

# Towards a guidance document for invasive species planning and management on islands

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**Abstract** In 2012 a process was initiated to produce a guidance document for invasive species management on islands, as an objective of a regional invasive species project in the Western Indian Ocean (WIO) islands, implemented by IUCN. The consultative process for producing the document began with requests and discussions via regional and global island and invasives email distribution lists. Initial responses revealed a consensus on the need for a guidance document for programmatic planning. A draft was therefore constructed around existing Pacific regional guidelines and a draft manual that had initially been written for the WIO, with new supplementary sections suggested by respondents. The new draft was discussed and revised in workshops at two international conferences. The document is now organised into three main sections: the first on how to use it, the second a checklist of the essential components of a comprehensive island invasives programme (to ensure nothing is overlooked when planning), and the third providing detailed guidance on the planning and decision-making processes. The document is intended to provide a comprehensive framework and procedural guide for invasive species planning on islands. Further consultations took place by email, and a later draft was tested by a number of users writing various kinds of invasive species strategy and action plan. Publication will be in English, French (both published 2018) and Spanish (scheduled for 2019).

**Keywords:** best practice, consultative planning, NBSAP, networks, NISSAP, prioritisation

## INTRODUCTION

The intentional and unintentional movement by people of organisms around the world, many of which become invasive in the areas to which they are introduced, is an international problem of particular concern to islands. The effective management of invasive species on islands therefore requires comprehensive and coordinated action by international agencies, governments, NGOs, the private sector and local communities. Small islands and developing states do not have the resources to tackle all invasive threats by themselves, and in some regions collaborative regional plans and strategies have been developed to promote coordinated planning and action between islands and nations and also to guide international agencies in providing assistance to them. Many countries have also developed National Invasive Species Strategies and Action Plans (NISSAPs), as have a number of individual islands (for brevity, all such plans are herein termed NISSAPs). The Convention on Biological Diversity recognises invasive species as a serious threat, including in its Aichi Target 9, and encourages countries to include plans for managing invasive species in their National Biodiversity Strategies and Action Plans (NBSAPs). However, the NBSAPs and NISSAPs of different islands and island countries vary greatly in their comprehensiveness in dealing with invasive species problems (Doherty & Boudjelas, 2010; Boudjelas, in press).

The Inva'Ziles Project, implemented by IUCN from 2012 to 2018, provided assistance to the islands of the western Indian Ocean (WIO) region in managing biological invasions. One of the project's objectives was to develop guidance for islands and island nations to help them prevent and manage the spread of invasive species and reduce their impacts on biodiversity and people's livelihoods. This paper describes the process leading to the production of a guidance document specifically for invasive species planning on islands worldwide. It explains the purpose of the document and outlines progress towards its publication, including input from the 3rd Island Invasives conference in Dundee, July 2017.

## FIRST STEPS

The Inva'Ziles project began with a broad interpretation of its commitment to produce a guidance document for invasives management on islands, by compiling a first draft of a manual attempting to cover the whole range of actions necessary for an invasive species programme, in the following chapters:

### INTRODUCTION

- Importance of biological diversity
- Significance of biological invasion as a disruption of biodiversity

### BIOLOGICAL INVASION AS A PROCESS

### ELEMENTS OF AN INVASIVES SPECIES STRATEGY

- Regional coordination and exchange
- Risk Assessment
- Prevention without quarantine
- Pathways of introduction
- Early detection and rapid response
- Management of established invasions

### MONITORING

### CAPACITY

- Institutions
- Awareness
- Information
- Conventions

### IMPLEMENTATION OF INVASIVES SPECIES MANAGEMENT

- Policies, laws and regulations
- Institutions and capacity
- Roles and responsibilities of the public
- International and regional responsibilities

