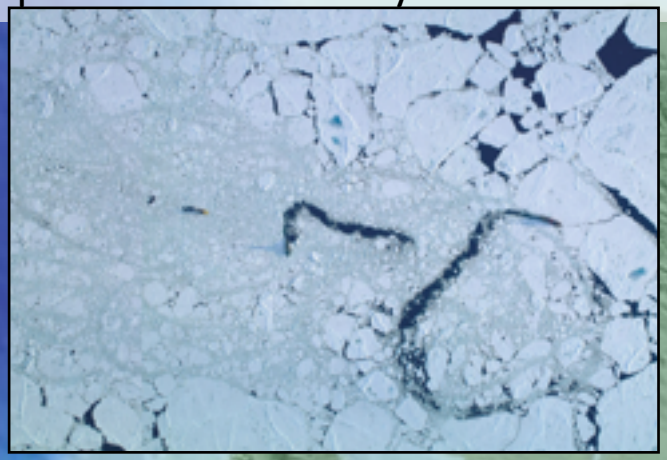
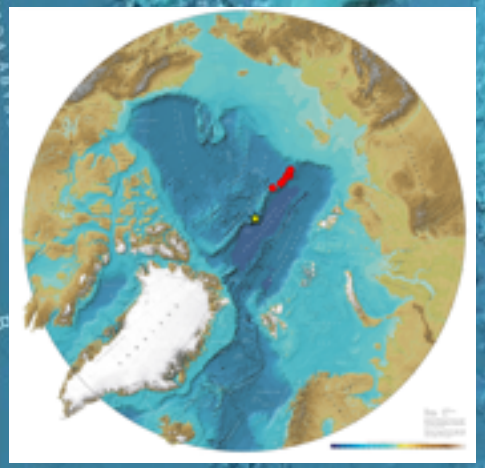
## 708-Full Add ACEX2 (March 2015)

**Old slide from March 2015**

- Water depth: 1405 m
- Penetration: 1200m x 3 (possibly x 2) at primary site
- Addendum still calls for three deep holes in deep water (2.6-3.6 km of drillstring).
- ACEX-style fleet, with ‘top-end’ geotechnical rig on a sizable icebreaker – doesn’t currently exist
- Stronger rig required to handle >2km of pipe.
- Casing will be required (extra space and time needed)
- Long site residency, risk of being pushed off station
- If no ice, may still get high sea states
- **$25M-$34M, with no IKC, 3 holes to 1200m**
- **$14M-$19M, ice breaker IKCs, 2 holes 1200m**
- Can proposal be approached differently?



# P708 Central Arctic Paleoceanography (ACEX2)



LR-02A
LR-01A
LR-07A
LR-06A
LR-08A
LR-09A
LORI-5B
ACEX

500
Kilometers

# P708 Central Arctic Paleoceanography (ACEX2)

**Recent proposal history**

March 2015: ECORD FB scheduled P708 for 2018 with $15M cap on cost to ECORD. ESO and proponents to work on selecting sites that are technically and financially feasible. In doing so, the primary objectives in the original proposal must not change.

June 2015: ESO and proponents met in Edinburgh to discuss technical and logistical challenges, and how sites could be modified to be less demanding (e.g. aim for total pipe length to be less than 2km).

April 2016: Proponents submitted new addendum to ESO and E-FB, and updated SSDB with new site survey data. E-FB to decide if second SEP review is required.

Old proposal

| Site | Position | Water Depth | Penetration | Drill pipe |
|---|---|---|---|---|
| LR-01A | 80°57.01'N, 142°58.3'E | 1405 | 1225 | 2630 |
| LR-02A | 80°57.9'N, 142°28.3'E | 1450 | 1300 | 2750 |
| LORI-16A | 80° 46.6'N, 142° 46.9'E | 1752 | 1850 | 3602 |
| LORI-5B | 83° 48.03'N, 146° 28.5'E | 1334 | 1250 | 2584 |
| LR-03A | 81.1825°N, 142.0918°E | 1013 | 1180 | 2193 |
| LR-04A | 81.2592°N, 141.2563° E | 776* | 1020 | 1796 |
| LR-05A | 81.3365°N, 141.3740°E | 906 | 1150 | 2056 |
| LR-06A | 81.4568°N, 140.7299°E | 779* | 970 | 1749 |
| LR-07A | 81.6851°N, 142.3074°E | 764* | 740 | 1504 |
| LR-08A | 82.4215°N, 142.1678°E | 1450 | 865 | 2315 |
| LR-09A | 82.8274°N, 142.4677°E | 1251 | 750 | 2001 |

New proposal. LR-01A is still the primary site. Others are alternatives.

ECORD Science Operator

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM

# P708 Central Arctic Paleoceanography (ACEX2)

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*If the water dept ne) might be disturbed/incomplete.

In this case, an option would be to split the sequence into two sites:

1) Quaternary, Pliocene and Miocene e.g. Site LR-05A (coring from seafloor to about 700 mbsf)
2) Oligocene-Eocene e.g. Site LR-04A (wash-down to 525 mbsf, then core from 525 to 1020 mbsf (~500 m coring interval).

