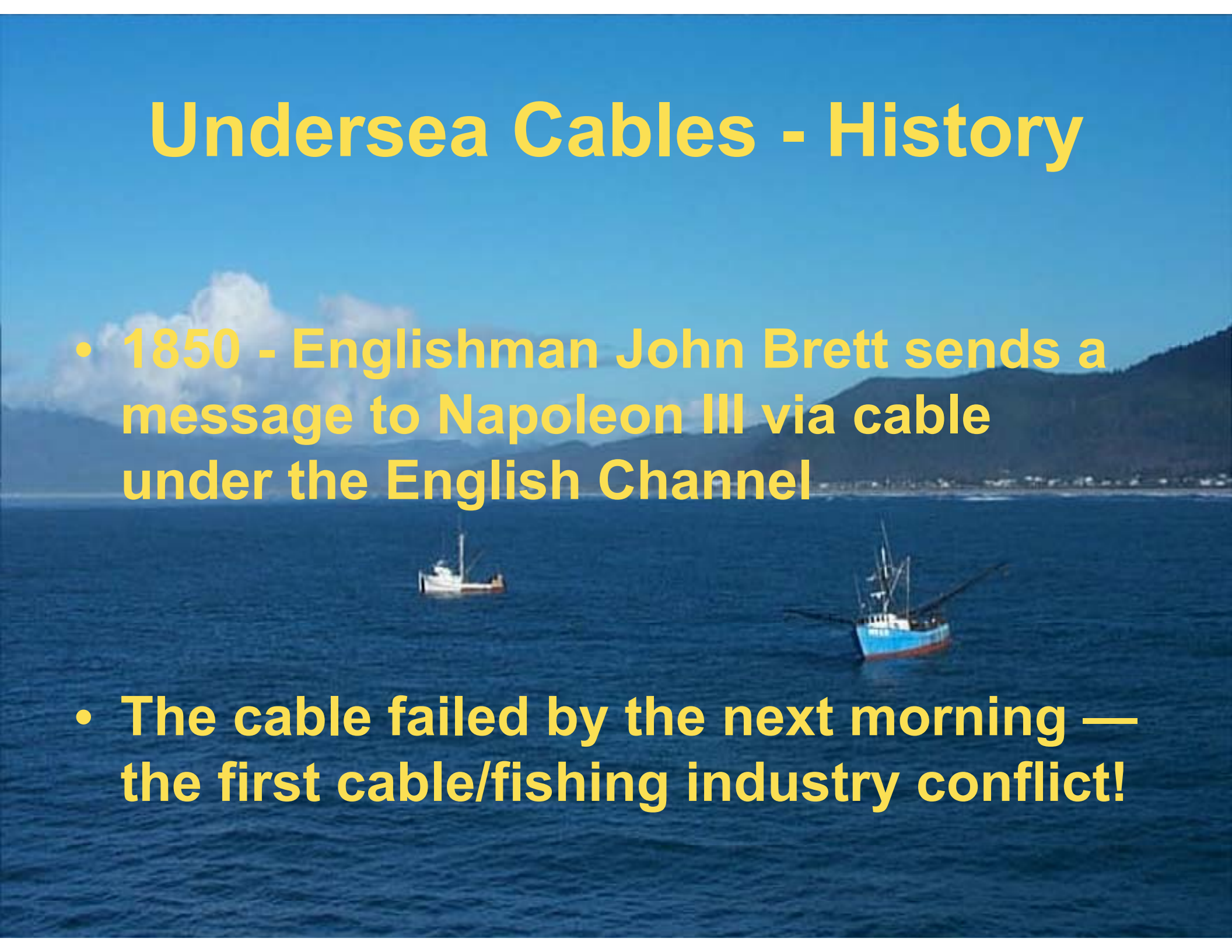
Oregon's Western Connections

Undersea Fiber-Optic Cables Landing on the Oregon Coast

Undersea Cables - History



- 1850 - Englishman John Brett sends a message to Napoleon III via cable under the English Channel
- The cable failed by the next morning — the first cable/fishing industry conflict!

