WHEREAS - the uninhabited area of southeast Orange County in California, known as Laguna Hills, is a treasure chest of fossil bearing strata of several periods of past milleniums, and

WHEREAS - the Laguna Hills, from Newport Back Bay to San Clemente recently have produced rich discoveries of Marine Mammal, Shark, Bird, Fish, Mastodon, Horse, North American Camel, and other terrestrial animal fossils in excellent state of fossilization, and

WHEREAS - the Laguna Hills until recently have consisted mainly of large ranches, heavily fenced and guarded, with very restrictive trespass provisions, VIRTUALLY NO PREVIOUS OPPORTUNITY has been possible to explore the area, and

WHEREAS - Public institutions locally, such as the Los Angeles County Museum, University of California, etc., have extended themselves to the full extent of their budgets to exploit the exposure of such fossils under pressure of excavating and grading schedules of contract housing and road building in Laguna Hills, and

WHEREAS - Several hundred acres of this fossiliferous area are being built on each month and will continue to do so,

WHEREAS - Local paleontologists have stated that this is the richest Miocene strata in the Western half of the U.S.,

WHEREAS - Archeologically the Laguna Hills are of vital interest because of the Indian middens, hunting grounds, etc

WHEREAS - valuable skeletons are daily being ground up under the blades of earth moving machinery resultant of the explosive construction activity,

WHEREAS - the Laguna Hills should be historically exploited in the PUBLIC INTEREST

NOW, THEREFORE, BE IT RESOLVED that the following resolution be sent immediately to the President of the United States, the Secretary of the Interior, the Governor of California, United States Senators and Representatives from the State of California, Orange County Supervisors, Public Museums, Universities and Libraries in Southern California:

"THAT THE UNINHABITED AREA KNOWN AS LAGUNA HILLS IN SOUTHEAST ORANGE COUNTY OF CALIFORNIA BE SET ASIDE AS A NATIONAL MONUMENT, AVAILABLE TO PUBLIC MUSEUMS AND PUBLIC UNIVERSITIES FOR THE PURPOSE OF OBTAINING THE TREASURE OF NATURAL HISTORY STORED THEREIN.

THAT THE SECRETARY OF THE INTERIOR SEND AN INVESTIGATING TEAM AT THE EARLIEST POSSIBLE DATE."

Florentine Boerner, Exec. Sec.
11702 West Street, Garden Grove, California
Governor Edmond G. Brown  
State Capitol  
Sacramento, California  

January 26, 1965  

620 East Avenue,  
Fullerton, California  

Dear Governor Brown:

We need eminent domain action in the Laguna Hills area of Southeast Orange County to prevent destruction of major archeological and paleontological discoveries in a construction area. This is the richest Miocene strata west of the Appalachian mountains (according to Dr. Reed MacDonald, Curator of Vertebrate Paleontology, at the Los Angeles County Museum). Other age periods are richly represented in the Laguna Hills and should be developed in the public interest. However, immediate action to preserve the above Miocene strata should be taken for the strata produces beautiful skeletons, teeth, bird bone and fauna of a marine mammal paradise of 10 to 25 million years ago.

New housing by Ross Cortese (Leisure World) at El Toro uncovered the first of the major Miocene deposits in the area. More are being uncovered by Macco Construction next door in another major housing project (Capistrano Highlands). To the south, Laguna Miguel is closing in on the area.

Contractors permit the L.A. County Museum to come in and do such work as would not impede the construction schedule. This may be indeterminate and is not under circumstances that permit the proper taking of satisfactory or undamaged specimens. The best uncovered area has now been closed off to permit landscaping on schedule.

From the archeologist's and paleontologist's, as well as the layman's viewpoint, the uninhabited area of the Laguna Hills should be made into a State or a National Monument; specifically providing for our Public Museums and Public Universities to have control over the removal and safekeeping and such displays of such specimens as can be made possible. It would be a U.C. Irvine laboratory.

Orange County O.K.'D last week 22 square miles of the area to developers for housing. Laguna Hills runs from Newport Back Bay to San Clemente - El Toro to Laguna, generally.

I happened to discover a large Desmostylus multiple molar just before Thanksgiving and turned it, plus other Miocene material, over to the Los Angeles County Museum. Around the first of December, I began to realize the extent of the find and arranged for the L.A. Museum to come on the project (their limited budget held them to volunteer weekend help - we were lucky to get that). Two Christmas holiday weekends with the company anxious to cover up for landscaping.

