

**National Invasive Species and Biosecurity  
Strategic Action Plan  
2018 to 2022**

# **NISSAP**



**DOSEBELII BELAU**

## **Background**

A workshop was held for members and partners of the Palau National Invasive Species Committee (NISC) on April 4, 2018, with the purpose of updating the National Invasive Species Strategic Action Plan (NISSAP). Workshop participants carried out a review of the goals and objectives of the previous NISC action plan (2012-17). The goals were then revised and adopted, and Goals and Actions were agreed to. The consultants have added estimated costs to ensure that activities in the plan are adequately resourced. The Goals and Objectives were updated for this plan to define the role of the NISC as a coordination and facilitation body, and to provide activities for NISC member and partner agencies. This plan was adopted by the NISC on \_\_\_\_.

## **Acronyms**

ASPC	Association of State PAN Coordinators
APCO	Alliance of Palau Conservation Officers
BOA	Bureau of Agriculture
CRRF	Coral Reef Research Foundation
LMO	Living Modified Organism
MNRET	Ministry of Natural Resources, Environment and Tourism
MOJ	Ministry of Justice
NEMO	National Emergency Management Office
NISC	National Invasive Species Committee
NISSAP	National Invasive Species Strategic Action Plan
NGO	Non-Governmental Organization
OEK	Olbiil Era Kelulau (National Congress)
PAN	Protected Areas Network
PICRC	Palau International Coral Reef Center
RBP	Regional Biosecurity Plan for Micronesia and Hawaii
RRT	Rapid Response Team
SAP	Strategic Action Plan
SOP	Standard Operating Procedure(s)
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
TNC	The Nature Conservancy
UNFAO	United Nations Food and Agriculture Organization

## **Acknowledgements**

The NISC thanks the Palau Community College for the use of their excellent meeting room for the workshop, and the use of their projector. In addition, we thank all the partners who joined us and contributed to the formulation of the plan.

# **NISC Strategic Action Plan 2018 - 2022**

The Action Plan is for the years 2018 - 2022. Goals, objectives and activities were updated for the NISC as a coordination and facilitation body, as well as activities for partner agencies and organizations. Objectives were prioritized in terms of year of implementation and budget allocations. A responsible party or parties indicates the lead agency or entity to implement a specific action. Budget amounts are estimations that will require full work plans and will be aligned with sustainable financing mechanisms in Goal 6.

**Goal 1: To increase community awareness and participation and build resilience of communities and ecosystems by increasing capacity and providing the framework (policies and enabling conditions) for ongoing management of invasive species at national, state, and community levels.**

**Objective 1.1 Community awareness with regard to invasive species prevention and management has increased.**

## **Actions**

**1.1.1** Beginning in Year 1 and throughout the period of this plan NISC members and partners will develop a media outreach campaign with an invasive species focus (newspaper, television, radio).

**1.1.2** Beginning in Year 1 and throughout the period covered by this plan, NISC members and partners will work with the Ministry of Education, private schools, and Palau Community College to integrate invasive species information and materials into school curricula.

**1.1.3** Beginning in Year 2, and throughout the period covered by this plan, NISC members and partners will carry out community visits to raise awareness of specific invasive species issues and to support community action in this regard.

**1.1.4** By the end of Year 3, NISC members and partners will develop and carry out one social marketing campaign on a selected invasive species, or invasive species issue.

**1.1.5** During Years 4-5, NISC members and partners will carry out follow-up and monitoring activities to ensure and monitor the success of the social marketing campaign.

