - trees cut within these areas will be removed,
6. Cutting of buffers around the head of infestations in contiguous habitat is acceptable unless doing so would separate the colony completely from suitable foraging territory (doughnutting or isolating colonies). In this case, the Camp Lejeune Wildlife Manager should determine if a buffer should be cut and, if so, the modifications of the buffer that should be made considering:
 - a. the likelihood of preventing the infestation from entering colony sites by cutting or not cutting the buffer,



- b. the distance from the colony to suitable foraging territory if a buffer is cut (short distances would be crossed by the bird without undue impact), and
- c. the probability of the infestation destroying all or a significant portion of the foraging territory if the buffer is cut versus not cut.

These guidelines were developed by inspection and discussions of the three infestation sites involving cavity trees. Specific application to the impacted cavity trees in the three areas is as follows:

- Site 6 - The dead cavity tree should be left because the beetles have emerged. The live cavity tree contains two cavities, one of which has been enlarged by pileated woodpeckers. The other is presently being enlarged. There are presently seven cavity trees within this colony. Therefore, this beetle infested inactive cavity tree should be cut and removed, leaving six healthy uninfested cavity trees within the colony site, which are sufficient for providing shelter and exceed the minimum of four recommended.
- Site 11 - The cavity tree should not be cut because it is active and the infestation is light and confined to the uppermost parts of the tree. In fact, the tree may have been successful in excluding or pitching out the beetles. The beetle infested start tree should be cut and removed because it is not a completed cavity useful for shelter.
- Site 12 - The cavity tree should not be cut because it has an active cavity. Because it was an active cavity tree, it was not checked to see if the beetles were successful in invading the tree or were repelled. Attacking beetle pitch tubes were large and very white in color, which is a good indicator of exclusion by some trees through heavy resin flow.

In addition to the guidelines just presented, implementation of recommendations are offered, which will enhance the conservation of the red-cockaded woodpecker and/or reduce susceptibility of pine trees to future infestations of southern pine beetles. These are as follows:

1. Reduce man-caused injuries to pines. All of the trees infested by beetles were stressed to some degree, most by man-caused physical injuries such as wounds from climbing spikes used in climbing trees, cutting implements such as axes and hatchets, heavy equipment and vehicles, and girdling by communication wire. These injuries should be reduced to the minimum. Designation of certain areas or trees for training needs such as climbing, instead of permitting indiscriminate, haphazard climbing, would reduce the overall injury impact on timber and confine such impacts to exact locations that could be closely monitored for implementation of necessary insect and disease control.



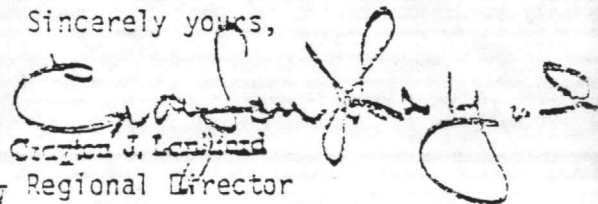
2. For minimum potential adverse impact to red-cockaded woodpeckers, treatment of infested trees in decreasing order of preference are:
 - a. cut and leave,
 - b. cut and remove (salvage),
 - c. cut and burn, and
 - d. cut and spray with pesticides.

The only registered pesticides available for southern pine beetle control are chlorinated hydrocarbons or organophosphates, therefore, use of these materials should be a last resort, especially in red-cockaded woodpecker habitat. We recognize, however, that pesticide treatment may be necessary in order to carry out beetle control in as short a time period as possible. No standing trees should be chemically treated but once trees are cut, chemical treatment is unlikely to affect red-cockaded woodpeckers because they are not ground feeders. However, exceptions do occur and there is an outside possibility that red-cockaded woodpeckers will feed on insects in or on cut trees on the ground.

Individuals with knowledge of the habits of the red-cockaded woodpecker were consulted for advice in this consultation. In addition, the approved recovery plan for the red-cockaded woodpecker and other pertinent literature were reviewed. A complete administrative record of this consultation is maintained and available for review at the Asheville Area Office of the Fish and Wildlife Service.

We appreciate the cooperation of your personnel and the early initiation of consultation in efforts to confront this situation as soon as possible. The cooperation of U.S. Forest Service (State and Private Forestry, Forest Insect and Disease Management) and North Carolina State University personnel was indispensable and also much appreciated. Should beetle control measures be changed from those outlined in this Opinion or should new information regarding control methods or impacts on the red-cockaded woodpecker become available, consultation should be reinitiated. Your efforts in fulfilling your responsibilities regarding endangered species are appreciated. We look forward to future cooperation.

Sincerely yours,



Clayton J. Leeland
Acting Regional Director



February 23 1981

Colonel R. W. Kirby
Acting Chief of Staff
U.S. Marine Corps
Marine Corps Base
Camp Lejeune, NC 28542

Dear Colonel Kirby:

This letter presents the Biological Opinion of the Fish and Wildlife Service regarding the potential effects of Camp Lejeune's sea turtle management program and military training use of Onslow Beach on the Threatened green turtle (Chelonia mydas). It responds to your letter of August 4, 1980, received August 20, 1980. Completion of the consultation was delayed pending receipt of additional data and information from Camp Lejeune, Dr. Frank Schwartz, and the Sea Turtle Recovery Team, as per request of October 20, 1980. This Biological Opinion is intended to help you fulfill your obligations under the Endangered Species Act of 1973, as amended.

This Biological Opinion is based upon review and analysis of the data requested from and submitted by Camp Lejeune and Dr. Schwartz; review of the Administrative Record on an earlier consultation concerning like effects on the Threatened loggerhead turtle (Caretta caretta) for which a Biological Opinion was rendered April 10, 1979; review of the Sea Turtle Conservation Strategy drafted at the first World Conference on Sea Turtle Conservation held in Washington, D.C., on November 26-30, 1979; input requested and received from the Sea Turtle Recovery Team; and discussions with knowledgeable individuals possessing expertise on the species.

It is our Biological Opinion that the sea turtle management program and military training use, as presented and examined in the earlier consultation on the loggerhead turtle, and cumulative effects associated with these activities, are not likely to jeopardize the continued existence of the green turtle. However, we do offer recommendations to enhance the conservation of the species. The recommendations made in the April 10, 1979, Biological Opinion for the loggerhead turtle should be applied also to the green turtle. Additional recommendations regarding moving nests follow and these recommendations are also intended as an amendment to the April 10, 1979, Biological Opinion and the subsequent April 26, 1979, letter regarding conservation programs for the loggerhead turtle.



1. Only nests threatened by erosion, tides, extreme predation, military activities, etc., should be moved. This includes late (August) nests as well as earlier nests.
2. Nests necessitating movement should be placed in a safe place on the beach and not removed to a laboratory.
3. Nests, especially late (August) nests should be monitored for hatchability.

These recommendations resulted from analysis of hatchability of 1979 and 1980 nests on Camp Lejeune, including natural nests, redeposited nests and nests removed to the laboratory for artificial incubation. An additional concern was the effect upon the imprinting process of turtles from artificial incubation and release. Natural hatchability exceeded artificial hatchability for months with sufficient data. Unfortunately, data on natural hatchability was not available for August. Monitoring of August nests for a couple of years would provide some data for comparison to artificial hatchability of August nests in 1979 and 1980, which was less than 50 percent (20 percent for the green turtle).

Once data is obtained, Camp Lejeune may reinitiate consultation if results warrant reconsideration of artificial incubation for late nests and Camp Lejeune so proposes.

An Administrative Record of this consultation is maintained and available for review at this office. Should new information reveal impacts that may affect the green and/or loggerhead turtle which was not considered in this and the April 10, 1979, Opinions and/or should the activities considered in this consultation be subsequently modified, consultation should be reinitiated. For example, if new or expanded use of the beaches for military activities are proposed, consultation should be reinitiated.

The conservation work with loggerhead and green turtles will require a permit, contrary to the April 26, 1979, letter on loggerheads which is now in error. Permit applications can be obtained from James R. Bailey, Senior Resident Agent, U.S. Fish and Wildlife Service, P.O. Box 1138, Raleigh, NC 27602, telephone 919/755-4786 (commercial) or 672-4786 (FTS) or from the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Main Interior Building, 18th and C Streets, NW, Washington, DC 20240, telephone 253-1903 (FTS) or 703/235-1937 (commercial). Copies of the Biological Opinions should accompany the application.

Once more we extend our appreciation to Camp Lejeune and its personnel for your conservation efforts for endangered and threatened species and your cooperation in this consultation. We look forward to future cooperation and consultations between our agencies.

Sincerely yours,

/s/ William C. Hickling

William C. Hickling
Area Manager

cc - Raleigh 25





FISH AND WILDLIFE SERVICE
PLATEAU BUILDING, ROOM A-5
50 SOUTH FRENCH BROAD AVENUE
ASHEVILLE, NORTH CAROLINA 28801

December 10, 1981

Major General C. G. Cooper
Commanding General
U.S. Marine Corps
Camp Lejeune, NC 28542

Re: 4-2-81-198 (MAIN/EMA/th 11-15)

Dear General Cooper:

This responds to Colonel Millice's letter of November 30, 1981, concurring with initiation of formal consultation regarding the effects of Marine Corps training activities on the endangered brown pelican (Pelecanus occidentalis) and American alligator (Alligator mississippiensis) and the effects of the establishment and use of a new range (Onslow Beach North Tower Machine Gun Range) on the threatened loggerhead and green sea turtle (Caretta caretta and Chelonias mydas). We have reviewed the November 30, letter and discussed it with Mr. Julian Wooten, Director, Natural Resources and Environmental Affairs Branch, Base Maintenance Division, and Lieutenant Colonel E. M. Asanovich, Training Facilities Officer, on December 8, 1981. We agreed to accept your recommendations outlined in paragraphs c and d and to make some word changes in reference to paragraphs b and e to clarify our intent. These changes were agreed to by Lieutenant Colonel Asanovitch.

