
Wotho ATOLL RESOURCE

MANAGEMENT PLAN

*Kōrkan Kapelaak menin
jeramman ko ilo Aelon in
Wōtto*



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Ippān jipān im karejar jān | With assistance and support from

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Customary Law & Language Commission

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Contents | Kobban

I.	Statement by Iroojlaplap Mike Kabua Eññaan jān Iroojlaplap Mike Kabua	4
II.	Vision Statement Kōmelelein Jibadbad In Ad	5
III.	Background Kamelele kōn Wōtho	5
IV.	Site Description Karōk'n Wōtho	7
A.	Location	7
B.	Status of Marine and Terrestrial Resources Jekjekin menin jeramman ko ionnāne im lojet	7
1)	Marine lojet	7
i.	8ii.	102)
	Terrestrial lane	13
i.	14ii.	173)
	Problems and Causes Apan ko im ta unin aer waļok	17
V.	Management Plan Elmakwōt in kapelaak menin jeramman ko	18
	Main Goals Kottopar ko ilōñtata	18
C.	Management Plan Objectives and Actions Elmakwōt eo kab laajrak in jermal ko	18
	Objective 1: Conserve and protect the marine and terrestrial environment Kōjparok lojet im ane eo	18
	Objective 2: Develop a sustainable fishery practice Ejaake mōñakjen in kōjparok ilo eññod	18
	Objective 3: Increase community food security Kaļapļak wewein an jukjuk in ped eo ello mōññā	19
	Objective 4: Increase awareness and knowledge Kadrepakpak ļak melele	19
	Objective 5: Reduce coastal erosion and promote agroforestry practices Kadrikļak an lojet tare ãne im kamejajaik kilen ekkat lowaan mar ko	19
	Objective 6: Increase transportation and access to supplies Kaļapļak iaļan emakùtkùt	20
	Objective 7: Establish and implement a long-term adaptation strategy in the face of climate change Ejaake im kaweppen juōn mōñakjen in tariñaik ukoktak in mejatoto eo eaitok kutien	20
	Objective 8: Integrate resource monitoring into Wōtho social system Katakin jukjuk in ped eo kilen etale ejmour eo an menin jeramman ko	20
D.	Protected Areas Jikin kejparok ko	20
i.		23ii.
		25a) Gear Restriction
		24
	b) Atoll-wide species-specific restrictions	24
		2

c) Commercial Harvesting	25
i. <i>Area designation and map</i> Ijoko emoj kojoloki im pija in ane eo	25
	27
ii. <i>Rules of the Terrestrial Protected Areas</i> Kakien ko an Jikin kejarok ko ion ene	27
VI. Strategy to achieve the objectives Kallejar ñan kōtōpraki mejān kajjik ko	28
A. Responsibilities of the Wōtho Community Eddo ko kuṇaan Jukjukin pād eo ilo Wōt29B. Responsibilities of CMAC (Eddo ko kuṇaan CMAC)	29
VII. Establishment of Local Resources Committee Ejaakin Komiti eo an Menin jeramman Ko Ilo Aelōñ eo	30
A. Composition of the Local Resource Committee Kobban 32B. Responsibilities of the Committee (Jermal ko an K32C. Current Local Resource Committee (Ro uwaan Kamiti in ilo torein 2020)	32
VIII. Monitoring and Evaluation Plan Karok in Etale jerba35IX. Conclusion 34	
X. Acknowledgment and Commitment from Wōtho Community 36	

Note that key sections of this management plan are also presented in dual languages. Unless otherwise explicitly stated, the English version will be prioritized wherever there may be inconsistencies in translation.

I. Statement by Iroojlaplap Mike Kabua | Eññaan jān Iroojlaplap Mike Kabua

Aeri WōthoOO-O! Ujae. Lae.

This victorious cry still echoes today, signifying the bravery of the warriors of Wōtho during the last great battle for Wōtho. As was then and is now, the people of Wōtho have struck forth with the first resources management plan among this cluster of three atolls—Wōtho, Ujae, and Lae – that we call Kapin Meto. It is fitting for a burgeoning Kapin Meto fishery sector to be championed by the People and Local Government of Wōtho Atoll.

This Management Plan is a blueprint for these and other components that will play a role in the years to come, and for the people of Wōtho alongside Ujae and Lae. I am very happy to see one of the key ingredients right here with the blueprint for a sustainably managed fishery for Wōtho, and along with Mayor, Senator, and the Alabs recognize and value of the Reimaanlok Process and the regional efforts of the Micronesian Challenge in bringing this to fruition.

Ekkeilok eo ej ainikien anjo epañijñijtok wōt ñan rainin, kōkōllan an peran rūttariñae in Wōtho ro ilo kar im kijoñjoñ eo ion Wōtho. Ejjeļok oktak jān tōre eo tok ñan rainin, eñin emōj an armejin Wōtho bōk buñtōn eo imaan im kōmmane karōk eo imaan tata ñan kōpeļaaiki menin jerañman ko bwinnier ilo aer ejaake bujen jemdoon im karejar eo ikōtaan aelōñ kein jilu rej tūrtūr ippān doon – Wōtho, Ujae, im Lae – aelōñ kein me jej ñaetaer Kapin Meto. Ekkar ñan juōn jermal in eññod eo ej eddek im kouwa an Kapin Meto in bwe armej ro im kien eo an aelōñin Wōtho ren juraake im wōnmaanlok kake.

Karōk in ikijjen kōpeļaaake bwe en emman im polōmān kilen im wāween amān menin jerañman ko ilo Wōtho ej juōn karōk eo elōt etale im kōmeļeļeik an kar ejaak ikijjen mōttan kein ie im ko jet renaaj jermal ilowaan iiō kañe rej pedotok, bareinwōt ñan armejin Wōtho kobaļok ippān armejin Ujae im Lae. Ikanooj in mōñōñō kōnke ij lo juōn iaan wijkinen ko raorōk ijin ilo karkōn jermal in elōt ejaake ñan jerbale ilo juōn wāween eo etiljek kilen jerbale eññod ilo Aelōñin Wōtho, im kobaļok ippān Mayor eo kab Senator eo, im Aļap ro kab Kajoor ro, ij kile im kaorōke Jermal in an Reimaanlok im kijejeto kein an Micronesian Challenge ilo aer loloodjake bwe jermal in en eddek im kouwa.

Aeri WōthoOO-O! Ujae. Lae.

Iroijlaplap Michael Kabua

II. Vision Statement | Kōmelele in Jibadbad In Ad

The People and Government of Wōtho Atoll strive to establish a burgeoning and sustainably managed development strategy recognizing the importance to sustainably use and conserve our natural resources which support the livelihoods of fishers, farmers, handicraft, and other trades.

Ritōl ro ekoba armej ro Wōtho rej jibadrōk mejen kajjik eo ñan kalōk aelōñ eo ilo aer kile aurōk in kōjparok men ko bunnier rej wajok jān ioon āne bareinwōt lojet ñan aer kajeraṃṃan armej in Wōtho.

III. Background | Kamelele kōn Wōtho

Wōtho Atoll is situated in the northwest quadrant of the Marshall Islands. It is comprised of three large and fifteen smaller islets, with the largest hosting the atoll's entire permanent population of 80-90 people distributed among 22 households (RMI Census 2011). Wōtho's small population is serviced by one school (grades K-8), one medical dispensary, and two Christian churches. There are four teachers and 26 students currently enrolled at the school. The community's governing entity (and main sponsor of this Resource Management Plan) is the Wōtho Atoll Local Government. The Local Government consists of its popularly elected Mayor, five Council members with four Alab members, and one non-voting seat for the Iroj of Wōtho.

Wōtho ej ped uwaan āne ko tuiōñ turilik in Majoļ. Ilo Wōtho ewōr 3 āne eļļap im 15 āne jiddik. Jukjuk in ped eo ej ped ilo āne eo ekileptata (Wōtho, Wōtho). Wōran armej ro ej 90 im ewōr 20 eṃ ioon Wōtho (RMI Census 2011). Ilo jukjuk in ped eo, ewōr juōn iṃōñ jikuul (kùlaaj 0-8), juōn jikin taktō, im ruo ṃōñ jar. Jukjuk in ped eo ej ped ilo iuṃwin tōl eo an Wōtho Atoll Local Government. Uwaan Local government eo eped: mayor eo, 5 council (4 aļap), im juōn jiiā ejenolok ñan iroj eo an Wōtho.

Over the past several decades, the population of Wōtho fluctuated above and below 100 people. According to the Reimaanļok Socio-Economic survey results from November 2015, the population distribution indicated a minimum number of elderly members within the community. This is consistent with key informant accounts that Wōtho is a "youthful island."

Ilo juōn tōre, joñan wōran armej ro ioon Wōtho ekar tōpar jibuki im bar ļe ilaļ in jibuki ilo iiō ko rej pedro ļak. Ekkar jān Socio-economic survey eo ekar kōṃṃan ilo 2015, eļļab kanooj lōñ ritto ilo Wōtho, report in ekūr kaṃool enaan eo ke Wōtho ej "ānen jōdrikdrik".

The main occupations are fishing (30%), farming (30%), and handicrafts (25%). Five of seventeen (30%) households also have salaried employment. Occupations listed include teacher, pastor, community judge, solar technician, and health practitioner. Income earned is primarily used to supplement local food with imported food.

Jerbal ko ekkā aer kōṃṃani ej eṃñod (30%), ekkat (30%), im amimono (25%). Ẽalem ibúlijin jeñoul jilimjoon (30%) iaan iṃōko rej mour jān salary. Jerbal ko jet rej einwōt rikaki, ritōljar, judge, rilale solar, im taktō. Ekkā wōt kōjjerbal tōprak ak kōlla ko ñan wia ṃōñā ko rej itok jān likin im kakobaik ippān ṃōñā in Majoļ ko ioon ene eo ñan kabwe kijen baamle ko.

“As soon as you are old enough to and you are living in Wōtho, you will fish. All men, including male youth, fish.” – Wōtho key informant interview April 2015

The community is traditionally and religiously cohesive, with close economic ties to an estimated 200 migrated relatives and their Iroj (chief) who reside on Kwajalein Atoll which has a total population of over 12,000 and is an active US military installation. Wōtho’s strong economic ties to Kwajalein as well as political and religious ties extending to Majuro provide a support network in times of difficulty, but the lack of regular inter-atoll sea transport and twice-monthly (at best) air transport make these social networks only sporadically available.

Jukjuk in ped eo ej ippāndroon ilo iminene im tōmak ko aer, ekoba jipañ ko rej itok jān ro nukier eñañin 200 uwaer emōj aer emmakūt jān Wōtho, bareinwōt tōl im kōjparok eo an iroj eo aer, eo ej jokwe ilo Kwajalein. Jemjen jemjerā eo ikōtaan Wōtho, Kwajalein, im Majuro ekapeļļok iaļan jipañ ñan Wōtho ilo iien idriñ. Ijowōtke ilo an jabwe iaļan emmakūt kūt ikōtaan āne kein jilu, ekōmman menin an pen an jipañ kein tōpar Wōtho.

In 2013 national government assistance was needed to address a severe drought. This assistance has led to increases in Wōtho’s aggregated household water storage capacity from 20,600 to 32,300 gallons and has also led to the introduction of a PV-powered reverse osmosis unit with 350 gal per day productive capacity. This has allowed the population to reduce their reliance on the underground water lens, as evidenced during the most recent drought in 2015-2016 with low salinity levels reported by the RMI EPA in November 2015 and subsequent site visits by MICS. However, during this same period, disproportionately higher groundwater extraction rates at the site where the RO unit is located is evidenced by the RO downpipe having difficulty now reaching water level during low tides, which was not the case before the RO unit was introduced.

Ilo 2013 eo Wōtho ekar aikuj jipañ jān kien eo an Majoļ ikijen juōn iien mōrā eo ekar kanooj in aitok kūtien. Jipañ in ekar kōmman bwe en ļapļok dren ioon Wōtho jān 20,600 ñan 32,300 gallon bareinwōt armej in Wōtho rekar jino kōjerbal R.O. unit (kein ukok dren). R.O. unit in ekar maroñ kwaļok 350 gallon iumwin juōn raan. Menin ekar kōmman bwe en drikļak an armej in Wōtho kōjatdrikdrik ioon aibōjļal ko aer eo im ej walok ilo ekatok eo Opīj eo RMI EPA ekar kommane ilo iien mora aitok eo ekar bok jikin ilo 2015-2016 im barienwot opīj eo an MICS ke rekar jermal lok ane in. Ijo wok ke, ejja ilo torein mora in, ekar bar walok an jabwe an R.O. unit eo ebok dren jen aiboj lal eo ej ped ie im ej alikkar ilo an pipe eo jab maron tobar dren eo ilo iien ne ke ej paat monaknak, jonan paad eo ekar jab walok ilo iien eo jinoun aer kolaak R.O. unit eo.

The 22 households in the community are also equipped with household solar PV units, primarily used for lighting and household electronics—as well as smokeless stoves. The Protestant church also maintains a small gas-powered generator for a small refrigeration unit that is mostly used for community-wide events. A satellite-based telecommunications center located at the school campus provides a 120 Kbps internet capacity for one computer station and two (2) separate telephones for voice call services.

