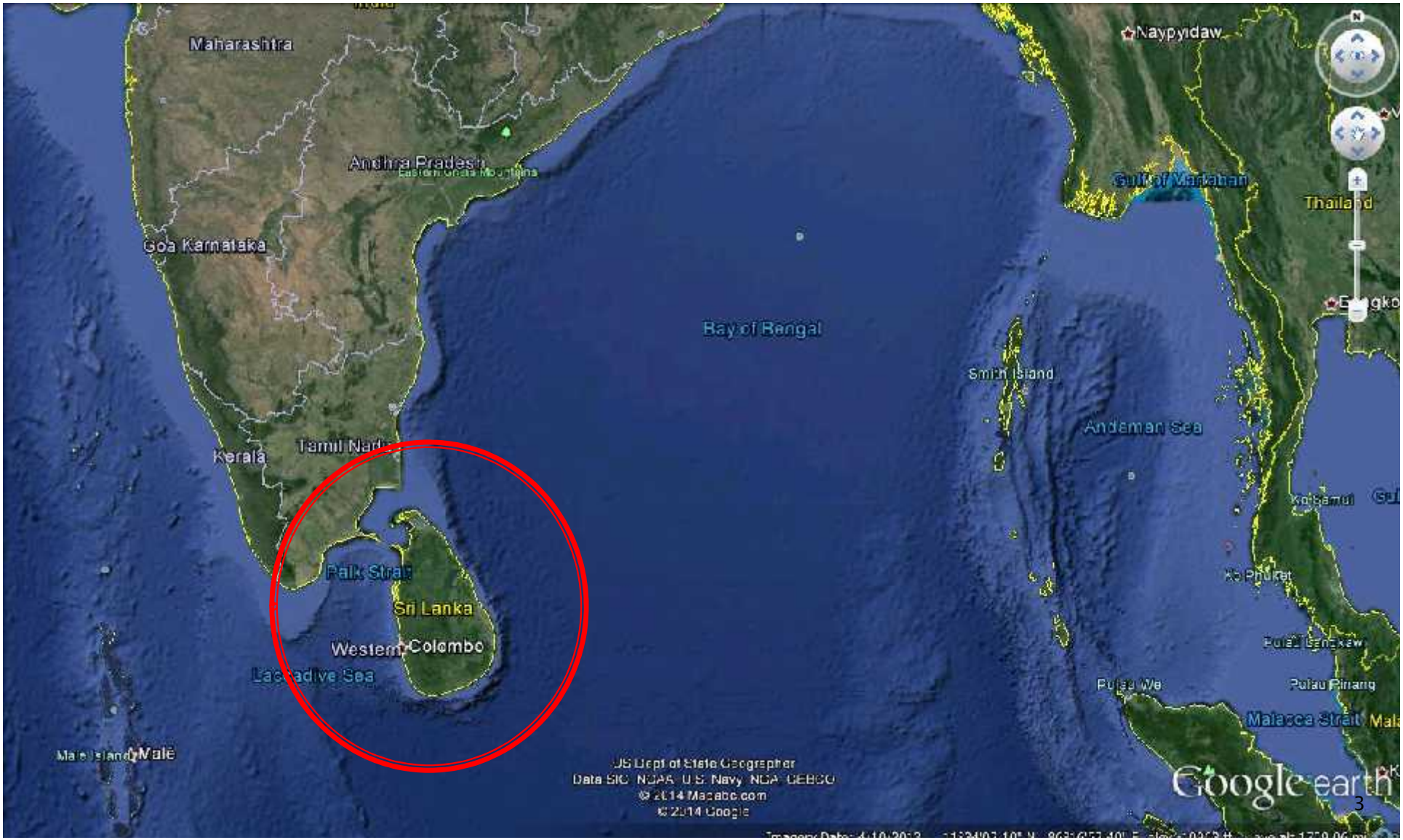
CASE STUDY OF WATER AERODROMES IN SRI LANKA – WAWG II - (WP 7)

29th Feb. 2016

OVERVIEW

- History of Float Plane Operations in SL
- Present Status of Float Plane Operations in SL
- Approved Water Aerodromes in SL
- Difficulties Faced Related to Water aerodrome Operations in Sri Lanka
- Study Made BY NARA on Water Aerodromes and Conclusions

