

16th World Lake Conference

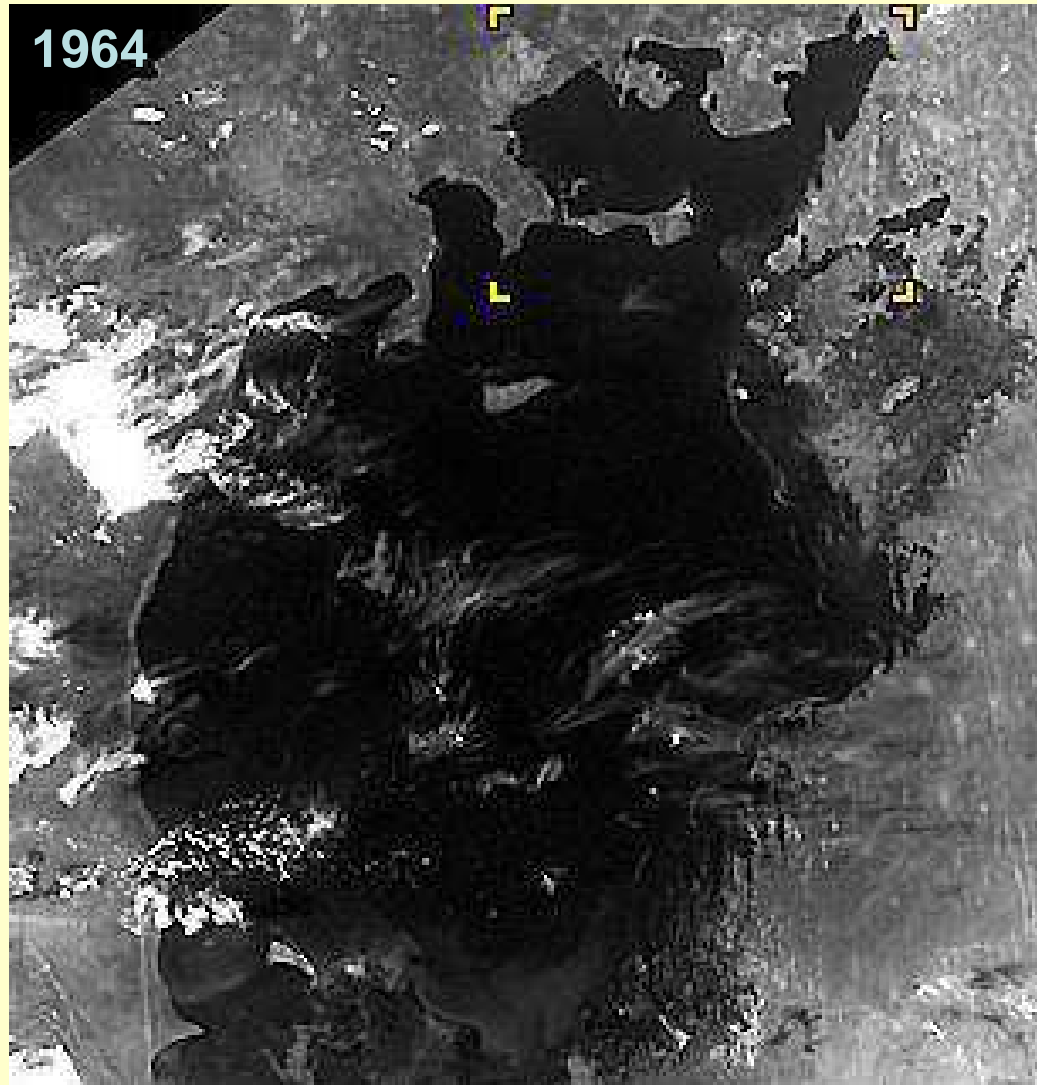
Bali, Indonesia

November 8, 2016

**CURRENT STATUS OF LAKE
ARAL – CHALLENGES AND
FUTURE OPPORTUNITIES**