### GLOBAL CHANGE AND INVASION

While all these topics are important, there are good resources already available to help planners and managers with many of these activities, including project design, border biosecurity, methods of controlling various species of invasive animal, plant and other organisms, raising awareness, etc. Examples include the guidelines and toolkits of the Global Invasive Species Programme ([www.issg.org/gisp\\_guidelines\\_toolkits.htm](http://www.issg.org/gisp_guidelines_toolkits.htm)) on marine biofouling (Jackson, 2008), marine pest management (Hilliard, 2005), legal and institutional frameworks (Shine, et al., 2000; Shine, 2008), best prevention and management practice (Preston, et al., 2000; Wittenberg & Cock, 2001), and economic analysis (Emerton & Howard, 2008) along with their accompanying training courses ([www.issg.org/gisp\\_training\\_coursematerials.htm](http://www.issg.org/gisp_training_coursematerials.htm)). There are also many excellent materials developed in individual regions, such as the rodent and cat eradication resource kits for the Pacific (Pacific Invasives Initiative, 2011) and UK (GB Non-native Species Secretariat, 2017), as well as the Pacific kits for invasive plant (Pacific Invasives Initiative, 2015) and ant (New Zealand MFAT, 2016) management and their accompanying training courses. It would be impossible within a single document to improve on all of these and others. Further, it was considered doubtful whether general explanations of biological invasions and their impacts on biodiversity would be necessary for the intended primary users of the document: invasive species planners, managers and researchers on islands. The introductory material covering these topics and the discursive style adopted in the first Inva'Ziles draft limited the amount and clarity of the guidance provided; for example, the draft did not give clear guidance on the steps to be taken when planning an invasives programme, nor on how to prioritise when faced with many problems and limited financial and human resources. It was felt that a short document with a clear purpose and direct guidance would be more useful and used than something longer and more discursive.

It was therefore decided to carry out consultation in order to find out what kind of guidance invasive species workers themselves thought they needed most, so as to be able to focus the planned document more precisely on priority gaps in available resources.

## CONSULTATION AND REDRAFTING

Given the Inva'Ziles Project's primary responsibility to provide assistance to the WIO region, an initial consultation was carried out by e-mailing a simple questionnaire to the c. 325 members of the Western Indian Ocean Network on Invasive Species (WIONIS), asking what kind of guidance they felt was most needed. It was essential to give respondents an idea of what might be possible for the project to produce within the limitations of its timespan and budget, so, to encourage realistic answers three possibilities were suggested: a manual-style document resembling the first draft produced by Inva'Ziles, something focused more precisely on the planning and decision-making processes, using the example of the *Guidelines for Invasive Species Management in the Pacific* (SPREP, 2009: hereafter termed the 'Pacific Guidelines'), or something else.

This was followed by a similar worldwide consultation using the following global and regional e-mail distribution lists: aliens-l (1,400 subscribers, global), islands-l (360, global), carib-ias (310, Caribbean), the Pacific Invasives Initiative list (1,210), and the Pacific Invasives Partnership (c. 40). In addition, the same request was sent to specifically compiled lists of known contacts in the Atlantic and Mediterranean islands (c. 20 people).

These consultations generated responses from invasive species planners, scientists and managers, including experts in all major island biomes, marine and terrestrial

(all contributors up to the submission date of the present article are named in the Acknowledgments). Of the 43 respondents who indicated a clear preference for the kind of document they would like to see developed, two wanted an operations manual for field management and 41 preferred guidance on planning, with no-one suggesting any other kind of document. These choices, taken together with written comments from many other respondents, indicated a consensus that specific guidance on programmatic planning was scarce and lacking in detail, and that this represented a particular resource gap. The Pacific *Guidelines* have been widely adopted and used in that region, and many respondents felt that an updated and internationalised version of this would be highly appropriate for other island regions.

The decision was therefore made to produce a document addressing this need for planning guidance, taking the Pacific *Guidelines* as a model, updating and hopefully improving it, and at the same time endeavouring to make the document as useful and relevant as possible to islands worldwide. A skeleton was then produced by adapting the text of the Pacific *Guidelines* for a global set of users, and adding ideas for new sections suggested by the drafting team, questionnaire respondents and others. The new sections were then partially populated by adapting text from the Inva'Ziles first draft manual.