**Responsible Agency:** NISC

**Annual Budget:** \$20,000.00/yr; **Total Budget:** \$100,000.00

## **Objective 1.2 Increase support for research and training and educational opportunities for local programs related to invasive species**

**1.2.1** Beginning in Year 1 and throughout the period of this plan, provide scholarships and internships through the Palau National Scholarship Board that prioritize the prevention, control and eradication of invasive species

**Responsible Agency:** Palau National Scholarship Board

**Budget:** \$20,000.00/yr; **Total Budget:** \$100,000

**1.2.2** Beginning in Year 1 and throughout the period of this plan, provide support for the Palau Community College Agricultural Program to develop an Integrated Pest Management (IPM) Program

**Responsible Agency:** Palau Community College

**Annual Budget:** \$10,000/yr; **Total Budget:** \$50,000

## **Objective 1.3 Identify the strengths, weaknesses, opportunities, and threats, and increase capacity in communities and all sectors, for invasive species prevention and management.**

### **Actions**

**1.3.1** By the end of Year 1, the NISC will determine which/whose capacity should be assessed (e.g., PAN site managers and conservation officers, communities, partner agencies, government agencies, etc.).

**1.3.2** By the end of Year 2, MNRET will contract a local consultant to carry out a capacity needs assessment for the agencies/organizations identified in Action 1.3.1.

**1.3.3** By the end of Year 2, the NISC will prioritize identified needs for action.

**1.3.4** By the middle of Year 3, MNRET will contract a local consultant to develop a capacity building plan of action to address the prioritized needs identified in Actions 1.3.2 and 1.3.3.

**1.3.5** During Years 3-5, the NISC and its partners will implement capacity building activities based on the prioritized plan of action.

**Responsible Party:** National Invasive Species Committee (NISC)

**Annual Budget:** \$15,000/year; **Total Budget:** \$75,000

## **Objective 1.4 Community and sectoral participation in the prevention and management of invasive species has increased.**

### **Actions**

**1.4.1** Beginning in Year 1, and throughout the period covered by this plan, community leaders, with the support and advice of NISC members and partners, will lead/organize awareness, control, and/or removal activities in their communities.

**1.4.2** By the end of Year 2 and throughout the period covered by this plan, NISC members and partners will assist communities in acquiring funding assistance and incentive materials (e.g., cleaning tools, signs) to generate community pride.

**1.4.3** Beginning in Year 2, and throughout the period covered by this plan, NISC members and partners will take advantage of existing school and community activities to raise awareness of invasive species issues.

**1.4.4** Beginning in Year 2, and throughout the period covered by this plan, NISC members and partners will carry out at least one nation-wide activity focused on invasive species each year, e.g., National Invasive Species Awareness Week linked with the annual Earth Day Week.

**Responsible Party:** National Invasive Species Committee (NISC)

**Annual Budget:** \$15,000/year; **Total Budget:** \$75,000

## **Objective 1.5 By the end of Year 5, develop and implement a functional framework for invasive species management**

### **Actions**

**1.5.1** Hire a local consultant to implement the following Actions:

By the end of Year 2, conduct a comprehensive policy review and gap analysis.

By the end of Year 2, identify policy and regulatory gaps, and address these in a prioritized plan of action.

**1.5.2** During Years 2-4, National and State governments will create new and/or revise existing policies, regulations, and procedures, according to the plan developed in Action 1.5.1.

**1.5.3** During Years 2-5 relevant staff will be updated/trained on new and revised policies, regulations, and procedures.

**Responsible Agency:** Bureau of Agriculture

**Annual Budget:** \$25,000/year; **Total Budget:** \$125,000

NOTE: this doesn't address the issues of underfunding and understaffing of the invasive species program.

## **GOAL 2: To prevent the introduction and establishment of invasive species.**

### **Objective 2.1 Strengthen biosecurity in order to prevent the introduction and spread of new species with the potential to become invasive**

#### **Actions**

**2.1.1** By the end of Year 1, MNRET will adopt updated biosecurity regulations for implementation of the new Biosecurity Act. Priorities for these regulations include

marine-aquatic organisms and inter-island movement of living organisms, as well as regulations governing introduction of Living Modified Organisms (LMO's) into Palau.

