Using the Web to Determine Monterey Sea Conditions

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Disclaimer:

Forecasting the weather is an imperfect science.

Use the web to decide whether to DRIVE to Monterey. Decide to DIVE when you get there and see what's really happening.

Things can change very quickly. Stay alert.

The models don't agree exactly on what "swell height" means or on where Monterey is.

Set YOUR Personal Thresholds

- It's not about diving all of the good days but rather about diving none of the bad days.
- If you wonder if you should dive, you probably shouldn't.

- Thresholds vary:
  - experience
  - how often you dive
  - depth
  - sightseer vs. photographer vs. hunter vs. ...
  - own boat vs. commercial boat vs. beach

Glossary

- NWS: National Weather Service
- CDIP ("sea dip"): California Coastal Data Information Program at Scripps Institute
- 46042: Monterey Bay Weather Buoy about 25 miles out.
- FNMOC: U. S. Navy Fleet Numerical Meteorology and Oceanography Center in Monterey

All are taxpayer dollars well spent.

Wind Waves, Wind Chop

- **Generally:**
  - irregular
  - "small" (1-5 feet)
  - short interval (< 6 sec.)
- Formed by local winds
- Makes boat ride and surface swim miserable
- Little effect on the bottom
- Dangers:
  - BIG (6+ feet) can break into boat, can capsize boat, knock people overboard
  - any breaking wave bigger than half the width of your boat is life-threatening
  - seasickness

Swells, aka Rollers

- **Generally**
  - well formed
  - "medium to huge" (5-30 feet)
  - longer interval (>9 seconds)
  - have a well-defined direction (sometimes 2)
- Formed by winds blowing a long way ("fetch") for a long time.
- Causes surge and surf
- Long intervals reach deep
- Dangers:
  - surge while diving
  - surf during beach entry and exit
  - boat motion during diver entry and exit
  - surf during boat launch and retrieval

Combined Seas

- Swell + Wind Chop
- Usually a good indication to stay home

Chuck's Guide to NW Swell Heights

10' - Go only if you've already paid for the boat. And they MAY cancel.

12' - Stay out of the water.

14' - Stay off the beach. Not uncommon in winter.

16' - Stay off Highway One. Occurs a several times each winter.

27' - Head for the hills. Occurs a couple of times each winter.

8' - Typical for Monterey. May be diveable, but I'd rather sort slides.

6' - Passable Diving.

4' - May be worth a vacation day to dive midweek. Not uncommon.

2' - Quit your job. Go diving.

Subtract from forecast:

- 2' if W
- 4' if SW
- 6' if S

Swell Direction Matters

- Northwest is typical
- West is better, but stay off the Pinnacles.
- Southwest - Oh joyous day!
- South - even better, but stay out of Santa Cruz.

Web Resources

- Mark I Eyeball
- NWS Coastal & Marine Forecast (C&M)
- CDIP Monterey Bay Swell Model
- FNMOC WW3 Model
- CDIP Three-Day Model
- CDIP Three-Day Graph

Do beware:

They measure heights a bit differently

They don't use the same color codes

CDIP uses different codes depending on height

Mark I Eyeball

- Examine conditions on-site, in person for at least five minutes
- Make no investment before looking:
  - Don't feed the meter more than one quarter
  - Don't unload gear
- If you don't like conditions, dive elsewhere or elsewhen
- If you're not sure you should dive, you shouldn't.
- It's YOUR life is YOUR responsibility

NWS Coastal & Marine Forecast (C&M)

- Easy to read, text
- Updated (roughly) 3 am, 9 am, 3 pm, 9 pm
- Very occasionally SPECTACULARY wrong
  - The next shift fixes it
- This year has been consistently optimistic
- iPhone-friendly (if you get the text-only version)
- Also available by radio
  - Marine band VHF
  - Radio Shack and Oregon Scientific WeatherRadio
- Forecast Areas:
  - Pigeon Pt. (North of Santa Cruz) to Pt. Pinos (Pacific Grove)
  - Pt. Pinos to Pt. Piedras Blancas (San Simeon)
  - Monterey Bay
    - It's always flat SOMEWHERE in Monterey Bay, usually Santa Cruz
    - DON'T BOTHER with the Monterey Bay forecast, learn to read the offshore forecasts. It's what's coming at you that counts, and you want dive Carmel, right?

NWS Coastal & Marine Forecast (C&M)

PZZ560-100445-
PIGEON POINT TO POINT PINOS TO 10 NM-
254 PM PDT FRI OCT 9 2009

.TONIGHT...NW WINDS 10 KT. WIND WAVES 2 FT OR LESS. NW SWELL 3 TO 4 FT AT 9 SECONDS. PATCHY FOG.
.SAT...NW WINDS 5 TO 10 KT...BECOMING SW IN THE AFTERNOON. WIND WAVES 2 FT OR LESS. NW SWELL 3 FT AT 9 SECONDS. PATCHY FOG.
.SAT NIGHT...W WINDS 10 KT...BECOMING S AFTER MIDNIGHT. WIND WAVES 2 FT OR LESS. NW SWELL 3 FT AT 7 SECONDS. PATCHY FOG.
.SUN...SE WINDS 10 KT...BECOMING S IN THE AFTERNOON. WIND WAVES 2 FT OR LESS. NW SWELL 2 TO 3 FT. PATCHY FOG.
.SUN NIGHT...S WINDS 5 TO 10 KT. WIND WAVES 2 FT OR LESS. SWELL 2 FT OR LESS...BECOMING W 3 TO 4 FT AFTER MIDNIGHT. SWELL 2 FT OR LESS. SLIGHT CHANCE OF RAIN.
.COLUMBUS DAY...S WINDS 15 TO 25 KT. WIND WAVES 3 TO 4 FT... INCREASING TO 4 TO 7 FT. W SWELL 4 TO 6 FT. RAIN LIKELY.
.TUE...S WINDS 30 TO 40 KT. COMBINED SEAS 7 TO 13 FT...INCREASING TO 10 TO 17 FT. RAIN.
.WED...S WINDS 10 TO 20 KT. WIND WAVES 2 TO 4 FT. W SWELL 9 TO 11 FT. NUMEROUS SHOWERS.

