

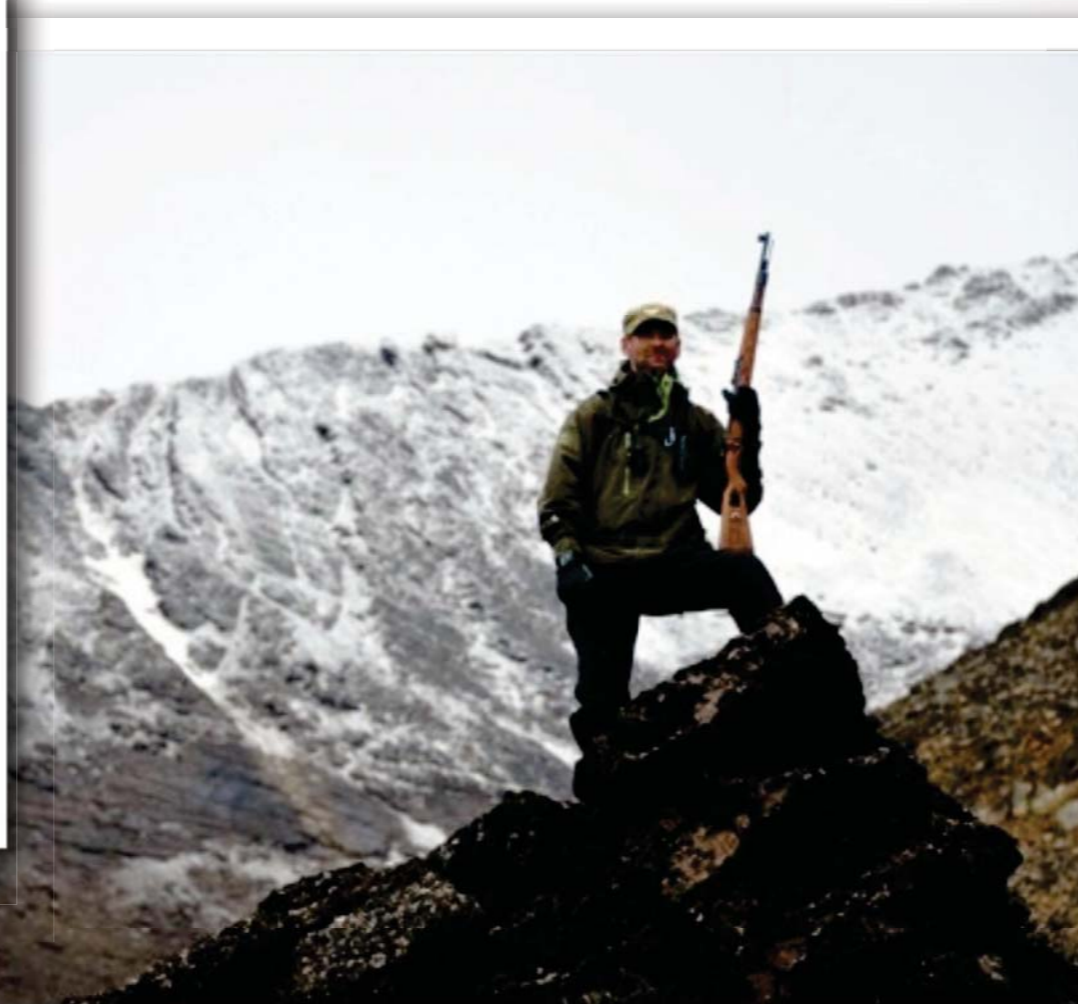
# Svalbard 2012

General & practical information  
participants at the Fugro & SGS  
Petroleum Geological Field Excursion to Svalbard