Attached is the final Biological Opinion incorporating these recommendations and changes.

Sincerely yours,

/s/ William C. Hickling

William C. Hickling
Area Manager

cc:
Director, FWS, Washington, DC (OES)
Regional Director, FWS, Atlanta, GA (ARD-FA/SE)
Project Leader, FWS, Raleigh, NC





United States Department of the Interior

FISH AND WILDLIFE SERVICE
PLATEAU BUILDING, ROOM A-5
50 SOUTH FRENCH BROAD AVENUE
ASHEVILLE, NORTH CAROLINA 28801

F-25
WIP

December 10, 1981

Major General C. G. Cooper
Commanding General
U.S. Marine Corps
Camp Lejeune, NC 28542

Re: 4-2-81-198

Dear General Cooper:

This letter represents the Biological Opinion of the Fish and Wildlife Service on (1) the effects of Marine Corps training activities on the endangered brown pelican (Pelecanus occidentalis) and the endangered American alligator (Alligator mississippiensis) and (2) the effects of the establishment and use of a new range (Onslow Beach North Tower Machine Gun Range) on the threatened loggerhead and green sea turtles (Caretta caretta and Chelonia mydas). This responds to General Barker's letter of April 27, 1981; subsequent correspondence of June 19, 1981 (signed by Bill Hickling), July 7, 1981 (signed by Colonel K. P. Mallice, Jr.), and August 3, 1981 (signed by Bill Hickling); and the letter of November 30, 1981, initiating consultation (signed by Colonel K. P. Millice). The effects of Marine Corps training activities on the two sea turtles were the subjects of previous consultations and Biological Opinions were rendered April 10, 1979, and February 23, 1981. The new range represents a deviation from activities considered in past consultations. This Biological Opinion does not supercede these prior Opinions but should be considered as an amendment, in regards to sea turtles, to those Opinions.

This Biological Opinion is based upon field inspections and associated meetings and discussions with Base personnel conducted on July 13-15, 1981; review of the Administrative Records for the earlier consultations on sea turtles referenced above; and review of documents provided by Base personnel on July 13-15, 1981, including: (1) Standing Operating Procedure For Training Facilities and Services (BO P11102.LJ), (2) new page inserts B-60 a through c, Chapter 2 to BO P11102.LJ, (3) Environmental Impact Assessment (EIA) - Proposed .50 Caliber Machine Gun Range at North Onslow Tower, (4) Minutes of the Environmental Enhancement/Environmental Impact Review Board Meeting of November 25, 1980, and (5) Utilization of Individual Ranges - data for BT-3 and G-7 from October 3, 1980, to July 13, 1981.

Specific activities and effects considered in this consultation are the effects of establishment and use of the Onslow Beach North Tower Machine Gun Range on brown pelicans, loggerhead turtles, and green turtles; the effects of the use of ranges G-5, G-5A, G-7, and BT-3 on brown pelicans and alligators; the effects of other military training activities involving stream crossings; maneuvers of men and vehicles in streamside and marsh habitat; and ordnance explosion in alligator habitat on the American alligator. Reference is made to correspondence from this office of



August 3, 1981, regarding review of activities for identification of those activities requiring formal consultation and the rationale used in evaluating the activities for impact and jeopardy to the continued existence of the species.

It is our Biological Opinion that the activities identified above, and cumulative effects associated with these activities, are not likely to jeopardize the continued existence of the brown pelican, American alligator, loggerhead turtle, or green turtle. However, field inspection and review of the documents referenced in paragraph two of this letter did reveal some inconsistencies and possible impacts that should be clarified, reduced, or corrected. These inconsistencies and impacts will be reviewed followed by recommendations to enhance the conservation of the two sea turtles.

The EIS and Minutes of the Environmental Enhancement/Environmental Review Board Meeting of November 25, 1980, state that avoiding interference with waterborne traffic on the intra-coastal waterway is a justification for the new Onslow Beach North Tower Machine Gun Range. However, Special Instructions a. (1) and i. on pages B-60 b and c, Chapter 2 of EO P11102.J, indicate or authorize use of other ranges during the times the Onslow Beach North Tower Range is used. Use of these other ranges requires control of boat traffic on the intra-coastal waterway and thus negates the justification stated above for the Onslow Beach North Tower Range for those periods of time when other ranges are being used. Because cumulative effects of usurping more beach areas for various uses (military uses, recreation, residences, etc.) throughout the range of nesting of sea turtles serves to continually reduce the amount of suitable nesting areas lacking interferences, we recommend that the necessity of changing or intensifying use of beach areas of Camp Lejeune be evaluated carefully. For example, on Camp Lejeune, the beach area from Risley Pier to Onslow Beach South Tower (1 1/2 miles in length) is intensively used for military training, necessitating translocation of turtle nests in the area. At the same time the entire Onslow Beach is utilized for recreation with the approximately two-mile section from Risley Pier north receiving heavy recreational pressure. In addition to the four miles of beach already heavily utilized by humans on Camp Lejeune, the establishment of the Onslow Beach North Tower Range adds one more section of beach to human use for military training. If this cumulative usurping of beach areas for intensive human use continues, sea turtles could eventually reach a threshold from which recovery is impossible. Translocation of nests is not a long range solution because eventually there will be no suitable safe beaches left to which turtle nests can be translocated.

Paragraph c. of the Minutes of the Environmental Enhancement/Environmental Review Board of November 25, 1980, states that to avoid damage to beach areas, the new gun positions at the Onslow Beach North Tower Range and a diagram of the existing vehicular trails authorized for movement to and from the gun positions will have to be incorporated into a change to the Base Order on Range Regulations. The new page inserts (pages B-60a through c, Chapter 2) issued to EO P11102.J did not diagram authorized access routes and identified gun positions as a 400-meter area forward of the dunes (beach area) and south of grid line 29. This is not adequate to avoid damage to beach areas, as so stated in the above referenced Minutes. A diagram showing the authorized routes of ingress/egress to the Onslow Beach North



Tower Machine Gun Range should be included in the base range regulations. Additionally, the firing point area should be marked by range limit signs to restrict the use of the beach to that amount of space necessary to conduct training.

Paragraph 1.c. of Section I of the EIA states that for safety reasons, no more than three vehicles will be on the firing line at once with a 25 meter interval between firing vehicles, yet page inserts B-60a through c to BO P11102.1J does not place these restrictions on use of the range. Restricting the use to three vehicles would also lessen the impact on the beach. This information should be part of the special instructions for this range.

Recommended conservation enhancement measures follow:

1. Amend or revise pages B-60a through c, Chapter 2 of BO P11102.1J by:
 - a. Restricting use of the range on days that other ranges are being used requiring control of boat traffic on the intra-coastal waterway to overflow that cannot be accommodated on the other ranges. (When other ranges are not being used, the use of the North Tower Range is obviously not so restricted).
 - b. Including identification of authorized gun positions and access routes.
 - c. Restricting personnel and vehicles using the range to an area between Grid 29 and a point where access route (2) in paragraph e. of Section I of the EIA bisects the beach.
 - d. Revise Special Instructions 1. to prohibit firing of weapons at sea mammals, birds, or reptiles or when these animals are visible down range.
2. Follow one of the three following alternatives to reduce or eliminate rutting of the beach area:
 - a. Amend or revise pages B-60a through c, Chapter 2 of BO P11102.1J to authorize use of the Range only during the period of November through April to avoid the turtle nesting season, or
 - b. Amend or revise pages B-60a through c, Chapter 2 of BO P11102.1J to restrict access to the Range to routes 2 and 4 identified in paragraph e of Section I of the EIA and/or to the tidal zone at low tide for routes 1 and 3 and restrict firing vehicles to the tidal zone at low tide, or
 - c. Amend or revise pages B-60a through c, Chapter 2 of BO P11102.1J to restrict access to routes 2 and 4 and translocate turtle nests from the Range area to safe beach locations outside the range.

An Administrative Record of this consultation is maintained and available for review at this office. Please provide us with documentation concerning implementation of recommendations. Should new information reveal impacts



