Building biosecurity capacity in the British Overseas Territories

Dr Jill Key, April 2020

ANNEX 6

Gap analysis results, 2020

Contents

Anguilla

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	No established system, but done on an ad hoc basis as needed.	Basic	No change.	Basic
Non-Native Species Risk Analysis	No established system, but done as needed when necessary.	Basic	Four participants attended the CSSF project funded CABI led risk assessment workshop in January 2020, which includes training in risk assessment for existing species.	Basic
Pathway Analysis	Not done.	None	Completed under the CSSF project.	Good
Horizon Scanning	No formal protocol for this as such, but the Department of Environment keeps abreast of what invasive species are affecting the region/neighbouring islands and depending on the nature of it, then sensitize the general public of its likely entrance and decide on a plan of action; This was done specifically with the Lionfish before its actual invasion in Anguilla.	Basic	Completed under the CSSF project. Pathway action planning to address priority species carried out.	Good
Contingency Planning	Plants and plant health risks: The invasive species strategy highlights actions to follow if an invasion occurs, but is not specific to a particular species.	Basic	No change.	Basic
	Animals and animal health risks: The invasive species strategy highlights actions to follow if an	Basic	No change.	Basic

	invasion occurs, but is not specific to a particular species.			
	Other risks: The invasive species strategy highlights actions to follow if an invasion occurs, but is not specific to a particular species.	Basic	No change.	Basic
Border Operations	One officer with part-time biosecurity functions, but not stationed at the border. Awareness Training has been done for Customs Officers with reference to biosecurity, but there is not anyone dedicated to biosecurity. The Agricultural officer is called on demand to inspect plants and animal imports. No dedicated biosecurity facilities, Large scale shipments (Containers) with plants and other products are delivered directly to the importers property or site. The container is then opened in the presence of an Agricultural officer and a custom agent. It's important to note that many containers with plants are destined for hotels and the garden shops/nurseries; since the containers are opened on site, the Department of Environment has taken the initiative to engage the hotel gardeners/horticulturalist in biosecurity training. This is especially necessary since there is not adequate border security. An effort is made to keep the public aware of invasive species and their impacts, and the public is therefore adequately informed through literature and media blitz, but there is still a lot of work	Some	No change.	Some

	needed to heighten awareness of publics since the initiatives are not continuous. Compliance is not monitored.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	There is no hotline and not a clear system in place, but some sporadic awareness programmes are done to inform the general public.	Basic	No change.	Basic
Surveillance	Plants and plant health risks: no programme in place	None	No change.	None
	Animals and animal health risks: no programme in place	None	No change.	None
	Other risks: no programme in place	None	No change.	None
Monitoring	No specific monitoring of established invasive non-native species. However, regular monitoring takes place of land birds, sea birds, land reptiles, marine turtles, and some key landscapes and habitat areas, which will encompass a range of species including invasives.	Basic	No change.	Basic
Rapid Response Capacity	Plants and plant health risks: There are personnel from selected agencies to address the occurrence of an incursion, but there is no standard operating procedures established to facilitate. Adequate	Basic	No change.	Basic

	resources are not available to deal effectively with the issue.			
	Animals and animal health risks: There are personnel from selected agencies to address the occurrence of an incursion, but there is no standard operating procedures established to facilitate. Adequate resources are not available to deal effectively with the issue.	Basic	No change.	Basic
	Other risks: Not available to deal with new invertebrate species, or for marine invasive species which are extremely difficult to control, and the Department of Environment does not have adequate resources to handle them.	None	No change.	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	In the Invasive Species Strategy, there are some terrestrial species recommended for eradication and control. These species were identified at an invasive species workshop by Anguilla stakeholders, and the process did not necessarily used global best practice. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive	Good	CSSF project funded NNSS-led prioritisation workshop held in Anguilla in January 2020.	Good

	alien vertebrate species for Anguilla. Key invasive alien vertebrate species are goats and black rats.			
Baseline	Plants: terrestrial native and invasive species reasonably well known.	Some	No change.	Some
	Animals (terrestrial vertebrates and invertebrates): Birds and land reptiles relatively few and well known. Terrestrial native and invasive invertebrate species reasonably well known.	Some	No change.	Some
	Other: marine reptiles well known. Other marine organisms are less well known.	Basic	No change.	Basic
Framework	Legal framework: There are several pieces of legislation that cover some aspects of biosecurity, but there is a need for stronger legislation. Powers exist with relation to the prevention of the spread of diseases for animals and plants (powers of inspection, entry, search, restriction of movement, seizure and destruction). Diseased imported plant and animals can be seized. This is primarily concerned with animal and plant health, and invasive species are not mentioned explicitly. No release of flora and fauna into marine parks. No monkeys allowed. Internal biosecurity is weak: Offshore islands are not explicitly mentioned in legislation.	Some	No change.	Some

	National framework: The Anguilla Invasive Species Strategy highlights the importance of prevention and outlines the required biosecurity actions with agency responsibilities, including Department of Environment, Department of Agriculture, Department of Health Protection, Department of Fisheries and Marine Resources and Anguilla National Trust. The Strategy was endorsed by the Government of Anguilla in or around 2009 and is being implemented.	Some	The Invasive Species Strategy was being drafted in 2017 with expectations if finalising it soon after the gap analysis was done. Work had to stop due to staff movements, and then to changes in priorities post-hurricanes Irma and Maria. The score is downgraded to reflect the fact that the work was not completed as planned and is work in progress, with hopes to finalise in 2020.	Basic

Acknowledgements: Rhon Connor

Ascension

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	No system in place.	None	No change	None
Non-Native Species Risk Analysis	Basic system in place for non-native plant species. Invertebrates system not in place as it depends on building baseline first.	Basic	No change	Basic
Pathway Analysis	Pathway risk analysis carried out as part of the Ascension Island Biosecurity Review, May 2016.	Good	Completed under the CSSF project	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project.	Good
Contingency Planning	Plants and plant health risks: None in place.	None	No change	None
	Animals and animal health risks: None in place.	None	No change	None
	Other risks: None in place.	None	No change	None
Border Operations	Currently limited in scope. A new post (from August 2016) will have up to 50% biosecurity function by 2017. Proposed components of border operations include the development and implementation of border procedures, including formulation of a white list, import health standards for sea containers and inspection procedures,	Basic	Actions being actively worked on. Biosecurity post has been filled since 2017. Successful Darwin Plus funding bid- Building Ascension Island's Biosecurity Capability, supported by CSSF project and ANRD from Saint Helena.	Some

	development of biosecurity treatment capability, and a public awareness campaign. This is expected to cover targeted phytosanitary and zoosanitary risks only. Different agencies will be involved in delivery. Operations at the airport depend on collaboration with MOD/Interserve and US Airforce as all flights are military at the moment. Specific protocol in place for all visitors to Boatswain Bird Island, covering zoosanitary and phytosanitary risks.		Through this project 4 staff have shadowed and received training from other biosecurity teams in the UK and/or Saint Helena. Putting together knowledge gained from training and on island experience a new Biosecurity Strategy, import health standards, protocols and responses have been drafted and are going through public consultation. Outreach and training plans are also under development. The proposed system and draft legislation will be presented to the Council for consideration at the end of the consultation. The team have built a good relationship with the different agencies on island and hope to work closely with them if the council agree to plans. Biosecurity protocol complete for visitors to Boatswain Bird Island	

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020
Alert System in Place	Informal system in place, all novel reports are sent to the Conservation Department. Wide awareness among border staff (airport and pier head) and local community.	Some	Through the Darwin project a training programme will be delivered to all employees of AIG and other island organisations involved in boarder and unloading operations. A public	Some

			information campaign will be delivered through public meetings, videos and signs.	
Surveillance	Plants and plant health risks: Planning to set up programme for crawling invertebrates.	Basic	AIG Conservation Plant Team report incidences of any novel pest species encountered. No active surveillance in place.	Basic
	Animals and animal health risks: Researchers are expected to report on any problems (eg diseases, failed nesting, nest destruction, abandoned nests etc) with seabirds on Boatswain Bird Island.	Basic	Animals and animal health risks: AIG Conservation staff report on any problems (eg diseases, failed nesting, nest destruction, abandoned nests etc) encountered when monitoring mainland breeding populations of seabirds and turtles.	Basic
	Other risks: MOD are running a mosquito monitoring programme at all ports of entry and island-wide. Planning to set up programme for fire ants. A disease outbreak amongst the conspicuous feral donkey or sheep population would be quickly spotted despite the lack of formal surveillance.	Basic	Crawling invertebrate monitoring takes place at key ports of entry where mostly invertebrate and reptile species are picked up. MOD carry out mosquito surveys Due to flight restraints the MOD had a two year gap in mosquito surveying but one has recently been completed with the help of AIG staff collecting samples Ant monitoring protocol has been implemented.	Some
Monitoring	Periodic plant surveys done, both native and non-native species: 'living' map. Bird, land crab and green turtle monitoring, surveys and mapping programmes in place. Non-	Some	Ant surveying takes place every quarter at key ports of entry. Bird, land crab and green turtle monitoring programmes continue.	Some

	native invasive species monitored around beaches. Plans to set up crawling invertebrate monitoring system in near future. Four Malaise traps being set up to monitor flying insects, checked on a monthly basis. Baseline being developed. Plans to set up mammal monitoring programme. The MOD are in the process of setting up a mosquito monitoring system.		Distribution of non-native invasive species is monitored within and around protected areas to prioritise control efforts and show efficacy of treatment. Rat population monitoring protocols have been established and will be undertaken by the AIG Environmental Health Team. More work is needed on finding out what invertebrate species are here on Ascension.	
Rapid Response Capacity	Plants and plant health risk: will use Fera invertebrate identification service to identify biosecurity interceptions. Otherwise nothing in place at the moment.	Basic	Emergency response plans for the detection of new plant or invertebrate pest species have been prepared and are being consulted on. Equipment required to mount a response to non-native introductions has been purchased. AIG Environmental Health Officer has received training in response techniques. With the current restricted flight access it takes a very long time to get samples to Fera (up to 4 weeks). Identification guide for high risk ant species has been completed based on Horizon scanning results.	Some
	Animals and animal health risks: nothing in place at the moment. There is no resident qualified vet on the island.	None	Emergency response plans for the detection of new animal species have been prepared and are being consulted on. Equipment required to mount a response to non-native introductions	Some

			has been purchased. AIG Environmental Health Officer has received training in response techniques. There's no resident qualified vet on the island but there is a good relationship with the vet on Saint Helena who can provide remote advice.	
	Other risks: nothing in place at the moment.	None	No change	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	Not done for plants or invertebrates. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Ascension. Key invasive alien vertebrate species are black rat, house mouse, rabbit, sheep, common myna and donkey.	Basic	Draft Biosecurity Strategy identifies priorities for control of existing non-native invasive species. Priority zones for the clearance of non-native plants around protected areas have been identified and are being treated and monitored. Rat control efforts are prioritised around settlements and protected areas.	Some
Baseline	Plants: Biannual plant census (March and September) for endemic species; baseline habitat map (including satellite images) and herbarium of species underway	Good	Habitat mapping exercise has been completed. Purchase of a drone intended to facilitate the ongoing monitoring of non-native plant distribution.	Good

	There is a terrestrial herbarium database for all species, native and introduced, with 300 species on it (including positions) and this is ongoing work.		Collection of herbarium specimens is still in progress with over 400 species completed.	
	Animals (vertebrates and invertebrates): few vertebrate species present and well known; an invertebrate database exists, having been built up on an ad hoc basis but is poor.	Basic	Invertebrate database is not comprehensive and this is constraining the ability to detect new biosecurity risks.	Basic
	Other: Marine species: Quantitative fish and marine invertebrate baseline abundance studies established and conducted both spatially and temporally. Good knowledge of marine species present and database of species exists. Long term turtle nesting studies established. Seabird population and productivity monitoring established.	Good	No change	Good
Framework	Legal framework: Legislation review done in 2009 (Shine 2009), and biosecurity legislation and polices reviewed as part of the Ascension Island Biosecurity Review, May 2016 and found to be weak. The Prohibited Animals regulations (1967) prohibits the importation of primates and birds of the Order Psittaciformes in order to prevent the importation of disease. The Dogs and Cats ordinance (2000) prohibits the keeping or importation of un-neutered cats and dogs and aims to prevent the colonisation of the Island with	Basic	Biosecurity legislation being drafted ready to be presented to the Council for consideration	Some

	feral populations after the successful feral cat eradication. The Bahamas agreements (2005) and Final Governing Standards for Environmental Protection by United States Forces when operating on Ascension Island (2002) provide a basis to allow the AIG to effectively require the USAF to implement a range of biosecurity measures to prevent the introduction of invasive pests.			
	National framework: there are plans to develop a national biosecurity strategy/ policy.	Basic	Biosecurity strategy drafted and out for public consultation before being presented to the Council for consideration	Some

Acknowledgements: Vicky Knight, Diane Baum

Bermuda

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	Phytosanitary risks: This is done on an ad-hoc basis, and there is no formal procedure. Importation of regulated items is done only for Agriculture controlled commodities and requires an application process that enables the authorities to access the phytosanitary risks the species and or country (area) where it is exported from. Supporting information, including pest free areas and details of the in-country phytosanitary program is requested as well. Regulated articles listed in the application are checked against an official restricted and invasive plant species list to verify that the articles pose no or minimal risk to Bermuda Zoosanitary risks: In a similar way, there is a process that follows a mostly qualitative import risk analysis. The hazard analysis is binary: does a hazard exist or not. This considers not only the animal species itself – could it be a pest? – but also the risk it is carrying a harmful disease. This is followed by risk assessment: entry assessment, exposure assessment, consequence assessment	Basic	No change. Phytosanitary risks: Import permits are issued for all plant material as a formal procedure and although additions are done on an ad-hoc basis this does not detract from the efficacy of the permit process. Importation of regulated items is not only done with Agriculture in mind however as the legislation is agriculturally focused our powers are restricted to the creation of policies around agriculture specifically though most plant pests and disease move between plants in both an agricultural and horticultural setting. New plant species for importation are set through a risk analysis and checked against official invasive and weed lists to verify that the articles pose no or minimal risk to Bermuda.	Basic

	and risk estimation. Then through risk management the Appropriate Level Of Protection is determined.			
Non-Native Species Risk Analysis	No programme in place.	None	A Non Native Species Risk Assessment was developed in 2018 for the importation of terrestrial plants to Bermuda (based on the Australian Weed Risk Assessment protocols). It is only being used to evaluate new species for entry.	Basic
Pathway Analysis	Not done.	None	Completed under the CSSF project.	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning to address priority species carried out and priority issues being addressed.	Good
Contingency Planning	Plant and plant health risks: Contingency plans are in place for certain agricultural pests such as Tephritid fruit flies. For new weed species or pests of endemic plants, no contingency plans have been developed as yet.	Basic	PPL has formal procedures for dealing with interceptions of live insects (ants, wasps/bees and termites) and soil products. PPL has already worked with the Department of Health to establish a contingency plan for tick outbreaks.	Some
	Animal and animal health risks: Basic protocols exist in the event of a new exotic vertebrate pest. No contingency plans for animal diseases presently exist but if an outbreak occurs international recommendations are followed.	Basic	No change.	Basic
	Other risks: No contingency plans are in place for a new marine species, or terrestrial invertebrate pest which is not a plant pest, eg a fire ant species.	None	No change.	None

Border Operations	There is no 'biosecurity team' as such. For border control the main players are the Plant Protection Section (includes agriculture) and Animal Control Section, of the Department of Environment and Natural Resources (DENR). HM Customs and the Marine Resources Section of DENR also play a role here. Phytosanitary: There are 3 dedicated officers at the Plant Protection lab (Principal Plant Protection Officer, Plant Protection Officer and Laboratory Assistant in the Plant Protection Lab). A new position for a 4th dedicated officer is planned. More staff needed for plant inspections. The Plant Protection Lab issues importation and exportation (and CITES) permits and inspect incoming plants and related products. There is an application process and import permit system for Importation of regulated articles. Regulated articles requiring permits include: live flowers, floral arrangements, greenery, fresh produce, Christmas trees, plant material for propagation (includes plants, bulbs, tubers, rhizomes or cuttings), wood (firewood or raw wood), seeds, potting media, sand, stone, gravel and insects. Importers who have applied for a release form (e.g florists) can transport products for inspection to the Plant Lab themselves from the point of entry.	Some	Capacity increase: the Plant Protection Lab has now employed a fourth officer. PPL trains HM Customs in border control for what to look out for and what to withhold for inspection. Invasive plant list is available upon request. It is also part of the importation package provided to importers wishing to import plant material. A disclaimer is added to ensure that importer are aware that the list is active and can be added to.	Some

	A formal list of black listed agricultural produce is available (quarantine and economic embargo). A permit is required before importing fresh fruit or vegetables that are non-commercial, considered High Risk Produce or from a High Risk Area (relating to the threat of Pink Hibiscus Mealybug *Maconellicoccus hirsutus, Mango seed weevil, Sternochetus mangiferae or* Tephritid fruit flies). All produce is subject to inspection upon entry into the island. A black list for seeds is also available. An informal black list of potentially invasive plant species prohibited from import is used. The list is not formal or publicly available. Soil and topsoil are prohibited entry into Bermuda. Potting media, sand, stone and gravel can be imported with a permit. Articles declared to Customs or discovered in searches at the airport are seized and transported to the Plant Lab for inspection, then confiscated or released to the importer. Used equipment and vehicles are required to be cleaned of quarantine risk material. They may be required to be steam cleaned or fumigated prior to importation. There are dedicated biosecurity facilities in the form of the Plant Protection Laboratory at the Department of Environment and Natural Resources Headquarters.			