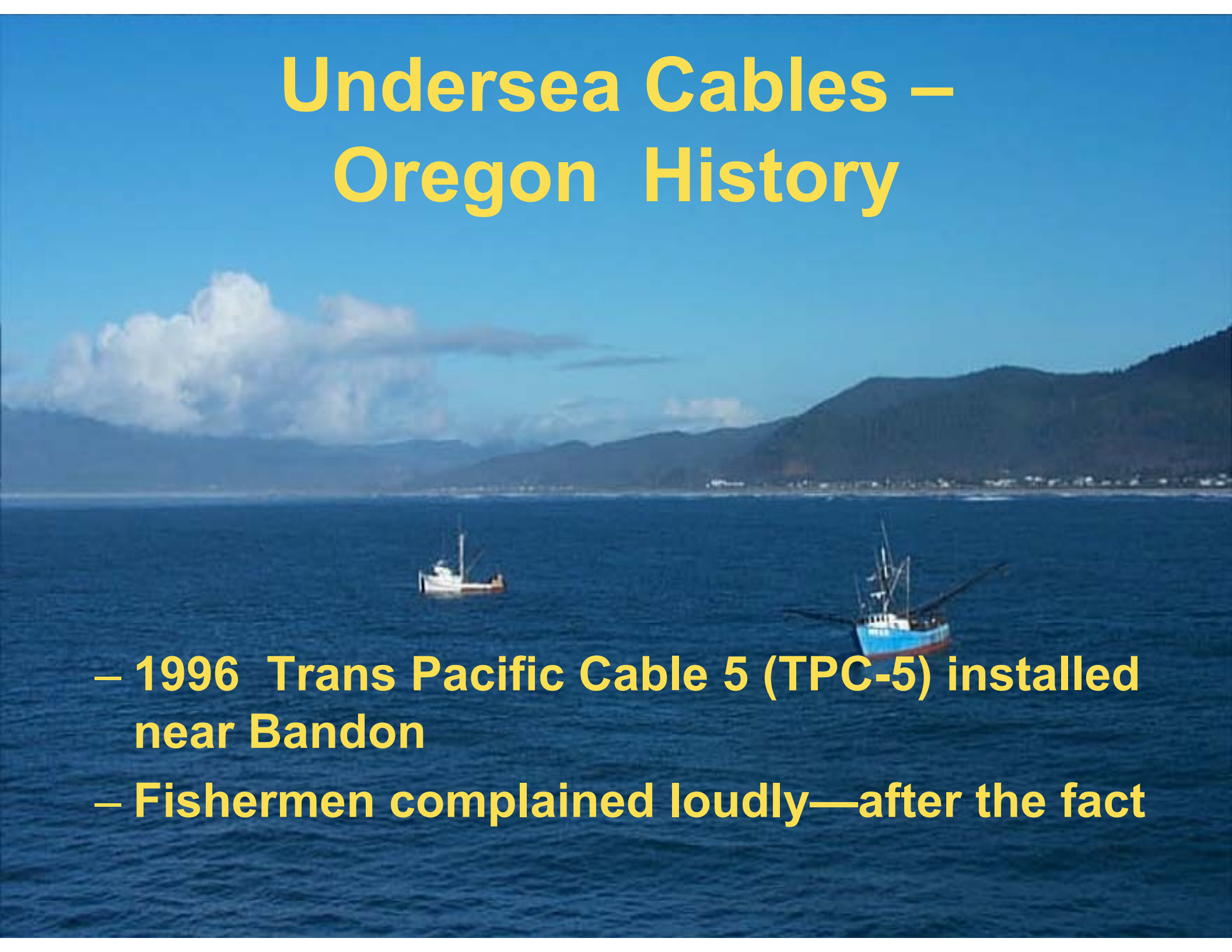
Undersea Cables - History

- 1888 US adopts *The Convention for the Protection of Submarine Cables*
  - Can't impede a cable-laying ship
  - Mariners must sacrifice gear
  - Cable owners must replace gear
- 1958 Convention on the High Seas
  - States (nations) can't prohibit cable laying