NWS Coastal & Marine Forecast (C&M)

Tuesday, 24 Nov 1998 at 12:00:03
PIGEON POINT TO POINT PIEDRAS BLANCAS OUT 20 NM
900 AM PST TUE NOV 24 1998

...HEAVY SURF ADVISORY... (Means DO NOT DIVE)
...SMALL CRAFT ADVISORY FOR HAZARDOUS SEAS... (MAYBE DO NOT DIVE)
.TODAY...SWELL NW 18 TO 23 FT. WIND NW 15 KT OR LESS. WIND WAVES LESS THAN 3 FT.
.TONIGHT...WIND VARIABLE LESS THAN 15 KT. WIND WAVES LESS THAN 3 FT. SWELL NW 15 TO 19 FT.
.WEDNESDAY...WIND VARIABLE LESS THAN 15 KT EXCEPT SE 15 KT NORTH OF POINT SUR. WIND WAVES 3 FT. SWELL NW 12 TO 15 FT.

NWS Coastal & Marine Forecast (C&M)

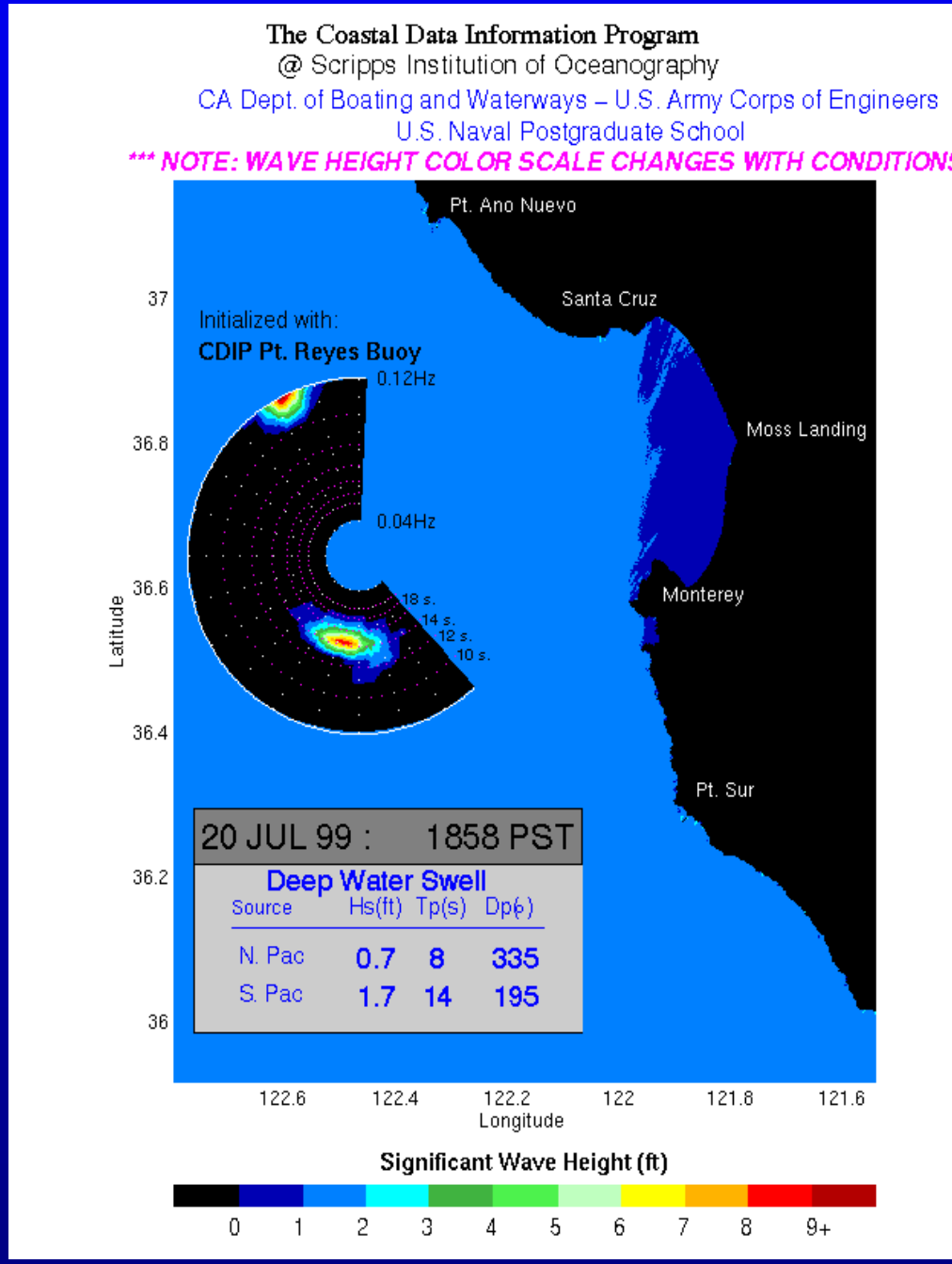
PZZ560-565-302230-
PIGEON POINT TO POINT PINOS TO 10 NM-
POINT PINOS TO POINT PIEDRAS BLANCAS TO 10 NM-
916 AM PDT FRI APR 30 2010

...SMALL CRAFT ADVISORY IN EFFECT THROUGH SATURDAY AFTERNOON...