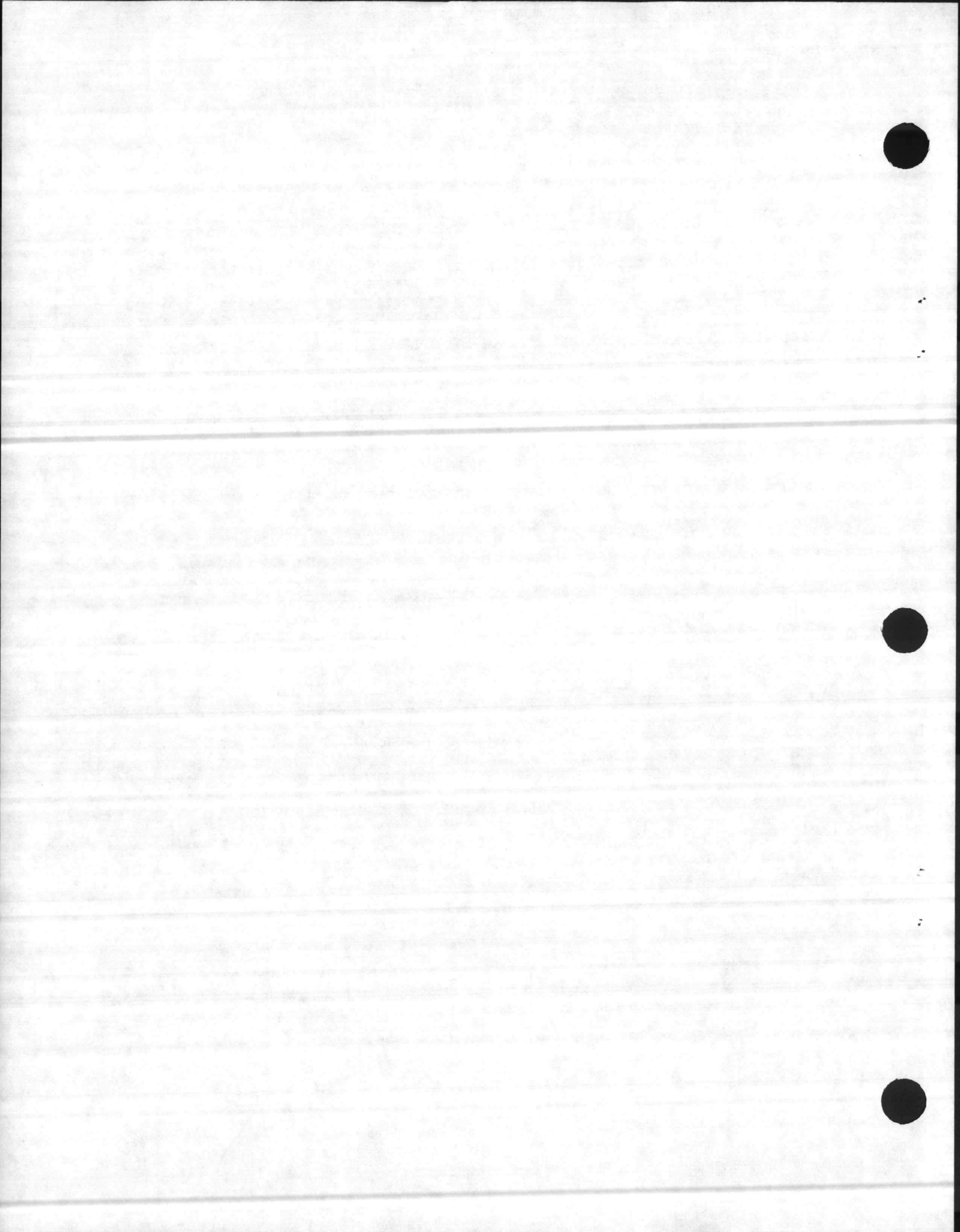
that may affect the four species considered in this consultation and which were not considered in this or earlier consultations and/or should the activities considered in these consultations be subsequently modified, consultation should be reinitiated. For example, should the unexpected happen and any of the four species be directly killed during military training activities, or if new and expanded use of the beaches or other areas for military activities be proposed, consultation should be reinitiated.

As per several times over the past years, we extend our appreciation to Camp Lejeune and its personnel for your initiative and conservation efforts on behalf of endangered and threatened species, as well as other fish and wildlife, and for your cooperation in this consultation. Please contact us if we can be of help in the future. We look forward to continuing cooperation between our agencies.

Sincerely yours,

/s/ William C. Hickling

William C. Hickling
Area Manager



Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

June 27, 1983

Colonel J.T. Marshall
Assistant Chief of Staff, Facilities
United States Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

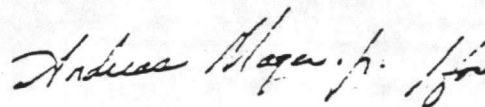
Dear Colonel Marshall:

This responds to your June 3, 1983, and June 16, 1983, letters regarding expansion of the N-1 Impact Area and Brown's Island Target and Bombing Area BT-3 at the Marine Corps Base, Camp Lejeune, North Carolina. Consultation was requested pursuant to Section 7 of the Endangered Species Act of 1973 (ESA).

We have reviewed your biological assessment (BA) and concur with your determination that populations of endangered/threatened species under our purview would not likely be jeopardized by the subject action.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

Sincerely yours,



Charles A. Oravetz, Chief
Protected Species Management Branch

cc:
FWS - Asheville, NC



OPNAV 5216/144 (REV 6-70)
 S/N 0107-LF-778-8097
 DEPARTMENT OF THE NAVY

Memorandum

DDS
 CJP

DATE: 18 MAR 83

FROM: A/S Fae

TO: DIR NRIEA

SUBJ:

Here is TRN's comments on our package. I have talked to them LTCOL SAM S/LTCOL BRUNELLI and COL AND THEY KNOW that they have to do a flight before they can fire and the area must be clear.

J. J. Marshall





UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

F-31
IN REPLY REFER TO
TRNG/AWR/kak
1500
18 Mar 1983

FIRST ENDORSEMENT on TFACO ltr TRNG/ARB/eks over 1500 dtd 17 Mar 1983

From: Assistant Chief of Staff, Training
To: Assistant Chief of Staff, Facilities

Subj: Aerial Flights to Protect Endangered Species in Offshore Waters

1. Forwarded as discussed on 17 Mar 1983.
2. You interposed no objection to morning flights and flights only on days when live firing taking place to seaward.

A handwritten signature in cursive script, appearing to read "M. P. Sams".

M. P. SAMS -
By direction





UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

F-32

IN REPLY REFER TO
TRNG/ARB/eks
1500
17 Mar 1983

From: Training Facilities Officer
To: Assistant Chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

Subj: Aerial Flights to Protect Endangered Species in Offshore Waters

Ref: (a) Yr ltr NREAD/DDS/th over 11015 dtd 16 Mar 83; same subject

1. The reference discussed measures believed necessary to provide protection for certain endangered marine species which, periodically/seasonally, frequent the offshore waters of this installation.

2. Notwithstanding the information contained in paragraph 3 which indicates the best time to observe the whales is 1200-1500, the present practice of requiring an aerial reconnaissance of the offshore surface danger area prior to commencing live fire on effected ranges is normally concurrent with units' firing request, most typically 0730-0900. It is believed that flights during the period just prior to the range(s) "going hot" are the better of the periods in that:

a. The aerial visual recon is already a range requirement and, accordingly, this would not generate a totally new wing requirement. It would, however, substantially increase the amount of area searched, with resultant increase in fuel/maintenance/flight hours involved.

b. Under normal weather conditions, both aerial observation and water clarity tend to be optimum in the earlier morning hours, and decrease markedly as the sun causes wind and waves offshore, which would enhance detection of whales if the flights were before the suggested 1200-1500 time period.

c. It is further understood that the clear intent of these reconnaissance flights is to attempt to take all prudent measures to protect these whales from possible firing danger (paragraph 3 of enclosure (5) to reference (a) germane), so these flights would be conducted only in association with live firing on ranges impacting into the offshore danger area.

3. Additional instructions for these flights and specifics relative to tower observers shall be promulgated as soon as practical.


A. R. BRUNELLI, Jr.



TRNG/ARB/eks
1500
17 Mar 1983

From: Training Facilities Officer
To: Assistant Chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

Subj: Aerial Flights to Protect Endangered Species in Offshore Waters

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A. R. BRUNELLI, Jr.



TRNG/ARB/eks
1500
17 Mar 1983

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To: Assistant Chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

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A. R. BRUNELLI, Jr.



UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

F-35

NREAD/DDS/th
11015

1 6 MAR 1983

From: Assistant Chief of Staff, Facilities
To: Assistant Chief of Staff, Training

Subj: Protection of Endangered Species in Offshore Waters

Ref: (a) Section 7, Endangered Species Act

Encl: (1) CG MCB ltr MAIN/CDP/th 11015 of 17 Nov 1981
(2) NMFS ltr of 23 Nov 1981
(3) CG MCB ltr NREAD/JIW/th 11015 of 4 Nov 1982
(4) NMFS ltr of 8 Nov 1982
(5) CG MCB ltr NREAD/JIW/jc 11015 of 12 Jan 1983
(6) NMFS ltr of 3 Mar 1983
(7) Whale Identification Packet

1. The purpose of this letter is to advise that formal consultation has been completed with the National Marine Fisheries Service (NMFS) relative to the impact of live-firing into offshore waters on nationally listed endangered and threatened species pursuant to the reference. Enclosures (1) through (6) document the consultation process. Based on the information provided in enclosures (1) through (6), the NMFS has concurred with Base's determination that current live-firing activity into the offshore waters, as described in enclosure (3), would not affect the subject species which are under NMFS purview. As specified in enclosure (6), NMFS concurrence was conditional with a possibility of reentering consultation if changes in circumstances occur. It is requested that any changes or proposed changes in firing into the subject waters be reported to this office so as to permit continued compliance with the reference.

2. Also, note that enclosure (4) required this Command to provide NMFS with a description of actions to be taken to avoid impact on individual members of the protected species which may be present in the subject waters. Enclosure (5) provided the requested information. Therefore, it should be noted that NMFS concurrence is also contingent upon implementation of the protective measures listed in enclosure (5).

3. Dr. Frank Schwartz, an expert on whales with the Institute of Marine Sciences, University of North Carolina at Morehead City, was contacted to determine appropriate methods to follow for detecting any whales in the area so as to avoid possible adverse impact. Dr. Schwartz advised that whales annually move through offshore waters during their spring migration occurring 20 February - 7 April. Females and calves of the right whale migrate very close to the coastline during spring migration. Whales may be in a given area for several days and then suddenly move quite rapidly sometimes traveling to a maximum distance of ten miles within a 24-hour period. The best time to observe whales from the air is from 1200-1500 hours. Enclosure (7) contains material for identifying various species of whales. Dr. Schwartz's recommendations were also based on consultation with Dr. Howard E. Winn, Whale Coordinator, University of Rhode Island, concerning annual whale migration off Onslow



Subj: Protection of Endangered Species in Offshore Waters

Beach and Brown's Island relative to protecting the species.