Undersea Cables – Oregon History

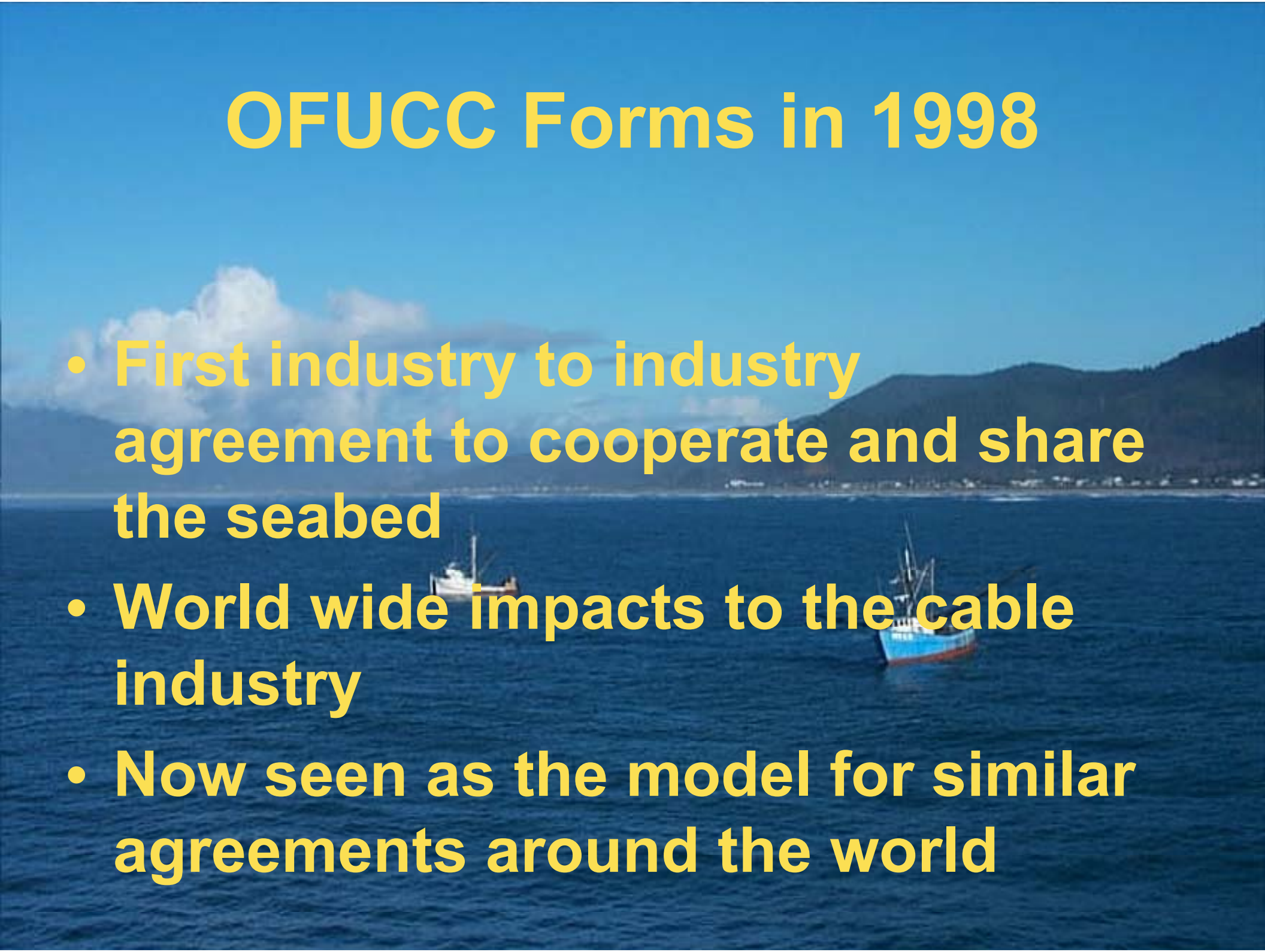
- 1991 North Pacific Cable (NPC) installed at Pacific City
- 1995 F/V Venture West sued for damages to NPC. Settled by insurance company for $1.2M+

Undersea Cables – Oregon History



- 1996 Trans Pacific Cable 5 (TPC-5) installed near Bandon
- Fishermen complained loudly—after the fact