# HSE - field security

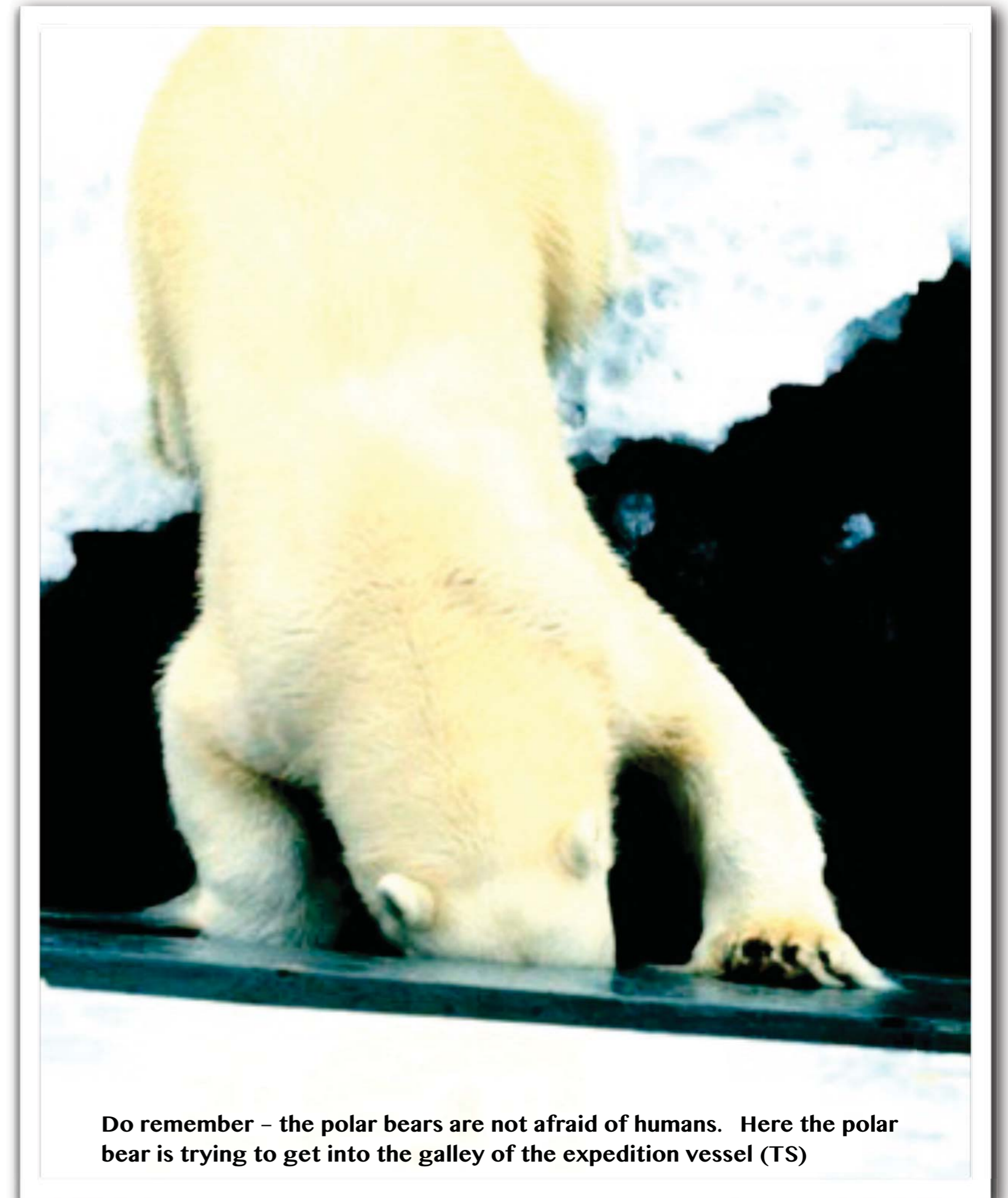


1. Instructions from the expedition leader / field security personnel shall be followed at all times. Onboard the expedition vessel this also relates to instructions from the crew.
2. On the expedition vessel one shall not wander alone on deck. A minimum of two is required for staying out on deck.
3. During use of rubber boats life preservers or self-inflated vests shall be worn at all times.
4. On land it is prohibited to leave the group to go wondering off on your own.
5. In Svalbard the weather is due to rapid and dramatic changes. One should always be prepared for fog, rain or snow. Proper footwear and clothing shall therefore be at hand at all times.
6. Much of the walking will be in steep slopes with lots of loose rocks. Helmets are mandatory and shall be worn at all times. Climbing is forbidden. When walking in the field make sure no one is walking directly below you in case of falling rocks.
7. Rabies has been found in mammals in Svalbard. Contact with wild animals should therefore be avoided at any time.
8. Remember you are here to do a job – not taking chances – **As on all polar expeditions the most important is that all participants comes back as sound – mentality and physically as they set out - anything scientific is a bonus.**