Comment from ESO: revised P708 is achievable within the specified budget (next slide). Final site selection could be made nearer the operation – keep flexibility to deal with ice conditions. Are the sites scientifically acceptable (for E-FB/SEP)?

ECORD Science Operator

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM

# P708 Central Arctic Paleoceanography (ACEX2)

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Possible options:

| | | |
|---|---|---|
| 2 x ~1000m holes (e.g. LR-04A & -05A) | $12.9 – 19.0M | - 83-108 days (too long) |
| 2 part holes/split (e.g. LR-04A & -05A) | $11.1-16.2M | - 65-83 days (maybe too long) |
| 1 x 1150m hole (e.g. LR-05A) | $9.3-14.0M | - 53-69 days |
| 1 x 750m hole (e.g. LR-09A) | $7.9-12.0M | - 41-53 days |

- There are other site combinations possible
- ESO recommend a one-hole strategy, possibly with re-entry capability
- Possible options to open hole certain intervals to reach key intervals
- Costs assume no icebreaker costs (IKC)
- Costs assume no passage fees (Russian IKC?)

ECORD Science Operator

IODP INTERNATIONAL OCEAN DISCOVERY PROGRAM

# P708 Central Arctic Paleoceanography (ACEX2)

**P708 Timeline**

June 2016: E-FB decision on revised sites – ESO need a final green light.

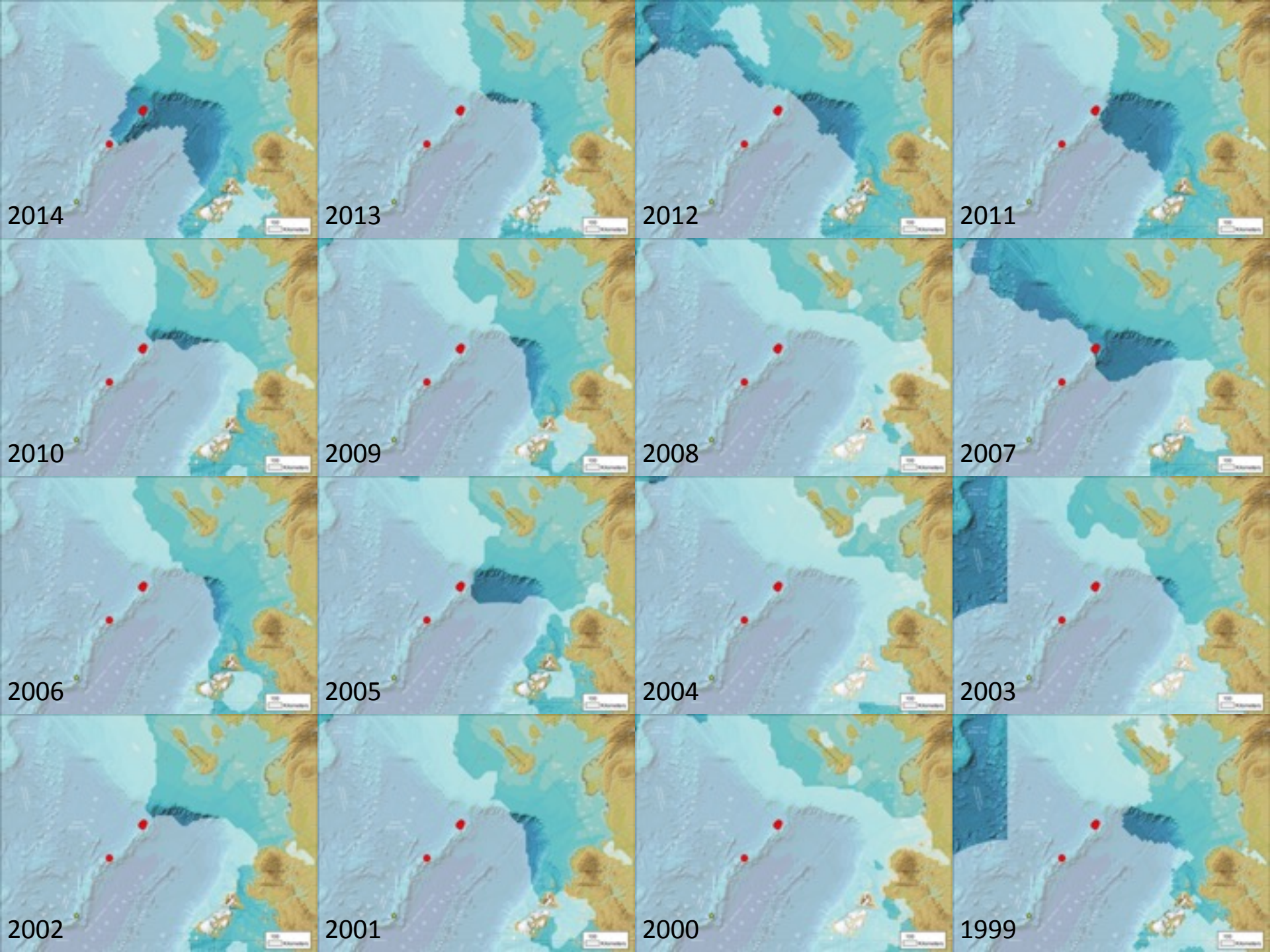
Autumn 2016: ESO start tendering for platform and drilling services. *Note: Tender for drilling services for ACEX1 was issued 17 months before the expedition, which at the time was considered to be a tight schedule.*

Early 2017: Contract negotiations, detailed operational and science planning, integration of ice breakers and ice management.

