

Topics:

- ↳ What is sand?
- ↳ Where does it come from?
- ↳ Waves and wave energy
- ↳ How global climate change will influence waves and wave transport
- ↳ Dune types and formation
- ↳ Natural dune communities
- ↳ Introduced beachgrass and influence on beach and dunes
- ↳ Surf zone and sand dwelling organisms and food web
- ↳ Snowy plover biology
- ↳ Oregon beach law
- ↳ Field trip

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- The Oregon coast now
- What is sand?
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Oregon coast:

- 2/3 sandy beach
- 1/3 rocky shore
- Pocket beaches bordered by rocky headlands

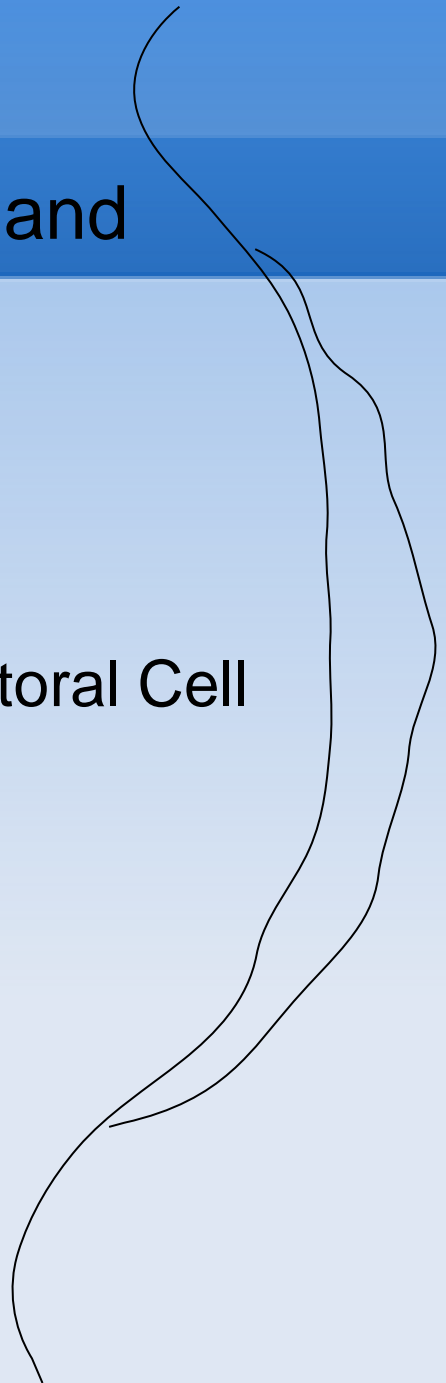


Headland

Littoral Cell

Pocket beach

Headland





(3) Cape Falcon to Cape Meares; 25 km

10 Oregon Littoral Cells