To expand the consultation process, we used opportunities created by international and regional meetings to obtain further input. Workshops were therefore organised at the IUCN 'World Conservation Congress' (WCC) in Hawai'i, September 2016, and the 3rd 'Island Invasives' conference (3II), Dundee, July 2017. The first of these meetings attracted (as expected) a broad cross-section of conservationists, while the second drew a substantially different group, consisting primarily of invasive species management practitioners and researchers. Both meetings generated contributions from people working on a wide range of aspects of the invasives threat to islands, from all parts of the world.

At the WCC, two events were organised with the objective of obtaining input. First, the IUCN held a major introductory event on '*Islands at risk: meeting the global challenge of Invasive Alien Species*', at which three initial presentations (one on the guidance document) were followed by work-groups on the three topics. The guidance work-group attracted some 30 people, of whom 14 offered to make additional contributions later, as the drafts developed. The second WCC event was a roundtable discussion organised by the Pacific Invasives Partnership, which attracted about 20 people, most of whom had not attended the first working session. At both of these sessions, input was obtained not only for the global guidance document, but also for a planned revision of the Pacific *Guidelines*, led by the Pacific Invasives Partnership.

Comments and ideas received at the WCC were incorporated into a second draft, which included supplementary sections solicited meanwhile from volunteer experts on particular topics. During this process it became clear that guidance on two areas in particular was desired: the planning process itself, including prioritisation and decision-making, and how to increase support for invasives management among politicians, their electorates (the public), and local communities experiencing problems caused by invasives. As a result, these two areas grew to constitute the largest supplementary sections.

At the 3II, the IUCN gave an introductory presentation in plenary to explain the purpose of a working session on the guidelines that evening. Some 50 people came to the evening session (approximately 15% of the conference attendees), which was organised into three work-groups

covering different sections of the draft, namely: planning and decision-making; awareness, support and capacity; research and practical management. Twenty of those who attended offered to contribute further.

The steps towards producing this document are illustrated in Fig. 1, and the location or geographical interest of the identified contributors summarised in Table 1. At the time of writing this paper, we were in the process of incorporating comments from the 3IIsland A major outcome from 3II was confirmation from practitioners that the fundamental need for this document was genuine and widespread, and also that guidance on how to use the document should be given clearly within.

### THE CURRENT DRAFT

The aim thus became to provide a comprehensive framework and procedural guide for anyone planning an invasives programme on islands, including international and regional agencies, conservation NGOs, relevant government agencies (agriculture, biosecurity, environment ...), conservation managers, research planners, and anyone else who has to find, plan and prioritise funds and resources for invasives management.

The latest and final draft met the target limit of 48 pages plus covers (the Pacific *Guidelines* comprises 24 pages including covers), has now been organised into three main sections (plus a “Resources” section). The first of the main sections explains the purpose of the document, how to use it, and who the intended users are. The second section is a checklist of the essential components of a comprehensive island invasives programme, to ensure nothing is overlooked when planning (this part still resembles the Pacific *Guidelines*, which consists mainly of such a checklist). The third section describes in detail how to conduct the processes mentioned by many people as being particularly problematic, especially how to plan, how to prioritise, how to make decisions, and how to increase collaboration, support and involvement by different target groups ranging from local communities to senior policy- and decision-makers. Throughout, there are links to additional resources on each topic.

The document provides decision-making guidance at both programmatic planning and field project planning levels, including how to prioritise, how to choose management goals, and how to win political and community support for the actions planned. It should help international agencies to identify their niche for invasives work on islands and to identify island priority needs that match their agency’s expertise. It will help national and local agencies and managers to identify and prioritise actions within their jurisdiction, design a NISSAP, benefit from the experience of other countries and organizations, and justify projects to decision-makers and donors. Content of the three main sections is organised as follows:

#### INTRODUCTORY MATERIAL

- Purpose of the document, intended users, how to use
- Background

#### THE GUIDELINES CHECKLIST

- Foundations (planning, decisions, support, capacity, legal)
- Information (baseline, monitoring, prioritisation, research)
- Management (borders, established invaders, restoration)