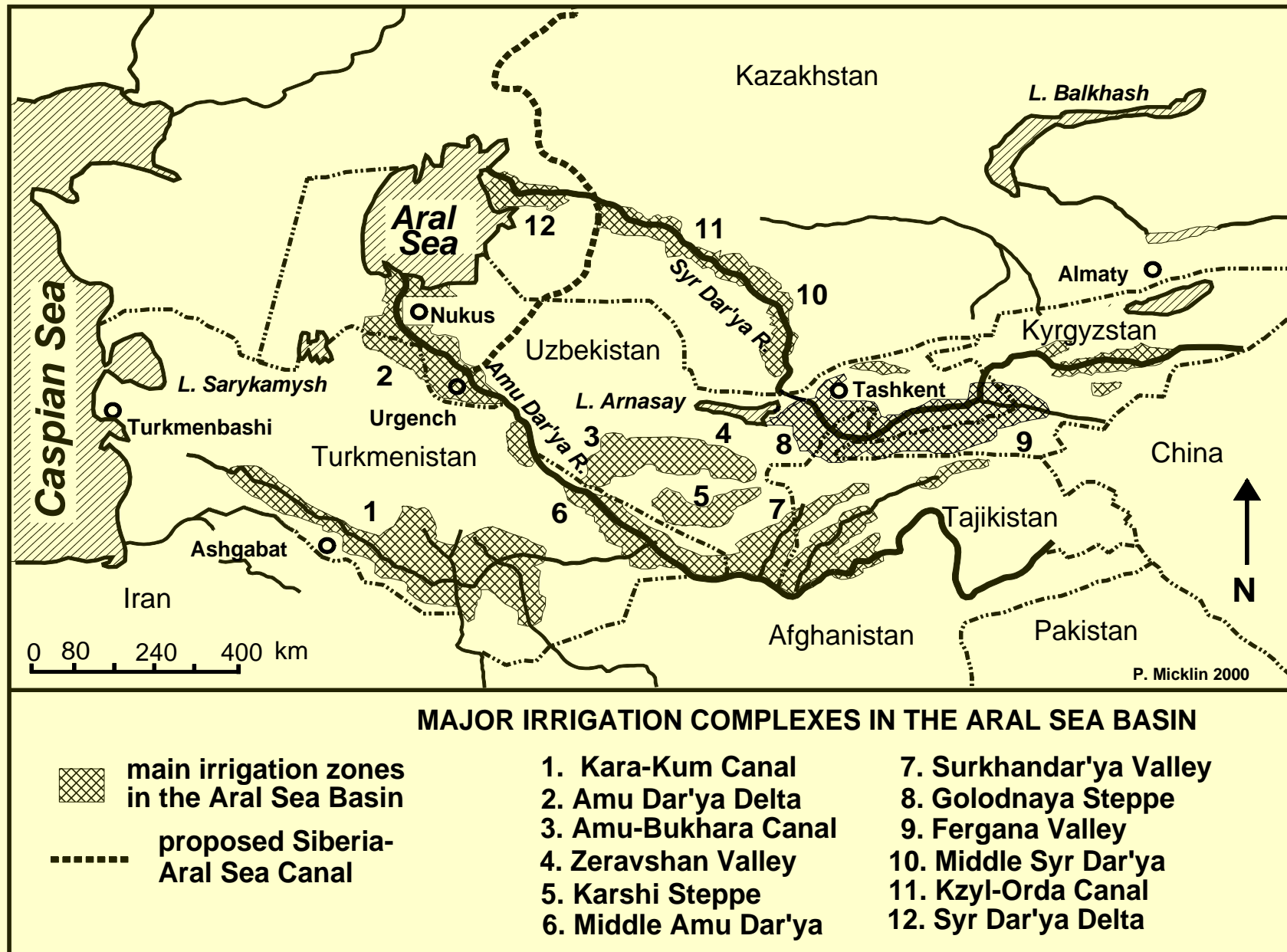
N. Aladin, T. Chida, J.-F. Cretaux, Z. Ermakhanov,
B. Jollibekov, B. Karimov, Y. Kawabata, D. Keyser,
J. Kubota, P. Micklin, N. Mingazova, I. Plotnikov, M. Toman