Bōrooj ko 22 ilo jukjuk in ped eo rej kōjberbal solar unit ñan jeram. Eļap wōt aer kōjberbal jeram ñan kameram mōko im charge. Mōn jar eo an Protestant ej bareinwōt kōjberbal generator ñan freezer jidrikdrik eo an jukjuk in ped eo im ekka aer kojerbal nan iien laplap ko an āne in. Jikin kenaan (DAMA) eo ej ped ilo mōn jikuul en. Ilo jikin kōñaan in ewōr juōn computer eo im elōn an internet, bareinwōt ruo telephone.

IV. Site Description | Karōk'n Wōtho

A. Location

Land Area: 1.67 mi² (4.32 km²)

Lagoon Area: 36.65 mi²

Coordinates (DD): 10.1140288 N 165.96956726 E

Number of islets: 18 islets (Figure 1)

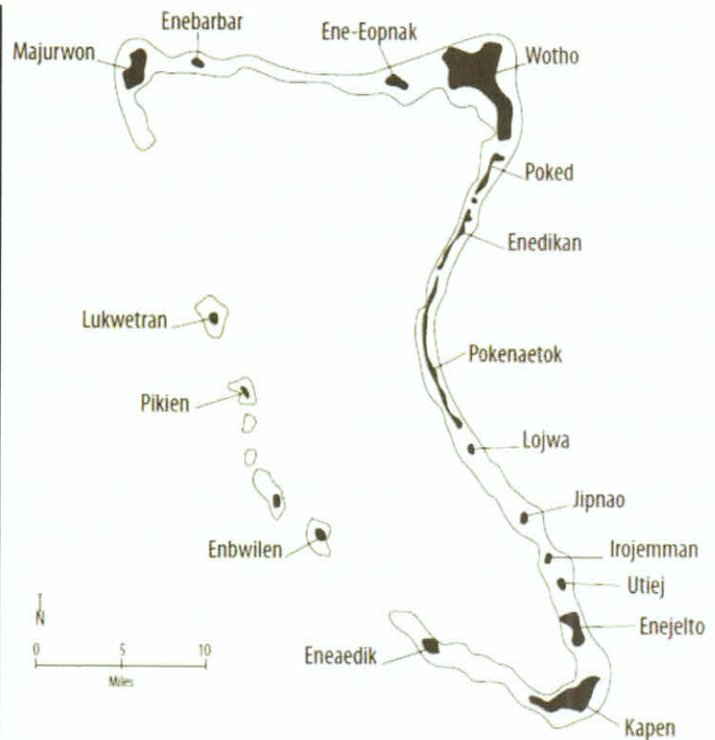
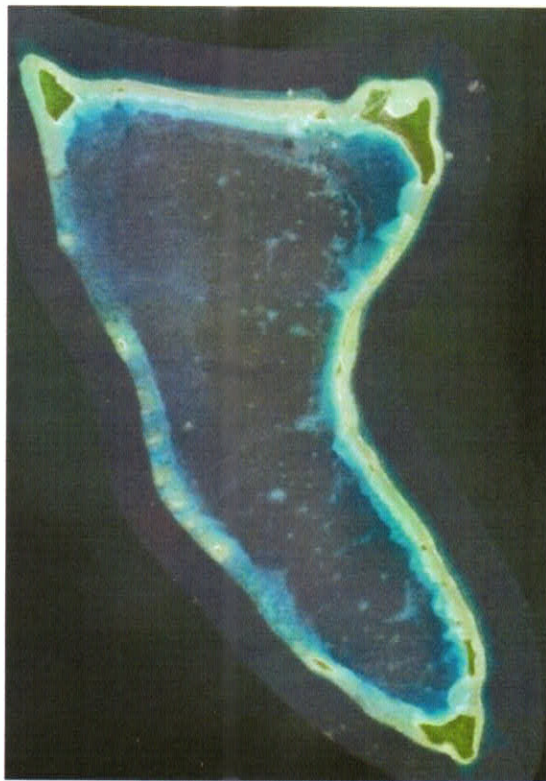


Figure 1 Satellite Map of Wōtho (left) and illustration (right) including the name of the main islets (Source: Esri, DigitalGlobe, GeoEye and RMI Census 2011)

B. Status of Marine and Terrestrial Resources | Jekjekin menin jeramman ko ioonane im lojet

1) Marine | lojet

i. Wotho Fisheries | Kobban malo in Wotho

Wotho is often described as one of the food baskets of the Marshall Islands, because of its isolation and therefore perceived abundance of marine and terrestrial food sources. Traditional leaders residing on Kwajalein periodically use Wotho as a place to gather food for special occasions. These periods of high fishing effort occur about once every two years. This type of “traditional harvest” is not considered a huge problem as the management from the landowners and chief is strong and the consumption (harvest for subsistence) is very low compared to the general consumption from the residing community and outside influence. Concerns persist for traditional protected areas (*mo*) however, as there is no continuous monitoring of these resources.

Ekkā an armej ba ke Wōtto ej juōn iaan āne ko relutōkļak kōn mōññā in lojet im ioon āne, itokwōt jān an ettoļak jān āne ko jet ilo Majoļ. Jet iien iroiļ eo ej kōjerbal Wōtto ñan kakijen ñan iien eļļap ko. Tōre kein ej eļļap eoñqod, ej waļok ekkā wōt ļakin 2 iiō. Ejjab kanooj ļap joreen eo ej waļok ñan lojet eo an Wōtto ilo iien kakijen eļļap kein ilo an kajoor wāwein kōjparok lojet eo jān iroiļ eo im aļap ro, kab jonan kakijen in ejab kanooj lap jen ne jukjuk in ped eo ej kakijen nan er make. Ijowōtke, ewōr inepata ikijeem mo eo Kapen ilo an ejjeļok wāwein etale joñan ejmour eo an kiiō.

During extended periods of less intensive marine resource harvesting, Wotho fishermen take pride in the relative ease and unhindered access they have to nearby fishing grounds (Figure 2). Fishing pressure may be unsustainably intense in the northeastern quadrant of Wotho Atoll moderately distant (1-2 miles) from the population center.

Ilo iminene, ekkā an rieqñod ro eoñqod ilo lojet eo iturin wōt Wōtho Wōtho ñan naajdrik baamle ko aer. Ilo iumwin iiō lōñlōñ ko, ewōr inepata elaññe lojet eo iturin Wōtho Wōtho ejino joreen itok wōt jān an ekkā an rieqñod ro eoñqod jān ijin.

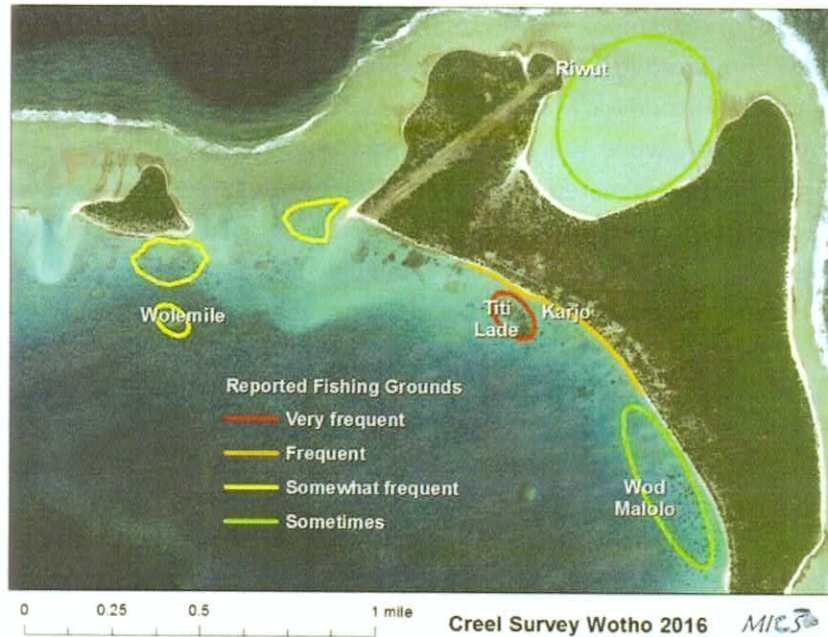


Figure 2 – Exploited fishing grounds divided in four categories (sometimes, somewhat frequent, frequent, and very frequent)

The community of Wōtho has one small motorized boat used to access more distant fishing grounds. There are no wind-driven marine vessels for inter-atoll transport presently available on Wōtho, nor was there during an assessment conducted by the Historic Preservation Office in 2004. Recently, residents of Wōtho declared experiencing difficulties catching fish in nearby fishing spots, and fishermen have observed decreased water quality and visibility in fishing grounds. Preliminary results from a recent comprehensive marine baseline survey by CMAC conducted in June 2016 also suggest large amounts of algae growth in more distant reefs within the atoll’s lagoon.

Juōn wōt ļoon ilo āne eo im rieōñōd ro rej kōjērbale ñan aer tōpar jikin eōñōd ko rettoļak. Ñan kiiō ejjañin wōr kōrkōr ilo Wōtto im ej kamool ilo report eo an HPO 2004 eo. Kiiō, rieōñōd ro rej kwaļok ke eļapļok an lūm ļojet eo iturin Wōtho Wōtho. Ej bareinwōt waļok ilo report eo an CMAC ālikin an kar kōmņmane ekkatōk eo ilo ļojet in Wōtto 2016 eo ke eļap ujoj in ļojet eņōj aer jino eddōk ilo lowaan Wōtto.

Another target species is the Jo or Goatfish, chosen because it is caught using the unique Karjo fishing method which is a line and rod fishing method using an elevated platform during high tide. All Jo caught using all fishing methods within the Creel survey were found to have an average weight and size of 25.7 cm and 0.03 kg. Karjo fishermen have a very high CPUE of 0.3kg per hour. The two Karjo fishermen surveyed said this catch amount is similar compared to 5 years prior, though it is possible that a fewer number of fishermen is participating in this type of fishing method today.

Juōn iaan ek ko eļap kojōki ej jo, itōk wōt jān eōñōd eo ejenolok an riWōtto ña etan kadjo. Ilo eōñōd in rieōñōd ro rej kōjērbal eō im bwā, im rej jutak ioon okwa ko eņōj kapooji ioon pedped ilo tōre ne ej ibwij. Creel survey eo ekar kwaļok ke joñan jo eo ej kojōk jān kilen eōñōd in ekanooj in ļap. Ruo iaan rikadjo ro rekar kalikkar ke ejjañin wōr oktak ilo joñan jo eo ej waļok ilo aer kadjo jān 5 iiō ko remootļak. Bōtaab eiiōt ļak rieōñōd rej kōjērbal kilen eōñōd in jān mōkta.

Overall, within the Creel survey, among all fishermen using all fishing methods, catch amounts were reported to be “fewer” compared to 5 years ago, with some citing “overfishing” and “fish depletion” as the causes. Within the Socio-Economic Monitoring survey, 30% of respondents declared that there are about the same number of fish, while 40% stated fish are somewhat or much smaller in size. Respondents of the survey also estimated an average of 22 lbs per harvest event, about the same as that observed among nighttime spear fishermen (28 lbs), suggesting nighttime spear fishing as the primary method among fishermen. Wōtho has not come up with any fishing regulations and there have been reports of sea cucumber harvesting in the past in which the traditional leaders put an end to.

Ilo an kùtbuujj aolep kilen eḡñḡ ko rej kōmḡmani ilo Wōtto, Creel survey in ekar kwaḡlok ke rieḡñḡ ro rej lo an iioḡ ḡak uwaan ek ko rej koḡḡki raan kein. Rekar kwaḡlok ke ḡōḡttan un ko ej kōnke eḡap ḡān ḡoñan eḡñḡ im ekōmḡman menin an iioḡ ḡak ek. Socio-economic survey (SEM) report eo ej kalikkar ke 30% in bōrooj ko rej ba eḡjañin wōr oktak ilo wōran ek, im 40% rej ba ke edriḡḡak size in ek. Rieḡñḡ ro rej kwaḡlok ke ekkā wōḡ aer koḡḡke 22 pound in ek ilo juōn trip, ḡoñan in enañin eiin-juōn wōḡ iḡpān ḡoñan eo riturḡn in boñ ro rej koḡḡke ilo juōn trip, ekōmḡman bwe en waḡlok ke kilen eḡñḡ eo ekkā tata kōḡerbale ilo Wōtto ej turḡñ in boñ. Eḡjañin wōr an Wōtto kakien in eḡñḡ im ekar wōr report kōn wiakeke ḡipenpen, juōn wāwein eo iroij eo im aḡap ro rekar kabōḡrake.

One traditional communal fishing method is practiced on a distant landing site on the southwestern islets. It is done using frayed coconut fronds to guide fish onto shallow waters in silence and in the dark of night. This method was last practiced in the 1980s and is still recalled by some fishermen, but the great distance and effort required has been hard to overcome in recent years.