4. Therefore, in addition to all existing precautionary procedures listed in enclosure (5), the Training Facilities Officer should implement the following procedures immediately and annually hereafter, during the period of 20 February - 7 April:

a. Schedule daily aerial flights covering an area extending four miles seaward from the beach from Bogue Inlet southward to New Topsail Inlet, to determine if any whales are present (See Enclosure (7)).

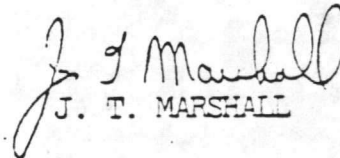
b. Conduct flights between 1200-1500 hours when possible and in a manner which allows the pilot to carefully observe the entire area within boundaries described in paragraph 4a above.

c. Flights should be flown at intervals of 24 hours or less.

d. Discontinue live-firing exercises anytime whales are discovered within 10 miles of the E-1, N-1 and BT-3 Range Areas and contact AC/S, Facilities.

5. Implementation of procedures and methods for protecting sea turtles also involved in this consultation with NMFS will be forwarded by separate correspondence in the near future.

6. Point of contact in this matter is Mr. Julian Wooten, Director, Natural Resources and Environmental Affairs Division, extension 2083.


J. T. MARSHALL



Mr. Harold Allen
Acting Director Southeast Region
National Marine Fisheries Services
National Oceanic Atmospheric Administration
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Allen:

Marine Corps Base, Camp Lejeune, North Carolina, has conducted formal consultation procedures with the U. S. Fish and Wildlife Service for endangered and threatened species pursuant to the Endangered Species Act of 1973, Title 50, Code of Federal Regulations, Number 402. Biological opinions have been rendered for the Red-Cockaded Woodpecker (*Dendrocopos borealis*), Atlantic Loggerhead Sea Turtle (*Caretta caretta*) and Green Sea Turtle (*Chelonia mydas*).

Formal consultation is now in progress which initially involved the Eastern Brown Pelican (*Pelecanus occidentalis*) and the American Alligator (*Alligator mississippiensis*). Possible impacts to sea turtles at Onslow Beach and in offshore waters from the Onslow Beach North Tower Range were noted during this consultation process. These impacts were listed in a draft biological opinion presently being reviewed by Marine Corps Base. The possible impacts listed include: ruts caused by assault amphibian vehicles in gaining access to the range presenting an obstacle to hatchlings reaching the sea; ruts caused by vehicles on the firing line in setting up and maneuvering also presenting an obstacle to hatchlings reaching the seas; and live service ammunition fired into the ocean causing direct mortality of sea turtles in offshore waters. The first two impacts were addressed in the draft biological opinion.

The U. S. Fish and Wildlife Service advised that the third impact was a basis for initiation of formal consultation with the National Marine Fisheries Service, who has jurisdiction over sea turtles in offshore waters. By this letter, we are, therefore, initiating formal consultation procedures with your agency to resolve any possible conflicts between Marine Corps activities and our responsibilities under the Endangered Species Act.

We look forward to consulting with you on these matters involving established military training requirements and our legal responsibilities concerning sea turtles in offshore waters.

Sincerely,

C. G. COOPER
Major General, U. S. Marine Corps
Commanding General



I. INTRODUCTION

A. This biological assessment provides information concerning threatened and endangered species occurring in offshore waters at Onslow Beach, Marine Corps Base, Camp Lejeune, North Carolina. Endangered whales migrating past Browns Island includes the Fin Whale (*Balaenoptera physalus*), Humpback Whale (*Megaptera novaeangliae*) and Right Whale (*Eubaleana glacialis*). Whales usually migrate one-fourth or more miles off Onslow Beach. Most movement has been recorded in mid-March to mid-May with lesser activities in late November and December. There have been no known strandings of whales on Onslow Beach but there have been recent strandings on nearby Bear Island, Topsail Island and Bogue Banks.

B. Threatened species include the Atlantic Loggerhead (*Caretta caretta*) and Green Turtle (*Chelonia mydas*) which nest on Onslow Beach. A comprehensive program has been conducted for these species since 1972 involving monitoring nesting activities through surveys, tagging and protecting nests from predation. Formal consultation has been conducted with the U. S. Fish and Wildlife Service and a biological opinion has been rendered for these listed species. Both opinions contain guidelines relative to military training activities and management functions for each of these listed species concerning nesting activities on Onslow Beach. Formal consultation concerning these species as well as the Atlantic Ridley (*Lepidochelys kempi*), Leatherback (*Dermochelys coriacea*) and Hawksbill (*Eretmochelys imbricata*) Sea Turtles which migrate through the area is necessary due to live-firing into marine habitat off Browns Island.

C. The Browns Island N-1 Impact and Target and Bombing Area has been used for live-firing since Camp Lejeune was established in the early 1940's. There has been no noticeable environmental change to the island or marine habitat except for the live ordnance contained there.

D. Aerial surveys have been conducted of Browns Island and surrounding areas to determine the amount of sea turtle nesting activity. Twenty-one flights were made during the 1982 nesting season as contracted by the North Carolina Wildlife Resources Commission. Ninety-one apparent nests were located during the aerial survey on Browns Island in comparison to sixty six active nests which were ground truthed on Onslow Beach.

II. DESCRIPTION OF AREA

A. The Browns Island coastline is a relatively uniform sand ridge about 200 to 500 feet wide and typically about 5 to 15 feet in elevation. Shifting sand dunes on the ridge reach elevations of 25 to 40 feet. The sand ridge protects the mainland from wave action and it impedes tidal action as well as drainage from the mainland. Drainage from the area passes through Browns Inlet and Bear Inlet into the Atlantic Ocean. Tidal flats occupy irregular strips behind the coastal sand ridge, in pockets along the shore at the sound and in lowlands along the estuaries draining into the sounds.



B. This area of the coastal plain is underlain by hundreds of feet of free or unconsolidated and weakly consolidated sediments ranging from cretaceous to miocene in age. Generally these formations are covered with a 5 to 30 feet surface layer of pleistocene sediments. These sediments are mostly clean sand and clayey sand, interlayered with deposits of clay and marine shells. On some of the poorly drained upland areas, thick organic soils have developed since emergence. Locally, on the banks of large streams, outcroppings of the miocene yorktown formation can be found. The yorktown consists of clay, sand and shell marl beds which are similar to the younger surficial deposits. The coastal sand ridge is primarily of wave-washed beach sand, but assorted sediments as described above occurs at shallow depths under the ridge.

C. Browns Island is composed of an intratidal zone, flat beach zone, supratidal zone; pioneer zone, scrub zone, forest zone and marsh zone. Beach vegetation is non-existent in the intratidal and flat beach zones. Plant life in the supratidal zone is marsh cord grass. Plants found in the pioneer zone are American beachgrass, sea oats, panicgrass, bitter panicum and marsh elder. The plants found in the scrub zone are seacoast blue stem, silverleaf croton, seaside goldenrod, large pennywort, yaupon holly, waxmyrtle, bayberry, Eastern baccharis, shinning sumac and pepperwine. Plants found in the forest zone are Virginia creeper, muscadine grape, American holly, devilwood, flowering dogwood, redbay loblolly pine, red maple, blackcherry, red cedar and live oak. Plants found in the marsh zone inland from the forest zone are marsh cord grass, glasswort, black needle rush, saltmeadow hay, salt grass, marsh elder, sea oxeye and grass.

D. Marine life in the supratidal zone are ghost crabs and sand fleas. Ghost shrimp, bristle worms and clams are found in the flat beach zone. In the intratidal zone, clams, lugworms and mole crabs are found. Blue crabs, sand dollars and silversides are found in the subtidal zone.

E. Marine fishes inhabiting offshore waters are barracudas, black sea bass, bluefish, bonitos, cobia, croakers, dolphin, black drum, red drum, flounder, grouper, grunt, jack mackerel, Atlantic mackerel, ling mackerel, spanish mackerel, ocean mullet, whitefish, pigfish, pompanos, porgie, spotted weakfish, sharks, silversides, snapping spot and white sea trout.

III. ACTION/PROJECT DESCRIPTION

A. This biological assessment does not describe a new facility or project. It provides information on threatened and endangered species located in an existing bombing and artillery range located at Browns Island. Both of these ranges have been in existence since World War II. The range located at Browns Island has been in continuous use since World War II. The range adjacent to, but offshore from, Browns Island was in use until the early 1960's. Since the early 1960's, it has fallen into disuse, except for over-shoots. Due to changes in the Marine Corps weapons inventory, plus increased range capabilities of new weapons, there is a requirement to resume firing in the offshore portion of Browns Island target complex. This assessment addresses these ranges as one since they are adjacent and will be scheduled for utilization as one range. This range is commonly referred to by one of the following names: BT-3, N-1 Impact Area or Browns Island. For clarity's sake this assessment will address the complex as the N-1 Impact Area as it is this agency's intent to formally declare Browns Island the adjoining rectangular ocean sector (see map) as a single target and bombing area. A description of the first range is as follows:



1. Range: N-1 Impact Area

F-40

2. Location: Brown's Island grid coordinate 9429 through 0033 and a rectangular oceanic sector approximately 6,000 meters wide, extending approximately 10,000 meters in a southeasterly direction off the coast of Camp Lejeune (see attached map), Appendix A.

3. Description:

a. This range is also referred to as Bombing and Target Range (BT-3) and Browns Island.

b. The Browns Island portion is used for aircraft, artillery and tank weapons firing utilizing improvised targets such as vehicle hulls. It is an impact area for the G-5, G-5A and G-7 Ranges.

c. The offshore portion of the N-1 Impact Area will be used as an impact area for machinegun and other light weapons fire at targets and as an over-shoot safety impact area from firing at land based targets. Targets will be small, improvised, anchored devices towed into place prior to a firing exercise and removed upon completion of the firing exercise.

d. The Browns Island portion of the N-1 Impact Area is adjacent to the Intracoastal Waterway.

