

PARK AND RECREATION AREAS
TERRITORY OF GUAM

NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C.

1952

REPORT

**REPORT ON
PARK AND RECREATION AREAS
TERRITORY OF GUAM**

**Irving C. Root
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National Park Service
U.S. Department of the Interior
Washington, D. C.**

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON 25, D. C.

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Hon. Carlton Skinner
Governor of Guam
Agana, Guam

Dear Governor Skinner:

In accordance with your request, there is transmitted herewith a "Report on Park and Recreation Areas, Territory of Guam". This study was prepared by the National Park Service under authority of the Park, Parkway and Recreational Area Act.

This report is the result of a thirty-day field study in Guam by Irving C. Root, Community Planner. It should be considered in the nature of a reconnaissance report. The actual determination of park and recreational area boundaries on the ground would obviously require additional time. However, it is hoped that this report will be helpful as a guide in the selection and improvement of recreational areas.

The cooperation of the various branches of the Government of Guam in assisting with transportation and information for the preparation of this report is greatly appreciated.

Sincerely yours,

Conrad L. Wirth
Director

Enclosure

Summary of Findings and Recommendations

1. The rebuilding of the City of Agana offers a wonderful opportunity to develop a city that is convenient, efficient and of such outstanding beauty as to be an inspiration for all.

2. A park and recreation survey of the various communities of Guam indicates the need for the following general uses: small children's play areas, local playgrounds, community parks, play fields, bathing beaches, forest and wildlife reservations, and special park areas for scenic, historical, archeological, parkway and biological purposes.

3. The Capital District, including Agana and contiguous suburbs, should be planned as a unit to insure uniformity and economy of development. Adequate school sites and off-street automobile parking in commercial areas are the most pressing needs.

4. The Territorial school system should be restudied as to school site size and location with careful consideration of future requirements and the use of school grounds for community recreation. Cooperation between public and parochial schools will lead to greater economy and efficiency.

5. A Park and Planning Commission should be set up as a continuing organization to direct the physical development of Guam and to build and operate a Territorial park system.

6. A park interpretive program is suggested as a method of getting more efficient use of park areas and securing greater educational values from leisure time.

7. Perpetuation of native crafts and skills for recreation, tradition and for survival in time of emergency.

8. Beach and water front reservations are recommended for recreation and for historic and scenic sites.

9. The use of former public domain lands is recommended for public building sites, school playgrounds, parks, building lots, agricultural leasing, reforestation, grazing, and scenic and wild-life reservations.

10. Reforestation with most useful timber trees to permit annual cutting and to provide forest parks, wildlife refuges, supplementary food supply, and to control erosion and conserve water resources. It is recommended that the possibility be investigated to use prisoners of war for this work.

11. A statute protecting historic sites and monuments and archeological remains from unauthorized investigations or other disturbance should be enacted.

Appendix

12. Species of trees recommended for reforestation.

13. Military reservations - recommended that surplus land be released to Government of Guam, that harvesting of coconuts, fruit and timber be permitted and that areas not needed now be reforested to prevent erosion and improve timber resources.

14. Local sources of food supply should be developed to increase the use of fresh foods and to reduce the need for importation.

15. Observations on the matter of public servants for the Government of Guam.

Foreword

The capital city of a country reflects the art, culture, history, and aspirations of its people. Thus, the capital should be more than just a city. It should be an inspiration and source of pride to all and a place to memorialize those whose public service deserves the acclaim of a grateful people.

Most of the great capitals of the world have developed through centuries of peace and war, with alternating periods of prosperity and poverty. Such cities may have many beautiful and inspiring scenes but at the same time suffer from the blight of slums, congestion, obsolete construction and insanitary conditions.

In the island of Guam the opportunity for building an inspiring capital city is almost unique. During the Second World War the destruction of the original Agana was so complete that now a new city is rising from the ruins of the old like the fabled "Phoenix".

As Agana and many of the rural communities are being built new from the ground up, in a short period of time, those responsible for their planning and development carry a very great responsibility. It is their duty to insure the construction of a capital city and villages that are beautiful, convenient, efficient, healthful and which demonstrate the most enlightened experience of city builders. To do less than this will bring down the criticism of the citizens and result in communities that fall short of what they could have been.

It is unfortunate that the planners of the New Agana decided to rebuild the capital on the site of the former city. A much more spacious and attractive site for the capital city is available nearby on Tumon Bay. Here indeed was a site for a truly inspiring capital city, a miniature Rio de Janeiro, along two miles of curving beach, terminated at each end with bold headlands. With half of the needed townsite in Federal ownership, and the remainder undeveloped, there would be none of the land problems that are hampering the development of Agana. In order to prevent financial loss, owners of business property in Agana could be given the option of exchanging their holdings for land in the new capital at Tumon Bay. The capital at Tumon Bay could be planned to provide adequate off-street parking, the lack of which will so seriously handicap the future development of Agana. Even though substantial expenditures for public buildings and improvements have been made at Agana it still may be an act of wisdom to consider moving the capital to a site having such evident advantages.

Consultants have been selected by the Government of Guam to prepare a master plan for Agana and also for the entire island. The park and recreation system will beautify our communities and provide interesting diversions for our spare time and so will become an important part of this master plan. My assignment is to make recommendations that the planners can incorporate in the plan when they finally put it together.

While in Guam, I made an effort to get an accurate background for making park and recreation recommendations by securing

basic information on such subjects as the physical characteristics of Guam, its geography, geology, topography, history, forests, agriculture, towns and villages, business and industry, schools, and most important of all, the people. The short time at my disposal does not permit the preparation of detailed maps. However, I expect my recommendations will be definite enough to be translated into features on the master plan. In case I shall touch on subjects outside my particular assignment, I hope my observations will be taken as an effort to be helpful.

Parks and Playgrounds - General Considerations

A park and recreation system to be effective should cater to the wishes of all age groups. Also the areas should be distributed in such a manner as to be convenient to all of the people. The various types of parks needed for a comprehensive system and their recommended sizes and distribution may be summarized as follows:

1. The Local Playground is the basic element in the recreation system and is usually located as a play area for the elementary school. The minimum area for the school building and playground should be five acres. Two acres of additional land should be acquired if there are to be school gardens. The generally accepted distribution for school playgrounds is one mile apart. This contemplates the efficient service area for each school to be within a half mile radius. The school building is useful as a community building or auditorium after school and the playground should be available during daylight hours.

School playgrounds should be arranged to provide for a soft ball diamond and back stop. Some apparatus is desirable such as

swings, horizontal bar, and jungle gym. Such equipment as merry-go-round and giant stride are not recommended as their use frequently results in injuries. Playground supervision during daylight hours is recommended and the use of apparatus makes supervision even more desirable.

2. Small Children's Play Areas of 10,000 square feet in size are recommended at half mile intervals to serve areas within a 1/4 mile radius. Equipment such as sand boxes, tables, benches, small slides and swings, drinking fountain, wading pool and shelter are desirable. There should be shade trees and seats so that mothers can be comfortable while there with their children.

3. Community Parks of five to 20 acres are intended to service areas within a mile radius. These parks usually have some natural feature that indicates their appropriateness such as woodland, stream, high point or ocean beach. The usual improvements expected in such a park include picnic areas, walks, seats, drinking fountains, shelter building, toilets, and informal planting. It is hoped that the former public domain lands will provide several of these parks and definite recommendations will be found elsewhere in this report.

4. Play Fields of ten to 20 acres should be so located as to serve the population within a one-mile radius. This type of recreation area accommodates such field sports as baseball, softball, football, tennis, track, and court games. Junior and senior high schools should have play fields within convenient walking distance. Showers and lockers should be provided in a field house at the play field or within the school building if the field is nearby. Frequently, it is possible to develop a community park and play field together if the site lends itself to such combined use.

5. Forest and Wildlife Reservations with large acreage should be provided for hikers, campers, equestrians and for conservation projects. These areas may be used for limited hunting and fishing, to grow timber and also breadfruit as an emergency food supply. It is expected that areas of this nature may be selected from former public domain lands and by proper management will become a source of pleasure, food, and timber for all the people.

6. Special Park Areas. There are many areas that should be either set aside as territorial parks or at least protected by legislation and marked with appropriate signs. Areas within this classification include historic sites, invasion beaches, outstanding topographical features such as cliffs, caves, and mountain tops, and archeological remains. Some existing roads and others to be built should be considered as parkways and protected from commercial encroachment. These parkways or park-like roads deserve special consideration due to their traversing localities of particular scenic beauty of mountain, forest or ocean. In the construction and maintenance of such park-like roads, turn-outs, overlooks, shade trees, descriptive markers and roadside picnic areas may be provided to make travel on them more enjoyable.

The Capital District

The City of Agana is the business as well as the administrative center of Guam. For this reason, the capital city has become a focal point for a concentration of population that spreads out over several suburban villages. Thus, for the convenience of this report,

the Capital District is considered as a unit composed of Agana, Agana Heights, Agana Vista, Sinajana, Mongmong and Tamuning. At present the population of this District numbers about 10,000. This is approximately one-third of the Guamanian permanent population. Although this area had a much larger population before the Second World War, due to the density of prewar Agana, that city is rebuilding rapidly and it should be expected that the population of the Capital District will double within a relatively short time.

The anticipated growth of the Capital District has been given a strong impetus by the installation of pavements, utilities, construction of public buildings, the new Naval Hospital and various military projects. Thus, it is important that the public land needs of this rapidly growing area be anticipated in order that parks, school sites and other needed open spaces may be secured before private development makes costs prohibitive.

A good start has been made toward park and school reservations for the Capital District in the present Agana town plan. In this plan the Plaza of Old Agana is retained together with some small buildings, walls, and gardens of the Governor's mansion dating back to Spanish times. Examples of Spanish architecture are so few but so basic in the Guamanian culture that those remaining in the Plaza should be carefully preserved.

The Plaza is connected with Marine Drive by the Mall, located between Fourth and Fifth Streets West. At the Plaza end of the Mall there are two fine building sites, one of them now occupied by a very attractive building for the Guam Congress.

The Plaza, Mall and adjacent portion of Marine Drive occupy such an important and central position in the capital that they should be planned and landscaped as a unit. Here is an opportunity to use a street tree planting that will be startling in its display of color. To secure this desired result, it is necessary to have a large enough planting of one species to provide a mass effect. A list of trees suitable for this type of planting should include jacaranda, royal poinciana, African tulip and well colored varieties of the orchid tree.