Since 1960 the Aral Sea has steadily shrunk and shallowed owing overwhelmingly to irrigation withdrawals from its influent rivers (Amu Dar'ya and Syr Dar'ya)

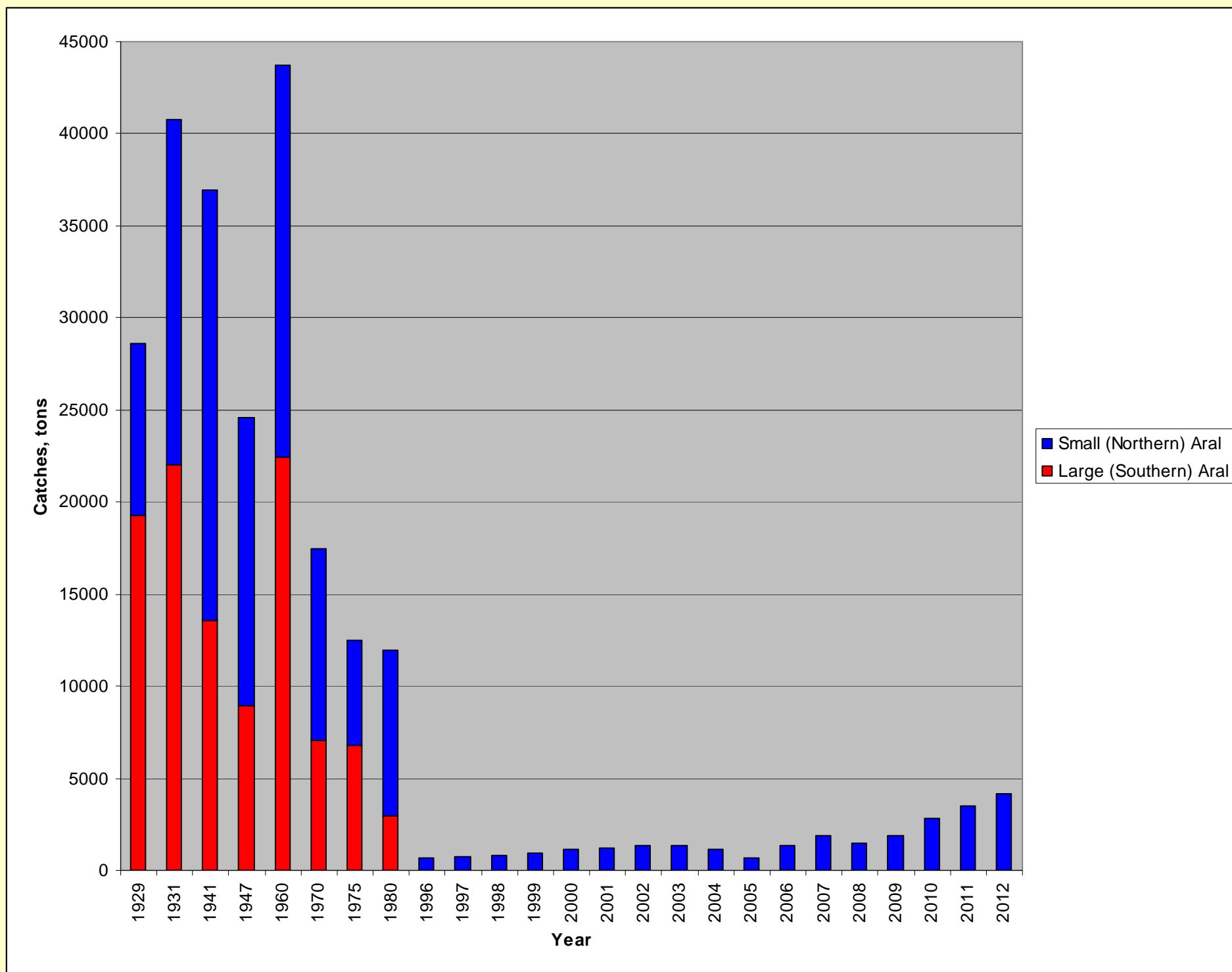


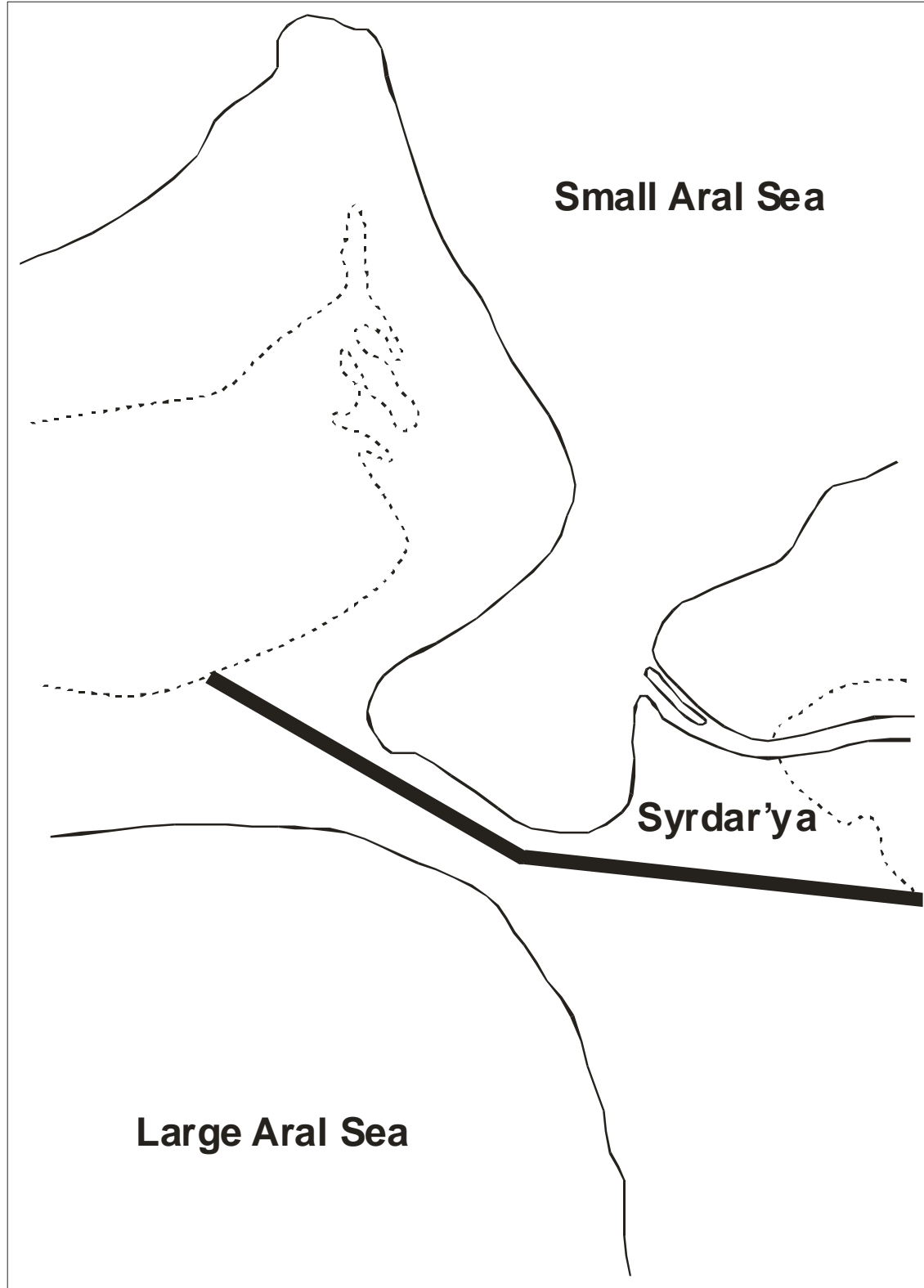
**September, 2009: Aral area – 8410 km² (13%), volume – 85 km³ (7.5%);
the Large Aral – 4922 km² (8%), 58 km³ (6%), salinity >100 g/l;
the Small Aral – 3487 km² (57%), 27 km³ (33%), salinity 10-14 g/l.**