Juōn iaan kilen eḡñḡ ko reḡo kōḡerbale ej lemwiḡ. Ekkā wōḡ an rieḡñḡ ro ḡokta kōmḡmane eḡñḡ in ilo āne ḡiddrik ko turōk turilik. Eḡñḡ in ekkā wōḡ aer kōmḡmane ilo boñ im rej kōḡerbal kimeḡ ḡān tōle ek ko ḡān iḡōko repāāt. Eliktata in an riWōtto kōḡerbal eḡñḡ in kar ilo 1980s ko im rieḡñḡ ro rej kememeḡ wōḡ kilen kōmḡmane eḡñḡ in, iḡwōḡke kōn an pen tōpar āne ḡiddrik ko turōk turilik, im aikuj elōñ armeḡ ḡān kōmḡmane, eḡeja aer kōmḡmane eḡñḡ in rainin.

ii. Reef and Fish

According to the Socio-Economic survey, the species most fished and/or favored (listed in ranking order) are:

Ekkar ḡān ekkatok ko rekar bok ḡikier, errein ej ek ko ekka aer eḡñḡdi (laajrak ḡān ḡaptata ḡān driktata):

- **Bwilḡk** - Orangespine Unicornfish - *Naso unicornis*
- **Kubañ** - Convict surgeonfish - *Acanthurus triostegus*

- **Ellök** - Fork tail Rabbitfish - *Siganus argenteus*
- **Mōmō** - Honeycomb grouper - *Epinephelus merra*
- **Jo** - Goatfish - *Mulloidichthys vanicolensis*
- **Merā / Ek mouj** - Parrotfish
- **Mejakut** - Humpnose Bigeye Bream - *Monotaxis grandulis*
- **Mōne** - Bluespine Unicornfish - *Naso unicornis*
- **Paan** - Giant Sea Bass - *Lutjanus bohar*
- **Majaani** - Blue spotted Large-eyed Bream - *Gymnocranius microdon*
- **Berrak** - Orange Spotted Emperor - *Lethrinus erythracantus*
- **Jaap** - Humpback Snapper - *Lutjanus gibbus*

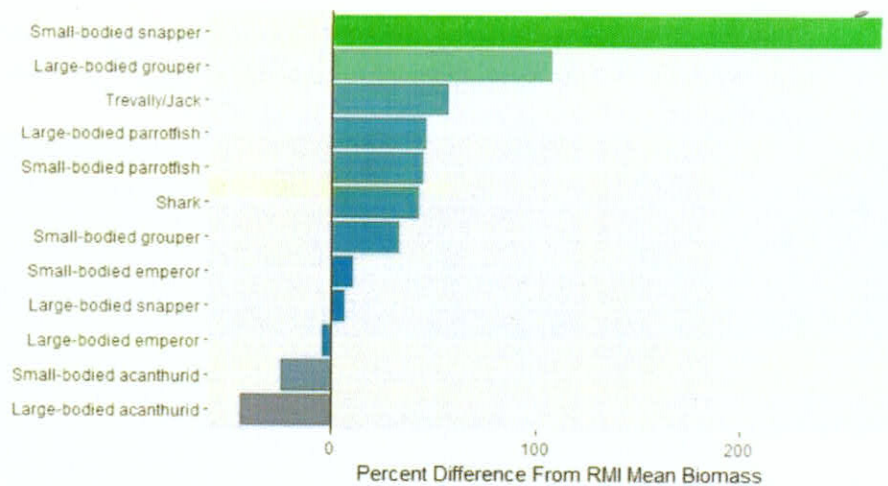


Figure 3 - Wōtho Biomass by fish functional group

Results from the marine baseline survey conducted in 2016 indicate that piscivores (small-bodied snapper, large-bodied grouper, trevallies, and jacks) are leading the production of biomass, followed by parrotfish (Figure 3). The majority of the sites surveyed had a positive Fish Condition score¹ (Figure 4). Two lagoon sites located near the inhabited islet had a low score, which may indicate signs of overfishing. There is evidence that the traditional protected area, Kapen is effective with increased fish biomass within the protected area.

Survey in lojet eo 2016 ej kwaʔok ke mōttan ek ko rellōñ tata uwaer ilo maʔo in Wōtto ej baamle ko an Jato (jetaar, bōneej, etc.), Kūro (jauwe, wōʔaʔo, etc.), ʔane (ikbwij, maʔo), im ʔōjabwil, kōjelintok baamle ko an merā (ekmouj, audaʔ, etc.). Enañin aolep ijōko ekar kōmman survey in ie ekar waʔok ke ebooʔ ek. Ruo wōt iaan ijōko repaake Wōtto Wōtto ekar iiōt ek ie, im ej kwaʔok kōkkalein an ʔap jān joñan eʔñod ilo jikin kein ruo. Ej bareinwōt waʔok kōkkalein an jeral mō eo (Kapen) ilo an lōñ tata ek ilo ie iaan aolep ijōko ekar kōmman ekkatok in ie.

Ciguatera is a common threat that the people of Wōtho avoid knowingly, with commonly ciguatoxic fish reported as: Giant Sea bass, Mullets, Trevallies, Parrot fish, Humpnose bigeye bream, and Black surgeonfish. The common Silverfish (*Gerres baconensis*), used to be categorized as a ciguatoxic fish but in recent years, the people of Wōtho have found it to be ciguatoxic free and somewhat safe for consumption (Figure 5).

¹ Calculated based on a site's (1) total biomass, (2) mean fish size, (3) species evenness, (4) assemblage heterogeneity, and (5) predator biomass. Sites are only compared to other sites within the same atoll and of the same reef type. Values are standardized to have a mean value of zero

Ekkar jān armej ro, mōttan ek ko rej kadrōki ej: Paan, lool, Łane, Merā, Mejakut, im Ael. Kar mōkta rekar kadrōk llimōk, ako ilo iio ko rej pedro łak ejako aer kadrōke im emōj aer bar jino mōññā llimōk

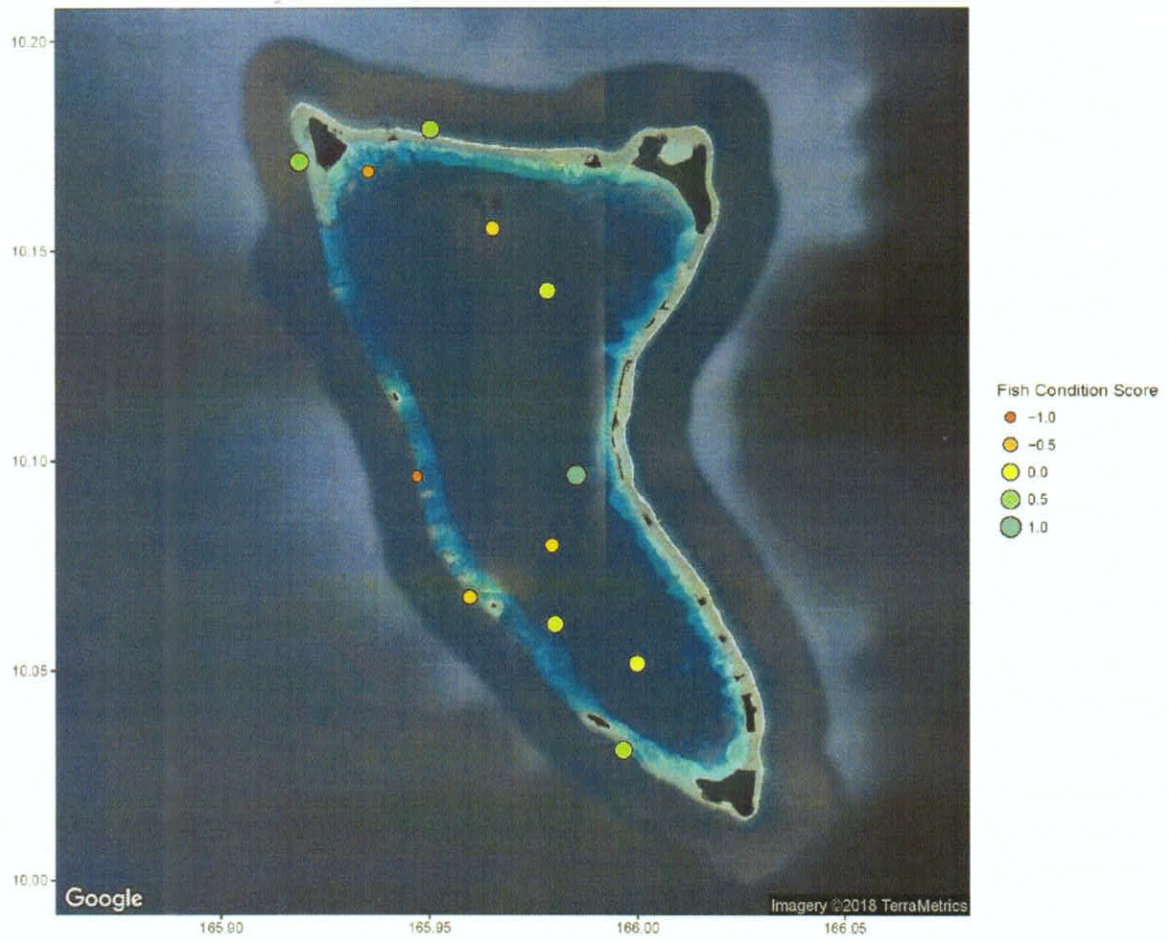


Figure 4 - Fish Condition Score of the sites surveyed during the 2016 marine baseline expedition.



Figure 5 - Map of ciguatoxic fish species in sites around Wōtho Atoll

Recommendations

Based on the marine baseline survey completed in 2016, the University of Guam Marine Lab (Dr. Peter Houk and Andrew Jarrett) provided the following recommendations:

Laajrak in ej kwaʔok naan in rōjañ ko jān UOG, pedped ioon ekkatōk in lojet eo 2016:

- 1) Wōtho's low human population and productivity suggest that it is suited for a multi-type network of marine protected areas
 - 1) *Ilo an iiet armej ilo Wōtho im jab kanooj ʔap eʔñod, ekōmman bwe en emman ñan kōmman elōñʔak jān juōn jikin keʔparok, ilo an oktak rule in eonod ko an area kein ko jān droon.*
- 2) Recommend the establishment of a large subsistence only zone for reefs near the main inhabited island
 - 2) *Ejaake kakien ko ñan kabojrak wiakake ek ko rej kojōki ilo jikin eʔñod ko iturin Wōtho Wōtho.*
- 3) Areas with a low Fish Condition score should be intermittently closed (by season, species, size)
 - 3) *kōmman kakien ñan ijōko eiiet ek ie (kabojrak eʔñod ilo jet allōñ, kabojrak eʔñod baamle in ek ko reiiet, kabojrak eʔñod ek ko rej idrik wōt).*
- 4) The traditional protected area, *mō*, is effective with an increase in fish biomass within the protected area. Hence, it is suggested to use this effectiveness and good standing as an opportunity to expand the boundaries of the *mō*, or border the *mō* with a no-take MPA.
 - 4) *Mō eo Kapen ej kwaʔok ke elōñ ʔak ek ie, enaaj emman ne ekileʔak mō eo im bar kūtbuuj Eneaedik im Enejelto bwe en bareinwōt lōñ ʔak ek ilo āne kein ruo im maʔo eo ikōtaan āne kein jilu.*

5) The remaining area may be open for commercial harvesting under strict regulations and monitoring.
5) Ijōko jet remaroñ peļļak ñan eņņod ñan wiakake ijowōtke ej aikuj wōr kakien ñan kōjparok bwe en drepdrep wōt ejmour eo an ļojet eo kiiō.

6) Ciguatera needs to be the first consideration when deciding on fish that may be targeted by the fishermen. Besides ciguatera concerns, almost all functional groups should be open to harvest from Wōtho.

6) Bwe en maroñ wōr jermal in wiakake ek, ej aikuj alikkar mokta aolep ek in kadrōk ko.

7) Encourage the harvest of pelagic species over reef fish as they are less susceptible to localized fishing pressure. This could potentially be done with a monetized incentive, making pelagic fish more valuable to harvest.

7) Rōjañ rieņņod ro bwe ren kaļapļok ilarak bwe epen an maat ek in ilarak ko. Emaroñ emman ne eļapļak wonen ek in ilarak bwe en ļapļak an itoklimo in rieņņod ro ilo ilarak.

8) Regarding gear restrictions, it is suggested that the following techniques be forbidden for commercial harvesting:

8) Ikijeen kilen eņņod ko, rōjañ eo bwe en bojrak kojermal kilen eņņod kein laajrak ilal ñan eņņod ñan wiakake:

- SCUBA spearfishing | *Le-tank im turon*
- Night-time spearfishing | *Turon in bon*
- Long gillnets (potentially damage habitat and have high rate of by-catch) | *Ok aitok (ekakure wōd ko im eļap an kojōk ek ko rejjab aikuj kar kojōk)*
- Dynamite or explosive fishing (extremely dangerous, kills non-target as well as target fish, and is extremely destructive) | *Kojermal dynamite ak kein kabbokļak ko*
- Use of chemical (may poison fishermen, coral and other organisms, and is dangerous for the consumer of the fish) | *Kojermal baijin (jerajko, etc.)*

9) Suggested species restrictions:

Rojan kon ek ko ej aikuj driklak eonodi:

- All shark species (following the Shark Sanctuary Bill) | *Aolep kain pako*
- Napoleon Wrasse (*Cheilinus undulates*) are not a sustainable commercial species | *Ļappo*
- All large long-lived grouper species are very susceptible to overfishing; (*Epinephelus lanceolatus* & *Epinephelus fuscoguttatus*) | *Jekro/Kidriej*
- Parrotfish, of the genus *Scarus* and *Chlorurus*, are functionally important to the ecosystem, making them a good candidate for quantity or size restrictions | *kōmman kakien ñan kalaajrak size in mera/ekmouj ko remaroñ kojōki im wōran an armej maroñ eņņodi.*

2) Terrestrial | Iane

i. Agroforestry | Kein Ekkan

According to residents of Wōtho, a typical year consists of 70% sunshine and 30% rain or cloudy weather, with trade winds and waves greatest between November and March. The islands of Wōtho Atoll have a naturally tropical forest ecosystem that have been mostly converted to agro-forest over the millennia since settlement by the Marshallese people. Since Western contact, many areas have been managed as coconut plantations and additional species have been introduced and integrated into the agro-forest (RMI Ministry of Resources & Development 2010). Compared to other atolls and islands in the Marshall Islands, food tree coverage on Wōtho is relatively limited due to its dry climate. Recent community consultations on local knowledge and practices indicate that the major food crops include breadfruit, pandanus and coconut (Table 1).

