

APRU



Developing and Evaluating Disaster Plans

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Department of Emergency Management

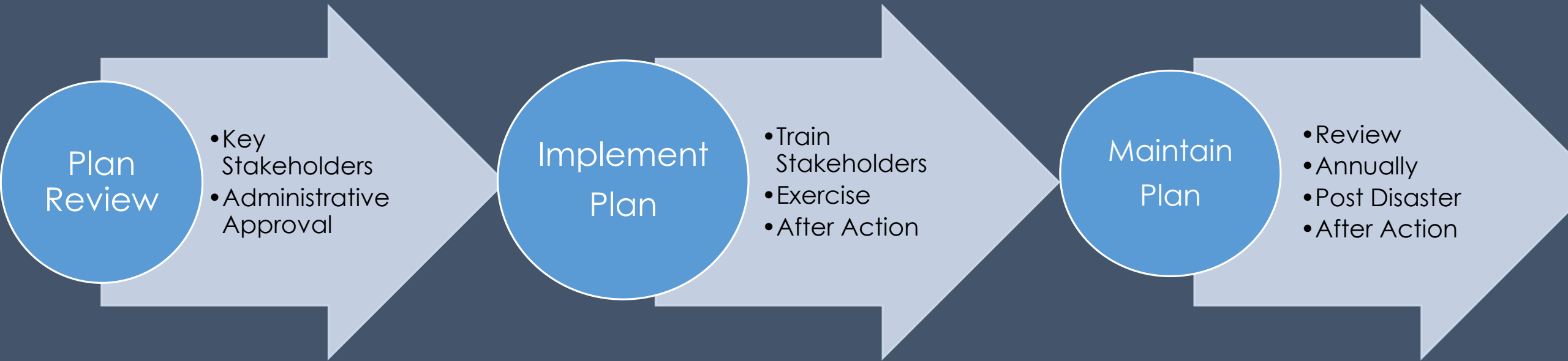
Florida International University, Miami, Florida, USA



Steps to create a plan



Steps to create a plan



Forming a Team

- ✓ Administrative support
- ✓ Authority to lead team
- ✓ Identify key stakeholders
- ✓ Identify central location to manage incident (EOC)

Hazard and Vulnerability Assessment

- Numerous tools to conduct hazard and vulnerability assessments
- ✓ Identify specific hazards
 - Natural
 - Man made
 - Community risks
- ✓ Probability of occurrence
- ✓ Impacts

Hazard and Vulnerability Assessment

- ✓ Hazard rating - prioritize
- Beyond natural disasters
- Other university departments for information
 - GIS
 - Environmental Health & Safety
- How often?
- Who conducts it?

Communications

Before, During, After

- National Meteorological Services
- Local Government
- Local Responders
- Internal Department
- Media
- Social Media
- No notice event vs. event with warning (Earthquake vs. Typhoon)
- University wide email
- Public address systems
- Policy; training to send message; testing

Communications

Before, **During**, After

- National Meteorological Services
- Local Government
- Local Responders
- Early warning systems (sirens)
- Verifying and disseminating information
- Foreign students and faculty
- Exchange or study abroad students
- Concerned parents
- Back up communications

Communications

Before, During, **After**

- Student and faculty support
- Will I get paid?
- Tuition payment
- Grant reporting deadlines
- Media
- Satellite locations
- Foreign students and faculty
- Exchange or study abroad students
- Accountability of students and faculty

Data preservation

- Student records
- Financial data
- Research
- Universities as data collectors – record the incident – future research - preserving and sharing the data

Response

- All disasters are local
- Debris removal
- Mutual aid agreements
- Other universities – research; teaching
- Vendors
- Hotels; food; water; fuel
- Local response agencies
- Damage assessment team
- Students as volunteers

Resource Management

- Everyone is a priority (or so they think)
- Limited staffing
- Data centers
- Food, water, fuel, electricity

Mitigation

- Risk reduction strategies
- Physical mitigation (impact windows; straps; higher elevations)
- Risk avoidance (Rebuild in less hazard prone area)
- Policy driven (University adopt stronger building codes)

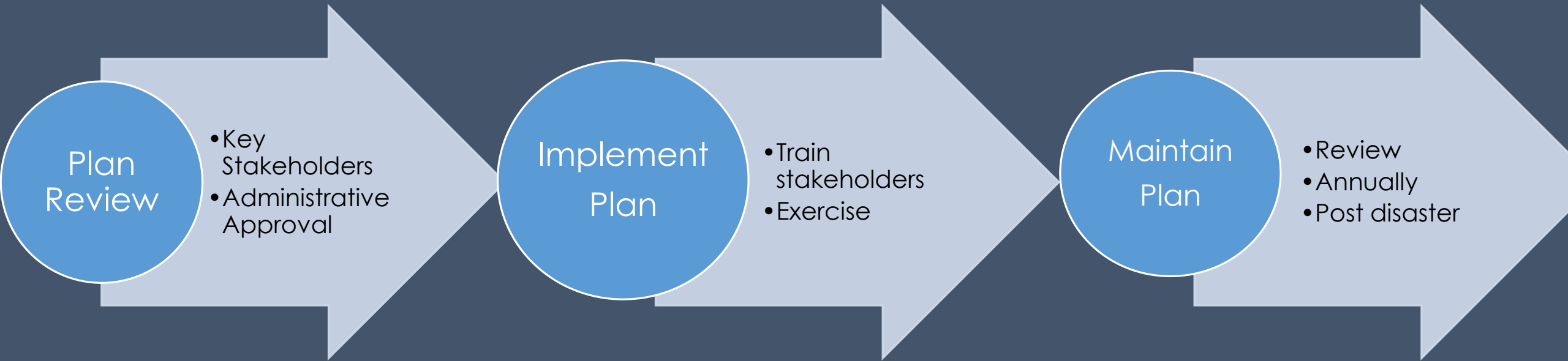
Types of Exercises to Test Plan

- ❑ **Drill** – single function
- ❑ **Tabletop** – Key personnel discussing simulated scenarios in an informal setting
- ❑ **Functional** – Testing specific functions of plan in most realistic manner possible
 - ❑ Examples: Communication between sites, emergency notification systems
- ❑ **Full Scale Exercise** – Large, lengthy event at a location with equipment and personnel
 - ❑ Takes a year to plan