The Paseo de Susana is a most important park area. It is located near the center of the capital and forms the northern terminus for the Mall. The Paseo is a peninsula of some 20 acres in area projecting into Agana Bay. It is to a large extent composed of debris from the original city of Agana which was destroyed during its recapture from the Japanese. Along the west side of the peninsula there is a channel terminating in a small boat harbor at Marine Drive. At the north end of the Paseo, there is a small replica of the Statue of Liberty and from this point there is a very fine view of Agana Bay and the cliffs that dominate the city. See Map No. 2(1).

The Report of the Guam Recreation Commission, 1952, recommended that the Paseo be developed as a sports center with a large arena, amphitheatre, athletic field, tennis courts, auto parking, bus terminal, taxi stand, concession, etc. This type of development would result in a "Coney Island" amusement park atmosphere that I feel would be entirely out of keeping with its important location as terminus for the Mall and front yard for the public buildings of Guam. The Paseo should be improved as an attractive promenade and sitting out park with walks, shade trees, seats and perhaps an inconspicuous shelter building. The Luneta in Manila is a good example of the dignified type

of water front park that I feel would be most appropriate for the development of the Paseo de Susana.

A portion of the frontage on Marine Drive at the Paseo is occupied by sheds of the Farmers' Market. This market is certainly a meritorious project but it is not beautiful and should not be given a permanent location facing the government center. It would be well to secure a permanent site for the Farmers' Market so the present sheds may be removed when funds for the improvement of the Paseo are available. There are more appropriate sites for the Farmers' Market on the cliff side of Marine Drive between the Naval Cemetery and Tamuning.

The Plaza, Mall and Paseo de Susana can be made so beautiful that they will be a source of pride and inspiration to the citizens and a showplace for visitors. First a detailed design plan is needed, then street and shade trees should be planted as it takes time for them to grow. The Plaza and Mall should be kept mainly in lawn so street and shade trees are the first consideration. However, the Paseo presents quite a problem as it is composed of debris and pockets of good soil must be provided for trees and top soil for grass. The planting of coconut trees and ironwood (Casuarina) is recommended on this poor soil and exposed location. The Paseo should be developed as a pedestrian park without automobile roads. However, the main circuit walk can be made strong enough for use by a light truck for park maintenance operations.

Adelup Point, located on Marine Drive about a mile west of the Paseo de Susana, is another outstanding park site. With about the same area as the paseo and rising to a height of 80 feet Adelup Point

provides a most unusual overlook. The elevation of the Point gives an opportunity to view the coast line in both directions. To the east the panorama includes Tumon Bay and extends to Amantes Point six miles distant. To the west you can see Asan Point, Cabras Island, Apra Harbor and the cliffs of Orote Point.

The reef, which parallels the coast line at a distance of a quarter to a half mile, passes close to Adelup Point. During times of high seas breakers pound at the base of the Point. This is a most inspiring scene with a long line of churning foam marking the location of the reef and separating the deep blue of the sea from the blue-green of the lagoon. Frequently fishermen may be seen wading in the lagoon and casting their nets in the same manner as many generations of their ancestors have done. It is hoped that the use of this locality for a school will not conflict with the availability of the tip of the Point for park purposes.

Marine Drive for most of its distance between Adelup Point and Tamuning is in close proximity to Agana Bay. In many cities this fine, wide highway with its beautiful views of the bay, breakers crashing on the reef, the palm-lined beach and the naturally landscaped cliffs would be rated as a scenic parkway of first importance. Perhaps such wonderful scenery is so common to the local people that it remains for visitors to call attention to the outstanding natural attractions!

Unfortunately, much of the land between the bay and Marine Drive is in private ownership. Gradually business structures are being

erected that will cut off this priceless view of the sea. There is ample business property without using the shore so there is no good reason why this portion of the bay front should not be saved for the enjoyment of all of the people. Many similar situations have occurred in the States, where scenic beaches have become cluttered with business establishments even to the point of excluding the public. Then the loss of the beach is realized and developed beach areas are purchased at great expense so that they can be restored as natural beaches for the use of the public.

In order that Guam will not make the same mistake that has been so costly to many cities, it is recommended that all privately owned beach from Adelup Point to Tamuning that is not now developed with buildings for commercial use be purchased and held for the public. In fact, I consider the purchase of this remaining beach property as a project of first priority. New construction is progressing rapidly and if action is not taken at once, much of the beach will be lost forever. See Map No. 2(3).

The Cliffs, which frame the City of Agana, are a close second to the ocean as a scenic asset. These cliffs, which tower above the city and border much of the perimeter of Guam, are landscaped by nature with many varieties of trees, shrubs and vines. It is very important that the cliffs be maintained in their natural condition. In order to protect the appearance of the cliffs it is desirable to have a uniform maintenance policy such as would be assured by government ownership. Substantial portions of the cliff areas are now in Federal ownership and some are owned by the Government of Guam. As opportunities arise,

the Government of Guam should acquire the cliffs remaining in private ownership. No doubt some of the cliff area can be secured by gift for park purposes as the land is of practically no use but still is subject to land tax.

The Botanical Garden. The visitor in Guam is immediately impressed by the great variety of trees, shrubs and vines found growing here. In addition to the long list of native trees, many others have been imported from other parts of the world. In the Spanish Governor's garden, I found several interesting trees but office workers nearby had no idea as to their names. In the rural areas I found that the people are better bontanists than city dwellers for they not only have Chamorro names for the trees but they know the various uses that can be made of the wood, bark, fruit, etc.

Perhaps no other single park feature is so interesting to both local citizens and visitors as a well-planned botanical garden with the trees labeled as to name and origin. Of particular interest are trees valuable for their timber, fruit, nuts, and flowers. The native trees of Guam are in such variety as to provide timber for every particular need. However, some of the most valuable Guamanian species have been so depleted by overcutting that they are practically unknown to the general public.

The site recommended for the botanical garden is located on the proposed extension of Cliff Drive just east of Route 4. It is very near the George Washington High School and so will be convenient for use as an outdoor botanical classroom. The tree garden site should

have an area of at least 25 acres of which 19 acres, known as Lot 87, now belongs to the Government of Guam.

The Foster Garden in Honolulu is the type of botanical garden that I would like to see developed for Agana. In this garden, trees of similar families are grouped together so they can be compared for study. Also the trees are artistically arranged to create a pleasing park with walks leading to all parts of the garden. The manager of the garden is a student of plants and able to answer questions and identify specimens. The garden also includes a propagating section where new plants are started for transplanting later to places in the garden. Botanical gardens throughout the world exchange seeds with each other so the ultimate size of a tree collection is limited only by the area of land available.

The Government House Site. This magnificent building site is located east of the new Naval Hospital and between Route 7 and Cliff Drive. It overlooks the Plaza, Government Buildings, and Agana Bay and has an area of some 45 acres. Any portion of this tract not needed for the Governor's House could well be developed as an overlook park. Most of this site consists of a plateau which was the scene of intense fighting during the recapture of Guam from the Japanese. This plateau was also the site of the early Spanish Fort Apugan which was rebuilt by the Japanese into a strong point. These historic remains and an American command post nearby on Route 7 should be appropriately marked. In the base of the cliff along Cliff Drive are several tunnels and subterranean chambers used by the Japanese in their defense of Agana.

Off-Street Automobile Parking

Although auto parking in commercial areas is not usually considered as part of the park system, still there is a very close relationship. Off-street auto parking is open space and the construction, maintenance, and policing of such parking spaces will no doubt be carried on by the same agencies who provide similar services for the parks.

One of the most serious omissions in the planning of the new Agana was the failure to provide for off-street automobile parking. With the few public buildings and scattered stores in Agana, a good share of the street parking space is taken up. Later, when all the lots are improved by commercial structures the traffic will become so congested on some of the streets that auto parking will have to be prohibited. We all know that if congestion of traffic becomes too great that business areas do less business and property values decline. The future of the Agana business district will be disappointing indeed unless something is done about auto parking before the land is built up.

In commercial areas, it is common practice for zoning ordinances to require two square feet of off-street auto parking for each one square foot of store sales space. In communities that are developed for profit by competent real estate firms, three to four square feet of off-street parking are provided for each square foot of store floor space. Two feet of parking for one foot of store should be considered the absolute minimum to properly maintain business. In Agana, with no off-street commercial parking, only one third of the business lots should be used for building purposes.

In Silver Spring and Bethesda, two suburban communities near Washington, D. C., the county has purchased a number of off-street parking lots adjacent to the commercial areas so that business will not be strangled by congestion and have to move elsewhere.

Off-street parking areas should be screened from view by the use of landscape planting and shaded by a border of trees. Rows of trees that will stand between rows of cars can be used to shade the inside of the parking lot. In this manner, the unsightly appearance of the usual barren parking lot will be avoided.

The School Site Situation on Guam

The selection of school sites, which was made during the years immediately following the recapture of Guam from the Japanese, has left the present administration with headaches from which it will suffer for a long time. In fact, about every known rule for properly locating school sites was violated and usually several rules were violated at each site. This is most unfortunate as so much of the tax dollar is required for school sites, construction and operation that grossly inefficient location and layout will prove to be an unreasonable cost burden through the years ahead. Corrective measures should be instituted at once to salvage as much as possible of the school investment before new residential construction, and consequently higher prices, make the cost prohibitive.

In Guam, the most frequent violations of good principles of school site selection have been:

1. School site inadequate in size.

2. School site not placed to efficiently serve the community in which it is located.

3. School sites located so close together that their half mile circles of efficient service seriously overlap. It is more expensive to serve part of a school district with two schools.

4. School site so placed that large portion of its half mile efficient area is occupied by military installations, ocean, or steep mountain side. These are "dead" areas that will not have any school population.

5. School located beside a main highway so that the half of the pupils living across the road will be exposed to serious traffic hazards.

The distressing part of the present unfortunate school situation is that in most cases the Government recently owned the land and had its choice of sites for schools. In many cases, the land that should have been reserved for schools, parks, and playgrounds has been sold and houses built. The cost now to recapture the proper school sites would be fantastic. The recommendations made in this report with respect to individual sites are based on an attempt to reach a workable compromise within the realm of financial possibility.