	Export permits are issued for wood products and plant materials. Zoosanitary: There is 1 dedicated officer in the Animal Control Section (Chief Veterinary Officer). The Animal Control Section issue importation and exportation (and CITES) permits and inspect incoming animals and related products. More staff needed for vet functions and administration. Import permit applications are online for the import of dogs, cats, birds, horses, ponies and equines. Import permit applications and associated veterinary documents are assessed by the DENR. There is no quarantine facility for animal imports. Imports of marine species are regulated by the Senior Marine Resources Officer and Marine Resources Officer. Import permit applications for fish, marine fish, lobsters and sea shells are online. Individuals do not qualify for such a permit. The importation of any live marine species (animals, fish or plants) is strictly forbidden without permit. Individuals do not qualify for such a permit. These same items may be imported by individuals without a permit if these items are fully and visibly cooked or frozen at the time of import. The importation of clean sea shells is permitted without a permit, except where the species is protected by law. The importer should expect to have his/her shells confiscated by Bermuda			

	Customs so that the shells can be inspected by the Marine Resources Section of the Department of Environment and Natural Resources. If the imported items pass inspection, the shells will be returned to the importer. Research is ongoing on vessel biofouling to identify potential invasive species. For deliberate introductions, residents know that they require an import permit to import plants and plant products, animals and animal products, marine species etc. The public are aware they can bring plants that they suspect are diseased or insects to the Plant Lab for identification, and that they can report unusual animals to the DENR. On occasion pest animals (e.g red eared sliders and chickens) are surrendered for euthanasia. For marine species there is moderate to high level of awareness for importation and of Lionfish, low awareness of the threat of vessel biofouling. Unusual marine specimens are kept in the natural history collection at the Bermuda Aquarium, Museum and Zoo.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020

Alert System in Place	Formal reporting of plant pests and diseases is done by contacting the Plant Protection Lab by phone, email, online contact form (with photo upload capability) or an office visit. Reports from the public about unfamiliar animals may be sent to a number of sections within the DENR or to the Bermuda Aquarium, Museum and Zoo. There is no formal reporting procedure unless the animal is in distress. Bird kill events are reported to the Government Vet using an online form. Reports from the public about unfamiliar marine animals may be sent to sections within the DENR or to the Bermuda Aquarium, Museum and Zoo. There is no formal reporting procedure unless the animal is in distress. There is no formal reporting procedure for unfamiliar marine plants. Fish kill events are reported to the Marine Resources Section online. Lionfish are an established pest species, widely recognized by the public, and with an active culling programme. There is little informal reporting now, as they are established and widespread. They are informally reported by telephone and email, and formally reported online.	Some	No change. HM Customs is part of the reporting process.	Some

Surveillance	Plant and plant health risks: General surveillance is carried out by field officers of the DENR and public reports in terrestrial habitats.	Basic	No change.	Basic
	Animal and animal health risks: For animal disease surveillance, passive surveillance exists amongst small animals, and limited surveillance amongst farm animals. No surveillance exists for backyard flocks and wildlife. No surveillance for escaped exotic vertebrate pests.	Basic	No change.	Basic
	Other risks: General surveillance is carried out by field officers of the DENR and public reports in marine habitats, and covers all taxa. However, there is no specific surveillance programme to detect new marine species. Department of Health has an active island-wide monitoring and control program for mosquitoes and vermin. This is run by the Vector Control section.	Some	Some marine surveillance took place in 2018 (MSc research - Antonition, Shane. 2018. Ocean vessels as vectors of invasive marine species to island environments. unpublished MSc. thesis, Plymouth University. 55 pp.	Some
Monitoring	Informal monitoring of some garden ornamentals and fruit plants. Informal monitoring also includes: grocery store inspections, inspections of produce importer facilities, inspections of hardware stores.	Basic	No change.	Basic
Rapid Response Capacity	Plant and plant health risks: Low capacity to respond. Some capacity through the Terrestrial	Basic	Capacity increase: Terrestrial Conservation Crew now consists of 4 personnel	Some

	Conservation Crew (3 people) to cull small infestations of plants. Little capacity to respond to outbreaks of plant diseases or control plant pests. New species are identified from published material, online resources, communication with contacts (both experts and contacts from academia, and officers from other jurisdictions). Once a species is on-island, the Biodiversity Section and Terrestrial Conservation Section of the DENR are responsible of eradication, monitoring and some surveillance. Record keeping and some identification are done by the Natural History Museum (part of DENR).		Basic biosecurity kits were issued to border control partners in 2019 (main freight company, Customs at Hamilton docks, Customs at airport) to help with the capture and containment of small non-native species (flora & fauna) when encountered on incoming cargo/baggage. Part of the limited capacity to respond to outbreaks is that such a good job is done at the border that there is no need to do this. Note that the man power for something of this scale isn't present and would require other departments.	
	Animal and animal health risks: Low capacity to respond. Several pest-control shooters are licenced by the Bermuda Police Service and the Protection of Birds Act (PoBA) - Pest Bird management (mainly DENR staff members). At present, they only deal with established pest birds as listed under the PoBA. Little or no capacity to deal with incursions of small terrestrial vertebrates or invertebrates. No on-island facility to house captured animals. They would need to be immediately euthanized, which would tax the resources of the Government	Basic	No change.	Basic

	Vet, and the carcasses would have to go into the household waste stream. Reportable diseases: Outdated list of 'communicable diseases', capped off by the catch-all phrase "Any other disease or conditions communicable to man". The Department is ill equipped to respond to a report of a communicable disease in an animal. Once a species is on-island, the Biodiversity Section and Terrestrial Conservation Section of the DENR are responsible of eradication, monitoring and some surveillance. Rodent eradication is carried out by the Vector Control division of the Department of Environmental Health. New species are identified from published material, online resources, communication with contacts (both experts and contacts from academia, and officers from other jurisdictions).			
	Other risks: No capacity to respond to a new marine pest species. Current marine invasive species control efforts (lionfish) are largely undertaken by the public. There is little or no capacity to deal with incursions of marine fish, invertebrates or plants/algae, or to detect and respond to occurrences of harmful	None	No change.	Basic

	marine micro-organisms/pathogens (including fish diseases and agents that cause human illness). New species are identified from published material, online resources, communication with contacts (both experts and contacts from academia, and officers from other jurisdictions).			

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Invasive species are prioritized for eradication based on other conservation goals (e.g because they are a threat to a particular endangered species, or because they are a problem in a particular nature reserve). Three pest bird species are prioritised for eradication because they are a public nuisance and a threat to agriculture and endangered species. Also the pathway is closed, so there is the possibility of success. There is a Control Plan in place for the invasive Lionfish. Not done for plants or invertebrates, terrestrial or marine. Mosquito and vermin control are prioritised by the Vector Control section of the Department of Health.	Basic	No change. For plants there is some prioritisation within managed Nature Reserves e.g *Casuarina* and *Ficus* removal on the Castle Harbour Islands and Walsingham shoreline. There has been some discussion and investigation on the importation of beneficial	Basic

	RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Bermuda. The study did not identify any priority vertebrate eradication projects for this territory.		insects and fungi for the control of Balloon Vine which has become an increasing problem island wide. The Entomologist has been investigating biological controls for some whitefly species and new grass species to deal with increasing concerns of chinch bug.	
Baseline	Plants: The Bermuda Natural History Museum maintains a biodiversity database with approximately 8,000 records of species known from Bermuda; either presently or from historic records. Good records exist for major plant taxa and marine algae. Less comprehensive records exist for minor plant taxa (especially bryophytes) and fungi. Bermuda's biodiversity is well documented, and specimens, images and literature are held in on-island collections and overseas.	Good	No change	Good
	Animals (terrestrial vertebrates and invertebrates): Good records exist for terrestrial vertebrates, marine vertebrates and birds (including regular migrants). Less comprehensive records exist for some families of terrestrial invertebrates (others are well documented). Bermuda's biodiversity is well documented, and specimens, images and literature are held in on-island collections and overseas.	Good	No change	Good

	Other: Good records exist for established and native fish and marine reptiles. Less comprehensive records exist for some families of marine invertebrates (others are well documented). Bermuda's biodiversity is well documented, and specimens, images and literature are held in on-island collections and overseas.	Good	No change	Good
Framework	Legal framework: Legislation is weak, and focused on plant health and animal health issues for agricultural production and livestock. Powers exist with relation to prevent of the spread of diseases for animals and plants (powers of inspection, entry, search, restriction of movement, seizure and destruction). Diseased imported plant and animals can be seized. Diseased imported plant and animals can be seized. No sand, soil or earth allowed on stock. No sand or gravel without permit. No legal powers to seize/destroy plants that have become invasive. (e.g *Schefflera*, now invasive and sold in commercial nurseries). No flexibility to restrict sale or propagation of a plant species that becomes a pest once it is on the island. No legal right to access private property to cull invasive plants. No legal power to induce land owners to cull invasive plants.	Basic	No Change Note that any diseased plant can be seized, not just imported ones. If a plant is diseased or infested it can be destroyed regardless of invasive tendencies.	Basic

	No animal products from South America. No live or unfrozen and uncooked fish allowed into the waters of Bermuda except under license. No powers to prevent release of animals into the environment. There is little leeway to prohibit/restrict importations of animals and animal products in response to the dynamic disease patterns and incidents that occur. Weak quarantine: the Vet Officer has ability to restrict movement of animals into/out of a quarantine area, but powers do not extend to vehicles and people. A species can be denied entry on ecological grounds, but once found here, the ability to control it does not appear in legislation other than in defence of some protected species. e.g. smuggled. Seizure of property becomes a Bermuda constitutional issue. Border control is fairly strong (with some additional legislation/policy needed), but there is no legislation managing invasive species that have established on the island. Offshore islands not explicitly mentioned in legislation.			
	National framework: There are several biosecurity and invasive species items in the 2003 Biodiversity Strategic Action Plan, but no stand-alone strategy.	Basic	No Change	Basic

	A number of sections of the DENR are involved in long-term management of invasive species, as are the Dept. of Parks and a number of local NGOs.			

Acknowledgements: Mark Overbridge, Kim Burch and colleagues.

British Antarctic Territory

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	No routine PRA process carried out. Some taxa (e.g. Collembola) have been assessed.	Basic	No change	Basic
Non-Native Species Risk Analysis	No formal framework in place. However, very few non-native species are present, and most are invertebrates. All are considered high risk within BAT. Antarctica only has two native flowering plants and two native higher insects. Therefore the new introductions dramatically increase the continent's plant and insect biodiversity and can have substantial (if so far very localised) impacts upon native ecosystems.	Some	No change	Some
Pathway Analysis	Completed as part of the Review of British Antarctic Survey (BAS) Biosecurity Practice, March 2013. In addition, a range of studies have been done on different pathways / taxa. An assessment of biofouling risks was published in 2016.	Good	Repeated under the CSSF project. Recent research has examined the risk of transfer of species with eco-regions within BAT. See: Hughes, Kevin A., Convey, Peter, Pertierra, Luis R., Vega, Greta C., Aragón, Pedro, Ollala-Tárraga, Miguel A.. (2019) Human-mediated dispersal of terrestrial species between Antarctic biogeographic regions: a preliminary risk assessment. *Journal of*	Good

			Environmental Management, 232. 73-89. 10.1016/j.jenvman.2018.10.095 We have also looked at the chances of an existing non-native insect becoming invasive. See: Pertierra, Luis R., Bartlett, Jesamine C., Duffy, Grant A., Vega, Greta C., Hughes, Kevin, Hayward, Scott A. L., Convey, Peter , Olalla-Tarraga, Miguel A., Aragón, P.. (2019) Combining correlative and mechanistic niche models with human activity data to elucidate the invasive potential of a sub-Antarctic insect.. *Journal of Biogeography*. 16 pp. 10.1111/jbi.13780 Also recorded the risk of microbial introductions associated with recent importation of contaminated wood. See: Hughes, Kevin A., Misiak, Marta, Ulaganathan, Yogabaanu, Newsham, Kevin K. . (2018) Importation of psychrotolerant fungi to Antarctic associated with wooden cargo packaging. *Antarctic Science*, 30. 298-305. 10.1017/S0954102018000329	
Horizon Scanning	Various exercises have been carried out as part of the Antarctic Treaty Systems Committee for the Environmental Protection 'Non-Native Species Manual', and publications: Continent-wide risk assessment for the establishment of nonindigenous species in Antarctica (Chown et al	Good	Completed under the CSSF project. See: Hughes, Kevin A., Pescott, Oliver L., Peyton, Jodey, Adriaens, Tim, Cottier-Cook, Elizabeth J., Key, Gillian, Rabitsch, Wolfgang, Tricarico, Elena, Barnes, David K.A. , Baxter, Naomi, Belchier, Mark, Blake, Denise, Convey,	Good