Steps to create a plan



Steps to create a plan



Group Activity

- ❑ Divide into 6 groups of 5
- ❑ Using guidelines presented to you, begin to develop a comprehensive emergency plan
- ❑ Share best practices; brainstorm

Table Top Exercise (TTX)

- ❑ Success depends upon feedback from group AND
- ❑ Impact of feedback has on evaluating plan
- ❑ Remember – testing the PLAN, not the participants

CHARLIE BROWN UNIVERSITY



CHARLIE BROWN UNIVERSITY



- 32,000 students
- 9,000 live on campus; foreign students
- 6,000 faculty and staff
- Research

Tropical Cyclones Around the World



A world map with a green landmass and blue ocean. Three colored regions are highlighted: a yellow region in the Atlantic and Caribbean, a green region in the western Pacific, and a red region in the Indian and Southern Oceans. The labels 'Hurricanes', 'Typhoons', and 'Cyclones' are placed over these regions respectively. The map also shows the Arctic and Antarctic regions.

Hurricanes

Typhoons

Cyclones

RSMC Tokyo's

Tropical Cyclone Intensity Scale

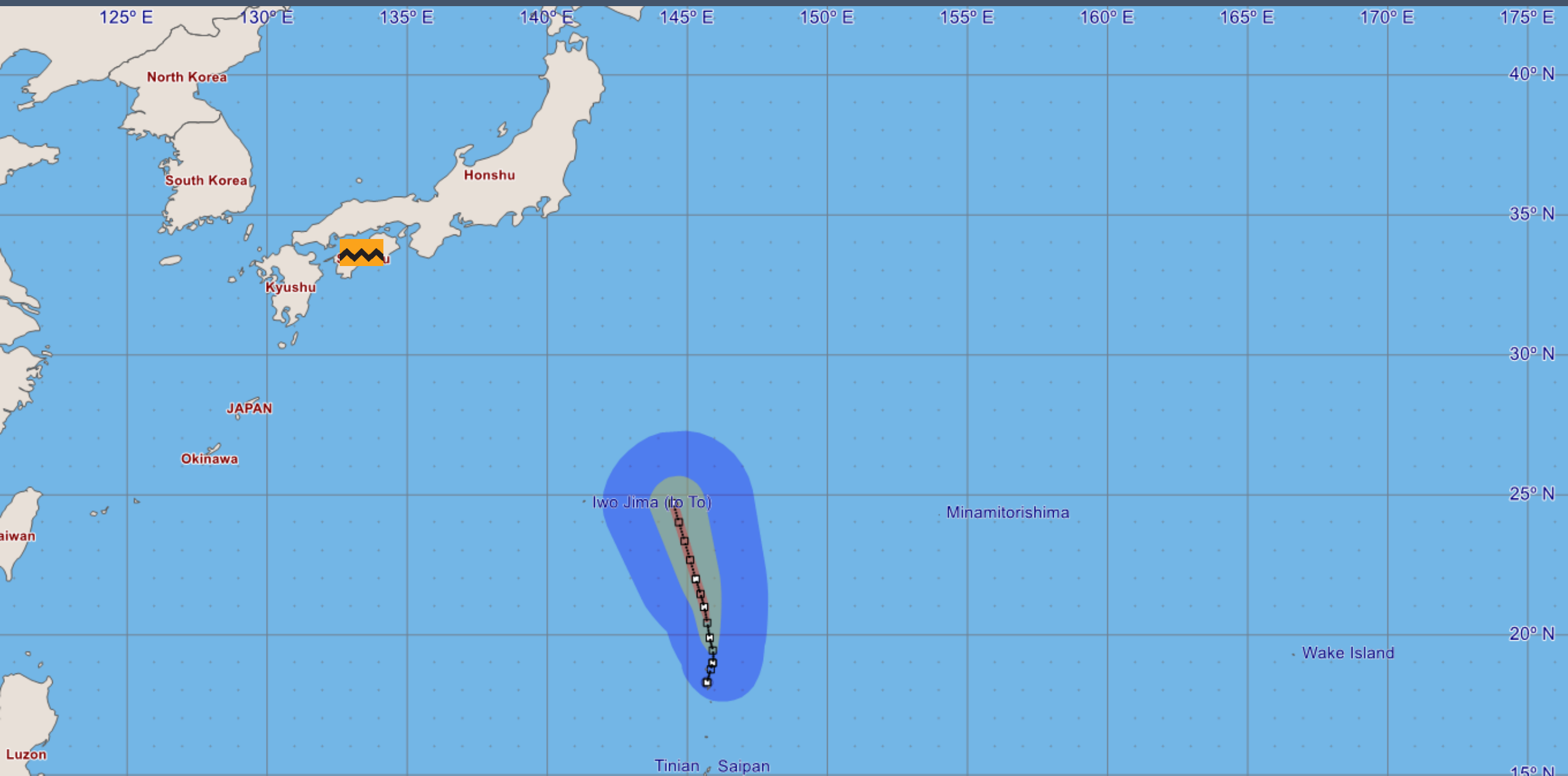
Category	Sustained winds
Violent Typhoon	≥105 knots ≥194 km/h
Very Strong Typhoon	85–104 knots 157–193 km/h
Typhoon	64–84 knots 118–156 km/h
Severe Tropical Storm	48–63 knots 89–117 km/h
Tropical Storm	34–47 knots 62–88 km/h
Tropical Depression	≤33 knots ≤61 km/h