Armej ro rej kwaḷok ke iumwin 1 iiō 70% ej dret im 30% ej wōt ilo Wōtto. Allōñ ko ekka an ḷap kōto ej November ñan March. Jān jinoun, aelōñ in eoobrak kōn menin eddōk ko ekka ad loi ilo ijōko remeenen, im jān ke armej rekar jino jokwe ilo Wōtto, rekar jino jermal in ekkat wōjke in ṁōñā. Im jān tore eo ekar jino itok rilikin ñan Wōtto, elōñ jikin eṁōj kajenolōki ñan jikin kawainini im bareinwōt lōñ menin eddōk kaal rekar jino katōki (RND 2010). Keidi ippān āne ko jet ilo Majoḷ, wōran wōjke in ṁōñā ko ioon Wōtho edrik, tok wōt jān an jeja an wōte Wōtho. Armej ro rej kwaḷok ke wōjke ko ekka aer ṁōñā jeni rej einwōt ma, bob, im ni.

Table 1 - Wōtho food crops (RMI Census 2011)

Agroforestry crops						Garden crops	
Banana	Lime	Papaya	Breadfruit	Coconut	Pandanus	Pumpkin	Squash
52	11	54	116	585	441	17	11

“The islands above 9 degrees latitude are the sunny and dry islands in the Marshall Islands. Wōtho is on the 10th degree latitude.”

“Āne ko reped ilo 10 degree latitude (location) ej āne ko remeenen im

Residents have noticed changes in recent years as rainfall, wind, and associated harvesting and nesting seasons shift with changing weather patterns. In particular, the breadfruit harvest typically from April to September started much earlier (February) in past “dry” years and lead to exceptionally low yields. As a result, the community increased its reliance on imported goods including drought relief supplies.

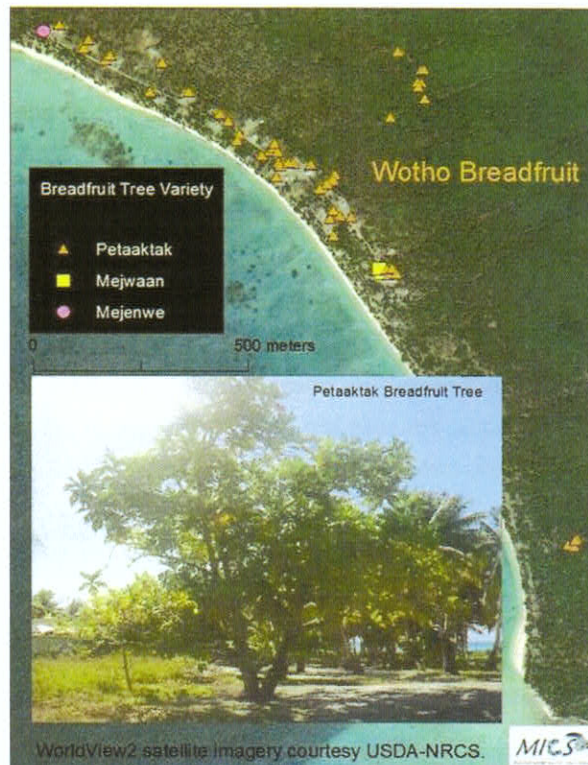
Armej ro rej lo eḷap oktak ikijeen iien ko ekka an wōt, eḷḷap kōto, im iien an lik menin mour im menin eddōk ilo an oktak ḷak mejatoto. Kar ṁokta iien ma ej jino jān Feb. ṅan September, kiiō eḿōj an rumuj ḷak an jinoe ṅan April, ekkōḿḿan menin an driklak mona eo ewalok. Menin ekōḿḿan bwe armej ro ren kojatdrikdrik wōt ilo ṁōññā ko rej itok jen likin.

These shifts in weather patterns and harvesting seasons coincided with a strong El Nino phase leading to increases in air temperature and changes in rainfall including prolonged drought, both of which are predicted in the future due to climate change. Meanwhile the harvest season for pandanus and various flying birds from October to March seems to have remained unchanged, and Wōtho elementary school teachers have led student field activities that highlight land-based ecosystem services found on Wōtho.

Oktak kein ilo mejatoto im iien kalle rekar jino waḷok jān iien El Nino eo ekajoor, im ekar kōḿḿan bwe en ḷapḷak okmāāḅān im oktak iien an wōt bareinwōt aitok kutien an ṁōrā. Jikin katu eo ej loe ke enaaj ḷapḷak okmāāḅān im ṁōrā iliju im jekḷaj itok wōt jān ukottak in mejatoto (climate change). Iḷowōtke iien bob im iien an lik elōñ iaan bao in mejatoto ejjanin oktak. Rikaki ro ilo imwon jikuul eo rekar komman activity ko nan rijikuul ro aer ikijjen waween ko jej loei jeramon ko jen men ko bwinnid.

Several attempts to introduce compost gardening to mitigate climate influence over crops have failed. It may be due to insufficiently enriched soils, the practice of burning forest debris (that traditionally would have been at least partially composted), and unrestrained pigs accessing the crop seedlings. The community re-plants resilient crops such as a type of the pandanus tree near coastlines for both handicraft as an alternative livelihood and coastal barrier.

Elōñ alen aer kajjeon kojermal kōñ ṅan ekkat ak ejjanin wōr toprak ilo jermal in. Emaroñ itok wōt jān an drik on ilo būdrej eo, ḷap an armej ro kattil, im piik ko rejjab oror rej kani kein ekkak ko. Jukjuk in ped eo



eṃōj aer ekkat kein ekkan ko edrik aer joreen jān ṃōrā einwōt bob ilo iturin lojet ṃan bōbrae jān no im bareinwōt nan amiṃono.

Compared to 2010, over 70% of homeowners surveyed indicated a decrease in crops yield. According to one older resident of Wōtho the younger generations do not have an appreciation for the resilience-bearing Mejwaan breadfruit variety. Indeed, only one breadfruit on Wōtho is of the Mejwaan variety. The local women have also tried to get traditional cooking values back but have found it requires greater effort to gather local food and crops already in diminished supply. Meanwhile, islands outside of the main island remain under-utilized as there is no reliable transportation. If healthy and effectively managed breadfruit trees and other food bearing trees in Wōtho may be able to provide a reliable source of nutrients and livelihood for the community (Figure 6).

Keidi ippān 2010, elōñ lak jān 70% in armej ro rekar survey rej ba ke edriklak an kalle menin eddōk ko. Ekkar jān juōn iaan rutto ro, jodrikdik ro rejjab lo aurok in mejwaan, ilo an maroñ mour ilo iien ṃōrā im lan. Ilo Wōtto ewōr juōn wōt mejwaan. Kora ro rekar kajjeon karooltok kilen komat ma ko ṃokta ak ejab toprak itok jān an lap jerbale im ilo an driklak an ma ko kalle. Ijowōtke, āne jiddrik ko ilo Wōtto rej ajimourur wōt ilo an Ejjeļok loon nan topari. Ne enaaj eṃṃan jerbale in kōjparoke wōjke in kalle ko ilo āne jiddrik kein, enaaj maroñ kabwe kijan jukjuk in ped eo bareinwōt enaaj kapeļlak iaļan kōṃṃan jeen.

Aside from food trees, community members identified other trees that support livelihoods and societal functions including rope making, boat building, roofing, handicrafts, and household beautification (e.g. Lau and Pinpin). Residents have also found ways to enhance their household income by harvesting the native medicinal tree named Kejbar, Indo-Pacific Yellowwood, *Neisosperma oppositifolium*. The Kejbar is typically found in climax forests of the Marshall Islands, in this case the central to ocean-facing forests of Wōtho Atoll.

Ijenļokin wōjke in ṃōñā, jukjuk in ped eo rekar bar kwaļok wōjke ko jet rej kojerbali ṃan kōṃṃan to, loon, borooj, amiṃono, im kein kaiboojooj ṃōko. Bareinwōt eṃōj an armej ro lo kilen aer kōṃṃan jeen ilo aer wiakake kejbar.

A flood risk model was developed for Wōtho and will be included as an Appendix to the Resource Management Plan.

ii. Livestock | Taap menin mour

In 2004, it was reported that “the increasing pig population is a considered problem on Wōtho, where the population is divided between those wanting free roaming versus fenced pigs” (HPO 2004: 52). More recently, the Local Council has sent pigs from Majuro to populate a piggery on the island. These pigs have been fenced in within a cement structure located along the beach front and outfitted with a septic tank (Figure 7). The piggery cannot fit the rest of the pig population, however, and so many pigs continue to roam freely. When surveyed in November 2015, a large percentage (88%) of households

owns pigs. Chicken is also a valuable livestock that supports the community's nutritional needs, with 76% of households owning chickens.

Ilo 2004, ṁōttan abunōṁo ko ej “wōran piik ejjab jemḷak an eddōk im ekōṁṁan apan, eo im jimattan in jukjuk in ped eo rekōṁaan bwe en oror piik ko im eo juōn rejjab kōṁaan oror piik” (HPO 2004: 52). Ilo iio ko rej jemḷok council eo ekar boktok piik jān Majuro im kanne imon piik eo. Imon piik in ej kōṁṁan jān cement im ewōr an septic tank. Ijowōtke ejabwe jikin ṁan piik ko jet ioon āne eo im ekōṁṁan menin an armej kōṁḷak bwe ren itoitak. Survey eo 2015 ej kwaḷok ke 88% in jukjuk in ped eo ewōr nejier piik. Bao ej



bareinwōt juōn iaan menin mour ko rej taapi ṁan ṁōṁā, eo im 76% in jukjuk in ped eo ewōr nejier bao.

3) Problems and Causes | Apan ko im ta unin aer waḷok

Several issues were identified as threats to Wōtho's natural resources and livelihood during the planning and consultation process (LEAP). The source(s) of these issues may stem from human activities or natural occurrences.

Jetjo apan rekar elaaḷrak einwōt menin kauwōtata ṁan menin jeramṁan ko an Wōtho. Jarjar in apan kein rej itok jān jimor komanman in armej im komanman in Anij.

1. Livelihood Threats | Apan ko rejelet mour an armej:

- i. Limited local and inter-atoll transportation options | Ejabwe iaḷan emakūtḷūt lowaan kab namoj in āne eo
- ii. Limited economic opportunities resulting in migration to urban centers | Ejabwe wewein kōṁṁan jeen kōṁṁan menin an armej emmakut jān Wōtto
- iii. Increased air temperature and solar intensity potentially representing health risks (skin) | Okmāāṁan in aḷ ekōṁṁan apan ṁan ejmour
- iv. Isolation and lack of transport increases community's vulnerability in case of emergency | Ilo an ettoḷak jikin takto ko im jabwe ial ejelet ejmour an armej

2. Terrestrial Threats | Apan ko ṁan ioon āne emōrā:

- i. Deforestation from cleaning, clearing, and livestock | Eḷap mani wōjke ko ṁan karreo im jān meninmour aer kani
- ii. Limited crop variety | Ejjab lōṁ kain wōjke in kalle (enaṁin eiin juōn aolep wōke)
- iii. Intense drought and low rainfall resulting in low crops yield | Eḷap ṁōrā im drik wōt kōṁṁan menin an drik an kalle kein ekkan ko.