The rich historical finds of the Laguna Hills should be developed in the interest of California and the nation.
The U.C. Irvine campus is in this area. Dr. Aldrich told me this evening that he would have someone down there to meet me tomorrow to explore another strata that has just been exposed - broken bones exposed over large area.

The Pliocene stratas of Newport Back Bay are producing richly. The Eocene and Miocene stratas of Dana Point are producing richly. However, the Miocene stratas apparently roll the full length of the area and will provide the greatest Marine Mammal collection of all time. Rancho Viejos to the south has skeletons (Miocene) laying around on top of the ground. Indian artifacts are richly abundant in the entire area.

These proposals have the enthusiastic support of Mr. Jack Maddock, President, Pacific Coast Archeological Society, Box 293, Orange, California; Dr. Bayard Brattstrom, Biology, Cal State, Fullerton; unanimous in Orange County Democratic Council. Before the week is out several organizations or their executive boards will have met to adopt the attached resolution or something similar.

Please do not wait for regular legislative action. These contractors are among the biggest in the country and will consume the entire area before summer arrives.

Please do take whatever executive action is within your power to set this area aside in the public interest; provide U.C. Irvine with emergency funds to fully investigate the area; provide the Los Angeles County Museum (or some capable Paleontological group) with funds to come in and work undisturbed during an established moratorium.

very sincerely yours,

W. Earl Calhoun

ENGL.
WBC/ac
United States Senator Thomas Kuchel  
Senate Office Building,  
Washington, D.C.

Dear Senator Kuchel:

You will be pleased to know that a remarkable new find of 10 to 25 million year old skeletons, fossilized in jewel condition, has been unearthed here in your native Orange County.

The Miocene strata, so rich and productive of even tiny articulated bird bones, are blanketed over a large part of the Laguna Hills from Newport Back Bay to San Clemente.

Contractors in the old Moulton Ranch area between El Toro and Laguna turned up the bones and shark teeth in the spring of 1964. However, around the first of December after the discovery of a rare Desmostylus molar excited new interest, the ever expanding area of this strata is only now being realized.

Much of the area is either in course of construction or zoned for immediate development, except a delay in the so called 'GREEN BELT' for the El Toro Marine Air Base air strip for landing.

Immediate action on the part of Congress to set this area aside as a National Monument would be in the public interest.

Your request to the Secretary of the Interior for one of his leading paleontologists to survey the area would assist the University of California - Irvine; California State College - Fullerton; and the Los Angeles County Museum - all of which are extending themselves to the full extent of their budgets. Yet they can not begin to keep up with the grading and construction schedules of the builders.

I enjoyed a long discussion of this project with your brother, Mr. Theo. Kuchel, this morning. He reminded me of your interest in sponsoring and pushing through, despite bitter opposition, the Wilderness bill. I know of the opposition. I also know of your record and support of good legislation when it is in the public interest. We discussed possible action on the part of Orange County Supervisors to provide one man in the field, at least, to protect specimens and coordinate the activities of the various agencies involved. It had been Dr. Langendorf's (Cal-State Fullerton) suggestion that I see Mr. Kuchel at the shop as soon as possible. This letter and others, as well as the proposed resolution to Congress will be forwarded to you through Mr. Kuchel.

May I hear of your action in this matter soon?

very sincerely yours,

W. Earl Calhoun

WEC/ec
The following resolution was adopted by Orange County Local Union #441 of the International Brotherhood of Electrical Workers at the regular meeting of February 2, 1965:

WHEREAS - the uninhabited area of southeast Orange County in California, known as Laguna Hills, is a treasure chest of fossil bearing stratas of several periods of past milleniums, and

WHEREAS - the Laguna Hills, from Newport Back Bay to San Clemente, recently have produced rich discoveries of Marine Mammal, Shark, Bird, Fish, Mastodon, Horse, North American Camel, and other terrestrial animal fossils in excellent state of fossilization, and

WHEREAS - the Laguna Hills until recently have consisted mainly of large ranches, heavily fenced and guarded, with very restrictive trespass provisions, VIRTUALLY NO PREVIOUS OPPORTUNITY has been possible to explore the area, and