# HSE -working in areas with Polar Bears

- The Polar bear are all over Svalbard and is **extremely dangerous**.
- Always keep with the group and pay attention to all instructions from the expedition leaders.
- Always look around and pay attention to your surroundings. Look for movement or signs from other animal's behaviour. Dead animals normally means there are Polar bears in the area
- If you spot something, report it to the expedition leaders & continue to keep eye contact so we know what the bear is doing.
- If a Polar bear is encountered, we will leave the area quietly - Running can lead to panic and extremely dangerous situations.
- The Polar bear will attack with great speed and determination, if it gets close it will kill you.
- The excursion leaders carries rifles and will try to scare the polar bear away – however if a close-encounter occurs the Polar bear will be shot.
- **Always look around and pay attention to your surroundings at all times. Each expedition participant has an equal responsibility with regards to the group's safety.**





# What to bring - as little as possible...

- Daily routine onboard

- ➔ 0715 wakening
- ➔ 0730 Breakfast
- ➔ 0830 Ready to go on shore
- ➔ 1200 Field lunch (Each participant makes his/hers lunch in the morning. Hot drinks for thermos flasks will be provided)
- ➔ 1630 return on board
- ➔ 1700 Expedition leaders reception on the boat deck
- ➔ 1800 Dinner
- ➔ 1930 Evening session



- ▶ Expedition vessel MS Origo

- ▶ Build in 1953 for the Swedish maritime lighthouse services
- ▶ Highest ice classification
- ▶ Upgraded into modern tourist charters
- ▶ Accommodation in double cabins
- ▶ Highly experienced crew used to working in Svalbard area and this type of excursions
- ▶ Use of zodiacs for landing operations



E.g. field kit (weapons only carried by SGS staff Here O. A. S Heintz in the field 2008)

## Personal field wear – important to bring

- Wind and wet proof jacket and pants (not jeans)
- Thermal underwear (incl. long johns) – preferably wool
- Windproof and warm mittens/ gloves, scarf and mountain cap and/or head-over (helmets will be provided)
- Warm (woolen) socks – thin and thick
- Rugged boots with good ankle support (not trainers – needs to be broken in!)
- Field rucksack – with room for;
  - ✓ Extra, warm wool or fleece sweater(s)
  - ✓ Water bottle (cold drinks)
  - ✓ Thermos flask (warm drinks)
  - ✓ Camera
  - ✓ Sunglasses, sunscreen



- Onboard the boat

- Casual indoor cloths
- Indoor shoes or slippers (No boots inside the boat!)
- Camera charger
- Binocular (if you have)

- It is recommended to **pack in a soft bag**,
- as the cabins are small with no room for suitcases

