BSAC EXPEDITION GRANT SCHEME (BEGS)

2010

Extremities of Scotland III:
Dunnet Head
(Pentland Firth)

Edinburgh University Sub-Aqua Club
Expedition Report

Written by Paul Bullen, Dunnet Head expedition leader

Acknowledgements

Thanks to every team member who contributed the expedition, including the planning and preparation such as cylinder filling, engine and boat repairs. The expedition would not have been such a success without them, their teamwork, humour or their patience; yet again proof of the mantra which originated after the 2008 Cape Wrath EUSAC/BEGS expedition: “the best expeditions are made of great people and great diving”.

This report would not be complete without the charts produced for most sites from raw echo sounder data. Many thanks to Max Ruffert for working so hard to produce them—they make the report very valuable to other divers.

Content

This report is written to be a publically available, all-inclusive account of the trip as well as providing reference and inspiration for future expeditions to the area. A short trip report is included for those who do not need background into the area or its facilities. It is hoped that future expeditions would build upon this document to keep it up to date. Hopefully this document will also be of interest to non-diving residents of area and so be a reference for any visiting divers and also to provide a different perspective to the area they live.

PART 1: PREPARATION

Inspiration

EUSAC (Edinburgh University Sub Aqua Club) organised a series of expeditions to explore Scottish/UK mainland extremities and publish details of diving these areas. By their very nature, these locations are very exposed to wind/tides, wild and often far from any facilities or shelter. Diving them is demanding and requires a capable and experienced team of divers. In return, they also offer stunning scenery and exceptional expeditionary diving.

After a very successful expedition to Cape Wrath (most north-westerly) in 2008, Ardnamurchan in 2009 (most westerly), the finale in this series needed to be very special. After some evaluation, the Pentland Firth was selected as being ideal if not challenging – this would offer some very adventurous expeditionary diving with the possibility of diving the most northerly and north-easterly points of the UK mainland.

The Pentland firth area

Dunnet Head and Duncansby Head are at the most northerly and most north easterly points of the UK mainland, and face out towards the Orkneys. Between the mainland and Orkneys is the Pentland Firth (indicated by red arrow on map below), a 4nm wide channel which has a fearsome reputation as some of the most dangerous water in the world. The reason for this is the Atlantic ocean which flows in and out of the north sea through this narrow channel. As a result, tidal flows can reach 16 knots on large spring tides. The sheer volume of water forcing between the islands – up to 3 million tons per second- creates immense standing waves, legendary whirlpools and the potential for some excellent if not very advanced diving.

On the assumption that we could safely dive these waters, the finale looked set to be very exciting indeed. The British Sub Aqua Club BEGS scheme provided vital funding to help such exploration go ahead and the expedition team members are grateful to BSAC for this support.

Objectives and style of expedition

1) Dive two extremities of the UK mainland: most northerly and most north-easterly
2) Explore and publish details of dive sites and facilities around the Pentland Firth.
3) Develop diver confidence and increase level of diving within EUSAC as well as increase confidence and capability in the entire expedition team (12 divers) with exposure to more challenging diving by running a trip in such challenging conditions.

The expedition was planned to be truly exploratory by being entirely self-sufficient: diving, boats, air and food were all being bought and managed by the team, and therefore the expedition would be more demanding but hopefully more rewarding than a lot of other trips.

EUSAC currently runs 5.2m inflatables with 40hp tiller engines as their diving platforms due to their flexibility in launching over less than ideal slipways and beaches which are found on such expeditions. Where ‘squidgies’ lack in speed, they make up for in being flexible and forgiving—they can be carried from sea to trailer if necessary!

Dive site research

Very little documentation of diving in the area exists, as the majority of divers are bound for charter vessels out of the Orkneys.

Gordon Ridley's 'Dive North West Scotland' and ‘Dive Scotland (vol III)’ were of limited use, including some scant details of sites and being long out of print, is unobtainable as a reference for the vast majority of divers.

Caithness Diving club are a useful local resource, http://www.caithnessdivingclub.co.uk/ and offered some advice about potential dive sites.

Due to the amount of shipping traffic and treacherous conditions, there are a large number of wrecks in the Pentland Firth. The UK Hydrographic Wreck Search service (link) was contacted to establish potential dive sites. The search area, once was narrowed by geography and depth, provided a list of 11 wrecks: their details were purchased from the excellent service provided by the hydrographic office.

The sites we dived were identified by poring over the charts and looking for interesting features such as pinnacles and walls. If something looked interesting, it ended up on a list of potential sites for consideration. We had absolute freedom as to where we dived, of course limited by weather, distance and tides!