IRRIGATION DEVELOPMENT IN ARAL SEA BASIN



Dynamics of fish catches in the North and South Aral Sea



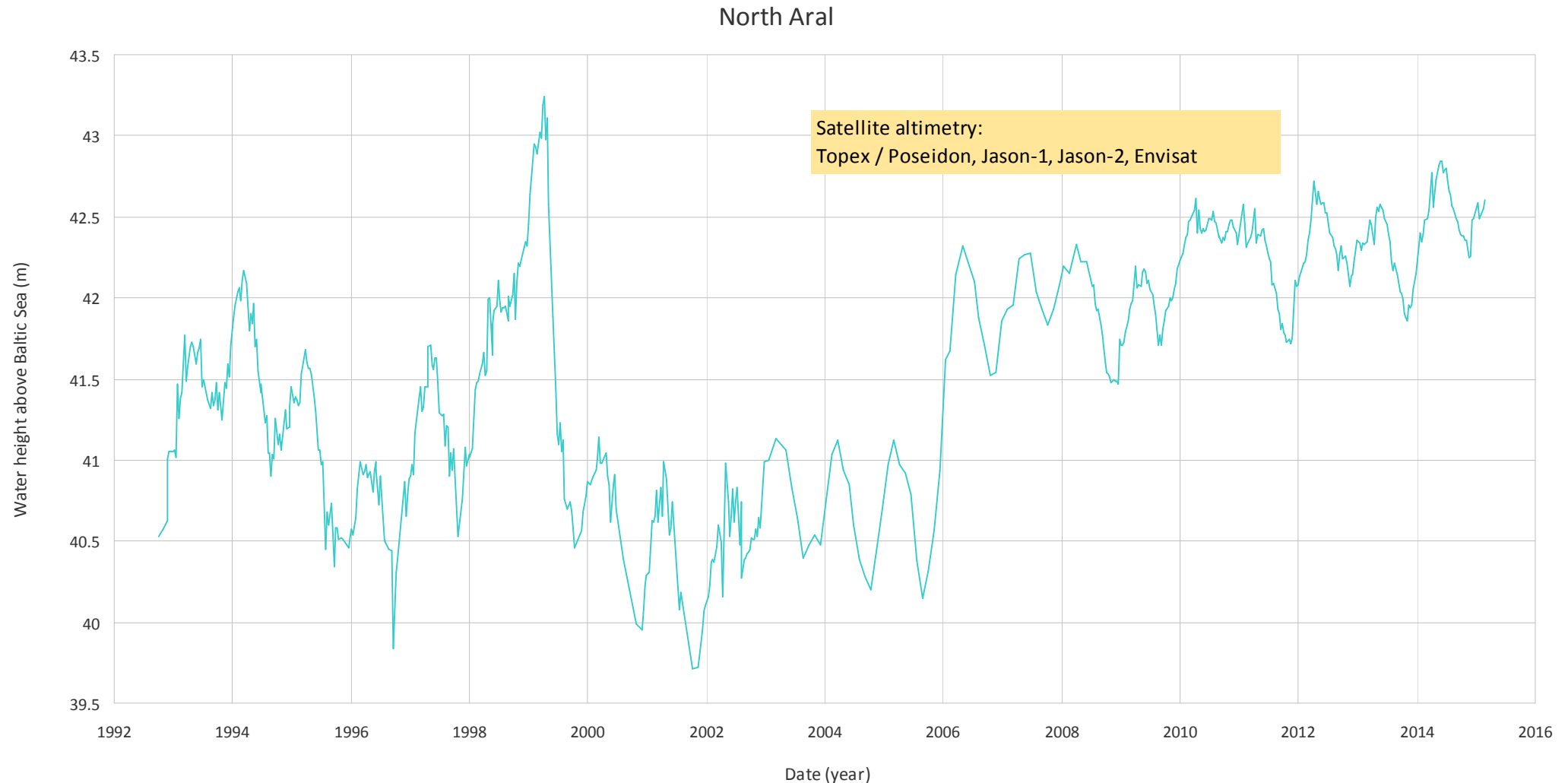


**Dam in Berg strait is
preserving
Small (Northern) Aral
and **rehabilitating its
biodiversity.****

By: Aladin N.V., Plotnikov I.S., Potts W.T.W., 1995.
The Aral Sea desiccation and possible ways of
rehabilitation and conservation of its North part //
Int. J. Environmetrics. Vol. 6: 17-29.

In April 1999, when the Small Aral Sea level increased more than by 3 m and reached +43.5 m, the dam broke.

(data from satellite altimetry by J.-F. Cretaux)