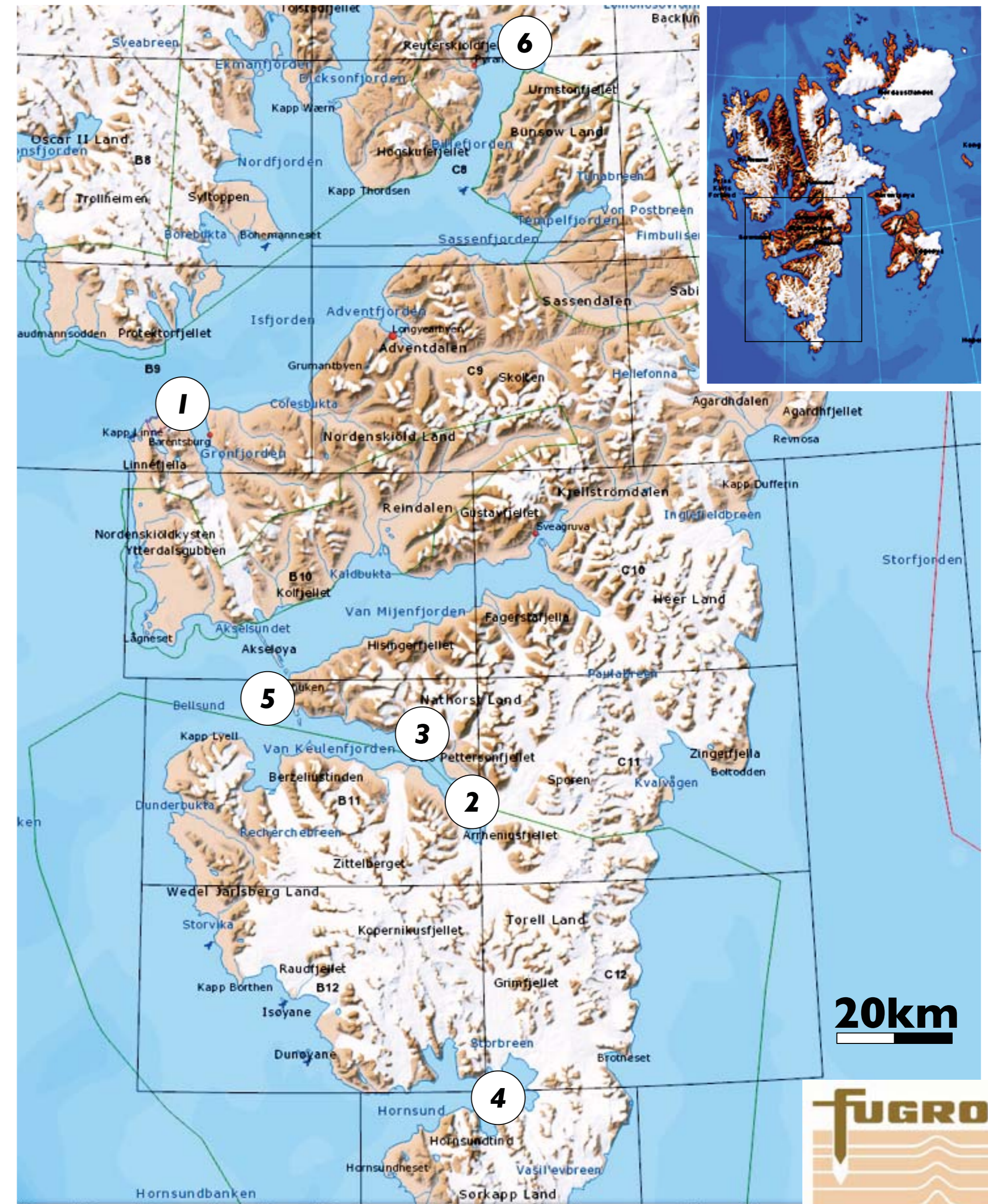




# Localities

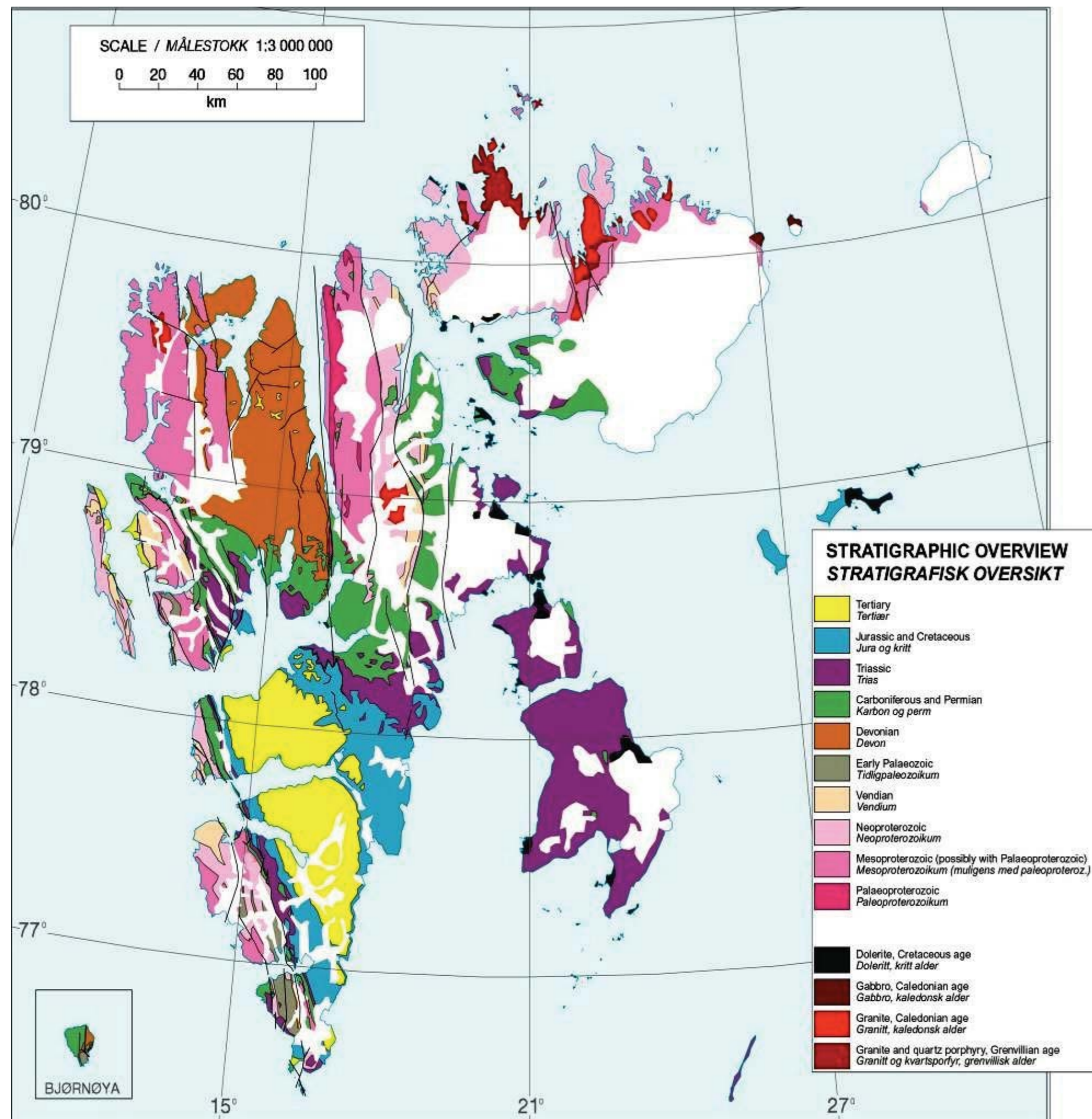
- **Day 1B Festningen**
  - Departure Longyearbyen with MS Origo
  - Helvetiafjellet Fm., Cretaceous non - marginal marine succession
  - Outer Isfjorden tertiary tectonics
- **Day 2B Inner Van Keulenfjorden, Storvola**
  - Eocene foreland basin in seismic scale and details - deep marine deposits
- **Day 3B Inner Van Keulenfjorden, Brogniartfjellet**
  - Upper shelf – deep marine deposits
- **Day 4B Hornsund**
  - Mid Carboniferous syn-post rift sequence
  - Helvetiafjellet Fm., Cretaceous non-marginal-shallow marine
- **Day 5B Outer Van Keulenfjorden**
  - Helvetiafjellet Fm., Marginal-non marine sequence
- **Day 6B Billefjorden**
  - Mid Carboniferous – rift basin
  - Regional tectonics
  - Return to Longyearbyen

Please note that the plan may be altered due to bad weather or Polar bear menace





# Some literature



## Svalbard geology:

Hjelle, A, 1993 Geology of Svalbard, Norwegian Polar Institute Handbook series includes a concise map - very useful and easy to read highly recommended

1:500.000 Geological map south western Spitsbergen, Norwegian Polar Institute

Both of these can be bought from the Norwegian Polar Institute of the web ([www.npolar.no](http://www.npolar.no)) recommended

## Others general are:

Steel and Worsley, 1984, Svalbard post-Caledonian strata..., in Spencer (ed) Norwegian Petroleum Society, Special Publication, 109-135 (bit old but good overview)

Nøttvedt et al., 1993, Svalbard Barents Sea correlation a short review, Norwegian Petroleum Society, Special Publication No 2, 363-376

## Eocene outcrops:

Johannessen and Steel, 2005, Shelf margin clinoforms and prediction of deepwater sands, Basin Research 17, 521-550

Steel et al, 1985, Tertiary strike-slip basins and orogenic belt of Svalbard, SEPM Special Publication 37, 339-359 (bit old but gives an overview)

## Cretaceous outcrops

Gjelberg and Steel, 1995, Helvetiafjellet Formation..., in Steel et al (ed) Norwegian Petroleum Society, Special Publication No 5, 571-593 (controversial)

