

THE ELEPAIO

Journal of the
Hawaii Audubon Society



For the Better Protection
of Wildlife in Hawaii

VOLUME 35, NUMBER 3

SEPTEMBER 1974

Testimony at public hearing on Commercial Use of Conservation District Lands,
11 April 1974 by Mae E. Mull

Application for the commercial development of Mauna Kea:

1. Optical Telescope and Observatory Facilities atop Mauna Kea.
2. Construction Camp at Hale Pohaku on Mauna Kea.
3. Road from Hale Pohaku to Mauna Kea Summit.

The Hawaii Audubon Society makes the strongest possible recommendation that action on these three separate applications be deferred and that the Board /of Land and Natural Resources/ develop NOW an integrated Mauna Kea Master Plan for long-term land use. The Society protests the haphazard development that is proceeding—with many individual projects being considered separately and no planning for the permanent protection of Mauna Kea's unique natural resources.

Public hearings are not being held, to our knowledge, on two additional commercial projects on Mauna Kea that the Board is currently reviewing. These are: (a) Commercial Utilities—Power to Summit, Mauna Kea and (b) Mid-Elevation Facility, Mauna Kea Observatory.

Ugly power poles and overhead transmission lines will blight that beautiful scenic landscape for almost ten miles auka of the Saddle Road to the 13,000' elevation, according to present plans. It is wrong to treat that mountain wilderness so cheaply! Is Mauna Kea just a "junk" mountain to this Board? Does this Board think that Mauna Kea is valueless wasteland that can be "improved" with technological construction and monstrous observatories?

We say "No"! Big Island people love that mountain. It is a priceless treasure in our natural heritage. The Mauna Kea Master Plan should have as its primary goal the protection of the great beauty, majesty and unique ecosystems of that singular mountain—which belongs to the people of Hawaii. Those five projects should be evaluated and altered to fit this goal. Just because other countries won't permit desecration of their mountain tops, and just because the atmosphere around the Mt. Palomar Observatory in Los Angeles is so polluted with smog that they can't see the stars—these are not good reasons to turn our precious Mauna Kea into a playground for astronomers.

How many more observatories will this Board approve to permanently scar Mauna Kea? One EIS /Environmental Impact Statement/ says that Great Britain has plans for two more and that the U.S. also has plans for two more observatories. With the current plan for the Canada-France-Hawaii Telescope and the one already on the mountain, that makes a total of SIX! But that isn't all. The map (Exhibit 3) of the Observatory EIS locates sites on Mauna Kea for eight additional facilities: six future Telescopes (three 150" Telescopes, one 88" Telescope, one 60" Telescope, one 40" Telescope), a "24' Planetary Patrol (61cm)" and something indicated "Air Force (61cm)". This planned desecration of the mountain must be stopped now.

We urge the Board to draw up a Mauna Kea Master Plan that will protect the remnant mamane forest and its threatened birdlife, provide for steady hunting pressure on feral sheep, pigs and goats, and offer recreational use for the benefit and enrichment of Hawaii's people.

Letter to Dr. Richard E. Marland, Interim Director, Office of Environmental Quality Control from Mae E. Mull, 23 April 1974, RE: MAUNA KEA MASTER PLAN

The Hawaii Audubon Society asks for your support for a Mauna Kea Master Plan to be drawn up by the Department of Land and Natural Resources and the Office of Environmental Quality Control. Such a Plan would be based on total long-term land use of Mauna Kea, with the opportunity for County and public input. The lower boundaries of the Plan could be the Saddle Road, Keanakolu Jeep Road and/or Conservation District boundaries--to include easements and existing road access.

The primary goals of a Master Plan should be the permanent protection of Mauna Kea's natural beauty and rare native ecosystems and to provide for public recreational use. The Plan should specify controls on present and future technological projects, limiting development to that which is compatible with the primary goals. We are calling for balanced planning for public benefit and use of public lands in the Conservation District.

Present planning is concentrated on the Canada-France-Hawaii Telescope Observatory and astronomer-related facilities. Nowhere evident to us is there any public planning to protect Mauna Kea from over-development. Right now the OEQC and the DLNR are at various stages in considering five separate projects: (1) Construction of the Canada-France-Hawaii Observatory, (2) Access Road from Hale Pohaku to Summit, (3) Permanent Mid-Level Facility for astronomers, (4) Overhead Power Transmission Lines from the Saddle Road mauka almost to the Summit, and (5) Construction Camp at Hale Pohaku (part of Mauna Kea State Park and leased to the University of Hawaii for astronomer use).

These projects are uncoordinated and are not being reviewed in terms of their accumulative impact on Mauna Kea. This whole emphasis on astronomical observation, with no permanent provisions for public use or conservation of Mauna Kea's unique natural resources, dramatically illustrates the overwhelming need for a Master Plan. In a Master Plan, limited technological development should be coordinated with protection and enhancement of the superb scenic landscape and rare native ecosystems, State Parks, hunting of feral mammals and other recreational use. There should be just one Master Plan--to cover all land use on the mountain. Public use and protection of Mauna Kea would continue to suffer if there is one plan for technological development and a separate plan for resource conservation.

The five current projects are being considered on a piece-meal basis. Public hearings are being held on some and not on others. Environmental Impact Statements (EIS) have been issued on some projects, but apparently not on all. Several concerned Big Island groups and individuals could not get EIS copies on the five projects from OEQC. After repeated efforts, the Society could get only one EIS on one project from your office. The quality, completeness and honesty in the appraisal of environmental impact is uneven or blatantly deficient in the EISs that we have been able to look at.

One unfortunate example is the inadequate, deceptive and evasive EIS on Power to the Summit. It first attempts to gloss over and hide the fact that it really proposes to install ten miles of OVERHEAD electrical power lines and poles from the Saddle Road mauka to the 12,950' elevation (within a mile of the summit) and three miles of OVERHEAD telephone lines from Humuula Sheep Station to the proposed Mid-Level Astronomers' Facility at 8,000' elevation. This mutilation of the mountain wilderness is proposed for public lands in the Conservation District! This EIS fails to present unbiased information needed by the public and decision-makers on the impact on the natural environment of these installations. The impact of the project on threatened native forest ecosystems, on endangered Hawaiian birds, and on the aesthetic values and scenic grandeur of Mauna Kea is not discussed at all. Obviously it does not meet the OEQC's minimum requirements for EIS preparation.