	2012), and Global thermal niche models of two European grasses show high invasion risks in Antarctica, (Pertierra et al 2017).		Peter , Dawson, Wayne, Frohlich, Danielle, Gardiner, Lauren M., González-Moreno, Pablo, James, Ross, Malumphy, Christopher, Martin, Stephanie, Martinou, Angeliki F., Minchin, Dan, Monaco, Andrea, Moore, Niall, Morley, Simon A. , Ross, Katherine, Shanklin, Jonathan, Turvey, Katharine, Vaughan, David , Vaux, Alexander G.C., Werenkraut, Victoria, Winfield, Ian J., Roy, Helen E.. (2020) Invasive non-native species likely to threaten biodiversity and ecosystems in the Antarctic Peninsula region. *Global Change Biology*. 10.1111/gcb.14938	
Contingency Planning	Plants and plant health risks: A response protocol has been developed and will be proposed to the Treaty Parties in May.	Some	'Non-native Species Response Protocol' approved by the Committee for Environmental Protection in 2019 for inclusion in the 'CEP Non-native Species Manual'.	Some
	Animals and animal health risks: Mass Animal Mortality Event (MAME) Response Plan.	Good	No change	Good
	Other risks: No contingency plan in place.	None	No change	None
Border Operations	Biosecurity duties are part of environmental function. There are no specific biosecurity facilities, but boot washers and other biosecurity equipment are provided. Strict biosecurity controls are applied to visitors (including tourists, with the tourism industry represented by the International Association of Antarctica Tour Operators (IAATO)) and vessel	Good	No change	Good

	access, to research staff, vehicles, cargo, and food supplies. All visitors apply self-policing protocols. Internal biosecurity (between stations) is also rigorous for some pathways. Procedures, protocols and detailed Handbook in place. The Protocol on Environmental Protection to the Antarctic Treaty demands a black list approach. Non-native species can only be introduced with a permit for scientific purposes or food, and then must be destroyed. Codes of Conduct have been prepared by the Scientific Committee on Antarctic Research (SCAR) that provide advice for scientists regarding non-native species. These Codes apply to BAT. Good levels of awareness and generally good compliance by the UK. However, standards vary in the 18 other nations operating in BAT, in terms of both biosecurity protocols and compliance in the field. This is of particular concern for those operating in the climatically less extreme areas of the northern Peninsula where non-native species establishment may be more likely. The CEP non-native species manual has been endorsed by all 29 Antarctic Treaty Consultative Parties through Resolution 4 (2016). However,			

	levels of compliance are unclear, both within Antarctica and at other points in the supply chain.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020/2020
Alert System in Place	BAS operates an accident/incident/near-miss/environment (AINME) reporting system with a special category for non-native species.	Good	No change	Good (for UK researchers)
Surveillance	Plants and plant health risks: no formal programme in place. BAS staff are expected to report any sightings of novel species.	Basic	Occasional surveys undertaken, e.g.: Malfasi, Francesco, Convey, Peter , Zaccara, Serena, Cannone, Nicoletta. (2020) Establishment and eradication of an alien plant species in Antarctica: Poa annua at Signy Island. *Biodiversity and Conservation*, 29. 173-186. 10.1007/s10531-019-01877-7	Basic
	Animals and animal health risks: BAS staff are expected to report any sightings of suspected animal disease.	Basic	Occasional surveys undertaken, e.g.: Hughes, Kevin A., Greenslade, Penelope, Convey, Peter . (2017) The fate of the non-native collembolon, Hypogastrura viatica, at the southern end of its introduced range in Antarctica. *Polar Biology*, 40. 2127-2131. 10.1007/s00300-017-2121-4 Bartlett, Jesamine C., Convey, Peter , Pertierra, Luis R., Hayward, Scott A.. (2019) An insect	Basic

			invasion of Antarctica: the past, present and future distribution of Eretmoptera murphyi (Diptera, Chironomidae) on Signy Island. *Insect Conservation and Diversity*. 10.1111/icad.12389	
	Other risks: no formal programme in place. BAS staff are expected to report any sightings of novel species.	Basic	No change	Basic
Monitoring	Some studies on plants and non-native invertebrates has been done; no formal long-term programme in place.	Basic	See studies detailed above. No formal long-term monitoring programme in place	Basic
Rapid Response Capacity	Plants and plant health risks: limited local capacity exists to rapidly eradicate small number of non-native plants; no capacity to respond to anything other than the smallest invertebrate incursion. BAS staff expected to take immediate "reasonable" action to deal with any sightings.	Basic	No change	Basic
	Animals and animal health risks: Rats unlikely to survive unless associated with research station buildings - no infestations known within BAT. No capacity to respond to an animal disease outbreak.	Some	Very basic instruction provided in case of a Mass Animal Mortality Event. These focus on preventing the spread of the infectious agent by humans immediately following discover, with subsequent measures decided upon and communicated by BAS experts. Should a Mass Animal Mortality Event occur, Kevin Hughes is	Basic

			contacted immediately via established emergency channels to coordinate a response. No change: this component considered to have been previously over-scored, and is corrected here.	
	Other risks: BAS staff expected to take immediate “reasonable” action to deal with any sightings of invertebrates (fly, spider, etc.) within station buildings and ships. BAS lacks the technology to eradicate non-native micro-invertebrates without doing severe damage to the existing rare terrestrial habitat.	Basic	Emergency biosecurity bags have been provided to all stations containing means to clean contaminated equipment and eradicate invertebrates within buildings or ISO containers (pyrethrum foggers, insect spray, etc.).  Biosecurity rooms are being provided within the new infrastructure being developed at Rothera Research Station.	Basic

Component	Status	Rating	Update	New rating 2019/2020/2020
Prioritisation	There are relatively few non-native species within BAT. Two non-native plant species have been eradicated and there are plans to remove all non-native plant species within the next 2-3 years. A protected area, managed by the UK, was established specifically to protect a remote nunatak with unusual species assemblage from non-native species introductions.	Good	The UK has been involved in the preparation of management strategies for the non-native fly *Trichocera maculipennis* on King George Island. However, the chance of eradication or control does not look promising.	Good
Baseline	Plants: The nature of the territory means that there are few species present. Only two native plants present. Only one non-native plant (*Poa annua*) at one location and eradication work underway. Monitoring is very poor so others may exist (and probably more so for invertebrates).	Good	*Poa annua* on King George Island continues to be pulled up by Polish scientists. However, seed bank means plants keep returning. Not known how long this will take to eradicate completely.	Good
	Animals (terrestrial vertebrates and invertebrates): The nature of the territory means that there are few species present. No native vertebrates in BAT and no non-native vertebrates established. At least 13 non-native invertebrates established within BAT.	Good	No change	Good

	Other: Marine species are not well known. Micro-organisms are relatively well known.	Some	Some more consideration of marine species in literature and presented to the Treaty Parties. See: McCarthy, Arlie, Peck, Lloyd, Hughes, Kevin, Aldridge, David C. (2019) Antarctica: the final frontier for marine biological invasions. *Global Change Biology*, 25. 2221-2241. 10.1111/gcb.14600	Some
Framework	Legal framework: Biosecurity legislation is contained within Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, which is enacted into UK legislation through the Antarctic Act 1994, 2013. With a few exceptions, the legislation prohibits the introduction of all non-native species.	Good	No change	Good
	National framework: The Protocol on Environmental Protection to the Antarctic Treaty agreed in 1991 and entered into force 1998. Procedures are detailed in the comprehensive Biosecurity Handbook.	Good	BAS Biosecurity Handbook has been retitled the BAS Biosecurity Regulations, to better describe the mandatory nature of the contents for BAS personnel and those working under BAS logistics. Further biosecurity documents and checklists have been developed for BAS contractors (BAM) during the construction of the new wharf at Rothera. Expenditure on biosecurity for this project has been c. £500,000, or 1-1.5% of total project costs.	Good

Acknowledgements: Kevin Hughes

British Indian Ocean Territory

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	No system in place	None	No change.	None
Non-Native Species Risk Analysis	No system in place	None	No change.	None
Pathway Analysis	Completed for the Brown Tree Snake in 2013. Pathways of entry for BIOT need to be considered at two levels which should be considered separately. Firstly, the pathway via Diego Garcia, where cargo (and personnel) are regularly transferred both by ship and by air. Secondly, to and between the 54 Outer Islands. These are visited rarely by i) scientists ii) personnel based on Diego Garcia and iii) occasionally by persons from private yachts which are given permission to travel through BIOT. Access to the islands is possible only by small vessel (i.e. RHIB or similar) or by swimming, as coral reefs impede landing from larger craft.	Basic	Completed under the CSSF project.	Good

Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning to address priority species carried out and priority issues being addressed.	Good
Contingency Planning	Plants and plant health risks: No plans in place	None	No change	None
	Animals and animal health risks: plan in place for Brown Tree Snake detection.	Basic	No change	Basic
	Other risks: no plans in place	None	No change	None
Border Operations	BIOT does not have dedicated biosecurity officers. There is a customs team who inspect luggage and personnel for contraband items (drugs etc), but would not proactively check for plant or animal materials. The customs team look at all containers coming onto the island for infestations. If they see any evidence of this, they seal the containers and get pest control in to fumigate the affected container. Imported materials (large granite rocks) for coastal defence are inspected for the presence of soils etc. These are stored on a concreted area for a period of c.28 days before being utilized. Public awareness is good, with regular monthly training on the Diego Garcia Final Governing Standards covering the introduction of invasive species, pests, and twice a year training on Brown Tree Snake and other invasive species awareness.	Basic	A biosecurity training programme is being delivered to all new and existing customs staff with an increased focus on checking for plant and animal material in both containers and in personal luggage. An on island review of procedures during all stages of container arrival and departure is being carried out during the beginning of 2020 to address gaps in knowledge. This will highlight where procedures are good and where they may need improvement.	Some

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	Emergency phone numbers in use but no dedicated line or system. Inspection by Pest Control in cases of sightings, and extermination if detected.	Some	Due to the size of the island and operational capacity a dedicated line/ system would not be needed. Dedicated phone numbers are in use and work well.	Some
Surveillance	Plants and plant health risks: No programme in place.	None	No agriculture on island. Some ad hoc monitoring of plant health risks.	Basic
	Animals and animal health risks: No programme in place.	None	No captive animals / farmed animals on island. Donkeys (a remnant of the copra plantation industry) are checked on a regular basis for disease and general health.	Some
	Other risks: No programme in place.	None	No change	None
Monitoring	Long term monitoring system in place for cats, rats, donkeys, agama lizards, sensitive plants (*mimosa*), and spiders. Long term monitoring system in place by the Zoological Society of London (ZSL) on coral, reef fish, marine turtles and reef sharks.	Some	Planned monitoring programme to be implemented in the new year on ant species. ZSL conduct long term monitoring of seabirds on Diego Garcia and some of the outer islands. SFPO (senior fisheries protection officers) conducts some environmental monitoring / surveillance on the outer islands during their patrols and feed that back to those on island and in BIOTA on a weekly basis – e.g. bird sightings, marine mammals and anything of note.	Some

Rapid Response Capacity	Plants and plant health risks: For chronic and widespread species capacity is very limited.	None	No change	None
	Animals and animal health risks: There is a pest control team who would be called to eradicate a non-native species should it be detected incidentally where the species may be a threat to human health (i.e. a non-native spider or snake). For snakes, Guam has a Rapid Response Team to respond to Diego Garcia requirements. However, given the relatively recent establishment of agamid lizards, capacity is clearly lacking. For chronic and widespread species capacity is very limited.	Basic	No change	Basic
	Other risks: no capacity to respond.	None	No change	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Some species are prioritized (for example current eradication of cats) and a feasibility study for the eradication of rats on Diego Garcia has been undertaken, but not completed based on global best practice. There is an eradication programme for cats (on Diego Garcia) in place, which involves monitoring	Basic	No framework in place, but much progress on species flagged as priority. Cat eradication is ongoing. Rat control is ongoing on Diego Garcia around human habitations and buildings.	Basic

	activity using cameras. Traps are then set according to detected movement patterns. This has reduced the cat population from several hundred to c.30 individuals. However, other species, for example rats are only managed in certain areas – for example rat poison is used around human habitation and buildings, but the rats are widespread across the rest of the island. Not done for plants or invertebrates. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for BIOT. Key invasive alien vertebrate species are black rats.		A rat eradication feasibility study is being produced for the other islands (excluding Diego Garcia) by the Chagos Conservation Trust. Public Works on DG control *Mimosa pudica & M. invisa* and Ironwood trees as needed.	
Baseline	Plants: Royal Botanical Gardens Kew has compiled a full plant species list for the Territory.	Good	Royal Botanic Gardens Kew have produced plant habitat maps.	Good
	Animals (terrestrial vertebrates and invertebrates): Updated species lists are being formulated by ZSL as part of a long-term monitoring project.	Good	Ongoing and updated through regular scientific studies and environment officer observations.	Good
	Other: coral, reef fish, marine turtles and reef sharks	Good	Ongoing and updated through regular scientific studies.	Good
Framework	Legal framework: The Prohibited Imports and Exports Order 2009: an Order made under the Imports and Exports (Control) Ordinance 2009 which includes the prohibition of importing into the Territory any fill material which contains plant or	Some	Review of the existing legislation with regards biosecurity provisions carried out under the CSSF project.	Some

	animal material not originating in the Territory and also prohibits the exportation without written permission of any wildlife (including seashells, corals, eggs etc.) whether alive or dead. Under The Visitors and Visiting Vessels Ordinance 2006, Guidance for Visitors includes the following: Fauna and flora from outside the Chagos Archipelago must not be introduced into the Territory. In particular, pets are not to be landed.			
	National framework: None in place	None	Comprehensive BIOT Administration conservation priorities document drafted, which provides both policy and a strategy for biosecurity and invasive species management across the archipelago, incorporating the results of the horizon scanning and pathway action planning workshops held under the CSSF project in August 2018.	Basic

Acknowledgements: Nadine Atchison-Balmond

British Virgin Islands

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	No system in place. Training of one officer for pest risk analysis was conducted in Antigua in November 2016. This officer is the Head of Plant Quarantine and will train the other officers as part of the work programme for 2017. A training manual has been developed to conduct this training.	Basic	No change.	Basic
Non-Native Species Risk Analysis	No system in place. The National Parks Trust of the Virgin Islands (NPTVI) have conducted targeted invasive species pest risk, where it impacts biodiversity in national parks.	Basic	No change.	Basic
Pathway Analysis	Not done.	None	Completed under the CSSF project.	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning to address priority species carried out.	Good
Contingency Planning	Plants and plant health risks: Contingency plans are in place.	Some	No change.	Some
	Animals and animal health risks: Contingency plans are in place.	Some	No change.	Some

	Other risks: There is a contingency plan and on-going programme for the incursions of new marine species. A prime example is the Pacific Lionfish.	Some	No change.	Some
Border Operations	The Department of Agriculture (DOA) has 10 staff with biosecurity functions who conduct Port control. There are no dedicated facilities. DOA has posters of certain agricultural pests in Ports of entry. There is a licensing process for the phytosanitary and/or zoosanitary risk goods, and the manuals developed by FAO are followed when carrying out inspection procedures. There is an estimated 85% compliance. The Government Information Services is utilized to periodically conduct public awareness campaigns throughout the territory. Many people import plant material without permission, also the BVI's close proximity to the USVI means that people with private boats travel frequently between the islands, with potential for illegal importation of invasive species. Any unidentified specimens are sent off to the UK for identification by Fera.	Some	Facilities have been lost following the impacts of hurricanes Irma and Maria in 2018. Staff turn-over means that new staff recruited require further training. Two participants attended the CSSF-funded Fera course on biosecurity and entomology in York, October 2019.	Basic

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	There is no dedicated hotline. People call the Department of Agriculture to report new sightings.	Basic	No change.	Basic
Surveillance	Plants and plant health risks: Active surveillance programmes for Giant African Snail, Black Sigatoka, Tephritid fruit fly species, Lethal Yellowing, Red Ring Disease and Citrus Greening. The quarantine team randomly conducts surveys throughout the year to determine if there are any new sightings of pests and diseases within the territory. With the aid of GPS machines and GIS documentation.	Good	No change.	Good
	Animals and animal health risks: There is an active surveillance programmes for new animal species or animal diseases. This area is governed by the Veterinary Division within the Department of Agriculture.	Basic	No change.	Basic
	Other risks: The Conservation and Fisheries Department has an active surveillance programme for new marine species entering the territory.	Basic	No change.	Basic
Monitoring	NPTVI uses GPS to map invasive plant species within national parks and areas where plant inventories are being conducted. This is then mapped in a GIS.	Good	No change.	Good

	Species monitored are: *Casuarina equisetifolia*, *Scaevola taccada*, *Leucaena leucocephala*, *Iguana iguana*, and the Pacific Lionfish *Pterois volitans*.			
Rapid Response Capacity	Plants and plant health risks: Medium capacity available, NPTVI are currently trialling invasive plant removal techniques under a BEST 2.0 project with RSPB within a national park. Collaboration is made with other government agencies, other sectors will aid in the onset of biosecurity problem. Resources available to carry out rapid eradications: staff, equipment, funding and legal powers.	Some	No change.	Some
	Animals and animal health risks: There is basic capacity to respond to an animal disease outbreak, or new animal species detected. Resources available to carry out rapid eradications: staff, equipment, funding and legal powers must be budgeted for and any pertinent legislations must be amended to protect officers and compensate producers where applicable.	Basic	No change.	Basic
	Other risks: Lionfish control is being undertaken by the Conservation and Fisheries Department and Dive operators. Research and testing have been conducted and reduce the population of the Lionfish by preparing it in a particular way and eating it. This procedure is documented.	Some	No change.	Some

	There is medium capacity to respond to an outbreak of a new invertebrate species (non-plant pest).			