Tillamook Head

Cape Falcon

Cape Meares

Cape Lookout

Cape Kiwanda

Cascade Head

Cape Foulweather

Yaquina Head

Cape Perpetua

Heceta Head

Cape Arago

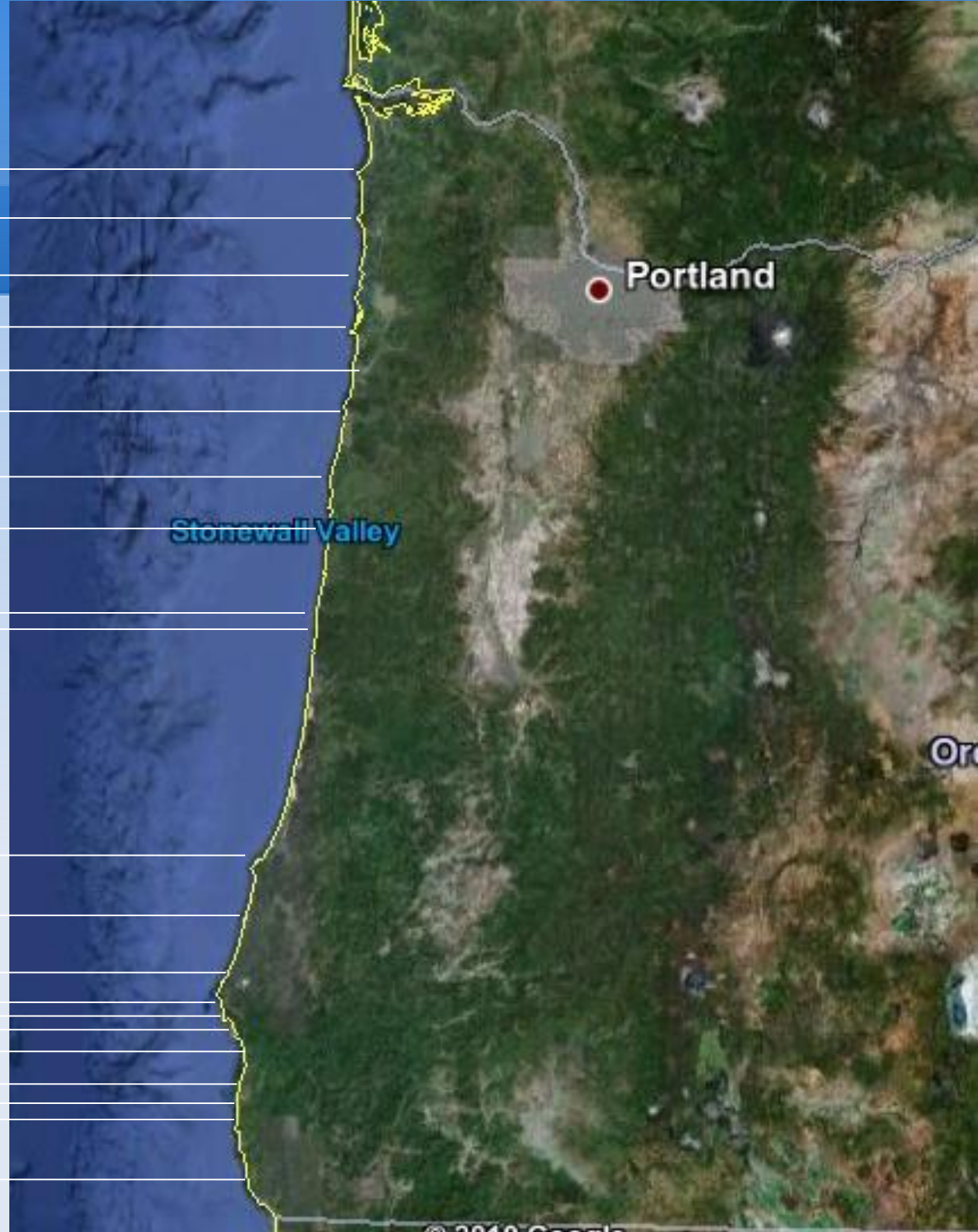
Coquille Point

Blacklock Point

Cape Blanco

Humbug Mountain

Cape Ferrelo



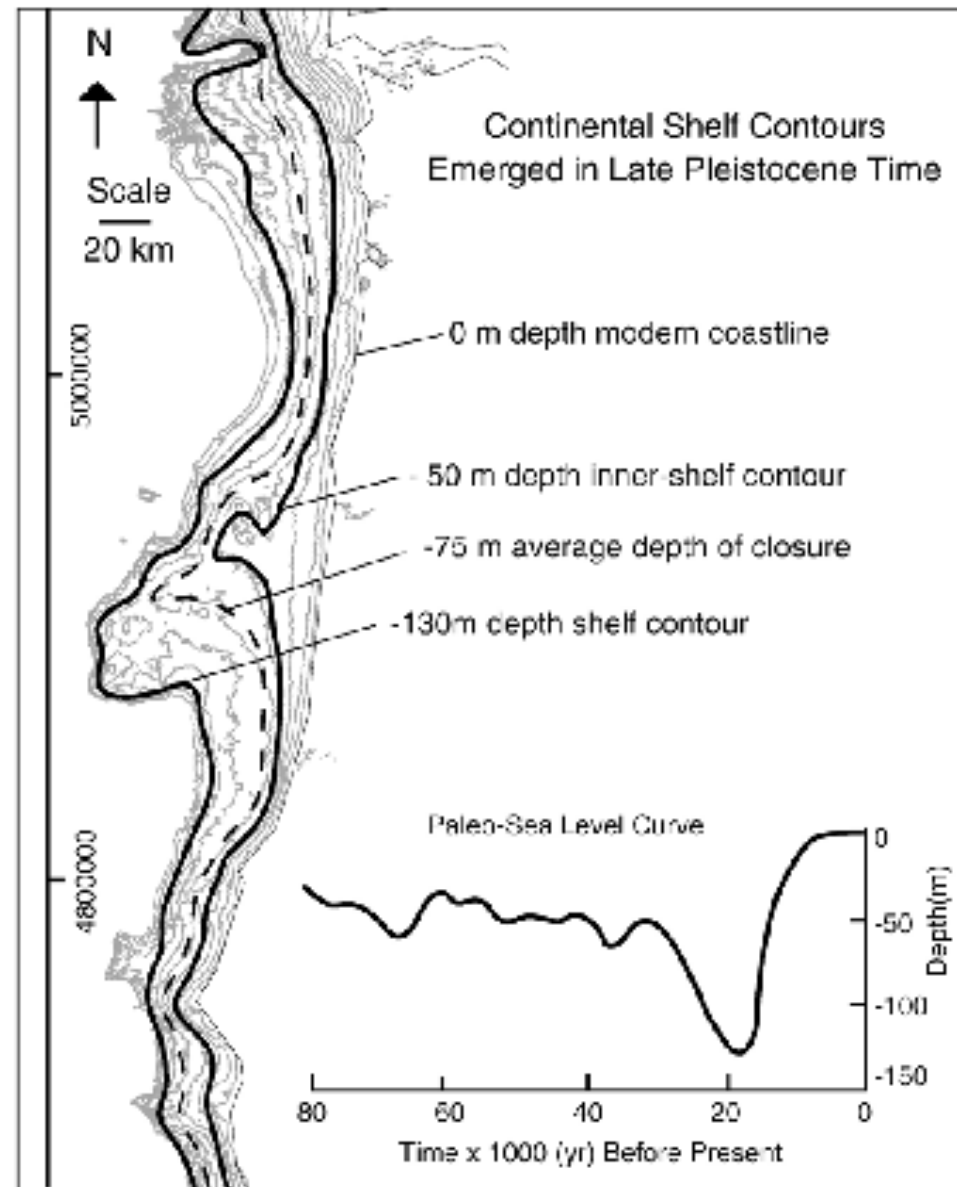
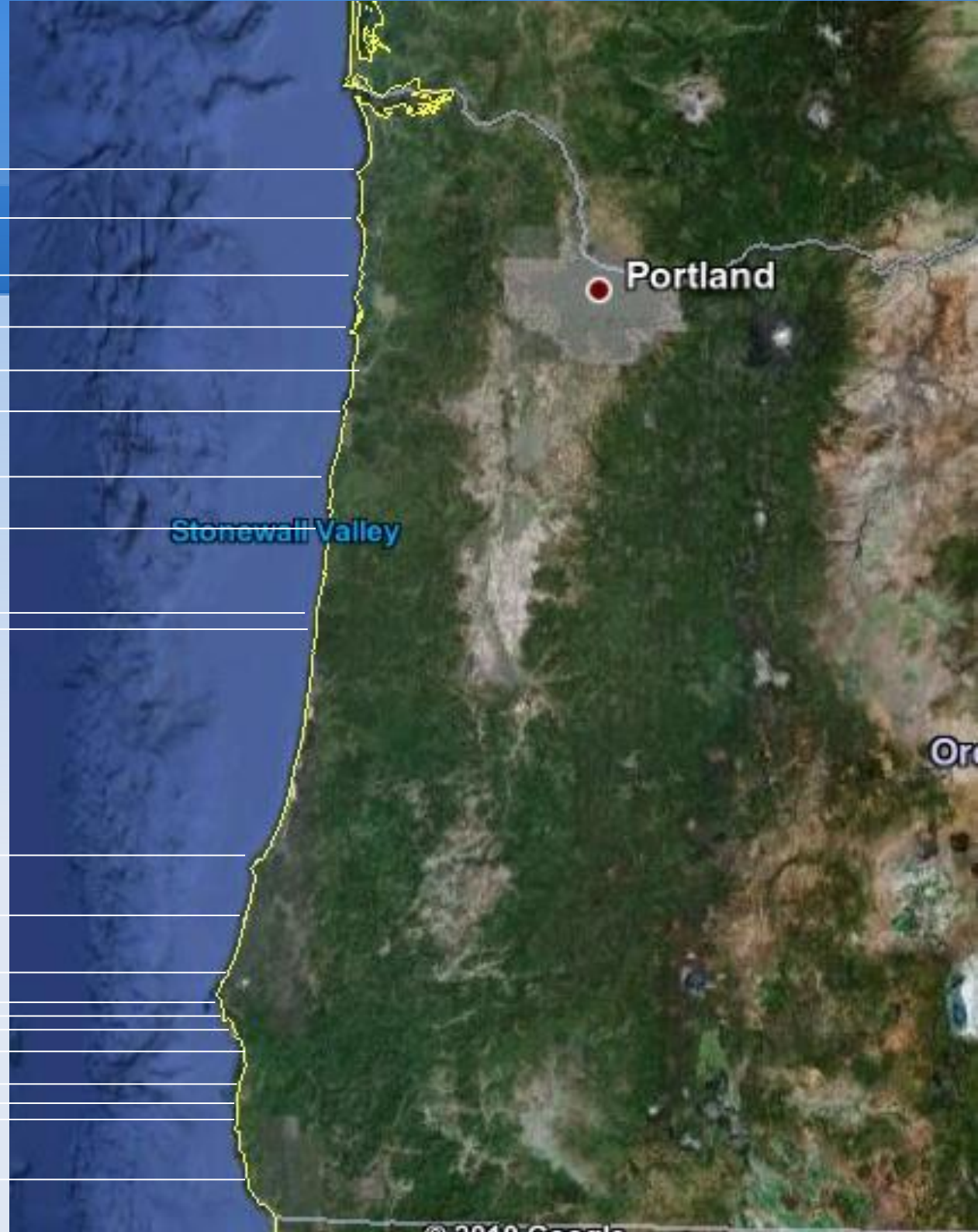
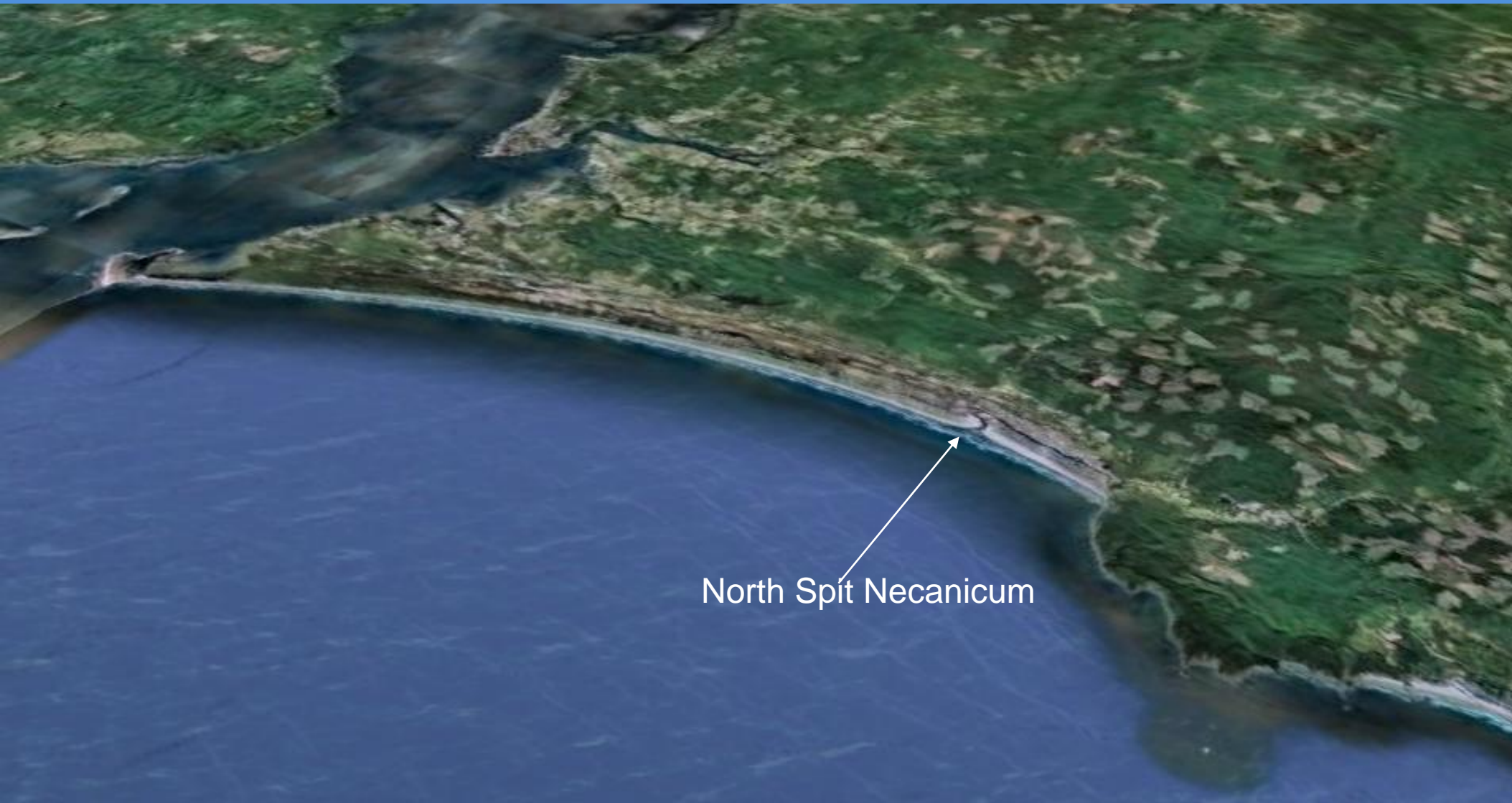