We protest the EIS treatment of Mauna Kea as worthless land useful only for technological development. Surely overhead power transmission cannot be justified because it is faster and cheaper. The obvious environmental demand for an underground transmission system cannot be dismissed by a single trite assertion of: "Due to lack of funds and time..." (p. 2). The transparent lack of objectivity and distorted presentation in the EIS is further demonstrated by the complete omission of an underground transmission system as an alternative.

We strongly challenge the manifest bias favoring the project, the gross misrepresentation of Mauna Kea wildlife and forest zones, the avoidance of any meaningful treatment of

environmental impact, and the failure to support its assertions on costs and economic benefits. This EIS is totally unacceptable and must be rejected.

Profit-making utilities continue to make irresponsible demands on public lands and demonstrate disregard of the environmental consequences of their projects, especially since their lobbyists were successful in removing the public hearing requirement for utilities on commercial use of Conservation District land. The burden of controlling the depredations of utilities on State lands rests heavily on OEQC and the Board of Land and Natural Resources.

Big Island residents, conservationists, hunters, public planners and most of Hawaii's people have special regard and respect for Mauna Kea. Clearly and urgently, a Master Plan is needed to prevent massive degradation of our publicly-owned natural treasure and scenic resource. Must every mountain crest on these beautiful Hawaiian Islands be blighted by the heavy hand of man? To destroy the unique natural values of the mountain for the sake of astronomical observation of outer space is not "progress" by any measure.

Public planners must openly examine the following issues before deciding on more technological development of Mauna Kea: (1) Consider the permanent pollution of discarded technological hardware on mountain tops elsewhere in the world when astronomers leave because of atmospheric pollution or funding problems. (2) Look at the shameful clutter of Science City on Haleakala. What are the costs to the beauty and natural features of that mountain crest? How well-used are all those facilities? What benefits accrue to Maui residents and the State from that despoliation? (3) Weigh the environmental and economic costs of six (or 7? or 8?) more telescopes on Mauna Kea. Hear with caution the single-purpose blandishments of astronomers who think we should be grateful they "chose" Mauna Kea for desecration. (4) Ask for a cost-benefit analysis for the State and County of more observatories and facilities. Read the Tri-Partitite Agreement draft (Canada-France-Hawaii Telescope Corporation) and note what the University of Hawaii (through federal, State and County agencies) provides in relation to what it gets. Note the non-payment of any taxes by the Corporation. Realize that all the local economy will get is what twenty or so transient Observatory personnel purchase in local stores. (5) Consider the hostility of the French (Post-WW II) toward the United States and the instability of the French economy in relation to paying their share (42.5%) of the C-F-H Observatory and facilities maintenance costs in long-term.

The Hawaii Audubon Society calls upon State officials, with County and public participation, to draw up a long-term integrated Master Plan for Mauna Kea land use with these conservation goals:

(1) Preserve the unique natural assets and beauty of Mauna Kea. Protect its natural outline and scenic grandeur from technological exploitation. Permit only land use that is compatible with its status as a National Natural Landmark. In announcing the placement of Mauna Kea in the National Registry of Natural Landmarks, the Department of the Interior said on December 28, 1972: "Few sites possess better credentials to justify their national significance than does Mauna Kea...Mauna Kea, rising to an elevation of 13,784 feet above sea level, is the highest insular volcano in the world. Lake Waiau is located below the summit at an elevation of 13,020 feet above sea level making it the highest lake in the United States. A remarkable cluster of cinder and spatter cones fans outward and downslope from the summit. During the Pleistocene Epoch an ice cap covered Mauna Kea's summit above the 11,000-foot level. Evidences of glaciation abound on the summit slopes in the form of glacial striae, boulders, polish and grooves...And, possibly transcending all of these qualifications, is the fact that Mauna Kea is the most majestic expression of shield volcanism in the Hawaiian Archipelago, if not in the world."

The announcement notes that "the boundary of the 83,900-acre landmark site is the same as the boundary of the Mauna Kea Forest Reserve," and further explains that: "Landmark areas must be essentially unspoiled examples of nature which are maintained in a relatively undisturbed state. The purpose of landmark designation is to encourage owners to preserve the nationally significant values which have been found at a particular site."

(2) Speed the process of designating Lake Waiau as an official Natural Area for inclusion in the Hawaii Natural Area Reserves System. Take measures to prevent pollution of the lake's waters and shoreline.

(3) Protect and restore the remnant endemic ecosystems of Mauna Kea. These ecosystems, unique to Hawaii, include the mamane-naio forest, the aweoweo scrub forest, the high

altitude scrub, and the alpine stone desert. Determine the Hawaiian plant and animal species that are component parts of these ecosystems and the effects of introduced plants and animals on endemic populations.

(4) Institute programs to conserve the habitat of endemic Hawaiian birds. Ten species of birds that occurred ONLY on the Big Island are almost certainly extinct. Of the remaining Big Island bird fauna that occur on Mauna Kea, 14 species have suffered gross reduction and degradation of habitat. The populations of seven of these species with Mauna Kea habitat are so depleted that they are listed as endangered species: Dark-rumped Petrel, Hawaiian Hawk, Nene, Hawaii 'Akepa, 'Akiapola'au, 'O'u, and Palila. These unique birds, distinctive members of Hawaii's special natural heritage, will not survive in the wild unless serious efforts are made to protect and enhance their habitat. One endangered member of the remarkable Hawaiian Honeycreeper family, the Palila, occurs only in Mauna Kea's mamane-naio forest, and its survival depends wholly on maintenance of that ecosystem.

(5) Apply the provisions of the National Endangered Species Act of 1973 and the Hawaii Indigenous and Endangered Species Act of 1972 to conservation of habitat in land use planning on Mauna Kea. Recommend designation of the best part of the mamane-naio forest as an Endangered Species Preserve.

(6) Fulfill the requirements of the National Environmental Policy Act in spirit, substance and procedure for any Mauna Kea projects involving federal funds directly or indirectly, including compliance with the Hawaii County General Plan.

(7) Take steps to stop predation at the ancient Hawaiian Stone Quarry by rock and artifact collectors. This National Historical Landmark at the 12,400-foot elevation is designated as the Keanakakoi Adz Quarry on the National Register of Historic Places.

