Incident History Database (IHDB)

SAR Controllers Workshop 2020
March 2020
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ERT, Inc.

Incident History Database (IHDB) Overview

- Contains records for beacon activations in the US service area
  - Records are created automatically when alert sites close (beacon stops transmitting)
  - Records are:
    - Populated by US RCC Controllers
    - Populated by USMCC Controllers (for SPOCs)
    - Checked by USMCC Controllers and USMCC operations staff
- Is maintained by NOAA
- Provides historical data on why beacons activated

Uses of IHDB Information

Resource for:

- RCC Controllers for previous activation history
- NOAA reporting (daily, weekly, quarterly, and annually)
- Annual report to COSPAS-SARSAT
- US Coast Guard and US Air Force reports
- Ongoing research
  - About beacon reliability – reported at annual Beacon Manufacturer's Workshop
  - To identify repeat offenders (to reduce false alerts)
  - Concerning RGDB accuracy
  - On additional topics (e.g., further analysis of MEOSAR uncorroborated alerts)

IHDB False Alert Reasons

- Beacon Mishandling
- Beacon Malfunction
- Mounting Failure
- Environmental Conditions
- **Maintenance Activations**
- **Voluntary Activations**
- Unknown

IHDB False Alert – Beacon Mishandling

- Beacon Mishandling **(resulting in an unintended activation)**
  - False Alert – Mishandling – Installation
    - Exposure to sea action or ship's work; equipment struck beacon; beacon improperly placed in bracket

IHDB False Alert – Beacon Mishandling

- Beacon Mishandling **(resulting in an unintended activation)**
  - False Alert – Mishandling – Installation
  - False Alert – Mishandling – Testing/Maintenance
    - Failure to follow proper testing procedures
    - Repair by owner or service center causing activation
    - Improper removal from bracket while testing or cleaning
    - Beacon shipped while armed and activated
    - During craft maintenance, wash-down, winterization, painting, etc.
    - Improper beacon storage

IHDB False Alert – Beacon Mishandling

- Beacon Mishandling **(resulting in an unintended activation)**
  - False Alert – Mishandling – Installation
  - False Alert – Mishandling – Testing/Maintenance
  - False Alert – Usage
    - Accidental activation:
      - Activated operationally in an attempt to perform self-test
      - Beacon was activated in an attempt to ascertain beacon ID or 24-bit address from a local receiving device and a signal was unintentionally sent to satellite
      - Was reported, no further information supplied
    - Demonstration/test not coordinated

IHDB False Alert – Beacon Mishandling

- Beacon Mishandling **(resulting in an unintended activation)**
  - False Alert – Mishandling – Installation
  - False Alert – Mishandling – Testing
  - False Alert – Mishandling – Usage
  - False Alert – Mishandling – Disposal
    - Beacon discarded as trash, abandoned

IHDB False Alert – Beacon Malfunction

- Beacon Malfunction
  - False Alert – Malfunction – Switch
    - Switch broken
    - **Hard landing**

IHDB False Alert – Beacon Malfunction

- Beacon Malfunction
  - False Alert – Malfunction – Switch
  - False Alert – Malfunction – Water Intrusion
    - Water leakage due to manufacturing defect, cracked casing, or faulty seal
    - **Not** situations when the exterior of a beacon gets wet!

IHDB False Alert – Beacon Malfunction

- Beacon Malfunction
  - False Alert – Malfunction – Switch
  - False Alert – Malfunction – Water Intrusion
  - False Alert – Malfunction – Test
    - Transmitted non-inverted frame while in test mode (*i.e., activated in self-test mode, transmitted operational mode*)

IHDB False Alert – Beacon Malfunction

- Beacon Malfunction
  - False Alert – Malfunction – Switch
  - False Alert – Malfunction – Water Intrusion
  - False Alert – Malfunction – Test
  - False Alert – Malfunction – Electronics
    - Electronics malfunction
    - Non-GPS electronics malfunction

IHDB False Alert – Mounting Failure

- Mounting Failure
  - False Alert – Mounting Failure – Bracket
    - Strap or bracket failure
    - Beacon fell out of bracket

IHDB False Alert – Mounting Failure

- Mounting Failure
  - False Alert – Mounting Failure – Bracket
  - False Alert – Mounting Failure – Mounting Release
    - Hydrostatic release failure (*i.e., beacon improperly transmitted as if it was submerged in water*)

IHDB False Alert – Mounting Failure

- Mounting Failure
  - False Alert – Mounting Failure – Bracket
  - False Alert – Mounting Failure – Mounting Release
  - False Alert – Mounting Failure – Magnet
    - Switch magnet not effective or missing

IHDB False Alert – Environmental Conditions

- Environmental Conditions
  - False Alert – Environmental Conditions
    - Extreme weather
    - Hurricane/cyclone conditions
    - Vessel knocked down
    - Heavy seas
    - Ice build-up

False Alert - Environmental Conditions - NO

False Alert - Environmental Conditions - YES

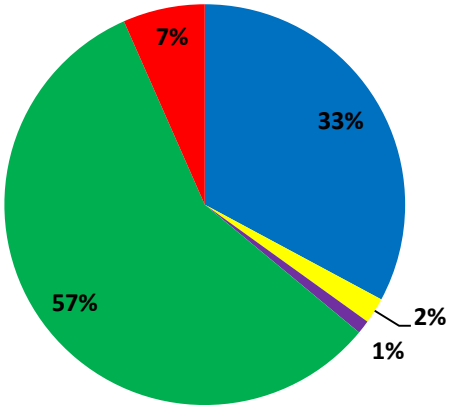
IHDB False Alert – Maintenance & Voluntary Activations

- Maintenance Activations
  - **Intentional activation** for testing purposes by a person performing maintenance
- Voluntary Activations
    - Non-declared tests
      - Activations of a beacon for testing, without proper notification or agreement of authorities (other than by a person performing maintenance)
      - Malicious activations, hoaxes

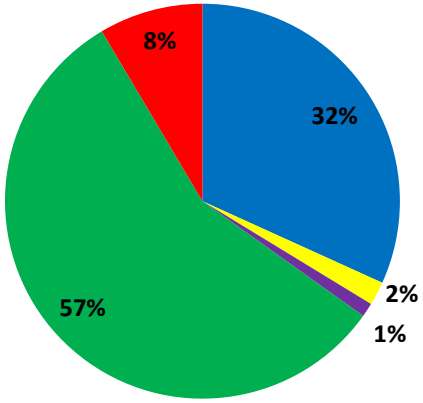
IHDB False Alert – Reason Unknown

- Unknown
  - False Alert – Reason Unknown
    - Confirmed beacon false alert
    - No feedback on why activated
    - Investigation into beacon activation cause was inconclusive