Saffir-Simpson Hurricane Scale

Category	Wind Speed	
	mph	knots
5	≥156	≥135
4	131-155	114-134
3	111-130	96-113
2	96-110	84-95
1	74-95	65-83
Non-Hurricane Classifications		
Tropical Storm	39-73	34-64
Tropical Depression	0-38	0-33

Scenario – Day 1 1100 hours

- The Regional Specialized Meteorological Center (RSMC) has announced a Tropical Depression formed
- No projected threat to your university



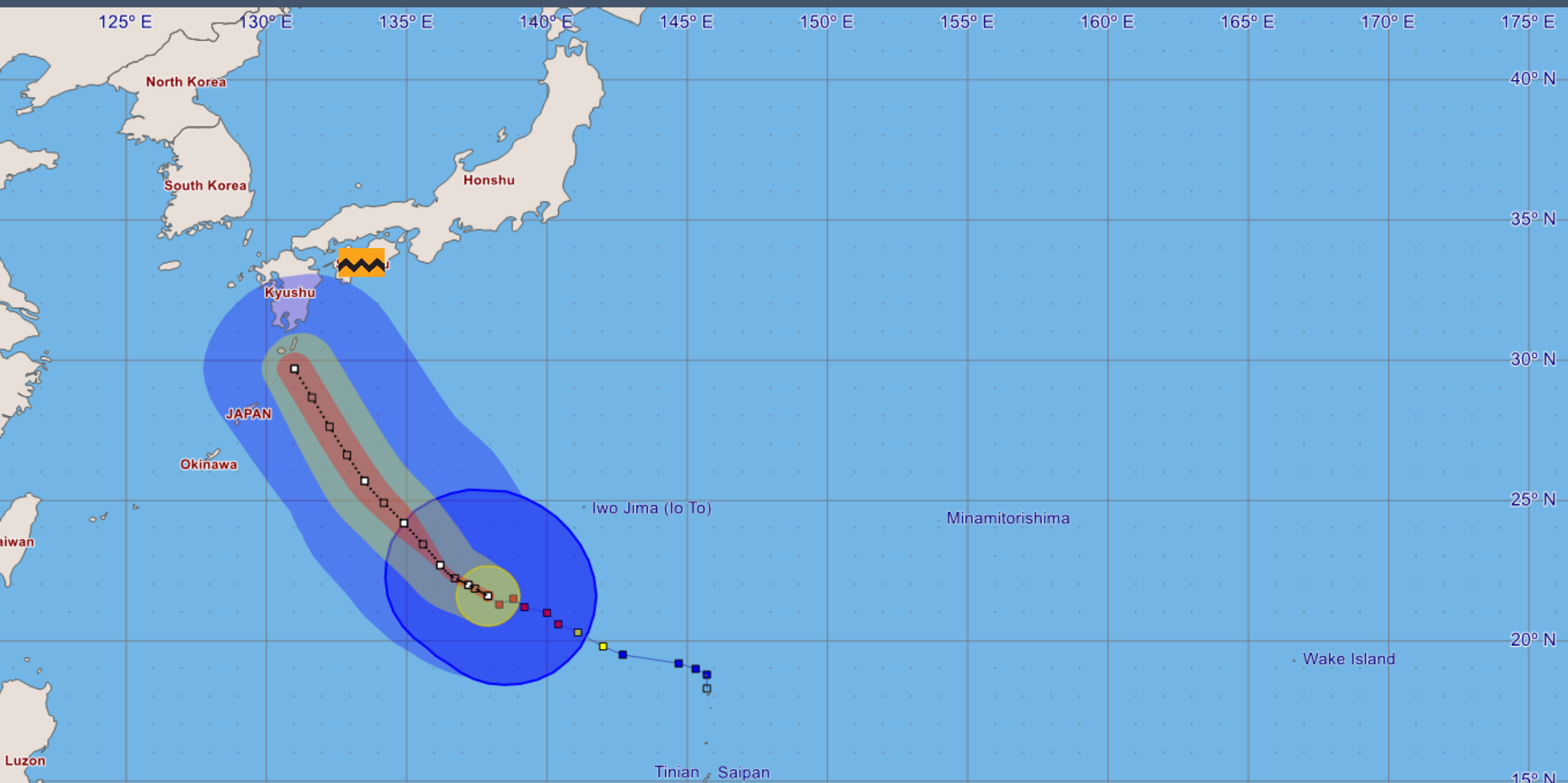
7 Days Out - Tropical Depression

Center Location: 18.3 N 145.7 E Maximum Sustained Winds: 35 mph Movement: 6 mph NNE

Sustained Wind Speeds: ■ tropical storm $\geq 34\text{kt}/39\text{mph}$ ■ strong tropical storm $\geq 50\text{kt}/58\text{mph}$ ■ typhoon $\geq 64\text{kt}/74\text{mph}$