(8) Assign Mauna Kea to the most restricted zone, the Protective Subzone, in the new Regulation 4 on land use in the Conservation District.

(9) Plan for present and future State Park needs on Mauna Kea for Hawaii's residents. Provide for permanent status of the Hale Pohaku section of the Mauna Kea State Park. Local residents' use of Hale Pohaku must not be taken away and turned over to the exclusive use of the Institute of Astronomy for years to come. The park, with lodging facilities on a 200+ acre-site, is under the jurisdiction of the Division of State Parks and is offered for public recreational use in current State brochures. It is a valuable park for residents for enjoyment of high-elevation outdoor recreation at all seasons--hiking, hunting, snow sports, nature study, photography and appreciation of the mountain wilderness.

(10) Provide for steady hunting pressure on feral sheep, goats and pigs to reduce populations to the carrying capacity of the mountain. Devise a plan for exclusion of introduced mammals from a specified range, by fencing and intensive hunting, that is essential habitat of endangered bird species in order to permit restoration of the mamane-naio forest.

(11) Find a workable means of stopping off-road use and riding through cinder cones by motorcycles and jeeps.

(12) Put effective limits on technological development of Mauna Kea. Give highest priority to sound conservation of the unique natural values of the mountain for the benefit of Hawaii's people today and in the year 2000.

Your efforts to draw up an integrated Mauna Kea Master Plan would be a significant contribution toward sustaining the quality of Hawaii's environment. The Hawaii Audubon Society would greatly appreciate having your reply to the issues raised in this letter.

Excerpts from letter to Acting Governor Ariyoshi from Mae E. Mull, 1 May 1974: ...The Hawaii Audubon Society asks for your support for an integrated, long-term Mauna Kea Master Plan to include all land use in the Conservation District.

Protection of the natural values of that prized mountain and public recreational use are being overlooked or denied in the current concentration on new observatories and accessory facilities for astronomers. The single-purpose goals of astronomers must be balanced with multiple-purpose needs and multiple use for the benefit of Hawaii's residents in one cohesive Plan.

There is an urgent need for a Mauna Kea Master Plan now--before more observatories and related construction proceeds further. ...We would greatly appreciate knowing your views and action on this issue.

Acting Governor Ariyoshi's reply: ...Regarding the need for an integrated, long-term

Mauna Kea Master Plan, I wholeheartedly support the development of such a plan before any further commitment by the State to astronomy facilities beyond what is presently committed. You are correct in stating that the protection of natural values as well as recreational and other values must be balanced against the scientific and economic values of Mauna Kea.

I am sending a copy of this letter to the key agencies who are presently involved in various developments on Mauna Kea and to the University of Hawaii which is participating in development of a master plan. You may be assured that I fully support the University's effort to master plan and effectively manage its Science Reserve as well as to coordinate its activities with those of other interested agencies. Mahalo for taking the time to write to me about this most important subject. ...

Following topics were discussed at the 20 minutes meeting between Rep. Patsy P. Mink and Mae E. Hull on 4 May 1974 to discuss Hawaii Conservation issues:

(1) Observatories and Related Astronomer Facilities on Mauna Kea. Urgent need for a Master Plan to protect the natural values of Mauna Kea and to control technological development. ...

What is the involvement of federal funds, direct or indirect, in the current Canada-France-Hawaii Telescope Corporation Observatory? Do the EIS requirements of NEPA apply to this project? Does the Tripartite Agreement require US State Department or US Senate approval, since the agreement is between three public agencies of the three countries?

What is the status of negotiations with Great Britain for its 1 or 2 observatories on Mauna Kea?

Must an EIS be approved by the President's Council on Environmental Quality before funds are appropriated for NASA's infrared telescope facility on Mauna Kea?

Is there any way a request can be made at the federal level to the State for a Mauna Kea Master Plan to protect the mountain and control development?

Can the Department of the Interior urge State planning to preserve the National Natural Landmark status of Mauna Kea?

(2) Involvement of Institute of Pacific Islands Forestry, US Forest Service, in State Forestry Programs. All State research is conducted by the federal Institute. In the President's budget for fiscal 1974 are \$850,000 in funds for US Forest Service use in Hawaii. There are eleven federal foresters stationed in Hawaii. We believe these funds and personnel exert tremendous pressure on the State Division of Forestry for the bulldozing of native forests for conversion to commercial tree plantations of introduced timber species of unproven economic worth to Hawaii. ...

How can the US Forest Service be persuaded that Hawaii's remnant endemic forests must be protected from further exploitation? Federal programs that recognize and respect Hawaii's unique and threatened forest ecosystems are most welcome. We strongly support limited-scale commercial silviculture in native forest products and a sustained yield in native woods such as koa, 'ohi'a and sandalwood. In a small-scale operation based on selective cutting, planting and regeneration of native forest products, the interacting components of our unique ecosystems would be preserved. Purposeful, wholesale destruction of Hawaii's forests must stop.

(3) Application of the National Endangered Species Act of 1973 to protection and enhancement of habitat for Hawaii's 28 endangered bird species. How can we help to encourage federal programs in Hawaii to comply with the spirit and substance of this Act?

(4) What is the status of the sewage treatment plant and disposal wells proposed at Kanaha Pond, Maui?

Representative Mink was not informed on the first two issues.

Letter to Rep. Patsy T. Mink from Asst. Adm. for Legislative Affairs Gerald D. Griffin, National Aeronautics and Space Administration, 18 June 1974: ...This responds further to your letter of May 28, 1974, requesting information on new telescopes being planned for location at Mauna Kea, Hawaii, and the status of their environmental impact statements.

We are not aware of any telescopes being planned for Mauna Kea other than the 3.6-meter (142 inch) Canada-French-Hawaii Telescope referred to in S.2764 and H.R. 11796, and the proposed 3-meter NASA Infrared Telescope. We have been informed that other groups have shown interest in the Mauna Kea site, but no specific plans have been made.

The status of the assessment of the environmental impact of these telescopes is as follows: A draft environmental impact statement was circulated for comment in December 1973 for the Canada-French-Hawaii Telescope in accordance with the Government Executive Order of August 23, 1971, and the State Office of Environmental Quality Control Manual for the Preparation and Processing of Environmental Impact Statements.

