



Tsunami is a verb

National Tsunami Warning Center

Dr. James Gridley,
Dr. Summer Ohlendorf,
Dave Snider

NTWC: Mission

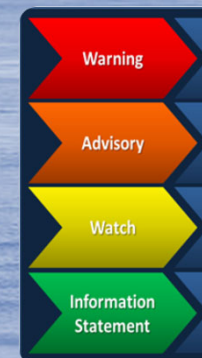
Protect life and property



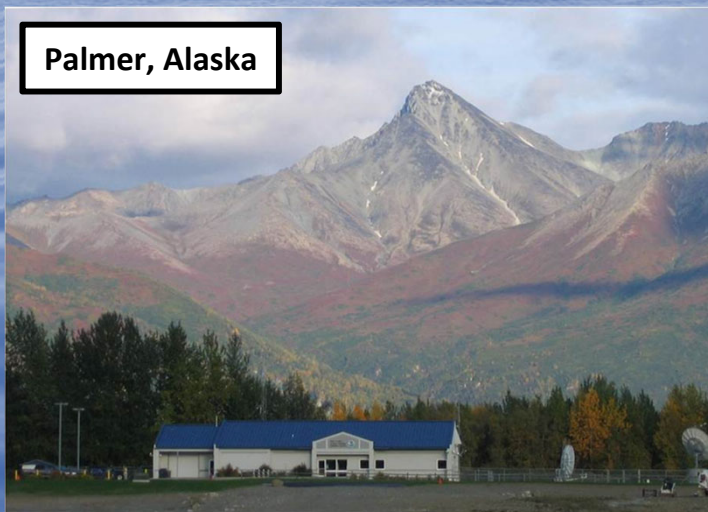
Provide reliable tsunami detection, forecasts, and warnings.

Promote community resilience through collaboration, education, & research.

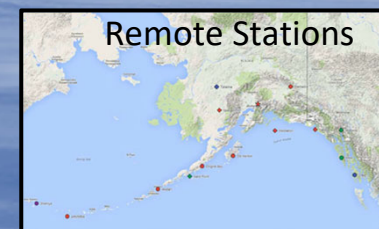
5 minute mandate for Bulletin #1



Palmer, Alaska



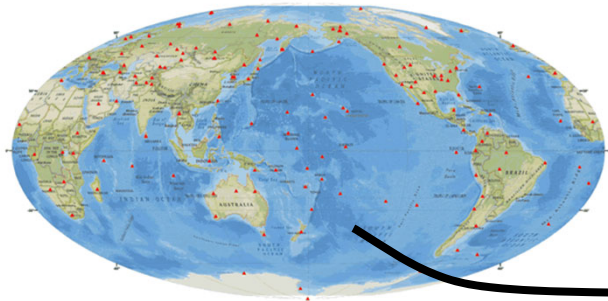
- 24 x 7 Operations, 2 Duty Scientists always on duty
- 10 total Duty Scientists (Physical Scientists)
- Management
- IT Support Staff
- IT Security
- Admin
- Electronics/Field