4. Authorized Firing:

a. Aircraft - All aircraft ammunition is composed of practice rounds not exceeding net explosive weight of 20 pounds TNT equivalent.

b. Ground Weapons - All weapons and ammunition authorized for ranges G-5, G-5A and G-7.

c. Mortars may be used to mark targets (HE, illumination and WP).

d. Artillery - All types of ammunition.

5. Range Limits: This range extends northeast from the Junction of north/south grid line 94 at Onslow Beach, along the beach line to Bear Creek Inlet; north-northwest along Bear Creek to a point 400 yards northwest of the Intracoastal Waterway; west-southwest on a line 400 yards of and parallel to the Intracoastal Waterway to Freeman's Creek then south to the point of origin. This portion of the N-1 Impact Area is bordered by a 1,000 yard buffer zone on the north and west side. A 1,000 yard no fire zone extends inboard from Bear Creek. The water portion of the N-1 Impact Area is a rectangular oceanic sector approximately 6,000 meters wide and extends approximately 10,000 meters in a southeasterly direction seaward, off the coast of Camp Lejeune.

B. A description of the second range is as follows:

1. Range: Onslow Beach North Tower Machinegun Range

2. Location: Onslow Beach North Tower grid coordinate is 9328

3. Description:



b. Floating target platforms seaward within the N-1 Impact Area

4. Authorized Firing:

a. Weapons - M-2, M-85, M-60 and 25 mm machineguns both ground mounted and vehicle mounted.

b. Ammunition - Service

5. Range Limits:

a. Right flank coordinate 935287, azimuth 105°

b. Left flank coordinate 939290, azimuth 80°

C. A description of the third range is as follows:

1. Range: E-1 Onslow Beach Missile Range

2. Location: E-1 Onslow Beach Missile Range extends between Onslow South Tower and grid line 90 on the beach between the frontal dunes and the ocean.

3. Additional Information: The E-1 Range is a missile firing range for Redeye and Hawk missiles. The weapon systems are designed to be used against aerial targets. Firing of these missiles is by Marine Corps and the U. S. Army personnel on the beach. There are no explosives on the practice missiles, but there will be debris from fragmentation and the missiles themselves which impact into the ocean. Normally the missile firing is conducted semi-annually. Twelve missiles were fired from 3 December 1980 through 22 March 1982.

IV. PROBABLE IMPACT TO ENDANGERED/THREATENED SPECIES IN THE MARINE ENVIRONMENT

A. The marine environment in the N-1 Impact/BT-3 Bombing and Target Area has been used for many years for military training exercises. This area contains large quantities of unexploded ordnance. The land area can be entered only by Explosive Ordnance Disposal personnel. The U. S. Fish and Wildlife Service found no adverse impact in the opinion rendered for the Green and Atlantic Loggerhead Sea Turtles relative to impact from live-firing on Browns Island.

B. The offshore portion of the range is primarily used for firing non-exploding projectiles. It is also used as a buffer zone for firing on Browns Island and infrequently receives artillery projectiles or aircraft bombs that are over-shot. There are no permanent structures except for an observation tower on the outer edges of the buffer zone at Onslow Beach and Browns Tower. Range regulations prohibit firing at wildlife species on land, air or water at all times.

C. A dead Loggerhead Turtle was stranded near Browns Inlet in 1978 which appeared to have been shot through the head. Two whales of undetermined species were stranded on Bear Island in April 1982 approximately 24 feet to 30 feet in length. Neither of these incidents were known to have resulted from firing into the N-1 Impact/BT-3 Bombing and Target Areas. A portion of the subject area has been established as a sea turtle sanctuary by the State of North Carolina to prohibit commercial trawling during the nesting seasons.



D. The sea turtle sanctuary is listed as beginning at the northernmost end of Hammocks Beach (Bear Island) and seaward toward the Bogue Inlet buoy for 1,000 feet; southwestward 1,000 feet off Bear Island to the restricted zone designated as part of Camp Lejeune restricted area; seaward along the northern boundary of this zone; on the south side of the restricted zone the sanctuary shall recommence 1,000 feet or one-fourth mile off the beach and pass southwestwardly to the first (northern) observation tower on Onslow Beach; thence the zone shall extend for three-fourths of a mile to $34^{\circ} 33.5' N-77^{\circ} 13.4' W$; the zone shall thence include that portion of the ocean southwestward of the New River Inlet buoy the demarkation line shall pass the southernmost tip of Onslow Beach, no person shall use any commercial fishing equipment between June 1 and August 31, except that the Secretary, North Carolina Department of Natural Resources and Community Development, acting upon the advice of the Director, may by proclamation modify the sea turtle sanctuary within the above described area and vary implementation between these dates for the protection of the sea turtle population. The sea turtle sanctuary is contained in Appendix B.

E. Contracts have been made with recognized experts concerning listed species in the subject area including those with the U. S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission and the University of North Carolina. The North Carolina Marine Fisheries Division has been contacted relative to commercial fishing operations in offshore waters along Onslow Beach. Names and addresses of those individuals contacted are as follows:

1. Dr. Frank Schwartz, Institute of Marine Sciences, University of North Carolina, Morehead City, North Carolina
2. Mr. Don Harke, State Supervisor Wildlife Assistance, U. S. Fish and Wildlife Service, Raleigh, North Carolina
3. Mr. Otto Florschutz, Sea Turtle Recovery Team Member, U. S. Fish and Wildlife Service, Washington, North Carolina
4. Mr. Stuart Critcher, Endangered Species Coordinator, North Carolina Wildlife Resources Commission, Raleigh, North Carolina
5. Mr. Stephen Polinski, Law Enforcement Plot, North Carolina Marine Fisheries Division, Morehead City, North Carolina
6. Mr. Howard Bogey, Inspector, North Carolina Division of Marine Fisheries, Swansboro, North Carolina

F. Available literature on the listed species has been reviewed.





Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

November 23, 1981

F/SER61:AM

Major General C. G. Cooper
Commanding General, U. S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear Major General Cooper:

This responds to your November 17, 1981, letter requesting consultation for Marine Corps activities at the Marine Corps Base, Camp Lejeune, North Carolina, as required by Section 7 of the Endangered Species Act of 1973.

The attached list provides the threatened and endangered species under National Marine Fisheries Service jurisdiction that may be present in the project area. Upon receipt of this list, the USMC must insure that its actions are not likely to jeopardize the continued existence of the listed species.

For a major Federal action, the agency must conduct a biological assessment to identify any endangered or threatened species which are likely to be affected by such action. The biological assessment shall be completed within 180 days after receipt of the species list, unless it is mutually agreed to extend this period.

The components of a biological assessment are as follows:

- (1) conduct a scientifically sound on-site inspection of the area affected by the action, which must, unless otherwise directed by the Service, include a detailed survey of the area to determine if listed or proposed species are present or occur seasonally and whether suitable habitat exists within the area for either expanding the existing population or potential reintroduction of populations;
- (2) interview recognized experts on the species at issue, including those within the Fish and Wildlife Service, the NMFS, State conservation agencies, universities and others who may have data not yet found in scientific literature;
- (3) review literature and other scientific data to determine the species distribution, habitat needs, and other biological requirements;
- (4) review and analyze the effects of the action on the species, in terms of individuals and population, including consideration of the cumulative effects of the action on the species and habitat;





- (5) analyze alternative actions that may provide conservation measures;
- (6) conduct any studies necessary to fulfill the requirements of (1) through (5) above;
- (7) review any other information.

At the conclusion of the biological assessment, as described above, the Federal agency should prepare a report documenting the results.

If the biological assessment reveals that the proposed project is likely to affect listed species, the formal consultation process shall be initiated by writing to the Regional Director, National Marine Fisheries Service, 9450 Koger Boulevard, Duval Building, St. Petersburg, Florida 33702. If no effect is evident, there is no need for formal consultation. We would, however, appreciate the opportunity to review your biological assessment.

If you have any questions, please contact Andreas Mager, Jr., Fishery Biologist, Southeast Regional Office, FTS 826-3503.

Sincerely yours,

Charles A. Oraveck

for R. Ekberg
Chief, Environmental &
Technical Services Branch

Enclosure

cc: FWS, Atlanta, GA
FWS, Raleigh, NC



North Carolina

<u>LISTED SPECIES</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>DATE LISTED</u>
Fin Whale	<u>Balaenoptera physalus</u>	E	12/2/70
Humpback Whale	<u>Megaptera novaeangliae</u>	E	12/2/70
Right Whale	<u>Eubaleana glacialis</u>	E	12/2/70
Sei Whale	<u>Balaenoptera borealis</u>	E	12/2/70
Green Sea Turtle	<u>Chelonia mydas</u>	Th	7/28/78
Hawksbill Sea Turtle	<u>Eretmochelys imbricata</u>	E	6/2/70
Kemp's (Atlantic) Ridley Sea Turtle	<u>Lepidochelys kemp</u>	E	12/2/70
Leatherback Sea Turtle	<u>Dermochelys coriacea</u>	E	6/2/70
Loggerhead Sea Turtle	<u>Caretta caretta</u>	Th	7/28/78
Shortnose Sturgeon	<u>Acipenser brevirostrum</u>	E	3/11/67

SPECIES PROPOSED FOR LISTING

None

LISTED CRITICAL HABITAT

None

PROPOSED CRITICAL HABITAT

None

1. Include sperm whale only for deep water projects.
2. Humpback and right whales occur in shallow water.





United States Department of the Interior

FISH AND WILDLIFE SERVICE

F-46

ENDANGERED SPECIES FIELD STATION

100 OTIS STREET, ROOM 224

ASHEVILLE, NORTH CAROLINA 28801

December 4, 1984

Brigadier General L. H. Buehl
Commanding General
U. S. Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear General Buehl:

This letter presents the Biological Opinion of the Fish and Wildlife Service concerning the effects of proposed repairs to the existing railroad (Phase II) from Camp Lejeune to Cherry Point, North Carolina on the endangered American alligator (Alligator mississippiensis). It responds to Colonel M. G. Lilley's request for formal consultation dated November 21, 1984. This opinion does not address requirements of environmental laws other than the Endangered Species Act. Log No. 4-2-85-078 has been assigned to this consultation; this number should be referenced in all future correspondence concerning this project.