Fig. 4. Map of Oregon continental shelf showing paleo-sea levels (solid lines) at -50 m and -130 m isobaths. A eustatic, sea-level curve is shown for the last 80,000 years (figure redrafted from Pirazzoli, 1993, sea-level curve from Chappell and Shackleton, 1986). The major period of Late-Pleistocene dune emplacement (30–70 ka) is dominated by sea levels of about 50 m below present sea level. The average depth of closure, e.g., limit of littoral transport (dashed line at -75 m contour), for the late Pleistocene is assumed to have been about 25 m below the average sea level for that period. Sea level during the last glacial maximum (21–18 ka) briefly decreased to 130 m below present sea level.

12 Oregon Littoral Cells

- Tillamook Head
- Cape Falcon
- Cape Meares
- Cape Lookout
- Cape Kiwanda
- Cascade Head
- Cape Foulweather
- Yaquina Head
- Heceta Head
- Cape Perpetua
- Cape Arago
- Coquille Point
- Blacklock Point
- Cape Blanco
- Humbug Mountain
- Cape Ferrelo





(1) Columbia River south jetty to Tillamook Head; 26 km

Columbia River Sediment Dispersal

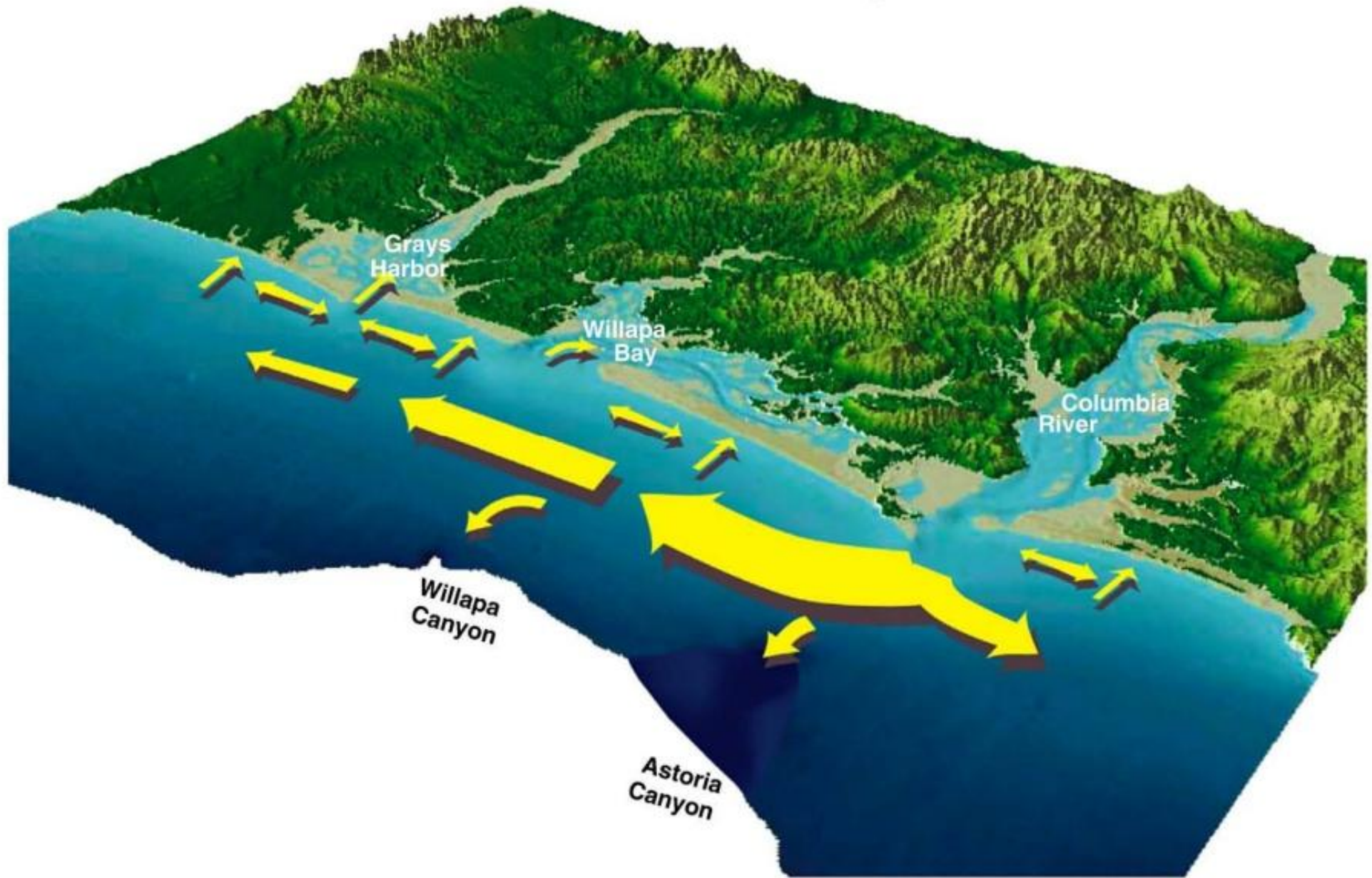
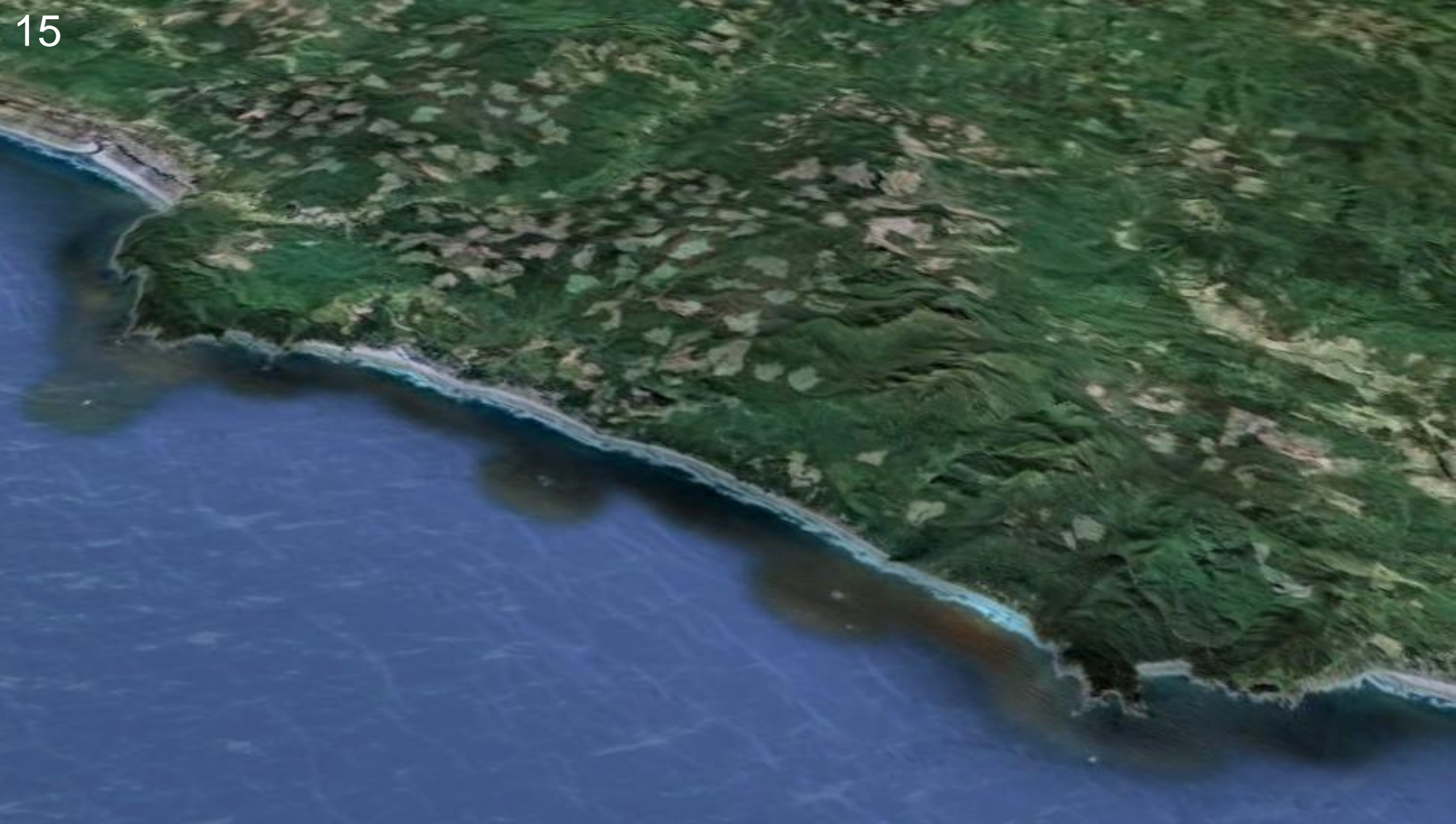