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Invasive species prioritised for control or eradication, using methods based on global best practice. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for BVI. Key invasive alien vertebrate species are feral cat, dog, goat, cow, sheep, donkey, feral chickens, pig, brown rat, black rat, green iguana, Cuban treefrog and small Asian mongoose. Lionfish *Pterois volitans* eradication project was initiated in 2009. Lionfish removal uses techniques developed within the Caribbean region. NPTVI, RSPB and *Jost van Dykes Preservation Society* (JVDPS) are currently involved in a BEST-funded project to eradicate goats from the Tobagos and undertake a rat eradication feasibility study.	Good	No change.	Good

	This project also looks at developing a biosecurity protocol. The Environmental Profiles have compiled information on alien invasive species. They identify known invasive species, in addition to those that have been identified as potentially invasive. Those species that are of immediate concern because of the conservation challenges they pose.			
Baseline	Plants: Flora being surveyed as part of a Darwin Plus project, started in 2015. GIS mapping of invasive plants across BVI has also been undertaken.	Good	No change, but probably over-scored in 2017, as work is in progress but not complete.	Some
	Animals (terrestrial vertebrates and invertebrates): turtles and seabirds well known, with monitoring programmes in place. Invertebrate species (pest, introduced and native species) are not well documented in a database for the greater general public use. Additionally, proper storage of specimens need significant improvement.	Basic		Basic
	Other: marine species and habitats being surveyed under a Darwin Plus project.	Basic	No change.	Basic
Framework	Legal framework: National biosecurity legislation does not give adequate protection.	Some	No change. Biosecurity legislation is being revised by the AGs office, using their own drafter.	Some

	There are provisions for regulations concerning imports of animals and plants. Early detection and rapid response of invasive species isn't covered, although powers exist with relation to the prevention of the spread of diseases in plants. No soil from a foreign territory is permitted in. Law and regulations exist (stop, search, seizure and arrest) to minimise intentional or accidental introduction of invasive species to the marine environment. Internal biosecurity is not covered. Improvements are now being made to existing legislation.			
	National framework: There is no national biosecurity policy. Invasive species management is with NPTVI and the Conservation and Fisheries Departments.	None	No change.	None

Acknowledgements:

Cayman Islands

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	When requests are received for importation of products from countries that the Cayman Islands has not previously imported from or for new products from some importing partners, the DOA routinely conducts Risk & Pest Risk Analysis, following the guidelines of the OIE or the IPPC. Although technical staff is limited the DOA has successfully undertaken multiple PRA's. In general animal and plant products for consumption originating from the USA, Canada, Australia, New Zealand, UK or the EAU are not subject to PRA's. Live plants or animals, however are subject to more stringent risk assessment and import conditions. There is a proposal for White and Black lists for more expeditiously dealing with requests to import live plants for the ornamental and landscaping sectors, currently in discussion stage as is the idea of a biosecurity policy. Import control will remain the responsibility of the DOA under existing laws. The draft	Some	Two participants attended the CSSF project funded CABI-led risk assessment workshop in January 2020. The list of regular imports has been sent by DOA to DOE for comments, as the first step towards finalising a white list.	Some

	biosecurity policy includes definitions and logical procedures for assessing individual taxa, and establishing white lists and black lists to limit the amount of individual assessment that needs to be done on an ongoing basis. It also a process for risk assessment in cases where import and /or release of taxa not on white list or black list has been applied for. Cayman Islands also routinely imports construction aggregate from several countries. To facilitate this the Department of Agriculture has developed a PRA procedure for aggregate importation and the inspection of exporting quarries. Just last year this procedure was adopted by the Caribbean Plant Health Directors (CPHD) Forum to be used as a regional guidance document for the other members in the Caribbean.			
Non-Native Species Risk Analysis	The draft bio-security policy will include provision for NNRA.	Basic	No change	Basic
Pathway Analysis	In preparation. A regional pathway analysis was conducted several years ago by a team led By Dr. H Meissner. This document has been adopted by the CPHD Forum. Given the commonalities of the region and the small size of the island states it is the opinion that a regional approach is the most value for money	Basic	Completed under the CSSF project.	Good

	approach to this issue rather than undertaking individual analyses. The CPHD has for several years been seeking funds to update the Meissner study, most recently as part of a submission through CIRAD to an upcoming INTERREG project.			
Horizon Scanning	Some substantial advances have been made in the field of plant health and animal health, while other actions in the broader field of invasive species remain to be done. There is awareness of several future threats in the areas of plant health and animal health. The Cayman Islands is an active member of the CPHD (currently holding the Chair) and Caribvet. Through these organisations and their linkages to other international bodies such as GICSV (The Inter-American Coordination Group in Plant Protection), OIE, IPPC, IICA, FAO, USDA-APHIS. etc. the Cayman Islands is kept well apprised of potential threats. The CPHD has in fact made it part of its annual meeting to report on new potential threats in the area of plant, that are not yet in the region.	Some	Completed under the CSSF project. Pathway action planning discussed and priority gaps being addressed.	Good
Contingency Planning	Plant and plant health risks: The DOA developed rapid response protocols following the introduction of the Pink Hibiscus Mealybug, using this as a test case. Both regional and national rapid response plans are being	Basic	No change. A phytosanitary contingency response document is being developed.	Basic

	developed. In the meantime, contingency planning for phytosanitary risks is done on a case by case basis by the DOA.			
	Animal and animal health risks: contingency planning for zoosanitary risks is done on a case by case basis by the DOA.	Basic	No change.	Basic
	Other risks: No contingency plans present for marine invasive species or invertebrates (not plant pests).	None	No change	None
Border Operations	The DOA is responsible for regulating importation of all animal, plants and their products. This is done under The Animals Law and the Plants Importation and Exportation law via the issuance of import permits and setting of import conditions. Customs and Agriculture staff at ports of entry carry out biosecurity functions. The DOA operates an Agriculture Health Inspection Services (AHIS) unit with 8 full time staff (7 Inspectors) that are responsible for issuing import permits, inspection of imports and border protection. The work of the unit is guided based on potential risk. There is an AHIS officer in the customs arrival hall at the airport to support the Customs service at all times the airport is operational. All imports of live animals and plants and cut flowers and	Good	No change. The import procedure of live plants from the UK is being updated. There are two additional amnesty bins in place at the airport. Two participants attended the CSSF project funded Fera biosecurity course in the UK, September 2019. Cayman Brac now has a trained officer.	Good

	foliage receive 100% inspection as do any shipments of agricultural products arriving via air cargo. Fresh produce and meats arriving via ocean containers receive random checks. The DOA did operate an agricultural detector dog at the airport, however the programme is temporarily suspended awaiting recruitment of a new handler. The draft biosecurity policy includes definitions and logical procedures for assessing individual taxa, and establishing white lists and black lists to limit the amount of individual assessment that needs to be done on an ongoing basis. Public awareness is reasonable. The US awareness programme “Don’t Pack A Pest” is being extended across the Caribbean region, including the Cayman Islands. Compliance is considered reasonable overall. The Fera invertebrate identification service is widely used, as is also the USDA identification service.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020

Alert System in Place	The DOA maintains a network of (66) sentinel sites at key locations, such as around ports of entry, nurseries, etc. that are monitored monthly to collect and identify any new pest. These sites serve as an early detection network. In addition, periodic surveillance for specific pest groups are conducted and samples of pests for identification are collected by extension service or brought in by farmers and backyard gardeners.	Some	No change	Some
Surveillance	Plant and plant health risks: Surveillance is very good for pest species of agricultural concern, but weaker for invasive species of environmental concern. DOA surveys its network of sentinel sites monthly on Grand Cayman and Cayman Brac and quarterly on Little Cayman. Periodically DOA staff will conduct surveillance exercises for specific pest groups, eg. mites or white flies, etc. during which all specimens found are collected for identification. This process has helped expand the DOA's National Pest list. DOA has also undertaken surveys for specific pest species as part of regional initiatives, and has an active plant health service who would quickly become aware of any new pest outbreak.	Some	No change. A full time surveillance post has been created in Grand Cayman and procedures have been correspondingly stepped-up. DOE check for new terrestrial invasive plant and vertebrate species, both new to the Cayman Islands, and moving between islands.	Good

	DOA also has a very active surveillance and monitoring programme for Tephritid fruit flies comprising of 5 trap lines in Grand Cayman & 1 trap line in Cayman Brac with some 97 traps. DOA is also an active member of the CPHD Tephritid fruit fly technical working group and all trap data is logged in the regional online Fruit Fly trapping data base. There is no active ongoing surveillance for molluscs but period surveys have been undertaken to collect and identify molluscs on island as DOA is well aware of the risk of Giant African Snail. As part of regional initiatives surveys have been done for *Tuta absoluta*, *Fusarium oxisporium*, *Frankliniella occidentalis* on pepper, cactus moth, citrus hindu mite, red palm mite, lobate lac scale, cotton seed bug, several mealybugs, and other species.			
	Animal and animal health risks: No formal surveillance in place, but the Department of Agriculture has an active animal health service who would quickly become aware of any new disease outbreak.	Basic	No change	Basic
	Other risks: No surveillance in the marine environment	None	No change	None
Monitoring	Green Iguanas are being monitored by the Department of the Environment.	Basic	Green iguanas are now being actively culled.	Basic

	DOA has an active monitoring programme for Tephritid fruit flies and other pests, see above under surveillance. No monitoring of non-crop pest invertebrates or marine species.			
Rapid Response Capacity	Plant and plant health risks: The DOA has good response capacity and has repeatedly been able to respond to pest introductions for example Pink Hibiscus mealy bug. DOA works closely with colleagues in the region via the CPHD and other contacts as well as with the USDA-APHIS. When new pests have been identified the DOA has been able to respond either via introduction of bio-control agents and or application of appropriate pesticide treatments combined with education of farmers, back yard gardeners and nursery / landscape professionals. Although it has proven impossible to eradicate plant pests once introduced, in virtually all cases these pests have been successfully managed. On the plant side the CPHD has a technical Working Group focused on emergency response which is currently working on a regional plan. National emergency response plans were developed several years ago by IICA and it is the CPHD's goal to update this	Some	No change. DOE will react quickly to reports of new invasive species. There are volunteer groups in both Cayman Brac and Little Cayman who respond to green iguana sightings.	Some

	plan to be used as a template for adoption by member countries and territories. Very limited capacity available in the Department of Environment. New species are identified using published material, direct communication with expert contacts. There is no “biosecurity team” as such, but the Department of Agriculture and Department of the Environment are the main players.			
	Animal and animal health risks: The DOA has limited capacity to respond to a new animal disease outbreak, due to the small number of qualified vets available at any one time (the DOA employs two full time veterinary officers). On the animal side, due to very stringent regulation of live animal imports there have only been a very small number of instances of introduction of new animal pest and diseases. National programmes have been implemented to address some of these cases such as liver fluke and horn flies in cattle.	Basic	No change. A new veterinary post has been created.	Basic
	Other risks: No capacity to respond to a new marine pest species.	None	No change	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	The DOA is committed to addressing issues of prioritization at a regional level. On the Plant health side, the CPHD has developed a regional priority pest list of the top 10 threats to the region. The methodology used to develop the list is now being extended to the national level with persons trained in 10 member countries / territories. The goal is for each member to develop a national list which in turn will be rolled up into the regional list. The goal is to train all 32 member countries and territories and to update the regional list every two years. On the animal side, Caribvet has developed a similar national animal disease prioritization tool. The Department of the Environment and the national Conservation Council has done some internal work on this. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for the Cayman Islands. Key invasive alien vertebrate species are feral cat, dog, black rat and green iguana. Regionally many Caribbean territories including the Cayman Islands have concerns with some of	Some	In addition to the work by DOA, DOE carry out annual planning to discuss and agree the invasive species to be tackled next. Considerations for deciding which species to tackle include: major threats, new species, management available, etc.	Good?

	the published data in terms of what pests are listed as present in specific countries.			
Baseline	Plants: The National Trust of the Cayman Islands operates the Cayman Islands only herbarium, available internationally in digital form online. Botanists have catalogued most of the wild plants of the Cayman Islands. There is excellent baseline information for most taxonomic groups, but weak at the micro-organism level.	Good	No change.	Good
	Animals (terrestrial vertebrates and invertebrates): The National Trust of the Cayman Islands maintains an insectarium that includes both historic and recent collections. There is excellent baseline information for most taxonomic groups. The DOA maintains and continuously updates its national pest list. All entries on this list have been taxonomically identified and confirmed by recognised experts either in the US or UK. The DOA also routinely reports to the OIE on the status of animal diseases. Terrestrial vertebrate species are few and relatively well known.	Good	No change.	Good

	Other: Marine species (marine turtles, sharks and cetaceans, conch) are well known. General surveys have not been undertaken.	Some	No change	Some
Framework	Legal framework: Legislation is considered adequate. Importation of plants and animals requires a licence, they must be imported through a specified port, with powers of inspection. Importation of Plants is regulated under the Plants Importation and Exportation law. Both this law and the Animals law are overdue for updating and this is a priority of the DOA. The Animal Law 2015 restricts the importation of animals (including carcass, dung, bedding, biological product of any animal) without a licence. Animals from Asia, Africa, Central and South America are banned. Powers exist with relation to the prevention of spread of diseases for animals and plants (powers of inspection, entry, search, restriction of movement, seizure and destruction). Diseased imported plants and animals can be destroyed. Penalties exist for contravention and release of pests and disease carriers. Internal biosecurity is covered, the legislation specifically refers to sister islands.	Some	The draft Plants (importation and exportation) law is being revisited. The National Conservation Law is being amended for invasive species regulations.	Some

	National framework: A multi-agency national biosecurity policy is in early draft form. Biosecurity policy is currently a draft document being discussed. The DOA will remain the lead agency for regulation of animal and plant health and importation of animals, plants ad their products. The Cayman Islands is closely involved in regional biosecurity forums such as the Caribbean Plant Health Directors Forum, Caribvet, CARICOM CVO's and other CARICOM and regional bodies.	Basic	No change. The policies have not been progressed.	Basic

Acknowledgements: Kenisha Palmer, Vaughn Bodden

Cyprus Sovereign Base Areas

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020/2020
Pest Risk Analysis	No system in place.	None	No change	None
Non-Native Species Risk Analysis	No system in place.	None	No change	None
Pathway Analysis	Not done	None	No change	None
Horizon Scanning	A Darwin grant has been awarded and part of this will involve comprehensive horizon scanning for invasive species, including plant species & certain fish.	Basic	Horizon scanning done for biodiversity impacts under a Darwin Plus grant in 2017. Second horizon scanning for public health and economic impacts done in 2019.	Good
Contingency Planning	Plants and plant health risks: No contingency plans in place for new plant pest or disease risks, or new weed species.	None	No change	None
	Animals and animal health risks: Contingency planning exists for new animal disease outbreaks, and public health issues (eg mosquito species or bird flu).	Some	No change	Some

	Other risks: No contingency plans in place for new marine pest risks.	None	This is delegated to the RoC who handle the majority of the marine issues. There may be contingency plans for some species such as the lion fish, with work in progress, but the status of the work towards this output is unclear.	None
Border Operations	There are no border controls to the SBAs themselves, only between the north and south parts of the Republic of Cyprus. These do not include biosecurity controls, except in the event of public health outbreaks such as bird flu.	None	There have been improvements in MOD biosecurity, especially for troops returning from military exercises. MOD policies and procedures are in place across the military activities. The customs team check them, together with the health unit.	Basic

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020/2020
Alert System in Place	No formal system in place. There is an Area Officer in each of the two Areas, these are the interface with the Cypriots who live and work in the SBAs and any reports of new species would come to them. Within military there are separate lines of contact.	Basic	No change	Basic

Surveillance	Plants and plant health risks: No programme in place for new plant pests and diseases, or new weed species.	None	No change	None
	Animals and animal health risks: Departments in the Republic of Cyprus carry out surveillance for animal disease outbreaks, and those of public health concern. The Joint Services Health Unit (JSHU) has a mosquito surveillance system in place to not only catch native species but additional trapping designed for Invasive Alien Species. They have been working more closely with the Republic of Cyprus Ministry of Health department to monitor for invasive species; they have put some traps around Limassol Port. The JSHU has also been working with the University of Cyprus in Nicosia who are screening birds for West Nile Virus by providing *Culex* mosquitoes for sampling. The concern is the amount of migratory birds in the area.	Some	No change in the set-up, but projects have been progressed.	Some
	Other risks: No programme in place for new invertebrate or marine species.	None	This is delegated to the RoC who handle the majority of the marine issues. There may be work in progress towards this but the status is unclear.	None