SRI LANKA – PEARL OF THE INDIAN OCEN



SRI LANKA

Area: 65610 SqKm, 25325 SqM

Total Population: 20,000,00

Capital of SL: Colombo

Highest Elevation: 8281ft/2524m

LAND AERODROMES IN SRI LANKA

HISTORY – FLOAT PLANE OPERATIONS IN SL

- Float Plane Operations Stated in SL in 1980 with two Amphibious Aircraft – Lake Buccaneer's
- There were no designated Water Aerodromes
- Both aircraft crashed after few years
- Float Planes operations stopped in SL after that

HISTORY – FLOAT PLANE OPERATIONS IN SL

- After about 20 years SriLankan Airlines started Float Plane Operations with a one “Single Otter” aircraft to transport their passengers to different inland destinations from Bandaranaike International Airport.
- With the end of Civil War in 2009 Float Plane Operations in SL became popular. SriLankan increased their Float Plane fleet to 3 aircraft. Later they stopped their Float Plane Operations.
- Presently we have two float plane operators. Another operator willing to start float plane operations soon.
- Scheduled flights to 7 destinations – 3 destinations daily.
- 25 to 30 flights per week Approximately.

FLOAT PLANE OPERATORS IN SL

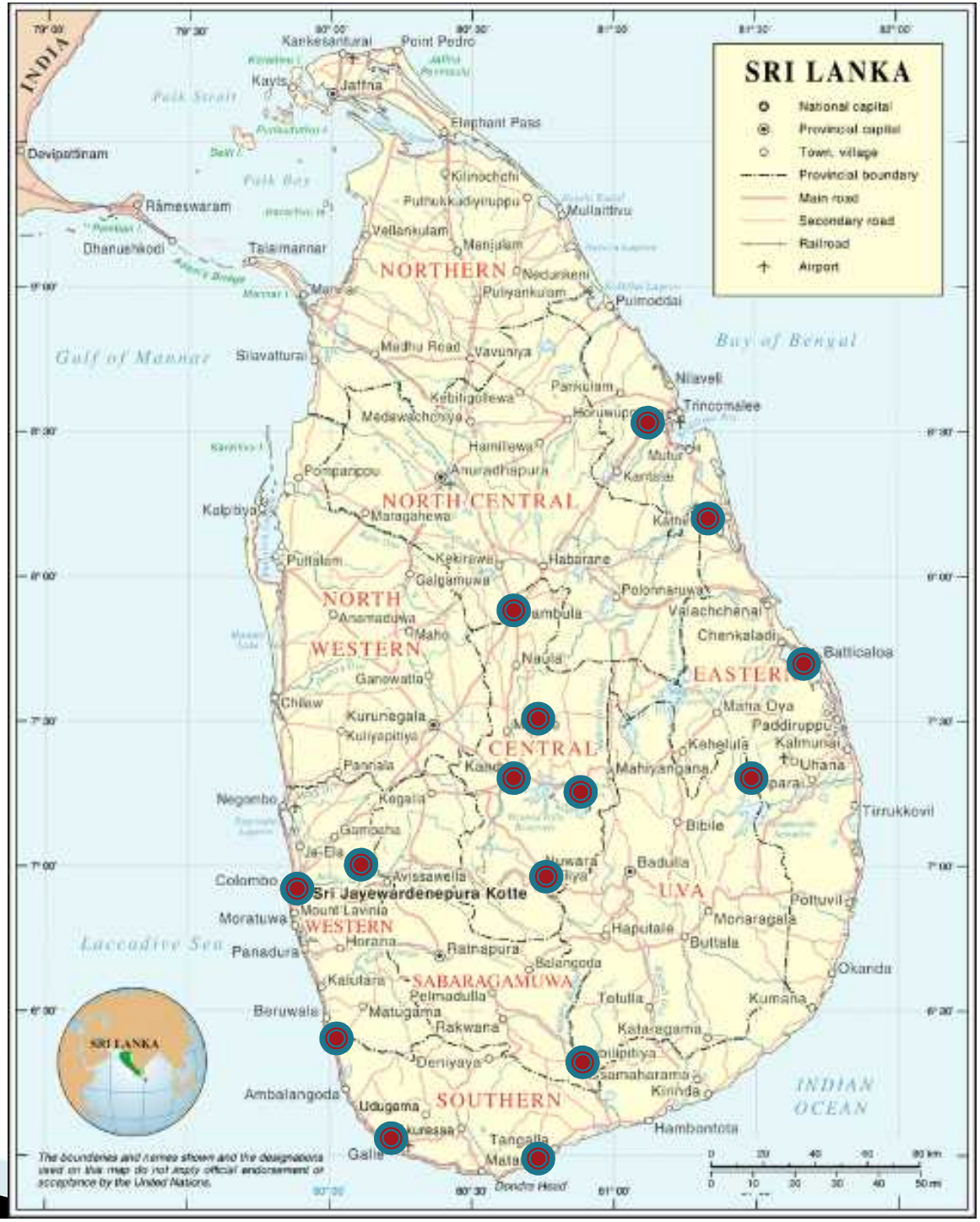
- Cinnamon Air
  - Type of Aircraft: 2XC208 – 8pax +2

