Where We Are

- Goals
- Objectives
- Strategies
- Prioritized List of Strategies
- Case Studies
- Final Draft Framework Document
- Comprehensive List of Actions
- Cross-cut Budgeting Tool
- Web-based Framework
Goals for Today

- Complete comprehensive list of projects/actions for the Top 12 strategies
- Building off:
  - Project Sheets submitted by the deadline for the Task Force Strategy/Biennial Report
  - Line items entered into the Action Step Matrix
  - Including both *current projects* and *needed actions*
- Focus on *strategic* actions in the needed category
Goal 1: Prevention

Strategies and Actions
Goal 1: Prevention - Strategy Prioritization Results

- Strategy 1A1: Identify pathways and prioritize potential threats and invasive exotic species.
- Strategy 1B1: Enhance and improve the pathway inspection/screening process.
Strategy 1A1: Identify the pathways and prioritize potential threats and invasive exotic species
Strategy 1A1: Identify the pathways and prioritize potential threats and invasive exotic species

Current Projects

- High Risk Areas-Target domestic inspection activities at vulnerable points in the safeguarding continuum (FDACS, POC Greg Hodges, #2406)
- Complete Structured Decision-Making exercise and report on prevention of python establishment in Loxahatchee NWR (USGS, POC Fred Johnson)
Strategy 1A1: Identify the pathways and prioritize potential threats and invasive exotic species

Needed Projects

- Assemble a multi-agency/multi-disciplinary work group to conduct the following prevention efforts:
  - Catalog high pressure exotic species.
  - Define needed research on nonnative species and their impacts to adequately inform prioritization efforts.
  - Prioritize species by assessment of ecological, economic, and human health risk.
  - Determine invasion pathways.
- Review and evaluate risk assessment methods for invasive exotic animals
Strategy 1B1: Enhance and improve the pathway inspection/screening process
Strategy 1B1: Enhance and improve the pathway inspection/screening process

**Current Projects**

- Increase predictive screening/risk assessment on importation of non-native plants (USDA-APHIS through Q37 NAPPRA authority)
- Increase knowledge and awareness of exotic species of first detectors by implementing First Detector Training (Southern Plant Diagnostic Network and UF extension)
- Enhance pest detection at high-risk domestic interdiction sites and marinas/canals systems (FDACS; POC Greg Hodges, #2403)
- Interception and research for potential biocontrols of the Brown Marmorated Stink Bug (FDACS; POC Greg Hodges, #2401)
- Enhancement of Fruit Fly Immature Stage ID and Taxonomy (FDACS, POC Greg Hodges #2404)
- FDACS Detector Dog Teams (FDACS, Greg Hodges, #2402)
- Detector Dog Pilot Program FWS Law Enforcement
- Genetic analyses of invasive reptiles to assess invasion pathways in Florida (USDA, POC Michael Avery; UF, POC Kenney Krysko, #2724)
- eDNA monitoring of five aquatic invasive species in South Florida (USFWS, Greg Moyer/John Galvez, #2409)
Strategy 1B1: Enhance and improve the pathway inspection/screening process

Needed Projects

- Implement predictive screening/risk assessment tool(s) for assessing potential harm of importation of non-native wildlife (USFWS through existing Lacey Act authority; would also require new/additional authority)
- Increase first detector training.
- Increase capacity for regulatory inspections.
- Increase success of public declarations.
- Increase detector dog program at ports
- Implement better state-to-state screening for USPS and other mailing and delivery providers
Goal 2: Eradication through EDRR

Strategies and Actions
Goal 2: Eradication through EDRR - Strategy Prioritization Results

- Strategy 2A2: Utilize existing and develop needed regional monitoring/reporting networks to increase likelihood of detection.
- Strategy 2A3: Employ science and technology for development of early detection tools, e.g., surveys, traps, inspections.
- Strategy 2A5: Establish rapid assessment and response programs/processes/ cooperatives/tools that allow for nimble attempts at eradication.
- Strategy 2B1: Rapidly assess the status and potential threat of newly detected invasive exotic species populations and develop a response/no response plan.
- Strategy 2C1: Initiate rapid response based upon the plan of action developed during the assessment phase.
Strategy 2A1: Implement a systematic, prioritized, multi-species monitoring and inventory plan.
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Current Projects

- USDA Monitoring for Plants
Strategy 2A1: Implement a systematic, prioritized, multi-species monitoring and inventory plan.