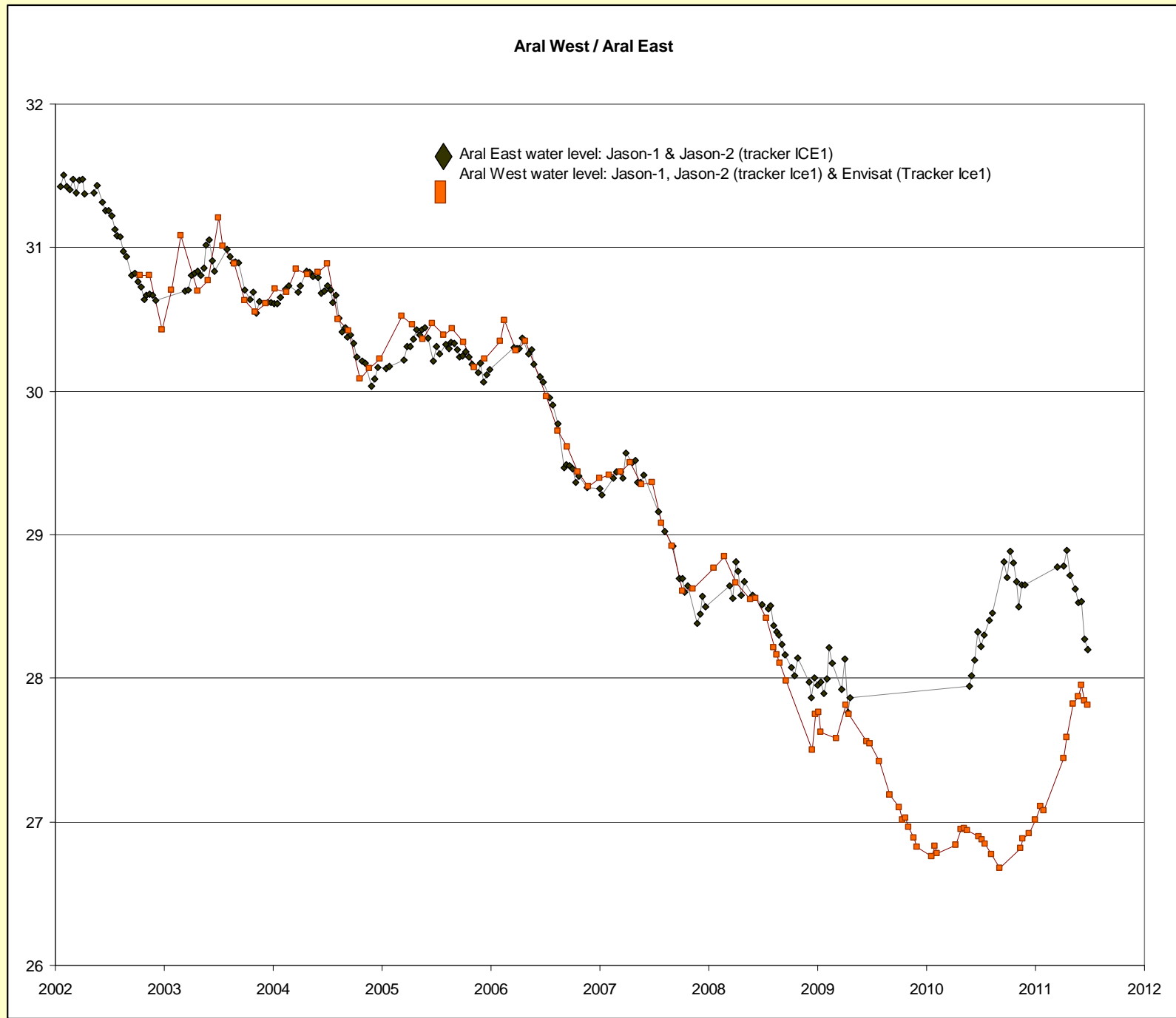


New Kok-Aral dam built by Russian company “ZARUBEZHVODSTROY”



**Kok-Aral
Dam**

**Since Aral Sea divided into 2 lakes at the end of 1980s
level of Large Aral Sea is declining
(data from satellite altimetry, courtesy of J.-F. Cretaux)**



Tsche-Bas Bay

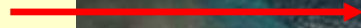
**Western part of
Central Aral
(area = 129 km²)**

**Approximate
boundary of the
Central Aral**



Central Aral, 3.10.2015. Light green color - wet soil, shallow water and xerophytic vegetation. This is the Central Aral at the end of the dry season (July-November), when it receives a little water from the Small Aral Sea. Salinity of Western Lake at the end of this period is, probably quite high (perhaps too high for the survival of any fish).

Tsche-Bas Bay



**Island in the middle of
the Central Aral
(area = 276 km²)**



Central Aral, 23.01.2016. Central Aral during the wet season (from December to June), when large volumes of water discharge into it from the Small Aral Sea due to the large winter water releases through the Toktogul dam on Naryn River in Kyrgyzstan for power generation and normal spring flood. Mineralization of the lake at this time is low (fish can survive). The lake is covered with ice.