There are a number of general considerations to keep in mind in the selection and planning of a school site.

1. Draw a half mile radius on a map about a school site under consideration to determine the area of efficient service and its relation to adjoining schools.

2. Select sites with level areas for building site and playground and fertile soil for school garden. Frequently, an inexpensive

but hilly site is selected and the ultimate grading cost exceeds the price of a more desirable site.

3. Use highways and natural barriers such as cliffs, streams, or military reservations as boundaries of the district to be served by a school. This will insure more efficient use of the school plant and minimum traffic hazard to pupils.

4. School site and building plan should be adequate to serve its particular school district when the locality is completely populated. Then, knowing the ultimate school capacity, rooms can be added to an extensible building as needed.

5. Place the school building on the site to secure the best orientation and to leave the remainder of the site in usable shape. A plot plan should be prepared for each new school site before construction begins showing school building location, playground design, and school garden.

6. Permanent construction of the best design is most economical as anything else must soon be replaced at rising cost.

7. Landscape planting about the building and shade trees are good for morale. They make a pupil proud of his surroundings and interested in the care of the grounds. Shade trees provide an opportunity for outdoor classes during warm weather.

8. Make a census of preschool age children by age groups in each locality to get an estimate of annual school plant requirements for each of the six years ahead.

9. Keep in mind that most of our school difficulties are the result of "too little and too late" so estimates should be on the generous side.

Capital District - School Playgrounds

1. The Agana Elementary School (SK-3)* in Block 21, and located at the corner of First Street South and Tenth Street West, occupies quonset huts. This is considered a temporary school site and has an area of about two and one half acres. However, if the school is to occupy this site for any considerable length of time, the area should be enlarged to take the entire block. If abandoned for school purposes, this site should be retained as a local play area to serve one half mile radius.

2. Adelup Point (SL-1)*. This tract has an area of about twenty acres and so is adequate in size for school purposes. However, it is recommended that this site also be used for park purposes. (Discussed under Capital District).

3. Agana Heights (SK-2)*. This site is inadequate in size and should be enlarged to a minimum of five acres for school and playground purposes. Then additional land, usually two acres, should be acquired to satisfy the estimated area needed for school gardens. This locality is destined to grow substantially in population so it is important to secure the additional land needed for school purposes at once.

4. Sinajana Central Elementary School (SK-19)* has an area of about four acres. This site is not adequate in size and the use of quonsets, which do not use land efficiently, has resulted in most of the play area being occupied by school structures. The adjoining

Note: * Refers to the file number of maps prepared by the Department of Land Management for the Guam Recreation Commission.

private property fronting on Munda Avenue should be added to the school site.

5. Sinajana School Annex (SK-19-2). This site is located east of Kwajalein Avenue and only one quarter mile from Central School. This makes the two school sites too close together for efficient service so this site should be abandoned eventually as an elementary school. However, it should be retained as a local park or playground or enlarged to an area of ten acres if it is decided to use it as a site for a junior high school.

6. Sinajana School (SK-19-3). This site located on Guadalcanal Avenue is almost completely occupied by quonsets and a gymnasium building. Adjoining low ground to the east should be improved for a playground if this site is to be retained. However, as this school is only a few hundred feet from the Central School it should be abandoned as a school site but retained for a local park. A new school site should be acquired that will have adequate size and will not overlap the district of another school.

7. Mongmong School Site (SK-14). This school occupies a small knoll on the Mongmong-Toto Road. The site is very inadequate in size but there seems to be suitable land available to the west. Back of the school there is a large swamp area that would be suitable for school gardens if it can be drained. This school site should be enlarged to five acres plus additional school garden land.

8. Tamuning School Site (SK-21) is inadequate in size and is not near the center of the area it should serve. Also, it is located at the intersection of two important highways which makes a dangerous situation for pupils crossing these roads. However, the traffic congestion that makes the site undesirable for school purposes

also makes it valuable for business development. Unless this site is needed for a fire house or other public use, I recommend that it be sold and a suitable site be secured to the north. Lots 2116 and 2121 have been suggested as possible school sites. However, before a final selection is made on a new site, a half mile radius circle should be drawn around it to find out how much of the school service area falls in "dead areas" such as Agana Bay and Agana Airfield.

9. George Washington High School Site (SK-9). This school site is adequate in area and centrally located. However, there are disturbing elements such as the power plant, proximity of the airfield and the heavy traffic on Route 8.

Cooperation with Church Schools

At several public schools the Catholic Church owns property near the school site. In some cases, the church has built a parochial school that attracted a considerable number of pupils away from the public school. When the church school is near the public school ground, the parochial school pupils play on the public school playground. In one or two cases, the parochial schools were distant from the public school playground but had inadequate play facilities.

It would seem to be a wise move to jointly plan new school and playground facilities. The ideal plan would be to secure an adequate playground for both schools and then locate the schools at opposite sides of the playground. Even though it may not be possible to work out the most desirable cooperative arrangement, the mutual discussion of the problem should be very helpful to each school agency in planning its facilities.

As the public school playground is a unit in the recreation system of all of Guam, everyone in the community is welcome to use it. Also, I feel there will be benefits in greater unity and cooperation if the pupils of both school systems join for recreation on a common playground.

Capital District - Other Park Areas

There are a number of other small park areas that will serve a useful purpose in the park system of the Capital District.

Bradley Park is the largest of these with a total area of about six acres. This park is located between Fourteenth and Sixteenth Streets West and extends from the Cliffs to Agana Bay. The area is divided by Marine Drive, a drive along the beach and Cliff Drive also should be extended across it.

Spanish Bridge Park is a small area set aside to preserve a bridge of the Spanish era. This park is on Marine Drive at Seventh Street West and contains less than one acre. The bridge has been extensively rebuilt in an inferior manner and the stream it once spanned has been diverted. Several better examples of Spanish bridges may be found on Guam so I doubt that this structure warrants the maintenance expense necessary to preserve it. The site of the bridge, however, should be retained as a sitting out park.

The Naval Cemetery and the small tract of public land adjoining on the west should be incorporated in the park system. The cemetery dates from the beginning of the American administration of Guam and contains the earthly remains of a number of people who played a part in making local history. This cemetery should be set

aside as a Historic Site and properly marked so that visitors will be aware of its interest.

Ypao Point is included in a tract of some 90 acres of former public domain land that is now owned by the Government of Guam. This tract includes the west end of Tumon Beach. Automobile access to this area makes it readily available and it should all be retained for park use. See Map No. 2(4).

Tumon Bay has a fine bathing beach some four miles northeast of Agana. This is the nearest, good bathing beach of the capital and so should be considered one of the outer parks of the Capital District. The beach of fine, white sand and shaded by coconut palms extends from Ypao Point some two miles northward to Bijia Point. See Map No. 2(5).

The central and best portion of the beach is owned by the Federal Government and is restricted to the use of Navy personnel. This portion of the beach is improved with cottages, bathhouses, beach club, refreshment stand, picnic areas, roads, and parking spaces. The popularity of this improved portion of the beach indicates the demand for similar facilities for the citizens of Guam who have no improved public beach.

The remainder of the beach is in private ownership and at present there are no restrictions to its use by the public. There are rumors of contemplated development by the owners so it is only a matter of time until the beach becomes commercialized. Several nondescript beer parlors are operating nearby so the type of future development may be anticipated. The entire privately owned portion of the beach between Ypao and Bijia Points should be acquired at once for after private development takes place the price will become excessive and the charm of the natural beach will be impaired.

At the north end of the beach, three Japanese guns were mounted to prevent landing operations at this point. A short distance back from the beach there is a prehistoric village site with "latte" stones that have been reset in their characteristic pattern and several well-worn mortar stones that testify to long time occupancy of this village site. The prehistoric remains and Japanese defenses certainly warrant the acquisition and marking of this area as a Historic Site in addition to its need as a bathing beach and picnic area for residents of the capital.

Fonte River Parkway. The Fonte River parallels Route 7 for some 3,400 feet east of the highway intersection with Route 6. The river flows through a narrow valley with alternating meadows and wooded areas that would make attractive picnic grounds. Then going up stream, the valley turns south and about one mile above Route 7 the stream flows through a 120-acre tract of former public domain land. This large tract adjoins "COMMAR" on the south and although too rough for residential use it will make a fine outlying park area for the Capital District. Enough land should be acquired along the Fonte River from Route 6 to the 120-acre tract to provide for a park drive and to protect both banks of the river by Government ownership. See Map 2(6).

Between Coontz Junction and Asan there are two former public domain tracts with a total area of about 100 acres. One of the tracts has several hundred feet of bay frontage and extends southward up the cliffs to the plateau above. These two tracts are too rough to be desirable for residential use but they will make a fine overlook park and picnic area for the Capital District. As opportunity arises, this

park area should be enlarged to include all of the steep land and beach area between Adelup Point and Asan Point Naval Housing area.

Village School Playgrounds Outside the Capital District

Barrigada is a rapidly growing community on Route 8 about three and one half miles east of Agana. The Central School Site (SK-6) and Annex School Site (SK-6-2) are both inadequate in size and poorly located. Both sites are only one block south of Route 8 on the other side of which there is a large military reservation. This means that about one-third of the area efficiently served by each site is within the military reservation and does not need school service. Also being so close together, the areas of efficient service of both schools overlap 50 percent. As both of these school sites are so poorly located to serve their intended purpose, they should be developed as park and recreation areas and a new school site of adequate area selected on the south side of the community.

Toto, the next community east of and a mile distant from Mongmong, should have a school site and playground selected. It will not be many years until a school will be needed here and a delay in selecting the site will result in a higher price for a less desirable location.

Mangilao School is located on Route 10 one mile south of Barrigada at the Agricultural Experiment Station. The site was no doubt selected on account of being government property and without considering the fact that very few pupils will come from the government farm. This school should be considered temporary until relocated on a site that will serve the school population more efficiently.

Ordot is a small community on Route 4 about a mile southeast of Sinajana. There is no school at Ordot as local children go to nearby Chalon Pago School. However, there should be a playground at Ordot and a site of five to ten acres selected one-quarter mile from the highway so it will eventually be about the center of the larger community and serve for a school site.