Mid-2017: Call for Scientists, further science planning.

Late Summer 2018: Offshore operation.

Late 2018/early 2019: Onshore Science Party.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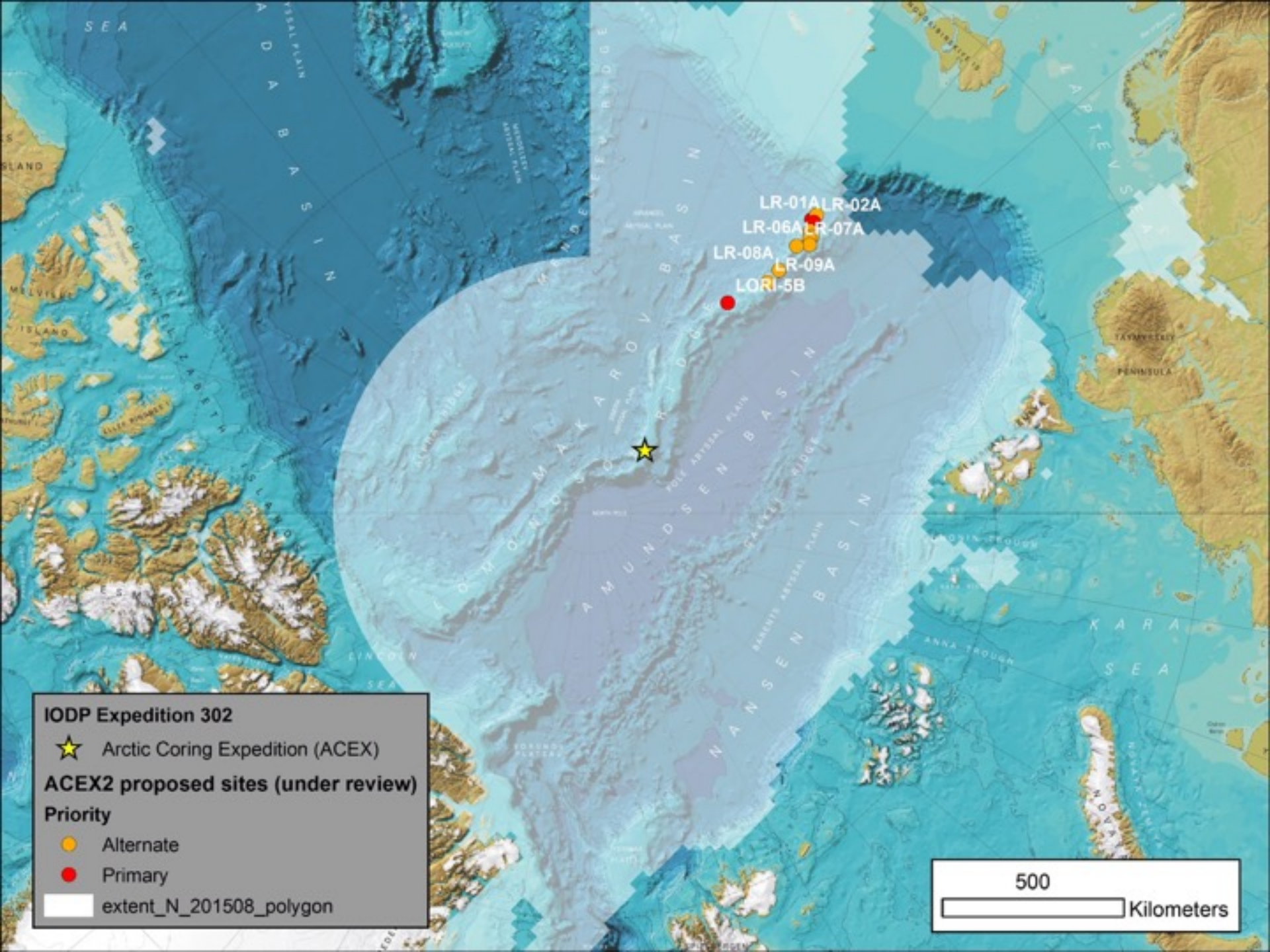
LR-01A
LR-02A
LR-06A
LR-07A
LR-08A
LR-09A
LORI-5B
IODP Expedition 302
Arctic Coring Expedition (ACEX)
ACEX2 proposed sites (under review)
Priority
Alternate
Primary
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500
Kilometers