**Needed Projects**

- Develop a system wide SFER regional monitoring network, by synthesizing ongoing IES monitoring networks, leveraging existing monitoring networks when possible and assessing gaps in monitoring by taxa and geography.
Strategy 2A2: Utilize exiting and develop needed regional monitoring/reporting networks to increase likelihood of detection.
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**Current Projects, Page 1**

- Continue to implement the Corridors of Invasiveness Vital Sign project for Plants (SFCN NPS, POC Kevin Whelan, #2512) (Also in 2B1)
- Continue to implement the Everglades Invasive Reptile and Amphibian Monitoring Program (FWC/UF; POC Jenny Eckles/Frank Mazzotti, 2511) (Also in 4A2)
- Continue to implement the early detection of new exotic fish species in adjacent canals vital sign project (NPS, POC Kevin Whelan/Jeff Kline, #2507)
- Continue trapping program to detect new exotic forest pests (FDACS-DPI, POC Gordon Bonn)
- Continue monitoring program to detect presence of any exotic psyllids and Liberibacter species that might prove harmful to Florida agriculture (FDACS-DPI, POC Greg Hodges, #2405)
- Continue to implement the Project-Interdiction Marinas and Canals Survey in order to detect presence of exotic arthropods and plant pathogens at Florida’s interdiction stations and marinas and canals in the South Florida Ecosystem (FDACS-DPI, POC Greg Hodges, #2407)
- Continue to conduct Northern African python surveys (FWC, POC Kristen Sommers; USGS, POC Michael Cherkiss/Kristen Hart; #2506)
Strategy 2A2: Utilize exiting and develop needed regional monitoring/reporting networks to increase likelihood of detection.

**Current Projects, Page 2**

- Continue to monitor for the Mexican Red Bellied Squirrel (NPS/BNP, POC Tony Pernas, #2508)
- Continue digital area sketch mapping for Laurel Wilt within the ECISMA boundary (NPS, POC Tony Pernas, #2722)
- Continue NPS/USGS efforts to develop reporting and response network for DOI lands in the South Florida Ecosystem (USGS POCs Kristen Hart/Robert Reed; NPS, POC Tylan Dean)
- Fruit Fly Survey and Detection (FDACS, POC Greg Hodges, #2504)
- Cooperative Agricultural Pest Survey (FDACS, POC Greg Hodges, #2510)
- Nile Monitor Eradication Project (FWC, POC Kristen Sommers, #2603)(Also in 3A3 and 3A4)
- Development of comprehensive fish monitoring programs in Everglades National Park (NPS, POC Jeff Kline, #2509)
Strategy 2A2: Utilize exiting and develop needed regional monitoring/reporting networks to increase likelihood of detection.

Needed Projects

- Conduct an assessment of existing surveillance and monitoring efforts to identify gaps
- Develop improved methods for monitoring through research and statistical designs
- Increase capacity/coordination for conducting systematic reconnaissance for invasive species and responding to reports of potential new species from I’ve Got1 network and others
- Evaluate existing marine/estuarine surveillance protocols or programs and develop or augment programs for key natural areas
- Apply existing Burmese python eDNA method in systematic surveys of south Florida waterways to monitor possible range expansions
Strategy 2A3: Employ science and technology for development of early detection tools, e.g., surveys, traps, inspections.
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Current Projects

- Continue to develop and validate eDNA methods for detection of invasive reptiles (USGS, POCs Margaret Hunter/Sara Oyler-McCane/Kristen Hart)
- Development of eDNA for Nile Monitor detection and removal (USDA, POC Toni Piaggio/Michael Avery, #2514)
- Fruit Fly Eradication Methods Development (FDACS, POC Greg Hodges, #2503)
- Metagenomic survey in south Florida waters (USDA, POC Toni Piaggio/Michael Avery, #2513)
- Continue to improve the probability of detection of invasive reptiles (UF, POC Frank Mazzotti, #2607)(Also under 3B1, 3B2 and 4C3)
- Burmese python eDNA development and application (USDA-APHIS, POC Michael Avery, #2515)
Strategy 2A3: Employ science and technology for development of early detection tools, e.g., surveys, traps, inspections.

Needed Projects

- Conduct eDNA sampling to detect expansion of pythons into Loxahatchee NWR
- Conduct quarterly eDNA sampling in area occupied by Northern African Python to assess success of eradication effort
- Conduct mesocosm trials to detect eDNA levels in flowing water, soils, and other varying environmental conditions
- Investigate/Develop pheromone attractants for use in detecting incipient populations
Strategy 2A5: Establish rapid assessment and response programs/processes/cooperatives/tools that allow for nimble attempts at eradication.
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Current Projects
- Utilize existing FWC on-call expert and responder lists (FWC, POC Kristen Sommers, #2714)(also in 4C3)
Strategy 2A5: Establish rapid assessment and response programs/processes/ cooperatives/tools that allow for nimble attempts at eradication