Chalon Pago School is located on Route 4 just beyond Ordot. This site is inadequate in size and if the site is retained the area should be extended back from Route 4 to double present acreage. The school garden at this site is located on fertile soil and makes an attractive display along the highway. It is unfortunate that this school site was not placed about one-third mile north of Route 4 so the highway would serve as a boundary for a school zone. Then the children would not be exposed to danger in crossing this traffic way.

Dededo School (SK-8) site is adequate. However, much can be done to improve the appearance of this community by landscaping the shelter belt along Marine Drive. Also, the police and other government activities should be moved to the north end of the central panel so the site occupied by them can be attractively planted and parked. It is unfortunate that a repair garage was permitted at the entrance to this village as it presents a very unsightly appearance.

Yigo School (SK-25) is located on private property that should be acquired for school and playground purposes. An adequate size would be five acres with additional land to take care of school gardens.

Yona School (SK-26) is well located on the northwest side of the village. Additional land should be acquired now while it is

available to meet a requirement of five acres plus school garden requirements. Another play area should be provided on the opposite side of Route 4 from the school site. A recommended site is east of and adjoining the Catholic Church property.

Talofofa School does not meet the standard for size but to enlarge the grounds would be unreasonably expensive on account of the improved property that would be required. It is understood that the government owns an adequate site on the east side of town to which the school eventually should be moved. This eastern tract should be improved now for use as a playground.

Inarajan School Site (SK-11) is inadequate as to size and if possible the area should be enlarged. The developed land adjoining the west will no doubt be very expensive and land on the east and south is owned by the Catholic Church. There is vacant land between the school and the church that would be more useful if added to the school play area. It is hoped that an understanding may be worked out with the church for the joint use of the school playground. Then, when a church school is built at Inarajan, both schools could use a more adequate playground. The school garden at Inarajan is very attractive but would perhaps be more productive if shading coconut palms were removed.

There is a government owned tract of some five acres occupying Lots 46, 47, 49, and 50-52 on Asmisa Street at the north end of the village. This is a fine playground and park site and should be used for this purpose as soon as several temporary dwellings being used for typhoon relief can be removed. No buildings should be built on this site for park purposes other than an open sided shelter as this entire area is subject to serious storm damage.

Merizo School Site (SK-13) is inadequate in size and due to the steep slope at the back no land of satisfactory grade can be added. The Government of Guam owns the land adjoining the school site on the north. Although this land is too steep for playground or for usual garden purposes, it still can be used for such garden crops as sweet potatoes, papayas, and fruit trees. In front of the school, the highway passes quite close to the beach. This strip of land between the highway and beach is too narrow for building lots so it should be acquired as a park strip.

Merizo is an attractive small village with a water front park and bell tower. There is an opening in the outer reef which invites boating and fishing.

Umatac School Site (SK-24) is most inadequate. Enlargement of the present site is impracticable so it should be abandoned for school purposes and retained for a park. The Government of Guam owns the land adjoining the village on the north and a satisfactory school site should be selected there.

During the days of Spanish occupation, Umatac Bay was an important port of call for galleons and whalers. There are a number of ruined reminders of the Spanish days such as Fort Nuestra Senora de la Soledad on the south side of the bay, Fort San Angel at the north entrance of the bay and Fort Nuestra Senora del Carmen high on the hill above Umatac. There are ruins of a Spanish church near the center of the village and nearby a monument commemorates the landing of Magellan. The wreck of a midget Japanese submarine rusts on the beach. The many points of historic interest here will be covered in detail in Dr. Reed's report on History and Archeology of Guam.

Formerly a highway connected Umatac with Agana but the southern portion is now impassable due to lack of repair. Eventually this road will be rebuilt and then its easy accessibility will make Umatac a Mecca for visitors. In anticipation of this event, the village of Umatac should be protected by zoning and architectural control so that its beauty and quaint character may be preserved.

The Agat Elementary School Site (SK-4) is adequate in size but poorly located to serve the area. Considering the value of school improvements on the site, it is unlikely that it will ever be given up.

A junior high school has been considered for the Agat-Santa Rita area and a satisfactory site owned by the Government of Guam is available on the east side of Agat Village.

Government land between Marine Drive and the ocean should be held for recreation use. Former public domain land between Agat and Santa Rita should be reserved for the residential expansion of these two communities and as a natural forest park.

Santa Rita School Site (SK-18) is inadequate in size and cannot readily be enlarged. It is at the south side of town where the land slopes steeply upward. The growth of the town will be toward the north so it would be advisable to abandon the present school site and select a new one that will more efficiently serve the community.

Piti School Site (SK-17) is occupied by a fine, new school of modern design. The original site was too small but it is understood that additional land will be secured in blocks 2 and 4 and by closing intervening streets the area will be made adequate. West of the school site and in a bend of the Masso River, there is a tract of good soil that would make a convenient school garden.

Adjoining the village of Piti on the south, there is a large tract of former public domain land. This area should be retained for a forest park and for future residential requirements.

Asan School Site (SK-5) is quite well located to serve present and future population needs but is inadequate in size. The tract between the present school site and the Catholic Church should be acquired at once before it is developed for residential purposes. Additional land should also be acquired to the north of the present school so there will be space for both play and school gardens. This play area will be convenient for joint use by both public and parochial school pupils.

South and east of the village of Asan are former public domain tracts that should be reserved for future residential extension and for forest park areas.

The Park and Planning Commission

Public Law 33 provides for the appointment of a Territorial Planning Commission which is expected to submit a Master Plan before the final adjournment of the 1952 regular session of the Legislature. The preparation of a Master Plan and its servicing with revisions and amendments is a continuing operation so the Planning Commission should be made a permanent organization.

In the interests of economy and ease of administration, it is suggested that consideration be given to combining planning and parks into one organization that may be called the Park and Planning Commission. The Commission should consist of five members, four appointed by the Governor, with concurrence by the Legislature, for terms of 1, 2, 3, and 4 years, reappointments to be for four years each. The fifth member of the Commission to be the Director of Public Works,

ex officio. The chairman to be appointed by the Governor. The Director of Land Management to be Executive Secretary of the Commission. The appointive members of the Commission should be selected for their knowledge and interest in town planning, parks, architecture and community development.

This Commission should be organized and staffed to make recommendations on the following general subjects:

1. Selection of sites for public buildings, schools, and public utilities.
2. Boundaries for parks, playgrounds and areas of scenic, historic, or archeological importance.
3. Approval of subdivision design and requirement of desired improvements prior to lot sale.
4. Approval of highway location, grading, and construction plans.
5. Report and recommendation on all zoning amendments.
6. Approval of design and development plans for parks, school grounds, recreation areas, and auto parking lots.
7. Recommend areas for reforestation, wildlife reservations, and conservation projects.
8. Annual report with recommendations to the Legislature.

The Department of Public Works is properly equipped and should be the "house keeping" organization to do the supervision, surveys, construction and maintenance that will be necessary for the park operations of the Commission. Also, it is quite likely that the office and administrative work of the Commission could also best be done

through an existing department. Additional personnel could be added as needed such as a city planning engineer and a landscape architect. The landscape architect could serve as park superintendent as such qualifications would be needed for that position.

Native Crafts and Skills

Within the past two generations, the citizens of Guam have changed from a self-sufficient rural existence to a so-called "tin can" economy. This has been a perfectly natural change due to the impact of the military use of the island and employment at good wages. The citizens have certainly shown a remarkable adaptability to fit themselves into an absolutely different way of life.

However, in making this change, there is a danger of something very precious being lost. The arts and crafts, the knowledge of nature and the wisdom of the ancient Chamorro culture should be preserved. Estimates of the population on the Marianas Islands at the time of the coming of Magellan indicated a much larger population than now. That shows the ancient Chamorros had a very satisfactory way of life.

So often in our modern world, we are inclined to discredit and toss aside many things as being "old fashioned". This is not a wise practice for there may come a time, due to emergency conditions, when we must use all of our knowledge and intelligence to survive. It is important to revive and keep alive the ancient skills such as fishing, trapping, use of forest foods, weaving and construction. This kind of an educational program would fit in nicely with the training of Boy and Girl Scouts and provide the finest type of character building recreation.

Beaches and Other Ocean Frontage

The beaches of Agana and Tumon Bays have been covered in the Capital District portion of this report.

Following the shore line northward the waterfront is in Federal ownership from a mile south of Tanguisson Point to one mile north of Haputo Point. Within this area there are sandy beaches on each side of Tanguisson Point and Hilaan Point and another beach south of Haputo Point. The steep cliffs 300 feet high follow the shore line closely excepting at the beach areas where the cliffs curve a short distance inland. In case this Federal land is ever released, the beach and cliff area should be retained in public ownership on account of its great scenic and park value and because of the presence of occasional archeological sites (groups of latte stones) along the beaches in this areas. See Map No. 2(7).

Between Haputo and Uruno Points, there is a 125-acre tract of former public domain land with three thousand feet of ocean frontage. There is easy access to this tract from Potts Junction. Although there is no beach area, the cliffs are very steep and rise to an elevation of 400 feet. This area should be retained for park purposes. See Map No. 2(8).

From Uruno Point to Ritidian Point and on the Mergagan Point, the property along the shore is in private ownership although it is only a narrow belt between Camp Andersen reservation and the ocean. At Ritidian Point, the northernmost point of Guam, there is a lighthouse on the cliff which is almost 500 feet high. This is a beautiful scenic point and on clear days the island of Rota may be seen in the distance.

A ruined building called the "Casa Real", evidently a small church or school, is on the beach just below Ritidian Point, and there are several latte sites along the beach and extending around the northwest end of the island.

At Mergagan Point, there is a small tract of former public domain land with one thousand feet of sand beach. This tract should be retained as it is the only property of the Government of Guam in this locality. See Map No. 2(9).

The shore line from Mergagan Point through Tarague Point to Taguan Point is also part of Camp Andersen. Tarague Point beach is used extensively by service personnel in this locality and this beach is so valuable for recreation purposes that it should be kept in public ownership if ever abandoned for military purposes. See Map No. 2(10).

From Taguan Point on the north coast, the former public domain land extends southward down the east coast for a distance of one and one half miles south of Pagat Point. This large area is the Catalina Tract described under Former Public Domain Lands. This is the longest water front owned by the Government of Guam and should be held intact for public use. See Map No. 2(11).