.TODAY...NW WINDS 15 TO 25 KT. WIND WAVES 3 TO 5 FT.
NW SWELL 6 TO 8 FT AT 11 SECONDS. PATCHY FOG.
.TONIGHT...NW WINDS 15 TO 25 KT. WIND WAVES 3 TO 5 FT.
NW SWELL 8 TO 10 FT AT 11 SECONDS. PATCHY FOG.
.SAT...NW WINDS 15 TO 25 KT. WIND WAVES 3 TO 5 FT.
NW SWELL 7 TO 9 FT AT 10 SECONDS. PATCHY FOG.
.SAT NIGHT...NW WINDS 15 TO 25 KT. WIND WAVES 3 TO 5 FT.
NW SWELL 6 TO 8 FT. PATCHY FOG.
.SUN...NW WINDS 15 TO 25 KT...DECREASING TO 5 TO 15 KT AFTER
MIDNIGHT. WIND WAVES 3 TO 5 FT. NW SWELL 6 TO 8 FT. PATCHY FOG.
.MON...NW WINDS 5 TO 10 KT. WIND WAVES 2 FT OR LESS.
NW SWELL 4 TO 6 FT.
.TUE...NW WINDS 10 TO 20 KT. WIND WAVES 2 TO 4 FT.
NW SWELL 3 TO 5 FT.

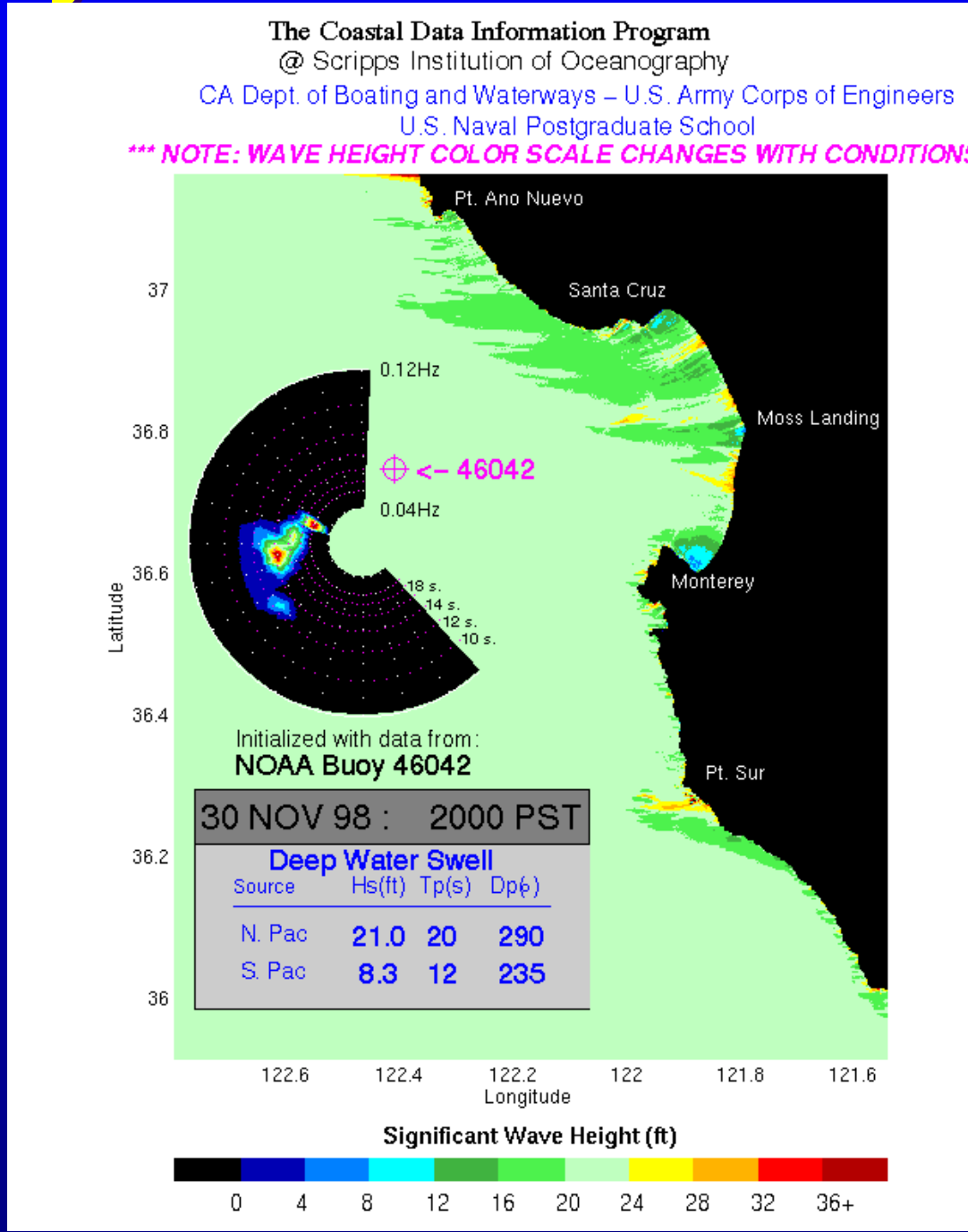
CDIP Monterey Bay Swell Model

- Prepared by Coastal Data Information Program at Scripps
- Data from 46042, analyzed, converted to a map
- Real-time, delayed about two hours
- Color key varies based on max height (UGH!)