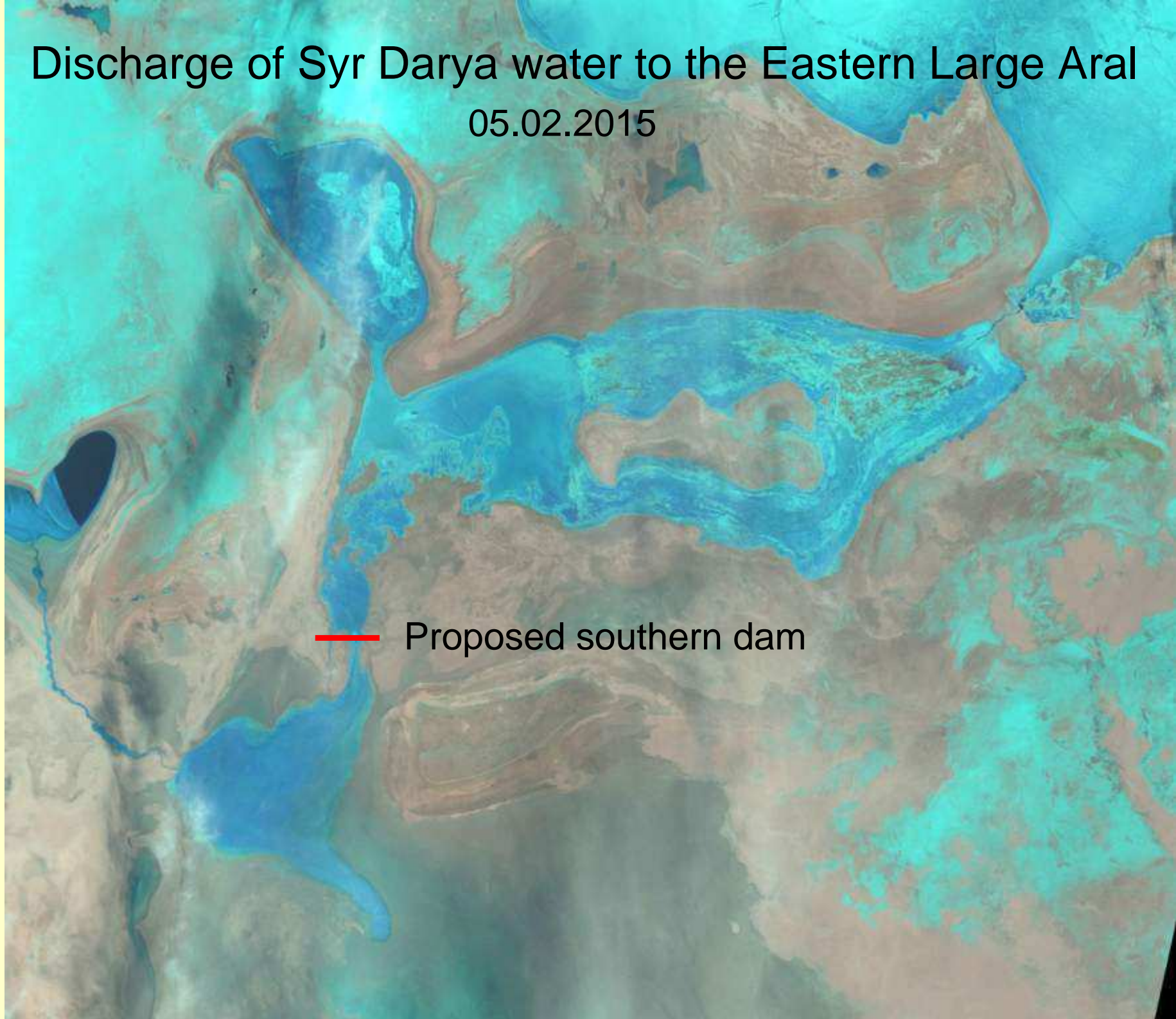


ARAL SEA on August 19, 2014 (MODIS)

- 1 - dried Eastern Basin of the Large Aral Sea
- 2 - Western Basin of the Large Aral Sea
- 3 - New Central Aral Sea
- 4 - Small Aral Sea
- 5 - Tsche-Bas Bay
- A - Kokaral dam (Central dam)
- B – Proposed Northern dam
- C – Proposed Southern dam

Discharge of Syr Darya water to the Eastern Large Aral

05.02.2015



— Proposed southern dam

WHAT SHOULD BE DONE FOR CONSERVATION OF BIODIVERSITY AND BIOLOGICAL RESOURCES OF THE ARAL SEA

1. As soon as possible to raise by 2-3 m the dam in Berg Strait.
2. In the next few years to build a dam in the entrance to Sarycheganak Bay.
3. Build a simple dam to the south of Kulandy peninsula.
4. Refuse to refill shallow reservoirs in Amu Darya delta.
5. To redirect the rest of the Amu Darya flow to the Western Large Aral Sea.

August 2005 Rendezvous over Aral



http://www.zin.ru/labs/brackish/presentations/Aral_2005.pps

http://www.zin.ru/labs/brackish/pdfs/2006/Managing_Aral_Lake_and_their_Basin_for_Sustainable_Use.pdf

July 20, 2016

Those left from the Aral Sea



<http://www.artemjew.ru/en/2016/07/20/aral16/>



Thank you for your attention

The Aral Sea has future