Monitoring	Routine monitoring takes place of birds. There is also routine monitoring of aerial insect vectors, specifically mosquitoes. The JSHU has permanent monitoring stations (e.g. RAF Aki Airport) and routine monitoring at the top end of the SBA near the Limassol Port. If something different was detected they would engage with the RoC and coordinate immediate action. Due to the amount of equipment the JSHU has if the RoC found an invasive species they would no doubt come for help.	Some	No change with regards monitoring for mosquitoes. The bird monitoring is considered to have been over-estimated in the original gap analysis in terms of monitoring for new invasive species, and the overall score is consequently downgraded to reflect this.	Basic
Rapid Response Capacity	Plants and plant health risks: No capacity to respond to a new weed or plant pest outbreak within the SBAs.	None	No change.	None
	Animals and animal health risks: Capacity exists to respond in the event of human or animal health outbreak.	Some	No change.	Some
	Other risks: No capacity to respond to a new marine pest within the SBAs.	None	No change	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020/2020

Prioritisation	*Acacia saligna*, is native to Australia and was introduced in Cyprus in the last Century. It is the most invasive exotic species in Cyprus and constitutes a main threat to natural habitats at Akrotiri, Episkopi and Dhekelia. It has been spreading rapidly, especially in areas affected by fire or mechanical disturbance. The efforts for its management within the SBAs are still at an early stage and include mapping, prioritisation and experimental control.	Basic	No change. Controlling Acacia is on-going and the main issue is now managing the seed bank. Biological control is being considered.	Basic
Baseline	Plants: Good knowledge of native and non-native plants, database available.	Good	No change	Good
	Animals (terrestrial vertebrates and invertebrates): Good knowledge of bird and mammal species; good knowledge of invertebrate species.	Good	No change	Good
	Other: Reasonable knowledge of marine species.	Some	No change	Some
Framework	Legal framework: The SBA Administration (SBAA) seeks to replicate as far as possible the legislation of the Republic of Cyprus and this also applies to environmental legislation. British Forces Cyprus (BFC) are bound by the SBAA environmental legislation and by UK environmental legislation where the	Basic	No change. The effects of Brexit are unknown at present.	Basic

	standards set are higher. In addition, BFC has an obligation to implement MOD sustainable development policies. The Protection and Management of Nature and Wildlife (Amendment) Ordinance, 2008, includes prohibition on introduction of non-local species of wild flora and fauna.			
	National framework: No specific policy or strategy in place, although invasive species issues are broadly covered in principle in the Akrotiri Peninsula Environmental Management Plan 2012 for Akrotiri Peninsula.	Basic	A management for one of the designated sites (SAC, SPAs and Ramsar) is in progress.	Basic

Acknowledgements: Graham Johnstone, David Reynolds

Falkland Islands

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	Use an ad hoc risk assessment process. Are standardising the approach with a tailored risk assessment template being produced by CABI. Previously, PRA training was given by a consultant, and PRAs of citrus fruits and various stone fruits carried out, but skills lost, primarily due to change of staff.	Some	Templates being developed under Darwin Plus project 0074, which includes training in their use (as well as the CABI on-line tools) at a workshop in St Helena in December 2019.	Good
Non-Native Species Risk Analysis	Use the Risk Assessment undertaken by Whitehead for species identified in the Falklands in 2008. It includes a formal framework comprising a database of all invasive species recorded in the Falklands. While this was completed in 2008 it is still very current, and the impact of invasive species can be changed easily to reflect geographic spread of species, and additional species added.	Good	No change	Good
Pathway Analysis	Legislation review done in 2009 (Shine 2009) which includes identification of the main pathways and vectors. Pathway analysis was	Good	Repeated under the CSSF project 2018.	Good

	also carried out by visiting consultants (Simpson and Hellstrom) in October 2004 and partially reviewed in 2008. Both marine and aviation pathways are expanding. Main source of shipping is Chile, Uruguay and UK. Main source of air traffic is Chile, Argentina and the UK.		A new pathway entered into force on November 2019 with the new flight from Brazil.	
Horizon Scanning	Not done	None	Completed under the CSSF project 2018. Pathway action planning workshop held in-territory April 2019.	Good
Contingency Planning	Plants and plant health risks: No plans in place	None	No change. Falklands Conservation is working on a general biosecurity contingency plan specifically for their sites, but in actual fact they tend to either deal with any potential problem plants there and then whilst doing site visits.	Some
	Animals and animal health risks: Limited contingency planning for the risk of rat incursions of rodent-free islands, and unapproved plans for a Foot & Mouth Disease outbreak. Simulation for a FMD outbreak planned for the future.	Basic	Wildlife disease workshop held in April 2019. Wildlife Health Strategy finalised and being published. This includes risk levels and sampling protocols, including how to easily and safely take and send samples to Defra for analysis. Defra materials have been shared.	Some
	Other risks: No plans in place	None	No change. Work is planned under the shallow marine survey group project.	None

			A hull fouling protocol is in place but not really followed due to the lack of personnel or technologies to carry over the work.	
Border Operations	One full time Biosecurity Officer with the Department of Agriculture (DoA), responsible for pre-border and border relating to imported goods and cargo. Veterinary staff deal with imports of live animals, and support in matters relating to the import of meat and foods of animal origin. The Biosecurity Officer has the support of other departments and individuals, and there is a MoU with Customs. One full time Environmental officer in the Environmental Planning Department (EPD) covers internal and inter-island biosecurity, as part of wider role, and supports the DoA on many biosecurity issues. Licencing system in place with three main categories; allowed, restricted and prohibited. Prohibited items are banned from import, allowed items can be imported freely, and restricted items may require an import permit, phytosanitary or zoosanitary certificate as appropriate. Border operations for other risks (eg marine, predatory invertebrates) are poor. No dedicated biosecurity facilities. Working towards a white list approach, but lack the pest risk analysis process.	Some	There is now a PT biosecurity assistant, and a second assistant is budgeted; the second assistant would work primarily as an inspector. Identification of invertebrates has been assisted by the presence of a USB microscope. Training given in basic entomology in April 2019 under the CSSF project. At least one biosecurity officer is present at 100% of incoming flights. The score for 2016 could be considered an overestimate of capacity at that time. There are still no facilities and on change for the other points noted for 2016.	Some

	Inter-island biosecurity: no mandatory rules or systems in place, but guidance given to cruise ship passengers, visitors, and ship captains. Good level of awareness with generally a high level of compliance and buy-in from the public and importers.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020
Alert System in Place	System in place, but no formal hotline. There is a website (www.bugs.co.fk) but it is not yet fully populated and as such has not been widely publicised. There is a degree of uncertainty of 'who to call' from the public.	Basic	System working well through general awareness and use of social media via FB. Frequent articles in Penguin News, and also the Wool Press, to raise awareness.	Some
Surveillance	Plants and plant health risks: For agricultural/horticultural pests, agricultural advisers "keep their eyes open" during farm visits.	Basic	No change There is some increased awareness amongst landowners who also 'keep their eyes open' and NGOs in undertaking fieldwork also make observations. Surveillance effort/knowledge has probably increased a little.	Basic
	Animals and animal health risks: Limited, carried out on an ad hoc basis. EPD place rat bait stations on high risk rat free islands, and	Basic	Rodent detector dogs are now working to detect the presence of rodents on off-shore islands, and also at the ports and harbours around	Some

	the inter-island ferry. DoA have placed rat traps on FIPASS (Port facility in Stanley Harbour) and undertake ad hoc surveillance at importers premises, container yards etc. Mandatory reporting only under the Animal Health Ordinance.		Stanley to minimise the risk of rodents boarding vessels. Discussions regarding the introduction of a biosecurity dog to detect meat products which will decrease the risk of livestock disease incursion further have started. Improved sampling techniques for animal diseases, following an animal disease risk assessment workshop through the CSSF project.	
	Other risks: There is no systematic surveillance in place in relation to environmental pests, although some ad hoc surveys take place, notably follow-up surveys on small islands (up to 1000ha) where rodent eradications have been attempted. Marine surveys around Kidney Island may reveal the presence of invasive species.	Basic	The project 'Invasive species monitoring: Stanley Harbour and Pt William' led by SMSG was completed on September 2019. A new project led by BAS is soon to start 'Origins of potentially invasive *Mytilus* spp biofouling a polar research vessel using population genetics approaches'	Basic
Monitoring	Several programmes in place for conservation monitoring on invasive species impacting seabird colonies and/or specific islands. The annual invasive plant control programme led by EPD has monitoring elements included in control on priority species and early invasive species. Early invasive plant monitoring is not	Some	No change. Calafate management is on-going, which includes monitoring of spread. There are increasingly a number of species being brought to FCs attention that require such activity: creeping thistle being the main concern Early intervention was more resourced in the past than now, with some previous annual	Basic

	systematic and is focussed on the Stanley area.		eradication work. Now it is not clear if there is any at all, so the situation has probably worsened since 2017, and has been downgraded.	
Rapid Response Capacity	Plants and plant health risks: FI make use of the Fera invertebrate identification service to identify biosecurity interceptions. Rapid ID can sometimes be provided via photographs, otherwise the slow turnaround time of sending samples to UK means that results are often too late to base decisions on. There is no plan in place to deal with incursions of agricultural or plant pests. Limited resources to carry out local eradications. There is no plan in place to deal with incursions of agricultural or plant pests. It is felt that advice could be sought quickly in the event of an incursion.	Basic	Identification of border and post-border invertebrate interceptions is quicker through contacts with Fera.	Basic
	Animals and animal health risks: A plan has been put in place for dealing with Foot & Mouth outbreaks.	Some	DoA now has an animal disease rapid response plan for both livestock and wildlife diseases, supported through the CSSF project. Livestock disease outbreak protocol is only in its first draft form and needs considerable 'brushing up' but it is a work in progress (comment by the vets).	Some

	Other risks: There are several basic contingency plans in place for small island rodent incursions. There is no plan in place to deal with incursions of environmental pests or marine species.	Basic	No change.	Basic

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	The Whitehead risk assessment is used. Pro-active control and trials supported on priority species.	Basic	No change	Basic
Baseline	Plants: Rebecca Upson and Richard Lewis published a document in 2014 “Updated Vascular Plant Checklist and Atlas for the Falkland Islands”. Daffyd Crabtree recently undertook a study on behalf of Falklands Conservation to document non-Vascular plants (unpublished). This information is not available online.	Good	No change. There was a lot of taxonomic analyses to do for this work. The mosses and liverworts are still being worked on, but the lichens now have a checklist which includes the identification of possible and probable introduced species.	Good
	Animals (terrestrial vertebrates and invertebrates): Terrestrial vertebrates are relatively well known and understood but data gaps exist with invertebrates. Alexander G Jones produced a “Insects of the Falkland Islands species checklist” in 2011, and	Good	No change	Good

	Alastair Lavery “The Spiders, Harvestmen and Pseudoscorpions of the Falkland Islands” in 2014. Otherwise there is little data on other classes of arthropods. This information is not available online.			
	The marine environment has significant data gaps, and while the commercial species are well studied and understood it is not the case with invertebrates and near shore species.	Basic	Work is in progress.	Basic
Framework	Legal framework: Legislation review done in 2009 (Shine 2009). Legal framework in place, but is complex and out of date. Biosecurity framework constructed around existing legislation: Customs Ordinance 2003 (live animal), Animal Health Ordinance 1998 (animal products), Plant Disease Regulation Ordinance 1944 (plant material), Prohibited Goods Ordinance 1992, and Conservation of Wildlife and Nature 1998. An MoU was agreed between Customs and Department of Agriculture in 2012.	Basic	Biosecurity legislation is being drafted through the CSSF project. Finalisation will depend on the biosecurity policy.	Basic
	National framework: Government resources in this area remain low, and there is no clear lead on all biosecurity issues (prevention, surveillance, control, eradication) within government.	Basic	Biosecurity policy framework under development. Progress has been delayed due to changes in personnel.	Basic

	Biosecurity objective captured in the FI Biodiversity Framework 2016-2030. This includes the development of a biosecurity and invasive species strategy including a risk assessment framework, strengthened border controls, and legislation/management provisions to support management of priority invasive species.			

Acknowledgements: Daniela Baigorri, Frin Ross, and colleagues.

Gibraltar

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	No system in place at the border although technical staff from the Gibraltar Botanic Gardens assess risks prior to the introduction of any species to the gardens and landscaped areas.	Basic	No change.	Basic
Non-Native Species Risk Analysis	No system in place.	None	Watchlist and *ad hoc* monitoring now in place following horizon-scanning exercise, for terrestrial and marine habitats.	Basic
Pathway Analysis	Not done.	None	Completed under the CSSF project.	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning to address priority species carried out.	Good
Contingency Planning	Plants and plant health risks: No contingency plans in place for new plant pest or disease risks, or new weed species.	None	Monitoring for possible invasives and legislative changes to combat invasion, e.g. with regard to import restrictions.	Some
	Animals and animal health risks: No contingency plans in place for new exotic vertebrate pest or invertebrate species such as fire ants.	Basic	No change.	Basic

	Contingency planning exists for new animal disease outbreaks, and public health issues (eg mosquito species or bird flu).			
	Other risks (invertebrate (not plant pests) and marine species): No contingency plans in place for new marine pest or disease risks.	None	The only contingency plan is some direct removal, as is the case with Rugulopteryx okomurae.	Basic
Border Operations	There are no border controls to Gibraltar with a specific biosecurity remit, and no dedicated biosecurity facilities. There is a high level of public awareness on invasive species. Compliance is high for phytosanitary risks as gardening is limited and most work is carried out by conscientious people.	Basic	No change.	Basic

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	There is a hotline for reporting new sightings of new non-native species or disease outbreaks.	Good	No change.	Good
Surveillance	Plants and plant health risks: Surveillance programme in place for all terrestrial species considered invasive as detailed in the Gibraltar	Good	No change.	Good

	Biodiversity Action Plan and Draft Gibraltar Nature Reserve Management Plan.			
	Animals and animal health risks: Departments in Gibraltar carry out surveillance for animal disease outbreaks, and those of public health concern. The Gibraltar Environmental Agency and Gibraltar Botanic Gardens have a detailed and intensive programme in place for mosquito detection, which includes sampling in Gibraltar and following trends in Spain. No surveillance for new exotic vertebrate pests.	Some	No change.	Some
	Other risks (invertebrate (not plant pests) and marine species): Surveillance programme in place for all marine species considered invasive as detailed in the Gibraltar Biodiversity Action Plan and Draft Gibraltar Nature Reserve Management Plan. Gibraltar Botanic Gardens carry out invertebrate sampling on-site and new exotic invasive species have been intercepted. In one case, this had led to biological control. Ants are regularly surveyed.	Basic	No change.	Basic
Monitoring	Monitoring is done on all terrestrial and marine species considered invasive, identified in the BAP and Draft Gibraltar Nature Reserve Management Plan.	Good	No change.	Good

	The status and trends of the main EU-listed habitats in Gibraltar have been determined through two classification exercises carried out in 2007 and 2013 respectively. These were carried out in-line with the requirements of the EU Habitats Directive. In line with this Directive, there is continued habitat surveillance and data management. Specific assessments of marine biodiversity have been carried out in line with the requirements of the Marine Strategy Framework Directive. There is also surveillance monitoring of the Marine Special Area of Conservation.			
Rapid Response Capacity	Plants and plant health risks: Medium/High capacity to respond. Actions undertaken by Department of the Environment, Heritage and Climate Change (DEHC), Environment Agency, Botanic Gardens, GONHS and HM Customs. Novel species are identified by a combination of expert knowledge, fieldwork and casual observations. Support and technical assistance for invasive species or biosecurity issues available in Spain.	Good	No change.	Good
	Animals and animal health risks: Medium/High capacity to respond. Capacity exists to respond in the event of human or animal health outbreak.	Some	No change.	Some

	Support and technical assistance for invasive species or biosecurity issues available in Spain.			
	Other risks: No capacity to respond to a new marine pest. Support and technical assistance for invasive species or biosecurity issues available in Spain.	None	Some planning and capacity to respond to new marine pests.	Basic

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Actions for invasive species have been prioritised under the BAP. Twenty-two plant species have been identified of concern that have become established outside garden areas. They are classified as very problematic (already causing serious damage and spreading significantly) problematic (less damaging and threatening but also capable of spreading) and potentially problematic (serious invasives in other countries and could become a serious concern in the future, but are not at present established in Gibraltar). Management plans have been prepared for 18 species. The BAP also identified 6 vertebrate pest species, “pest” being defined as “species that are detrimental to the indigenous biodiversity, and could also have	Good	No change.	Good.