We understand from Dr. Jefferies, Director of the Institute for Astronomy at the University of Hawaii, that the final statement on this project has been accepted by the appropriate State Office.

NASA, in compliance with Section 102(2)C of the National Environmental Policy Act of 1969, had a preliminary assessment made in January 1974 of the possible environmental impact of the proposed NASA infrared telescope prior to the selection of Mauna Kea as the optimum site which in summary states: "Four of the five sites under evaluation to locate the infrared telescope for the best infrared 'seeing' capability are all well developed mountain top astronomical observatories with existing roads and supporting utilities; therefore, no significant degradation of the local environment will result from the additional telescope facility. The fifth site would require the construction of an access road and supporting facilities and utilities which would cause only minor and temporary impact on the environment during the road construction phase."

Now with the selection of the Mauna Kea site, upon final Congressional approval we expect Dr. Jefferies to proceed with the development of the detailed environmental assessment as required by the State of Hawaii House Bill 2067 passed on June 4, 1974.

Dr. Jefferies further advises us that a Master Plan for the entire Mauna Kea Science Reserve is under preparation by the University of Hawaii which will be submitted to the State by the end of the year. ...

HAWAII TRIBUNE-HEROLD, 26 June 1974: Groundbreaking for Mauna Kea Project Set Despite Protests. Recent opposition to further development of astronomical facilities on Mauna Kea has apparently had little impact on those planning a giant, \$20 million Canada-France-Hawaii Telescope (CFHT) on the mountain. Groundbreaking for the project will be held at noon Tuesday. ...The CFHT project is the first of many such facilities planned for the mountain. A Massachusetts Institute of Technology (MIT) telescope is being planned, and both the United Kingdom and Austria have indicated that they would like to build telescopes there. ...On May 30, the first section of a road leading up the mountain was dedicated.... Canada and France are paying for most of the \$20 million going into the project. France will provide the telescope and Canada will furnish the facility to house it. The two countries will share 85 per cent of the telescope observing time, and the University of Hawaii's Institute for Astronomy will control the telescope 15 per cent of the time. The University of Hawaii already has three telescopes on the mountain. ...Construction on a camp for construction workers will begin soon. The camp will be located just below the summit. ...Construction on the CFHT project will be completed sometime in 1975.

HONOLULU STAR-BULLETIN, 20 July 1974, page A-12: A Precious State Resource by Harry Whitten

Mauna Kea, besides being the highest mountain in the State, supports the highest lake in the United States, shows evidence of glaciation, and is a place for skiing, stargazing, hiking and hunting. Such diverse interests are bound to cause conflict and this year broad sentiment developed for a Mauna Kea Master Plan. Work has now started on this plan, according to Richard E. Marland, director of the Office of Environmental Quality Control.

Acting Governor George R. Ariyoshi has affirmed the importance of the master plan and has told the County of Hawaii, which passed a resolution /No. 233, adapted by County Council on 19 June 1974/ asking for it, that he has a personal interest in seeing that the planning is done well.

The Institute for Astronomy at the University of Hawaii is developing its segment of the plan and after University approval, the Department of Land and Natural Resources will start work on incorporating the Institute's plan in a comprehensive plan.

Public hearings will be held and ideas will be sought from the County of Hawaii and many public and private agencies as well as individuals.

Marland said the first phase will involve possibly all of the mountain from the

Saddle Road to the summit. ...The campaign for the master plan was sparked by the Hawaii Audubon Society through its Big Island representative, Mae E. Mull. ...The master plan concept has since been endorsed by the Hamakua District Development Council, the Animal Species Advisory Commission, and the Hawaii Island Fish and Game Association.

The Association, which represents hunters, has often been in disagreement with the Hawaii Audubon Society, but the letter to Marland, written by Earl Pacheco, association president, presented some of the same arguments and recommendations as the Audubon Society. ...The association recommends "programs for present and future hunting of sheep, goats, pigs and game birds." The Audubon Society recommends "steady hunting pressure on feral sheep, goats and pigs to reduce populations to the carrying capacity of the mountain."

Both organizations recommended measures to conserve the habitat of endemic Hawaiian birds, protecting and restoring the remnant endemic ecosystem of Mauna Kea and stopping pilferage by rock and artifact collectors at the Keanakakoi Adz Quarry, which is on the National Register of Historic Places. They also urged designation of Lake Waiau as an official natural area for inclusion in the Hawaii Natural Area Reserves System and favored measures to stop off-road vehicles, such as motorcycles and jeeps, from defacing the mountain. ...Only preliminary work has been done to establish Lake Waiau as a natural area and that a public hearing will be held later.

Lake Waiau at an elevation of 13,020 feet, lies in a breached cinder cone deepened by glaciation. John A. Maciolek...is a limnologist, a scientist who studies conditions in fresh water, such as lakes and ponds...described the lake in an article written for a German limnological publication, telling about its unique qualities, how it is representative of Hawaii's prehistoric ecosystems, and of the primitive animal groups, such as small crustaceans and fly midges, that inhabit it...says a thin winter ice cover is common on the lake and marginal ice may occur daily even during the summer. Its inflow comes mostly from snow melt.

There has been much speculation as to why the lake doesn't dry up. One theory is that water seepage is prevented by an ice seal on the bottom, operating the way perma-frost does in Arctic regions. Alfred H. Woodcock, University researcher, has a different theory--that sediments, as deep as 23 feet, form the seal. He found no data suggesting an ice seal.

...L.W. Bryan, former Big Island forester, planted trees along Lake Waiau in the 1930s, but they did not survive. A plant that survives on Mauna Kea only in steep gulch banks, inaccessible to mouflon or feral sheep, is the silversword, of the same species as the Haleakala silversword. Hilo residents who visited Mauna Kea in the 1930s remember seeing thousands of silverswords in flat areas near Wailuku Gulch. They are gone now--destroyed by wild animals.

Mauna Kea is indeed a precious State resource that needs protection.

HONOLULU STAR-BULLETIN, 13 August 1974, page D-2: Mauna Kea Development Halt Asked by Dave Shapiro, Big Island Bureau Chief

Hilo--Plans for more astronomical observatory development near Mauna Kea's summit drew strong public resistance last night at an informational meeting conducted by the University of Hawaii's Institute for Astronomy.