OFUCC Forms in 1998

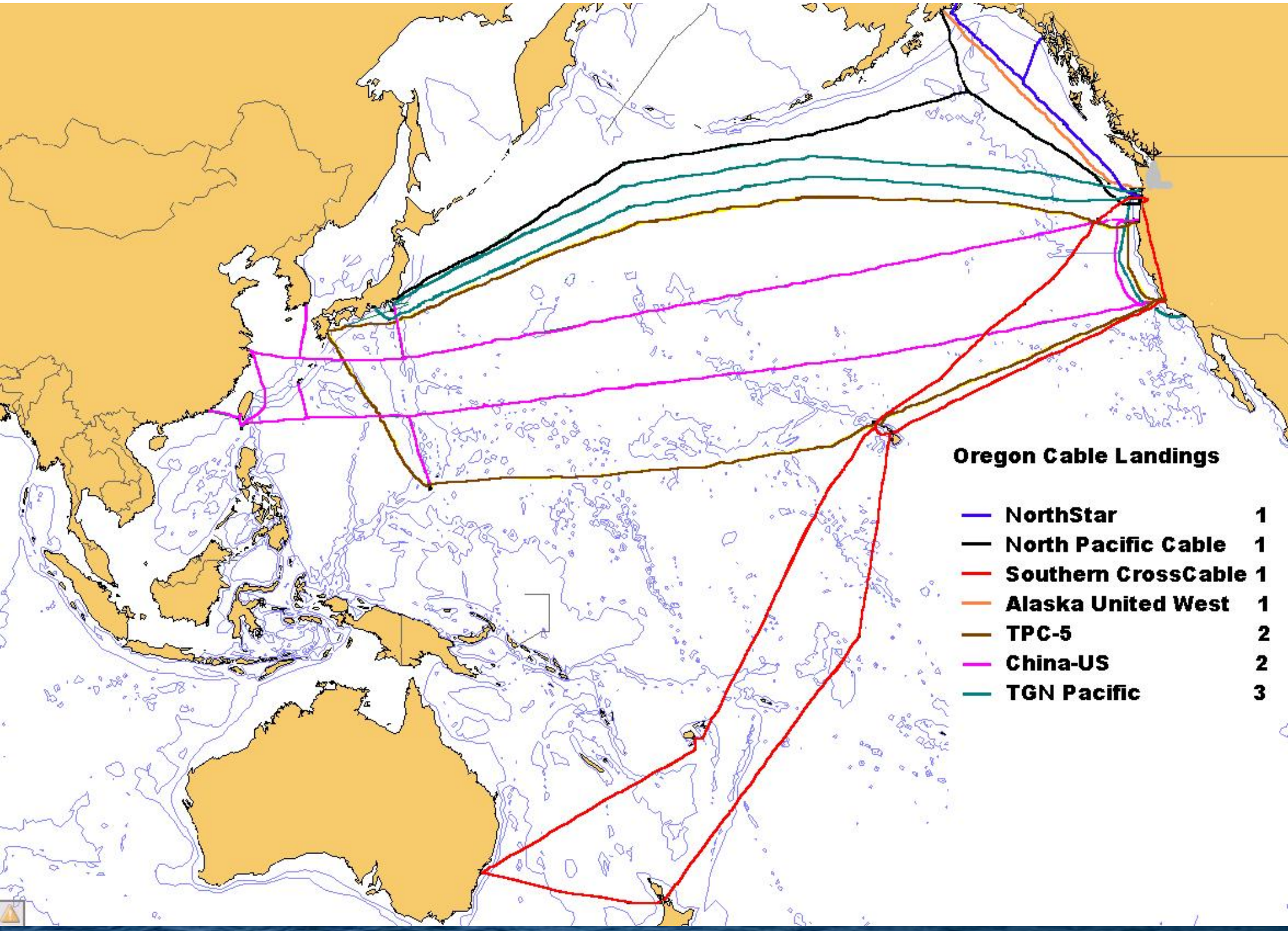


- First industry to industry agreement to cooperate and share the seabed
- World wide impacts to the cable industry
- Now seen as the model for similar agreements around the world