The coast between the Catalina Tract and Pago River is rather uninteresting as the reef follows the shore and there are no sandy beach areas. North of Pago Bay at Taogam Point, there is a tract of about 200 acres of former public domain land that should be retained for park as it is the only tract of any size in Government ownership in the locality. See Map No. 2(12).

South of Pago River there is a former public domain tract extending to Tagachan Point and having an area of about 200 acres. There is a small bathing beach just north of the point. This entire tract should be retained for the use of the people living in the Yona-Ylig area. See Map No. 2(13).

Between Ylig Bay and Ypan Point there are miles of good beaches but only one small tract of land is in public ownership. This is Camp Dealey, which is considered surplus by the Navy and is being disposal of. The campsite would make a fine beach park if it can be secured by the Government of Guam. Additional Federal legislation should be secured so that land surplus to military needs can be transferred to the Government of Guam for its own use or for final distribution to the public. See Map No. 2(14).

There is a small tract of former public domain land at Ypan Point and bordering the north shore of Talofofu Bay. This tract includes a cliff 400 feet high from which there is a marvelous view. There are several grottoes and interesting rock formations along the trail which leads from the Talofofu Road to the summit of the cliff. See Map No. 2(15).

At Jalaigai Point, there is a tract of some 600 acres of former public domain land with a frontage of about a mile on the ocean. This land is covered with underbrush and second growth timber and varies in elevation from sea level to 300 feet. It should be retained as a forest park, reforested with useful species of timber and used for recreation and community pasture. See Map No. 2(16).

Between Inarajan and Merizo, there is no ocean frontage in public ownership. However, in a number of places the highway follows.

the beach so closely that there is hardly room for private use of the land on the ocean side. Where the road borders the sea, the private land should be purchased for park and bathing beach. This section of the coast road is a very scenic drive as it winds around the indentations of the bays and passes the many small islands and wave worn rocks that dot the coastline. There is ample Government property inland for forest and grazing use but unfortunately the scenic coastal area is open to private development. See Map No. 2(17).

From Merizo to Umatac the road follows the coast for most of the distance and again the water front should be acquired for its scenic value. South of Umatac the Mt. Schroeder tract of Government property extends along the beach for a distance of over half a mile. This public ownership should be extended to include the site of the ruins of the Spanish Fort Nuestra Senora de la Soledad overlooking Umatac Bay. See Map No. 2(18).

In the six miles of shore line between Umatac and New Agat, there are only two points on the beach with a total length of three quarters of a mile that belong to the Government of Guam. From Chii Point, the public land extends along the coast to Achugao Point. This is quite rough terrain with no sand beach and at present inaccessible as the coastal road stops at Umatac. North of Sagua River the Government land follows the coast for a short distance. See Map No. 2(19).

At Facpi Point, there is a fine overlook privately owned rising steeply to 200 feet above the sea. A park area should be secured at the tip of this point as the view from this elevation has great scenic value. See Map No. 2(20).

Three quarters of a mile south of Bangi Point there is a beach development for service personnel known as Nimitz Beach. See Map No. 2(21). This beach and other beaches to the north of Agat Bay were used for landing operations in the recapture of Guam by our troops and so are of historic interest. Most of the beach area between Nimitz Beach and Apaca Point (See Map No. 2(22)) is suitable for recreational use and it can be secured inexpensively as it is practically undeveloped and often the highway follows the shore line closely. North of Apaca Point is Palm Beach nicely developed with all necessary facilities for service personnel. See Map No. 2(23).

The Apra Harbor Reservation extends northward from Apaca Point to the village of Piti. The only areas of water front of park or recreational interest in this reservation are Palm Beach and Orote Point. This point is at the end of a long peninsula which forms the southern boundary for Apra Harbor. Orote Point (See Map.No. 2(24)) has an elevation of over 200 feet and is the location of a signal tower. In Spanish times there was a lighthouse on this point and a portion of the stairway leading down to a landing on the beach is still visible. This point is a very scenic spot with interesting views of the harbor and along the coast.

Asan Point (See Map No. 2(25)), north of the town of Piti is occupied by a service housing development. There is also a beach development here. In case this area is abandoned for military use, it should be retained for park purposes as it is the only available beach in the heavily populated Piti-Asan locality. East of Asan the descriptions and recommendations for beach use are included in the Capital District section of this report.

The service personnel are well taken care of with respect to water front parks and bathing facilities. However, there is not a single developed beach on all of Guam that is available for the general public. The citizens of Guam would appreciate and use such facilities for I have seen them by the jeep load at abandoned Camp Dealey and using the beach for swimming and picnicking. On Saturdays and Sundays many of the Capital District residents go to Tumon Bay for outings on privately owned portions of the beach that may be denied to them by the owners. I feel that the acquisition of the beach areas for recreation and scenic purposes as recommended in this report is so important that the program should be started at once.

Former Public Domain Land*

During the period of Spanish administration, there were many tracts of land both large and small on Guam known as Crown Lands. After the Spanish-American War these Crown Lands were ceded to the United States by the Treaty of Paris in 1898. Under the administration of the United States, the Crown Lands became known as Public Domain. Some of this land has been used for town sites and military establishments but there is still remaining some 30,890 acres. Secretary of the Interior Oscar L. Chapman on March 4, 1952, announced the transfer of these lands to the Government of Guam.

Public Law 33, enacted by the Legislature of Guam in 1951 is known as the Public Lands Act. This law establishes a Territorial Department of Land Management and provides for a Territorial Planning Commission. The Government of Guam is authorized to set aside lands found suitable for recreation, conservation, or other public purposes.

* See Map No. 1.

Land not needed for these purposes is available for lease, sale or homesteading with priority to former property owners who were dispossessed and their land taken for military or governmental purposes.

The management, use and disposal of this large acreage, which represents over 22 percent of the area of Guam, is a great responsibility for those who shall make the many important decisions. The complicated problems involved will require unusual judgment and wisdom so that public lands shall be of the greatest continuing service to the citizens of Guam. There will no doubt be pressure from all sides to promptly dispose of this land to people having a prior right to Government land. However, it will be in the greatest public interest to move slowly in the disposal of any of this land.

In land planning, it is a generally accepted truth that there is "a best use for all property". However, it is often a difficult problem to determine that best use. The land decisions will usually prove satisfactory if the people making them use as their criterion, -- "is it best for all of the people of Guam?"

The Public Lands Act provides for setting aside suitable land for recreation, conservation, or other public uses. A Planning Commission has been established by this act and the problem of land use should be referred to this commission for recommendation.

The uses to which Government land may be put are listed in the order of their importance, as follows:

1. Government building sites and land uses, schools, utilities.
2. Parks, historical, archeological and scenic sites.
3. Public waterfront and beaches.

4. Residential building lots of one quarter acre or less.
5. Water supply watersheds and reservoir sites.
6. Reforestation and conservation projects, wildlife refuges.
7. Community or cooperative pasturage of livestock.
8. Leases for farming purposes.
9. Distribution of land to bona fide farmers.

It is obvious that Governmental needs should be satisfied first before land is made available for individuals. Also, it will be helpful if legislation will permit the exchange of Government land for privately owned land needed by the Government. Of course, it is understood that in case of military emergency the needs of national defense will take precedence over any other use.

In considering the land problems of Guam, it is well to recognize the fact that a change is taking place from an agricultural to a wage and salary economy. Farmers find that wages are more certain than farm income so now much of the farm land is either untilled or only partially worked to provide supplementary food or income. In fact, there is such a labor shortage on Guam that thousands of contract laborers have been brought in to speed the military construction program. As long as this labor shortage prevails, wages will be high and it will be difficult to interest workers in farming.

The effect of the new property tax law is another factor that should be considered in the complicated land problem. In the past the ownership of property in Guam was a source of personal pride and prestige. The ownership of land was considered in the nature of a

sacred trust and it was held by a family and handed down to heirs even though it was not used. However, if taxation makes the holding of land expensive, it will not pay to hold idle land. Thus taxation will force the use of land to make it productive or the land will eventually be sold. It will take several years for this trend to sell idle farm property to assert itself but when it does the rural areas will become more productive and prosperous. People who seriously want to go into the farming business will then be able to purchase the land they require.

People who have sold their home or farm to the Government have first priority in the distribution of public land. However, most of these people are employed for wages and it is doubtful if many of them would care to make the investment in time and money necessary to establish a farm.

The former public domain lands may be grouped roughly by location into three large tracts. One of the tracts is in the northeastern portion of the island for convenience called the Catalina Point Tract, another is bounded by the loop road in the north central part of the island which I will call the Dedeo Tract, and the third, which I will call the Mt. Schroeder Tract, is located in the mountainous southwestern part of the island. These areas are quite different in character with examples of rugged coast line, vertical cliffs, dense tropical jungle, coral limestone plateau and grass covered mountains of volcanic origin.

The Catalina Point Tract consists of a twelve mile belt of coast line extending inland one-tenth to eight-tenths of a mile. The elevation extends from sea level to over 500 feet high. In many places the cliffs are perpendicular and the lush jungle vegetation,

rugged rock formation, and views of the sea all combine to make a scenic area of great natural beauty.

The rich, coral soil supports the nearest approach to a virgin forest to be found on Guam. On account of its inaccessibility, tree species can be found here that are seldom seen in other parts of the island. It was in this locality that Japanese stragglers evaded surrender until the latter part of 1951. The natural foods of the sea and jungle enabled them to survive in good physical condition since the end of hostilities in 1945.

This entire tract, due to its rugged character and inaccessibility, is not suitable for individual farming operations. The area should be set aside as a wildlife refuge and the cut over land should be reforested with valuable timber varieties that are becoming so scarce. This is the best locality on Guam to create a wilderness area as there are no roads and even access by foot requires considerable exertion.

The Dedeo Tract of former public domain land has an area of over twelve square miles and includes most of the land inside the loop made by highways 1, 3 and 9. This area is gently rolling and varies from an elevation of 200 feet to about 600 above sea level. The soil is of coral origin and so porous that most of the rainfall penetrates quickly to lower levels. The timber is second growth with small, scattered coconut groves. This land is suitable for reforestation and a scheduled cutting basis could replace a considerable portion of the depleted timber resources of Guam. This tract would also be suitable for livestock grazing.