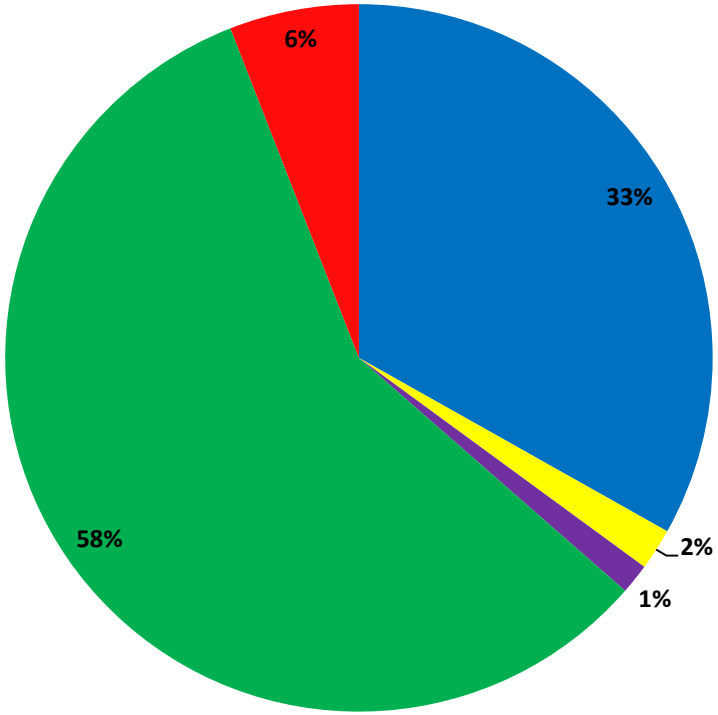
AFRCC 2017



AFRCC 2018

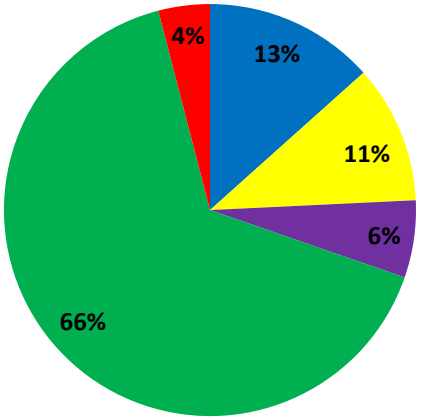


AFRCC 2019



Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

AKRCC 2017



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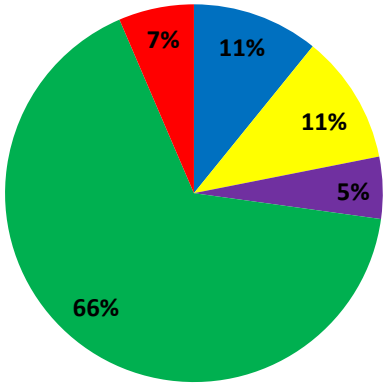
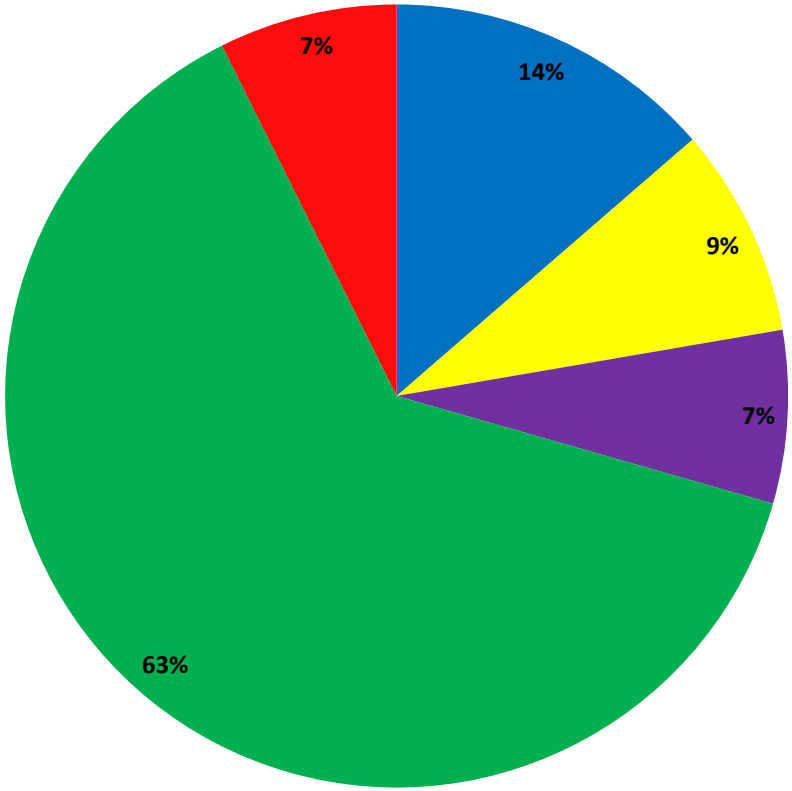


AKRCC 2019



Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

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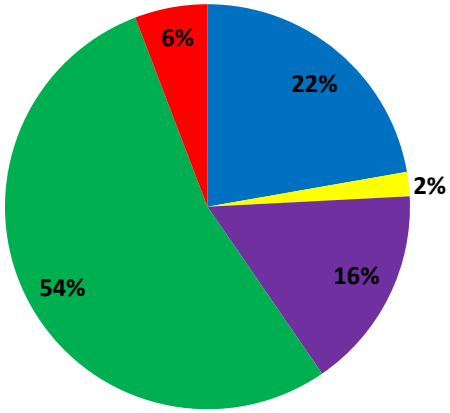
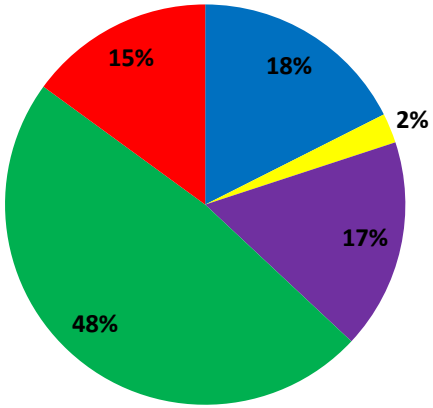


CGD01 2018



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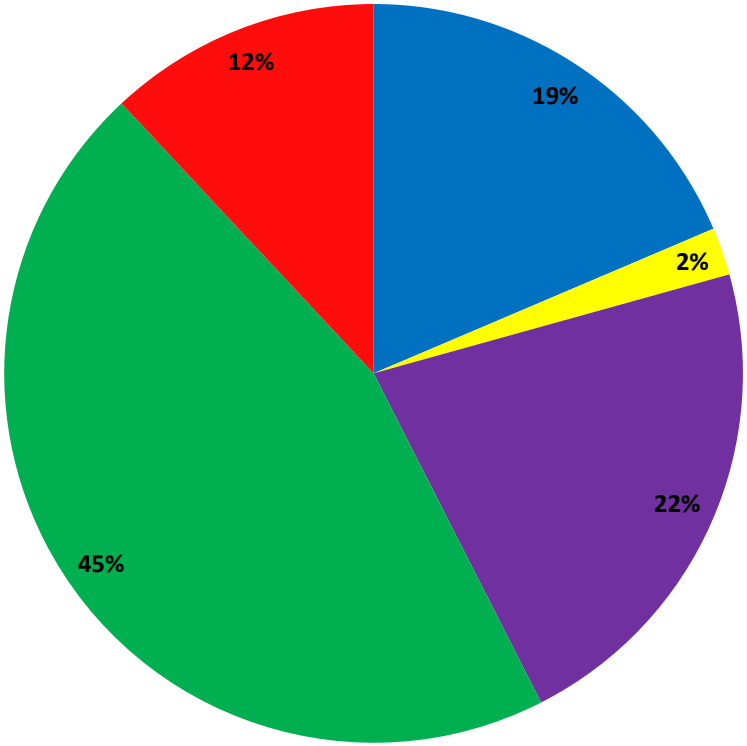

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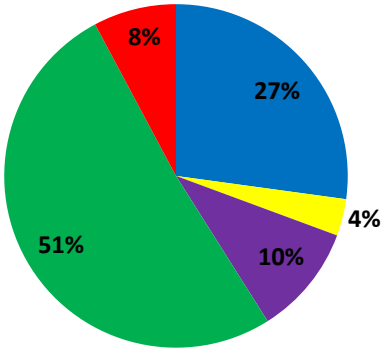
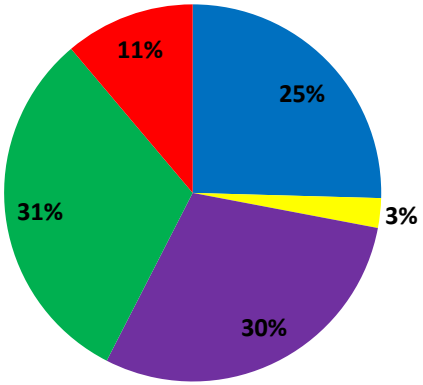
CGD05 2017



CGD05 2018



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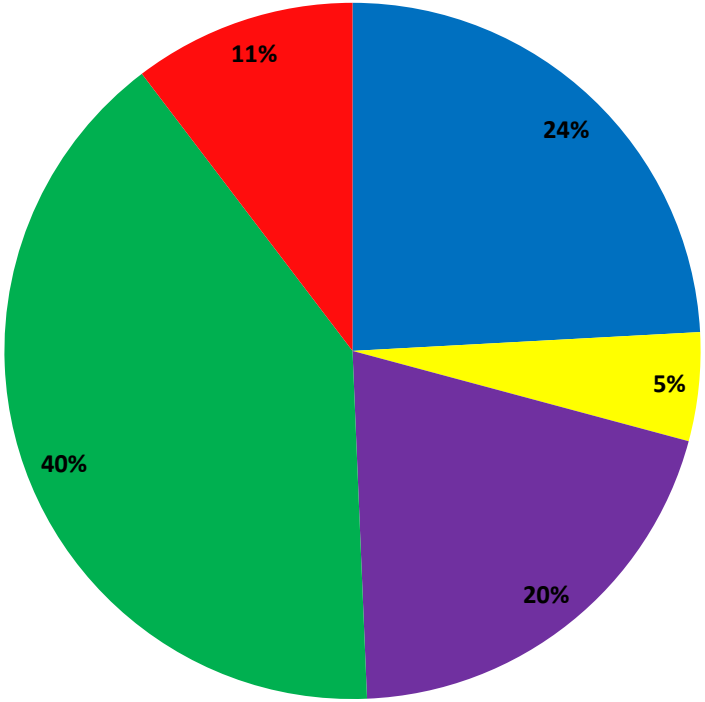
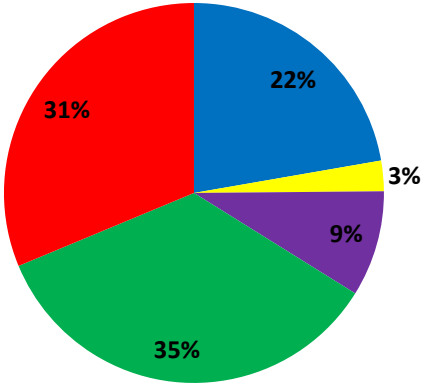


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

CGD07 2017



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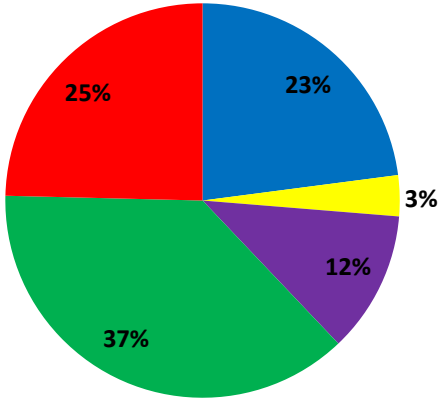