**Responsible Party:** MNRET

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**2.1.2** By the end of Year 2, the Bureau of Agriculture (BOA), with the support of NISC partner agencies and regional organizations such as Secretariat of the Pacific Community (SPC) and United Nations Food and Agriculture Organization (UNFAO), will develop and/or revise standard operating procedures for dealing with introductions of living organisms into Palau.

**Responsible Party:** BOA

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**2.1.3** Beginning in Year 1, and throughout the period covered by this plan, the BOA, with the support of NISC partner agencies and regional organizations such as SPC and UNFAO, will develop and maintain a "white list" of organisms acceptable for import, including, as necessary, conditions for import, as well as a "black list" of prohibited organisms.

**Responsible Party:** BOA

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**2.1.4** Beginning in Year 1, and throughout the period covered by this plan, the BOA, with the support of NISC partner agencies and regional organizations such as SPC and UNFAO, will develop and maintain a database of all introductions of living organisms.

**Responsible Party:** BOA

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**2.1.5** Beginning in Year 1, and throughout the period covered by this plan, the NISC and partner agencies will develop and implement outreach and coordination programs regarding import laws, regulations, and procedures, for multiple stakeholders, e.g.:

- targeted at policy makers
- targeted at plant/animal lovers/importers
- targeted at government agencies

**Responsible Party:** NISC

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**2.1.6** Beginning in Year 1, and throughout the period covered by this plan, MNRET will cooperate fully in the implementation of the Regional Biosecurity Plan for Micronesia and Hawaii (RBP).

**Responsible Party:** MNRET

**Annual Budget:** \$5,000/y; **Total Budget:** \$25,000

**Objective 2.2 Ensure early detection of, and rapid action against, new introductions of potentially invasive species.**

**Actions**

**2.2.1** By the end of Year 2, the NISC and its partners, with support from regional organizations, will establish standard operating procedures (SOPs) for the appropriate government agencies and nongovernmental organizations (NGOs) to ensure early detection of invasive species.

**2.2.2** By the end of Year 2, working closely with the National Emergency Management Office (NEMO), NISC and its partners will establish a cross-sectoral rapid response team (RRT) with SOPs. The RRT should be organized according to an agreement to obtain commitment from member agencies (budget, staff and resources), and which mainstreams or integrates the rapid response plan into agency work plans.

**2.2.3** By the end of Year 3, member agencies of the RRT will develop and implement financial and operational plans for each agency to include commitment of necessary resources to the RRT. The plans should:

- Identify funds, capacity (people to be trained/agencies), resources
- Specify development of a database (to including profiling of likely pathways/vectors and others) to ensure that resources are targeted where they are most needed
- Include outreach, such as social-networking sites and a hotline.

**Responsible Party:** NISC

**Annual Budget:** \$15,000/y; **Total Budget** \$75,000.00

**Objective 2.3 Prevent or reduce the spread of invasive species within Palau, especially from one island to another – See Objectives 2.1 and 4.1 for related actions**

**Actions**

**2.3.1** By the end of Year 2, the NISC and its partners will identify and prioritize target vectors and pathways for invasive species within Palau.

**2.3.2** Beginning in Year 2, and throughout the period covered by this plan, the NISC and its partners will develop and implement an outreach campaign focused on preventing the spread of invasive species within Palau.

**2.3.3** By the end of Year 3, NISC members and partners will work with the Association of State PAN Coordinators (ASPC), with conservation officers in each state, and with the Alliance of Palau Conservation Officers (APCO), to develop a protocol for early detection of and rapid response to invasive species, in particular at PAN Sites and other protected

areas. Technical and financial assistance will be requested from partners, including from The Nature Conservancy (TNC), SPC, SPREP, and other appropriate organizations.

**2.3.4** Beginning in Year 2, and throughout the period covered by this plan, NISC members and partners will develop and conduct standardized trainings on detection of and response to invasive species, to increase capacity of conservation officers.