The Mt. Schroeder Tract in general follows the sea coast from near Inarajan to the southern tip of Guam and then northward to New Agat. There are about twenty-six square miles of area in this tract and elevations from sea level to the tops of several mountains between 900 and 1320 feet high. Although the soil in this area is of volcanic origin it varies greatly in character from narrow but lush stream valleys to barren ridges that are seriously eroding. Most of the area is grass land on the ridges and main plateau. In the valleys there is some tree growth but most of the trees large enough for lumber have been cut. There are a few coconut groves in the lower areas.

The destructive practice of livestock owners of burning grass land to secure tender grass has been going on for many years. The mountain tops and ridges are generally bare excepting for very coarse sword grass (*Miscanthus*) that does not make a satisfactory ground cover. Much of the higher areas are being seriously eroded and there seems to be no top soil remaining. However, in the poorest soil there are scattered pines (*Pandanus tectorius*) and small, seedling ironwood trees (*Casuarina*) which would seem to indicate that these barren ridges once grew timber and could be reforested. In any case, the plateau and lower valleys, with their great variety of plant growth, show a willingness to produce choice timber if given the opportunity.

With much of the Mt. Schroeder Tract now in grass the use of this area for grazing is a natural suggestion. Research into forage grasses may suggest a better grass for feeding purposes, but the crying need is for a ground cover that will prevent erosion. Below the average elevation of this tract there are many small streams that will provide ample all-year water for livestock.

Mount Lamlam, the highest on Guam, with an elevation of 1335 feet, has a road to the summit. This road can be made an outstanding scenic drive and the view from the top is breath-taking. A number of colorful bays and valleys of coconut groves may be seen to the west. To the southeast are the rolling savanna lands with Fena Reservoir in the distance. To the south, there is a long ridge with scattered peaks. Paralleling the coast is the thread like but now impassable road of Spanish construction that formerly connected Agana with Umatac.

Reforestation

The island of Guam at one time was densely forested. The Japanese occupation reduced the already depleted timber land and the needs for post-war construction has taken all of the remaining timber of usable size that is readily accessible. The hardy ifil, Guam's most durable wood, has practically disappeared from all but the most distant localities.

At present, large quantities of timber are being shipped into Guam from the States, Philippines and Japan. Most of this comes in large pieces cut square and milled here to the sizes needed. If some of this timber could be produced here, there would be a material saving in shipping space and transportation costs. Also, the timber would be convenient in case of an emergency. In any reforesting project, breadfruit (*Artocarpus*) should be included as it provides emergency food as well as timber.

The former public domain lands should be considered first for reforestation as the benefits would accrue to the citizens of Guam. The public lands of the southern half of Guam are being seriously

damaged by erosion so reforestation would be the first move in a conservation program. The next choice should be Federal lands reserved for military purposes which could be spared for this purpose or should be camouflaged by timber growth. The last choice would be to plant private lands of sufficient size to produce material quantities of timber and where the owners agree to stipulations as to care and cutting. These private holdings may be exempted from land tax as a special inducement and to insure observance of the requirements.

There are many kinds of trees growing on Guam. However, most of them do not produce commercial timber and should not be included in a reforestation program. Mr. D. H. Kipp, sawmill superintendent for the Brown-Pacific-Maxon Co., the contracting firm for the Federal Government, recommends that four species of trees be planted as they will provide most of the kinds of wood needed for construction work on Guam. The trees recommended by Mr. Kipp in the order of their importance are: Doag, ifil, chopag and dug-dug. A description of these trees as furnished by Dr. Egbert H. Walker, Associate Curator of the National Herbarium, Smithsonian Institution, Washington, D. C., will be found in the Appendix of this report.

In case funds are made available for a reforestation or conservation program, a competent tropical forester should be engaged to direct the work. Seeds are available on Guam of the recommended varieties of trees. Seed beds must be selected and planted and then the seedlings set out at the proper time to get the benefit of the rainy season. The seedlings will need some protection for several years from being overgrown by vines or weeds or being eaten by livestock. After native trees get above livestock height, they can usually take care of themselves.

A system of forest management should be set up, similar in operation to the United States Forest Service, to direct the conservation program from planting to harvesting the timber. When income is derived from leases or timber, it should be paid into a revolving fund to extend the benefits of conservation. Grazing leases should be handled by the office of forest management as there are times when grazing in a recently planted area would be very injurious to the young trees.

A program of reforestation is expensive on account of the cost of labor involved. There is an additional difficulty on Guam on account of there being an acute labor shortage. In order to get around these two very serious difficulties, I would like to suggest that an effort be made to bring in prisoners of war from Korea for this reclamation work. There are several abandoned camps that the prisoners could rehabilitate for their own use. Within the confines of their camps, they could grow most of their own food. The forest tree seed beds could be inside the camps or nearby. These prisoners must be guarded and fed in Korea and that could be done just as well here and important work accomplished at the same time.

A Park Interpretive Program

The value of a park system can be measured by the use made of the parks and by the beneficial effects of the parks on the people using them. It is obvious that different visitors going to the same park will notice different things depending upon their powers of perception, past experiences, training and interests.

It is the purpose of an interpretive program to show park visitors things they would perhaps not see unless they were pointed out

to them. These interesting features of the park may be pointed out by signs along foot trails, by leaflets given to park visitors, by simple trail-side museums and by conducted walks by competent leaders.

The kinds of things that an interpretive program helps park visitors understand are trees, other plants, geology, insects, conservation, archeology, birds, animals, and marine life with opportunities for photography, sketching, etc.

The most effective way to carry on an interpretive program is to have competent leaders in the various lines of study who will give their time to conduct scheduled tours of an hour or so duration. These leaders are usually available in any community and they are willing to explain their personal hobby to others who care to go along on a hike and listen. In this way, expert interpreters can usually be found who will gladly contribute their time at no expense just to assist this type of program. These specialists can be found among the teachers of botany and biology in the schools but also a surprising number can be found among the general public, just ordinary people who have made a study of some particular phase of nature.

A program of interpretation will do much to increase the use of parks and get all ages to understand and love them. Also, the additional knowledge these students of nature receive will broaden their horizons, lead them into hitherto unknown worlds, and make their whole lives more enjoyable.

Historic Sites and Archeological Remains

The first and fundamental need is general protection by law of surviving historic structures, historical monuments, and archeological

sites from destruction and vandalism, especially since the recent transfer of the public domain on the island (until then covered by the Antiquities Act of 1906, like all Federal lands) to the Government of Guam. A Territorial statute to this end, comparable to the various State laws protecting antiquities, should be promptly enacted.

The act should (1) state a general policy of conservation of historical resources, similar to the declaration for the country as a whole in the Historic Sites Act of 1935; (2) prohibit any destruction, unauthorized excavation or appropriation, or other disturbance, of ruins of historic importance (to be specified) and of all archeological sites (not individually listed) on the island of Guam and also prohibit any vandalism of markers and monuments relating to the liberation in 1944; (3) provide for the authorization of scientific investigations (collecting or excavations, by qualified representatives of reputable institutions), issuance of permits by the Governor, or by the appropriate office to which he delegates this function, upon the favorable recommendation of the Pacific Science Board of the National Research Council (this function would actually be handled by the Conservation Committee for Micronesia--which is made up largely by Interior Department personnel--or simply by the Subcommittee on Micronesian Archeology, and need not go through the board itself).

There is no need to include in this act a provision for setting aside or acquiring historic sites or archeological monuments, as this is already authorized in Public Law 33 of August 29, 1951.

Sites which are at present within privately owned tracts of land, should, of course, be acquired by the Government if at all possible,

at least the Casa Real at Ritidian Point and the three Spanish forts at Umatac Bay.

The group of historic structures at Umatac should receive special attention, looking toward development as a Territorial park or historic site; this group might even be proposed later on, after Government acquisition, for consideration as a potential National Historic Site. This group at Umatac would include all three forts, and the ruined church, plus the monument to Ferdinand Magellan, and perhaps also the old stone bridge at Seja Bay as a "detached section".

Although extremely interesting, the "Casa Real" at Ritidian Point probably does not rank with the Umatac group in importance, and calls for little or no development beyond protection.

The surviving structures of the "Governor's Palace" complex, on the south side of the main plaza, should be retained and protected, worked in with the plaza itself in a park scheme, but not requiring special development as historic sites.

Only two of the numerous archeological sites are so located as to be particularly suitable for development and interpretation. The extensive partially-restored latte site in Gongna Cove, at the north end of Tumon Bay, should be acquired by the Government and can be preserved and displayed as one phase of the recreational development of the whole Tumon Bay area. The latte groups in an open field within the settled area of Agana Heights indicate the other such archeological site. The property should be acquired by the Government, and this site excavated for exhibit use, with a field laboratory in operation there in connection with the Territorial Museum.

Organization and development for educational uses of a Territorial Museum on Guam is much the most important step in an interpretive program, without which the preservation of sites and remains does not become full conservation for public use. Markers and additional explanatory exhibits at major sites are also important features of the program, but probably can best be handled in connection with a central museum.

(Note: This section on "Historic Sites and Archeological Remains" prepared by Dr. Erik K. Reed, Chief Archeologist for Region Three, National Park Service).

APPENDIX AND MISCELLANEOUS OBSERVATIONS

Recommended Tree Species

Dr. Egbert W. Walker, Associate Curator of the National Herbarium, Smithsonian Institution, Washington, D. C., prepared the following descriptions of trees recommended by Mr. D. H. Kipp:

Calophyllum inophyllum¹

Local names: Doag, Palo Maria (Guam)

This is a widely distributed tree, common in the Old World tropics from India to the Pacific, and from the Ryukyu Islands and Hawaii to Australia. It is commonest near shores. It reaches 50 feet in height with a trunk diameter up to four feet. The leaves are thick and dark green above, lighter beneath. The bole is short, the crown wide-spreading. It may often grow slanting. The fruits are globose drupes about 1-3/4 inches in diameter. The fresh fruits and the inner bark exude a yellowish sticky sap.

The wood is hard, strong, and tough. It seasons well, but must be thoroughly dried for best results. It is somewhat difficult to work because of interlocked grain, but is durable for interior work, especially when not in contact with the ground. It has been used for general construction, boat knees, general boat building, doors, flooring, sheathing, hubs of vehicle wheels, furniture and cabinet work, gun stocks, and musical instruments.