Maps and charts

Admiralty Tidal Stream Atlas NP209 is vital for any diving or voyage through the area—the Pentland Firth is covered in detail.

Admiralty chart 2581 (Southern Approaches to Scapa flow) and covers Gills bay to Duncansby Head (1:26,000)

Chart 2162 (Pentland Firth and approaches) covers the region from Thurso to Skirza at 1:50,000.

Of course, on any such expedition, the associated OS map for the area is invaluable, and OS Explorer Map 451 (Thurso and John O'Groats) is ideal at 1:25,000.

The divers

(in no particular order)

The expedition team consisted of the following grades, 1xFCD, 4xAD, 2xDL, 4xSD, and deemed to be a good combination of experience and divers progressing skills. The roles below were flexible and tasks shared equally.

A full list of divers, membership numbers and a non-exhaustive list of SDCs are given in Appendix III.

Paul Bullen, AD – expedition leader

Dr Amal Al Sayegh, AD – chef/medic

Graeme Kirk, AD – boat manager of Talisker

Sian Griffiths, DL – dive manager

Steve Czuprynski, DL – chief compressor operator/instructor

Dr Max Ruffert, FCD – sounding, charting and mapping

Peter Swann, SD – compressor operator

Kirsty Hitchen, SD - chef

Sasha Zachegriva, DL – boat manager of Macallan

Sarah Butler, SD – van driver

Clare Nisbet, SD – photographer

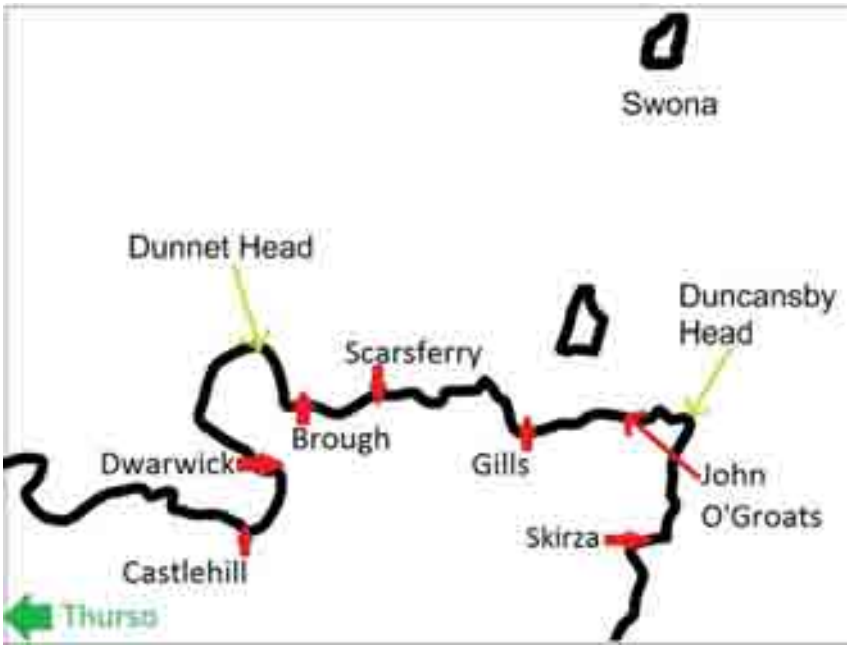
Dave Gibson, AD – logistics co-ordinator

Access

The Pentland Firth is easily accessed and well connected, and due to its connections with the Orkney isles, is served well by roads and villages/towns. The nearest major town is Thurso which is approximately 5-6 hours north of Edinburgh.

Map of Pentland Firth area (for this expedition)

The map below hopefully provides some orientation for divers and outlines some of the key points of the coastline for this expedition, in particular slipways/villages.



Further information on launch sites and facilities is given later in the document.

The plan

Logistics:

Expedition dates: 21-25 July 2010, leaving early on the 21st in order to launch boats and dive on the first day. Choosing dates was critical to the tides for this expedition, there were only two sets of dates which provided the optimal combination of neaps and slack water at reasonable hours.

Vehicles:

After some initial calculations it was clear that more than one van would be required to carry diving kit given the additional weight of two 5cfm compressors. As a result, the best combination was as follows:

1 transit van, 3 people, for 25 cylinders and 2 compressors with towbar and boat

1 transit van, 3 people, for remaining dive kit / weightbelts with towbar and boat

2 cars for people and dry-kit

Accommodation: There is a surprisingly lack of self-catering accommodation for groups of 12 in Thurso. Sandra's backpackers hostel (http://www.sandras-backpackers.co.uk/) was chosen eventually as it could house all divers and provide a reasonable shared area for briefings, planning, cooking and socialising. The hostel was very basic but cheap.