WHEREAS - Public institutions locally, such as the Los Angeles County Museum, University of California, etc., have extended themselves to the full extent of their budgets to exploit the exposure of such fossils under pressure of excavating and grading schedules of contract housing and road building in Laguna Hills, and

WHEREAS - Several hundred acres of this fossiliferous area are being built on each month and will continue to do so, and

WHEREAS - Local paleontologists have stated that this is the richest Miocene strata in the Western half of the U.S., and

WHEREAS - Archeologically the Laguna Hills are of vital interest because of the Indian middens, hunting grounds, caves, etc., and

WHEREAS - valuable skeletons are daily being ground up under the blades of earth moving machinery resultant of the explosive construction activity, and

WHEREAS - the Laguna Hills should be historically exploited in the PUBLIC INTEREST

NOW, THEREFORE, BE IT RESOLVED that the following resolution be sent immediately to the President of the United States, the Secretary of the Interior, the Governor of California, United States Senators and Representatives from the State of California, Orange County Supervisors, Public Museums, Universities and Libraries in Southern California:

"THAT THE UNINHABITED AREA KNOWN AS LAGUNA HILLS IN SOUTHEAST ORANGE COUNTY OF CALIFORNIA BE SET ASIDE AS A NATIONAL MONUMENT, AVAILABLE TO PUBLIC MUSEUMS AND PUBLIC UNIVERSITIES FOR THE PURPOSE OF OBTAINING THE TREASURE OF NATURAL HISTORY STORED THEREIN.

THAT THE SECRETARY OF THE INTERIOR SEND AN INVESTIGATING TEAM AT THE Earliest Possible Date."

Donald R. Pohlman, Sec'y
Local Union 441, I.B.E.W.
Memorandum

To: Regional Director, Western Region  
From: Acting Assistant Director, Resource Studies  
Subject: Paleontological finds in Laguna Hills area

The enclosures, including our letters of March 3 to Senator Kuchel and March 5 to Recording Secretary Donald R. Pohlman of the International Brotherhood of Electrical Workers, Local No. 441, Santa Ana, California, concern recent paleontological finds in the Laguna Hills area and the proposal that it be made a National Monument.

Neither we nor Paleontologists Frank C. Whitmore and Thomas J. Dutro, Jr., of the Geological Survey and the United States National Museum have any information about these recent finds.

Please make appropriate and adequate investigation of this matter as soon as possible and give us a report so we may, in turn, make a satisfactory further reply to Senator Kuchel.

Drs. Whitmore and Dutro agree with us that consultations with the Geological Survey's staff at Menlo Park would prove helpful. We are particularly concerned about such matters as land ownership, probable size and significance of the paleontological deposits and other major factors which would determine whether Service involvement in a National Monument proposal, or in any other way, is practicable and justifiable in the circumstances.

(SGD) HOWARD R. STAGNER

Howard R. Stagner

Enclosures 2

cc:
Mr. Stagner
Mr. Rose

RHRose:mcm 3/5/65
MAY 3, 1965

L55-RN

Hon. George L. Murphy
United States Senate
Washington, D.C. 20510

Dear Senator Murphy:

We have your letter of April 22 requesting information in duplicate concerning reported fossil discoveries in the Laguna Hills and the resolution of Local No. 441 of the International Brotherhood of Electrical Workers of Santa Ana, California, that the area be established as a National Monument.

A preliminary study of the area was made in response to earlier inquiries we received along the same lines. The matter has also been discussed with informed scientists and the more important scientific literature has been consulted. Neither the study, the discussions and the review of literature nor the potential of the area seem to provide a sufficient basis for the establishment of a National Monument at Laguna Hills.

We understand that a grant from Orange County may be made to Fullerton State College for a thorough geological and paleontological survey of the area and that the application for the grant envisions completion of the survey and the submission of a scientific report by November of this year. The results of such a study will make it possible to evaluate the area's importance and assist in developing a practicable plan for its protection.

We hope the proposed survey materializes. If, and when, the survey is completed we will be glad to be of further assistance.

We appreciate the concern of the individuals and organizations who have written to you about Laguna Hills. Their interest in preserving the natural and scientific resources of the nation is commendable.