**Responsible Party:** NISC

**Annual Budget:** \$25,000/y; **Total Budget** \$125,000.00

## **GOAL 3 Reduce negative impacts of existing invasive species.**

**Objective 3.1 Take urgent action to control and/or eradicate invasive species which are known to be causing serious damage to biodiversity and/or society.**

### **Actions**

**3.1.1** By the end of Year 1, MNRET and MOJ, with the advice and support of international partners with expertise in non-human primate (NHP) control, will initiate a national effort to locate and remove all feral macaque monkeys (*Macaca fascicularis*) in Koror and Babeldaob, including the Rock Islands World Heritage Site, and the island of Peleliu.

**3.1.2** By the end of Year 2, the OEK will enact legislation to prohibit the possession, transport, sale, or purchase of any monkey or other non-human primate anywhere in the republic, with severe penalties, including fines and imprisonment, for violations.

**3.1.3** By the end of Year 1, MNRET will initiate a dialogue with the traditional and elected leaders of Angaur State which will lead to a long-term project for the complete removal of all monkeys from the island of Angaur.

**3.1.4** Beginning in Year 1 and throughout the period of this plan, MNRET will work with state governments and local communities, and local and international NGOs, to continue and expand the efforts to eradicate rodents which have begun in Kayangel and Koror States, with the target of having rodent-free islands in as many locations as possible by the end of Year 5.

**3.1.5** Beginning in Year 2, MNRET will initiate negotiations with international partners to develop, fund, and implement a project to eradicate the Philippine Fruit Fly (*Bactrocera philippinensis*) from Palau.

**3.1.6** Beginning Year 2, and to be completed by Year 5, MNRET will implement the existing eradication plan for imperata grass (*Imperata cylindrica*).

**3.1.7** Beginning in Year 1, MNRET will work with the Micronesia Regional Invasive Species Council (RISC) and partners in Australia to plan and implement a biological control project using the mikania rust which is successfully controlling mikania in Fiji, Papua New Guinea, Vanuatu, and the Cook Islands to control the invasive vine mikania (*Mikania micrantha*) in all Micronesian islands where this vine is found.

**3.1.8** Beginning in Year 1, and throughout the period of this plan, MNRET and MPIIC will work with state governments and communities and the Babeldaob Watershed



Alliance to integrate control of kebeas vine (*Merremia peltata*) into regular roadside maintenance in Babeldaob and Koror.

**3.1.9** Beginning in Year 1, MNRET will work with state governments and local communities to initiate a national control program for control of Coconut Rhinoceros Beetle (CRB).

**3.1.10** Beginning Year 1, MNRET and Palau Community College will cooperate in a Pacific-wide project for biological control of coconut rhinoceros beetle.

**Responsible Party:** Bureau of Agriculture

**Annual Budget:** \$ 1,000,000/y; **Total Budget:** \$5.0M

### **Objective 3.2 Inventory, assess, and prioritize existing invasive species for appropriate management action, including control and/or removal.**

#### **Actions**

**3.2.1** By the end of Year 1, the NISC and its partners will engage a consultant to review existing literature on invasive species in Palau, compile available information, and to produce an inventory and assessment report and distribute to appropriate stakeholders (communities, policy makers, and relevant agencies).

**3.2.2** Beginning in Year 2, and throughout the period covered by this plan, the NISC and its partners will conduct agency and state workshops and community outreach to build awareness about the inventory and assessment report.

**3.2.3** Beginning in Year 1 and throughout the period of this plan, MNRET and partner agencies and organizations will inventory and map the locations and densities of invasive species in terrestrial environments.

**3.2.4** In Year 2 or 3, MNRET, working closely with PICRC and CRRF, will engage consultants to repeat and expand the survey of marine invasive species conducted in 2007 to include all ports of entry and other locations which have a high risk of entry of marine invasive species.