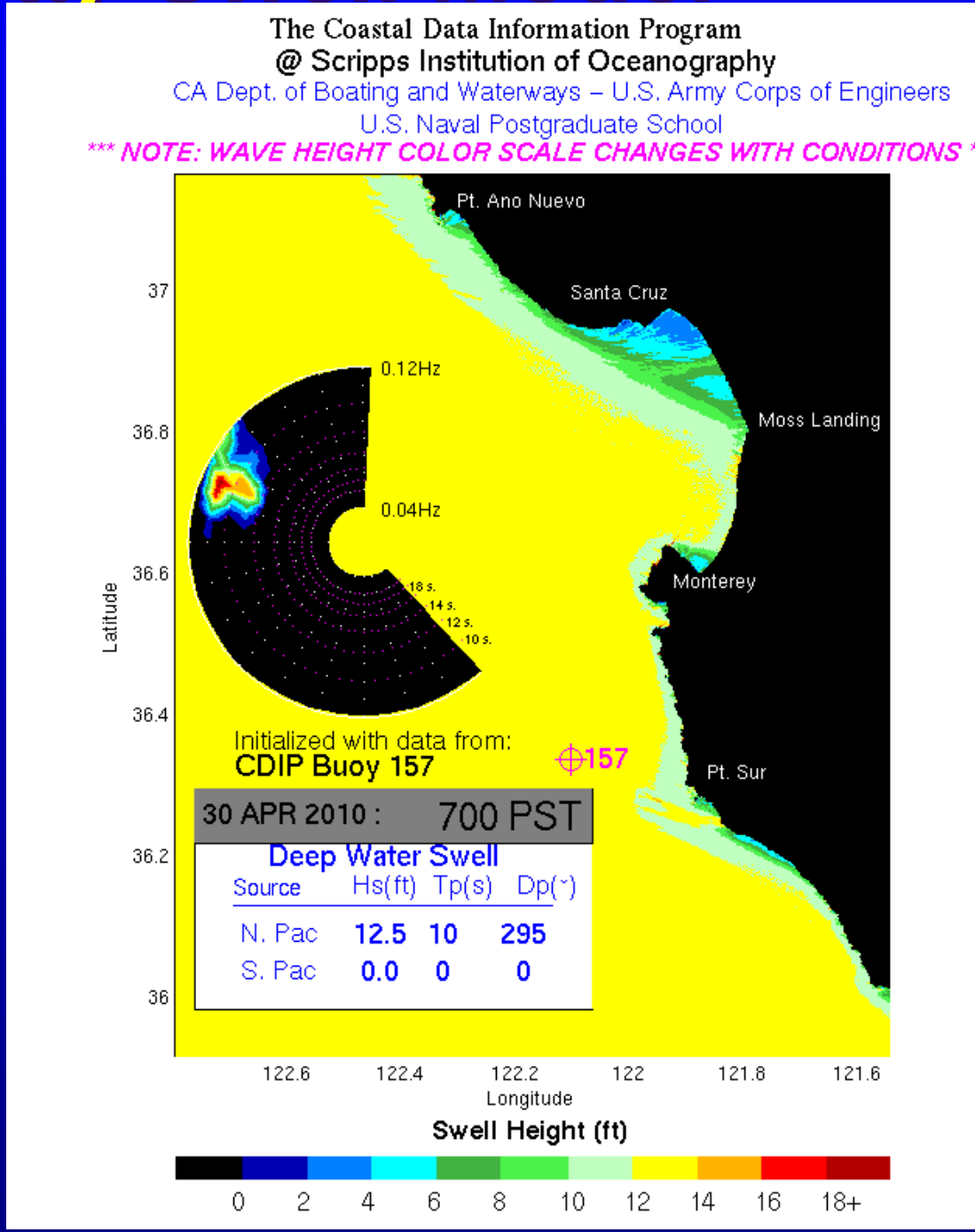
CDIP Monterey Bay Swell Model

- Real big
- But from the West
- Note different color key
- WAAY bigger than I'll dive