Project Description

The standard gauge railroad between Camp Lejeune and Cherry Point was constructed during the World War II period. It was originally built and owned by the Seaboard Railroad Corporation, but during the past several decades usage dropped substantially and the 27-mile-long reach involved in this consultation was acquired by the Federal government. A significant amount of repair work is needed to bring the system up to full standard and allow the safe transporting of heavy military equipment from Camp Lejeune to port facilities at Morehead City. Contemplated work includes replacement of damaged cross ties, refurbishing of bridges, right-of-way clearing, and the upgrading of the existing road bed. Soil material needed for road bed improvement will come from borrow areas within the right-of-way. Much of the railroad right-of-way crosses the Croatan National Forest.

Consultation History

Contacts with U. S. Forest Service personnel on the Croatan National Forest during the summer of 1984 indicated that a significant amount of repair work was forthcoming on this railroad bed. These personnel expressed concern over the fate of American alligators that are frequently seen during the warmer months of the year. Informal consultation on this project was requested by letter from Colonel Lilley dated September 24, 1984. On October 26, 1984, I visited Camp Lejeune and was briefed on the project by members of your natural resources and facilities staff. That afternoon I inspected the entire length of railroad. After considerable discussion with biologists knowledgeable of the area and the American alligator, conclusions were drawn and set forth in my letter to you of November 19, 1984. These recommendations indicated that the only area of concern was that portion of the railroad that passed near the Camp Brian-Lake Ellis area. Work within



this particular area, from mile marker 20 to 27, should be scheduled only during the periods October 1 - December 15, and March 15 - June 15. By letter of November 21, 1984, from Colonel M. G. Lilley, formal consultation was requested on this project in view of the may affect situation.

Biological Opinion

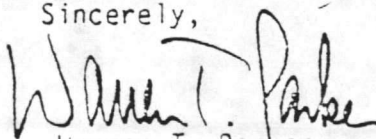
After careful review of all the information available for this project and based on the commitments made in Colonel Lilley's letter of November 21, 1984, concerning the timing of work between mile markers 20 and 27, it is my Biological Opinion that the planned upgrading of the Camp Lejeune to Cherry Point Railroad (Phase II) is not likely to jeopardize the continued existence of the American alligator.

In meeting the provisions of "incidental take" in Section 7(b)(4) of the Endangered Species Act, we have reviewed the biological information and other available information relative to this action. Based upon our review, incidental take is not authorized for the American alligator during implementation of this activity.

If modifications or changes in planned operations for the upgrading of the Camp Lejeune-Cherry Point Railroad are made which were not a part of this consultation, or other information reveals impacts of these actions which may affect listed species or critical habitat in a manner not previously considered, consultation must be reinitiated with this office.

I would like again to thank you and your staff for the hospitality provided in this consultation process, and trust that this opinion will prove useful to you. Your interest in endangered species is certainly appreciated.

Sincerely,



Warren T. Parker
Field Supervisor

CC:
Director, FWS, OES, Washington, D. C.
Regional Director, FWS, Atlanta, Georgia (FA)
Field Supervisor, FWS, ES, Raleigh, N. C.





United States Department of the Interior

FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES FIELD STATION
100 OTIS STREET, ROOM 221
ASHEVILLE, NORTH CAROLINA 28801

F-48

December 6, 1984

Brigadier General L. H. Buehl
Commanding General
U. S. Marine Corps Base
Camp Lejeune, North Carolina 28542

Re: 4-2-85-077

Dear General Buehl:

This letter presents the Biological Opinion of the Fish and Wildlife Service concerning the effects of proposed range improvements at the K-2 Impact Area on the endangered red-cockaded woodpecker (Picoides borealis). It responds to Colonel M. G. Lilley's request for formal consultation dated November 7, 1984. This opinion does not address the requirements of environmental laws other than the Endangered Species Act. Log No. 4-2-85-077 has been assigned to this consultation; this number should be referenced in all future correspondence concerning this project.

Project Description

The K-2 Impact Area has been operational for many years. That portion of the area actually designated for impact of short range weapon systems as well as long-range artillery fire totals 1,597 acres. This is surrounded by a buffer zone that comprises some 1,181 acres. Predominate timber type throughout is mixed longleaf pine and hardwood and some essentially pure, open stands of longleaf pine.

Range refurbishment is necessitated by reduced visibility of target areas within the K-2 Impact Area. This has occurred due to growth of trees and understory vegetation. Trees and brush will be leveled by heavy equipment to provide visibility of target arrays at distances up to 3,000 meters from observation posts.

Consultation History

On September 26, 1984, Fish and Wildlife Service personnel accompanied Regional Director James Pulliam for a meeting with you and your staff regarding the G-10 Impact Area and its possible effect on adjacent colonies of red-cockaded woodpeckers. At this meeting we learned of the planned clearing of the K-2 Impact Area. Subsequent discussion revealed that an active colony of red-cockaded woodpeckers had only recently been discovered within the buffer of this impact area. In view of this "may affect" situation, formal consultation was initiated. On October 26, 1984, I visited Camp Lejeune and conducted an on-site inspection of the active woodpecker colony as well as adjacent habitat. By letter of November 19, 1984, I informed you of my findings and recommendations concerning the management of the colony site. Subsequent discussions with Mr. Julian Wonten indicate that



requested helicopter surveys were conducted and no new colonies of birds were located within the project area.

Biological Opinion

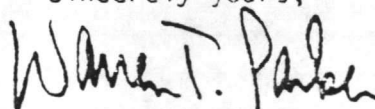
After careful review of all the information available for this project and based on the commitments made in Colonel Lilley's letter of November 7, 1984 concerning the dedication of 125 acres of selected habitat for foraging and colony site protection, it is my biological opinion that the planned clearing of the K-2 Impact Area is not likely to jeopardize the continued existence of the red-cockaded woodpecker.

In meeting the provisions for "incidental take" in Section 7(b)(4) of the Endangered Species Act, we have reviewed the biological information and other available information relative to this action. Based upon our review, ~~incidental take is not~~ authorized for the red-cockaded woodpecker during implementation of this activity.

If modifications or changes in planned operations for the clearing of the K-2 Impact Area are made which were not a part of this consultation, or other information reveals impacts of these actions which may affect listed species or critical habitat in a manner not previously considered, consultation must be reinitiated with this office.

We would like to express our appreciation to you and your entire staff for the assistance provided in this consultation process. I trust that the end results are an improvement of an already commendable program and an amicable and cooperative relationship between our offices.

Sincerely yours,



Warren T. Parker
Field Supervisor

CC:

Director, FWS, OES, Washington, D.C.
Regional Director, FWS, Atlanta, Georgia (AFA/SE)
Field Supervisor, FWS, ES, Raleigh, N. C.





United States Department of the Interior

FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES FIELD STATION
100 OTIS STREET, ROOM 224
ASHEVILLE, NORTH CAROLINA 28801

F-50

June 5, 1985

Mr. B. W. Elston
Assistant Chief of Staff, Facilities
U.S. Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

Dear Mr. Elston:

RE: Log No. 4-2-78-385

This responds to your letter of May 9, 1985, requesting consultation regarding forest fire suppression in red-cockaded woodpecker (Picoides borealis) habitat. Your letter was acknowledged by letter of May 24, 1985, from our Regional Office and forwarded to this office for handling. As pointed out in your letter, the April 3, 1979, biological opinion on the base forestry management program does not address this point. We have informally consulted by telephone with base personnel on this issue in the past.

We will attempt herein to offer guidance on this issue, based on consultation with your personnel as well as our knowledge concerning the biological needs of the species. If this guidance is acceptable, please acknowledge such by return letter and incorporate the guidance as an amendment to the April 3, 1979, biological opinion in terms of further description of your forestry management program. If this guidance is unacceptable, we request that you initiate formal consultation regarding the effects of fire suppression effects at Camp Lejeune on the endangered red-cockaded woodpecker.

The April 3, 1979, biological opinion recommended a two- to three-year prescribed burning cycle in red-cockaded woodpecker habitat and restriction of road construction in colonies and buffer zones. In addition, the June 12, 1979, biological opinion on activities within the Mechanized Infantry Training Area restricted digging and destruction of vegetation. Obviously, if a need to suppress a wildfire within red-cockaded woodpecker habitat exists, some of the restrictions in these biological opinions would hamper these efforts.

However, every case must be handled individually based on the situation existing at that place and time. Therefore, we can only offer general guidance and depend on the case-by-case situations being adequately handled by base Natural Resource personnel, who are located on-site and are most knowledgeable regarding the biological needs of the species, habitat conditions in the area, and the risks involved in suppression versus non-suppression. In general, wildfire suppression within red-cockaded woodpecker habitat is only appropriate if the risks to the species and its



habitat from the wildfire are greater than the risks from the suppression activities themselves in the judgment of your Natural Resource personnel.