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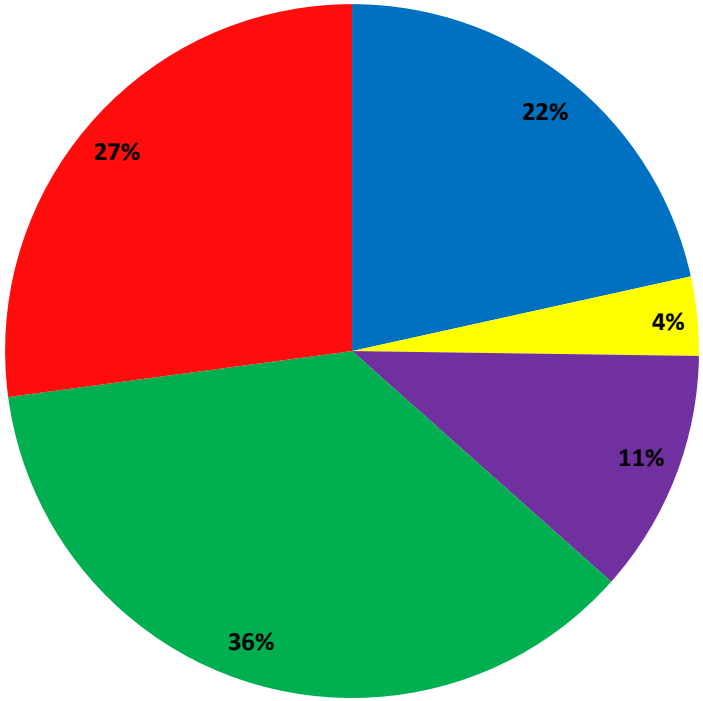

Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

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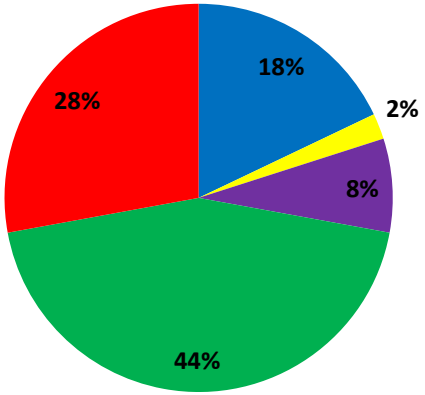
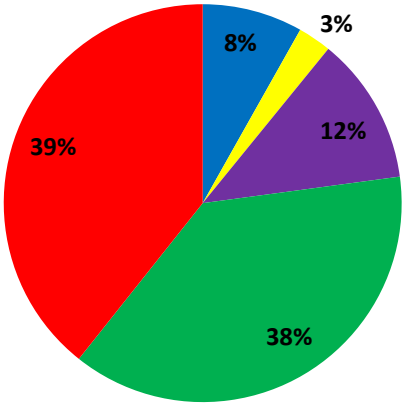


CGD08 2018



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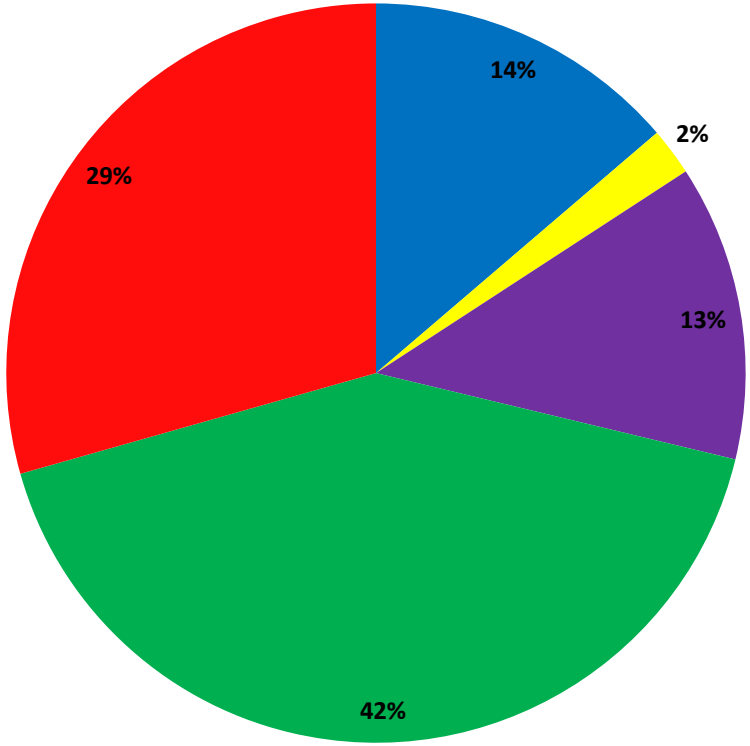

Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

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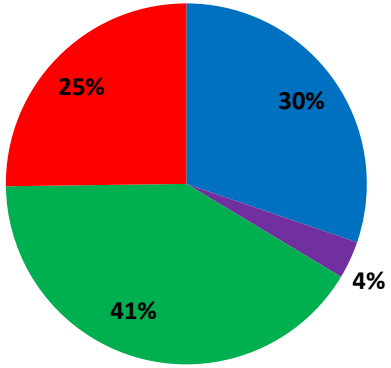

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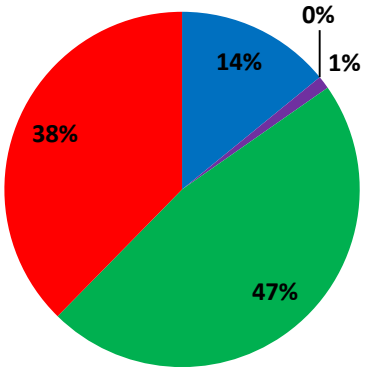

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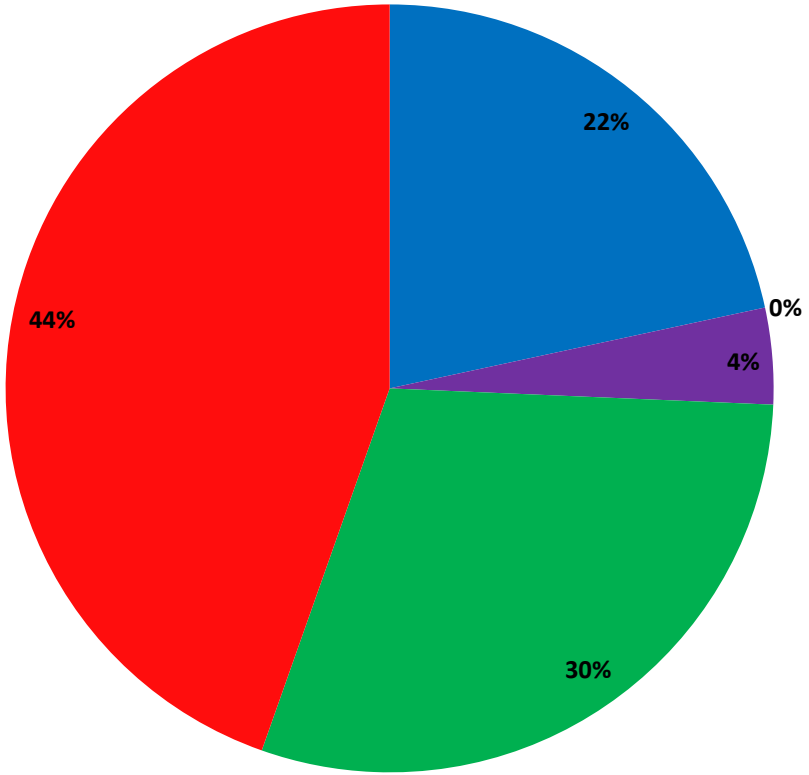
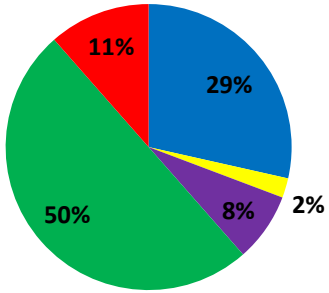


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

CGD13 2017



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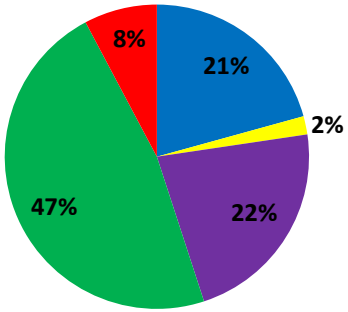

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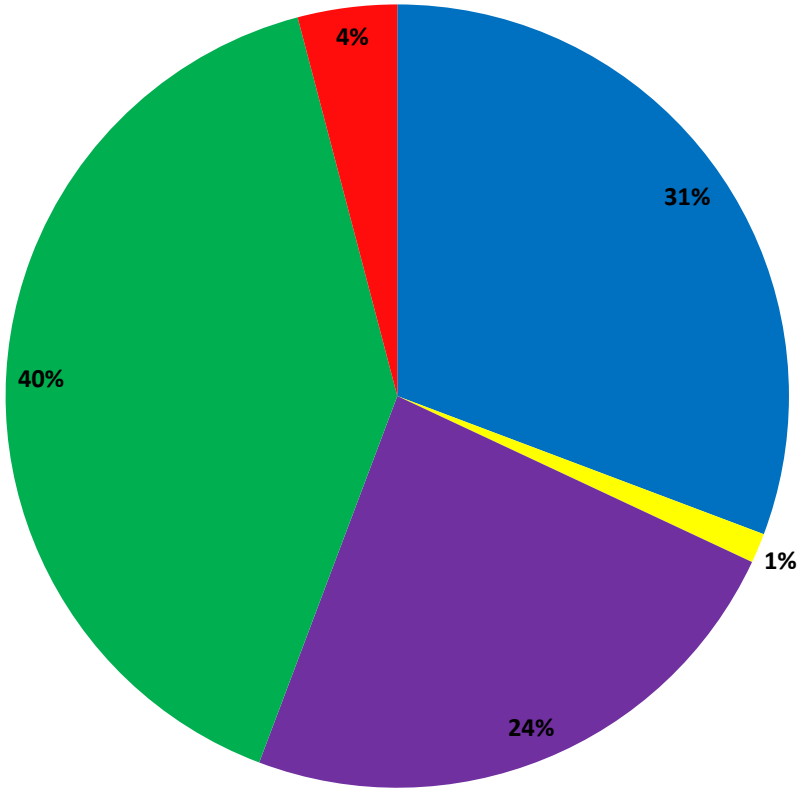
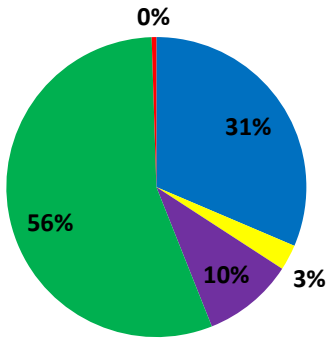