**Needed Projects**

- Develop on-call expert and responder lists.
- Assemble technical expert work groups for specific species of concern.
- Develop Response Action Plan (RAP) for each taxa, utilizing the ECISMA EDRR response protocol.
- Expand and enhance training programs for rapid responders.
- Reduce barriers to interagency EDRR efforts such as permitting issues for responders.
- Establish and provide the resources (funding and staff) for an EDRR Team to conduct rapid assessment and initiate rapid response.
- Update and provide access to EDRR guidelines, model response plans, and other resources.
- Establish a rapid response fund in addition to consistent, dedicated resources for early detection. (FWC working on potential leg. budget request for rapid response)
Strategy 2B1: Rapidly assess the status and potential threat of newly detected invasive exotic species populations and develop a response/no response plan.
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Current Projects

- ECISMA EDRR Plan (POC Tony Pernas/Dennis Giardina, #2517)
- Continue to assess the effects of exotic fish on Everglades structure and function: risk assessment (ENP/USGS, POC Jeff Kline/Pam Scofield, #2408)
- Continue to implement the Corridors of Invasiveness Vital Sign project for Plants. (SFCN NPS, POC Kevin Whelan, #2512) (Also in 2A2)
Strategy 2B1: Rapidly assess the status and potential threat of newly detected invasive exotic species populations and develop a response/no response plan

Needed Projects

- Notify the appropriate agencies, land managers, responders, and technical experts (EDRR Team)
- Conduct ecological risk assessments and RAP (EDRR Team)
- Form a consensus plan of action for the response utilizing the ecological risk assessments and RAP (EDRR Team)
  - (Note: FWC working on getting resources for the above.)
- Review and evaluate risk assessment methods for invasive exotic animals
Strategy 2C1: Initiate rapid response based upon the plan of action developed during the assessment phase
Strategy 2C1: Initiate rapid response based upon the plan of action developed during the assessment phase

Current Projects

- Develop and implement a FWS Florida Invasive Species Strike Team (USFWS, POC, #2501)
- ECISMA EDRR: Continue to eradicate *Chrysopogon aciculatus* from Air Force base property in Homestead (FDACS-DPI/CISMA, POC Gordon Bonn, #2517)
- Giant African Land Snail Eradication Program (FDACS, POC Greg Hodges, #2502)
- Continue developing response network including Authorized Agents for rapid response to new invasive reptile observation on NPS lands (USGS/NPS, POCs Bryan Falk/Tylan Dean, #2719)
- ECISMA EDRR: Sacred ibis retrieval (#2517)
- MDFR Rapid Response and Invasive Species Removal (Miami-Dade County, POC Jeffrey Fobb, #2516)
Strategy 2C1: Initiate rapid response based upon the plan of action developed during the assessment phase

**Needed Projects**

- The EDRR team will establish strike teams to implement the action plan.
- Develop Incident Command Structure and training courses for rapid response activities, modeled on successful programs elsewhere.
- Continue/expand support and funding for a formal interagency invasive species strike team.
Goal 3: Containment
Strategies and Actions
Goal 3: Containment – Strategy Prioritization Results

- Strategy 3A2: Implement control efforts at containment boundaries and known pathways.
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Strategy 3A2: Implement control efforts at containment boundaries and known pathways

Current Projects

- Continue tegu interdiction to prevent expansion into ENP and natural areas. (FWC/UF/USGS/ENP; POCs Jenny Eckles/Frank Mazotti/Michelle McEachern/Bob Reed/Nick Aumen/Tylan Dean, #2604)
- ECISMA EDRR: Continue to contain and eradicate known populations of *M. micrantha* as well as survey other areas to allow for early detection and rapid response. (FDACS-DPI/UF/CISMA; POC Gordon Bonn, #2517)
- Eradicate the Gambian Pouch Rat (FDACS/FWC, POC Scott Hardin, #2601)
- Continue to implement EWBB (Exotic wood boring Beetles) section for multiple forest pests. (FDACS-DPI-CAPS; POC Gordon Bonn)
- Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (*Boa constrictor* spp.) at the Charles Deering Estate at Cutler (Miami-Dade County, #2602)
- Big Cypress National Preserve Exotic Reptile Control response network (BICY, Ron Clark #2608)
Strategy 3A2: Implement control efforts at containment boundaries and known pathways

Needed Projects

- Evaluate 2011-2014 tegu capture records to assess efficacy of control efforts and identify dispersal corridors.
- Increase Tegu containment efforts including population reduction through intense trapping in the interior and full containment lines to the north and east of known populations.
- Develop detector dog program to aid in containment and control efforts.
Strategy 3B1: Invest in science-based containment methods
Strategy 3B1: Invest in science-based containment methods