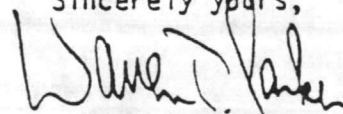
If red-cockaded woodpecker habitat has been prescribed burned on two- to three-year cycles, the risks from wildfires should not be great. Therefore, suppression activities should be conducted outside designated support stands, colony sites, and buffer zones. If the fire is outside these areas, suppression activities should be conducted outside of or at the designated habitat boundaries. If the fire is within the designated boundaries, it should be allowed to burn to the boundary and suppressed there, unless fuel build-up is such that the fire would be expected to be more detrimental to the species than the fire suppression measures necessary, by destroying overstory and midstory trees valuable for foraging, roosting, and/or nesting of the species.

At no time should suppression activities (fire lines, etc.) be conducted within colony sites and buffer zones because these areas are so small that possible benefits would not outweigh the possible adverse impacts. Again the fire should be suppressed outside of or at the boundary. If the fire is already within the colony site or buffer zone, it would be expected to traverse the area before suppression could be effective within the area anyway because of its small size. Also, the adverse impacts from fire suppression activities would be much greater in colony site and buffer zones than in support stands. Therefore, we cannot perceive risks from wildfires outweighing risks from fire suppression activities in colony sites and buffer zones.

If it is considered necessary to suppress wildfires in support stands, every effort should be made to avoid or reduce impacts to the most mature trees by placement of fire lines, etc., through the younger stands and/or stems. Within a mixed stand, move the line through younger stems to avoid the older stems.

I hope this guidance meets your needs and is acceptable. We appreciate your concern and interest in endangered species, especially the red-cockaded woodpecker, and look forward to future cooperation in this regard between our agencies.

Sincerely yours,



Warren T. Parker
Field Supervisor

cc:

Ms. Deborah S. Paul, North Carolina Wildlife Resources Commission,
Raleigh, NC
Director, North Carolina Natural Heritage Program, Raleigh, NC
Field Supervisor, ES, FWS, Raleigh, NC





United States Department of the Interior F-52
FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES FIELD STATION
100 OTIS STREET, ROOM 224
ASHEVILLE, NORTH CAROLINA 28801

December 13, 1985

Brigadier General J. B. Knotts
United States Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Re: 4-2-85-681

Dear General Knotts:

This letter presents the biological opinion of the Fish and Wildlife Service concerning the potential effects of the suspension of the nightly beach monitoring of sea turtle nesting activities, from Onslow Beach North Tower to Browns Inlet, on the threatened loggerhead sea turtle (Caretta caretta) and the threatened green sea turtle (Chelonia mydas). It responds to your request for consultation dated August 5, 1985. This opinion is based upon review of Colonel T. A. Tiebout's September 13, 1985, letter which assessed the increased training use of Onslow Beach and the additional impacts on sea turtles, and other relevant information. It does not address requirements of environmental laws other than the Endangered Species Act.

Project Description

The G-5 and G-5A ranges fan over the northern end of Onslow Beach. They were designed as a tank range complex allowing firing of all weapons up to the tank main gun. Due to improvements in tank gunnery systems and limited range and maneuver space, this complex was used only periodically. However between 1982 and 1984 the range complex was refurbished and presently receives almost constant use by the tank battalion, amphibian assault vehicle battalion, light armored vehicle battalion, and other units. This increased use has resulted in an increased possibility of unexploded ordnance being present on the northern end of Onslow Beach. The safety of personnel monitoring the turtle nesting activities on this section of the beach cannot now be guaranteed at night.

Biological Opinion

After careful review of all the information available for this action, it is the biological opinion of the Service that the suspension of the nightly sea turtle monitoring activities on the north end of Onslow Beach will not jeopardize the continued existence of the loggerhead sea turtle or the green sea turtle.

In meeting the provisions for "incidental take" in Section 7(b)(4) of the Endangered Species Act, we have reviewed the biological information and other available information relative to this action. Based upon our review, incidental take is not expected as a result of this action and is not authorized.



If any modifications or changes in this action are made which were not a part of this consultation, or if other information reveals impacts of this action which may affect listed species or critical habitat in a manner not previously considered, consultation must be reinitiated with this office.

Conservation Recommendations

For the past 11 years, Camp Lejeune has conducted a highly commendable sea turtle nest monitoring and conservation program. Nest success on Onslow Beach has been relatively high compared to other areas, as indicated by the base's summer sea turtle monitoring reports. This is a direct result of Camp Lejeune's efforts toward nest protection.

We are concerned that suspension of the nightly patrols and nest protection on the northern end of Onslow beach will result in loss of a large percentage of nests to predation and tidal inundation. Nest loss in unprotected habitat often ranges from 80-100 percent. In order to reduce this potential for nest loss, we have the following conservation recommendations:

1. Nightly patrols should be continued on Onslow Beach from the New River Inlet north to the Onslow Beach North Tower.
2. Nightly monitoring should be resumed along the portion of the beach which is designated as a secondary danger zone, since according to the assessment this area should not ordinarily contain unexploded ordnance and could be safely monitored by observing basic safety procedures.
3. Monitoring of the remaining portion of the beach (1400-1500 meters) designated as an impact area should be conducted daily, as early in the morning as safely possible. When it is necessary to relocate nests in this area, relocation should take place within six hours of egg-laying whenever possible; and eggs excavated during daytime should be shaded from the heat of the sun.

We hope this opinion will be useful to you in fulfilling your obligations under the Endangered Species Act. If you have any questions concerning this opinion, contact John Fridell or Nora Murdock at (FTS) 672-0321.

Sincerely yours,

V. Gary Henry

V. Gary Henry
Acting Field Supervisor





United States Department of the Interior

F-54

FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES FIELD OFFICE
100 OTIS STREET, ROOM 224
ASHEVILLE, NORTH CAROLINA 28801

March 23, 1987

Major General J. E. Cassity
Commanding General
U.S. Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

RE: 4-2-86-623

Dear General Cassity:

This letter responds to an informal consultation request received by telephone the week of February 17, 1987, regarding proposed management activities for the endangered red-cockaded woodpecker (Picoides borealis). I also took the opportunity while on the Base to briefly inspect the Tank/Mechanized Infantry Training Area (TMITA) as per the biological opinion of June 12, 1979.

Three specific areas were reviewed on the ground with regard to needed habitat management for the species. I will reference these areas by the red-cockaded woodpecker inventory colony number used by Base and North Carolina State University research personnel.

The first area looked at was colony site number 33 in timber compartment 26 east of Highway 17. This was a newly discovered colony that is in need of understory and midstory control work. The second area was colony site number 36 in timber compartment 47 just east of Highway 17. This site also needed some understory and midstory control work but also included a seed tree area in which the seed trees had not yet been removed and were being utilized by the red-cockaded woodpecker for foraging habitat. The last area evaluated was colony site number 22 in timber compartment 5 just west of Highway 172. This site was believed to be abandoned, but we discovered an active tree in this evaluation and observed one bird. We also discovered an inactive tree infested with southern pine beetles. This stand is in need of thinning, in general, which can provide much of the control of understory and midstory necessary in colony sites.

We discussed needed management and options to accomplish the necessary work. In general, the necessary management can be grouped into the following recommendation headings and are also addressed on page 50 of the recently revised recovery plan for the species:



1. Manage colony sites as stands - In the past, colonies on some lands have been considered as the cavity trees plus a 200-foot buffer, and these colony sites have been managed separately from the adjacent and surrounding stands. While this is a positive approach, it has some pitfalls. In colonies with scattered trees, some parts of the colony can be separated from other parts of the same colony. Also, colonies with few trees encompass such a small area that it is noneconomical, inefficient, and impractical in many cases to conduct needed management activities.

We recommend that the colony sites be stand size of 10 acres or more for management purposes and that they be prescribed for needed treatment during normal compartment prescription entry. Where possible, some of the needed treatments can then be handled by normal timber harvest contract. Noncommercial treatments can also be more efficient and economical because the acreage involved is sufficient to justify expenditures. Of course, treatments must be conducted outside of the nesting and fledging season of March through August. In delineating colony stands, all cavity trees and a 200-foot buffer should be included. The additional acreage should be the oldest and best habitat in terms of species composition and ease of management. In other words, include upland longleaf instead of mixed pine-hardwood or pocosin where possible. This recommendation is currently being implemented on Camp Lejeune, with the exception of colony site 22, and is not a major problem.

2. Control hardwood stocking - Hardwood stocking in colony stands should be kept below 20 feet²/acre BA, and all hardwood stems 1 inch and larger within 50 feet of cavity trees should be removed. Pine stems within 25 feet of cavity trees should be removed, and other pines within 50 feet that interfere with open travel lanes to the actual cavities should also be removed. Treatment options include hand treatment, mechanical treatment such as drum chopping, herbicide treatment, and prescribed fire. The treatment(s) needed, or most efficient and economical, will vary by stands and is strictly up to Base Natural Resource and Environmental Affairs Division (NREAD) personnel. Of course, chemical treatment must be with nonpersistent herbicides that are not toxic to vertebrates.

3. Maintain a 20- to 25-foot spacing between trees in sawtimber stands - This is a recommendation to minimize the probability of bark beetle infestation and spread. Where infestations occur, follow the provisions of the March 12, 1980, biological opinion on southern pine beetle control.

Application of these and other recommendations in specific cases reviewed are as follows:

Colony site 33 - Control understory and midstory by provisions in recommendation number 2. This will probably require hand, mechanical, or chemical treatment (or a combination of these), followed by periodic prescribed fire for maintenance.

Colony site 36 - Control understory and midstory by provisions in recommendation number 2. This does not appear to be quite as bad a situation as in colony 33 and will probably not require as much fund



expenditure and manpower. Also, the seed trees should be left for foraging habitat and not be removed, as there is sufficient information to indicate the usage of the area at present by the birds.