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

CGD14 2017



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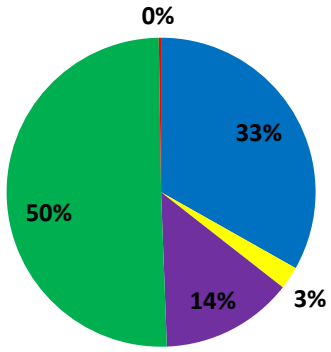

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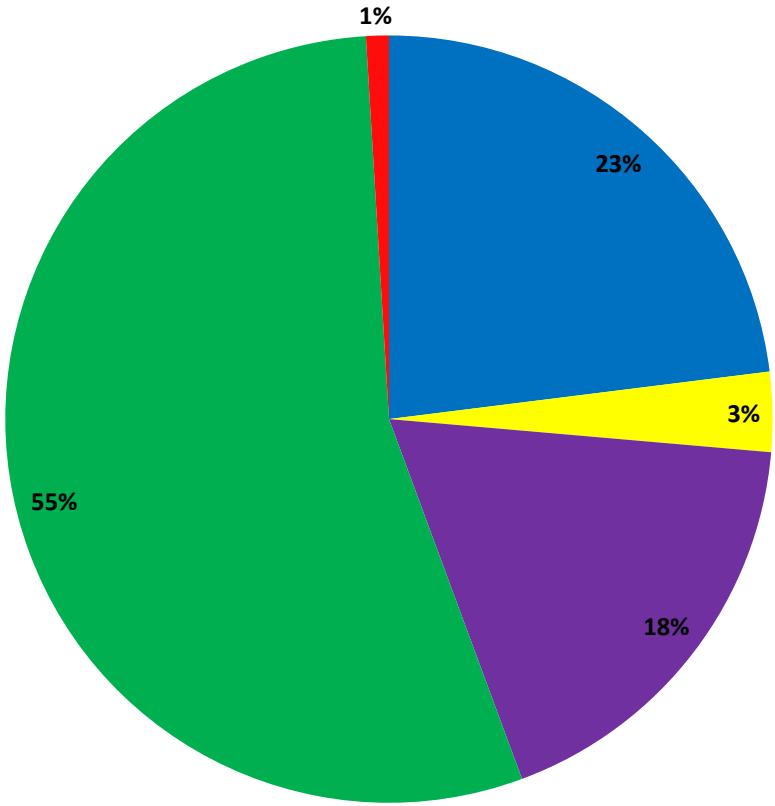
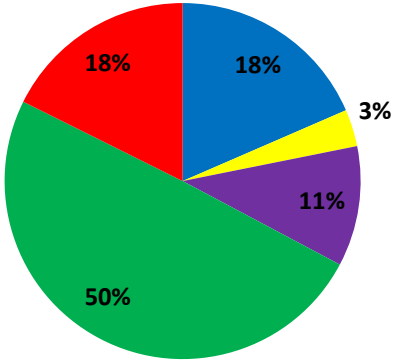


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

CGD17 2017



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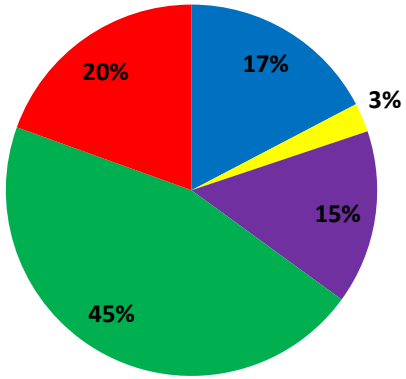

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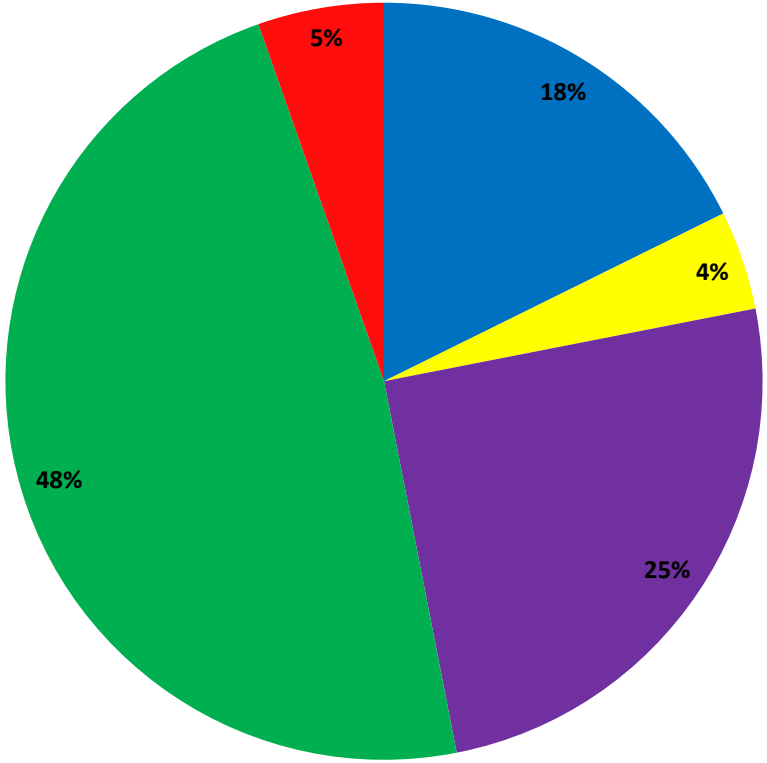
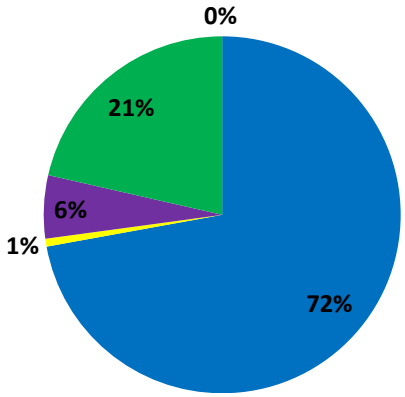
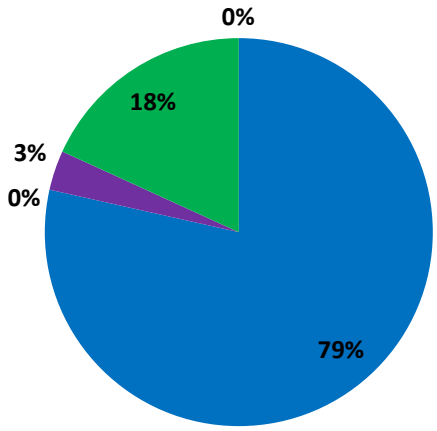


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

MARSEC 2017



MARSEC 2018



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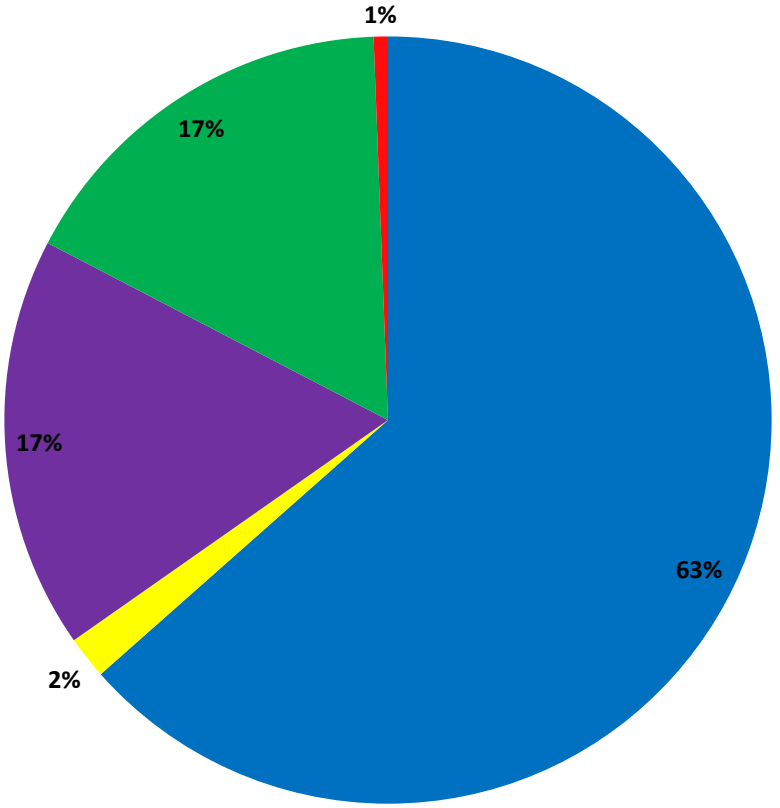
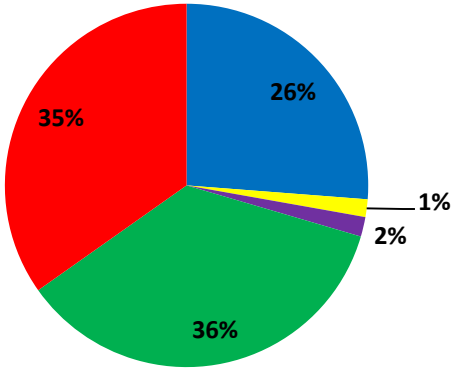
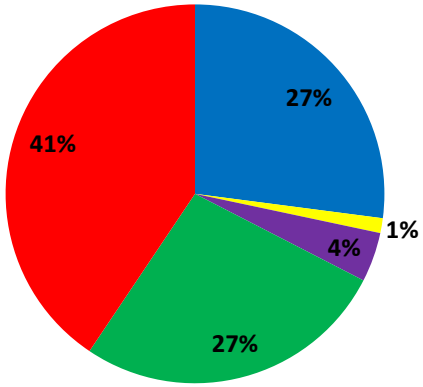