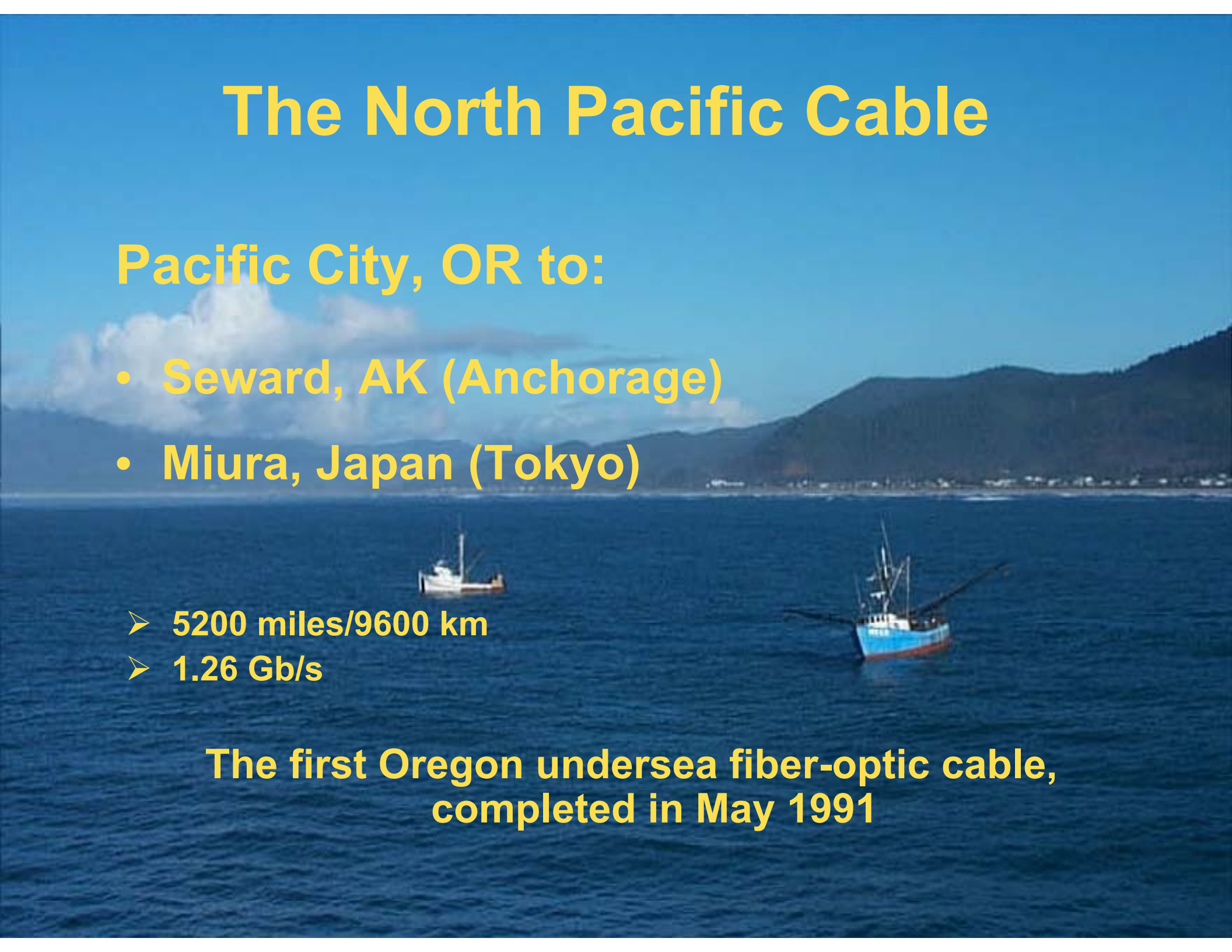
Oregon Fishermen's Cable Committee

- Works cooperatively between trawl fishermen and undersea cable owners
- Helps cable owners to find routes that allow for good burial in the seafloor
- Educates the fleet about submarine cables

Oregon's Undersea Cables


Oregon Cable Landings
NorthStar 1
North Pacific Cable 1
Southern CrossCable 1
Alaska United West 1
TPC-5 2
China-US 2
TGN Pacific 3