3. Marine Threats | Apan ko ṁan loḷjet:

- i. Over-reliance on nearby fishing grounds | Eḷap eoṁḷod jān loḷjet eo iturin Wōtto Wōtto

- ii. Rising sea surface temperatures | ʟojet eo ejino okmaanenʟak
- iii. Rising sea level | Uwe ʟo im tare āne eo
- iv. Increased occurrence of algae in the lagoon (unexplained) | Eddōk ujoj in ʟojet ilo iaar (ejjab alikkar ta unin)

V. Management Plan | Elmakwōt in kapelaak menin jeraṃṃan ko

Main Goals | Kottopar ko ilōñtata

- Protect marine and terrestrial resources through sustainable management practices | *Menin jeraṃṃan ko ʟojet im āne renaaj ped iuwmin kōjparok*
- Revamp traditional Marshallese methods of conservation and exploitation of natural resources | *Kamour im kamejaja wewein kōjparok ko jān ritto ro im manit eo ad*
- Address the challenges of climate change and its effects with the assistance of the local government | *Jukjuk in ped eo en melele kōn joreen ko rej jarjar jān ukotak in mejatoto im wewein aer jelmae apan kein ippāndroon ippān local government eo aer.*

C. Management Plan Objectives and Actions | Elmakwōt eo kab laajrak in jerbak ko

The community of Wōtho expressed the need to address current and upcoming issues in the fisheries, food security, and transportation sectors, and expressed concerns over weather related events and lack of use of traditional knowledge that are exasperating hardship on Wōtho. The objectives of the plan are as follow:

Armej in Wōtto rej kwaʟok kon aer aikuj in pojak nan jelmae apan ko rej walok ilo ʟojet eo im apan ko rejelet aer maroñ kabwe kijen baamle ko, ilo aer kajjeon kaʟapʟak iaʟan emakùtkùt lowaan im inamojin Wōtto. Rej bareinwōt kwalok kon aer aikuj in jelmae apañ ko rej waʟok jān oktak in mejatoto im karooltok wewein mour eo mokta an ritto ro. Errein ej laajrak in kōttopar ko:

Objective 1: Conserve and protect the marine and terrestrial environment | Kōjparok ʟojet eo im ane eo

- Establish a network of Marine and Terrestrial Protected Areas (see Section 5.4) | *Ejaake jikin kejparok ko ioon āne im ʟojet*
- Implement and abide by the rules and regulations of the Wōtho Atoll Natural Resource Management Ordinance 2021 (e.g. species, size, seasons, quantity and approved fishing methods in the network of MPAs) | *Kaweppen kab loor kakien in Kejparok menin jeraṃṃan ko jān Local Government Ordinance*
- Promote awareness and education on the good and services provided by marine and terrestrial ecosystems | *Karon kab katakin jukjuk in ped eo kōn aurok in ʟojet im jeraṃṃan ko rej waʟok jān ʟojet*

Objective 2: Develop a sustainable fishery practice | Ejaake mōñakjen in kōjparok ilo eoñod

- Design a fishery based on a precautionary approach to ensure environmental, economic, and social sustainability | *Karok im kakankan kakien in eoñod ko bwe en jab jelet ʟojet eo, kilen kōṃṃan jeen, im kijen baamle ko*

- Establish the necessary institutional and legal framework for the issuance of coastal fisheries licenses (in coordination with other Kabin Meto Atolls if appropriate) | *kōmman kakien ak buntan ne ko iumiŋ opij ko rekkaŋ, ñan maroñ leʝok melim ñan eʝoñod (ne emman, kōmmane kwon in ippān aelōñ ko jet ilo Kabinmeto)*
- Define obligations and rights of Wōtho community residents, and duties and powers of the Local Government and Local Resource Committee to ensure implementation of fishery management and to achieve this objective | *Kalikkar eddo im maroñ ko an jukjuk in ped eo im eddo im maroñ ko an Local Government eo bwe elmakwōt in en toprak.*
- Identify sources of sustainable financing for monitoring, surveillance, and enforcement | *Pikwōt joñan jeen eo ebwe ñan kōmman jermal in monitor, surveillance, im kaweppen ilo kien.*
- Use of data-driven application of regulations for the harvesting and export of fish and fish products including new fish species | *kōmman record in ek ko rej kojōk im kojembali ñan ejaak kakien in wiakake ek*
- Monitor ciguatera in fish species (prohibit the sale of potentially harmful species) | *Etale ek in kadrōk ko (jab wiakake ek in kadrōk)*

Objective 3: Increase community food security | Kaʝapʝak wewein an jukjuk in ped eo ello mōñā

- Conduct effective replanting programs of key food crops (coconut, breadfruit, and pandanus) | *kōmman jermal in ekkat wōjke in mōñā aurok ko epoʝōmān.*
- Seek assistance from knowledgeable organizations on agroforestry knowledge and methods (seeds selection, location, maintenance, etc.) | *Kappok jipañ jān opij ko retijemʝak ilo jermal in ekkat (kappok ine, jikin ekkat ko rejijot tata, wewein drepjij ejmour an wojke ko, etc.)*

Objective 4: Increase awareness and knowledge | Kadrepakpak ʝak melele

- Raise awareness of community members on | *Karon jukjuk in ped eo kōn:*
 - The benefits of ecosystems natural defenses (sediment balance, coastline buffer) | *Aurok in menin jeraṃman ko ilo aer jipañ bōbrae (ño, kōto, etc.)*
 - The crucial role of parrotfish and other functional species in regulating coral reefs | *Aurok in mera, ekmouj, audam, etc. ñan wōd ko (rej karreo ujuj in ʝojet)*
 - Behavior changes to avoid activities and practices that impact natural defenses | *Ukwōt iminene ko rekakkure pelaak ko pelaakid (ittil ʝokwōt).*
 - Effective solution to ongoing issues (e.g. strategies to address livestock interference) | *Wewein eo epoʝōmān ñan mejal apan ko im rej jelet jermal kein ad*
 - Traditional knowledge | *Jela im iminene ko ad jān ritto ro*
 - Citizen-based environmental monitoring | *Jukjuk in ped eo rej record ta ko rej loi ilo menin jeraṃman ko*

Objective 5: Reduce coastal erosion and promote agroforestry practices | Kadrikʝak an ʝojet tare āne im kamejaʝak kilen ekkat lowaan mar ko

- Maintain and develop buffer zones around flood risk areas by planting native, resilient, salt-tolerant coastal vegetation and allow space landward of such areas to enable them to adapt

naturally to sea-level rise | *Drepjij im kōkajoorļak pedped ko ñan tariņaeik ņo ko ilo ad ekkat wōjke in Majoļ ko remaroñ eddōk iturin lojet.*

- Promote sustainable use of agroforestry resources for livelihoods development in handicraft, medicinal, and other high value products for export | *Kamejajaik kilen ekkat wōjke ibulen mar ko ijo eļap on ilo būdrej eo ñan ekkat wōjke in amiņoņo (unmaaņ), uno in Majoļ, im ko jet.*

Objective 6: Increase transportation and access to supplies | Kaļapļak iaļan emakùtkùt

- Seek assistance to increase the transportation frequency between Wōtho and other atolls, particularly Kwajalein as the closest urban center | *Kapok jipaņ ñan kaļapļak iaļan emakùtkùt ikotaan Wōtho im āne ko jet einwōt Kwajalein.*
- Secure and maintain equipment for local transportation; to reach distant islets and pelagic fishing grounds within Wōtho Atoll | *Pikwōt in kōjparok wa ko remaroñ emakùtkùt lowaan malo in Wōtto im bareinwōt ilikin Wōtto ñan illarak.*

Objective 7: Establish and implement a long-term adaptation strategy in the face of climate change | Ejaake im kaweppen juōn mōņakjen in tariņaik ukoktak in mejatoto eo eaitok kutien

- Utilize the inundation exposure assessment upon building new infrastructures | *Kojerbal katak ko im emōj kōmņane ñan lale ne enaj iuwe ņo mōkta jān ekkal jabdrewōt ilo āne eo*
- Request training(s) in resource monitoring from CMAC partners | *Kajjitok jipaņ ikijeem training ñan etale ejmour an menin jeraņņan ko jān CMAC*
- Maintain the island's storm shelter(s) | *Kōkmanņanļok im kōjparok iņōn kōne eo*

Objective 8: Integrate resource monitoring into Wōtho social system | Katakin jukjuk in ped eo kilen etale ejmour eo an menin jeraņņan ko

- Support Wōtho Elementary School to engage students, parents, and community leaders in environmental monitoring activities relevant to the Wōtho Atoll Resource Management Plan | *jipaņ Wōtho Elementary School kakobaik tok rijikuul ro, mama im baba ro, im ritol ro bwe ren bareinwōt jipaņ ilo jerbal in etale ejmour eo an menin jeraņņan ko rej ekkeijel tok ippān Management Plan in.*

D. Protected Areas | Jikin kejparok ko

Since marine protected areas serve a variety of purposes, different forms exist in terms of size, spacing, degree of environmental / fishery protection. Generally, MPA designs are expected to provide multiple benefits including protection of fish stocks, preservation of critical habitats such as spawning and nursing grounds, and protection of biodiversity and ecosystem function. There are four types recognized under the Protected Area Network Regulation 2020:

Eaurok bwe jān melele ke elōñļak jān juōn wewein ejaak jikin kejparok. Jikin kejparok ko rej pedped ioon ta oktak ko jukjuk in ped eo ekōņaan loi ilo menin jeraņņan ko aer. Ilo an ejaak jikin kejparok ko, an jukjuk in ped eo im ritol ro aer pepe ñan kelet ia ko renaaj jenolok ñan jikin kejparok, im joņan aitok im drepakpak in jikin kejparok ko. Jet jikin kejparok emaroñ kankan kakien ko aer im jet emaroñ jab kanooj kankan kakien ko. Jikin kejparok ko ilo lojet rej kōjparok elōñ kain men ko einwōt: wōran ek, wōd ko, etc.

Elōñ emen kain jikin kejarok iumwin Protected Area Network Regulation (Kakien ko an jikin kejarok) 2020:

- (a) Type I – Subsistence Only. This area is managed for subsistence non-commercial use. In international standards, this relates to the IUCN Category VI-Managed Resource Protected Area | *Ijōko emōj kajeno]ok ñan Type I jikin kejarok emelim eoñod ñan kakijen, bōtaab ejjab melim eoñod ñan wiakake ilo area kein.*
- (b) Type II – Special Reserve. This area is subject to a high level of protection, and occasionally a very low level of subsistence or special occasion activities. In international standards, this relates to the IUCN Category Ib -Wilderness Area. Examples of this are the atolls of Ailinginae and Bikini that have high levels of protection and restrictions on human activities | *Ijōko emōj kajenolōki ñan Type II jikin kejarok e]ap]ak an kankan kakien ko. Ejeja an armej drelōñetok area kein im ejjab melim eoñod ñan wiakake. Ijoko ekka aer kojeral wewein kejarok in ej jikin an ek toor ak lik. Area kein ekka aer kilok nan eonod 2-5 allon ilo juon iio nan kotlak an ek ko lik.*
- (c) Type III – Restricted and protected area. This area has total restrictions subject to no activities, either within a large protected area or in an identified protected area | *Ijōko emōj kajenolōki ñan Type III jikin kejarok ko ekankan tata kakien ko ie. Ejjab melim kōmman jabdrewōt makutkut im jeral ilo area kein.*
- (d) Type IV – Traditional mō. This area includes either parts of land, a whole island, or a reef area that is managed and restricted through the practices of mō by Chiefs (Iroj) only | *Ijōko emōj kajenolōki ñan Type IV jikin kejarok ej mō ko an Iroj ro. Area kein remaroñ ped ioon āne, bareinowt lojet im rej loor kakien ko an Iroj ro. Aolep melim ñan komman jabdrewōt jeral ilo area kein renaaj itok wōt jān ritol ro ilo manit.*

Fully protected MPAs are most effective in conserving reef fish stock compared to rotational / seasonal reserves, which have fewer benefits for species populations (Williams et al. 2006, Friedlander et al. 2003, 2007) as they are particularly designed to ultimately ensure the conservation of populations inside the protected boundaries and to enhance fisheries outside the protected area (Halpern et al. 2006).

Jikin kejarok eo ekankan tata kakien ko an (Type III) e]ap]ak an po]ōmān ilo kōjparok ek jān jikin kejarok ko jet. Ilo an jab melim kōmman jabdrewōt ilo area in, ekōmman bwe ek im wōd ko ren wamourur im lōñ]ak, kōmman bwe ijōko repaake area kein ren bareinwōt wamourur.

In addition to a healthy coral reef ecosystem, a healthy and resilient shoreline is essential in providing the best possible resistance to coastal hazards. Coastal protection services provided by reef and shoreline ecosystems to human societies include (i) the reduction of marine inundation and coastal erosion by wave energy attenuation through wave friction over the reef flat and strand vegetation, and (ii) sediment delivery to the island, which is controlled by reef productivity, reef-to-shore sediment transport and the maintenance of accommodation space for sediment deposition at the coast.

Ekkeijel]ok wōt ippān ejmour an wōd, eaurōk bwe parijōt ko ren bareinwōt wāmourur ñan bōbrae joreen ko rej walok ñan āne eo jān lojet. Men kein ruo re]ak ejmour im kajoor rekajeramman koj armej ilo (i) an

wōd ko bōbrae im kadrikʌk kajoor in ʌo ko rej jibadrōkʌk parijōt eo, im (ii) wōd ko rej boktok bok ʌan parijōt eo ej bōbrae bwe ʌo en jab tare būdrej eo.

There is now wide acceptance of atolls' exceptional vulnerability to climate change. Specifically, sea level rise poses one of the most widely recognized climate change threats to the low-lying coastal areas of islands and atolls (Ellison et al. 2016). Additionally, local human disturbances also play an important role in increasing the islands' vulnerability and decreasing resilience. Inhabited islands generally experience human disturbances (e.g. sediment mining, sediment transport disruption and coral reef degradation, logging, seedlings removal) that may alter their natural dynamics, and as a result, exacerbated coastal erosion and marine inundation. The future of island nations –that is, whether their populations will be able to stay or be forced to migrate– will undoubtedly be driven by a complex interplay of climatic, ecological and human-driven processes, to which the alteration of the reef ecosystem protection services by human activities is central. Terrestrial Protected Areas are an essential tool in reducing, mitigating, or reversing the impacts of climate change and human disturbances.