- Fairway Holdings
  - Type of Aircraft: Cessna T206H, Amphibian

Water Aerodrome Approved for Float Plane Operations

1. Bentota – River
2. Koggala - Lake
3. Dickwella – Mawella Lagoon
4. Tissamaharamaya - Lake
5. Kandy - Victoria
6. Kandy - Polgolla
7. Dambulla
8. Ampara - Konduwattuwan
9. Colombo – Kalani River
10. Nuwara Eliya – Gregory Lake
11. Trincomalee
12. Arugambe
13. Baticalloa
14. Pasikuda
15. Castleriagh
16. Beire Lake
17. Waters Edge
18. Dandugama
19. Iranamadu

WATER AERODROMES IN SRI LANKA



Approval of Water Aerodromes – Constrains Faced by CAA

- Permission should be obtained from;
  - Ministry of Defense
  - Central Environmental Authority
  - Custodian of the Water body (Mahawali Authority, Irrigation Dept. etc…)
  - Divisional secretariat office
  - Any other relevant agency (Electricity Board, Ministry of Agriculture, Coast Conservation Authority etc…..)

Study Conducted by National Aquatic Resource Research & Development Agency

- In order to find solutions for these problems CAASL requested NARA to conducted a scientific study to determine;
  - the effect of float plane operations on the aquatic life in the water bodies used for float plane operations and
  - damage caused to water bodies due to float plane operations.

Final Conclusions of the Study

- The final conclusion of the study was that;

  - there is no factual basis for the restriction or prohibition of floatplane operation on the grounds of;
    - impacting fisheries or
    - distracting to the water supply for irrigational activities.

  - they are not causing significant chemical and biological effects on the water quality and biota in the reservoirs.

The Conclusions of the Survey Conducted by NARA

- The floatplanes excel at providing fast, safer and ecologically friendlier transportation to remote and sensitive areas where conventional transportation are limited.
- They are not causing significant physiochemical and biological effects on the water quality and biota in the reservoir.
- The noise generating level may comparable to large motorboats, but it is site specific, brief and transitory, lasts for only the 20 to 60 seconds that a floatplane requires to takeoff and depart the area.
- Site selection for water aerodromes could be permitted further minimizing likely impacts and safer landing.
- There is no factual basis for the restriction or prohibition of floatplane operation on the grounds of impacting fisheries or distracting to the water supply for irrigational activities

The Conclusions of the Survey Conducted by NARA

- Floatplane operation does not agitate the water and disturbs fish and aquatic life.
- Under water noise generation is insignificant to make any impact to fish behavior.
- The water aerodrome is assigned in deep central part of the reservoir occupying only a small strip of the water surface where fishing is rarely conducted. Except a floating jetty no other on-shore development is allowed at the base. All these will lead to minimize the likely impact to the land, forests, animals and birds.
- Floatplane operation is allowed only for limited hours during the daytime avoiding fishing time, so the impact is minimal.