Sincerely yours,

(Sgd.) Howard R. Stagner

Acting Assistant Director

Enclosure
PRELIMINARY REPORT

on

LAGUNA HILLS FOSSIL DEPOSITS
FULLERTON COUNTY, CALIFORNIA

National Park Service
Western Regional Office
San Francisco, California

Prepared by
James E. Cole
April, 1965
SUMMARY

From discussions with informed scientists, one day spent in field examination, and a review of the literature, it does not appear that the fossil deposits in the Laguna Hills warrant National Monument status. Neither the actual discoveries nor the potential of the area, when compared with other deposits or strata in the United States, or even in adjacent areas, evidence at this time outstanding fossil discoveries. Investigations proposed this summer should furnish data for a reliable analysis of values.

No action on the proposal of a National Monument in the Laguna Hills is considered desirable until the area has been investigated by scientists.
INTRODUCTION

Name and Location of Area

Laguna Hills is a local name for an undefined portion of the eastern flank of the San Joaquin Hills. Origin of the name is unknown, but may have been given rather recently by subdividers. The hills are in the southern end of Orange County, California. Although not delineated on any official maps, the name appears to be applied to a series of low hills to the west of U. S. Highway 101 from the vicinity of Irvine, California, roughly to the point where the highway turns down Aliso Canyon.

The San Joaquin Hills constitute the southeastern margin of the Los Angeles basin which is an extensive feature of the Peninsular Range province in southern California. The present-day Los Angeles topographic basin is a coastal plain or lowland adjoining the sea. It is bounded by mountains to the north, east, and south and by the Palo Verde Hills and the Pacific Ocean to the west. Due to the discovery of oil and the subsequent explorations, the Los Angeles basin is significant geologically and paleontologically.

Background Material

By memorandum of March 5, 1965, Acting Assistant Director Howard R. Stagner requested the Western Regional Office to instigate
appropriate and adequate investigations of a proposal to establish the Laguna Hills as a National Monument. The proposal was in the form of a resolution submitted by the Orange County Democratic Council to the President of the United States, the Secretary of the Interior, the Governor of California, United States Senators and Representatives, and other public officials.

Study Procedures and Persons Consulted

Accompanied by Dr. Reed McDonald, paleontologist of the Los Angeles County Museum, the area was visited on March 29, 1965. Prior to the field examination, discussions concerning the significance of the Laguna Hills fossil deposits were held with the following:

Dr. Theodore Downs, Los Angeles County Museum; Dr. Bayard Brattstrom, California State College, Fullerton, California; Dr. E. Yale Dawson, Charles Darwin Foundation of the Galapagos Islands; Dr. Richard Tedford, Riverside State College; Oliver E. Bowen, California Division of Geology and Mines; Patsy J. Smith, U.S.G.S. Branch of Paleontology and Stratigraphy.
DESCRIPTION OF AREA

Major Features of Interest

The Laguna Hills National Monument proposal is based upon a supposedly, recent, and rich discovery of marine and continental fossil deposits. While evidences of fossils disclosed to date do not support this contention, it is not impossible that uncovered fossil deposits exist in the Laguna Hills. Highly fossiliferous marine sediments and nonmarine strata of Cenozoic age are widely distributed in the Los Angeles basin. Appreciation of the potential fossil deposits in the Laguna Hills requires consideration of the geological history and paleontological aspects of the basin of which the hills form the southern margin.

The Los Angeles basin is an area of low relief lying southerly of the Transverse Range (Santa Monica Mountains), southwesterly of a series of low hills (Repetto and Puente Hills) and the Santa Ana Mountains, northerly of the San Joaquin Hills of which the Laguna Hills are a part, and east of the Pacific Ocean and the Palo Verde Hills. Names of the highlands are mentioned since fossil deposits in some of them will be discussed.

Because of early discovery of petroleum in this area, the basin has been intensively studied, particularly foraminifera in the subsurface and, consequently, a great deal is known about the fossil strata. Subsurface formations in the basin also crop out on the surrounding hills where fossil deposits have been studied and identified.
Since the Cenozoic in the Los Angeles basin is notable for its greatly differing geological histories within short distances, the stratigraphy and paleontology will be reviewed in relation to geologic time. Starting at the beginning of the Cenozoic, the sequence is Paleocene, Eocene, Oligocene, Miocene, Pliocene, and Pleistocene. No attempt herein will be made to reconcile chronological nomenclature of the Cenozoic sections which are based on megafossils and on microfossils (Foraminifera). The Los Angeles basin is a broad downward filled with marine and continental deposits. Foraminifera are very abundant through the upper Cretaceous (which preceded the Eocene) and the Cenozoic strata "Forams" are the principal tool by which petroleum geologists in southern California correlate strata.