Enaʌin aolep lal jiddrik ko ipelaak in lalin einwōt ʌajoʌ rej ioon joreen ko itok wōt jān an walōʌtak dren (ʌojet). Im jet iaan iminene ko an armej ekōmʌan bwe en ʌap ʌak joreen kein. Jet iaan iminene kein ej einwōt ebbok bok jān ʌojet, rubrub wōd ʌan kōmʌan dreka im ekkal, im jokjok wōke ko rej drepij parijōt ko. Men kein aolep rekakkure ejmour im kajoor eo an wōd im parijōt ko ʌan aer tariʌaik an walōʌtak dren. Kiiō armej rej aikuj kōmʌane ijo kwōʌaer ʌan jipaʌ wōd im parijōt ko tariʌaik apan in. Eaurok bwe en ejaak jikin kejarok ko ioon āne ʌan kōjparok kajoor im ejmour eo an parijōt ko.

1) Marine Protected Areas | Jikin kejarok ko ʌojet

i. Area designation and map | ijōko Wōtho ej kajenolōki ʌan jikin kejarok

The Wōtho Network of Protected Areas includes four Marine Protected Areas of different types (Figure 8). All areas extend 300 meters (984 feet) outward (towards the ocean side) from the reef crest.

| Ilo erreimanʌok eo ʌan kōjparok ʌojet eo, Wōtho ej komlet bwe area kein ren jikin kōjparok:

North East: Type I – Subsistence only (red – 1,560.04 ha) – This area is managed for subsistence non-commercial use only. Exploitation of resources is only allowed for community subsistence.

Buroro ej kalikkar ijo armej remaroʌ eʌōʌod ʌan kakijen bōtaab ejjab melim enod ʌan wiakeke.

North West: Type II – Special Reserve (white – 779.03 ha) – This area is subject to seasonal closure and a low level of subsistence.

Mouj ej kalikkar ijo ejjab melim eʌōʌod ie, mae elōʌ melim jān local government im ritol ro.

South: Type IV – Traditional mō (blue – 630.05 ha) – The area is managed and restricted through the practices of mō by Chiefs (Iroij) only.

Blue ej kalikkar mō eo an Iroij eo. Ilo area in, ejjab melim eʌōʌod ie mae elōʌ malim jān ritol ro ilo manit.

Center: Commercial Fishing allowed (green – 10,439.14 ha) - Fishing for commercial purposes is allowed although atoll-wide restrictions and regulations are applicable.

Green ej kalikkar ijo emalim eņņod ie ñan wiakeke bareinwõt kakijen.

A total of **13,406.26 hectares** of Wotho Atoll nearshore environment is under some form of protection.

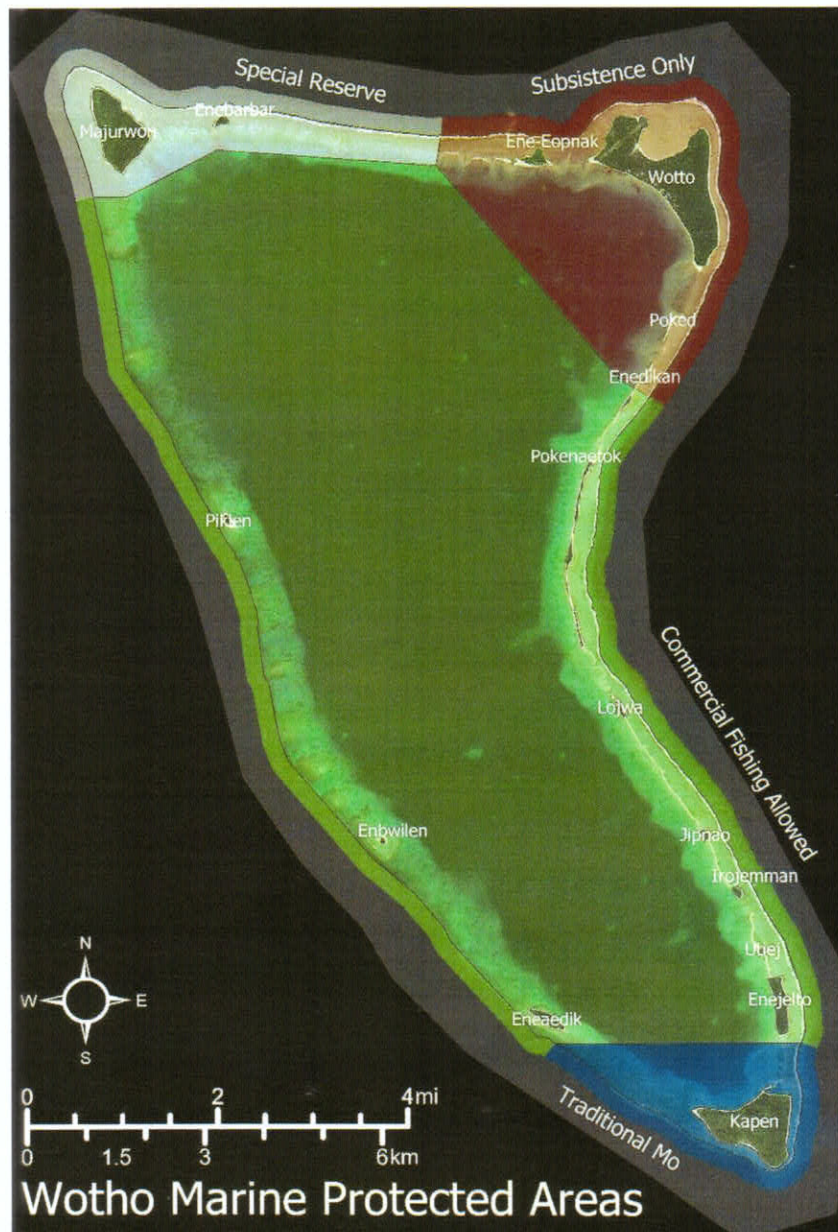


Figure 8 – Map of Wotho Marine Protected Areas (left) including a Subsistence Only Area (red), Special Reserve (white), Traditional Mo (blue), and an area where Commercial Fishing is authorized (green). All areas include a 984 ft (300m) outward buffer from the reef crest (right).

ii. *Rules of the Marine Protected Areas*

Based on the Wōtho Atoll Natural Resource Management Ordinance 2021, the following rules apply | *Pedped ioon kakien in eḡñḡd ko an Majoḡ im Ordinance ko an Wōtho, kakien kein ilal rej ella:*

a) *Gear Restriction*

The use of specific fishing gear and fishing technique varies based on the purpose of the harvest (subsistence vs commercial). Refer to the table below (Table #) for details.

Gear and fishing technique	Subsistence fishing	Commercial fishing
<i>Fishing using underwater breathing apparatus (e.g. SCUBA)</i>	Forbidden	Forbidden
<i>Night-time spearfishing</i>	Allowed	Forbidden
<i>Short Gillnets</i>	Allowed	Forbidden
<i>Long Gillnets</i>	Forbidden	Forbidden
<i>Dynamite and other explosives</i>	Forbidden	Forbidden
<i>Chemicals and poisons (e.g. Clorox)</i>	Forbidden	Forbidden

Kilen eḡñḡd ko	Eḡñḡd ñan kakijen	Eḡñḡd ñan wiakake
<i>Eḡñḡd im kojerbal tank</i>	Ejjab melim	Ejjab melim
<i>Turon in bon</i>	Emelim	Ejjab melim
<i>Ok aitok</i>	Emelim	Ejjab melim
<i>Kojerbal kein kabbokḡak</i>	Ejjab melim	Ejjab melim
<i>Kojerbal baijin (Jerajko)</i>	Ejjab melim	Ejjab melim

b) *Atoll-wide species-specific restrictions*

The Wōtho Atoll Resource Management Plan includes atoll-wide restrictions to specific species that apply to all marine protected area types (See Ordinance for details) | *Ek kein rej laajrak lal ejjab melim eḡñḡdi ilo jikin keḡparok ko.*

Wōtho shall adopt the turtle regulations stated in Part III, section 33 of the Marine Resources Act 1997, specifically that:

<p>Turtle Size Regulations / <i>Jab ebbok won jidrik</i></p> <p>Hawksbill Turtle (<i>Eretmochelys imbricata</i>), <i>Jōbake</i></p> <p>Green sea turtle (<i>Chelonia mydas</i>), <i>Wōn</i></p>	<ul style="list-style-type: none"> • No hawksbill or green sea turtles shall be taken or intentionally killed while on shore, nor shall their eggs be taken. • No hawksbill turtle shall be taken or killed except for subsistence fishing and where its shell is at least 27 inches when measured over the top of the carapace shell lengthwise. • No green sea turtle shall be taken or killed except for subsistence fishing and where its
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	<p>shell is at least 34 inches when measured over the top of the carapace shell lengthwise.</p> <ul style="list-style-type: none"> No person shall buy, sell, display for sale, offer for sale or otherwise market any turtle or turtle products.
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No *pinctada margaritifera*, commonly known as black-lip mother of pearl oyster shell, shall be taken from the first day of August to the thirty-first day of December inclusive. Harvested oysters shall have a shell of no less than four (4) inches in minimum diameter as measures across the nacre.

No person shall acquire, accumulate or hold trochus species or any part thereof for the purpose of sale, marketing or export.

It shall be unlawful to harvest, acquire, accumulate, hold, or trade any species listed below:

- All shark species (following the Shark Sanctuary Bill) | **Aolep baamle in pako**
- Napoleon Wrasse (*Cheilinus undulates*) | **Ļappo**
- Green Humphead Parrotfish (*Bolbometopon muricatum*) | **Mem**
- Saddle Grouper (*Plectropomus laevis*) | **Jauwe**
- Brown-marbled Grouper (*Epinephelus fuscoguttatus*) | **Jekro**
- Lobster | **wōr**

c) Marketable Fish Species

In undertaking the harvesting (**both for subsistence and commercial purposes**), handling, processing, purchasing for the sale of fish and fish products, individuals, operators of fishing vessels, and fish markets, shall ensure that the products meet at least the minimum size standard for that particular species as listed in Table 2. Other aspects of commercial fishing including but not limited to fish export, fishing license, offenses and penalties shall be governed by the Wōtho Atoll Fisheries Management Ordinance 2021 in accordance with the Marshall Islands Marine Resources Act 1997.

Ilo aolep jermal in wiakake ek rieōñōd ro, operator ro an loon ko, im mon wiakake ek ko rej aikuj lolorjake bwe ek ko rej kojōki ren loor size kein komeleti ilo kakien in eōñōd. Ilo an ped ilo kakien, enaaj wōr kaje ñan ro rejjab loor size kein. Jermal in eōñōd ñan wiakake ej aikuj loor kakien ko an jikin kejarok ko emōj kajenolōki.

2) Terrestrial Protected Areas | Jikin kejarok ko ionn ene

Table 2 - Minimum size (inches) of various fish species

Local name	Species	Suggested minimum size (inches)
Kwi	<i>Acanthurus lineatus</i>	7
Kupañ	<i>Acanthurus triostegus</i>	7
Jato, jaab	<i>Lutjanus gibbus</i>	10
Matel	<i>Parupeneus barberinus</i>	10
Bwilak	<i>Naso lituratus</i>	10
Mole, ellōk	<i>Siganus argenteus</i>	10
Jera	<i>Sargocentron spiniferum</i>	10
Ekmouj	<i>Hipposcarus longiceps</i>	12
Pejrōk	<i>Kyphosus cinerascens</i>	12
Pejrōk	<i>Kyphosus vaigiensis</i>	12
Mone	<i>Naso unicornis</i>	14
Wōlalo	<i>Variola louti</i>	14
Mejmej	<i>Monotaxis grandoculis</i>	14
Ikbwij	<i>Caranx sexfasciatus</i>	14
Lañe	<i>Caranx melampygus</i>	14
Wōlalo	<i>Plectropomus areolatus</i>	16
Kūro	<i>Epinephelus polyphkadion</i>	16
Lōjepjep	<i>Epinephelus maculatus</i>	16
Berak	<i>Lethrinus erythracanthus</i>	18

i. Area designation and map

The Wōtho Network of Protected Areas includes two types of Terrestrial Protected Areas with distinct scale and rules.

A) Atoll-wide Protected Area: includes measures that apply to all land areas of Wōtho Atoll.

B) Localized Protected Areas: includes measures that apply to specific areas, in addition to the Atoll-wide Protected Area measures.

1) Riwut Protected Area (yellow – 118.09 ha): measures that apply specifically to the delineated area on the north-eastern portion of Wōtho Island. The Protected Area consists of a portion of land as well as the intertidal basin (Figure 9).