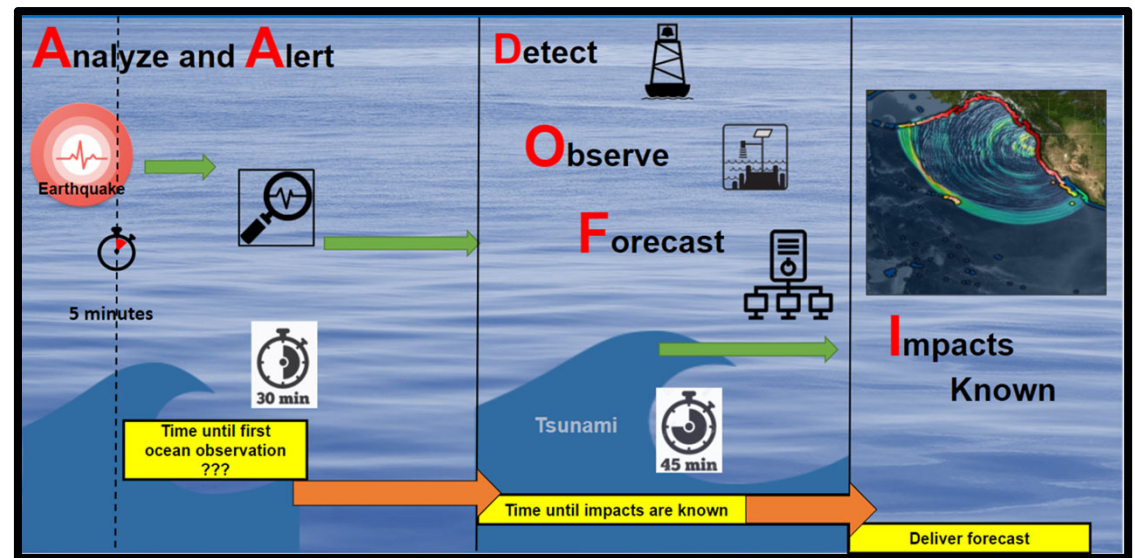
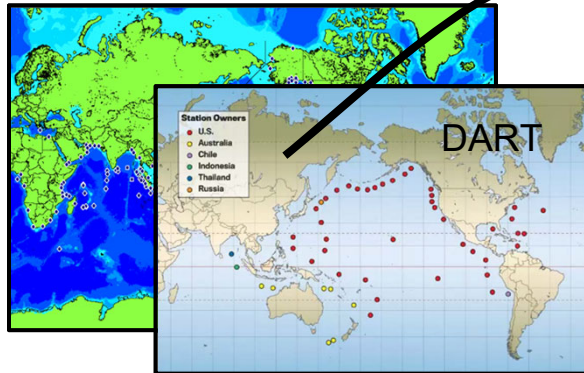


Like a Weather Forecast Office, but NOT.

Seismic Data



Coast Tsunami/Tide Gauges





What have we learned?



What have we learned?

Learned 3 important things this year:

1. "Tsunami" is a verb.
2. If it says "Tsunami", sooner or later it ends up at the Center.
3. The importance of Bulletin #1, and what it means to EM's, WFO's etc.



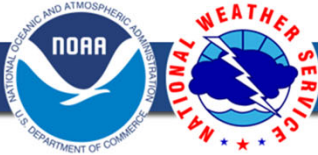
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Challenges

1. New Management/Leadership Team
24x7 Rotating Staff
2. COVID Operations
3. Critically under resourced
4. Synchronization between the TWCs
5. Messaging
6. Barry Arm - Landslide



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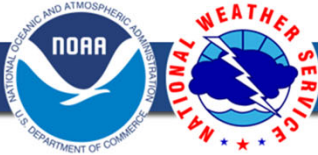
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What are we doing about these challenges and changes?

NTWC Strategic Plan for FY21

Theme: Reducing mission risk by continuous improvement through employee involvement.



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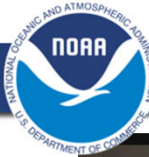
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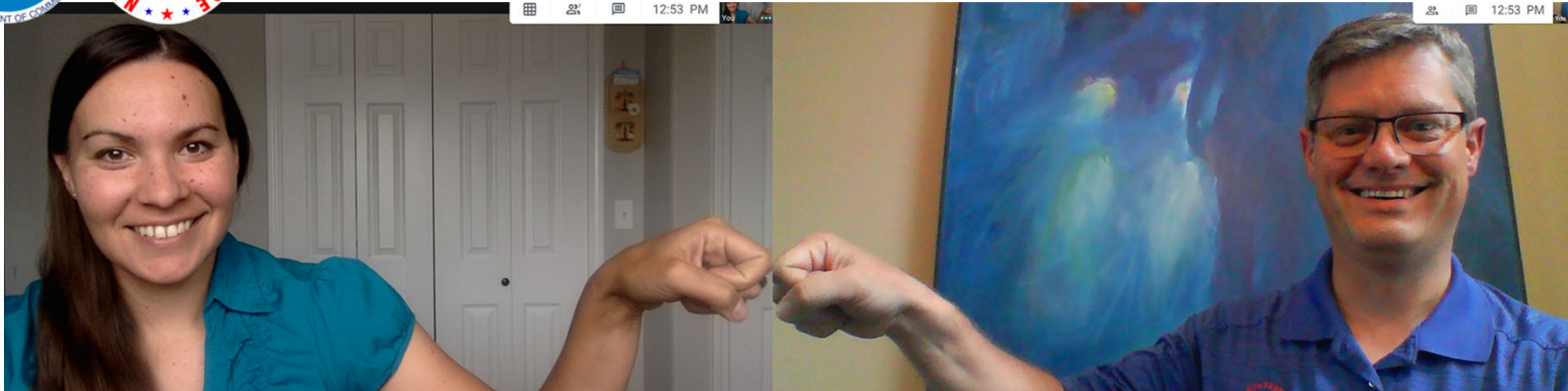
NTWC Strategic Plan for FY21