	an impact on environment and human health”; these species can either be native or naturalised. Management plants have been developed for five of them. The sixth, Barbary macaque, has a species action plan. Invasive invertebrates are not currently included in the BAP but this is under revision.			
Baseline inventories	Plants: In line with EU Habitats Directive there is continued habitat surveillance and data management. Good knowledge of native and non-native plants, database available.	Good	No change.	Good
	Animals (terrestrial vertebrates and invertebrates): Good knowledge of bird and mammal species; good knowledge of invertebrate species.	Good	No change.	Good
	Other risks (invertebrate (not plant pests) and marine species): Specific assessments of marine biodiversity have been carried out in line with the requirements of the Marine Strategy Framework Directive.	Good	No change.	Good
Framework	Legal framework: Nature Protection Act 1991 and all the Regulations that come under the Act include sections dealing with the introduction of fauna and flora that are not indigenous to Gibraltar. The Plan and the relevant Regulations are implemented and enforced by the Environmental Protection and Research Unit of the Department of the	Good	No change.	Good

	Environment and Climate Change as well as the Gibraltar Nature Reserve Management team. Gibraltar is now covered by EU Regulation No 1143/204. However, there is limited capacity to enforce the regulation locally.			
	National framework: Invasive non-native species are included in the Gibraltar Biodiversity Action Plan and the Upper Rock Management Plan, implemented under the umbrella of the Gibraltar Nature Reserve Management Plan. In support of the GNR Management Plan and through consultation with the DECC, the Ministry of Defence implemented their Integrated Rural Management Plan during 2014, for MOD estates in Gibraltar. This plan also contains an Invasive Species Control Programme. The overall direction is managed by the DoE.	Some	No change.	Some

Acknowledgements: Keith Bensusan, Stephen Warr

Montserrat

PREVENTION

Component	Status 2017	Rating	Updated status 2020	New rating
Pest Risk Analysis	Basic risk assessment is carried out. Montserrat depends largely on the work done by neighbouring territories and literature searches using CABI and other sources.	Basic	OECS is developing a regional approach which Montserrat will look to align with.	Basic
Non-Native Species Risk Analysis	No system in place.	None	No change.	None
Pathway Analysis	Not done.	None	Completed in May 2017 under the CSSF project, together with the other wider Caribbean region OTs.	Good
Horizon Scanning	Not done.	None	Completed in May 2018 under the CSSF project. Pathway action planning workshop held in-territory in June 2019.	Good
Contingency Planning	Plants and plant health risks: There is no formalised plan. For phytosanitary risks staff collaborate with regional partners and adopt whatever programmes they have. If it is a specific national matter they meet and strategise as the need arises.	Basic	Work is in progress to develop contingency plans for key horizon scanned pests, such as the Giant African Land Snail.	Basic

	Animals and animal health risks: There is no formalised plan. For zoosanitary risks staff collaborate with our regional partners and adopt whatever programmes they have. If it is a specific national matter they meet and strategise as the need arises.	Basic	No change.	Basic
	Other risks: No plan in place.	None	No change.	None
Border Operations	There are no dedicated biosecurity officers, biosecurity functions are handled by Customs Officers who attend the Plant Quarantine Course that phytosanitary officers attend. There are about seven phytosanitary officers and three zoosanitary officers who all have other duties within the Ministry of Agriculture. The Fera invertebrate identification service has been used. There is a fair level of public awareness. The level of compliance is fairly high because the Customs Officers are fully cognisant of the threats and collaborate closely with the officers from the Ministry of Agriculture, Trade, Land, Housing and the Environment. Some Customs Officers have received CITES training.	Some	Import health standards and inspection protocols are being developed for a range of commodities. Pest Alert posters are in use. The Fera invertebrate identification service is being used.	Some

EARLY WARNING AND RAPID RESPONSE

Component	Status 2017	Rating	Updated status 2020	New rating
Alert System in Place	There is no hotline but people report anything they perceive to be a new sighting to the Department of Agriculture.	Some	Pest alert and awareness posters have been developed, as well as education materials for pre-school and 7 to 13 year olds.	Some
Surveillance	Plants and plant health risks: No programme in place.	None	A pest list is being developed for Montserrat, and surveillance plans developed for some of the key horizon scanned pest species, such as Giant African Land Snail.	Basic
	Animals and animal health risks: No programme in place.	None	A programme is starting, and a regional alert system is in place.	Basic
	Other risks: No programme in place.	None	No change.	None
Monitoring	No programme in place. Forestry staff, from the Department of Environment, conduct an annual bird monitoring exercise to determine the bird populations in the Centre Hills of Montserrat.	None	With the development of an up-to-date pest list, extension staff are able to start monitoring existing plant health pests. Farmers are also coming forward with pest reports more.	Basic
	Plants and plant health risks: When rapid eradication is required a task force is normally set up and resources are sought to carry out the necessary actions. Usually there is	Some	No change.	Some

Rapid Response Capacity	difficulty in acquiring all of the necessary elements in a timely manner.			
	Animals and animal health risks: When rapid eradication is required a task force is normally set up and resources are sought to carry out the necessary actions. Usually there is difficulty in acquiring all of the necessary elements in a timely manner.	Some	No change.	Some
	Other risks: When rapid eradication is required a task force is normally set up and resources are sought to carry out the necessary actions. Usually there is difficulty in acquiring all of the necessary elements in a timely manner.	Some	No change.	Some

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status 2017	Rating	Updated status 2020	New rating
Prioritisation	Not done for plants or invertebrates. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Montserrat. Key invasive alien vertebrate species are the feral pig, goat, cow, feral cat, black rat, and cane toad. The study also identified that biosecurity should be a high priority for Montserrat, to prevent the establishment of more invasive alien vertebrate species.	Basic	There is ongoing control of feral vertebrates, and of fire ants.	Basic

Baseline	Plants: are well known and a database exists	Good	No change.	Good
	Animals (terrestrial vertebrates and invertebrates): relatively few vertebrates and well known. Plant pests well known, but other invertebrates poorly known.	Some	A pest list is being developed.	Some
	Other: Initial surveys undertaken on marine species and a database exists.	Some	No change.	Some
Framework	Legal framework: Legal framework: Permits required for live animal import and animals from some origin countries banned. Powers exist with relation to prevent of the spread of diseases for plants (powers of inspection, entry, search, restriction of movement, seizure and destruction). Diseased imported plants and animals can be destroyed. All imported plants and animals are imported through specified ports or places of entry, with the appropriate documentation and inspected.	Basic	Biosecurity legislation is being drafted for Montserrat, in line with new regional OECS Bills currently being developed in Plant Health, Animal Health and Plant Protection.	Some
	National framework: No national biosecurity policy in place.	None	Biosecurity policy in early stages of drafting, to complement the new biosecurity legislation.	Basic

Acknowledgements: Claude Browne, Stephen Mendes, Ernestine Corbett

Pitcairn

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	Under the new Environmental Protection Ordinance (due to be finalised in 2017) the Bio Security Department will assess each permit application and follow a checklist before approving or disapproving the application. This process is under development and is being followed whilst waiting on the official documentation.	Basic	No change.	Basic
Non-Native Species Risk Analysis	No formal protocols in place but invasive species are monitored and managed accordingly.	Basic	No change.	Basic
Pathway Analysis	In 2006 an analysis of the risks associated with new trading arrangements with French Polynesia included a detailed pathway analysis. No subsequent pathway analysis has been done.	Basic	Completed under the CSSF project.	Good
Horizon Scanning	As part of the 2006 analysis of the risks associated with new trading arrangements with French Polynesia, a preliminary horizon scanning exercise was carried out in the form of an assessment of potential non-native invasive species present in French Polynesia and the wider region which could be introduced by the new pathway.	Basic	Completed under the CSSF project. Pathway action planning to address priority species carried out and priority issues being addressed.	Good

Contingency Planning	Plants and plant health risks: training conducted on Emergency response to any incursion of fruit flies in 2013 by the Secretariat of the Pacific Community (SPC).	Basic	No change.	Basic
	Animals and animal health risks: Annual bee hive inspections for disease are carried out. Domestic goats kept in captivity as a food source. Goats are annually vaccinated and external vet (New Zealand) advice is available to all registered goat owners.	Some	No change.	Some
	Other risks: no plans in place.	None	No change.	None
Border Operations	The Bio Security Department consists of 2 staff one being the Director of Bio Security and the other a Bio Security Officer. An Environmental Protection Ordinance is in development and will be finalised in 2017. It includes permits for importing controlled plants and controlled animals and native organisms. There is a big concern for Tephritid fruit fly introduction. There is a phytosanitary declaration form but it is not used as the nearest neighbour is 300 miles away by sea in French Polynesia (Mangareva Gambier Islands) and has no biosecurity officers on the island.	Some	No change in the score yet, but progress is being made. A Biosecurity Manual has been drafted and is being reviewed. A review of procedures and training in biosecurity has been delivered by a consultant under an RSPB-led Darwin Plus project. The biosecurity facilities require upgrading to allow full use, and equipment is still lacking.	Some

	There is a zoosanitary declaration form in place, used for the Pitcairn Honey industry products. Pitcairn honey is tested on an annual basis in New Zealand by a reputable organisation for certification into the UK and EU. All honey producers are aware of zoosanitary declaration forms the Bio Security department provides printed declarations when required. There are posters and signs for raising biosecurity awareness. There are dedicated biosecurity facilities and limited functions are carried out at that location. Another facility would need to be developed to handle wider range of biosecurity matters. Constraints with offloading the cargo boat, such as bad weather, can make implementing border operations difficult. Compliance is variable. The Biosecurity operations for Pitcairn Islands was established in 2006 with the assistance of SPC. In March 2010 the technical assistance was reviewed. Biosecurity operation and importation systems were also reviewed and there was a biosecurity awareness campaign conducted to the Pitcairn island community on the importance of biosecurity and respecting the biosecurity systems put in place (2013, SPC). Further awareness is required for the new procedures being put in place.			

	In 2015 biosecurity practices were reviewed and recommendations drafted under a Darwin Plus project.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	There is a reporting system in place where community members notify the Biosecurity department.	Good	No change.	Good
Surveillance	Plants and plant health risks: fruit fly surveillance trapping Queensland fruit fly (*Bactrocera tryoni*), and the non-economic *Bactrocera setinervis*	Some	No change.	Some
	Animals and animal health risks: No programme in place.	None	No change.	None
	Other risks: Henderson Islands has surveillance for rats, following eradication	Basic	No change.	Basic
Monitoring	A monitoring and surveillance process is in place for some taxa which would encompass a range of species including invasives. Regular monitoring takes place for birds, lizards, rats, and the native plant *Cenchrus echinatus*.	Basic	No change.	Basic
	Plants and plant health risks: Once the draft Environmental Protection Ordinance comes into	Some	No change.	Some

Rapid Response Capacity	effect the Bio Security department will have more powers to seize and search, monitoring permit holders for compliance, and act on any breaches. The Bio Security department manages all aspects with the assistance from another Division Department such as Contracts & Cleaning who carries out lawn maintenance of all government buildings and recreational areas around the island. Pitcairn is on budgetary aid and therefore funds are limited to what can be achieved in terms of rapid response. External funding would be required that would include a small team to conduct the work, this is due to capacity issues and human resources.			
	Animals and animal health risks: Local capacity is limited. RSPB conducted a Henderson Rat Eradication program 2011. During the 2012, Pew Charitable Trust and National Geographic Society visit to Henderson a rat was detected and reported to the Island Council, the Environment, Conservation and Natural Resource Division and RSPB.	Basic	No change.	Basic
	Other risks: No capacity.	None	No change.	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Pitcairn is currently working with other South Pacific territories ie Wallis and Futuna, and French Polynesia in an EU project application based on Invasive Management. Pitcairn will be requesting an invasive assessment to be carried out and the development of an invasive management plan. A small team is required to initially kick the project off as Pitcairn has capacity issues and requires the assistance. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Pitcairn. Key invasive alien vertebrate species are goats, feral cat and Pacific rats.	Basic	The project application was approved and an EU-funded project has begun, led by the Secretariat of the Pacific Regional Environment Programme. This includes the development of an invasive species strategy and invasive species management plans.	Some
Baseline	Plants: In 2007, the Secretariat of the Pacific (SPC) carried out a basic survey on weeds listing the different species. Other taxa have not been surveyed.	Basic	No change.	Basic
	Animals (terrestrial vertebrates and invertebrates): no database available.	None	No change.	None
	Other: Between March - April 2012, Pew in conjunction with National Geographic Society	Good	No change.	Good

	conducted a comprehensive marine survey looking at the health of marine ecosystem including listing all marine species within the Pitcairn Islands group (includes outer islands).			
Framework	Legal framework: RSPB-led Darwin Plus project which included work to improve Pitcairn's biosecurity legislation, 2016 (http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2016-06-08/39960) The new Environmental Protection Ordinance is expected to be finalised in 2017. No bee products are allowed by Law to be imported into Pitcairn. The Bee Keeping Ordinance sets out conditions for bee keepers. A couple of years ago the Division introduced standard registration forms, apiary registration, and bee keeper identification numbers.	Some	New Biosecurity legislation is being drafted under the CSSF project.	Some
	National framework: No national biosecurity policy in place.	None	A Biosecurity Manual has been drafted which includes biosecurity policy statements, and is being reviewed.	Basic

Acknowledgements: Michele Christian

St Helena

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	Risk-based approach established as a guiding principle of the national biosecurity policy. Guidelines for risk analysis for phytosanitary risks drafted, defining three categories of commodity depending on familiarity with the commodity and therefore the confidence with which specific levels of risk for each commodity can be evaluated. Simplified rapid PRAs carried out for some low risk commodities using data from the CABI Crop Protection Compendium and internet tools such as GISD, CABI Invasive Species Compendium and PIER. Biosecurity staff given basic training in applying the Guidelines. Confidence in carrying out PRAs is weak. PRAs for commodities of high concern can't be done due to lack of data and lack of access to expertise.	Basic	Templates have been developed under Darwin Plus project 074 due to end in 2020, and including training in their use and the CABI on-line tools. Templates not yet in standard use.	Some
Non-Native Species Risk Analysis	NNRA not established as a priority activity. Staff lack the mandate, skills, access to data and expertise.	None	Weeds have been prioritised and assessed under the National Invasive Plant Strategy, approved by the ENRC in 2019. The framework can be applied to other taxa, such as invertebrates.	Basic

	Darwin Plus project approved for 2017 – 2019 includes development of a national invasive plant strategy.			
Pathway Analysis	Legislation review done in 2009 (Shine 2009) which includes identification of the main pathways and vectors. This has guided actions in the implementation of the national policy. Survey being done on selected high risk shipping containers. Main high risk pathways are marine, from Cape Town and Ascension Island (which links to the Americas) via a single passenger/cargo ship. Air access currently still very limited, with occasional small private jets and medevac flights. The situation in St Helena is very simple due to its isolation and limited (three) ports of entry.	Some	Completed under the CSSF project 2018.	Good
Horizon Scanning	Not done. Staff lack the skills, access to data and expertise.	None	Completed under the CSSF project 2018. Pathway action planning workshop held subsequently.	Good
Contingency Planning	Plants and plant health risks: Contingency plans in place for risks at different levels, approved by the national Resilience Forum as the Biosecurity Major Incident Plan in 2016. Plans are generic, but use species specific examples to illustrate each case. A simulation exercise for the Tephritid fruit fly incursion contingency plan was carried out in 2016.	Good	No change. Existing contingency plans need review, with simulation exercises.	Good