The North Pacific Cable



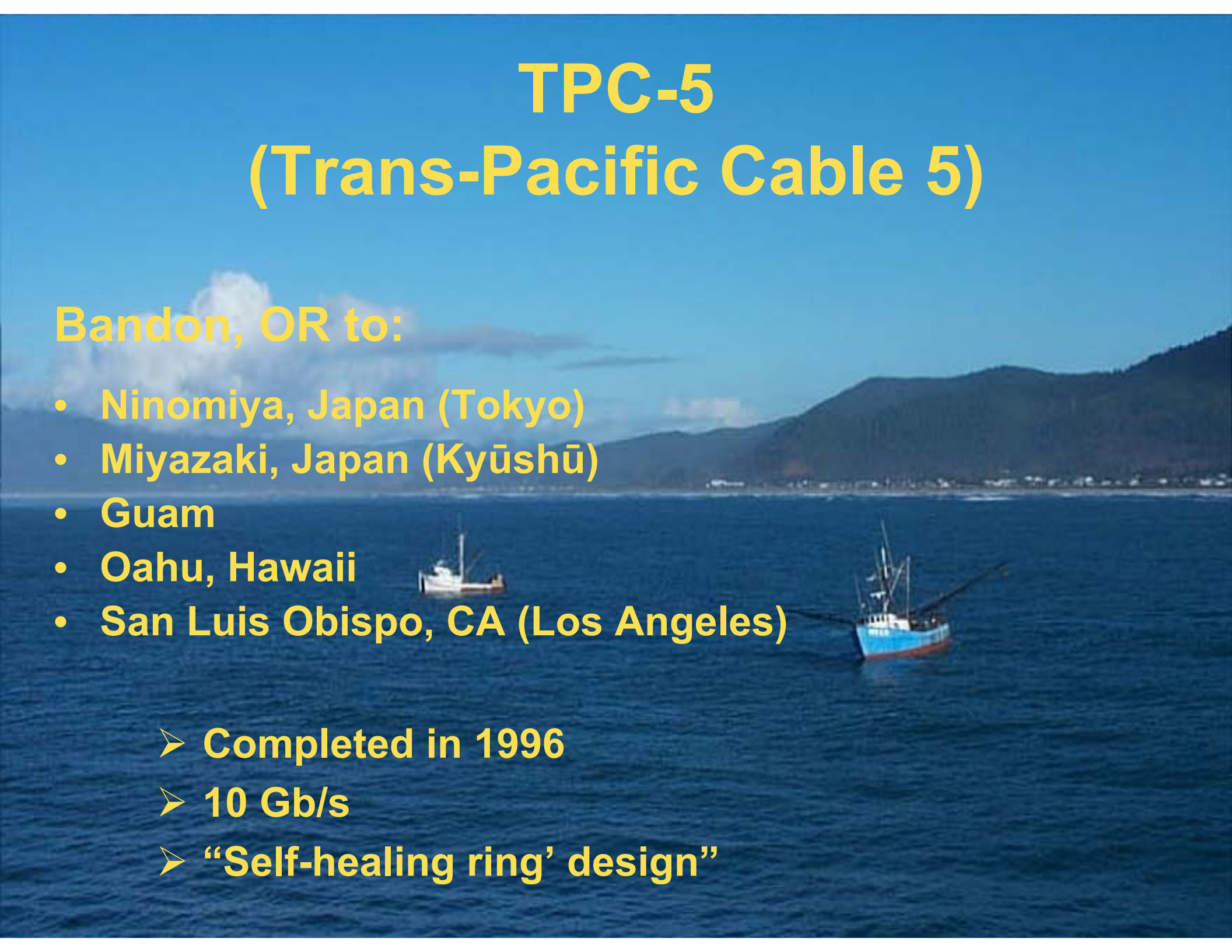
Pacific City, OR to:

- Seward, AK (Anchorage)
- Miura, Japan (Tokyo)

- 5200 miles/9600 km
- 1.26 Gb/s

The first Oregon undersea fiber-optic cable, completed in May 1991

TPC-5
(Trans-Pacific Cable 5)



Bandon, OR to:

- **Ninomiya, Japan (Tokyo)**
- **Miyazaki, Japan (Kyūshū)**
- **Guam**
- **Oahu, Hawaii**
- **San Luis Obispo, CA (Los Angeles)**