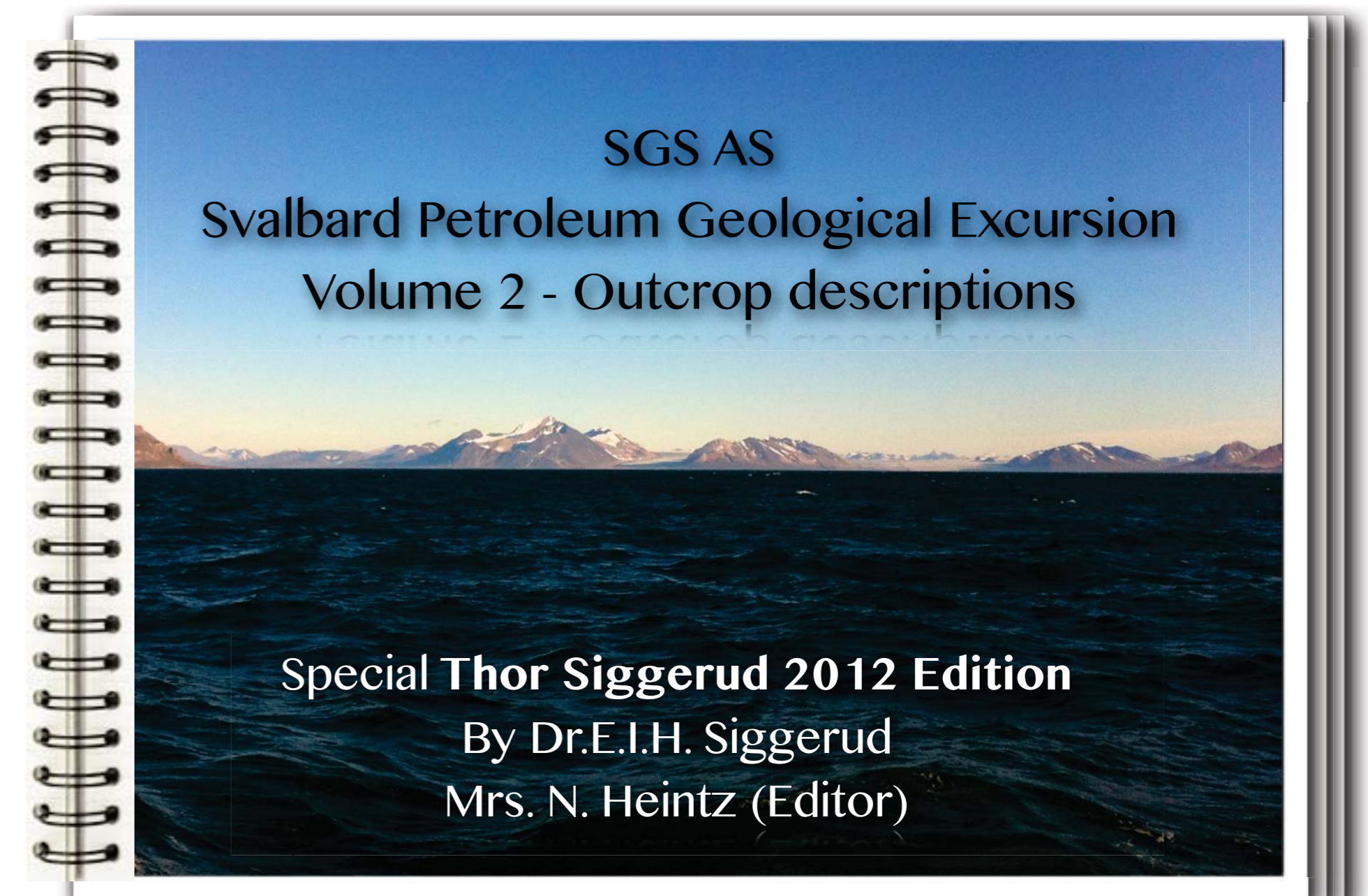
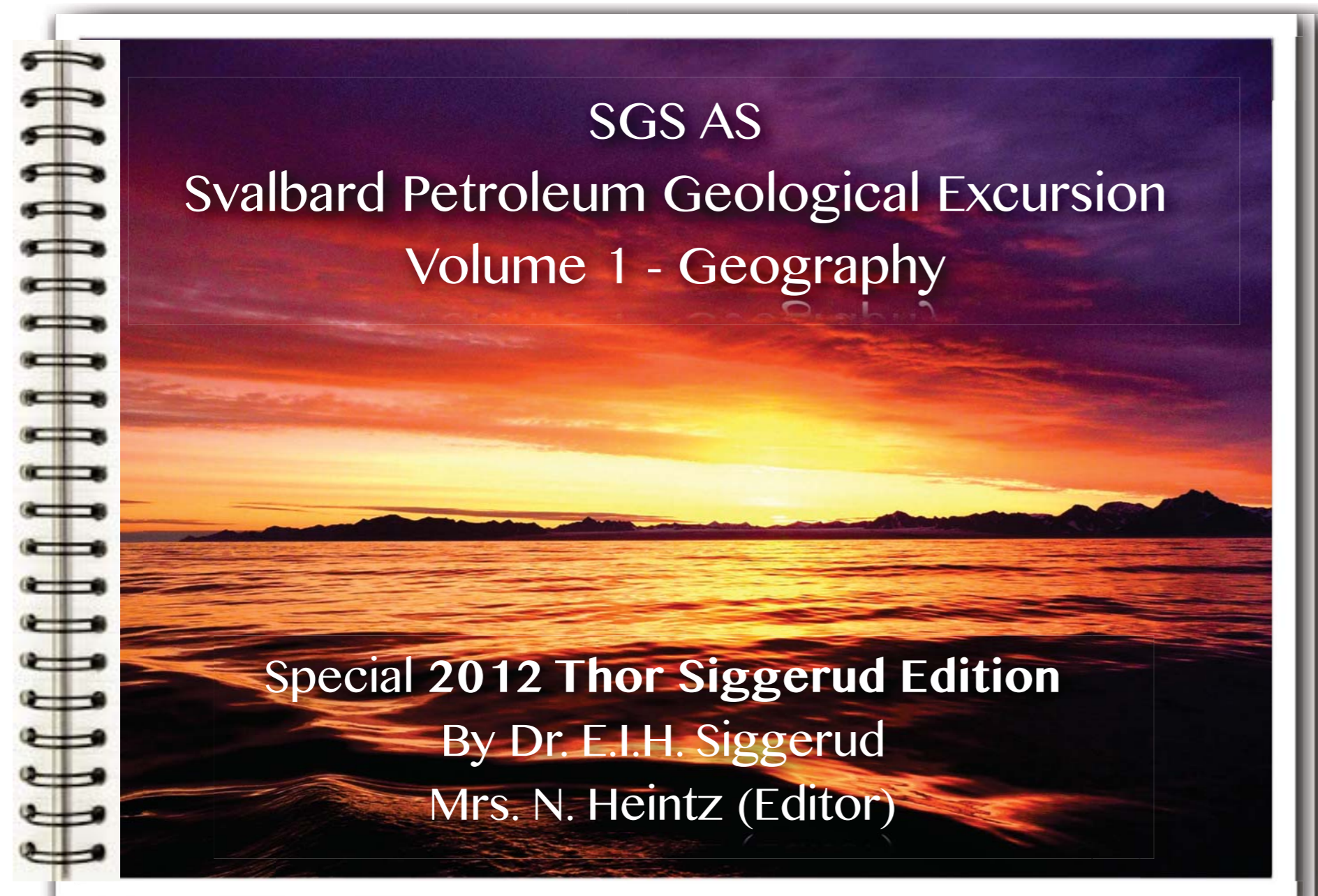
Nemec, W, 1992, Depositional controls on plant growth... Helvetiafjellet Formation..., in McCabe and Parris (eds) Geological Society of America Special Paper 267, 209 to 226