**Paleocene**

The Upper Cretaceous to lower Miocene (thus including the Paleocene and Eocene as well as lower Miocene) are mostly shallow marine or continental deposits, especially in the Santa Ana Mountains. In the Santa Ana Mountains about 1,400 feet of Paleocene sedimentary rocks designated the Silverado formation, are exposed.

The basal part of the Silverado formation is nonmarine conglomerates, while the upper part is arkosic sandstone, clay, and lignite that contain molluscan fauna in the upper section of a marine sandstone. In the eastern Santa Monica Mountains this formation consists of about 1,000 feet of shales with thin layers of sandstone.

The known fossils of Paleocene age are shallow-water marine mollusks, echinoids, and other invertebrates. No known Paleocene strata occur in
the San Joaquin Hills, but are found nearby at the north end of the Santa Ana Mountains.

**Eocene**

Eocene rocks, representing some 20,000,000 years of deposition, outcrop in the Santa Ana Mountains in the Los Angeles Basin and are shown to underlie the San Joaquin Hills. The gray sandstone beds of the Santiago formation contain a middle Eocene molluscan fauna. Subsurface rocks contain foraminifera which probably lived in fresh water lakes with strong estuary conditions.

**Oligocene**

The Oligocene, a span of about 10,000,000 years, appears to have been an epoch of emergence of the Peninsular Range on the eastern margin of the Los Angeles basin. Strata of this age in the basin are essentially restricted to the Santa Ana Mountains and the San Joaquin Hills. Variaged sandstone, siltstone and conglomerate constitute this nonmarine strata. They have yielded no megafossils in the Los Angeles basin, but produce richly in other parts of California.

A notable group of mammals of early Oligocene age was obtained from Titus Canyon in Death Valley which included rodents, dogs, brontotheres, rhinos, small browsing horses, tapirs, credons, and camelids. Late Oligocene is represented in the Sespe formation in the Los Posas Hills of Southern Ventura County by rabbits, squirrels, field mice, small and medium-sized dogs, rhinoceroses, small horses and sabre-tooth cats. The rich mid-Oligocene faunas of the Great Plains has not been discovered in California.
With regard to Oligocene fossils, the San Joaquin Hills have been unproductive. On the other hand, strata of this age from other parts of California and from the Great Plains have yielded in abundance a notable assemblage of mammals.

**Miocene**

The Miocene Age which extended over some 19,000,000 years is usually segregated into three divisions--lower, middle, and upper. Rocks of this age are broadly distributed in the Peninsular Range province and represent complex sequences of volcanism and widespread marine and terrestrial sedimentation. In the Los Angeles basin the section is dominately marine and includes the Vaqueros, Sespe, Topanga, San Onofre breccia, Monterey shale and the Modelo-Puente formations.

The lower Miocene marine Vaqueros and the nonmarine Sespe formation of the San Joaquin Hills and Santa Monica Mountains commonly are mapped as a single undifferentiated unit. The Vaqueros consists mainly of sandstone, conglomerate and sandy siltstone. Lower Miocene mollusks of shallow-water types are abundant throughout this formation.

The Sespe formation is composed of nonmarine interbedded earthy sandstone, conglomerate, and siltstone and have yielded microfossils in the Santa Ana Mountains. Elsewhere in California beds of the Sespe formation contain assemblages of mammals.

Middle Miocene sedimentary rocks include sandstone, conglomerate, breccia, diatomite, and organic shale in the Los Angeles basin. The coarse Klastic rocks of the Topango formation contain shallow-water marine fossils in most all the marginal hills except the San Joaquin Hills.
Unusual conditions of deposition south of Los Angeles are reflected by the San Onofre beccia which is present as small outcrops in the San Joaquin Hills. This unit is composed almost exclusively of angular slabs and boulders of schistose rocks derived from an offshore western source. It is mostly continental, but contains in some places oysters and pectens which indicates some marine deposition.