Theme: Reducing mission risk by continuous improvement through employee involvement.

Timely, Accurate, Actionable, and Predictable



NTWC adds Science Officer & Warning Coordinator



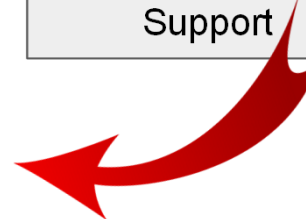
Dr. Summer Ohlendorf, NTWC Science Officer
summer.ohlendorf@noaa.gov

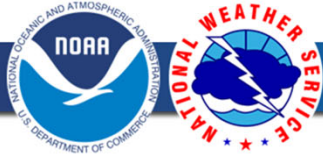
Dave Snider, Tsunami Warning Coordinator
david.snider@noaa.gov

- Observations
- Data Analyses
- Forecast Modeling
- Hazard Procedures & Alerts



- Product Generation
- Dissemination
- Procedures
- Impact-based Decision Support





What does the Science Officer do?

Quality control:
timely and accurate alerts



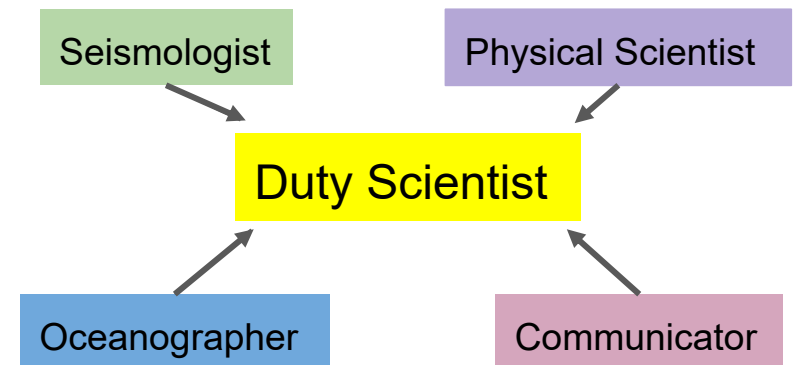
*Identify & implement improvements to
procedures and analysis*



Staff training

*Increase the breadth and depth of our team
members*

Ensure readiness





What does the Science Officer do?

Improve coordination & consistency with PTWC
Staff collaboration, training, approach

Science intra/interagency coordination
Strengthen relationships with NTHMP partners, USGS, PMEL, NCEI, NOS, others