Colony site 22 - This should be treated as an active site, because we found an active tree and observed a woodpecker in the area. At least parts of the area need thinning using the provisions of recommendation number 3. This site is an excellent example where the provisions of recommendation number 1 would have been helpful in past activities. The colony site was separated from the surrounding stand and not treated. It would have been better to have designated a stand of 10 acres or more containing the colony site as a separate stand and thinned it along with the rest or other stands. Of course, we cannot manage by hindsight but must manage by foresight by treating the stand as we now recognize the need. The southern pine beetle infestation should be handled as provided in the March 12, 1980, biological opinion. This includes removing the inactive cavity tree if at least four cavity trees (active and inactive) still remain and the beetles have not emerged.

Updated Habitat Management Guidelines for the red-cockaded woodpecker on Camp Lejeune as per the revised recovery plan and the recommendations included therein were also reviewed.

After on-the-ground review of management proposals and needs of the red-cockaded woodpecker at Camp Lejeune through informal consultation, we concur that the proposed actions and management guidelines for managing red-cockaded woodpeckers on Camp Lejeune as detailed in this letter are conservation enhancement actions and are not likely to adversely affect the red-cockaded woodpecker or other listed species or critical habitat. Therefore, the obligations under Section 7(a)(2) of the Endangered Species Act of 1973, as amended, have been fulfilled with regard to these proposed actions.

However, these obligations must be reconsidered and consultation reinitiated if (1) incidental taking occurs as a result of the action, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the proposed action is subsequently modified in a manner that causes an effect to listed species or critical habitat not considered in this consultation, or (4) a new species is listed or critical habitat designated that may be affected by the proposed action.

Inspection of the TMITA revealed no significant problems. The last inspection was conducted December 13, 1983, and the change in the area in the last three years is very conspicuous. At the time of the consultation (1979), the area was rapidly deteriorating into a biological desert as a result of indiscriminate vegetation destruction. Most sites in the area now have a very good herbaceous and woody understory established. A review of photos taken at the time of the consultation and comparison to today's situation should readily reveal the change. A comparison of the TMITA to the immediate site at TLZ Hawk would also reveal the difference, as the entire TMITA was rapidly being changed to a condition present now at TLZ Hawk with just a few scattered trees and little or no additional understory vegetation. The Base is to be commended on their efforts to



protect the red-cockaded woodpecker and the vegetation on which they are dependent in the TMITA.

The understory and midstory control, thinning, etc., recommended in this letter for colonies outside the TMITA may, on the surface, seem to be in conflict with recommendations made and implemented in the TMITA. However, the situation is entirely different. In the TMITA we are dealing with continuous indiscriminate vegetation destruction that left little vegetation for the birds' use. In the general forest area we are dealing with periodic and very specific discriminate vegetation control. Once again, one only has to compare the site at TLZ Hawk to the general forest area to conceive the difference. Vegetation control is sometimes necessary, but the vegetation to be controlled is very specific to create favorable habitat conditions for the species.

We appreciate the cooperation extended by the Base NREAD personnel in this informal consultation and inspection trip. We have complete confidence in the ability of the Natural Resource personnel to manage the red-cockaded woodpecker properly. The stability of the population over some trying times with regard to training activities, southern pine beetle infestations, etc., is a tribute to their efforts. We are available at anytime the Base NREAD personnel want our input and advice, and we look forward to future cooperative relations between our agencies.

Sincerely,

V. Gary Henry

V. Gary Henry
Acting Field Supervisor



HABITAT MANAGEMENT GUIDELINES
FOR THE RED-COCKADED WOODPECKER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

The purpose of the following guidelines is to comply with the Endangered Species Act of 1973 (Pub. L. No. 93-205) for the perpetuation of red-cockaded woodpeckers. These guidelines are in accordance with the 1985 Revised Red-cockaded Woodpecker Recovery Plan prepared for this species by the U.S. Fish and Wildlife Service. The subject guidelines are considered as immediate requirements to maintain current populations of these woodpeckers. By following these guidelines, areas closely resembling the original pine forests of the coastal plain can be maintained. All species of flora and fauna native to fire-maintained pine forests should benefit from this program.

These guidelines will become an integral part of the Natural Resource Management Plan. All natural resource management activities will be adjusted to maximize the perpetuation of this species throughout the contiguous habitat. Frequent monitoring of all colony areas and contiguous habitat is an ongoing responsibility of natural resource management personnel on the installation. Any land use activities adversely impacting upon woodpecker habitat will be reported to the proper authority for corrective action.

GUIDELINES

1. Protection and management of the red-cockaded woodpecker will take precedence over other featured species throughout the range of this bird at Camp Lejeune.
2. Maintain at least 100 acres of contiguous pine forest, including the colony stand and support stands 40 years of age or older, for replacement cavity trees, feeding, or roosting areas. In the event 100 acres are not present, manage available acreage. The following guidelines will be adhered to in management.
 3. Locate, conspicuously mark, and map all cavity trees and active colonies and aggregates thereof, including single trees, starts, and relicts. Mark a 400-foot buffer zone around each nesting cavity for exclusion of primary land use during nesting season (March through July).
 4. Manage colony sites as stands rather than individual trees and do not isolate colony sites from adjacent forest cover and foraging habitat. Plan no timber rotations for colony stands. Rotations for support stands will be aimed at providing sufficient stands of old growth timber. Rotations will be 100 years for longleaf pines and 80 years for loblolly



pinus for optimum dispersal. Younger stands of pines will be sufficiently dispersed for future replacement of old growth stands. Rotation of these stands will be the same as previously mentioned for longleaf and loblolly pines.

5. Maintain the cavity trees and a basal area of 50 to 80 square feet per acre in colony stands. Remove trees which threaten to block the cavity entrances. Conduct thinnings for reduction of dense pine and hardwood reproduction exceeding 1 inch d.b.h. or 15-foot heights within the colony stands. Thin to minimum stocking level acceptable. Understory and midstory stocking will be maintained as recommended in the recovery plan. Leave all dead snags for use by other cavity nesting birds thereby reducing competition of active cavities used by woodpeckers. Schedule logging operations in colony stands from August through February.

6. Prescribe burn colony stands and contiguous habitat for providing open park-like stands required by the woodpecker. Remove vegetation and debris from the area immediately surrounding all cavity trees prior to prescribed burning. Schedule prescribed burning with two- to three-year intervals from December through February.

7. Site preparation within the contiguous habitat will be for natural regeneration of longleaf pine whenever possible.

8. New roads will not be constructed within any colony stands.

9. Maintain a spacing of 20 to 25 feet between trees in sawtimber colony stands to minimize the probability of bark beetle infestation or spread. Control of pine park beetles in red-cockaded woodpecker habitat will follow the provisions of the biological opinion issued March 12, 1980. Problems not covered sufficiently by this opinion will be handled through consultation with the Fish and Wildlife Service.

10. Cavity trees, colony areas, and contiguous habitat will be protected from all actions which will result in the destruction or adverse modification of such habitat.

11. All land use activities will cease within the 400-foot buffer of nesting cavities from March through July except for the following:

- a. Casual human activity such as nature study and photography.
- b. Infrequent field trips by students or public groups.
- c. Management activities associated with site protection, evaluation, or populations studies.



12. Provide a minimum of 125 acres of well-stocked (≥ 60 ft²/acre BA) pine and pine hardwood stands (≥ 50 percent BA in pine), 30 years of age and older, with more than 24 pines/acre ≥ 10 inches d.b.h. within 0.5 mile of all colonies. Forty percent, or 50 acres, of the 125 acres will be 60 years old or older. In areas of younger, smaller diameter, or sparsely stocked stands, equivalent foraging substrate containing 21,250 pine stems with a total BA of 8,490 ft² and 6,350 pine stems ≥ 10 inches d.b.h. will be provided.



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DEFINITION OF TERMS

1. Cavity - An excavation used by red-cockaded woodpeckers for roosting or nesting at some time during the life of the colony.
2. Cavity Tree - A tree containing one or more red-cockaded woodpecker cavities.
3. Nest Tree - A tree containing a nesting cavity.
4. Nest Cavity - A cavity used by a pair of red-cockaded woodpeckers as a place in which to raise their young, usually the roosting cavity of a male.
5. Start Hole - The beginning of a cavity--may never be finished--but if completed, excavation is usually over a period of several months.
6. Roost Cavity - A cavity used by a red-cockaded woodpecker only as a shelter, particularly at night and during inclement weather.
7. Old Cavity - An enlarged cavity with deteriorating glaze receiving little or no current use.
8. Clan - All the red-cockaded woodpeckers that inhabit a colony at a given point in time--generally a mated pair of red-cockaded woodpeckers, their offspring, and their associated helpers.
9. Helper - Any red-cockaded woodpecker in a clan other than the genetic parents of young raised by the clan during the most recent breeding season.
10. Colony - The area prescribed by an aggregation of start holes and roost, nest, and old cavities habitually used by a clan.
11. Range - The area surrounding a nest cavity required by a clan to fulfill their life cycle requirements.
12. Habitat - The place or site where plants or animals naturally or normally live and grow.
13. Contiguous Habitat - Continuous acres of pine forest, including the colony, support stands, breeding territory, seasonal foraging area, or other definable units.
14. Buffer Zone - A 400-foot area around nesting/cavity trees when land uses are restricted during nesting and brooding period.



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15. Marked Boundary - An established line marked along the periphery of contiguous red-cockaded woodpecker habitat.

16. Resin Well - A small hole, generally circular, excavated by the bird in the bark of a cavity tree or on a tree adjacent to a cavity tree from which resin exudes.