■ tropical storm $\geq 34\text{kt}/62\text{kph}$ ■ strong tropical storm $\geq 48\text{kt}/89\text{kph}$ ■ typhoon $\geq 64\text{kt}/118\text{kph}$





4 Days Out - Tropical Storm Lucy

Center Location: 21.6 N 137.9 E Maximum Sustained Winds: 100 mph (Cat 2) Movement: 6 mph WNW

Sustained Wind Speeds: ■ tropical storm >= 34kt/39mph ■ strong tropical storm >= 50kt/58mph ■ typhoon >= 64kt/74mph

■ tropical storm >= 34kt/62kph ■ strong tropical storm >= 48kt/89kph ■ typhoon >= 64kt/118kph



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YES

NO

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MAYBE

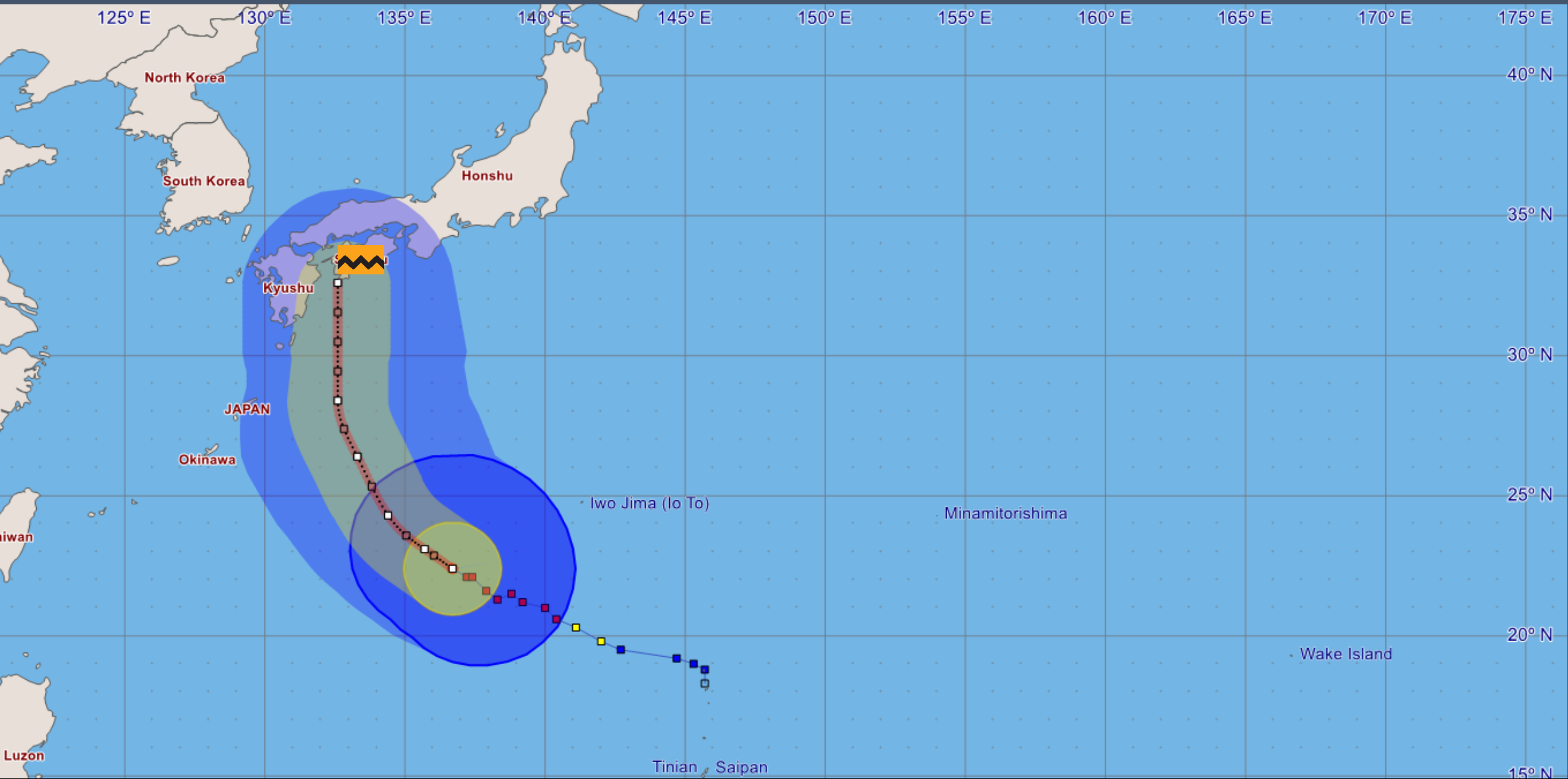
DON'T
KNOW

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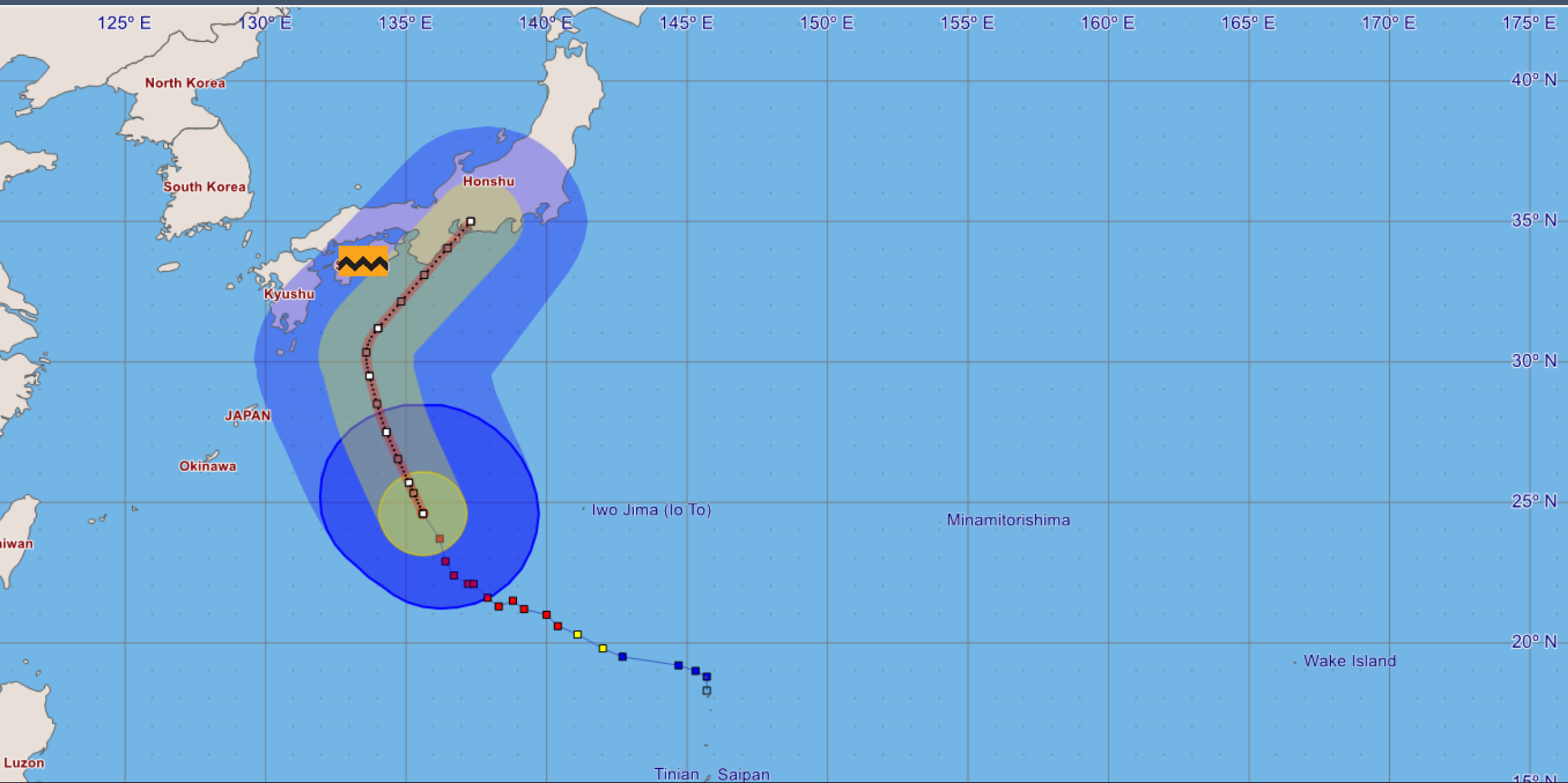
3 Days Out - Severe Tropical Storm Lucy

Center Location: 22.4 N 136.7 E Maximum Sustained Winds: 80 mph (Cat 1) Movement: 9 mph WNW

Sustained Wind Speeds: ■ tropical storm $\geq 34\text{kt}/39\text{mph}$ ■ strong tropical storm $\geq 50\text{kt}/58\text{mph}$ ■ typhoon $\geq 64\text{kt}/74\text{mph}$

■ tropical storm $\geq 34\text{kt}/62\text{kph}$ ■ strong tropical storm $\geq 48\text{kt}/89\text{kph}$ ■ typhoon $\geq 64\text{kt}/118\text{kph}$