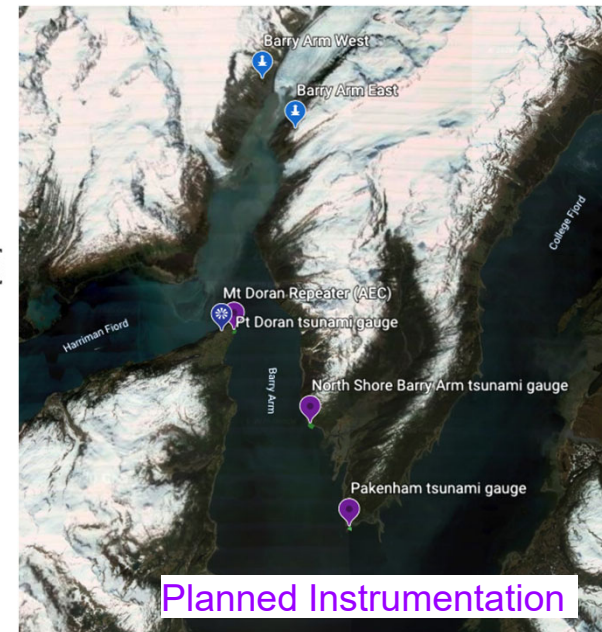
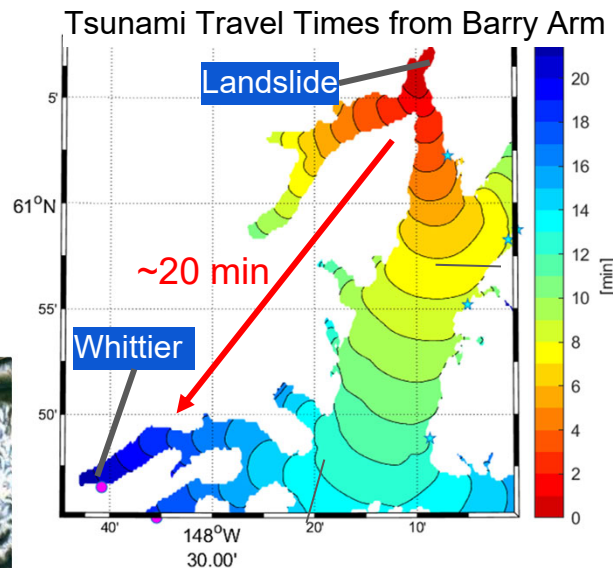
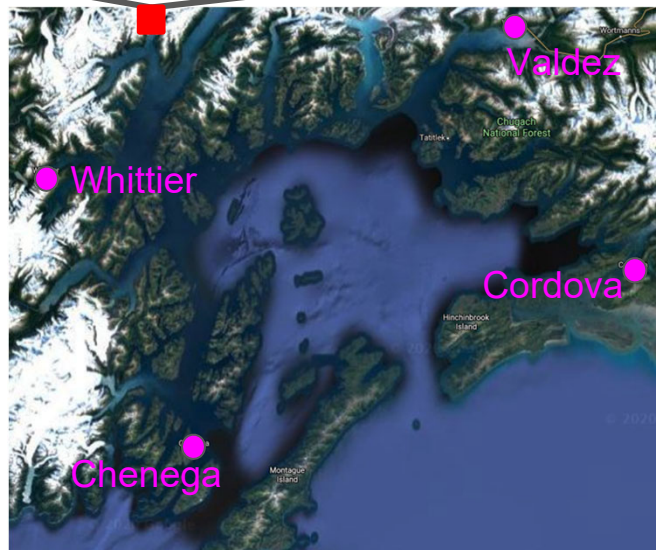
Research to operations
*Stronger ties with academic community
Eye to the future*



YOU
are on
Team Tsunami



Barry Arm Landslide Tsunami Hazard



Want to know more?

AGU Poster: Dec. 9, [NH014-0004](#)



Decision and information timeline

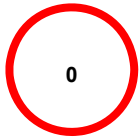


Earthquake

Seismic event
occurs



Decision and information timeline



Earthquake



NTWC Procedural
Decision Point

Seismic event
occurs

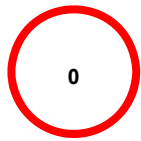
5-min mandate:
-WARNING
-ADVISORY
-WATCH
-INFORMATION
STATEMENT

THIS MAY BECOME
MESSAGE #1 of MANY





Decision and information timeline



Earthquake

**NTWC Procedural
Decision Point**

**Observation &
Detection**

Seismic event
occurs



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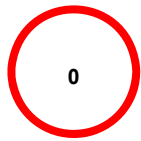
Monitor tide
gauges & buoys
for a tsunami.

Obs used to create
initial forecast.

Forecast is added
to next message.



Decision and information timeline



Earthquake

Seismic event occurs



NTWC Procedural Decision Point

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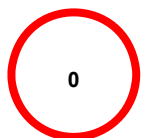
1st Conference Call

Decision-makers get first briefing from NTWC





Decision and information timeline



Earthquake

Seismic event occurs



NTWC Procedural Decision Point

5-min mandate:
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-INFORMATION STATEMENT
THIS MAY BECOME MESSAGE #1 of MANY

FORECAST



Observation & Detection

Monitor tide gauges & buoys for a tsunami.