The Conclusions of the Survey Conducted by NARA

- No direct relationship is observed in the issue of rationalization of water released for cultivation with the intention of retaining water to facilitating floatplane operation. Mahaweli Development Scheme provides water for irrigation as well producing hydropower for the country and has given rise to conflicting demands of water requirements from the two sectors. Floatplane operation never demands large volume of water and also never competes with either hydropower generation or irrigating paddy fields. It can operate at an even minimum water depth of 2 m. This much of reduction of water level has never been reported since these reservoirs have been constructed.

- Although attitudes and perceptions of stakeholders are different, a relationship would be developed through supporting enhancement of their livelihoods in which the operational use of floatplanes must be coordinated with all users and interested parties of the community.

REASONS TO BECOME FLOAT PLANE OPERATIONS POPULAR FOR TOURISM

- Vital Service to Promote Tourism
- Easy Means of Connecting Cities with Rural Villages (Accessible to many parts of the Island)
- Environmentally Friendly
  - Use existing water bodies (No need to construct airports)
  - Ripple effect is negligible, hence no bank erosion
  - Floats on the water (no rotation of fans inside water)
  - No water pollution
  - Comparatively less noise (few minuets only)
  - No major infrastructure needed
  - Limited to day time operations (No night disturbances)

Limitations of Water Bodies Used for Water aerodromes in Sri Lanka

- These reservoirs are situated in mountainous areas, remote villages and sometimes urban areas too. Therefore some limitations in these water aerodromes exist such as;
  - the width of the water body
  - the height of objects around the water body
  - Limitations in Approach path
  - Using the water body for different purposes by different users

CASTLE REIGH

CASTLE REIGH – AERODROME OVERVIEW

1. A/D CTR / ELEV	N06° 51.43 ' / E080° 35.28' • 3600 ft ASL
2. RUNWAY DATA	Rwy 13-31: 8800 ft TORA / LDA

5 NM - MSA


RWY 13 – ARRIVAL / DEPARTURE
DEPARTURE
ARRIVAL
DEPARTURE
ARRIVAL
ARRIVAL
HIGH RIDGE APPROX
4500 - 5000 FT ASL (1000 – 1500 ft HAA)
DEPARTURE
ARRIVAL
ARRIVAL
Maskeliya Reservoir
2 53 mi
Image © 2011 DigitalGlobe
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Image © 2011 GeoEye
DEPARTURE