A greenish yellow oil is obtained from the seeds. In the Philippines, it is called "bitaog oil" and may be used as an illuminant.

1. Useful Plants of Guam, by Safford - contributions from the National Herbarium, Vol. IX.

Its color and odor are due to a poisonous resin, hence it is not usable as an edible fat. It is used as a natural remedy for skin diseases and rheumatism in India. The oil may be used for soap. Its chemical properties have been studied.² The bark yields 11.9% tannin. The doag tree grows rapidly from seeds and is a good roadside or shade tree.

Intsia bijuga³

Local names: Ifil, Ifit (Guam), Ipil (Philippines)

The most important timber tree of Guam. Leaves abruptly pinnate; leaflet two pairs (rarely one pair), obliquely oblong, glabrous, inclined to be leathery; flowers in a dense terminal corymbose panicle; calyx-tube cylindrical; sepals four; corolla consisting of one developed petal, which is exserted and is round in form, with a long claw; fertile stamens three, sterile seven; filaments more than 2.5 cm. long, anthers small; pod rigid, flat, oblong, opening with difficulty; seeds one to five.

The heartwood of this tree is very hard and heavy, but not elastic. It is cross-grained and hard to work. It is very durable and is used for the house posts. At first the wood is yellowish, then it turns rust-color, and assumes a dark color with time, resembling that of black walnut. Although of rather coarse grain, it takes a very fine polish. Nearly all the better houses of the island have tables and settees made of it, and even floors, which are kept beautifully polished by rubbing them with grated coconut wrapped in a cloth, through which the oil oozes. The wood has the virtue of resisting the attacks of termites and decay. Trunks nine meters long and one meter in diameter

2. See W. H. Brown, Minor products of Philippine Forests 2: 158-160. 1921.

3. Ibid, 1, page 49.

are sometimes found, but they usually vary from 2.5 to five meters in length and from 30 to 60 cm. in diameter. Houses made of newly sawn ifil are not whitewashed or painted until the wood has had time to dry and season, on account of the brown coloring matter, which discolors fresh paint. When old, the wood becomes so hard that holes have to be bored in it for nails. The trees are scarce in the vicinity of Agana, but small ones are still comparatively abundant in the forests of the northern part of the island.

Artocarpus communis⁴

Local names: Seeded variety - Dugdug, Dogdog (Guam), Breadnut (Burma), Antipolo (Philippines), Breadfruit

A handsome tree, with viscid, milky juice, broad-lobed or digitate leaves, and gently curving limbs, bearing the celebrated breadfruit. This fruit is oval or spheroid in shape, about the size of a child's head or of a melon. It is formed by the female flowers, which are very numerous, and are grouped in a prickly head upon a spongy receptacle. In the fertile typical form, the fruit is covered with short hard projections, but in the cultivated breadfruit, which is seedless, it is much smoother and reticulated. The male flowers grow in dense, yellow, club-shaped catkins. The leaves are very large, leathery, ovate, wedge-shaped and entire at the base, the upper part three to nine-lobed, dark green and glossy, and paler beneath.

The wood is of fine yellow color. It is not very hard, but it has the virtue of resisting the termite, and if kept dry it is durable. In Guam, it is used for cupboards, shelving, furniture, and

4. Ibid, 1, page 49.

for partitions between rooms. It is also used for canoes, but as these are not well cared for by the natives and moisture injures the wood, they do not last very long. In Samoa, the framework of the roofs of all the best houses is made of the curved limbs of the breadfruit, beautifully rounded, fitted together and wrapped at the joints with coconut sennit.

Dugdug, the "Breadnut", or seeded variety of the breadfruit, grows everywhere in Guam--in the woods, on rocky cliffs, and in low, sandy soil. It is the chief source of timber and of gum, the seedless lemae being too valuable as a fruit tree to be used generally for these articles. The fruit of the dugdug is inferior to that of the lemae, which is softer and more sweetish. It is seldom eaten, but its seeds, called "nangka" (the name in the Philippines for Artocarpus integrifolia, the "jack-fruit"), are rich in oil and are relished by the natives. They are eaten roasted or boiled and are much like chestnuts.

The tree yields other products of economic value, such as native cloth or tapa, from the fibrous inner bark of young trees and branches, and a kind of glue and calking material obtained from the viscid milky juice, which exudes copiously from incisions made in the stem. Bark cloth is no longer made in Guam. It is recorded that during an interval of eleven years, when no ship visited the island and there was a scarcity of woven fabrics, a number of women made petticoats from the breadfruit bark.

Local names: Seedless variety - Lemae, Lemai, Lemay, Rima (Guam), Rima, Kolo, (Philippines), 'Ulu (Samoa, Hawaii), Breadfruit.

The lemae is not as good a timber tree as the dugdug, however, it is so desirable for its fruit that it is grown for that purpose.

The fruit is at first green, becoming brownish when imperfectly ripe and yellow when fully so. It contains a somewhat fibrous pulp, pure white at first, but becoming yellow at maturity. It is attached to the small branches of the tree by a short, thick stalk, and hangs either singly or in clusters of two or three together.

It is eaten before it becomes ripe, while the pulp is still white and mealy, of a consistency intermediate between new bread and sweet potatoes. In Guam, it was formerly cooked after the manner of most Pacific island aborigines, by means of heated stones in a hole in the earth, layers of the stones, breadfruit, and green leaves alternating. It is still sometimes cooked in this way on ranches; but the usual way of cooking it is to boil it or to bake it in ovens; or it is cut in slices and fried like potatoes. The last method is the one usually preferred by foreigners. The fruit baked or boiled is rather tasteless by itself, but with salt and butter or with gravy it is as palatable as well as a nutritious article of diet. Ovens were introduced into Guam by the Mexican soldiers who were brought by the Spaniards to assist in the "reduction" of the natives. They are of masonry and of the typical dome shape of the ovens so common in Mexico. A kind of biscuit is made by slicing the fruit into moderately thin sections after having cooked it, and drying the slices either in the sun or in ovens. Thus prepared, it will last from one breadfruit season to another. The dried slices may be eaten either as they are or toasted, or ground up and cooked in various ways. The Caroline Islanders, a colony of whom lived until recently on the island of Guam, follow a custom widely spread in the Pacific of preserving breadfruit in pits, where it ferments and is con-

verted into a mass resembling new cheese, in which state it gives forth a very disagreeable odor. The fermented paste is made into cakes and baked, and is then palatable and nutritious.

Lemae, being sterile, is propagated from the shoots which spring up around the base of the trunk and readily take root. The dug-dug is grown from the seed, though it occurs in such abundance on the island that it is not much planted. There are a number of varieties of breadfruit recognized by the natives. The species grows so readily that it might prove profitable to plant it for the manufacture of starch or "arrowroot" from the fruit.

Horses and cattle are very fond of the leaves and bark, so that young trees must be protected from them. When pasture is scarce, breadfruit leaves are gathered and fed to stock; and the fruit is so abundant that it is fed to cattle, horses, and pigs.

The breadfruit season begins in June and lasts for about five months.

Ochrocarpos obovalis⁵

Local name: Chopag (Guam)

A medium-sized tree with leaves resembling those of *Calophyllum*. Branches rigid, warty, with light-colored bark; leaves opposite, short-petioled, narrowed to the base, obovate or oblong-obovate, broadly rounded at apex, entire, smooth, ten to 18 cm. long by six to eight cm. wide, with broad, prominent midrib; flowers fragrant, polygamous, lateral, single, or clustered; petals six, white, oblong, about 13 mm. long; fruit three to four inches long, hard, and of an oblong, pyramid shape.

The wood is hard, heavy, fine-grained and durable. It is very highly prized by the natives of Guam, who use it for posts and beams in

the construction of their houses. Sometimes the trunks yield logs five meters long and 30 cm. in diameter. As the tree grows old, red heart-wood is developed which at length takes up a great part of the trunk.

The tree usually grows in rocky places near the shore. Vast quantities have been cut down for the use of vessels touching at the island, but as it multiplies rapidly from the seed, it has not become rare.

Military Reservations

The area of the military reservations on Guam changes frequently as land is acquired or released. However, in January of 1952, the most recent figures for the area of military use were 58,744 acres owned and 13,449 acres leased or a total of over 52% of the area of Guam.

A considerable portion of the acreage is held for but not actively being used for military purposes. Some of it is in process of being released. Under the present practice of land management, it is all lost to the citizens of Guam as far as use or productivity is concerned. It hardly seems good economy to take such a large proportion of the arable land of the island out of circulation and then let most of it lie idle. To serve the best interests of the public, it is recommended that:

1. Land surplus to military needs be released and the Government of Guam given first opportunity to acquire such surplus lands.
2. Reforest or operate grazing or both on lands where this could be done without jeopardizing the military needs.
3. Permit the harvesting of coconuts and timber by former owners of land within reservations, who have not yet been paid for their property.

Certainly great benefits would accrue from the planting of timber on the Naval Ammunition Reservation, Fena Reservoir area and unused portions of Camp Andersen. In time of emergency, lumber is of great value and any produced locally saves shipping and time. Also, many of the areas not actively used could serve for pasture.

The military reservations are of particular interest from a park standpoint as they include the only improved bathing beaches and quite a number of other areas that would be desirable as units in the Territorial park system.

Guam's Dependence on Outside Foods

Perhaps the weakest link in the over-all economy of Guam is the use of large quantities of imported foods. Within the memory of the older Guamanians, the island was self-supporting as to food and enough copra and other products were exported to permit the purchase of desired articles from the outside.

Although the ocean around Guam is teeming with the choicest fish, there is very little of this excellent food offered for sale. However, the people living on the northern Marianas and on the Hawaiian Islands eat great quantities of fish. No doubt "in the old days" fish was a prized article of diet on Guam.

Of course, we know why fish is purchased in cans instead of being caught in the sea, it is easier. Perhaps Guamanians have forgotten that fishing is a sport, and it usually "pays off" with a fish dinner! Interest could be stimulated in fishing by offering prizes for the largest fish of the week caught by hook and line, perhaps another prize for the largest captured by spear or casting net. Competition can be amplified by catches made by age groups to interest children or by the largest of

various kinds of fish. Dealers who sell fishing tackle could well afford to offer prizes that would result in increased sale of their goods. Commercial fishing by professionals is the only way to make food fish available to all. However, a revival of public interest in fishing will certainly augment the food supply and at the same time train people how to catch sea food if the necessity should ever arise. The nicely tended school gardens are an important step in the right direction toward food production. The pupils will learn the basic elements of agriculture in their youth and then they will apply this knowledge throughout their lives. This school training will result in many kitchen gardens through years to come and no doubt a few full time farmers.