Ceased/Undetermined Distress (Unassigned) Non-Distress

PACAREA 2017



PACAREA 2018



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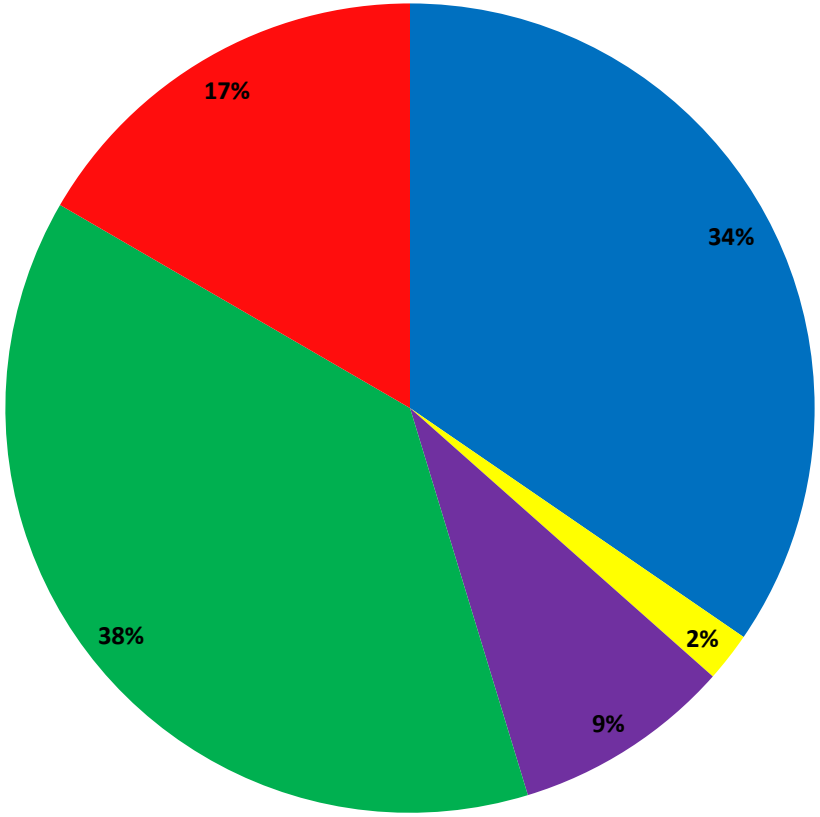
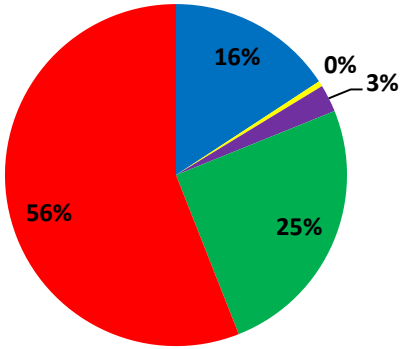
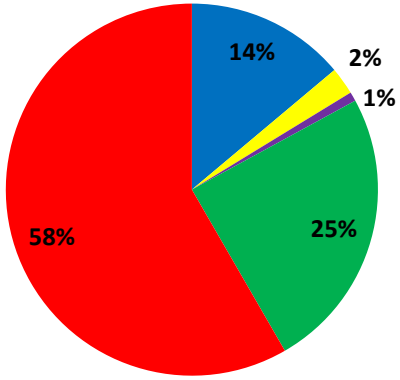