Representatives of conservation, recreation and Hawaiian groups complained that existing observatories and those planned for the future present a major threat to Mauna Kea's natural environment. Several spokesmen urged that the State declare a moratorium on all further construction until a master plan for the mountain is finished.

...The meeting was called by John Jeffries, director of the Institute for Astronomy, to discuss an overview of observatory development released recently by the University in connection with the master planning effort.

The University, which has a 65-year lease on 2.5 acres of State land at Mauna Kea's summit, is currently operating an 88-inch telescope and two 24-inch instruments.

The France-Canada-Hawaii telescope is now under construction and is expected to be completed in 1977. Two infrared telescopes are also in the initial planning stages--a 120-inch telescope sponsored by the National Aeronautics and Space Administration and a 155-inch instrument proposed by a British group. New dormitories, roads and power lines are also being planned to provide support for the telescope developments.

...Jeffries said a master plan for Mauna Kea is needed badly because of the rapidly growing interest in developing the mountain for science. ..."There's plenty of room for

everyone up here as far as we're concerned." he said. ...Most spokesmen at the meeting expressed strong resentment and hostility toward the observatory developments.

Mae Mull, representing the Hawaii Audubon Society, accused the University of "degrading this beautiful mountain with these technological developments." ... "A master plan should be based on protecting the natural environment that exists on Mauna Kea and nowhere else in the world." she said. "Then we can see what kinds of astronomical uses are compatible." She said severe environmental problems, such as the destruction of Mauna Kea's Mamane-Naio forest, are getting "shoved aside" because of the observatory projects.

THE WINDWARD SUN PRESS, 17-23 April 1974, pp 1A and A4: New U.S. Law May Be Invoked by Peter Wolf, Managing Editor

Kawainui Swamp--The flapping of guns and flapping of wings brought still another controversy over Kawainui Swamp. The previous battles have centered over Kawainui as either a shopping center or a regional park. But this "either-or" hypothesis may change. The 93rd Congress of the United States may be involved in the swamp issue also, according to one Senator and several other city and state officials.

December 28, 1973 was the date that Public Law 93-205 went into effect. That Public Law is better known as "The Endangered Species Act of 1973." Among other things, this act provides the means and the money for federal aid to wildlife sanctuary programs in the states. By definition the purpose of the Act is: "...to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered and threatened species and to take such steps as may be appropriate to achieve (these) purposes..."

...The first hint at use of this federal law was given by Senator Percy Mirikitani, R-Sixth District (Waikiki-Manoa). In a surprise move several weeks ago he urged a state takeover of Kawainui Swamp from the city. Last week Mirikitani said that he knew of the Endangered Species Act and the fact that federal money might be made available to Hawaii, if the state would set up a conservation program for the swamp's wild birds.

In political power plays and dealings, Mirikitani said he bowed to the six Windward Oahu legislators, "after guiding the way to a state plan of action." Mirikitani feels that the Windward legislators dropped the political football, by simply settling for passage of resolutions urging the city to proceed with its plans, "without delay." Mirikitani said that the state would be eligible, but he was not sure that the city government would be.

...Rom Duran, deputy director of Parks and Recreation, said he would surely be looking into the possibilities of federal assistance to the city's regional park plan under the new federal law. Part of the city's proposed park calls for a wildlife sanctuary.

The third possibility and one that some people have already mentioned is a citizen suit. It is possible for any citizen or community group to urge the federal government to do what is necessary to protect endangered wildlife of a state, according to portions of the Act.

...The swamp question is reaching to all levels of government. The city battles Castle Estate; the state pushes the city to get going, and now the people can look to the federal government to decide on the fate of the birds in the swamp.

Letter from Dr. F.R. Fosberg, Curator, Dept. of Botany, Smithsonian Institution, Washington, D.C., 17 July 1974: ...In the June ELEPAIO /Vol. 34, No. 12, p. 145/ I note the item on the threat to the Kawainui Marsh and plea for work to save it for a park and bird sanctuary. I concur 100%.

One important factor in this situation has not, I think, been mentioned or emphasized. Kawainui is about the only remaining lowland marsh on Oahu and one of the very few in the State of Hawaii where organic sediments still lie in the way they were originally deposited. Cores from such sediments, if properly taken and studied, may provide a pollen record that would give a clue to the Pleistocene and Early Recent vegetational history of Hawaii. This has been amply demonstrated by Selling's studies of cores from the mountain bogs in the State, but so far, to the best of my knowledge, no one has investigated any lowland Hawaiian marsh or bog.

This is a time-consuming and expensive type of study to make. Neither the University of Hawaii nor the Bishop Museum have a palynologist (pollen specialist) at present. Nor

has any mainland palynologist undertaken such a study. However, in all likelihood, a palynologist will come to Hawaii, either as a member of one of the institutional departments or as a visiting scientist. What a pity it would be if the best site for investigation into the history and development of the Hawaiian environment had been converted into a shopping center! ...

Request from Lani-Kailua Outdoor Circle ad hoc Committee for Kawainui Regional Park,
30 May 1974

If you would like to see the acquisition of the additional 260 acres of land necessary to make Kawainui Regional Park become a reality, within its logical and natural boundaries, and similar to the City Recreation Department's 1967 plan, there are several things you can do: (1) Write a card or letter to: Robert Way, Planning Director, 629 Pohukaina, Honolulu, Hawaii 96813, telling him you want such a Park. It doesn't have to be a fancy statement--write it as you feel it, signing your name and address. (2) Attend the public hearings: watch the papers for announcements and try to be there. Even if you don't say anything, the fact that you are there says a lot. (3) If you want to testify and aren't sure how to do it, the ad hoc committee has people willing to help you. They will help you to write your statement, saying what you want to say, and give you other information you may need. Call any of the following: Donna Goldcamp 254-1854, Marion Globber 261-1172, Joanne McGee 254-3268, Cathy Lyman 261-4332, Jack Hamilton 262-9551, Herb Robisch 261-9188, Sandy Braun 262-6498, Rob Borrel 261-2541, Doug Brittain 261-5103, Hope Gray 262-6026. (4) The Slide Show, both beautiful and informative is available to any club or organization wishing to present it. We are eager to have as many people as possible see it before the hearings. Please call Billie Moore, 261-5733, and she will schedule it for you. Everyone should know what is at stake in Kawainui. (5) If you have time, no matter how limited, to volunteer toward the effort to obtain Kawainui Regional Park, there are many things to do: Additional petitions to be distributed, Honolulu-side and Leeward; counting and sorting signatures. We also need people to do some telephoning. If you can help, please call Cathy Lyman, 261-4332.