Current Projects
- Conduct tegu brumation study. Thermal biology and behavioral ecology of Argentine tegus in southern Florida. (USGS/ENP, POCs Michelle McEachern/Tylan Dean)
- Continue radiotelemetric monitoring of Burmese pythons in Collier County to understand opportunities for control in upland habitats (USGS/Conservancy of SW FL, POCs Robert Reed/Ian Bartoszek)
- Initiate radiotelemetric monitoring of Burmese pythons on Miccosukee tribe lands (USGS, POC Kristen Hart)
- Continue to improve the probability of detection of invasive reptiles (UF, POC Frank Mazzotti, #2607) (Also under 2A3 and 4C3)
- Feral Swine Impacts and Control (USDA-APHIS, POC Michael Avery, #2609)
Strategy 3B1: Invest in science-based containment methods

Needed Projects

• Develop new control tools to assist in the containment of invasive exotic species.
• Conduct inventory and monitoring to identify containment boundaries and pathways.
• Conduct research on priority containment species to enhance tool development.
Goal 4: Long-term Management
Strategies and Actions
Goal 4: Long-term Management - Strategy Prioritization Results

- Strategy 4C3: Develop and improve tools to assist in the long-term control of invasive exotic species.
- Strategy 4C4: Integrate federal, state, and local agency invasive exotic species control programs.
Strategy 4C3: Develop and improve tools to assist in the long-term control of invasive exotic species
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Current Projects, Page 1
- Continue to implement Invasive Species Research and Information Exchange 2007 (SFWMD, POC LeRoy Rodgers #2702)
- Continue to conduct Purple swamphen diet assessment. (FWC/FAU, POCs Jenny Eckles/Dale Gawlik)
- Continue to develop genetic ID of gut content tool (USGS, POCs Kristen Hart/Margaret Hunter)
- Continue to conduct Black spiny-tailed iguana assessment. (FWC)
- Continue to develop methods to produce and refine species-specific large constrictor control tools. (ENP/USGS; POCs Tylan Dean/Bob Reed/Kristen Hart/Nick Aumen)
- Continue to conduct Lionfish assessment and control in NPS units. (NPS, POCs: Vanessa McDonough/Tylan Dean/Tracy Ziegler, #2720)(Also in 4A1)
- Development and Evaluation of Biological Control Agents for Invasive Species Threatening the Everglades and other Natural and Managed Systems (USDA-ARS, POC Philip Tipping #2708)
- Biological Control of Imported Fire Ant (FDACS, POC Greg Hodges #2710)
- Enhanced Mitigation Techniques for the Control of Several Whitefly Species (FDACS, POC Greg Hodges #2711)
- Expansion of Asian Citrus Psyllid Biocontrol (FDACS, POC Greg Hodges #2712)
- Everglades Complex of Wildlife Management Areas’ Exotic Plant Control (Everglades & Francis S. Taylor, Holey Land, and Rotenberger) (FWC, POC Melissa Juntunen/Eric Eckles #2715)
Strategy 4C3: Develop and improve tools to assist in the long-term control of invasive exotic species

Current Projects, Page 2

- Python removal authorized agent program for South Florida National Parks (NPS, POC Tylan Dean #2719)
- Python Responder/Patrol Training (FWC, POC Kristen Sommers #2714) (also in 2A5)
- Thermal infra-red detection of Burmese pythons (USDA/UF, POCs Michael Avery/Scot Smith, #2725)
- Python Chemical Communication/Pheromone Development (USDA/W&L, POCs Michael Avery/Rocky Parker, #2723)
- Florida Panther NWR Invasive Exotic Control Program (USFWS, POC Kevin Godsea #2726)
- Mitigating ecological and cultural effects of Laurel wilt disease (UF/USDA-APHIS, POC Jason Smith/Eduardo Varona #2727)
- Enhancement of the Aquatic Resources at the Miccosukee Tribe (Miccosukee Tribe, POC Rory Feeney #2729)
- Trap and lure evaluation with Burmese pythons
- Tegu trap and lure evaluation (USDA, POC Michael Avery/John Humphrey, #2606)
- Continue to improve the probability of detection of invasive reptiles (UF, POC Frank Mazzotti, #2607)(Also under 2A3, 3B1 and 3B2)
Strategy 4C3: Develop and improve tools to assist in the long-term control of invasive exotic species

Needed Projects

- Conduct Key Largo woodrat, Lower Keys marsh rabbit, and feral cat populations modeling study
Strategy 4C4: Integrate federal, state, and local agency invasive exotic species control programs
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Current Projects
- ECISMA MOU
- Southwest Florida CISMA Partnership (SWFCISMA, POC FWS/Erin Myers and Collier County/Christal Segura, #4304)
Strategy 4C4: Integrate federal, state, and local agency invasive exotic species control programs

Needed Projects