Fig. 4. Conceptual model of sediment dispersal within the CRLC. The Columbia River has been the dominant source of sediment to the littoral cell throughout the Holocene, having fed the beaches, coastal plains, bays, and continental shelf. Seasonal reversals of longshore sediment transport occur along the beaches of each sub-cell.



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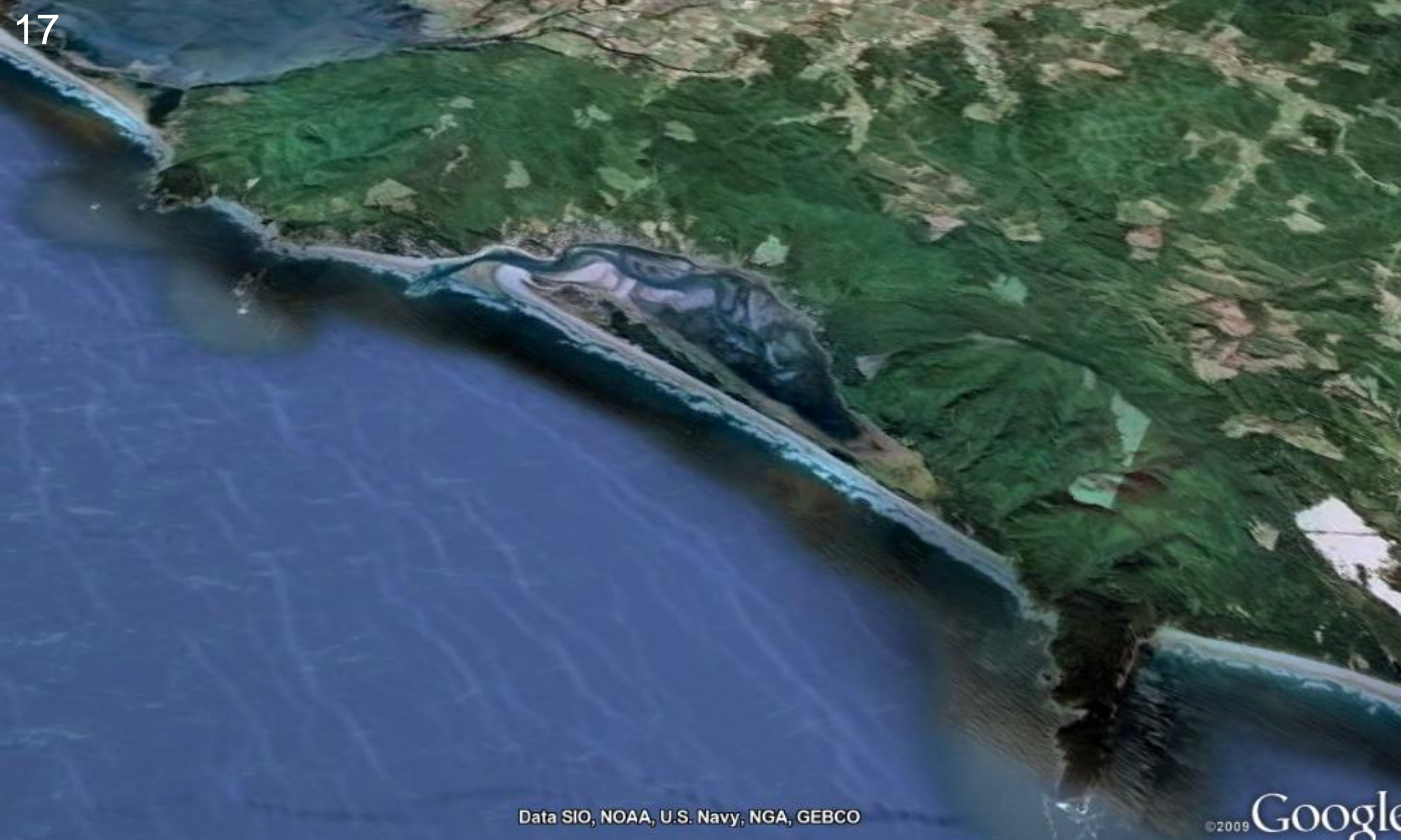
(2) Tillamook Head to Cape Falcon; 14 km



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Bayocean Spit

(3) Cape Falcon to Cape Meares; 25 km



(4) Cape Meares to Cape Lookout; 10 km



(5) Cape Lookout to Cape Kiwanda; 13 km



(6) Cape Kiwanda to Cascade Head; 13 km



(7) Cascade Head to Cape Foulweather; 22 km



Siletz River, bay, and sandspit



Siletz River, bay, and sandspit



"The Inn At Spanish Head invites you to experience exceptional oceanfront lodging and penthouse dining at Oregon's only resort hotel built right on the beach."