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

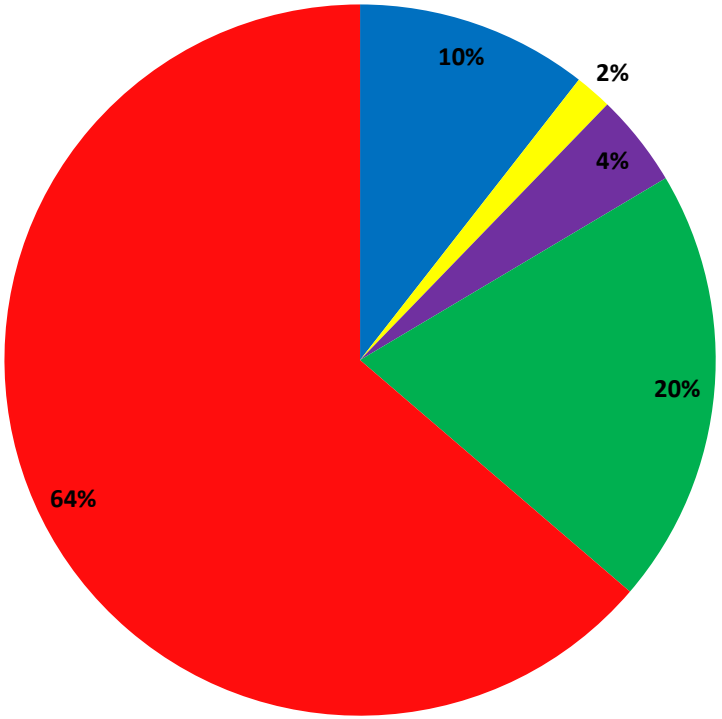
SANJN 2017



SANJN 2018

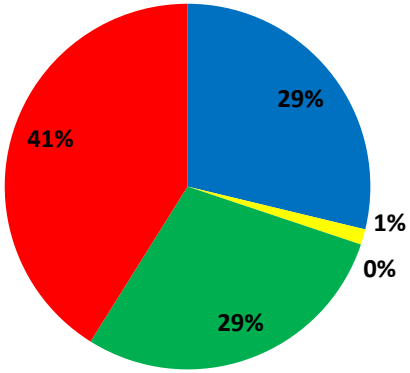


SANJN 2019

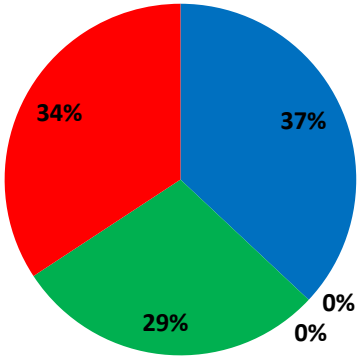


Ceased/Undetermined Distress Linked Site (Unassigned) Non-Distress

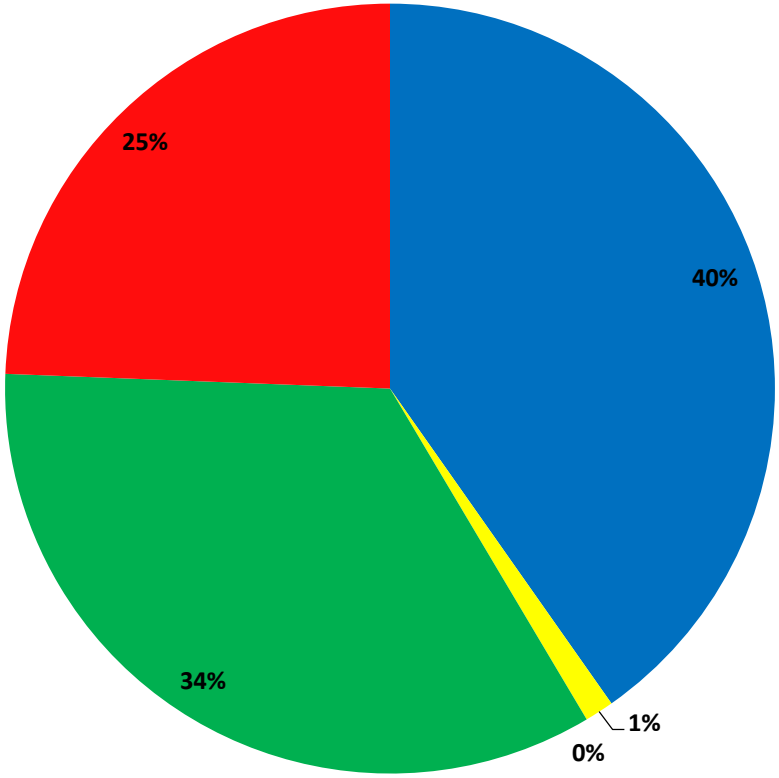
DOMREPSP 2017



DOMREPSP 2018

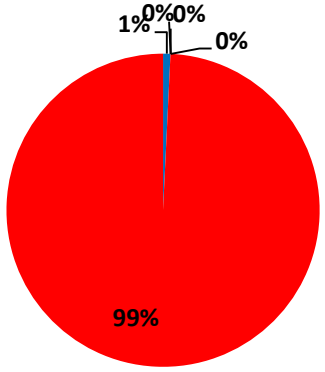


DOMREPSP 2019

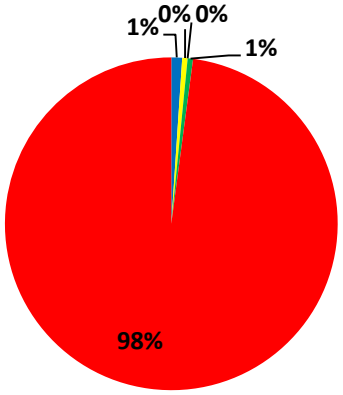


Ceased/Undetermined Distress (Unassigned) Non-Distress

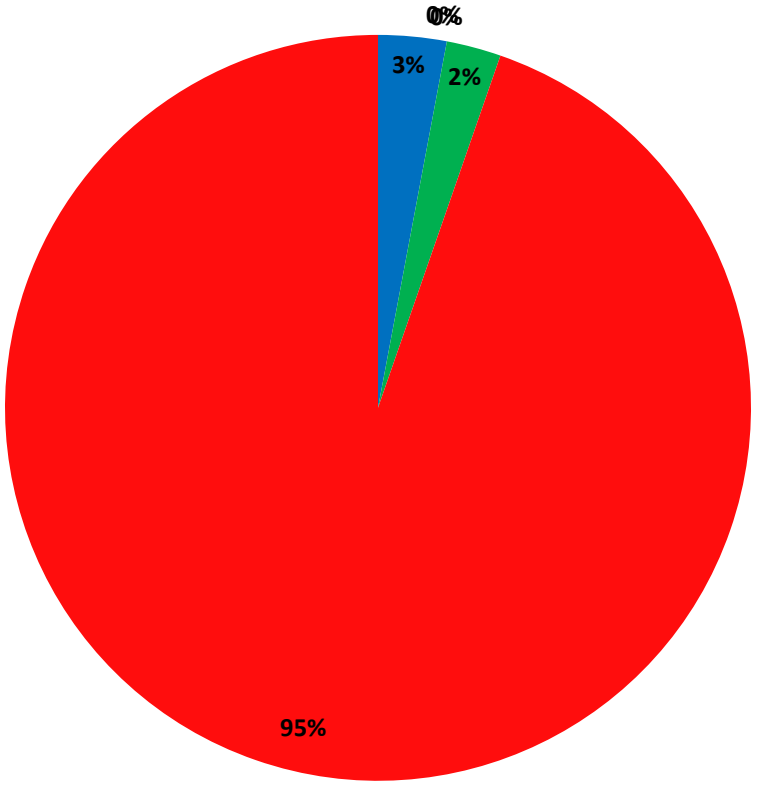
COCESNA 2017



COCESNA 2018

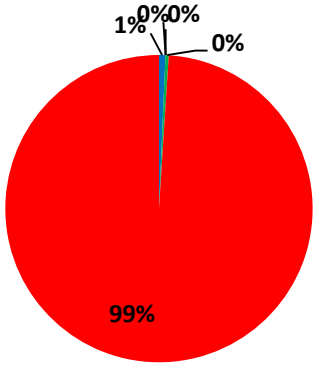


COCESNA 2019