Agriculture is a complicated business with the many insect pests and plant diseases that gardeners must contend with. For this reason, I feel that agriculture should be made a required subject for high school graduation. Scholarships should be given to promising students to enable them to get technical training in agriculture, preferably at the University of Hawaii, where problems are similar.

Guam can grow as fine tropical fruits as any place in the world, yet, oranges, lemons, and canned fruits and juices are shipped in by the boat load. Every property owner with garden space should have a few fruit or nut trees. Certainly, it is no more difficult to grow fruit trees here than any place else. Some varieties of fruits will do particularly well due to climatic and soil conditions and information of this nature should be determined by the scientists of the agricultural farm at Barrigada.

In the Hawaiian Islands, the macadamia nut is being planted extensively and in price and quality it is considered the equal of the cashew. In the Kona district of the Island of Hawaii, a great deal of coffee is produced. The coffee is sold to processing plants locally and the growers at present prices have a net return of one thousand dollars an acre. The Kona coffee is practically all consumed locally. The advantage of coffee and macadamia nuts is that they take little care excepting at harvest time so they can be grown by people who are employed and desire a supplementary income.

The market places of Hawaii and the Philippine Islands have ample quantities of a wide selection of fruits. In order to get choice varieties distributed, they could be propagated at the agricultural farm, largely by student labor, and then distributed to property owners who will care for them. Such distribution should include mangoes, avocados, sour sops, custard apples, oranges, grapefruit, tangerines, limes, lemons, papayas, coffee and macadamia nuts.

Many thousands of acres of grass land are available for cattle raising but only a very small proportion of this land is used for anything. Beef cattle, particularly if they have part Indian ancestry, are known to do well on Guam. Cattle raising is a highly specialized business and should only be undertaken by persons with adequate experience. A cooperative stock raising project is being considered at Saipan and if successful it will serve as a guide for similar projects elsewhere.

Enough coconuts go to waste on Guam to feed many thousands of hogs and chickens, yet pork, chickens and eggs are imported in great quantities. The African snails have been found to make good chicken feed if cooked. It is hoped methods will be developed to use these local resources to better advantage.

If the citizens of Guam, and particularly those of school age, had it impressed upon them that the growing of food was a patriotic duty, the importation of food would gradually be reduced and many precious dollars would remain at home.

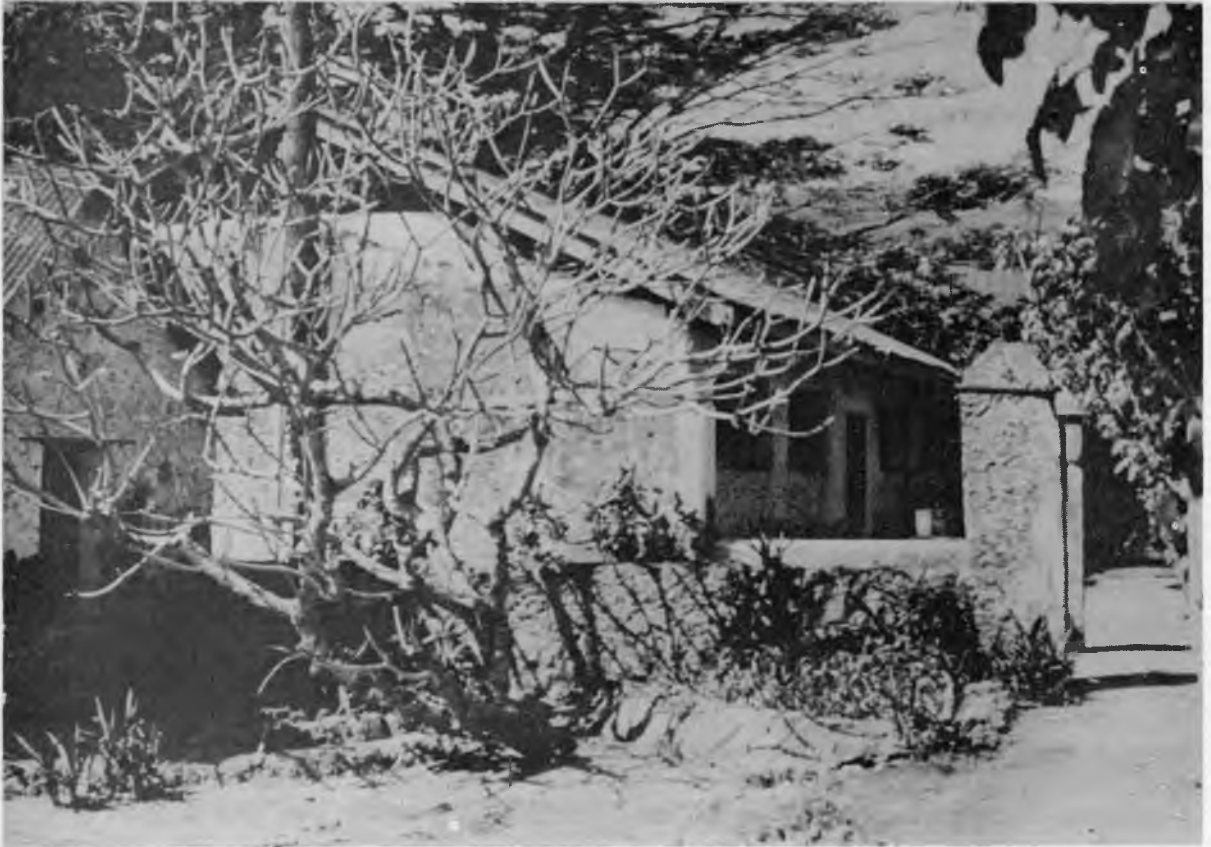
Public Servants for the Territory of Guam

While in Guam, on my park and recreation assignment, it was my privilege to work with many local people holding government positions from the lowly clerk to department heads. In every case of my contact with these public servants, I found kindness, understanding, and a sincere effort to be helpful. I was pleased to find that most of the civil positions were held by Guamanians and I hope this policy will be continued.

A number of technical and professional positions are held by Hawaiians who had been trained in Hawaii or in the States. This group of civil servants have the benefit of the finest training with the added personal ability to fit into the Guamanian way of life. Perhaps this is due to the similarity of climate, foods, and, to some extent, people. I have a very high regard for the competence of the Hawaiians it was my pleasure to meet in Guam. I am sure they will bridge the gap until Guamanians have been trained in sufficient numbers to fill all technical and professional positions.

In order to increase the availability of Guamanian technicians, scholarships should be given to promising students to attend the University of Hawaii or colleges in the States with the understanding that they will return to Guam upon completion of their studies. Advanced students of agriculture should be sent to Hawaii or the Philippines where climate and growing conditions are similar to those in Guam. The local food situation

on Guam would appear to make agricultural training a first priority for advanced students.



These buildings of Spanish design were part of the Governor's Palace group. They are near the Agana Plaza and should be preserved and put to some public use.



Marine Drive approaching Tamuning from the west, Agana Bay at left. The narrow strip between Marine Drive and the Bay should be secured for park purposes before the view of the Bay becomes obscured by small business establishments.



Police Headquarters, Agana. Site of proposed Government House (Governor's residence) on hilltop. Native vegetation should be retained on steep hillsides surrounding Agana.



Asan Beach with bathing and picnic facilities was developed for Service personnel. Similar facilities are needed for the local population.



Tumon Bay also has beach facilities for Service personnel. The remainder of the Bay front should be acquired for use as a public beach.



Umatac Bay and village catered to galleons and whalers under the protection of Spanish forts. Mt. Lamlam, in the background, should be reforested and retained in public ownership.



Mt. Bolanos from Mt. Lamlam. The future usefulness of this type of mountain country depends upon reforestation and public management.



... ..
... ..
... ..





The outdoor class at Merizo village school is a good idea on a warm day.



Rugged coral cliffs at Catalina Point. Campanaya Point in far distance.



Mt. Schroeder is typical of much of the Territorial lands in the southern portion of Guam.



Frequent and intentional grass fires in south-central Guam prevent natural reforestation. The evergreen trees are ironwood (*Casuarina*), a species of little timber value.

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MAP NO. 1 ISLAND OF GUAM

This map shows the main tracts of Public Domain lands now the property of the Territory of Guam.

Excepting where needed for town site use it is recommended that these lands be retained for parks, forests, wild life reservations and other public use.



Compiled from Third Air Reconnaissance Photo Squadron Photographs and Road Survey
Navy—PPO Guam, M. I.

NOTE: REVISION OF MAIN AREA DWG. R 349
FILE: GUAM/WH/7675 010 20 FEB 1947

REV. NO.	DATE	DESCRIPTION	BY	APP'D.
1	10/1/46	COMBINED NAVAL FORCE	AGANAN	GUAM #1
2	10/1/46	BASE DEVELOPMENT DEPARTMENT	MARIANAN	GUAM #1
ISLAND OF GUAM ROAD MAP				
DRAWN BY: [Name]		CHECKED BY: [Name]		SCALE: 1" = 1 MILE
DESIGNED BY: [Name]		APPROVED BY: [Name]		DATE: 10/1/46
TITLE: ROAD MAP		PROJECT: [Name]		ISSUED: [Date]

MAP NO. 2
ISLAND OF GUAM
 BEACH PARK AREAS

Interior park areas should be selected from Territorial lands shown on Map I.

Numbers in circles refer to text of report.



LEGEND

- FIRST CLASS ROAD —————
 - SECOND CLASS ROAD ————
 - THIRD CLASS ROAD - - - - -
 - POINT TO POINT MILEAGE ————
 - ROUTE NUMBER ————
 - VILLAGE ————
- 1 0 1 2 3
MILES

A. GUYER WILSON CHART SERIES		SHEET NO.	
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BASE DEVELOPMENT DEPARTMENT		ROAD MAP	
APPROVED		DATE	
FOR		BY	
ISSUED		DATE	

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Pacific Ocean