Obs used to create initial forecast.

Forecast is added to next message.



1st Conference Call

Decision-makers get first briefing from NTWC



Observation & updates

Observations incorporated into event alert and forecast



Next conference call

Repeat the cycle until threat ends

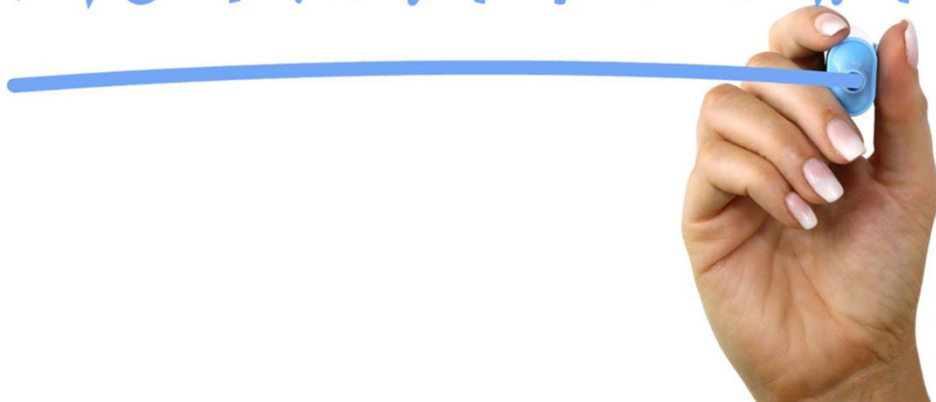
COULD GO ON FOR HOURS OR DAYS



The tsunami warning coordinator will



ACTION PLAN



Elevate & amplify
the NTWC message

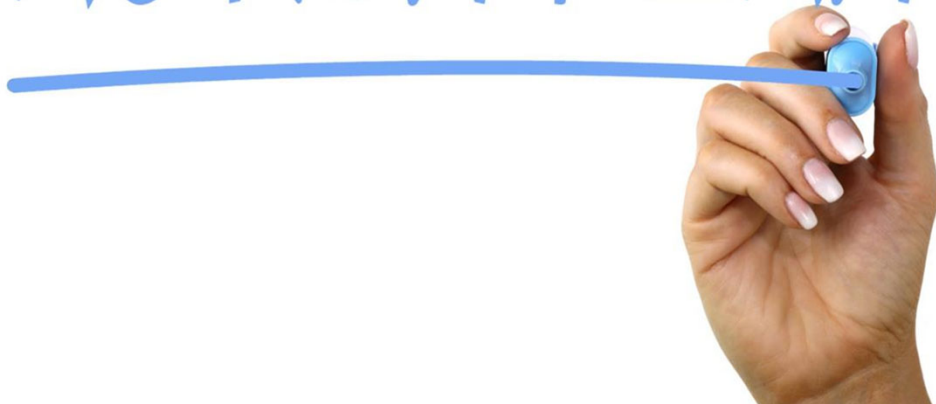
- Work to improve Tsunami Warning Center information for partners and publics
- Encourage the nation's atmospheric science agency in supporting a surface hazard / young seismic science to warning process.
- Reduce confusion and improve action from any message sent across the Tsunami Warning system



The tsunami warning coordinator will



ACTION PLAN



Listen, Learn, & Understand
your group's decision

- **triggers,**
- **thoughts,**
- **actions,**
- and **consequences**
to make the total
warning process better.



What keeps us up at night?

The same things that worry you worry us



- Will the system work?
- Do we have enough information to make the right decision?
- Are we alerting too many people- or not enough?
- Are we communicating effectively?
 - (NTWC = AK, BC, Lower 48)
 - (PTWC = HI and Pacific Islands, CNMI, Carribean).



Caution: Culture Change is here.

Be advised: Conditions are changing.

The National Tsunami Warning Center and Tsunami Warning systems of the past are in flux.

Be ready for change.