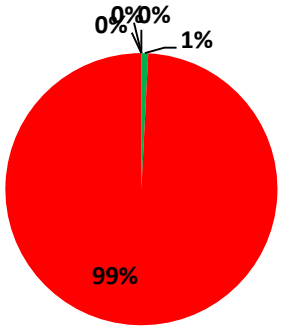


Ceased/Undetermined Distress (Unassigned) Non-Distress

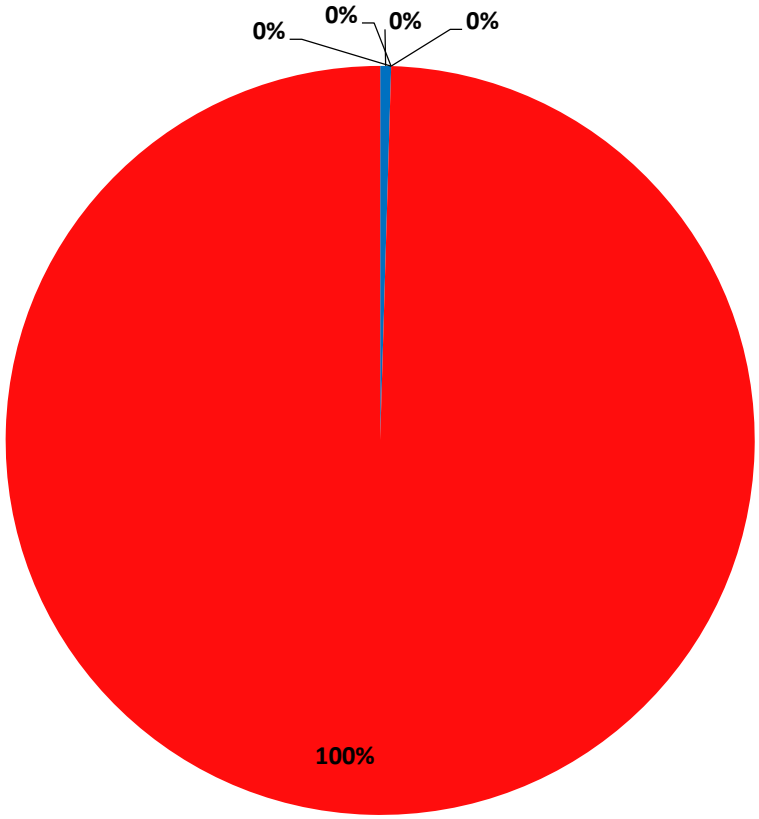
ECSP 2017



ECSP 2018

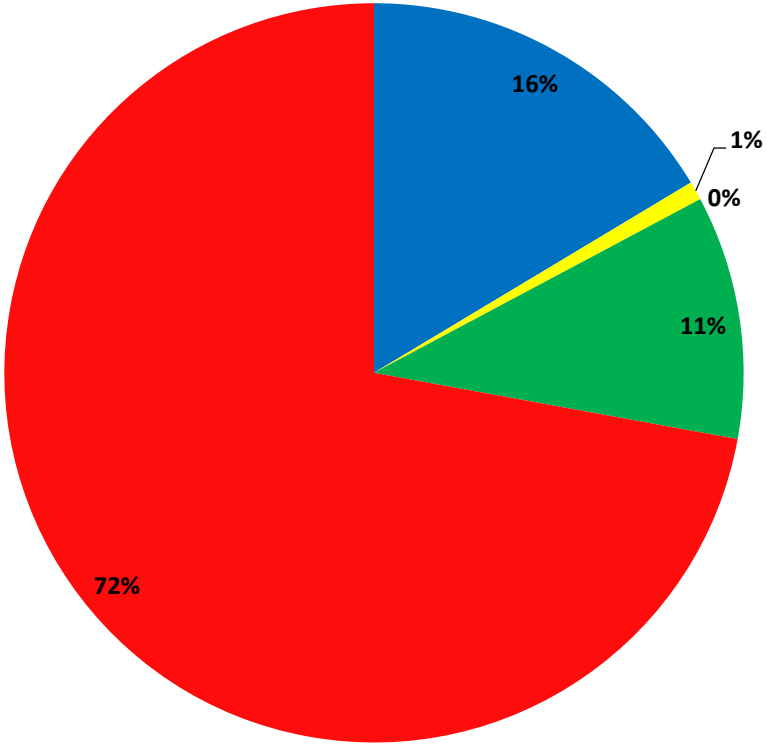


ECSP 2019

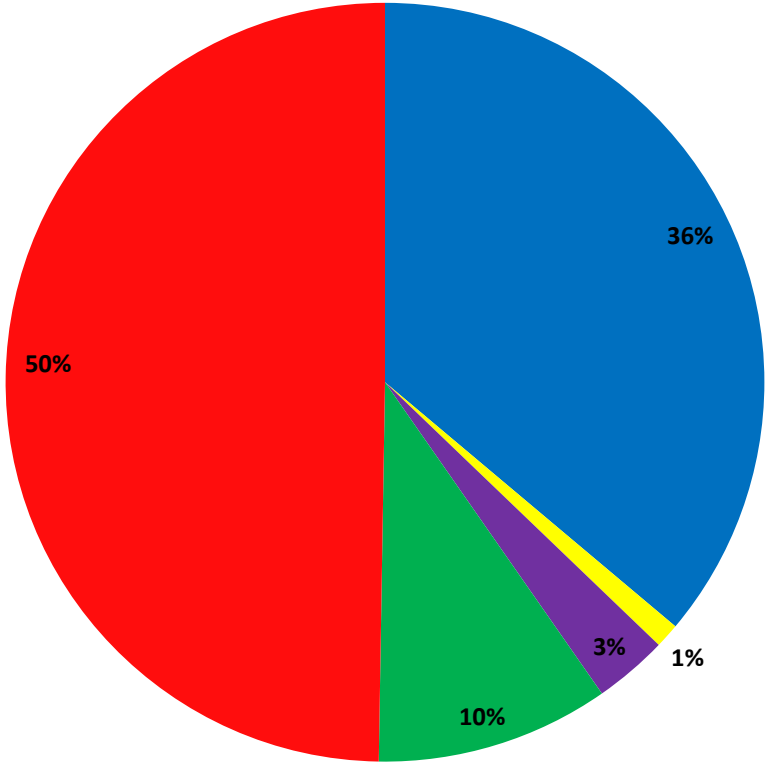


Ceased/Undetermined Distress (Unassigned) Non-Distress

TTSP 2018

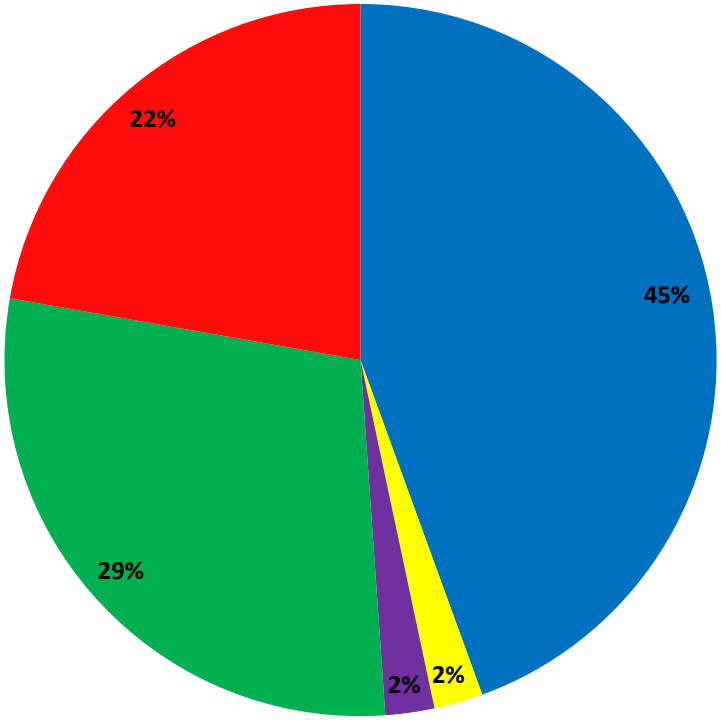


TTSP 2019

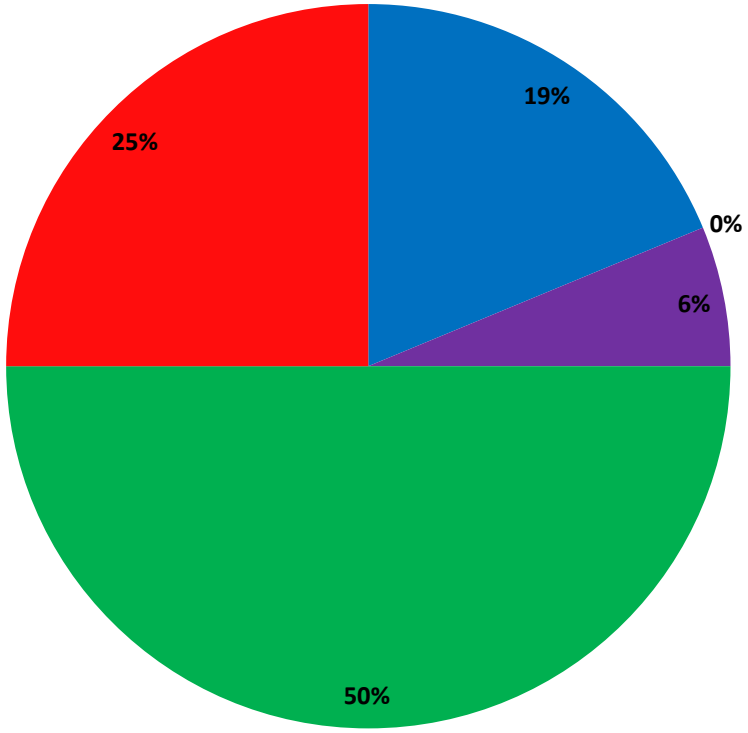


Ceased/Undetermined Distress (Unassigned) Non-Distress

BermudaSP 2018

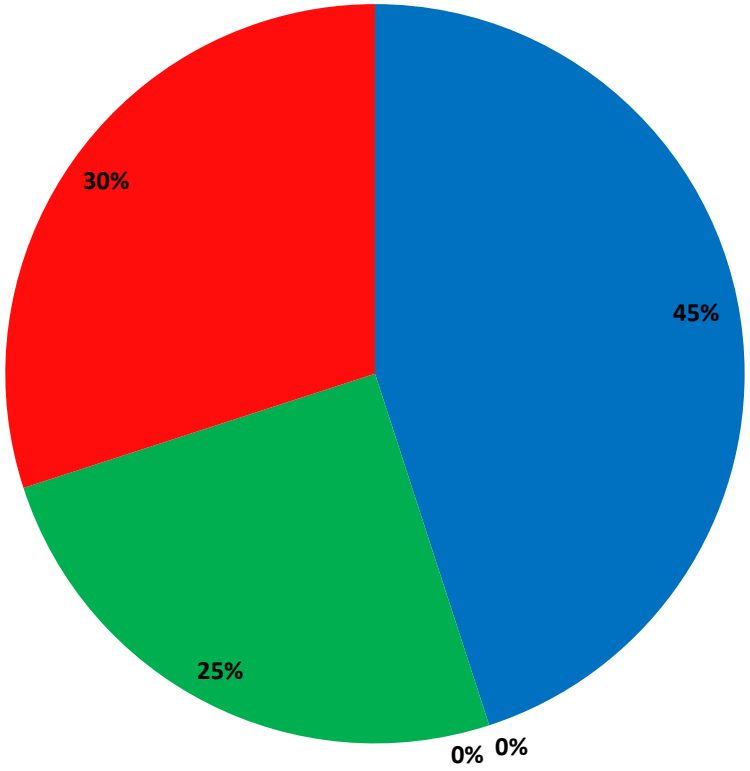


BermudaSP 2019



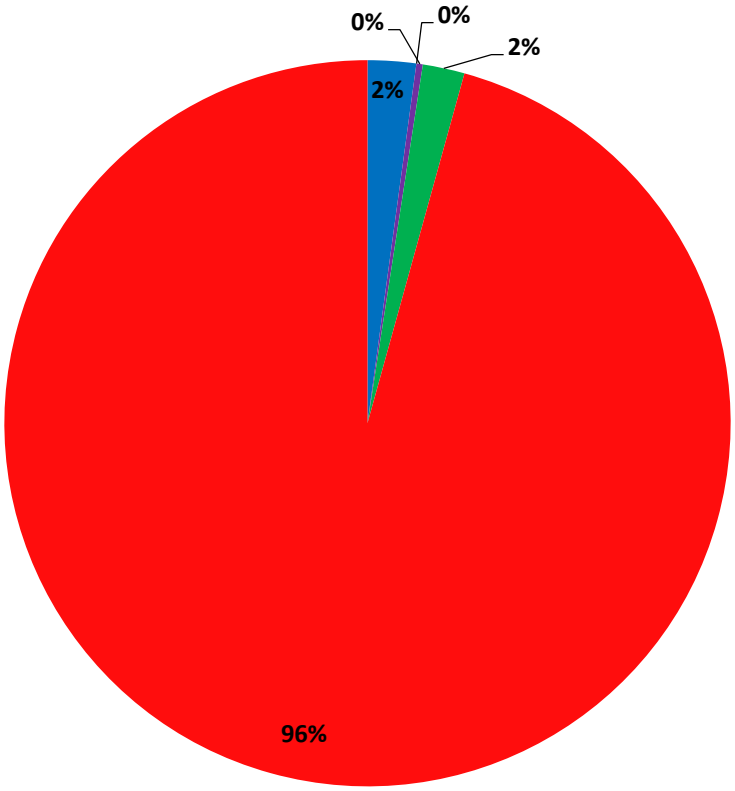
Ceased/Undetermined Distress (Unassigned) Non-Distress