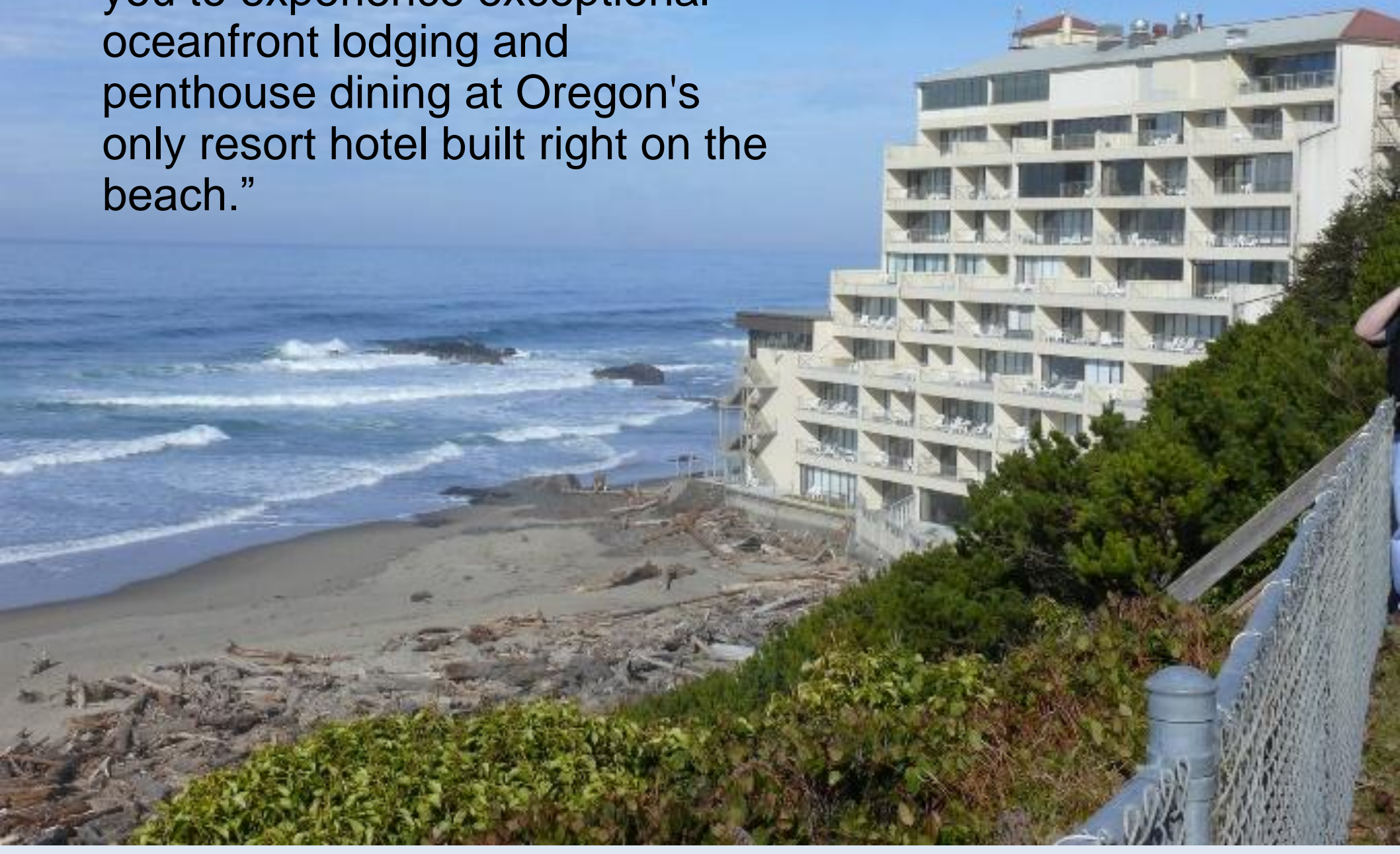




Image State of Oregon
Image City of Lincoln City



(7) Cascade Head to Cape Foulweather; 22 km



(8) Cape Foulweather to Yaquina Head; 7 km



(9) Yaquina Head to Cape Perpetua; 37 km



Image State of Oregon

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(10) Cape Perpetua to Heceta Head; 14 km



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Baker Beach
Sutton Beach

Siltcoos
Overlook
Tahkenitch

Tenmile

Coos Bay N Spit

(11) Heceta Head to Cape Arago; 83 km



(12) Cape Arago to Coquille Point; 16 km



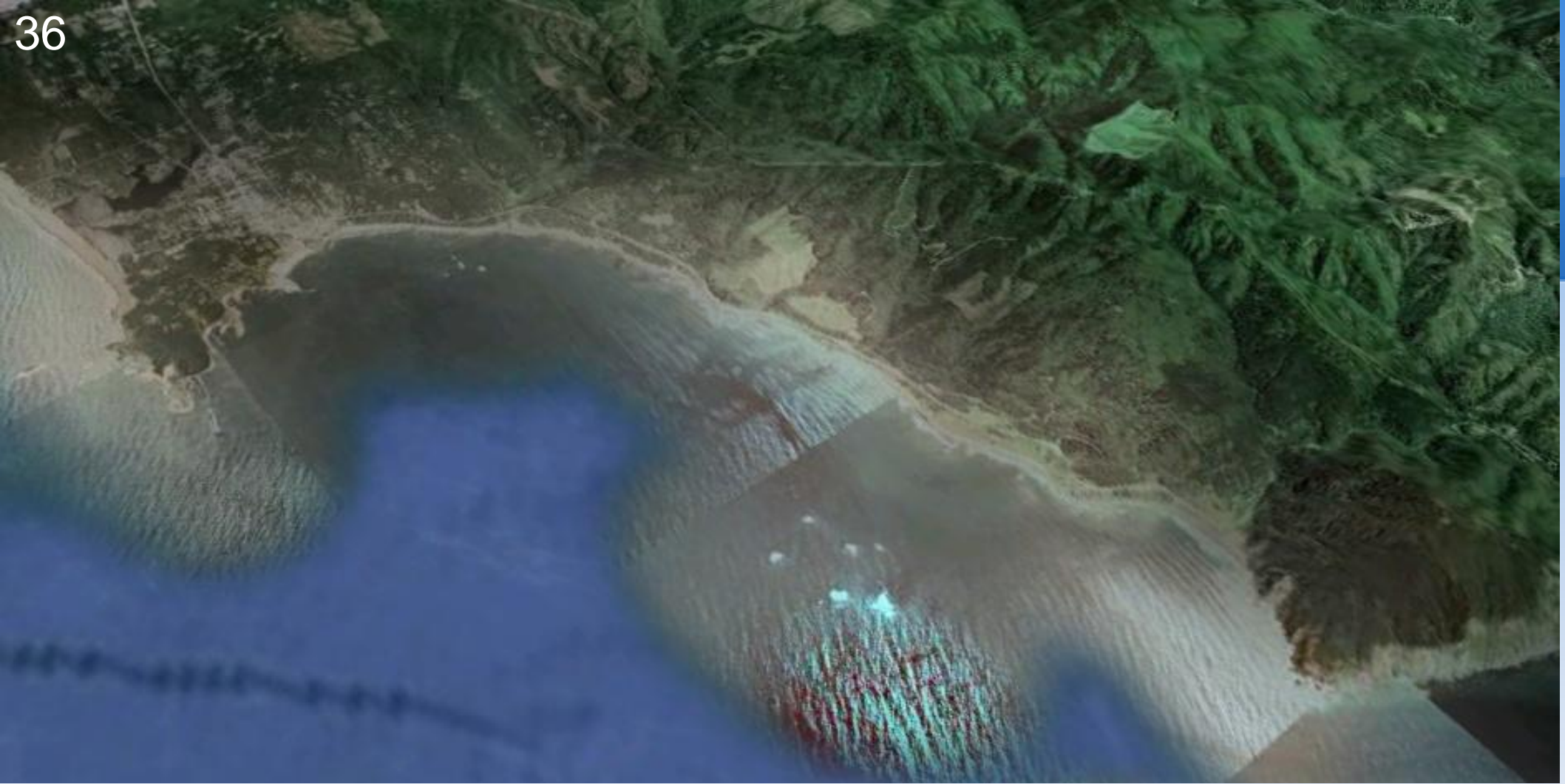
(13) Coquille Point to Blacklock Point; 25 km