**3.2.5** By the end of Year 3, the NISC and its partners will prioritize invasive species known to be present in Palau for action.

**3.2.6** By the end of Year 3, the NISC and its partners will begin to identify and map invasive species hotspots (priority areas) and critical areas for protection (e.g., PAN sites) based on existing knowledge.

**3.2.7** By the end of Year 2, the PAN Office, with the support of NISC members and partners, will develop guidelines for integration of invasive species prevention and management into PAN site management plans, provide these guidelines to all PAN site management teams, and modify PAN regulations to require the integration of invasive species prevention and management into all PAN site management plans.

**3.2.8** By the end of Year 5, invasive species prevention and management will be integrated into all PAN site management plans.

**Responsible Party:** Ministry of Natural Resources, Environment and Tourism

**Annual Budget:** \$50,000/y; **Total Budget:** \$250,000

### **Objective 3.3 Implement management actions identified through inventory, assessment, and prioritization activities.**

#### **Actions**

**3.3.1** Beginning in Year 1, and throughout the period covered by this plan, the NISC will facilitate effective coordination and collaboration among agencies and organizations for implementation of management actions.

**3.3.2** Beginning in Year 2, and throughout the period covered by this plan, inventory assessment and prioritization recommendations will be integrated into agencies' strategies and work-plans, especially in the PAN.

**3.3.3** Beginning in Year 2, and throughout the period covered by this plan, the NISC and its partner agencies will work to ensure adequate funding (through appropriations, grant funding, and leveraging other resources). – see Goal 5

**3.3.4** Beginning in Year 2, and throughout the period covered by this plan, NISC members and partners will increase and expand their capacity to manage invasive species through training and hiring additional staff and purchasing necessary equipment.

**3.3.5** Beginning in Year 2, and throughout the period covered by this plan, actions identified in PAN site management plans will be implemented.

**Responsible Party:** Ministry of Natural Resources, Environment and Tourism

**Annual Budget:** \$50,000/y; **Total Budget:** \$250,000

### **Objective 3.4 Work with partners to support the restoration of economies and ecosystems negatively impacted by invasive species.**

#### **Actions**

**3.4.1** Beginning in Year 2, and throughout the period covered by this plan, the NISC and its partners will consult with communities and partners to support development of economic and ecosystem restoration plans.

**3.4.2** By the end of Year 2, the NISC will work with partners to support the implementation of at least one economic and ecosystem restoration plan (including bio-security measures). At least one plan will be developed and implementation initiated by the end of Year 2.

**3.4.3** Beginning in Year 3, and throughout the period covered by this plan, the NISC and its partners will continue to support ongoing monitoring and restoration efforts. At least 5 plans will be developed and implemented by the end of Year 5.

**Responsible Agency:** NISC

**Annual Budget:** \$50,000/y; **Total Budget:** \$250,000

**GOAL 4 Strengthening the effective collaboration, coordination and participation for invasive species prevention and management among community, state, national, regional, and international partners.**

**Objective 4.1 Enhance domestic biosecurity at all levels**

**Actions**

**4.1.1** Hire a Biosecurity Director by Year 1.

**4.1.2** During Years 2-5, states, with the support and advice of NISC members and partners, will establish state biosecurity legislation and regulations that complement national legislation and regulations.

**4.1.3** During Years 3-5, individual states, with the support and advice of NISC members and partners, will develop and implement strategic implementation plans for state biosecurity regulations.

**Responsible Agency:** Ministry of Natural Resources, Environment and Tourism

**Budget:** \$25,000/y for Biosecurity Director; \$15,000/y for regulations;

Total Budget: \$200,000

**GOAL 5: Sustain a comprehensive and systematic effort to effectively address invasive species over the long term.**

**Objective 5.1 The NISC is a fully functioning and effective entity**

**Actions**

**5.1.1** Beginning in Year 1, and by the end of Year 3, the NISC and its partners will develop a process to ensure the continuity and functionality of the NISC.