	Animals and animal health risks: Contingency plans in place for risks at different levels, approved by the national Resilience Forum as the Biosecurity Major Incident Plan in 2016. Plans are generic, but use species specific examples to illustrate each case. The outbreak of Newcastle disease among poultry in 2014 provided the basis for the level 1 disease emergency response action plan.	Good	Animal disease workshop held in December 2019. Horizon scanning done of diseases affecting livestock and wildlife, and basic training given for consideration of diseases affecting endemic invertebrates.	Good
	Other risks: Contingency plans in place for marine biosecurity risks and exotic vertebrate predators. Plan for aerial insect vectors in draft form and remains to be completed.	Some	Work in progress, but delayed due to changes in staff in the marine team.	Some
Border Operations	In place and operational including: two trained dedicated staff based at the Agriculture & Natural Resources Division (ANRD); licencing system based on white-list approach for phytosanitary and zoosanitary risk goods; adequate biosecurity facilities at the airport and current sea port; biosecurity detector dog in operation; widespread public awareness and acceptance; indicators established, consistently above threshold indicating a good level of compliance. Border operations for other risks such as predatory invertebrates are also reasonably good. For risks in the marine environment protocols exist and there is good awareness, although capacity to	Good	No changes in terms of staff and most procedures: haul out procedures for yachts has been revised. It is notable that the standards of imported fresh produce and vehicles is greatly improved.	Good

	carry out inspections of eg yacht hulls for fouling is more limited. ANRD maintains a reference collection of pests and biosecurity interceptions. The Fera invertebrate identification service is widely used.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020
Alert System in Place	"Stop the Spread" campaign initiated with ANRD as the point of contact, information via leaflets, newspaper articles and radio interviews; feedback given via same media. Top-down approach; regular reports are received from the public and farming community. Both phytosanitary and zoosanitary risks covered; zoosanitary risks also picked up by the government veterinary service during their normal activities.	Some	No change, work continues.	Some
Surveillance	Plants and plant health risks: Programme in place with monthly checks by trained staff, includes written protocols, reference material and baseline data for plants and invertebrates being developed under Darwin Plus projects.	Good	No change	Good

	Generic programme for crawling invertebrates at ports of entry Incursion programme with pheromone baited traps for five species of Tephritid fruit flies.			
	Animals and animal health risks: No formal programme, but any animal problems are reported to the vet team which results in effective surveillance.	Some	No change	Some
	Other risks: Marine invasive species monitoring in key areas. Mosquito monitoring at the airport is being planned, operated by Public Health working with Biosecurity.	Basic	No change	Basic
Monitoring	Informal reports for both phytosanitary (reported to the biosecurity team) and zoosanitary risks (reported to the vet team) are followed up, but there is no formal programme. Darwin Plus project 2016 – 2018 in place for island-wide vegetation mapping for which one output is a "living map" allowing invasive plant distributions to be tracked at a macro-level. Darwin Plus project application submitted for 2017 – 2019 includes development of a monitoring programme for introduced plant species.	Basic	No change. Protocols have been established for monitoring introduced plants, and a monitoring protocol is in place, but there in no-one in the role. A multi-agency plant monitoring plan is being discussed.	Basic

Rapid Response Capacity	Plants and plant health risks: Active use of the Fera invertebrate identification service. Rapid identification can sometimes be provided via photographs, otherwise the slow turnaround time of sending samples to UK means that results are often too late to base decisions on. Staff also rely on internet tools. Darwin Plus Buglife projects 2013 – 2015 and 2016 - 2018 provide entomological expertise on-island. A national invertebrate reference collection being developed and baseline inventory of invertebrates built up. There is extensive knowledge in ANRD to identify pests and diseases of crops and other plants. There are reasonable resources available for rapid eradications in terms of: pesticides, pesticide application equipment including PPE, trained pesticide users, sampling and trapping equipment and trained staff. Basic stocks to be held in the event of an incursion are specified in the contingency plans.	Good	Systems are in place for invasive plant response at the airport, and training has been done. Baseline inventory of invertebrates is still being developed.	Good
	Animals and animal health risks: There are reasonable resources available for rapid eradications in terms of veterinary equipment and a qualified vet with trained assistants. Basic stocks to be held in the event of an incursion are specified in the contingency plans.	Good	No change	Good

	Other risks: There are reasonable resources available for rapid eradications of aerial insect vectors in terms of pesticides and trained staff. For non-native invertebrates which are not plant pests there are reasonable resources available for rapid eradications in terms of: pesticides, pesticide application equipment including PPE, trained pesticide users, sampling and trapping equipment and trained staff. Basic stocks to be held in the event of an incursion are specified in the contingency plans. For marine invasive species there is reasonable capacity to respond. Basic stocks to be held in the event of an incursion are specified in the contingency plan.	Good	No change	Good

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	Control programmes of invasive species (feral cats, rats, some invasive plants) in selected areas to protect endemic species. A Weed Management Action Plan is in place, with initial prioritisation of invasive plants based on local criteria. Darwin Plus project application submitted	Basic	National Invasive Plant Strategy approved by the ENRC in 2019. The top priority weed is the pheasant tail fern.	Some

	for 2017 – 2019 includes development of a national invasive plant strategy with prioritised species. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for St Helena. No priorities identified under this study for this territory.			
Baseline information	Plants: Survey work was carried out under the South Atlantic Invasive Species project and a series of field guides now published (flowering plants and ferns, lichens, mosses). Fungi are poorly known. Currently two Darwin Plus project are working on vegetation mapping and monitoring. This information is not yet online but will be in the future under the Darwin Plus projects.	Good	No change	Good
	Animals (terrestrial vertebrates and invertebrates): Few vertebrates present and well known; Buglife project is currently building an invertebrate database, although spiders are poorly known. The database for pests is on-line on the SHG Integrated Pest Management web page.	Good	SNCG is producing an invertebrate Field Guide	Good
	Other: Monitoring for marine species is being done, with a reasonable level of knowledge of invertebrates, vertebrates and megafauna.	Some	Work in progress through the Blue Belt project	Some
Framework	Legal framework: Legislation review done in 2009. There is no existing overall biosecurity legal framework or specific biosecurity legislation. The	Basic	Biosecurity legislation drafted under the CSSF project, together with outline Regulations.	Some

	biosecurity system operates under the Customs Ordinance 1999, with specific regulations outlined in six other Ordinances. The focus is on the protection of agricultural production, and is out of date. Preliminary draft revised legislation is with the Attorney General's office, covering phytosanitary and zoosanitary risks. Other biodiversity risks are covered by the Environmental Protection Ordinance 2016.			
	National framework: The first national biosecurity policy was endorsed in 2014. "Biosecurity St Helena" provides an integrated approach across the biosecurity continuum. It is multi-sectoral with six strategic objectives and five key performance indicators, two of which are reported monthly and all five annually. ANRD is the lead agency, with the Head of ANRD as the Authorised Officer under the Customs Ordinance. The Head or his/her designated officer has the authority to approve import licences, and to initiate emergency response procedures in the event of an incursion.	Good	Biosecurity Policy being revised, to bring it up to date and in-line with the new legislation.	Good

Acknowledgements: Julie Balchin, Ludi Kern

South Georgia and the South Sandwich Islands

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	No formal process has been put in place as the amount of imports is comparatively low and a formal process has not been considered necessary. The precautionary approach is adopted to try to stop anything which is non-native being introduced	Basic	No change	Basic
Non-Native Species Risk Analysis	There is currently a fairly limited suite of non-native species. Some have already become invasive and been eradicated (rodents, reindeer), others are invasive but have been assessed as being near impossible to eradicate now either because of their extent or mode of reproduction e.g. dandelions. Non-native plant species have been categorized based on their extent and prioritised for control. CABI conducted a feasibility assessment on control of terrestrial invertebrates in 2012 and concluded at present, this was not feasible.	Some	No change	Some
Pathway Analysis	No formal pathway analysis carried out but South Georgia is accessible only by sea with relatively few pathways for people or cargo to get to the island. Key suppliers have been identified and there is a high awareness of risks. Plans in place to mitigate risk on key pathways over the long and short term.	Some	Repeated under the CSSF project	Good

	Legislation review done in 2009 (Shine 2009) which includes identification of the main pathways and vectors.			
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning completed subsequently.	Good
Contingency Planning	Plants and plant health risk: Contingency plans in place for non-native plant incursions. Because of the relatively small number of pathways and the limited ability to deal with an incursion the response plans are limited to high priority species for which a response is possible.	Some	No Change	Some
	Animals and animal health risk: Basic contingency plans in the event of a major disease outbreak amongst wildlife (e.g. avian cholera), currently being revised to go from plans which deal with immediate response to finding dead things to one which outlines how/who decides next steps and how this is communicated to various key stakeholders. Response plan has been tested through an outbreak of avian cholera in chinstrap penguins in 2009.	Good	Continued work and collaboration with Falkland stakeholders. New Wildlife disease response group set up. Monitoring and assessment underway at Cooper Bay avian cholera outbreak to ascertain if threat still exists.	Good
	Other risks: Formal response plans for invertebrates would be helpful; earwigs are a particular worry. Contingency plans in place for rodent incursions; further strengthening is required to support the rat eradication programme at King Edward Point (KEP). The rodent incursion plan is practiced every year to make sure staff are	Some	Response plans have been reviewed and updated (rodent incursion plan being updated at time of writing).	Some

	prepared. There was also an earwig incursion (i.e. an individual found outside the biosecurity facility) which was dealt with it successfully using traps and sprays and extra biosecurity checks. Response plan has been tested through detection of rat tracks at KEP in October 2013, and weaknesses identified.			
Border Operations	In place and operational. One officer responsible for biosecurity policy and oversight in addition to other duties and three Government Officers with part-time biosecurity responsibilities. Dedicated biosecurity facilities at KEP but not large enough to accommodate all cargo (including high risk items like building materials); plans to enlarge KEP facility, and also to build a new biosecure room at Bird Island where currently there is no dedicated biosecurity facility. There is also no dedicated facility in the Falklands to check cargo pre-departure, currently checks are made on the dockside and there is no method of securely unpacking containers at KEP. In addition, there is no comprehensive checking of vessels for rodents but consideration is being given to the feasibility of using rodent detector dogs based in the Falkland Islands. Comprehensive Biosecurity Handbook in place, inspection protocols being developed, licencing system based on white-list approach for phytosanitary and zoosanitary risk goods; black-list also present. Stringent controls of cargo pre-border and on arrival; feedback provided to suppliers each year on how many 'infringements' have been detected in their consignments. Strong biosecurity controls are strictly applied	Some	Biosecurity has been tightened pre-border for both rodents and invertebrates, and plans to build pre-border biosecurity facility will bring further enhancement, reducing risk at the border. Biosecurity audit system has brought about significant improvement in border checks of visitors, and provided feedback to tourism industry which has effected systemic changes such as improvements in lighting, boot washing facilities and also in the outdoor equipment supplied to passengers (no Velcro, easy clean boot soles, no mesh on back packs).	Good

	to visitors (who are required to sign declarations to confirm they have complied with requirements), and vessel access. Generally very good public awareness helped by the recent high profile eradication projects. Fishing vessels have observers placed on board and one of their jobs is to check for rodent biosecurity and report this back to the Government of SGSSI.			

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020
Alert System in Place	Any incidents or concerns must be raised as soon as possible with the Government Officer, in particular any suspected sightings of rodents in rodent free areas or of any sick seals and birds. On-line reporting system planned for 2017/18.	Good	No change	Good
Surveillance	Plants and plant health risks: Baseline for non-native plant species extent and identification guide being developed.	Good	Citizen science 'bioblitz' enhances existing surveillance through ad hoc reporting of non-native species. This has already produced a new report of a plant species, suspected to be non-native	Good
	Animals and animal health risks: Extensive monitoring for non-native invertebrates and rodents in and around	Some	Biosecurity dog programme brings significant improvements to	Good

	buildings at KEP and Bird Island, with plans to extend the rodent monitoring to popular visitor sites. Currently surveillance on shore and vessels is limited to passive monitoring techniques.		surveillance on vessels and at gateway ports/jetties pre-border (in the Falklands). Working with Fera to enhance invertebrate reporting and responses – monitoring is already in place but working to get a better understanding of results and build a baseline for what native species we might expect to see.	
	Other risks: Settlement plates in the harbour to detect non-native marine species	Good	Note that this has not been downgraded. It should maybe should have been 'Some' before with a comment of "no change", but we only really know that now with the benefit of Horizon Scanning. Horizon scanning exercise has shown that we need to better address the risks of marine NNS, and we are committed to doing so, but we are still in a vulnerable position. Darwin marine invasive project in application stage, also JNCC providing a marine biosecurity	Some

			toolkit as part of the wider GBNNSS project.	
Monitoring	Good monitoring in place to monitor success of rodent project and report signs of incursion. Done for plants as part of the weed management project. Plans to monitor a non-native beetle which seems to be spreading.	Some	Exploring use of drones to inform habitat recovery, human impacts through visitation (i.e footpath formation) and potentially introduction of new species, either through direct observation or changes in wider habitat). Also exploring options to make better use of citizen science to monitor for NNS.	Some
Rapid Response Capacity	Plants and plant health risks: Use the Fera invertebrate identification service or British Antarctic Survey to identify invertebrates, and Kew to identify plants. Well placed to carry out small scale eradication in the immediate vicinity of the research stations but as the spatial extent increases it would rapidly become more difficult. Can call on British Antarctic Survey and South Georgia Heritage Trust for additional man power.	Some	Given the post-border monitoring, and the slower response needed to effect a response for plants, and the capacity for the weed team to undertake a response in that timeframe, I would argue that this should be rated Good, even though nothing has changed/.	Good
	Animals and animal health risks: Use the Island Eradication Advisory Group to help identify mammal signs. Well placed to carry out small scale eradication in the immediate vicinity of the research stations but as the spatial extent increases it would rapidly become more difficult. Can call on British Antarctic Survey and South Georgia Heritage	Some	Potential to use biosecurity dogs in the event of a rodent incursion increases our capacity to effect a response. Our capacity to respond to incursions outside of KEP will	Some

	Trust for additional man power.		always be limited by logistics, accessibility and environmental conditions. In Stanley, we now carry a stock of additional biosecurity equipment so we can deal with problems on vessels or at gateway locations in the Falklands. Greater (and increasing!) capacity to deal with wildlife disease outbreaks.	
	Other risks: Well placed to carry out small scale eradication in the immediate vicinity of the research stations but as the spatial extent increases it would rapidly become more difficult. Can call on BAS and South Georgia Heritage Trust for additional man power.	Some	No change	Some

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	Invasive species have been prioritised and are being addressed. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate	Good	No change, work continues with non-native plants. Biosecurity will continue to be a priority.	Good

	species for SGSSI. Rodents and reindeer were identified as the biggest priority and have been eradicated. Non-native plants are now being tackled over the next 5-years with a capacity building element included to ensure sustainability into the future.		New strategy due in 2020, but highly unlikely that biosecurity will be any less of a priority.	
Baseline	Plants: 41 species of introduced vascular plants. Comprehensive database of occurrence, spatial extent and management interventions. Recent possible introduced fresh water algae. Awaiting ID confirmation.	Good	No Change. Plant distribution data being updated seasonally.	Good
	Animals (terrestrial vertebrates and invertebrates): Only known introduced vertebrates were rodents and reindeer and have now been subject to eradication programme. Invertebrate monitoring in place around stations. Relatively well known and on-going research programme to detect 'cryptic' invaders. Species list but needs updating with spatial extents.	Good	No change	Good
	Scuba surveys for non-native marine species and programme of settlement plates for early warning system. No known introduced marine species. PhD into fungal diversity (including non-native) and past research on microbes. Data not yet available but will be on GSGSSI database once processed.	Good	No change	Good
Framework	Legal framework: Legislation review done in 2009. GSGSSI Wildlife and Protected Areas Ordinance (2011) provide biosecurity regulations for both intentional and unintentional	Good	Review currently underway as part of the GBNNSS project, which will	Good

	introductions. This has proven adequate up to now, but a legislative review is in process to ensure integration with visitor and fishing legislation.		ensure legislation still fit for purpose.	
	National framework: The multisectoral Biosecurity Handbook brought together and formalised existing policies and practices and was launched in 2016 (after a year of road testing and consultation with key stake-holder groups). It will be revised and updated every year following the outcome of an annual biosecurity review.	Good	Biosecurity Handbook revised annually, and formally adopted as a GSGSSI policy in 2019 (it was effectively a policy before, but not included in the policy handbook).	Good