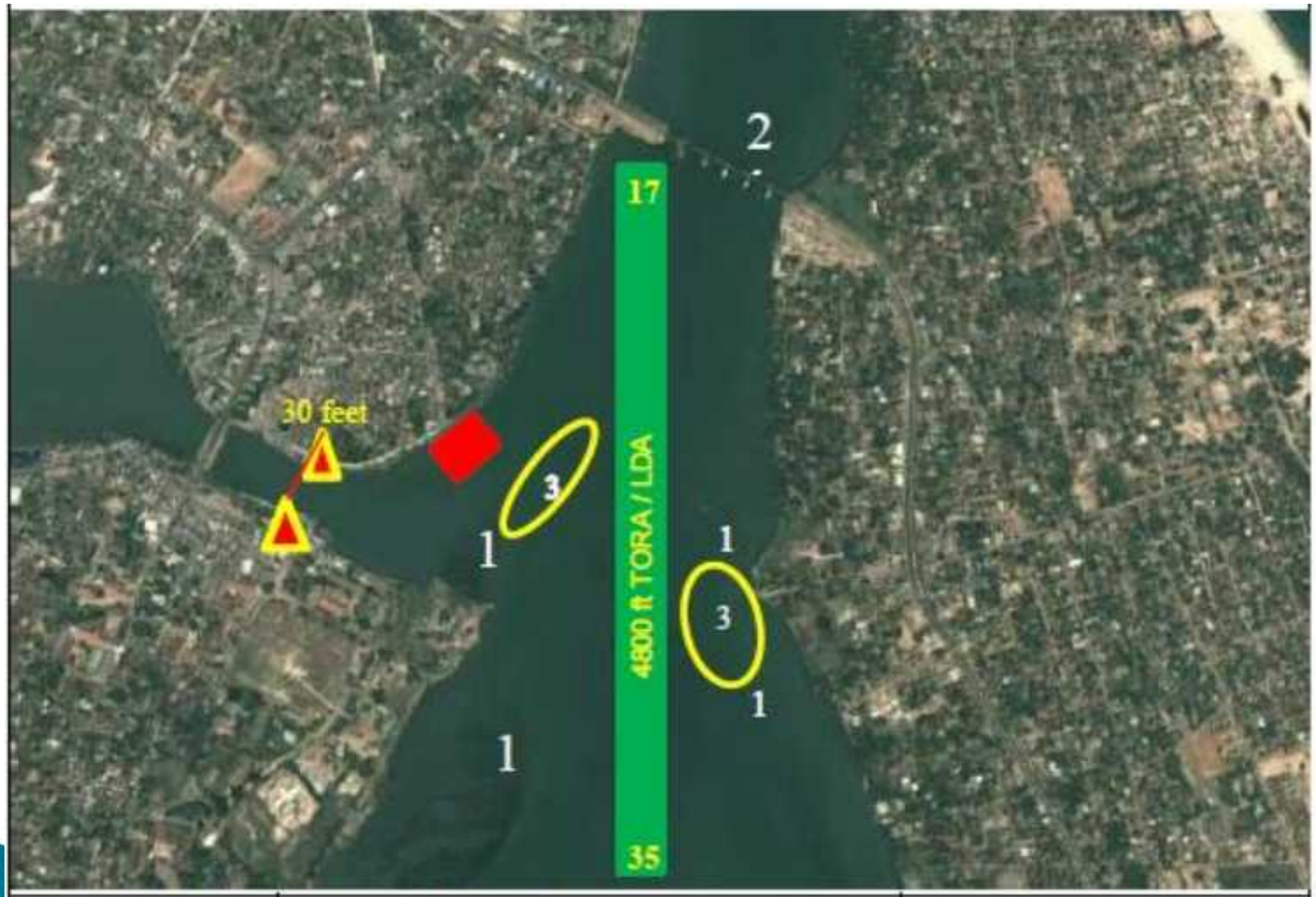

RWY 31 – ARRIVAL / DEPARTURE
ARRIVAL
ARRIVAL
DEPARTURE
ARRIVAL
HIGH RIDGE APPROX 4500 - 5000 FT ASL (1000 – 1500 ft HAA)
ARRIVAL
Maskeliya Reservoir
2.53 mi
Image © 2011 DigitalGlobe
© 2011 Cnes/Spot Image
Image © 2011 GeoEye
ARRIVAL