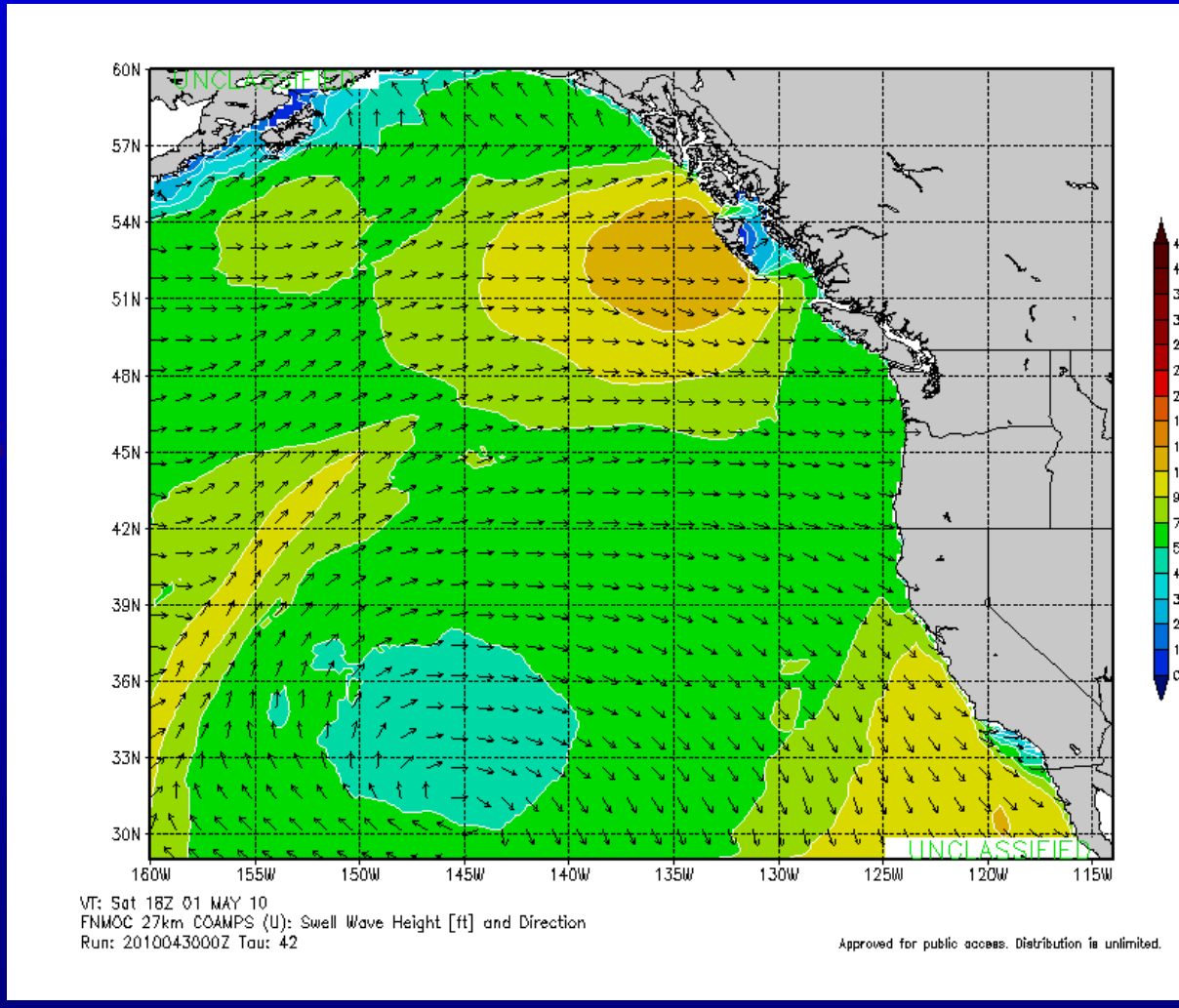
CDIP Monterey Bay Swell Model

- This morning
- West-northwest
- Note yet another color key
- Bigger than I'll dive



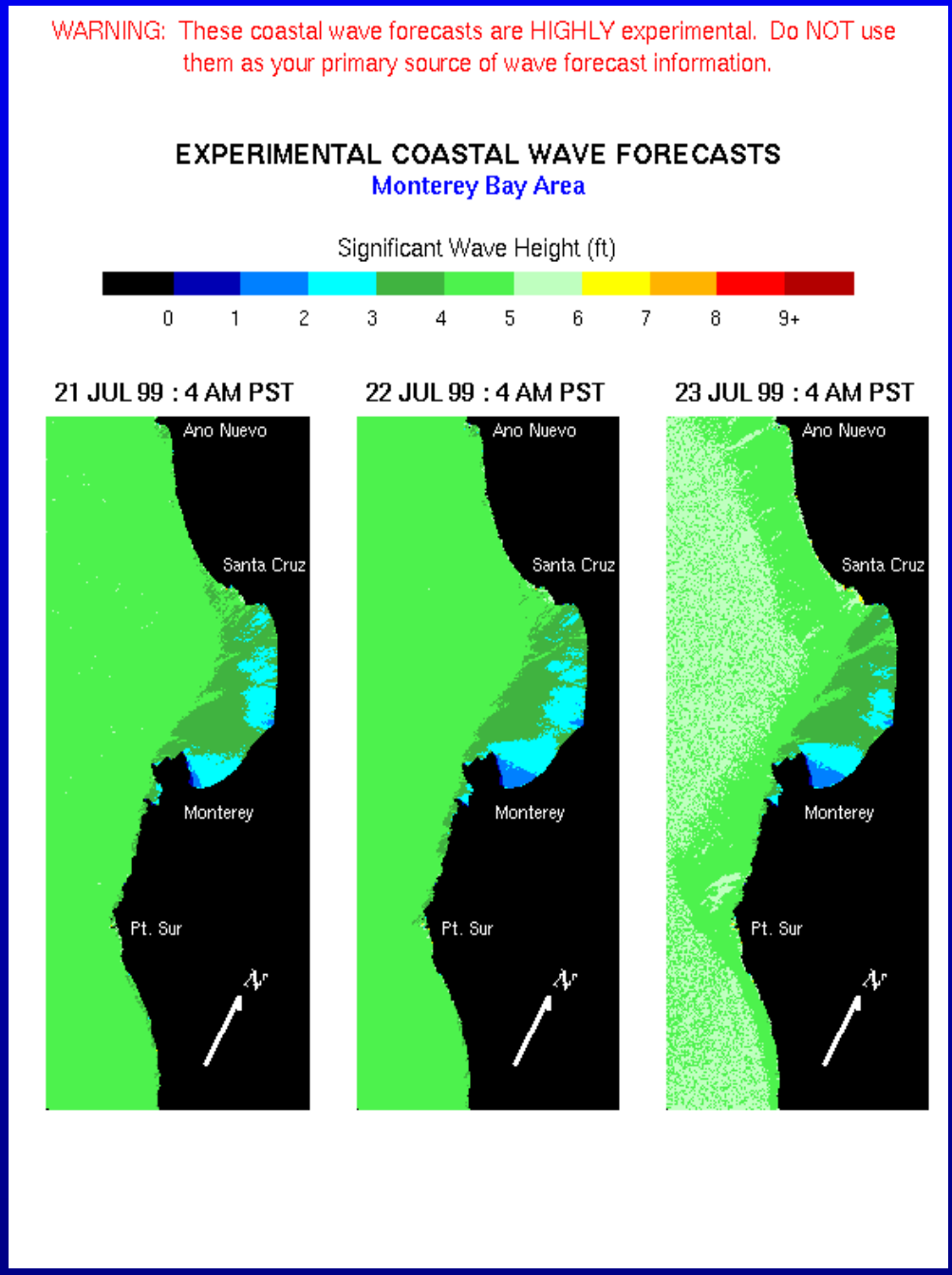
FNMOC WW3

- Sometimes incorrectly called WAM
- Shows swell height and AVERAGE direction
- Underlying data is input to other models
- Assumes everything is deep water
- Six day outlook
- Six day flaky