Field Notes from Erika Wilson: Oahu Creeper on the Poamoho Trail

Over the weekend of June 29th and 30th, 1974, Patricia Bloedon, friends, and I slid up and down the Poamoho Trail. It rained off and on throughout Saturday as we sloshed up to the summit. We saw Japanese White-eyes and 'Apapane as well as hearing Japanese Bush Warblers all along the path. At the summit the weather cleared; we watched a White-tailed Tropicbird sail along the pali faces below us. Later in the afternoon I saw several more 'Apapane feeding on 'ohi'a blossoms, more Japanese White-eyes flitting about, and finally, after much patience, the small but vocal Japanese Bush Warbler.

Our group stayed overnight in the Poamoho Cabin, which was delightfully dry after the long wet hike. The weather was clear as we walked down the next day; wonderful views of the Koolau greeted us at every bend in the trail. About 200 feet below the summit I saw a male Cardinal. Much lower, about $\frac{1}{2}$ a mile from the trailhead, I spotted 'Apapane in several large koa trees. Patricia and I stopped, dug out our binoculars, and became very excited as we realized that one of the Drepanids was a rare Oahu Creeper! It was feeding along large interior branches of koa, probing its straight bill into bark crevices. The Creeper was a female with double white wing bars; its coloring was subdued greens above and pale buff to white below. The individual was noticeably smaller than the 'Apapane around it, and its tail was shorter in relation to its body length than is the case with the 'Apapane. We watched the birds intently until the group moved on to other trees. After that experience I fear we hardly gave the numerous Ricebirds a glance as they flew up from grasses along the way.

The last sighting of Oahu Creepers reported in the ELEPAIO (34:43) was in June of 1973 on a Hawaii Audubon Society field trip on a trail above St. Louis Heights. A pair was seen along the same stretch of the Poamoho Trail by Gagne and Jacobi in 1973 (pers. comm.) where we had the pleasure of seeing this species.

Ulupau Head and Kaluapuhi Pond

Twelve birders celebrated July 4th, 1974, by visiting the birds at the Kaneohe Marine Air Corps Base. Sgt. Johnson very kindly escorted us to the Red-footed Booby colony on

Ulupau Head; it is certainly wonderful that the Marines are concerned enough to protect this unique colony. During our February visit there were only a few boobies on eggs; now there are many nestlings in various stages of growth. The boobies stoically obliged those of us who wanted photographs of adults and young on the nest, but they did bob and bow when we got too close, eventually raising their wings and lunging with their pointed beaks as a last resort. It was my impression that there were fewer boobies in the colony than in February, although they still numbered in the hundreds.

Overhead hung the Great Frigatebirds, of which there were more than in February. With the help of spotting scopes we saw Common Noddies, Sooty Terns, Great Frigatebirds, and Red-footed Boobies on Moku Manu. The Common Noddies were feeding low over the water and small flocks rested all along the wide rock shelves at sea level. The number of Sooty Terns was greatly reduced from our February visit. In fact, the screaming, hovering cloud of birds over Moku Manu was absent; in their place sailed numerous Great Frigatebirds. The Japanese White-eye, the Cardinal, and House Finches were sighted on Ulupau Head itself.

About noon we moved down to the shallow Kaluapuhi Pond on the Marine Base; a low tide made birding conditions excellent. To my surprise, we saw two Ruddy Turnstones flying, and five Sanderlings feeding with a Wandering Tattler along the pond's edge. As we ate our bag lunches six White-capped Noddies patrolled the shallows within a few feet of us. These striking birds winged slowly over the water, occasionally dipping down to snap up a small silver fish. Even more rewarding to watch were the Hawaiian Stilts, which numbered at least eighteen. They were quite active, calling, flying, and stalking about in the water. A number of immature and adult Black-crowned Night Herons completed the pond avifauna. We saw one adult heron with a large fish in its bill, so we knew he had a good lunch, too.

+++++

Field Notes from Gordon B. Joyce, Kipahulu District Ranger, Haleakala National Park, Maui, 11 July 1974: Three items which may be of interest to you from observations in the Hana-Kipahulu area of East Maui: (1) The cattle egret is occasionally seen around Hana.

(2) Nene will sometimes wander down to the Seven Pools near sea level. (3 stayed in the area most of last summer and another unsuccessfully attempted to nest). (3) 'Amakihi have recently been observed as low as 1,800 ft. in Kipahulu.

+++++

Plover Watching: From Mrs. Kenneth L. McKinnon, 23 July 1974

...Regarding the question of tameness and feeding of the Golden Plovers--of Christine Jones /ELEPAIO, June 1974, Vol. 34, No. 12, pp 144-145/. When we visited Koke'e State Park in Sept. 1973 (about Sept. 14 or 15th), the woman who was in charge of the Museum sales told us about how she would feed her "pet" plover--one of the wild plovers who were on the large grassy expanse at the Park. While we watched, she went outside, called to the plover in a high pitched sort of voice and threw broken bits of rather dry bread. We saw the plover pick up a piece of the bread, take it to a nearby small puddle, dip it into the water and then swallow it! She said that it did this, if the bread was dry--otherwise did not dip it in water! We also were much impressed with the relative tameness of the plovers in Hawaii--seeing them on lawns, golf courses and around and near people.

On April 26th and 27th of this year we were at Humboldt Bay, California (at Eureka), where a quite new Nat. Wildlife Sanctuary is in the process of acquisition on the Bay--which is a large expanse of fairly shallow muddy-bottomed bay, enclosed by two long spits of land with an entrance channel about midway. On the southern end, bay side of the spit on the 26th we saw hundreds of Black-bellied plovers in breeding plumage, and the next day saw some more (lesser numbers...probably a few hundred) at the northern end of the bay. These all seemed to be in full breeding plumage and very brilliant; however, after our return home in mid May my husband saw one, at the Yacht Harbor area near our home, which was not completely changed into breeding plumage, so perhaps both kinds of plover have different rates of changing plumage.

...We saw two nene fly right over us about $\frac{1}{4}$ mile out north from the end of the Strip Road (about Sept. 20th), and also visited the breeding pens at Pohakuloa. ...