HaitiSP 2019

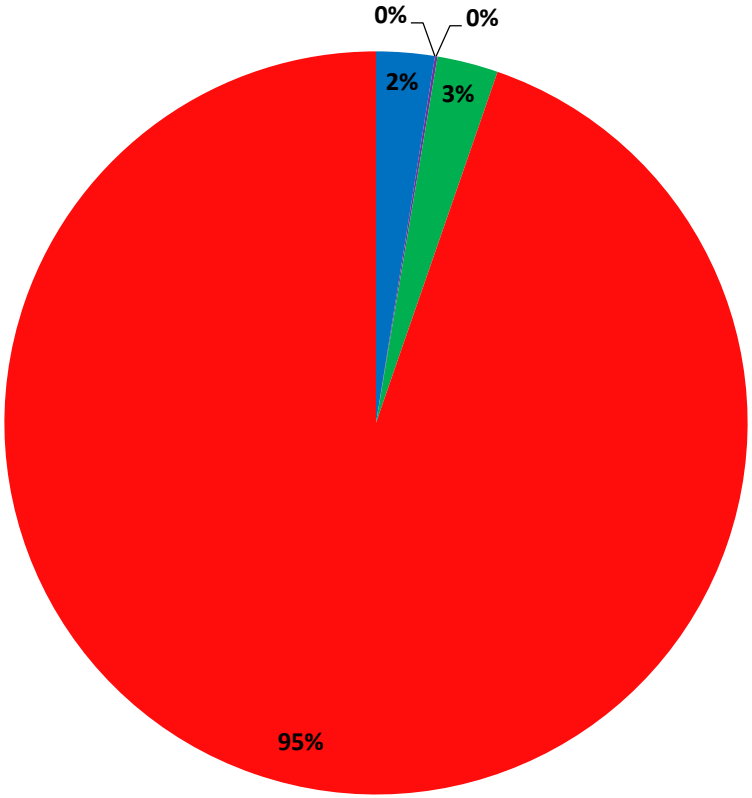


Ceased/Undetermined Distress (Unassigned) Non-Distress

MexicoSP 2018

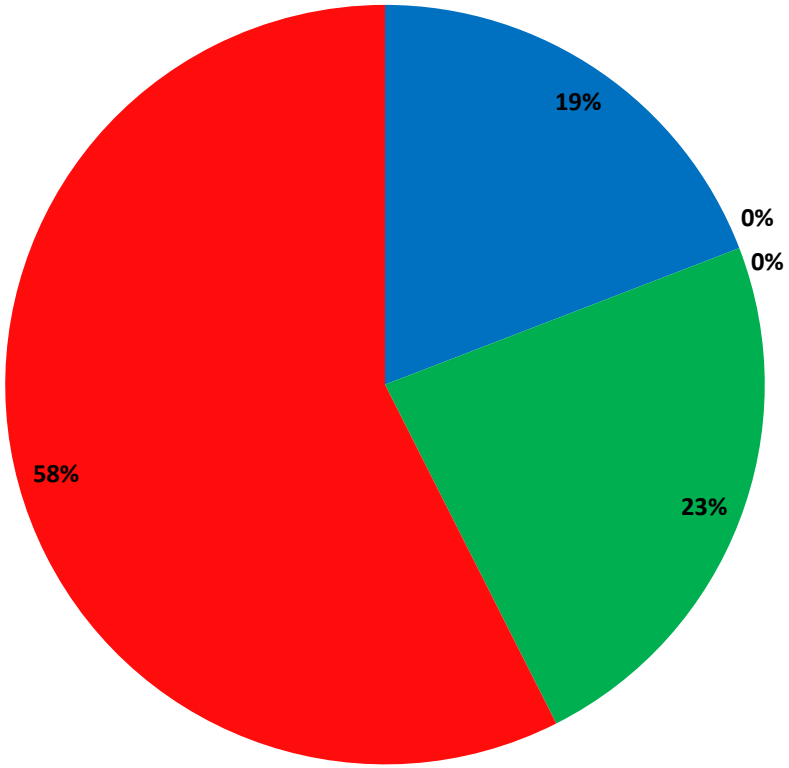


MexicoSP 2019

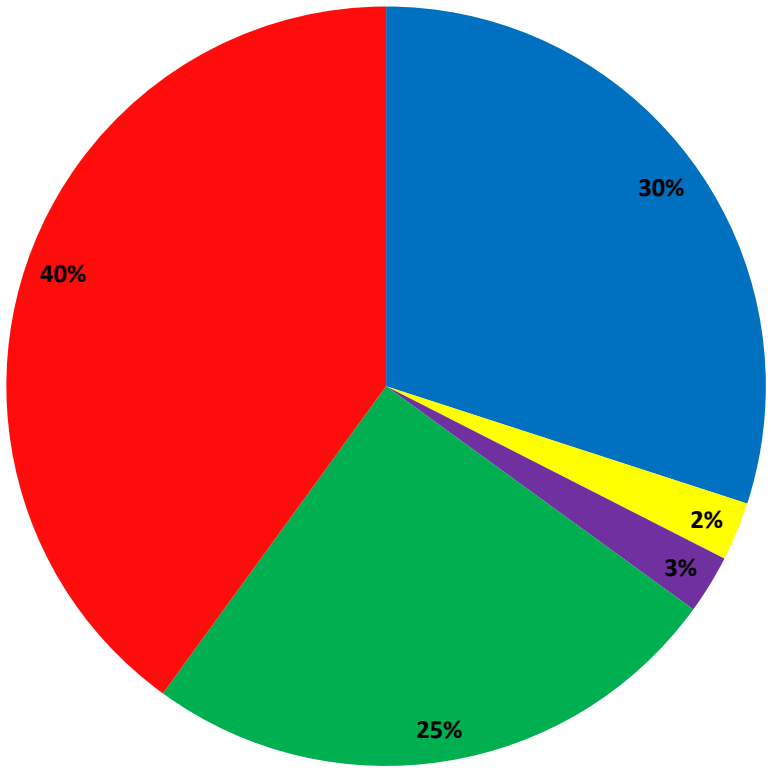


Ceased/Undetermined Distress (Unassigned) Non-Distress

NantSP 2018

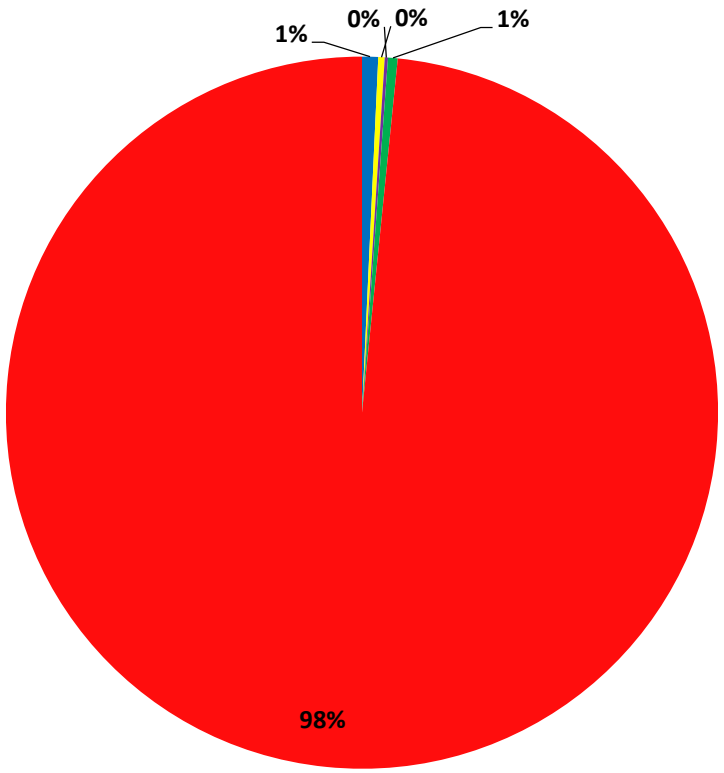


NantSP 2019

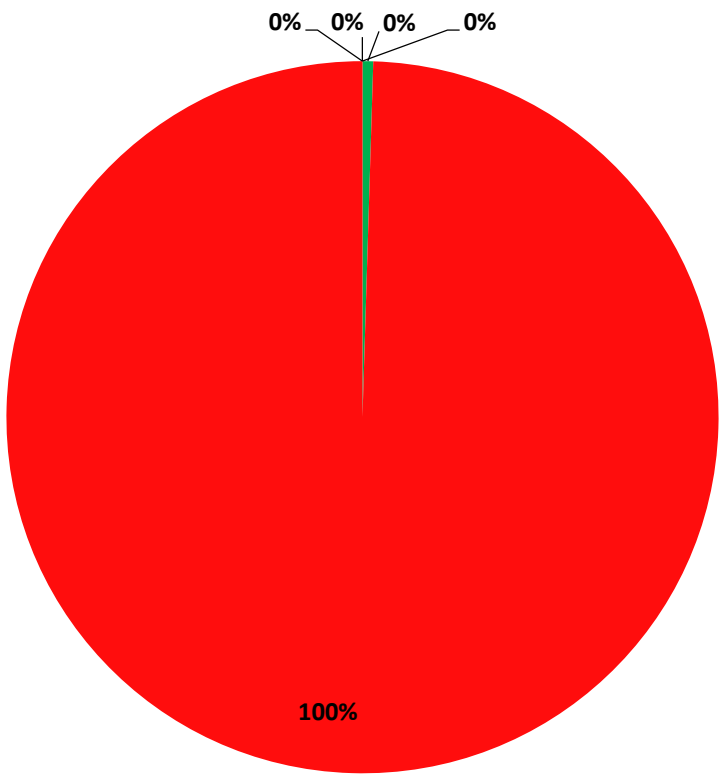


Ceased/Undetermined Distress (Unassigned) Non-Distress

PanSP 2018



PanSP 2019



Ceased/Undetermined Distress (Unassigned) Non-Distress

Summary of 2019 Alerts by RCC/SPOC

RCC/SPOC	Ceased/ Undetermined	Distress	Linked Site	Non-Distress	Unassigned
AFRCC	3,435	197	143	5,972	613
AKRCC	63	40	33	292	34
CGD01	98	11	115	240	63
CGD05	91	19	76	152	39
CGD07	410	70	216	691	516
CGD08	86	13	81	262	184
CGD09	16	0	3	22	33
CGD13	75	3	58	98	10
CGD14	96	14	75	228	4
CGD17	46	11	65	124	14
MARSEC	106	3	29	28	1
PACAREA	158	9	40	174	76
SANJN	25	4	10	47	151
DOMREP	33	1	0	28	20
COCESNA	5	0	0	4	160
ECSP	1	0	0	0	213
TTSP	69	2	6	19	95
Bermuda	9	0	3	24	12
HaitiSP	9	0	0	5	6
Mexico	22	0	1	23	821
NANTSP	12	1	1	10	16
PanSP	0	0	0	3	618