(14) Blacklock Point to Cape Blanco; 4 km



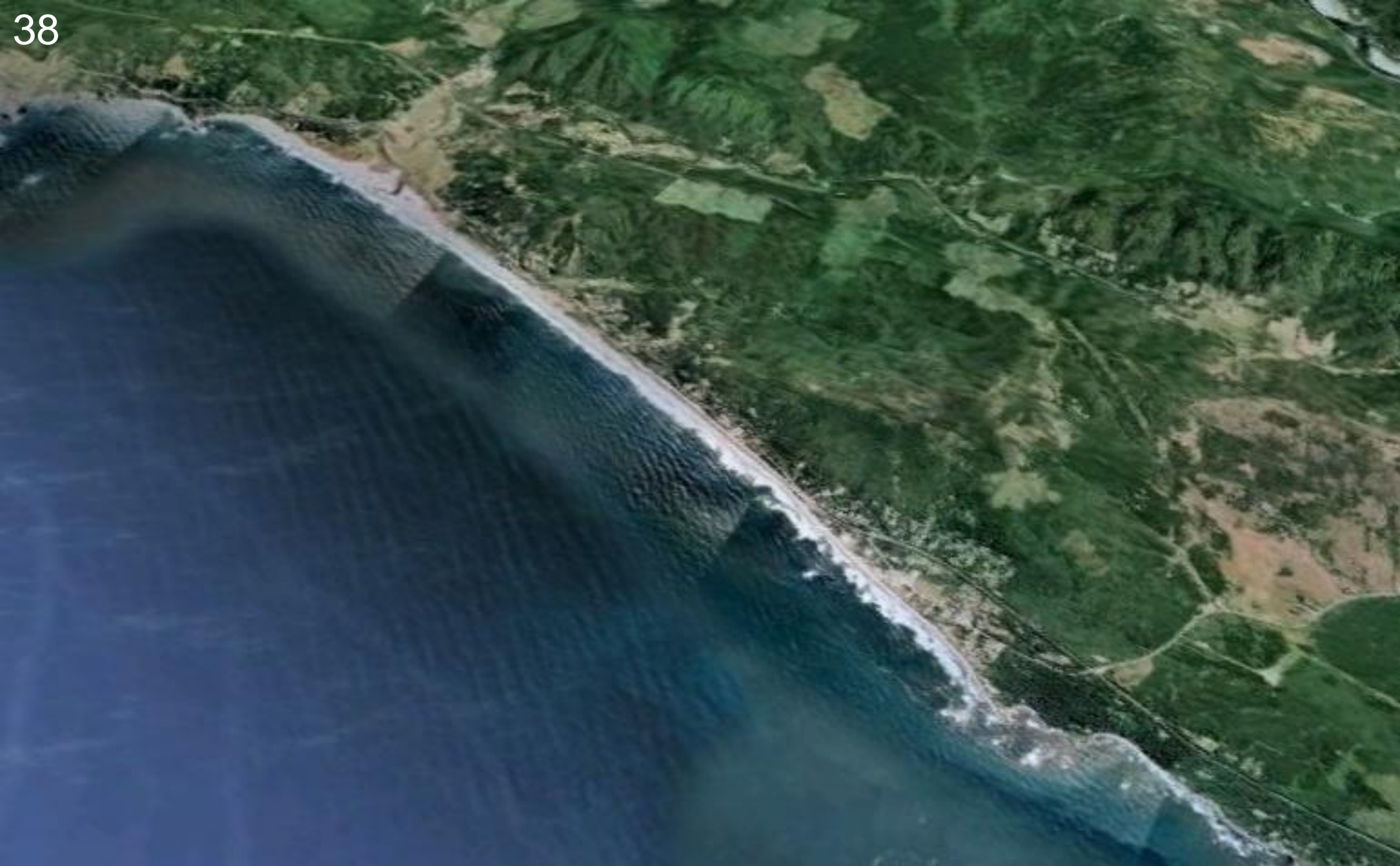
(15) Cape Blanco to Port Orford Heads; 10 km



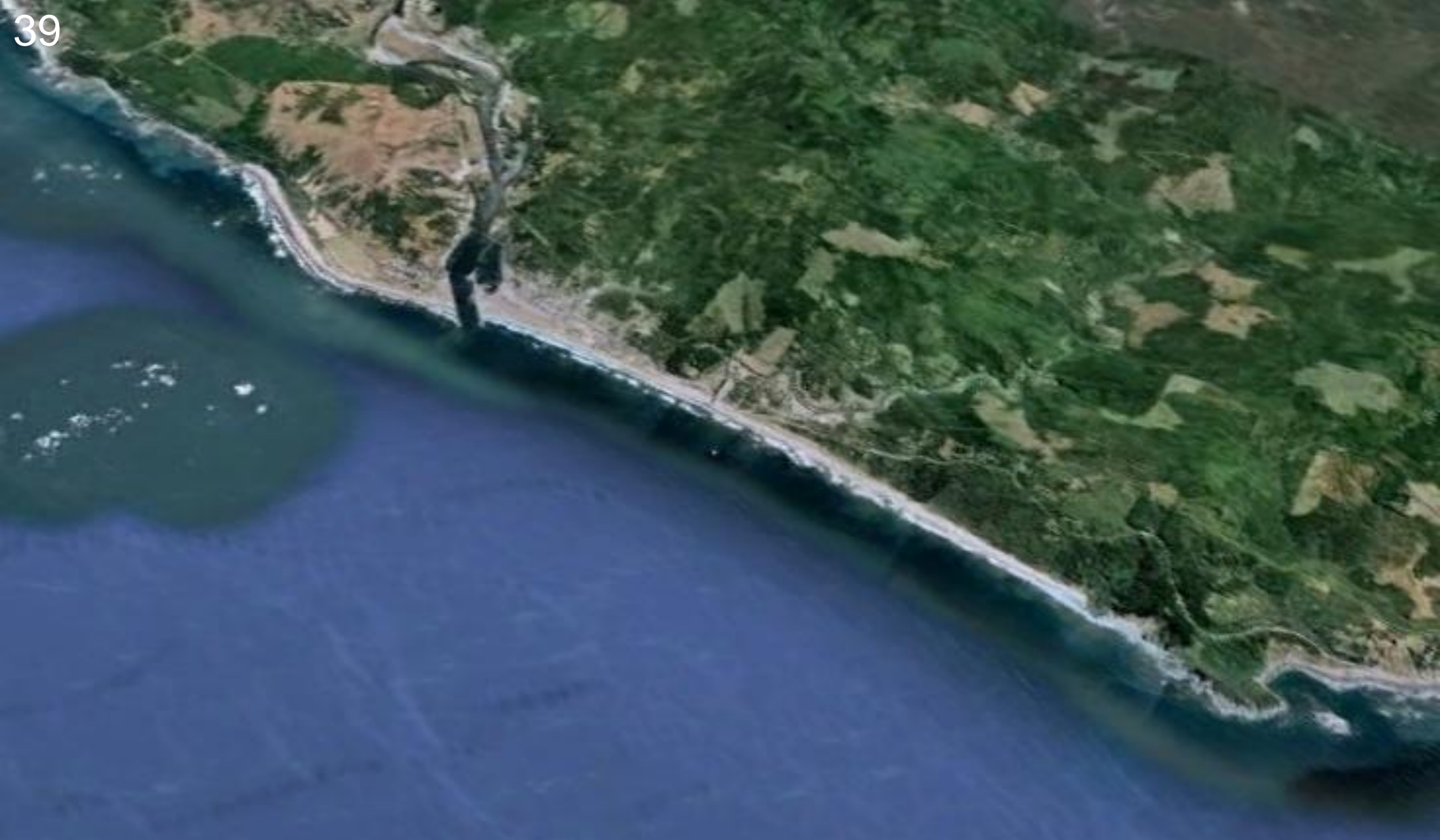
(16) Port Orford Heads to Humbug Mountain; 7 km