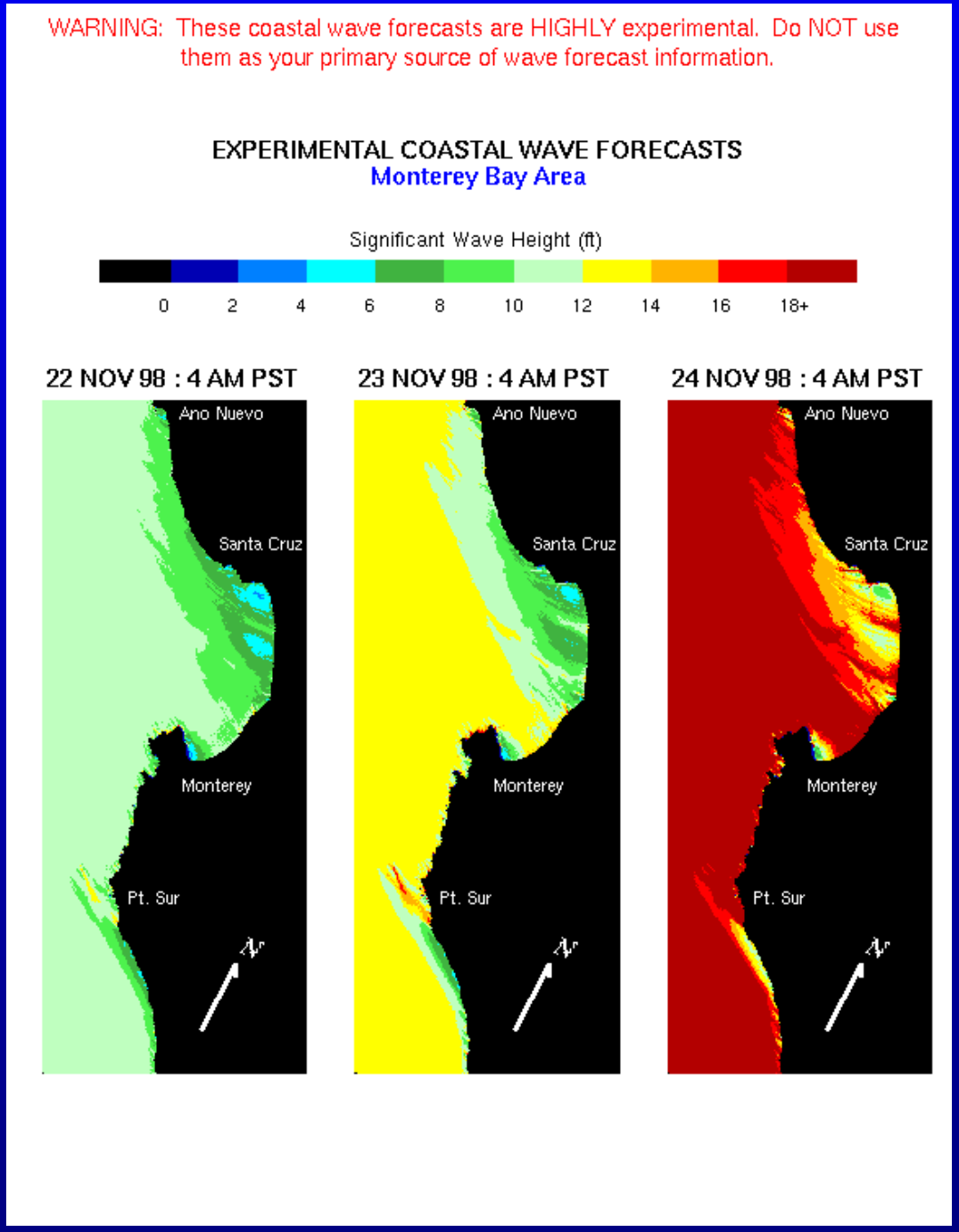


CDIP Three-Day Model

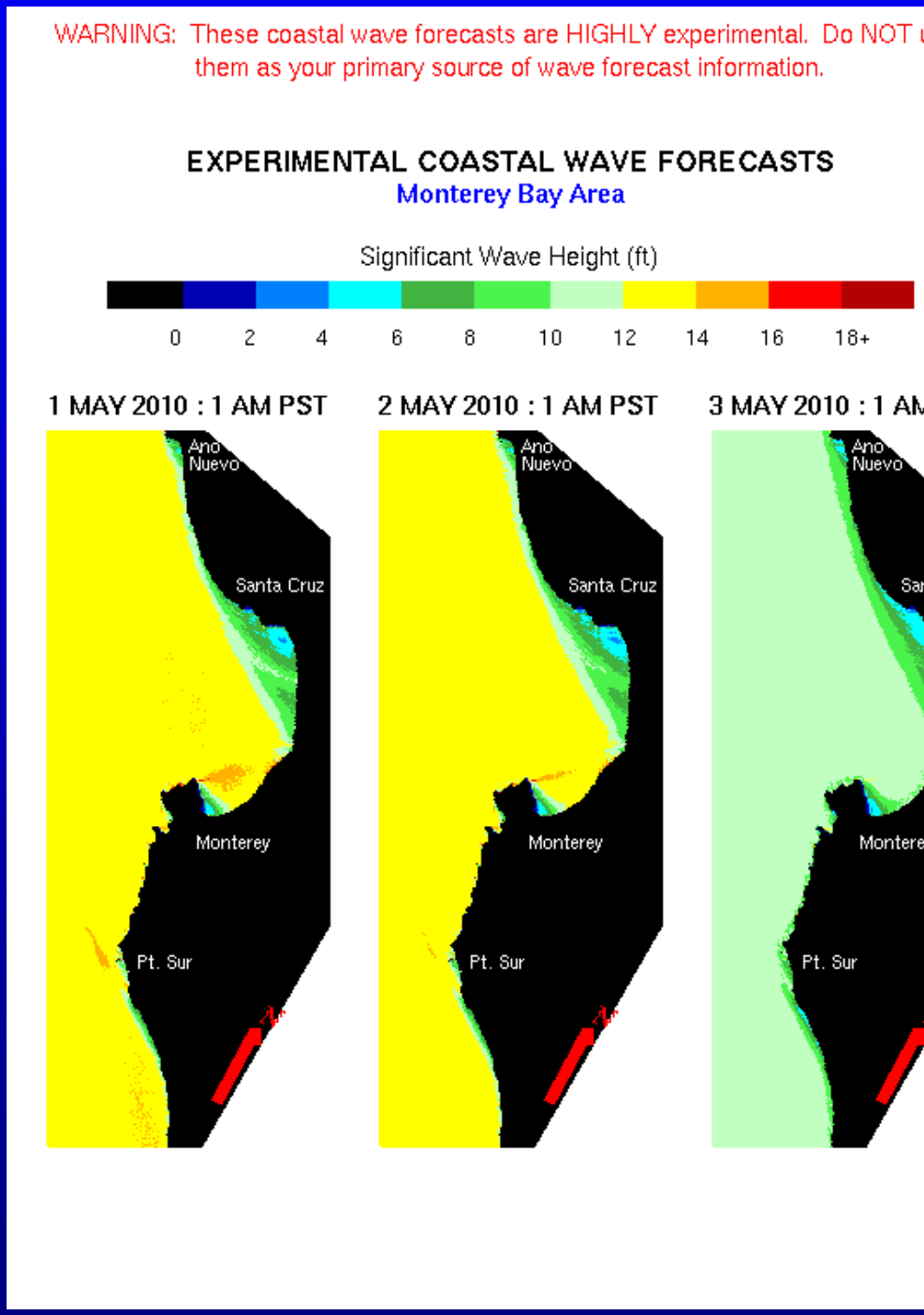
- Starts with Navy height and direction data
- Adjusts for influence of shallow sea floor and land mass
- Good source for where to go
- Color key varies from day to day
- North is not up