Notice: Any group or class interested in seeing color slide show "Destruction of Mauna Kea's Native Forest Ecosystem by Feral Sheep" by Dr. Alan Ziegler please call 847-3511 (8-4:30) or 847-3516 (evenings) for reservations.

REVIEWS: By Miklos D.F. Udvardy

PACIFIC SEABIRD GROUP BULLETIN, Vol. 1, No. 1, January 1974. "The Pacific Seabird Group's primary function is to increase the flow of information among persons interested in Pacific seabirds. ...The Group will provide coordination and stimulation of the field activities of its members rather than initiating any field programs of its own. For the time being, at least, the Group will be primarily concerned with the west coast of North America and adjacent areas of the Pacific." At present, working committees are concerned with coordination of activities in: colony censusing, beached bird surveys and disasters, and pelagic observations and sea-watches. The Group is further active in seabird conservation and policy statements. The regional reports (from Alaska to Mexico) list a surprising number of studies under way: Alaska 19, British Columbia 22, Washington 8, Oregon 7, California 35, Hawaii 2. Conservation policy statements are published concerning Seabird Conservation in the Gulf of California, and Alaska Oil and Seabirds. A book review, sundry news items, and membership list, with research topics of the 152 charter members complete this issue. The Bulletin is planned to be issued semiannually, in January and September, by the Secretary, George J. Divoky, U.S. Fish and Wildlife Service, 1412 Airport Way, Fairbanks, Alaska 99701

+++++

By E.H. Bryan, Jr., 25 July 1974

A little pocket size book, written by Geoff W. Stevens and James L.O. Tedder, is entitled A HONIARA BIRD GUIDE. It was published by British Solomon Islands Scout Association, Honiara, 1973, with 98 pages which measure 3 $\frac{1}{2}$ by 5 $\frac{3}{4}$ inches. The front cardboard cover is adorned with a color picture of the Papuan Hornbill, male, Rhyticeros plicatus; and the back cover with an equally colorful portrait of the Red-knobbed Pigeon, Ducula rubricera.

The book is simply written and intended as a guide for the use of "residents of Honiara and vicinity." But, "since Honiara area is really well off for birds" with more than a third of the Solomon Island's species and two-thirds of those on Guadalcanal Island, and many widespread in Melanesia, "the book should be useful to residents of other districts!"

There is a clear little bird diagram, naming parts, and a concise note on the distribution of birds (160 species in the Solomon Islands). Several other helpful books are noted, including the statement that "Mayr's Birds of the Southwest Pacific" is still the definitive guide to the birds..." Birds as pets are discussed, a dozen kinds being listed. Suggestions are given as to how they should be treated.

There is a clear little map of the Honiara area and a listing of "where to go", including the Training College Ridge, the Botanical Gardens, Poha valley, Tasahe Drive, Mount Austen National Park, etc. to see them.

One section is titled "those Latin names", with a page of examples of what makes up a complete name. Then 73 land-bird species are listed by families, with both common and scientific names. The number used by Mayr is also given to relate the species to his outstanding book on Pacific birds. This is followed by a "Colour key", with 17 black and white sketches including sea birds, and a plea for bird protection, including a statement concerning "closed seasons."

A copy of this excellent bird guide was brought back to Honolulu by N.L.H. Krauss, retired entomologist, who makes an annual private expedition to many parts of the Pacific. He also produces valuable little bibliographies of island groups. It reached the Pacific Scientific Information Center, just below the Library at Bishop Museum, through the cooperation of Unoyo Kojima, and there it will be available for consultation by bird enthusiasts.

+++++

By Wayne C. Gagne

ANIMAL SPECIES ADVISORY COMMISSION, 1974. Reviews of the five-year forest planting plan, State of Hawaii 1972-1976 and the attendant environmental impact statement. Department of Land and Natural Resources. 69 pp. This is the State Animal Species Advisory Commission's (ASAC) report on the forest planting plans of the Department of Land and Natural Resources, in response to State Senate Resolution 303 which was passed in the 1973 Legislature. The ASAC's subcommittee on Forestry worked on this mandate for five months before assembling these reviews which have met the unanimous approval of their members. Because of the diverse interests of their members, they believed that the

findings and recommendations were representative of a broad segment of the interested citizens of the State.

The report is composed of six separate reviews. All major findings and recommendations in the five individual islands and environmental impact statement reviews have been incorporated into a Statewide Summary Review, which should be especially useful to readers not familiar with the specific locations on each island. In addition, copies of Senate Resolution 303, excerpts from the Division of Forestry's FOREST PLANTING PLAN and other pertinent documents have been placed in an appendix.

The ASAC have attempted to frame their recommendations to meet the needs of long-term, quality resource management through implementation of a balanced multiple use concept adapted to Hawaii's specific forest resources and needs. The reader should find these reviews useful in matters relating to Hawaii's natural resource management.

Division of Forestry. 1974. Comments on the ASAC report on the five-year forest planting plan for the State of Hawaii Dept. of Land and Natural Resources. 19 pp. mimeograph

A reply that pretty much reiterates the familiar economic arguments that were some of the primary reasons for the legislative directive to have the ASAC review it in the first place.

BOCK, WALTER J. 1970. Microevolutionary sequences as a fundamental concept in macroevolutionary models. *EVOLUTION* 24(4): 704-22. This imposing title conceals a lucid analysis of the evolution and relationships of the Hawaiian honeycreepers especially in the subfamily Psittirostrinae. He shows their adaptive radiation with emphasis on bill and tongue morphology and feeding habits. The range of variation in this respect he found to be only slightly less than that found in the entire order of perching birds (i.e., a macroevolutionary model).

He explains the microevolutionary sequence by postulating that the evolution was primarily via "character displacement." He thought this occurred because of repeated interisland invasions of species. For example, a double colonization of an 'amakihi-like ancestor from Maui to Hawaii could have resulted in the eventual selection between these two weakly reproductively isolated populations of a larger species (greater 'amakihi) and a smaller species ('amakihi) which could coexist of the island of Hawaii. A similar situation between Oahu and Kauai, he thinks, is applicable for the 'anianiau and the 'amakihi. This process of double invasions and subsequent character displacement also weighs heavily in his Psittirostrine phylogeny of the finch-billed and long-billed species. He considers the 'ula-'ai-hawane to be the most primitive species of the Drepanidine lineage.