- **Completed in 1996**
- **10 Gb/s**
- **“Self-healing ring’ design”**

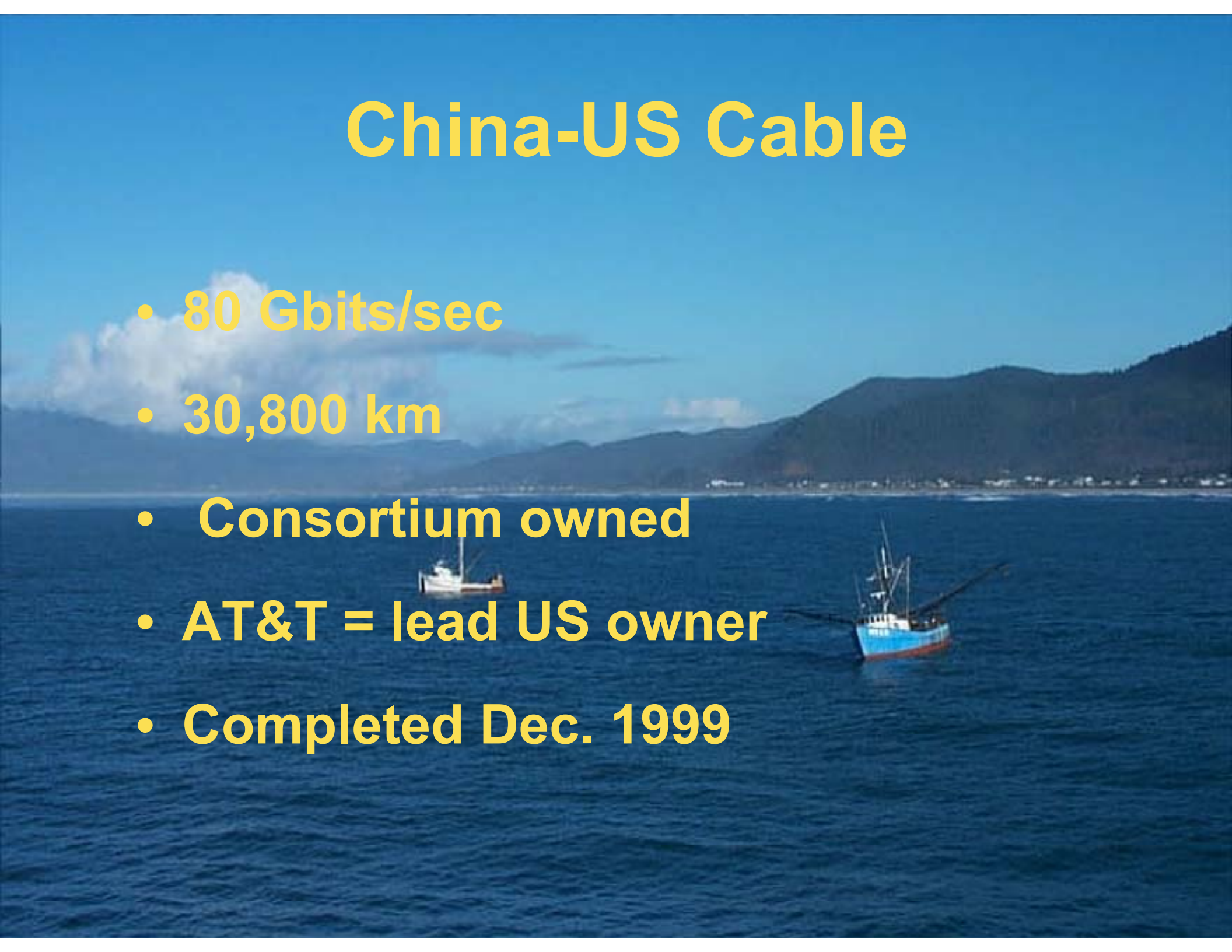
NorthStar Cable

- Nedonna, OR to:
  - Juneau
  - Whittier
  - Fairbanks
  - Hillsboro/Portland
- In service since Oct. 1999
- 15 Mb/s

The China-US Cable System

- Connects from Bandon, OR to:
  - Chikura, Japan (Tokyo)
  - Pusan, Korea
  - Chongming, China (Shanghai)
  - Fangshan, Taiwan
  - Shantou, China (Hong Kong)
  - Okinawa
  - Guam
  - San Luis Obispo (Los Angeles)

China-US Cable



- 80 Gbits/sec
- 30,800 km
- Consortium owned
- AT&T = lead US owner
- Completed Dec. 1999

Southern Cross

- “Ring” design- figure 8 with Hawaii in the middle
- Planned for California
- Second OFCC Member cable
- Connects US West coast to Hawaii, Australia and New Zealand

Southern Cross: Lightning Fast to the Western Pacific

- **The Southern Cross Cable (640 Gbps) is capable of transferring from the US West Coast to Australia:**
  - **A 3 km-high stack of typed documents**
  - **Eight full-length motion pictures, or…**
  - **Simultaneously transporting one million independent video streams at DVD quality**

EVERY SECOND!!!

The Tyco Global Network Cables

- **Connects Portland and Los Angeles to Emi and Toyohashi, Japan**
  - **Designed Capacity 7.68 Terabits/second**
  - **12 X bigger capacity than Southern Cross**

At full capacity, the stack of typed documents transmitted in one second would be over 22 miles high!