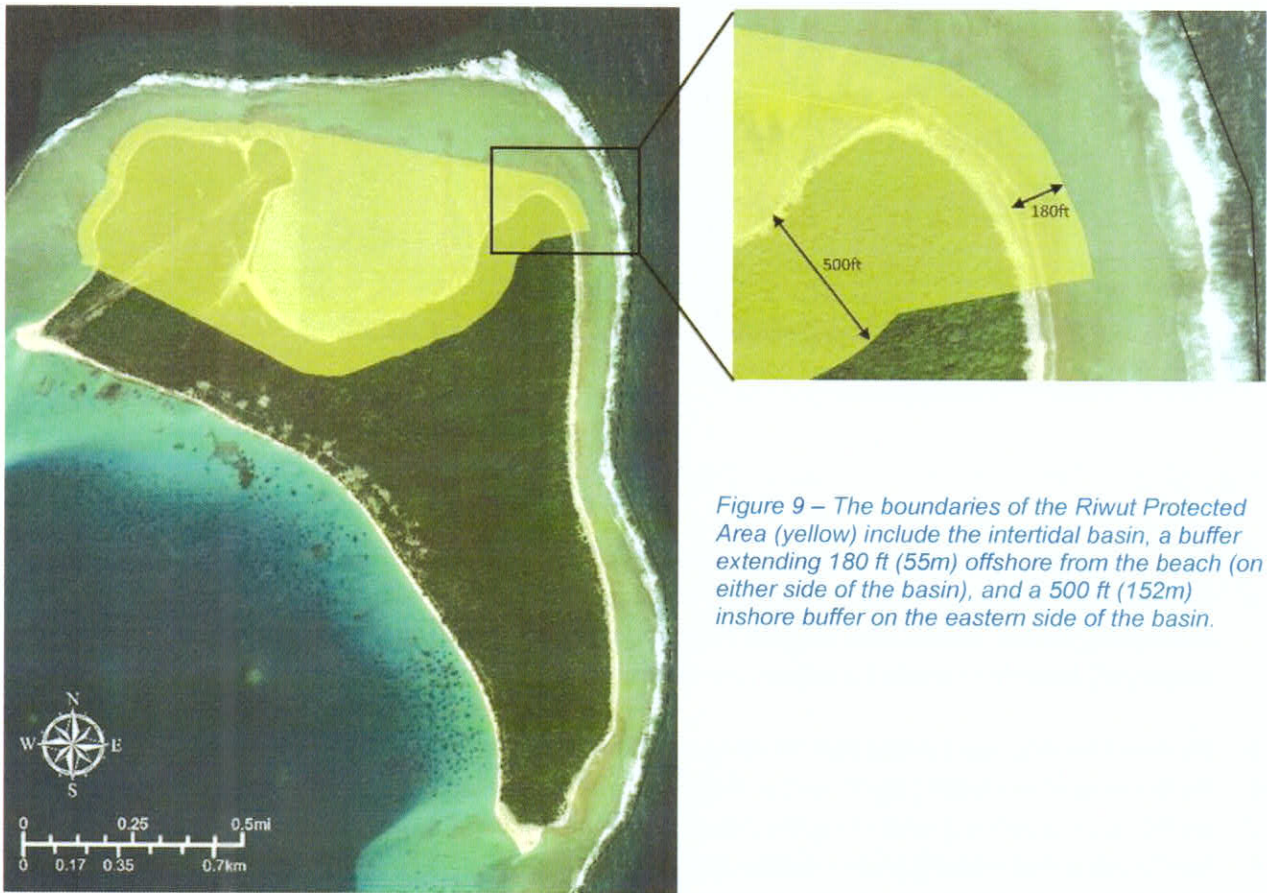


Figure 9 – The boundaries of the Riwut Protected Area (yellow) include the intertidal basin, a buffer extending 180 ft (55m) offshore from the beach (on either side of the basin), and a 500 ft (152m) inshore buffer on the eastern side of the basin.

Note. The basin is integrated in the Terrestrial Protected Area as the measures applied include restrictions for mineral resources only (e.g. sand, coral rubbles, coral boulders, etc.), not for marine (biological) resources.

2) **Mo** (blue – 117.96 ha): The area is managed and restricted through the practices of *mō* by Traditional leaders only (Figure 10).



Figure 10 – Terrestrial boundaries of the Traditional Mo to sea.

ii. Rules of the Terrestrial Protected Areas | Rule ko an jikin kejarok ko ioon ene

A) Terrestrial protected area rules (Recommendations):

- a. No logging, burning, or removal of healthy vegetation including but not limited to trees (seedling and adult), shrubs, weeds, and grasses. | *Ejjab melim jekjek, ittil, im kōteep wōjke ko rewamourur ekoba joñ, baamle in wōjke ko kajojo (ine im ko reritto), im ujooj*
Exceptions: Airport landing strip and terminal, within 50ft of a household, local paths and trails.
- b. No free-roaming pigs | *Aolep piik rej aikuj ped ilo oror ko aer.*
- c. No building of sea walls | *Ejjab melim ekkal sea wall*
- d. No filling or reclaiming land along the coast | *Ejjab melim eoñ]oke pedped ko*
- e. No dumping and littering | *Ejjab melim joto jotak kopej*
- f. No defacement or removal of informational posters, signs and structures | *Ejjab melim kakkure sign ko im oror ko rej kalikkar jikin kejarok eo.*
- g. Scientific activities will only be permitted under the following conditions: a) research permit will be obtained from the competent authority, b) research will contribute to the knowledge and management of the site of interest; c) there will be no significant impact on the marine and terrestrial resources; and d) results will be shared with the landowners. | *a) Jerbal in ekatok ko renej aikuj permit/melim jen ro drier jikin kein, b) tobrak ko an ekatok kein renej aikuj jipan tok jermal in kejarok ko nan jikin kein, c) en ejelak oktak elap en komman nan mo kein, im d) tobrak ko an ekatok eo en bar itok ippen iroij im alap ro an jukjuk in ped kein*

- h. Coconut crabs (*Birgus latro*) shall be harvested for subsistence only. Prohibited to harvest crabs smaller than **3 inches in carapace** width and any egg-bearing females | *Ejjab melim ebbōk barulep ko rej drik wōt (ko redrik)ak jen 3 inij ilo ijo kwōj jibwe ilikin barulep eo im barulep ko rej pojak nan lik).*
- i. All other practices prohibited by existing environmental regulations and ordinances and laws of the Republic. | *Aolep kakien ko im emōj kōmeleti ilo kakien ko an Majol.*

B) Localized Protected Area rules:

In addition to atoll-wide rules, additional rules apply to the specific areas:

B1) Riwut Protected Area | Rule ko ilo jikin kaRiwutwut

- a. No collection, removal, or rearrangement of rock, sand, coral rubble, coral boulders, and other components from the beach, intertidal basin, or reef flat | *Ejjab melim ebbōk jā im bok jen ioon pedped.*
- b. No development (e.g. permanent constructions) in the area | *Ejjab melim ekkal ilo aera in mae ewor melim jen ritol ro ilo manit.*

B2) Mo

- a. The area is managed and restricted through the practices of *mō* by Traditional leaders. | *Jikin in ej pedped ioon mō ko an Iroj eo im ritol ro ilo manit.*

VI. Strategy to achieve the objectives | Kallejar ñan kōtōpraki mejān kottopar ko

A. Responsibilities of the Wōtho Community | Eddo ko kuṇaan Jukjukin pād eo ilo Wōtho

In order to achieve the objectives of the plan, Wōtho community is committed to carry out the following responsibilities:

- Enter into a Memorandum of Agreement with Local Government Leadership and potential partners (e.g. Kwajalein Atoll Development Authority) that promotes a cohesive resource management scheme that supports fisher, farmer, and handicraft livelihoods in Lae, Ujae and Wōtho among others.
- Abide by the Wōtho Atoll Natural Resource Management Ordinance 2021

Bwe en tōprak mejān kajjik kein ilo karōk in, jukjukin pād eo ilo Wōtho ej jek ippān im eju būruōn ñan wōnṁaan!ok kaki eddo kein kuṇaan:

- *Wōtho im ro remaroñ karejartok im Jerbal ippān Kien eo (waanjoñok, Kwajalein Atoll Development Authority) juōn Kwōnin Pepe eo ej kōwōnṁaan!ok karōk eo ej kōpe!aak kilen kōjerbali menin jeraṁṁan ko ilo wāween eo ej jipañ ri-eqñod, rūkkat, im ri-amīṁōṁo ilo aer pukōt kōjkan aer mōur ion Lae, Ujae im Wōtho, ibwiljin wāween ko jet.*
- *Loor kakien ko an Local Government eo*

- Introduce licensing fees to foreigners that wish to fish waters of Wōtho Atoll
- Provision of data and information as requested by MICS/CMAC/PAN through filling of questionnaires.
- Establish and maintain a Local Resource Committee
- The Local Resource Committee will develop an action plan in the community responsibility to compliment the evaluation review, including period evaluations of the plan and Wōtho Atoll Natural Resource Management Ordinance every two years starting in 2021 or when required by the Wōtho Community.
- *Jino kōmman wōhāān ļaijen ñan ri-likin ro rōkōhāan itōn eōñōd ilo ļojet ko an Aelōñin Wōtho*
- *Jaaki maantak im kwaļoki karōk im meļeļe ko MICS/CMAC/PAN rej kajjitōk kake ilo wāween kanni peba ko rej kōllaajraki kajjiktōk ko ie.*
- *Kajutak im kōjparok jermal ko an kamiti eo ej bōk eddoin etali im lali menin jeraṃman ko ilo aelōñ eo*
- *Kamiti eo ej bōk eddoin etali im lali menin jeraṃman ko ilo aelōñ eo enaaj kōmmane juōn kōrkan jermal an jukjukin pād eo me enaaj rejtake jermalin etale aorōkin, ekoba ien etale tokjān karōk eo im Kakien Ko An Kōrkan Kōpeļaaiki Menin jeraṃman ko aolep ļokin ruo iiō jino jān 2021 ak ien eo Jukjukin pād eo ilo Wōtho enaaj aikuji.*

B. Responsibilities of CMAC (Eddo ko kuṇaan CMAC)

In order to support the Wōtho community in its attempt to manage and develop its environment and natural resources through its resource management plan, the Coastal Management Advisory Council and interested partners have agreed to provide the following supports:

- Provide monitoring and enforcement support through community trainings and workshops
- Monitor the effectiveness of the Management Plan including: follow-up baseline survey on marine and terrestrial resources in waters and lands of Wōtho, conduct socio-economic survey to ascertain the importance of the natural resources for the people of Wōtho, provide report and run community workshop to explain results and the situation in Wōtho.
- *Ñan an jipañ jukjukin pād eo ilo Wōtho ilo an kajjioñ kōpeļaaik im ejaake meļan im menin jeraṃman ko an ilo an jermal karōk eo ñan kōpeļaaik menin jeraṃman, kamiti eo an CMAC im ro jet eitoklimoier eṃōj aer errā in letok jipañ kein rej alikkar ijin*
- *Letok melele ko ilo kilaan ekkatak ak kwelok ko ñan kōjparok bwe jān loori wōt kakien ko im eṃōj komeleti*
- *Lale wōt ne ejimwe im jijjet bebe eo ñan kōjparok einwōt: kōmman katak ko ikijien iminene/waween makukut ko ilo meto im ane in Wōtho; kōmmane jermal in lale waween an armij mour im kōmman aer jaan ñan keidi ippān men ko bwinnid bwe en alikkar tokjeier; letok repoot ko im kōmmane kwelok ko ñan letok enaan in katak ko im bareinwōt tu ia eo Wōtho ebed ie ikijien jermal in kōjparok kein.*

- Provide technical and scientific advices and training on the development of the resource management plan in which would include both terrestrial and marine components
- Provide technical and legal advices on the preparation of the resource management ordinances on destructive fishing practices and seasonal closures on breeding sites for important fish and other selected creature of Wōtho.
- Conduct routine surveys on Protected Areas to determine their success and provide information to the Local Resources Committee and the community.
- Develop natural resource awareness materials to advise Wōtho community on the importance of proper management and conservation of its marine resources and environments through running community workshops, radio local new papers and TV advertisement and provision of information sheets.
- Provide technical and legal advices on partnership with Kwajalein leadership an economic growth in fisheries management planning and to include Ujae and Lae into cluster.
- Develop grant proposals and specific activities to assist the Local Resources Committee develop an action plan in the community responsibility to compliment the evaluation review, including in partnership with the RMI Public School System to integrate scientific monitoring into the Wōtho Elementary School curriculum.
- *Letok ennan ikijein katak ko eṃōj kamooli ñan ad maroñ make kōṃṃani jermal in kōjparok ko im naj kitbuuj meto kab ane.*
- *Letok enaan ko ikijien katak ko im eṃōj kamooli im kakien ilo ad naj kepooj “ordinance” ko ñan kōjparok jān waween eḡḡod ko im renaj kakure wōd im lojet ko, naat ko ien toor bwe jān kiil ak kabojrak eḡḡod, im bareinwōt kalikkar jikin lik ko an ek im men in mour ko jet.*
- *En erom minene kōṃṃane katak ko ilo ijōko eṃōj kalikkar ñan kōjparok innem naj kajedeed melele ko ñan ro ilo LRC eo.*
- *kōṃṃan kojjele im enaan ko ñan kajedeed jermal kein ñan kwaḷok ñan ro ilo Wōtho kin aurok in kōjparok im kojermal ilo jimwe, men ko bwinnid im kijed ilo meto im ilo ane ilo aer kōṃṃan kwelok ko, kōṃṃan kojjele ilo radio im TV im bareinwōt leto-letak enaan ilo pepa ko.*
- *Letok enaan ko im eṃōj kamol ikijien katak ko im ikijien kien ñan ro ilo kwon eo ippān Kwajalein ñan tel aelōñ ko jilu, Wōtho, Ujae im Lae ñan waween kōṃṃan jaan ilo ad kōjparok waween eḡḡod.*
- *Jiban kōṃṃan jermal ko im renaj jiban LRC eo ikijien an naj make kōṃṃan an bebe ñan jiban ilo ien naj kotmene waween an kar kōṃṃan jermal kein im bareinwōt ñan an maroñ kobaḷok ippān PSS im Wōtho Elementary School im kajedeed enaan kein ilo jikin jikuul ko ñan kadrebakbaḷok melele kein.*