(17) Humbug Mountain to Sisters Rocks; 6 km



(18) Sisters Rocks to Hubbard Mound/Otter Point; 8 km



(19) Otter Point to Cape Sebastian; 17 km



(20) Cape Sebastian to Crook Point; 7 km



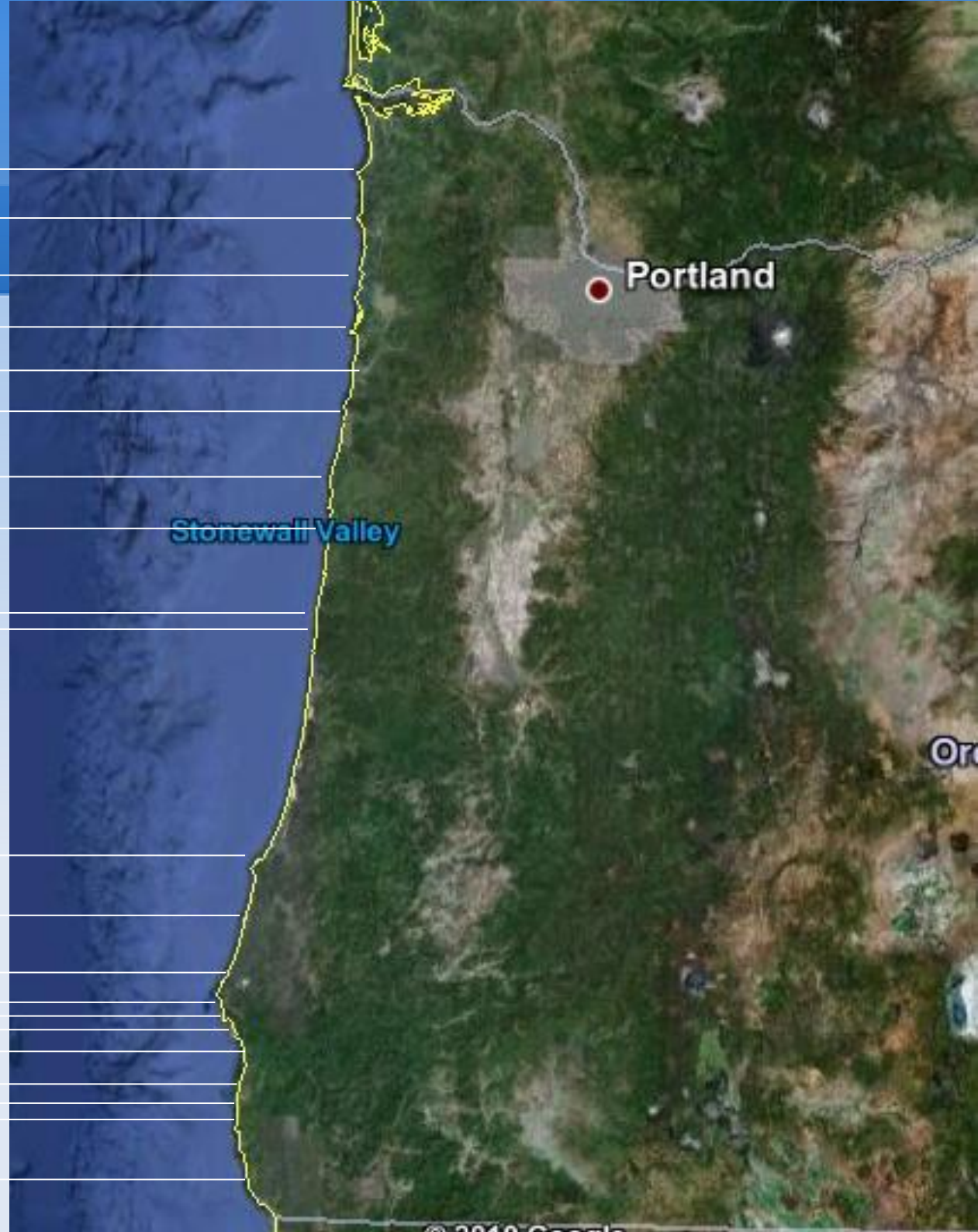
(21) Crook Point to Cape Ferrelo; 15 km



(22) Cape Ferrelo to California border; 14 km

Oregon Littoral Cells

- Tillamook Head
- Cape Falcon —
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- Cape Kiwanda
- Cascade Head —
- Cape Foulweather
- Yaquina Head —
- Heceta Head — Cape Perpetua
- Cape Arago
- Coquille Point —
- Blacklock Point —
- Cape Blanco
- Humbug Mountain —
-
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- Cape Ferrelo —



References:

1. Peterson, C.D., E. Stock, D.M. Price, R. Hart, F. Reckendorf, J.M. Erlandson, S.W. Hostetler. 2007. Ages, distributions, and origins of upland coastal dune sheets in Oregon, USA. *Geomorphology* 91: 80-102.