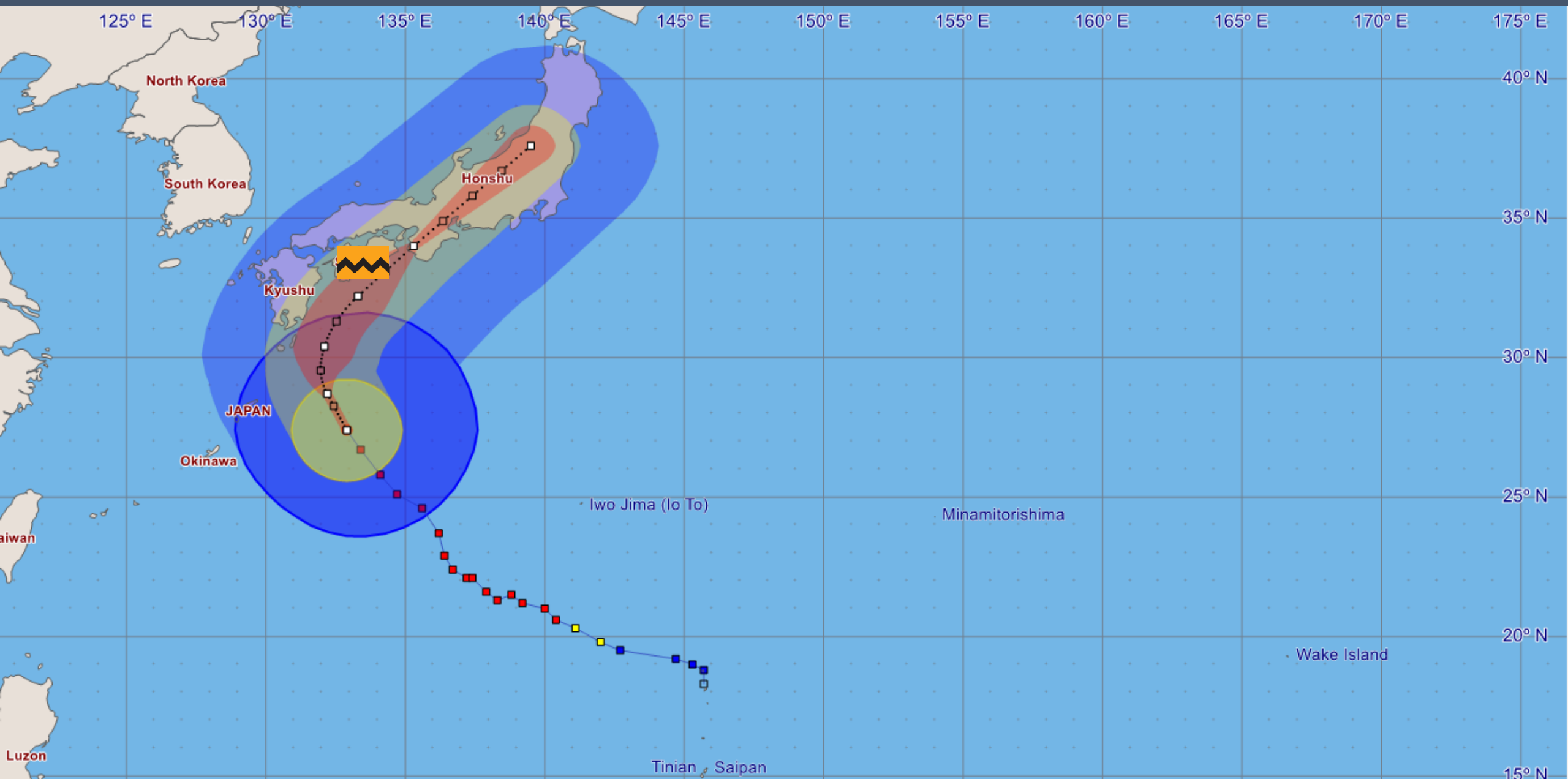
2 Days Out - Tropical Storm Lucy

Center Location: 24.6 N 135.6 E Maximum Sustained Winds: 85 mph (Cat 1) Movement: 9 mph NNW

Sustained Wind Speeds: ■ tropical storm \geq 34kt/39mph ■ strong tropical storm \geq 50kt/58mph ■ typhoon \geq 64kt/74mph

■ tropical storm \geq 34kt/62kph ■ strong tropical storm \geq 48kt/89kph ■ typhoon \geq 64kt/118kph