VII. Establishment of Local Resources Committee | Ejaakin Komiti eo an Menin jeramman Ko Ilo Aelōñ eo

A. Composition of the Local Resource Committee

Representatives of the Committee

- 2 representatives from the women
- 1 representative from the men
- 1 representative from the School
- 1 representative from the Council
- 1 representative from the MIMRA Fish Market Board of Directors
- Mayor or Designee
- Resources Management Officer- MICS
- Youth Representative
- 2 Church representatives- 1 from each of the churches (Protestant & AG)
- Irooj Representative
- Aļap Representative

Ro Uwaan Komiti eo

- 2 ñan na ainikien kōrā
- 1 ñan na ainikien emman ro
- 1 jān Jikuuļ eo
- 1 jān Kqonjeļ eo
- 1 jān Ro Rej Kōpeļaake Jikin Wia Ek ko an MIMRA
- Joonjo eo ak Eo Ej Jitōñe
- Armej Eo Ej Kōpeļaaq Opiij Eo An Menin jeramman Ko – MICS
- 1 ñan na ainikien Jodikdik
- 2 jān Eklejia – 1 jān Protestant im 1 jān AG
- 1 jān Irooj
- 1 jān Aļap

B. Responsibilities of the Committee (Jermal ko an Komiti eo)

The committee will be responsible for the overall administration, operation, and enforcement of the Wōtho Atoll Resource Management Plan. Its specific tasks include

- Election of a Chairman, Vice Chairman and Secretary of the Local Resources Committee. A term will consist of two years.
- Develop an annual work-plan to guide the yearly implementation of the plan activities and to the achievement of its objectives.
- Make sure that the responsibilities of the community under the plan are properly carried out and completed in a timely manner.

Kamiti eo enaaq bōk eddoin likioin etale wāween an jermal im makūtkūt Karōk Eo Ej Jermal ñan Kōjparok im Kōpeļaaq Menin jeramman ko ilo Wōtho. Jermal ko raalikkar an kamiti in rej:

- *Kāālōt Jeermen eo, Baj Jeermen eo im ri-Jeje eo an Kamiti Eo An Menin jeramman Ko ilo aelōñ eo. Aetokan lelkan jermal ej ruo iiō.*
- *Ejaake juōn kōrkan jermal ñan tōl kilen kōmmani makūtkūt ko ilo karōk eo im ñan kōtōpraki mejān kajjik ko ie.*
- *Loloodjaki eddo ko an jukjukin pād eo pedped ioon karōk eo bwe en jejjet kōmmani im ren tōprak ilo wāween eo emman im karbōb.*

- Work closely with MICS and follow up MICS's obligations under its responsibilities so that they are carried out in a timely manner.
- Report the progress on the development of the Resource Management Plan to the community and Wōtho Local Government Council from time to time or when required.
- Arrange and organize community workshops and gatherings as required under the responsibilities of both the community and MICS/CMAC.
- Represent the interest of Wōtho community in national and regional gatherings in matters concerning marine and terrestrial environments and fishery and agroforestry resources.
- With assistance from MICS/CMAC, initiate and establish processes that lead to the formulation and approval of Wōtho Atoll Natural Resource Management Ordinance as required under Section 50 of the Marine Resources Act 1997
- With Assistance from MICS, determine conditions and licensing fees for consideration and approval of the Local Government Council.
- *Kanooj jermal ippān MICS im ļoori men ko kunaan MICS pedped ioon eddo ko an bwe en emman im jeppet ien aer tōprak.*
- *Jān iien ñan iien ak ñe emenin aikuj, kwaļok ñan jukjukin pād eo im Kōņņeļ eo an Kien eo ilo Wōtho kōn wōnmaanļok eo an Karōk eo ikijjien Kōpeļaaiki Menin jeraņman ko.*
- *Ejaaki im kōpeļaaiki kwelok in jermal ko an jukjukin pād eo im ien kwelok ko ekkar ñan aikuj iumwin eddo ko an jukjukin pād eo im MICS/CMAC.*
- *Kwelok ilo etan jukjukin pād eo ilo Wōtho ilo kwelok ko an aelōñ kein im ko an laļ ko ipeļaaikin ekoba aelōñ kein kōn men ko raorōk rejelōt meļan ko ilojet im ioon āne im menin jeraņman ko ilo jermalin eņņod im ekkat keinikkan.*
- *Kōn jipaņ jān MICS/CMAC, jinoe im ejaake kiltōn ko rej wōnmaanļok ñan ejaakin im weppānin Kakien ko ñan Kōpeļaaik Jermal ko ikijjien eņņod ko rej aikuj kōmman iumwin Kōrkan Kōpeļaaake Jermal ko ikijjien eņņod im Section 50 in Kien Eo ilo 1997 an Menin*
- *Kōn jipaņ jān MICS, watōk wāween im wōñān leļok ļaijen ñan an Kōņņeļ eo ilo Kien eo an Aelōñ eo arto artaki im koweppāni.*

C. Current Local Resource Committee (2020)

Group/Organization	Role in Process	SECTOR
Local Government - Kudo Kabua, Off-Site Mayor (based in Majuro) - Bernard Joseph, On-Site Mayor -Hiram Antibas, Executive council member -Fonda Jelke, Executive council member	Ordinances and Enforcement	All

-Kelly L. Sebastian, Executive council member -Lina Carland,council member		
Local Resources Committee - Fonda Jelke & Estella Antibas, 2 Reps from the women - Carlmai Antibas, Rep from Men - Antibas Jelke, School Rep - Hiram Antibas, Rep from Council - Banner Joseph, Mayor Designee - Vincent Montiera, Youth Rep - Simpson Jelke & Lautona Ainrik, Church Rep - Mike Kabua or Junjun, Iroij - James Elanzo or Namar Nashon, Aʻap	Implementation	All
Traditional Leaders -Namar Nashon, Aʻap -James Elanzo, Aʻap representative -Jorwa Emijwa, Aʻap representative	Traditional practices and resource allowance	Community, agriculture, natural resource management,
Likiriepjel: Women's group -Estella Jelke, Club President -Fonda Jelke, Club member -Floring Loran, Club member -Julie Banner, Club member	Advisors	Community, health, education, agriculture, natural resource management
Elderlies -Nijan Joseph, indigenous knowledge member, oral history -Melinmar Anjerok	Advisors and Historians	Indigenous knowledge holder, traditional natural resource management, health
Fishermen/Men's Cluster -Mackney Braind, fisherman -Carlmai Antibas, fisherman/community Judge -Vincent Montiera, youth representative	Advisors	Community, water, community law enforcement, agriculture, natural resource management
Church -Rev. Elmer, Protestant Church -James Elanzo, Assembly of God Church	Advisors	Community (Men's and women's groups meet regularly as part of church & community functions.)
Health Clinic -Banner Aister	Advisors	Health
Education cluster -Antibas Jelke, Head teacher	Advisors	Education, natural resource management, community,
CMAC (in particular MICS, MIMRA, EPA, WUTMI, IOM)	Advisor	PAN coordination, management planning, data collection

VIII. Monitoring and Evaluation Plan

The progress in the development of the plan and the degree of success in fulfilling the plan's objectives will be carried out jointly by the Local Resources Committee and MICS. This exercise should be carried out according to product and process indicators consistent with the objectives stated above and those of the Reimaanlɔk Framework. This monitoring plan may be based on regional management effectiveness tools developed as part of the Micronesia Challenge, including:

Jermal ko nan etale plan eo im jonan tobrak ko walok jen plan kein renej itok jen committee eo ilo jukjuk in ped eo im opij eo an MICS. Jermal in etale kein rej ekkeijel lok wot ippen kotobar ko ilon im ilo Reimaanlɔk Framework eo. Jermal in etale kein ej pedped ioon kalaajrak in kejparok mejen kajjik ko emoj kommane im ej mottan Micronesia Challenge eo einwot kein:

i) Information on the activities implemented and level of achievement | *Melele ko ikijjen jermal ko rekar bok jikier im jonan tobrak ko jen jermal kein*

ii) Challenges met during the plan implementation and suggestions how these challenges may be overcome. | *Apan ko ioone ilo jermal kein im waween ko nan kokmanman lok ad jerbale*

iii) Information on the status of the fishery resources following a marine survey (members of the community will have to be trained on how to conduct these surveys to be able to better observe, evaluate and develop action plans). | *Melele ko ikijjen menin jerammon ko ad lojet walok jen ekatok ko (armej ro ilo jukjuk in ped eo rej aikuj training nan kommani ekatokin etale wamourur eo an menin jeramon kein)*

iv) Suggestions on new developments for consideration of the Wōtho community, Government and MICS to better serve the interest of the people of Wōtho and, | *Rojan im Kean ko nan kadrepakpak lok kotobar kein an jukjuk in ped eo, kien eo, im MICS nan kokmanman lok mour ko an armej in Wotto im,*

v) Recommendations on how the plan may progress in future | *Rojan im Kean ko nan lale waween an tobrak kotobar kein*

IX. Conclusion

We recognize that greater protection in any region may be introduced if signs of deterioration of their natural resources is evident, to allow the people of Wōtho the control over exports, catch sizes, catch numbers, and more. As we join together and *Reimaanlɔk* or Look to the Future, we envision the many adjacent marine resources of our Kabin Meto neighbors and our collective marketable potential for sale on Kwajalein and it is evident that a reliable and efficient transport service will be one of the key components of success in the years to come, alongside a sustainably managed fishery to sustain the trade routes.

Kem ej kile ke jermal in kejparok menin jerammon kein ad ilo jabdrewot aelon ko rej walok elane ej wor kokalle ko ikijjen an diklok, jorraanlok, ako jakolok menin jerammon ko, nan ad kotlok bwe armej ro ilo aelon in Wotto ren eddoik waween an diwoj lok ek in wia, jonan ek ko, woran ek im ko aerlok wot. Ilo ad

koba ippen doon im Reimaanlok, kem ej etonake lok elon kain waween ko jemaronne ippen ro iturir ilo Kabin Meto kein kon menin jerammon kein ad jen lojet im jemaron wiakake nan aelon ko jet enwot Kwajalein im ej bareinwot alikkar ke juon menin aikuj eo elap im jejjot ej ialen an men kein itoitak ilo naaj ilo kein rej peddo tok, ippen nej Jerbal in Kapelaak Menin Jerammon kein ilo Aelon in Wotto.

The Wōtho traditional leadership, the Wōtho Atoll Local Government, and the Wōtho Local Resources Committee now set forth in collaboration with the Coastal Management Advisory Council to implement a community-based resource management plan for our islands and in our waters. The Wōtho Atoll Resource Management Plan is anticipated to assist the people of Wōtho Atoll to effectively manage their resources for the next five (5) years (2021-2025) upon which the monitoring and evaluation step (7) will be completed.

Ritol ro ad ilo manit, kobalok ippen ritol ro ilo Local Government eo, im bareinwot ro ilo Local Resource Committee eo, ilo an kobalok im ekejellok ippen Coastal Management Advisory Council (CMAC) eo nan jino juon monakjen in jermal eo em enij kutbuuj ioon ane im lojet in Wotto. Waween korak im kopelaak menin jerammon ko ioon Aelon in Wotto ej kotmen ke enaaj jipan kopelaak menin jerammon kein nan armej ro iloaan iio kein (5) rej peddo tok imaan (2021-2025) eo im jermal in etale menin jerammon ko ilo step (7) edredrelok.

X. Acknowledgment and Commitment from Wōtho Community

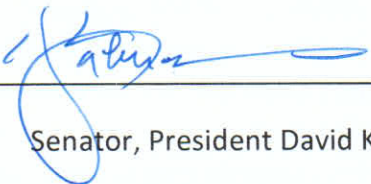
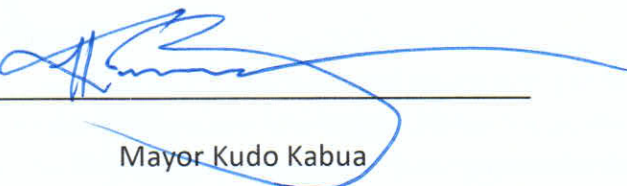


Alap

For 
Irojilaplap Michael Kabua



Alap


Senator, President David Kabua
Mayor Kudo Kabua