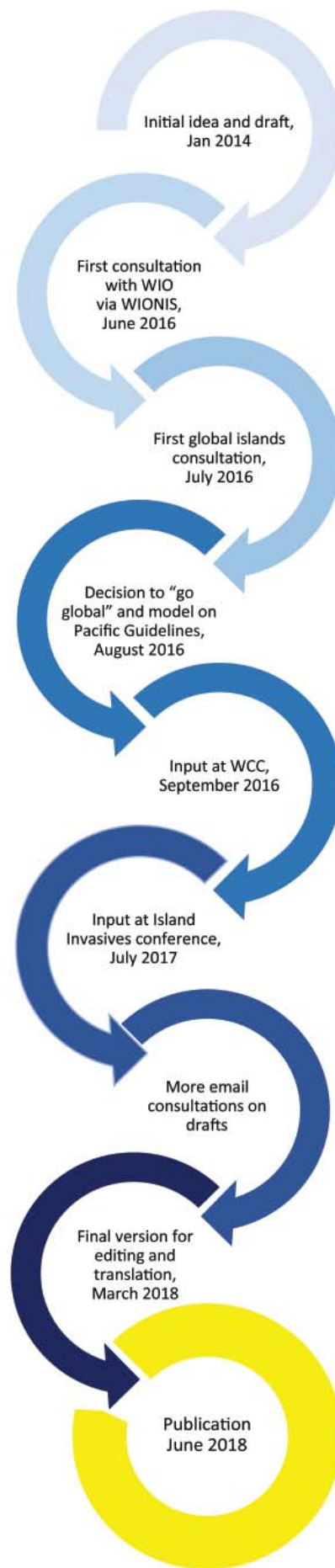


Fig. 1 Timeline of the process of producing the guidance document.

## HOW TO PLAN

- Getting people involved, raising support for the plan, mutual help networks
- Programme planning, NISSAPs and others
- Prioritising, hard decisions, decision tools, risk analysis
- Neglected areas
- Planning for global change
- Project planning, other decision tools

The identification of these priority areas for guidance has largely been determined by the views of the respondents. These priorities differ somewhat from the critical areas for action identified almost 20 years ago in the Pacific, when the following were considered to need special attention (SPREP, 2000):

- Shortage and inaccessibility of information on invasive species and best management practice
- **Lack of awareness of the impacts of invasive species**
- **Insufficient networking, coordination and collaboration**
- Inadequate legislation, regulations, cross-sectoral policies, and enforcement
- Shortage of trained personnel, and inadequate facilities
- **Insufficient funding.**

The three items in bold are closely related to the current priority needs identified by our recent consultations. The differences reflect both the fact that some of the other areas, particularly best management practices, have since been addressed by resources specially designed to assist with them, but also the fact that our new document is aimed at perceived needs for guidance itself, rather than at other kinds of need (e.g. adequate facilities, trained personnel, laws etc.).

## FINAL STEPS

The final draft was circulated once more to the core group of committed contributors (ultimately just over 100 people contributed) as well as to all of the e-mail distribution lists cited above. Special contributions were solicited from experts on particular themes. The later drafts were tested in a number of planning processes, including for the first NISSAP of the Comoro Islands in mid-2018. The English and French versions were published in print and online in mid-2018 and the Spanish version published online in early 2019.

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**Table 1** Islands and island regions represented by the 96 identified contributors so far (each contributor assigned to only one category). OIT signifies overseas island territories of any kind, irrespective of their political status; n = no. of contributors.

Islands	n	Islands	n	Islands	n
Australia	1	Indian Ocean	3	Pacific	8
Azores	3	Isle of Man	1	Palau	1
Bermuda	1	Japan	1	Papua New Guinea	1
Canaries	2	Kosrae	1	Seychelles	7
Cape Verde Islands	2	Lord Howe Island	1	Tonga	1
Caribbean	1	Madagascar	1	UK & OITs	4
Cuba	1	Mauritius	4	USA, Hawai'i & OITs	9
France & OITs	4	Mediterranean	3	Global, multi-regional or unknown	30
Galapagos	2	New Zealand	3		

Jeanne Wagner, Josua Wainiqolo, Katherine Walls, Andrew Walsh, Masahito Yoshida, Glyn Young, Kristi Young. Thanks to all, and if I've missed anyone, please let me know!

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