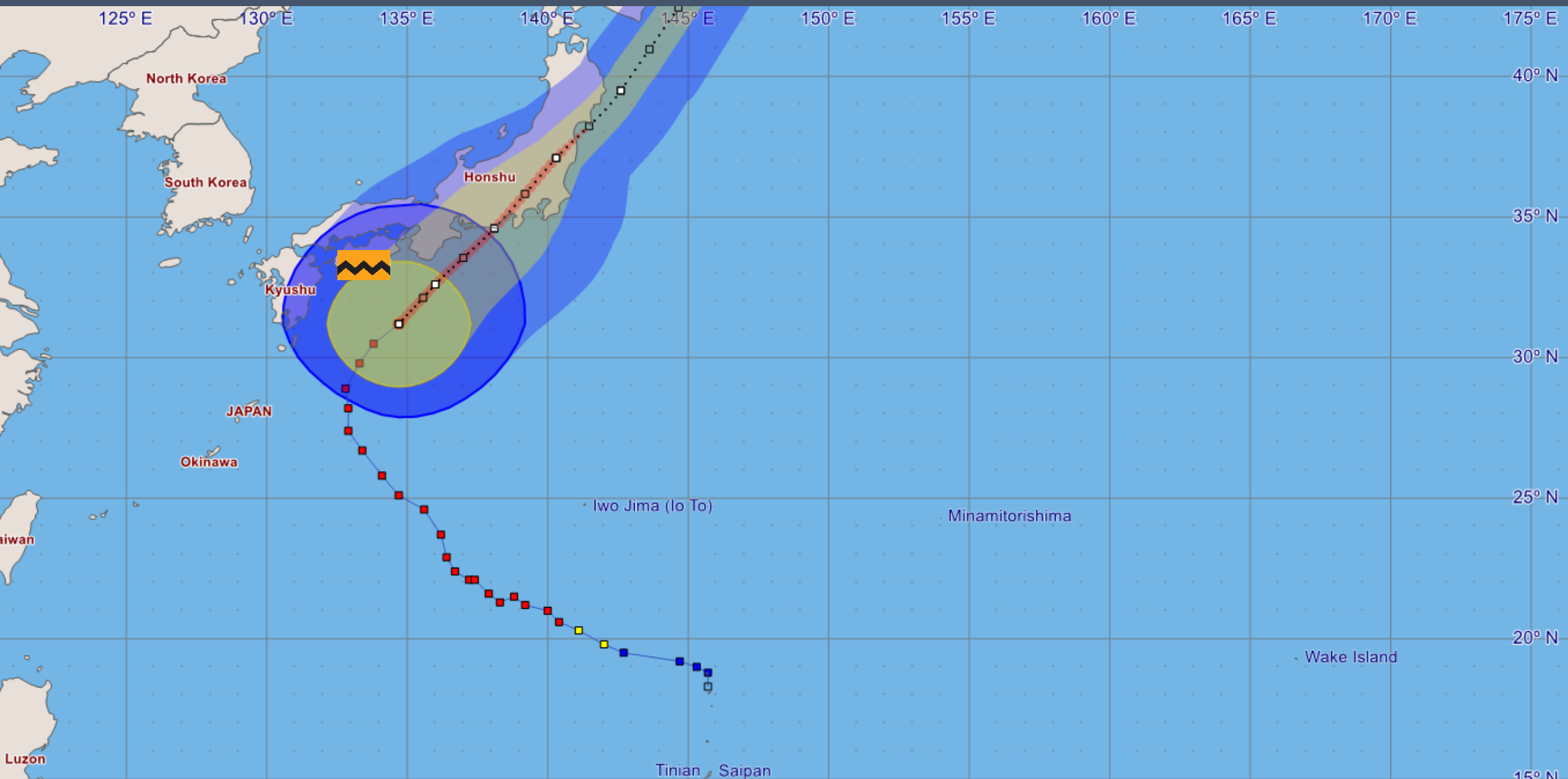
1 Day Out - Typhoon Lucy

Center Location: 27.4 N 132.9 E Maximum Sustained Winds: 110 mph (Cat 2) Movement: 12 mph NNW

Sustained Wind Speeds: ■ tropical storm \geq 34kt/39mph ■ strong tropical storm \geq 50kt/58mph ■ typhoon \geq 64kt/74mph

■ tropical storm \geq 34kt/62kph ■ strong tropical storm \geq 48kt/89kph ■ typhoon \geq 64kt/118kph





Severe Tropical Storm Lucy

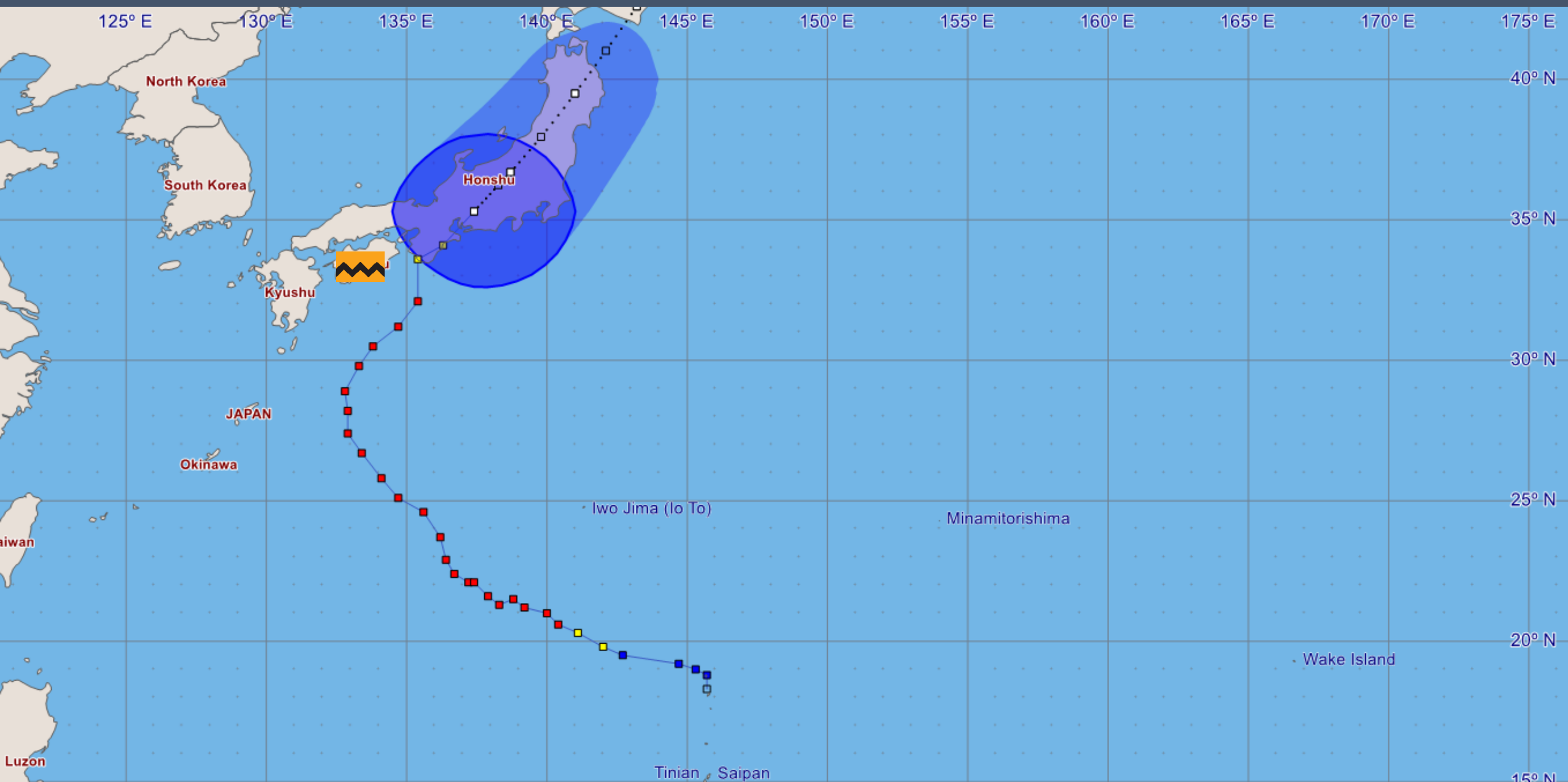
Center Location: 31.2 N 134.7 E Maximum Sustained Winds: 80 mph (Cat 1) Movement: 14 mph NE