Acknowledgements: Ross James

Tristan da Cunha

PREVENTION

Component	Status	Rating	Update	New rating 2019/2020
Pest Risk Analysis	Done on an ad hoc basis, no formal system in place.	Basic	No change	Basic
Non-Native Species Risk Analysis	No system in place.	None	No change	Basic
Pathway Analysis	Legislation review done in 2009 (Shine 2009) which includes identification of the main pathways and vectors.	Basic	Completed under the CSSF project	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning subsequently carried out.	Good
Contingency Planning	Plants and plant health risks: Simple protocols in place and being implemented.	Basic	No change	Basic
	Animals and animal health risks: Rodent contingency plan for Nightingale and Inaccessible. This was tested in 2011 when the MS Oliva ran aground at Nightingale Island.	Basic	Completed under an EU BEST Grant in 2018.	Some
	Other risks: 'Introduced Species in the Marine Environment: Contingency Plans for Tristan da Cunha' was drafted by Sue Scott in 2008 and	Basic	Being discussed and considered under marine protection scheme plan.	Basic

	revised in March 2012 ‘for discussion’, but has not been completed or approved.			
Border Operations	According to the legislation, residents can import agricultural or horticultural plants, pets and domestic animals without a permit; dogs require a permit. A permit system has recently been put in place for plants. The Head of Conservation or Head of Agriculture carry out biosecurity checks for incoming cargo ships, including checking plants, building materials and consignments of fresh produce but there is no dedicated biosecurity facility which limits what can be done. The Veterinary Officer checks new dogs arriving on the island. There is a comprehensive biosecurity leaflet issued to all visitors (yachts, cruise ships) which requires self-auditing before passengers land. Tristan residents, however, do not receive this, and have no inspection of baggage on arrival. Different levels of biosecurity are applied to the different islands: • Main island: Licencing system in place for live animals and plant material for propagation. Import health standards for fresh produce for human consumption are being adapted from St Helena.	Some	Facilities still lacking. A biosecurity tool kit a on Nightingale ready to respond to any potential occurrences.	Some

	• Nightingale Island: there is a designated biosecurity building, but it is not yet functional. • Inaccessible Island: biosecurity protocols implemented for all visitors (boot wash, equipment checks etc). • Gough Island: a much higher level of biosecurity is applied, with strict pre-border controls including the prohibition of all fresh produce, and poultry meat with bones. Checks are made of luggage, equipment and cargo arriving on the annual takeover voyage each September. These controls will be further strengthened in the future is association with an RSPB Gough Island restoration project. There is some level of awareness on biosecurity issues on-island as a consequence of the oil-rig stranding, Oliva oil spill, introduced rodents and other alien species on Tristan and Gough, and the interception of longhorn beetles in wooden cargo pallets. Compliance is poor and inconsistent.		In 2021 RSPB is leading the Gough Restoration Project has written an extensive biosecurity manual for the project. All project personnel will also sign the Biosecurity declaration. The Conservation Department and Fisheries Departments have high level of biosecurity awareness. As part of a current Darwin Plus project, a biosecurity workshop was help in Cape Town in 2019. A manual is being drafted to guide and promote awareness for all pre-border stakeholders.	

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Update	New rating 2019/2020
Alert System in Place	The small population size and high levels of awareness make this relatively simple and effective, without the need for a formalised procedure.	Some	No change.	Some
Surveillance	Plants and plant health risks: No formal programme in place but conservation officers keep their eyes open during their normal work programmes.	Basic	No change.	Basic
	Animals and animal health risks: No formal programme in place but the agricultural officer would quickly become aware of an animal disease outbreak. Rat hotels in place on Nightingale and Inaccessible but maintenance is sporadic.	Basic	No change. A biosecurity tool kit on Nightingale ready to respond to any potential occurrences.	Basic
	Other risks: Nothing in place. There is a plan to set up crawling invertebrate monitoring sites, along the lines of those used in St Helena, on the main island.	None	Two members of the Conservation Department received biosecurity training on St. Helena. Actions to monitor invertebrates still need to be put in place.	Basic
Monitoring	No formal programme in place.	None	-There is awareness of an invasive scale insect threatening the Phylica trees. -Monitoring of invasive New Zealand flax plant on Inaccessible, Nightingale and Gough Island.	Basic

Rapid Response Capacity	Plants and plant health risks: No capacity to respond. Tristan has received help from TBAG (Tristan Biodiversity Advisory Group), Fera and others for assistance with identification of new species.	Basic	Still limited on-island capacity. Working with RSPB, Fera, Cabi and Defra on a project for a bio-control for the invasive scale insect on Inaccessible and Nightingale Islands.	Basic
	Animals and animal health risks: No capacity to respond. Tristan has received help from TBAG, Fera and others for assistance with identification of new species.	Basic	No change.	Basic
	Other risks: No capacity to respond. Tristan has received help from TBAG, Fera and others for assistance with identification of new species.	Basic	Receiving support from Overseas Territories Project Manager, GB Non-native Species Secretariat.	Basic

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Update	New rating 2019/2020
Prioritisation	A number of projects are on-going or planned; there is no formal prioritisation process but the small nature of the Islands makes understanding priorities relatively straightforward. RSPB's study Eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Tristan da Cunha. Key invasive alien	Some	Substantial progress towards priority species, although no framework exists to identify new ones. - House mouse eradication is hoped to take place in 2021. -Under the Darwin Plus Grant with RSPB "Strengthening biosecurity for remote Territory	Some

	vertebrate species are black rats, mice, cattle and sheep. BEST project 2016 – 2018 includes local eradication of invasive *Rumex obtusifolius* and *Cotula australis* on Nightingale Island. Some invasive plant control taking place on Nightingale (New Zealand Flax, Australian Brass Buttons) and Inaccessible (New Zealand Flax, *Sporobolus*, and others). On Tristan there have been periodic efforts to control New Zealand Christmas Tree and *Rubus*, but they are not followed through. House mouse eradication is being planned for Gough in 2020.		communities and their World Heritage" creating a Biosecurity manual and drafting Biosecurity Legislation.	
Baseline	Plants: surveys completed for the main island, Gough and Nightingale and database exists.	Good	No change.	Good
	Animals (terrestrial vertebrates and invertebrates): knowledge of invertebrates is poor.	Basic	Potential for improvement with information in the Biosecurity manual and gaining knowledge during proposed scale insect bio-control project.	Basic
	Other: marine survey done , a database exists.	Good	No change	Good
Framework	Legal framework: Legislation review undertaken in 2009 (Shine 2009). TDC applies St Helena and English law where it is not inconsistent with specific TDC legislation. There is no specific biosecurity or Customs legislation. Biosecurity is	Basic	Under the Darwin Plus Grant with RSPB "Strengthening biosecurity for remote Territory communities and their World Heritage" creating a Biosecurity manual and additional support from Overseas Territories Project Manager, GB	Some

	covered under the Conservation Ordinance 2006 which is currently being revised. Import restrictions are limited to vaccination of dogs, and prohibition of live birds. The Import Permit for a 'live animal or plants' requires that the bird has a veterinary certificate that it is free from avian diseases and Bird Flu and that the plant has a phytosanitary certificate.		Non-native Species Secretariat in drafting Biosecurity Legislation in 2020.	
	National framework: A biosecurity policy "Biosecurity Tristan da Cunha" was agreed by the Tristan Island Council in 2016. The policy adopts a white-list approach and includes an implementation plan, based on Biosecurity St Helena. It requires the involvement of other government departments apart from Conservation (Agriculture, Fisheries, Police, Tourism, and Education) but has not been widely adopted and embraced on the island by the wider community.	Some	-Drafting of Biosecurity Manual includes biosecurity policy statements -Drafting of marine protection scheme framework which will include marine biosecurity sections.	Some

Acknowledgements: Trevor Glass, Stephanie Martin, Andy Schofield

Turks and Caicos

PREVENTION

Component	Status	Rating	Updated	New rating 2019/2020
Pest Risk Analysis	Plants and plant health risks: Importation of regulated articles is done only for Agriculture controlled commodities and requires an application process that enables the authorities to access the phytosanitary risks the article and or country (area) where the article is exported from. Supporting information, including pest free areas and details of the in-country phytosanitary program is requested as well. Regulated articles listed in the application are checked against an official restricted and invasive plant species list to verify that the articles pose no or minimal risk to the Turks and Caicos Islands. Animals and animal health risks: Depending on the animal or animal product, the country of import amongst other things, there is a process that follows an import risk analysis, qualitative for the most part. The hazard analysis is binary: does a hazard exist or not. This is followed by risk assessment: entry assessment, exposure assessment, consequence assessment and risk estimation. Then through risk management the Appropriate Level Of Protection is determined. This	Some	No change. Two participants attended the CSSF project-funded CABI-led risk assessment workshop in January 2020.	Some

	is codified in our protocol called the Foreign Country Evaluation Programme and all imports must go through this programme.			
Non-Native Species Risk Analysis	No system in place.	None	No change.	None
Pathway Analysis	No system in place.	None	Completed under the CSSF project.	Good
Horizon Scanning	Not done.	None	Completed under the CSSF project. Pathway action planning to address priority species carried out.	Good
Contingency Planning	Plants and plant health risks: no contingency plans have been developed as yet.	None	No change.	None
	Animals and animal health risks: No contingency plans for animal diseases presently exist but if an outbreak occurs international recommendations are followed.	None	No change.	None
	Other risks: no contingency plans have been developed as yet.	None	No change.	None
Border Operations	Plants and plant health: There are 2 officers in Agriculture, a chief Plant Protection Officer and a Plant Health Officer, who issue/certify importation and exportation permits and inspect Plant related products. There are no dedicated biosecurity facilities. Importation of regulated articles requires an application process and Import Permit. An	Some	No change. Two participants attended the CSSF project funded entomology and biosecurity course in York, October 2020. An interceptions database is held and kept up to date.	Some

	inspection of the articles is conducted at the point of arrival in the country. Animals and animal health: There is A Chief Vet, an Animal Health Officer and an Animal Health Assistant, who issue/certify permits, and do inspections of live animals, animal establishments etc. Presently the Department is going through a restructuring exercise where there would be the post “Quarantine Officers” who will be posted at the airport and sea port. All of these programmes are legally underpinned by the Animal Health Ordinance. In the Ordinance, it is a requirement that before an import permit is granted a risk analysis must be carried out and the sanitary requirements put in place. There is good public awareness of phytosanitary and zoosanitary import requirements. Compliance is estimated at 85% for phytosanitary risk goods and 95% for zoosanitary. Very good public awareness. For deliberate introductions, residents know that they require an import permit to import animals and animal products etc.		PHO post no longer exists. There is a new post of Quarantine Officer.	

EARLY WARNING AND RAPID RESPONSE

Component	Status	Rating	Updated	New rating 2019/2020
Alert System in Place	No formal structure.	None	There is an informal alert system, farmers, gardeners and members of the public know where to bring any new species sighted, and do so.	Basic
Surveillance	Plants and plant health risks: surveillance is done for all species on the established List of Restricted and Invasive Species, in the Plant Health legislation. Lists were compiled on known and potential invasive species of plants and animals proposed as barred for import on the appendices of the Biodiversity and Wildlife Protection Bill. Unfortunately, this bill was shelved as low priority during the UK Direct Rule 2009-2012 and has not yet been brought back up for completion.	Some	No change. The List needs to be updated.	Some
	Animals and animal health risks: surveillance is done for new diseases of animals.	Some	No change.	Some
	Other risks: No programme in place.	None	No change.	None
Monitoring	The Department of Environment & Coastal Resources (DECR) collects information from dive operators regarding the invasive Lionfish (*Pterois volitans*) which can be found in all marine ecosystems throughout the TCI, and this information includes observations on other marine taxa, including non-native species. These reports include numbers, size and location of lionfish on	Basic	No change.	Basic

	dive sites. Efforts are being made to control and eradicate this species through initiatives including the Annual Lionfish Derby and Festival.			
Rapid Response Capacity	Plants and plant health risks: Very Limited or no resources to deal with such a situation. Other sectors involved are Department of Environment & Coastal Resources, Turks and Caicos National Trust, and Customs Department. The Ordinance gives authority to address the incursion of invasive species. However, there is grossly inadequate staffing, limited material resources, and lack of funding.	Basic	No change.	Basic
	Animals and animal health risks: There are some resources and capacity to tackle new animal diseases.	Some	No change.	Some
	Other risks: No resources available.	None	No change.	None

MANAGEMENT, PRIORITISATION AND FRAMEWORKS

Component	Status	Rating	Updated	New rating 2019/2020
Prioritisation	Not done for plants or invertebrates. RSPB's study eradication of invasive alien vertebrates in the UK Overseas Territories reported the number of confirmed or suspected invasive alien vertebrate species for Turks and Caicos. Key	Some	No change. Prioritisation workshop held in-territory in February 2020 under the CSSF project.	Some

	invasive alien vertebrate species are black rat, mice, cat, feral chicken, dog, cattle, goat, donkeys, horses and Cuban treefrog. Also established on Providenciales are northern curlytail lizard *Leiocephallus carinatus*, Cuban knight anole *Anolis equestris*, and possible establishment of marine toad *Rhinella marina*, giant African land snail *Achatina fulica*, and Brahminy blind snake *Indotyphlops braminus*. Grand Turk has established breeding population of corn snake *Pantherophis guttatis*. Research through DECR, Turks and Caicos National Trust, and Royal Botanic Gardens, Kew (UK) and Imperial College London have also produced analyses of several invasive plant species including spread risk maps and models and impact on endemic species, namely for *Casuarina equisetifolia, Leucaena leucocephala*, and *Scaevola taccada*. Multi-agency efforts are being made to control/eradicate the lionfish invasion in the TCI. Some monitoring is conducted by the DECR but this has much room for improvement. Recent efforts have been made to increase awareness of the lionfish, reduce stigma, and try to introduce a market (and therefore a consistent fishery) for lionfish. This was done through collaboration between the DECR, Department of Culture, and the			

	Turks and Caicos Reef Fund (TCRF) to host the first annual Lionfish Derby and Festival in 2016, on Providenciales and Grand Turk. With amendments to the Fisheries Protection Ordinance, a Lionfishing license will be introduced, permitting bearers of the license to hunt lionfish within National Park boundaries.			
Baseline	Plants: There is a database of native plants, but it is (and will not soon be) complete due to continual discoveries of previously unknown native species and constantly changing taxonomy. There is no database of introduced plants, but it would be a useful project to carry out.	Basic	No change.	Basic
	Animals (terrestrial vertebrates and invertebrates): Native invertebrate fauna remains poorly understood with only a few very focused studies carried out in certain taxa (spiders: Sarah Crews, UCLA & University of Vermont; beetles: Dr Roger Booth, British Museum; butterflies, moths, and dragonflies: Dr Oliver Cheeseman, CABI Bioscience International; tiger beetles: Carnegie Museum of Natural History; bat-flies, Dr Tony Hutson, Bat Conservation Trust), many of which have never been completed. Preliminary findings suggest high numbers of endemic species. Former United Kingdom Government department (now privatised) Fera (Food & Environment Research Agency) through Dr Chris Malumphy has compiled	Basic	No change. A tick survey is being done.	Basic

	a list of introduced known pest species of insects in TCI. Descriptions of some of these pests are available from DECR as PDF files and complete lists can be found within the Caicos Pine Recovery Project's National Tree Restoration Strategy Scientific Data & Results document.			
	Other: DECR don't believe there is a specific database of marine species as such, beyond field guides etc. that are used in monitoring and identification of marine species on coral reefs, seagrass beds, and in mangrove ecosystems.	Basic		Basic
Framework	Legal framework: Legislation is considered adequate through the Plant Health Ordinance 2012, Animal Health Ordinance 2012 and Customs Ordinance 2009. Powers exist with relation to the prevent of the spread of diseases for animals and plants (powers of inspection, entry, search, restriction of movement, seizure and destruction). Vessels must come in to a recognised port. De-ratting requirements for vessels exist in regulations. Legislation exists as it pertains to diseases and infections of animals. To a lesser extent, this also covers control of non-native animals: assessment of importation of non-native considers not only for	Some	Wok is in progress to update the legislation and draft a new Biosecurity Bill, with support from the CSSF project.	Some

	their health but also their risk as an alien species. Other sectors are involved to some degree. Legislation specifically refers to all islands. New draft legislation includes provision for a permit system based on risk assessment, with powers to enter, survey, assess extent of invasive species and remove, contain, destroy if serious threat. Provision for early detection system for animals and plant disease to be designed.			
	National framework: there is no national biosecurity policy.	None	No change.	None

Acknowledgements: Roneta Huntley-Thomas