The Tyco Global Network

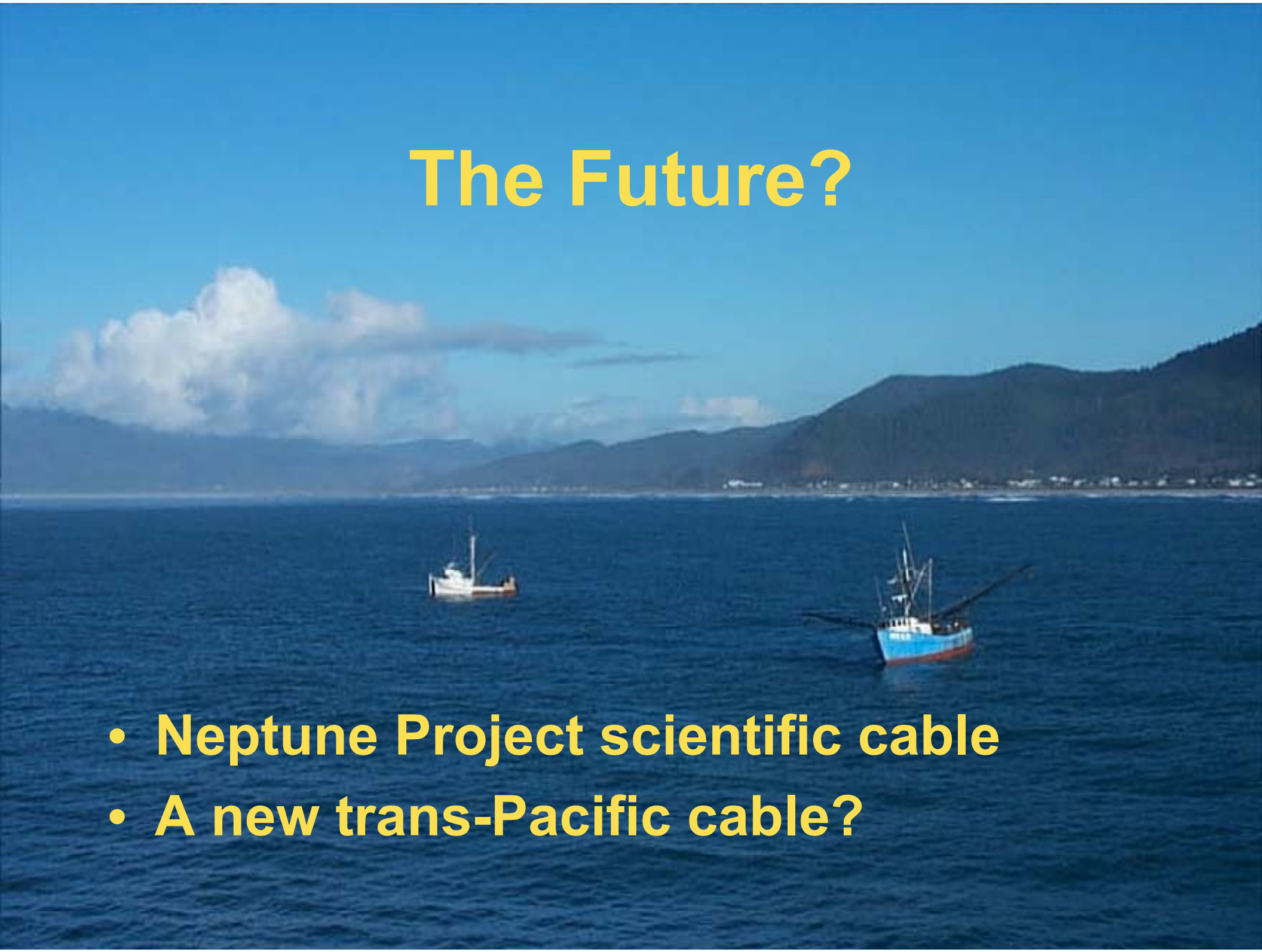
Alaska United West Cable

- Warrenton, OR to Seward, AK
- 640 Gb/s
- Completed in 2004
- $50 Million cost

Light Speed

- The total transmission delay between Oregon and Sydney is 70 milliseconds — 7/100ths of one second!

The Future?



- Neptune Project scientific cable
- A new trans-Pacific cable?


OREGON FISHERMEN'S
CABLE COMMITTEE
Thank you for your time and attention!
2004