Sustained Wind Speeds: ■ tropical storm $\geq 34\text{kt}/39\text{mph}$ ■ strong tropical storm $\geq 50\text{kt}/58\text{mph}$ ■ typhoon $\geq 64\text{kt}/74\text{mph}$

■ tropical storm $\geq 34\text{kt}/62\text{kph}$ ■ strong tropical storm $\geq 48\text{kt}/89\text{kph}$ ■ typhoon $\geq 64\text{kt}/118\text{kph}$







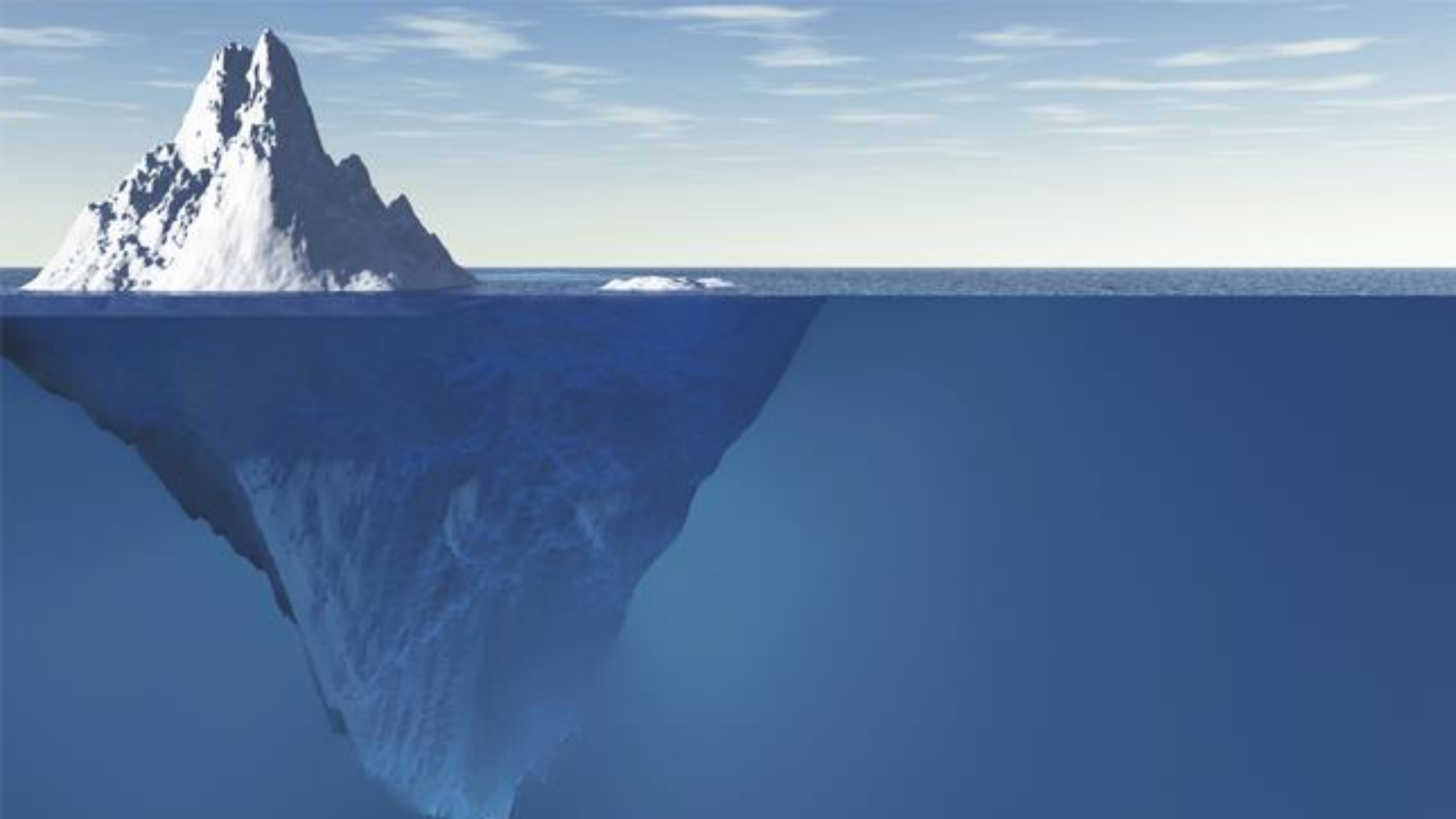
1 Day After - Tropical Storm Lucy

Center Location: 35.3 N 137.4 E Maximum Sustained Winds: 50 mph Movement: 14 mph NE

Sustained Wind Speeds: ■ tropical storm \geq 34kt/39mph ■ strong tropical storm \geq 50kt/58mph ■ typhoon \geq 64kt/74mph

■ tropical storm \geq 34kt/62kph ■ strong tropical storm \geq 48kt/89kph ■ typhoon \geq 64kt/118kph





After Action

- ❑ Name five organizational strengths
- ❑ Name five organizational weaknesses/gaps
- ❑ Next steps in planning and preparing?
- ❑ List and prioritize five short-term and five long-term actions for follow-up