CDIP Three-Day Model

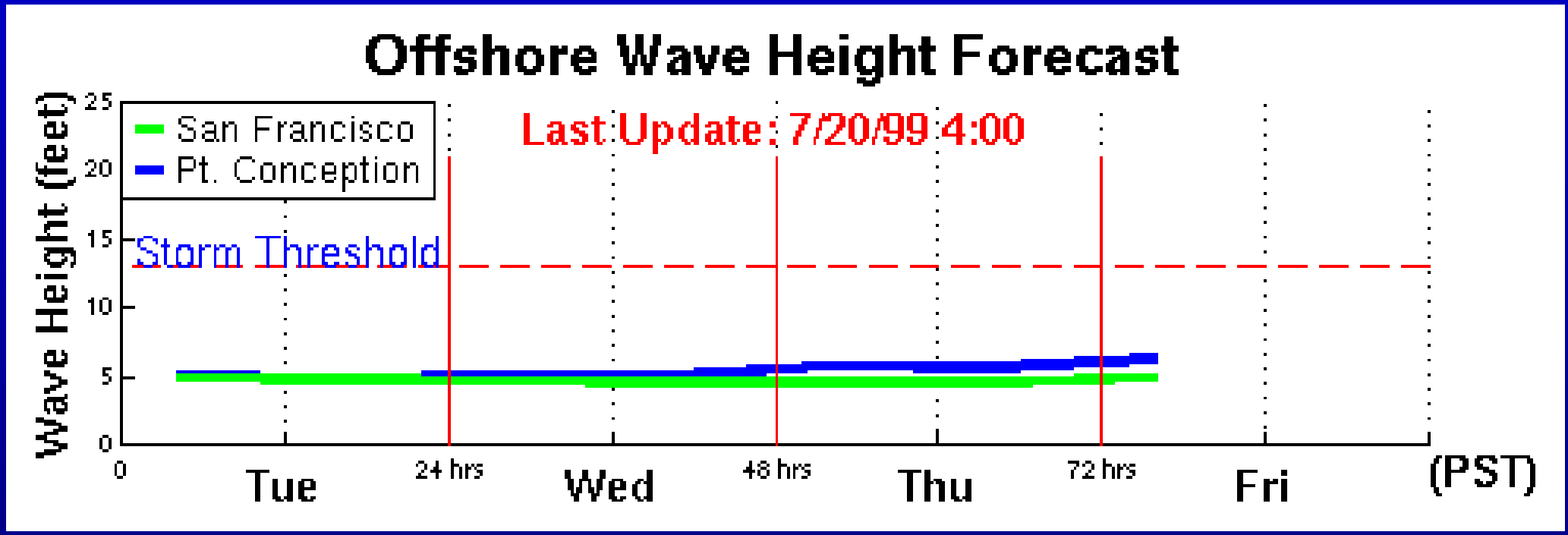


CDIP Three-Day Model

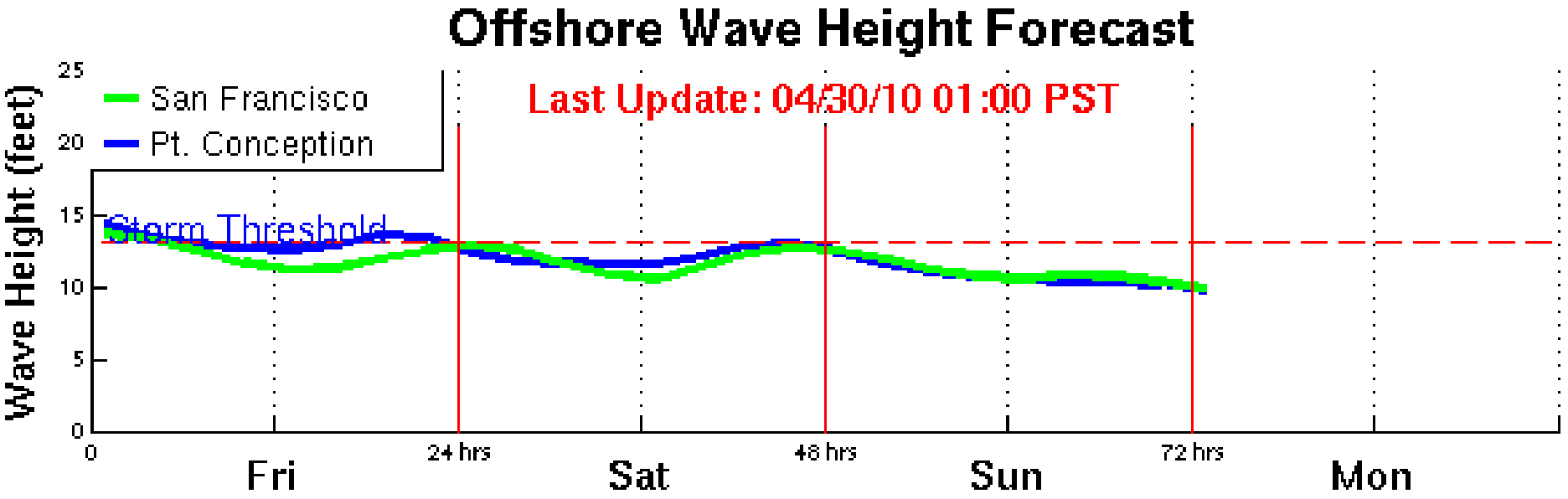


CDIP Three-Day Graph

- Shows height only
- Easy to read
- "San Francisco" really means Monterey Bay, out by 46042.



CDIP Three-Day Graph



The "Barrister Effect"

- Frequently the forecasts improve as the week progresses
- My theory is that they publish the high end of forecast range, and the range gets smaller as the day gets closer

All the Storms are on the Weekend!

- Some years the storms are on the weekend.
- Some years the storms are midweek.

- My THEORY: There's some seven-day resonance in the earth's atmosphere or oceans.
- Lot's of societies have a seven-day week. This may be related.

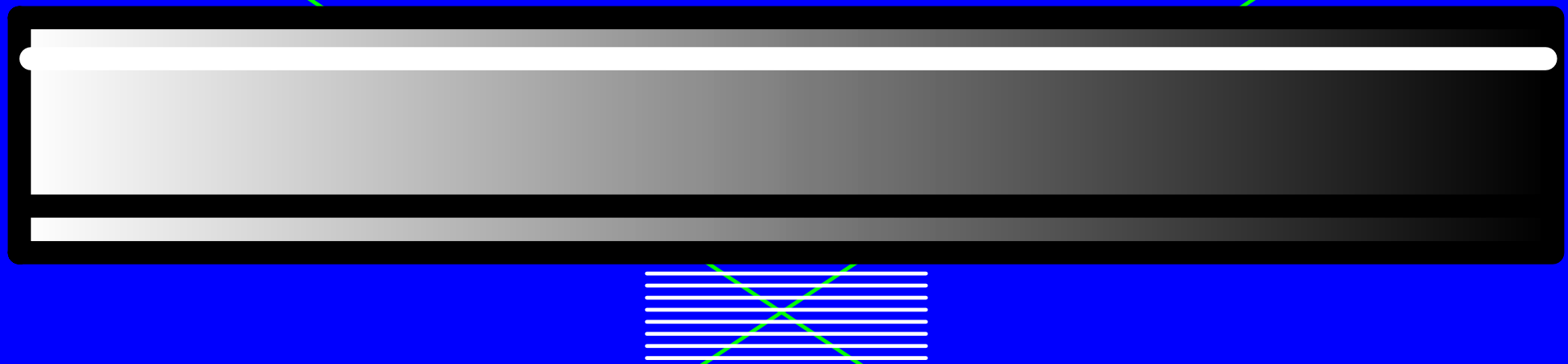
Clues to Stay Home

- "high surf advisory/warning"
- "gale/storm/hurricane warning"
- "with gale-force gusts"
- "combined seas"
- "small craft advisory" (maybe)

- It's not about diving all of the good days but rather about diving none of the bad days
- If you wonder if you should dive, you probably shouldn't.

URLs and Question Time

- Everything in one place:
  - http://www.garlic.com/~triblet/swell/wamglance.html
- NWS Coastal & Marine Forecast:
  - http://www.wrh.noaa.gov/mtr/getcwfzone.php?sid=MTR&zone=PZ560
- CDIP Monterey Bay Swell Model:
  - http://cdip.ucsd.edu/models/monterey.gif
- FNMOC Models
  - https://www.fnmoc.navy.mil/wxmap_cgi/
- CDIP Three-Day Model
  - http://cdip.ucsd.edu/recent/model_images/fm_mon_xxx.png
- CDIP Three-Day Graph
  - http://cdip.ucsd.edu/recent/model_images/fc_summary.png



Improvements needed to pitch:

- Get two consistent sets of graphs.
- Get photos of swells and windchop
- Add info on where to hide from what swells
- Bring in pictures at 1024x768