FLOATING FLATFORM – CASTLE REIGH

FLOATING FLATFORM – CASTLE REIGH


Bay
of
Bengal
NORTH
EASTERN
NORTH
CENTRAL
NORTH
WESTERN
NORTH
EASTERN
CENTRAL
UVA
WESTERN
SOUTHERN
Colombo
BATTICALOA

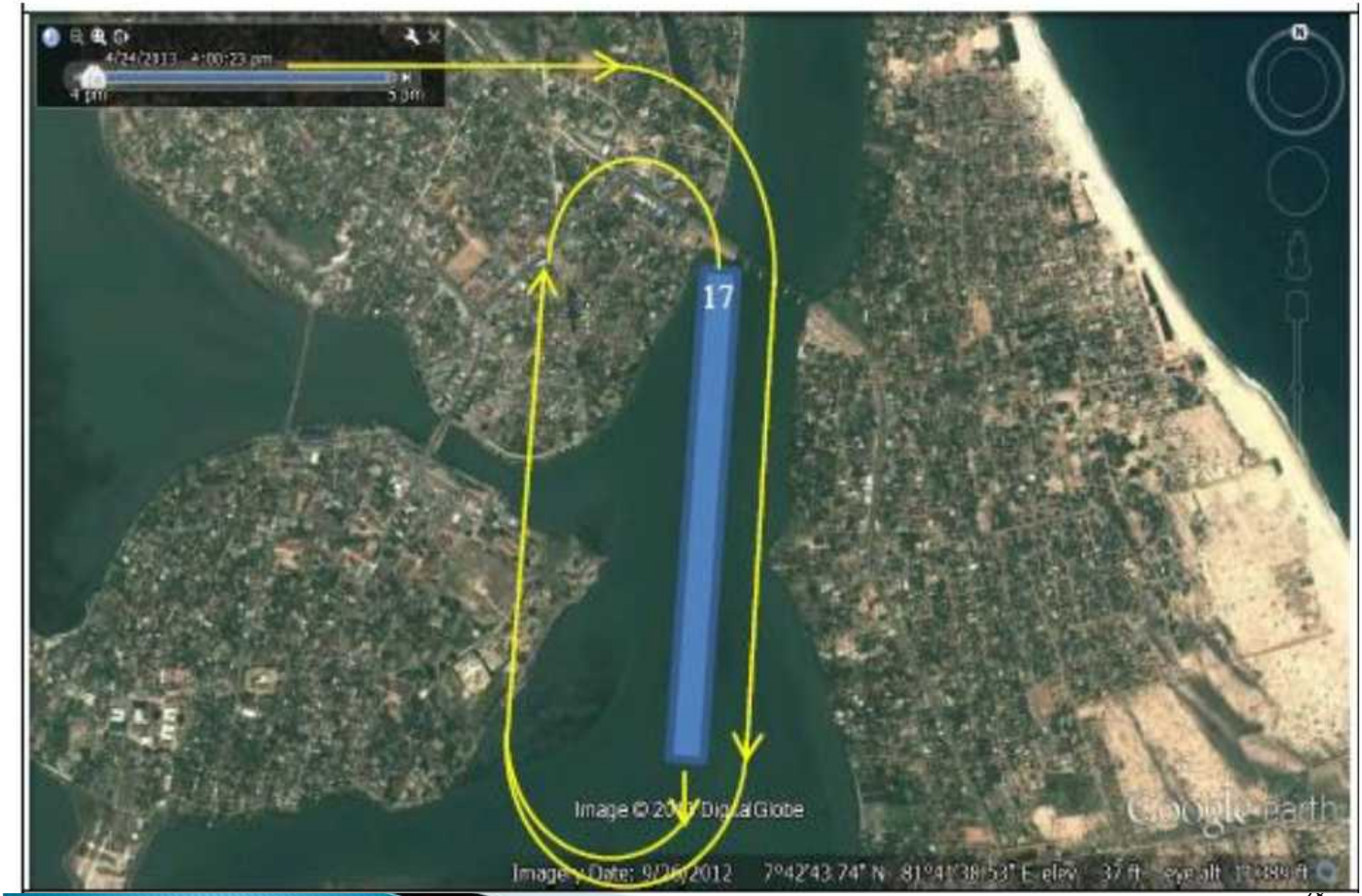
Batticaloa Lagoon – Aerodrome Overview



1. A/D CTR / ELEV	07°42'50.38"N 081°42'19.22"E• 0 ft ASL	5 NM - MSA
2. RUNWAY DATA	Rwy 36-18: 4800 ft TORA / LDA	

VFR ARRIVAL / DEPARTURE PROCEDURES RWY 35

Take-off and landing procedures RWY 17



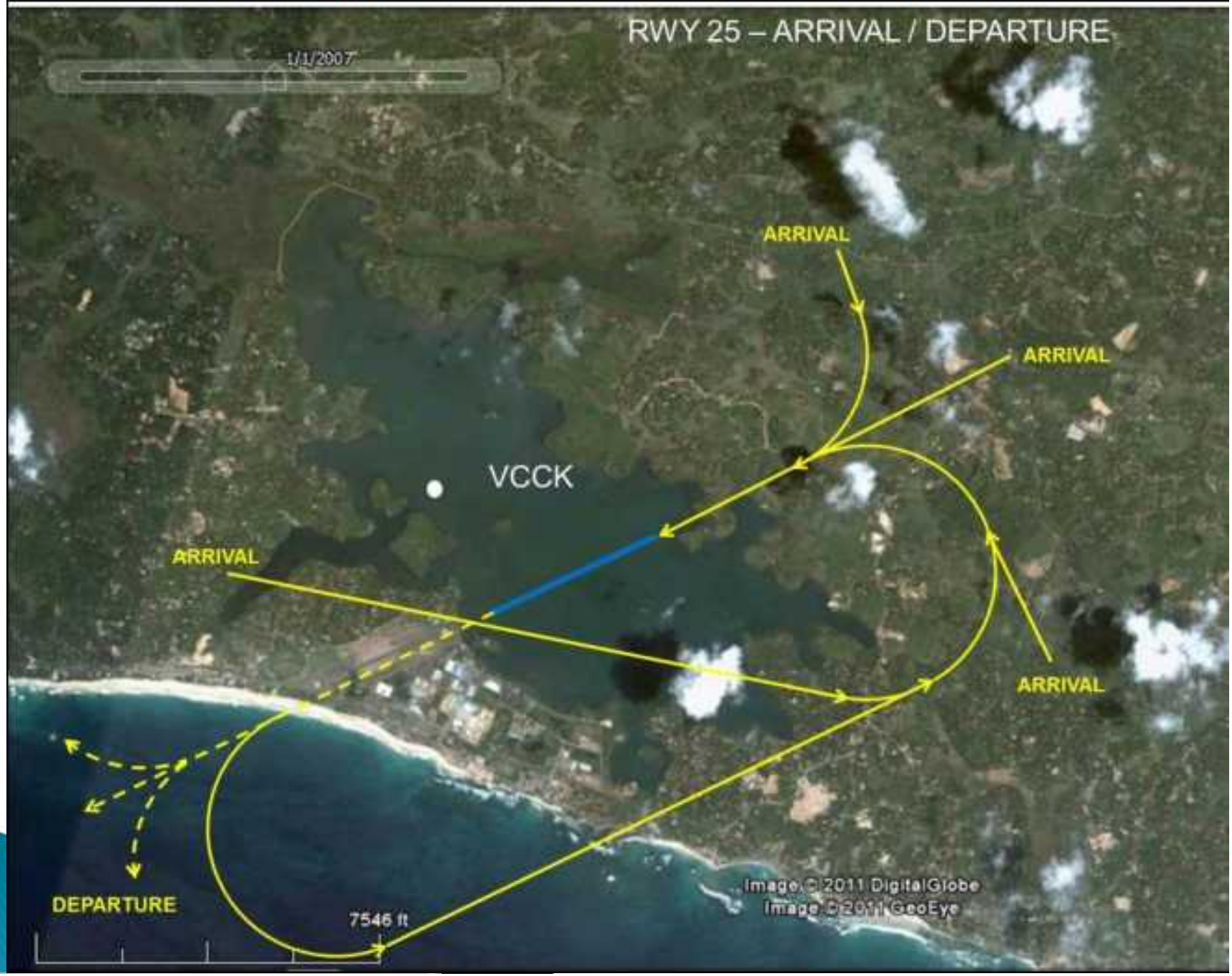

INDIA
Palk Strait
Palk Bay
Gulf of Mannar
Bay of Bengal
INDIAN OCEAN
NORTH EASTERN
NORTH CENTRAL
NORTH WESTERN
CENTRAL
SOUTHERN
Sri Lanka
National capital
Province boundary
Province capital
Railroad
Road

KOGGALA

KOGGALA – AERODROME OVERVIEW

VFR ARRIVAL / DEPARTURE PROCEDURES RWY 07

VFR ARRIVAL / DEPARTURE PROCEDURES RWY 25



VISUAL ARRIVAL / DEPARTURE PROCEDURES RWY 33

ACTION BY THE MEETING

- The Meeting is invited to note:
  - the case study
  - the conclusions of the Scientific Study conducted by NARA regarding Float Plane Operations and;

- Limitations of Water Aerodromes in Sri Lanka when developing standards for Water Aerodromes.

THANK YOU !!!

KALA WEWA TANK

CASTLE REIGH – HATTON

WEERAWILA TANK

WEERAWILA TANK

KALANI RIVER

PARAKRAMA SAMUDRAYA

PARAKRAMA SAMUDRAYA

ARUGAMBAY

PASIKUDA

DAMBULLA TANK

IRANAMADU TANK

KOGGALA TANK

MAHAWILACHCHIYA TANK