BOCK, WALTER J. 1972. Morphology of the tongue apparatus of Cirridops anna (Drepanididae). *IBIS* 114: 61-78. This is an important species in explaining the evolution of Hawaiian honeycreepers (Drepanididae). It was considered to occupy a phylogenetic position in the drepanidines near the bases of the psittirostrine and drepanidine subfamilies. The tongue apparatus has weighed heavily in past attempts to explain their phylogeny. Nothing conclusive was established on this aspect of Bock's study.

By fortuitous circumstances a tongue was saved from a skinned specimen of this long extinct species in the British Museum, London. It is apparently the only one in existence and was put back into fluid after the specimen was removed from the formalin in which it was originally preserved, skinned and mounted, presumably for esthetic purposes some years ago. Exceedingly few specimens of the 'ula-'ai-hawane, in any condition, exist in the world's museums.

On the basis of Bock's careful study of this tongue and his comparison with other honeycreeper species and other bird families, he was able to shed some light on the enigma of the possible origin of this endemic Hawaiian family. "The closest resemblance in morphology of the tongue apparatus is with the cardueline finches, not with the coerebids. Comparison of Cirridops and Loxops suggests that the family arose from one colonizing ancestor."

A similar analysis of the tongue morphology of the apparently related recently discovered new species on East Maui is eagerly awaited.

MacMILLEN, RICHARD E. 1974. Bioenergetics of Hawaiian honeycreepers: the 'amakihi (Loxops virens) and the 'anianiau (L. parva). *CONDOR* 76(1): 62-69. MacMillen presents

laboratory data on adaptive physiology of these species, viz: thermoregulation, oxygen consumption, and evaporative water loss. This reveals the magnitude of physiological divergence or conformance in comparison with continental passerines.

Both species were found to lack high temperature tolerance. Evaporative water loss of the 'amakihi was close to the passerine norms, but was considerably below these levels in the 'anianiau.

SMITH, H. EDDIE. 1973. A rhinonyssid mite in atypical loci of estrildine finches in Hawaii. J. PARASIT. 59(6): 1148. The recent surge of interest in Hawaiian avian parasitology is opening a Pandora's box of surprises. Our Vice President Eddie Smith has opened another one in survey of the parasites of the introduced birds living in a wild state in Hawaii. This mite, Sterostoma tracheacolum, lives in the respiratory passages of wild and domestic birds. Although it is now practically cosmopolitan, this is its first report from Hawaii. What is startling about Smith's discovery is that it was found embedded within organs outside of the respiratory tract--the first firm evidence of this also. He found them in the adrenal gland and viscera of a sick cordon bleu (Uraeginthus angolensis) and in the body cavity of a red-eared waxbill (Estrilda troglodytes). These unusual loci indicate to Smith that this represents a recent transfer to these exotic birds, hence the high rate of aberrancy.

BROWN, W.Y. 1973. The breeding biology of sooty terns and brown noddies on Manana or Rabbit Island, Oahu, Hawaii. 233 pp. Univ. of Haw. PhD dissertation No. 524. (Not seen)

FISHER, HARVEY I. 1974. Literature review of "The natural history of Gardner Pinnacles, Northwestern Hawaiian Islands by Roger B. Clapp and the natural history of Kure Atoll, NW Haw. Is. by Paul W. Woodward. Atoll Res Bull Nos. 163 & 164, 1972. 25 pp & 318 pp respectively" in WILSON BULLETIN 86(2): 195-6. Critical review from an ornithological perspective. Points out direction future research on birds there should take.

IN MEMORIAM: Miss Amy Greenwell who was keenly interested in the native flora and fauna died 5 August 1974. She will be missed, and we extend our deepest sympathy to her family.

ALOHA to new members:

Mr. & Mrs. Ray H. Greenfield, 1711 Mahani Loop, Honolulu, Hawaii 96819
Nancy L. Hattan, 4970 Kilauea Ave, Apt 301, Honolulu, Hawaii 96816
Dan Moriarty, P.O. Box 340, Lawai, Kauai 96765
Mrs. Patricia A. Schattensburg, 1629 Wilder Ave, Apt 904, Honolulu, Hawaii 96822
H. Goodwin Stevenson, 2809 Southaven Road, Annapolis, Maryland 21401
Kailua High School, 451 Ulumanu Drive, Kailua, Oahu 96734

MAHALO NUI LOA to Mr. & Mrs. Ray H. Greenfield. Mr. Greenfield, a long-time member, after two years of absence renewed his membership by generously contributing \$10.00 to support the vigilant actions taken by the Society to preserve the unique Hawaiian ecosystem.

HAWAII'S BIRDS, a field guide, is available for \$2.50 postpaid, AIRMAIL 65¢ extra. Send in orders to: Book Order Committee, Hawaii Audubon Society, PO Box 5032, Honolulu, HI 96814.

Reprint permitted if credited as follows: from THE ELEPAIO, Journal of the Hawaii Audubon Society.

SEPTEMBER ACTIVITIES:

- 8 September - Field trip to study shore birds. Bring lunch, water, and if possible your car. Transportation cost (\$1.00) to be paid to the drivers. Meet at the State Library on Punchbowl Street at 8:00 a.m.
Leader: Mrs. Erika Wilson, telephone 523-1843.
- 9 September - Board meeting at McCully-Moiliili Library, 6:45 p.m. Members welcome.
- 16 September - General meeting at Waikiki Aquarium Auditorium at 7:30 p.m.
Program: Destruction of Mauna Kea's Native Forest Ecosystem by Feral Sheep (color slides) by Dr. Alan Ziegler

HAWAII AUDUBON SOCIETY EXECUTIVE BOARD: Pres-W.C.Gagne; VP-H.E.Smith, G-A.Davis; Sec-B.Hacaulay(rec), E.Wilson(corr); Treas-C.F.Hendrycy; Bd Memb-S.L.Montgomery, Mae E.Mull(Big Is Rep). THE ELEPAIO: Editors-C.Hoskins & U.Kojima. MAILING ADDRESS: P.O.Box 5032, Honolulu, HI 96814. DUES: Reg-\$3.00, Jr.(18 yrs & under)-\$1.00, Life-\$100.00