## Mid-Carboniferous

Gjelberg, and Steel 1981, An outline of Early-Middle Carboniferous sedimentation on Svalbard... In Kerr et al. (eds) Canadian Society of Petroleum Geologist Memoir 7, 543-561 (little published on this in the last twenty years ^ this gives an overview even if outdated and model driven)



# What you will receive - Guide book



Each participant will receive an extensive field guide rich in illustrations of outcrops including log sections, analogues subsurface succession, maps and a concise text including an overview of the archipelago of Svalbard includes place names, flora, fauna, history and general geology





# Team SGS Svalbard 2012



**From left to right: Mattis Hamborg (36)**, Paramedic, Police officer, former member Norwegian counter-terrorist team - fifte season in Svalbard, **Dr. Erling I. Heintz Siggerud (50)**, Excursion leader, sedimentologist/sequence stratigrapher, more than 30 years working on Svalbard; **Per Hagenes (50)**, Field security, Telecommunication engineer & big game hunter, fourth season in Svalbard  
Not in the picture **Ole A. S. Heintz (46)**, Paramedic, Advisor Norwegian armed Forces on stress management - 11 seasons in Svalbard



**The excursion leader will supported by two assistants in the field, which all carry high velocity in the field**





*Welcome to Svalbard!*



*Dr E. I. H. Siggerud  
Expedition Leader*