**5.1.2** By the end of Year 2, hire a local consultant to do a comprehensive assessment of the structure and mandate of NISC is completed.

**5.1.3** Explore the option to institutionalize the NISC into a(n) agency or board with a mandate and staff to implement this plan. Invasive work requires a coordinated response from multiple agencies and partners.

**5.1.4** Create a National Invasive Species Office with a mandate and sufficient capacity (staffing and budget) necessary to lead implementation of the NISSAP.

**Objective 5.2 Efforts to prevent and manage invasive species are adequately and sustainably funded.**

**5.2.1** By end of year 1, a local consultant will be hired to work with NISC to implement actions 5.1.2 – 5.1.6:

**5.2.2** Undertake a costing for each of the activities of this plan

**5.2.3** Develop a funding matrix, identifying donor agencies, funding focus, dates, amount, and other useful information to assist with funding activities under the Strategic Action Plan (NISSAP)

**5.2.4** Prioritize activities in this plan to focus on funding for year 1

**5.2.5** Produce a document identifying other sustainable financing mechanisms (e.g. user-pays, cost for services or cost-recovery, fines, voluntary donations, private-public partnership, virtual community-e-funding, endowment fund, emergency response fund, etc.).

**5.2.6** Develop a Sustainable Finance plan based on Actions 5.1.1-5.1.5.

**5.2.7** Beginning in Year 1, and throughout the period covered by this plan, NISC members and partners will work with the PAN Management Committee and PAN Fund Board to ensure that invasive species are one of the priorities for PAN funding and management activities.

**5.2.8** Beginning in Year 2, and throughout the period covered by this plan, funding proposals based on the priority key activities (Action 5.1.2) will be developed and submitted to potential funding partners, identified in Action 5.1.3.

**Responsible Agencies:** MNRET hire consultant and oversee implementation.

**Division of Fish & Wildlife Protection** implement the biosecurity goals and objectives of this plan. The **State PAN** will implement the state based activities whether they be outreach or eradication specific activities.

**Annual Budget:** \$25,000/y; **Total Budget:** \$125,000/y

### **Objective 5.3 There is sufficient political support for long term invasive species efforts.**

#### **Actions**

**5.3.1** By the end of Year 1, NISC members will identify key political persons, bodies (e.g. OEK), committees, and institutions that need to be sensitized for support on invasive species.

**5.3.2** Beginning in Year 2, and throughout the period covered by this plan, NISC members will develop targeted awareness materials and utilize appropriate communication tools (e.g. champions) to ensure that these groups (political persons, bodies, committees, and institutions) are sensitized to invasive species prevention and management.

**5.3.3** Beginning in Year 1 and throughout the period covered by this plan NISC members will make every effort to ensure that politicians (especially the President – and OEK?) and other stakeholders (e.g. traditional leaders) are participating in, and/or informed about, invasive species activities (e.g., NISC meetings) through an annual NISC report and meeting

**Responsible Party:** NISC

**Annual Budget:** \$15,000/y; **Total Budget:** \$75,000

**Objective 5.4 Long term efforts to address invasive species are effectively integrated into existing state and national government procedures, work plans, and activities.**

**Actions**

**5.4.1** Beginning in Year 1 and throughout the period covered by this plan, the NISC Secretariat will actively provide support to NISC member and partner agencies' work planning, to ensure that invasive species are included in work plans and that adequate resources (funding, capacity, and others) are committed.

**5.4.2** Beginning in Year 1, NISC members and partners will ensure that Goals, Objectives, and Actions from the NISSAP 2018-22 are reflected in their agencies' work plans, and that the necessary resources are allocated.

**Responsible Party:** NISC

**Annual Budget:** \$15,000/y; **Total Budget:** \$75,000

**Total Budget: \$4,525,000**

**Complete Removal in 5 years for monkey: \$5,000,000**

**Total budget of about \$9,525,000**