The organic to cherty middle Miocene Monterey shale crops out in the San Joaquin Hills and Palos Verde Hills. The foraminiferal fossils suggest shallow deposition. Large dikes of diabase and andesite in the San Joaquin hills radiate from the vicinity of Laguna Beach. The Monterey shale contains middle or late Miocene fish scales.

Upper Miocene is represented by the Modelo and Puente formations. These names appear to be applied to rocks of similar lithology in different areas and consequently are at least partly equivalent. Neither of these formations is reported from the San Joaquin Hills. The Modelo formation contains a late Miocene foraminiferal fauna.

While formations of Miocene age have yielded abundant foraminifera in the Los Angeles basin, they have produced very limited megafossils. The available literature records no large mammalian fossils from the San Joaquin Hills. However, recent discovery has been verbally reported of sea lion fossils from formations in these hills.

**Pliocene**

Pliocene age strata, which span some 8,000,000 years, outcrop sparingly in the San Joaquin Hills. Three formations in the Los Angeles
basin are mentioned in the literature. These are the Repetto in the Puente Hills, the Pico in the central part of the basin, and the San Mateo on the southeastern margin of the San Joaquin Hills. The Repetto contains a fragmentary molluscan fauna. The Pico is represented by foraminifera. Available literature does not disclose the fossil content of the San Mateo formation in the San Joaquin Hills. Some authorities group the Pico and San Mateo formations.

The Pliocene age does not appear to be productive of significant fossils in the Los Angeles basin. Just outside the basin, however, middle and late Pliocene strata have yielded mammalian fossils from stream and lake deposits.

**Pleistocene**

Hancock Park in the city of Los Angeles has yielded one of the most famous concentrations of Pleistocene bird and mammal life in the world. This is Rancho La Brea, the asphalt death trap from which thousands of complete animal skeletons have been obtained. This fauna is characterized by predominance of living species of small mammals and birds together with a few usually large extinct forms.

Pleistocene marine and near-shore deposits in the vicinity of Newport Bay at the north end of the San Joaquin Hills also have yielded land mammals (ground sloth, horse, tapir, small and large camel, bison, mammoth, and sabre-tooth cat) and birds (eagle, vulture, quail and meadow lark) along with forms that frequent the sea, including the extinct diving goose.

Recent discoveries of some Pleistocene bones of mammoth, camel, and sabre-tooth cat have been unearthed in the Laguna Hills. While locally
significant these fragmentary fossil evidences are unimportant when compared to the world famous asphalt deposits from the Los Angeles and Ventura basins.
EXISTING DEVELOPMENT AND USE

The dominant use of the so-called Laguna Hills and the San Joaquin Hills has been cattle raising. Recently land adjacent to the U. S. Highway 101 has been subdivided. Laguna Hills Rossmore Leisure World is the largest subdivision. It is a retirement development which envisions a community of 36 thousand inhabitants. The urban sprawl in Orange County, the fastest growing county in California, will eventually encompass all the suitable building sites. Likewise subdivisions have reached the summits of some of the San Joaquin Hills which flank the Pacific Ocean in the vicinity of Laguna Beach, California. The combination of climate, proximity to the sea, and accessibility to the Los Angeles urban area, not to mention Disneyland, spells the end of this rural area.
SIGNIFICANCE AND NEED FOR CONSERVATION

When compared with the great fossil deposits of the United States, the Laguna Hills discoveries are not significant. As developed in the discussion of fossils in the Cenozoic era, the potential for rich discoveries in these hills does not appear to be outstanding. It is recognized, however, that to date the Laguna Hills fossil beds have not been thoroughly investigated. Final determination should await additional explorations.

The outcome of the thrust for preservation of these fossil deposits may be a geological and paleontological survey supported by an Orange County grant to Fullerton State College. If this materializes, the significance of the fossiliferous strata can be judged on the basis of a scientific evaluation. The request for funds envisions completion of the survey this summer and submission of a report by November, 1965.

The need for conservation of any part of the area cannot be appraised until the significant fossil beds, if any, have been identified and mapped. Presently, it appears the deposits are scattered and occur in localized beds some of which have yielded numerous shark teeth. Thorough investigation as planned should determine whether or if the deposits warrant protection by the Federal Government, other governmental or private agencies.