Food: EUSAC has a very strong team spirit on expeditions and believes in self-catering wherever possible. Cooking for ourselves is very sociable, and we have the flexibility to dive (and eat) whenever suits and as can be seen from the budget, the costs are significantly reduced. All food for the expedition cost just over £4.50 per person per day and we ate very well!

Gas: There are no commercial compressors in Thurso; therefore the expedition had to hire two portable 5cfm sets from Edinburgh Diving Centre. As a result of some intensive training on the Cape Wrath expedition in 2008, there were already a number of compressor operators.

Filling with the two compressors worked well. If the surface interval permitted it, we often ran a compressor at lunchtime to at least get some of the cylinders filled and reduce the amount of evening filling required.

In order to avoid creating too much disturbance to local residence, a large sea-front car park was used to run the compressors and fill bottles. This had the added advantage of some spectacular views across the sea.

As part of the logistic organisation, it was decided to use one van for all cylinders and two compressors. This also allowed the 'gas van' to be self sufficient and remain filling cylinders in one location whilst other vans could leave for other purposes.

Launching: the coastline is quite exception in the number of good slipways available, most likely due to the connections with the Orkneys.

Boats : Due to the remoteness and unrelenting nature of the location plus the challenging conditions we would be facing, the boats were prepared to be as self-sufficient as possible and to be ready for assisting the other vessel.

Diving Equipment: DSMBs were mandatory for all divers and flags strongly recommended. Due to the planned sites involved as well as the expectation of 'large seas', divers were encourage to bring single cylinders to keep the weight of the boats down.

PART II: SHORT EXPEDITION REPORT

This section is repeated as a standalone document so there is some repetition of the information given above.

Aim of expedition

This EUSAC expedition was the final in a series of three, to explore the 'Extremities of Scotland', having run a 2008 trip to Cape Wrath (most north westerly) and 2009 to Ardnamurchan (most westerly). This expedition had two extremities in sight: Dunnet Head and Duncansby Head (most northerly and north easterly points of UK mainland respectively). In particular the goals of the trip were:

1) To dive the most northerly extremities of Scotland / UK mainland
2) Explore and publish details of dive sites and facilities around the Pentland Firth
3) Increase confidence within the expedition team running a self-sufficient adventurous expedition

These goals would be made a lot harder given the nature of the Pentland Firth, which is one of the most dangerous stretches of water in the world due to the immense tides which channel through this 4 mile wide firth. The trip was planned well in advance to pick the best dates for slack water.

This short report outlines the events of each day of the expedition.

Arrow shows the Pentland Firth area

Day 1, Getting there and Dunnet bay

The weather forecast doesn't look good for the trip! Force 5-7 north, north-easterly. Couldn't be much worse...

Uneventful but foggy journey from Edinburgh after a very early start, taking about 6 hours

Expedition leader goes to check conditions. Eventually finds the slipway: despite the impressive surf, the only shelter on the coast-line is doing a good job: the water is flat calm!

Divers now realise they are actually going to dive, have to tear themselves away from their hot drinks

Boats are launched and loaded very quickly

Boats motored round headland as far as possible and turn round when waves get too large

Despite the grey weather, very happy divers heading for first dive

Echo sounding shows a gentle slope. Doesn't look good: could be a good 'shakedown' dive

First divers come out raving about the dive

Site has excellent visibility, depth 15m, boulders and gullies, everyone sees a dog fish if not lots of dog fish, huge shoals of fish, scorpion fish and also a john dory! Everyone has an excellent dive

Boats are moored with three-point anchoring. Fingers crossed they survive the night

One van heads to fill cylinders, others return to start cooking

Weather forecast not good for tomorrow

Everyone knackered but happy!

Day 2 Dunnet Head (most northerly point!) and Briga Head

Weather not too bad despite forecast

Boats have survived the night

Amazingly, we manage to motor round to the UK's most northerly point – Dunnet Head. Team poses for some photos and get very excited about diving this wild and remote location

The expedition team pleased to have reached the most northerly point

The most northerly point makes an excellent dive site: 15m visibility, rocky steps down to 30m, lots of coley, many dogfish, slight drift, dead men's fingers covering the wall. Very happy team, despite the sea-sickness

Motor back, eat lunch and lie around in the sun, someone stays awake to run the compressor

Relaxation is soon over and divers are kicked into action for second dive

Short journey round headland

Another good dive, a gentle slope down to 35m with large boulders, gullies, life everywhere, more dogfish (novelty wearing off a bit now), large octopus, gentle drift

Boats unloaded and recovered, left boats on trailers at slipway

Team splits up for compressor and cooking duties

Forecast not looking good for next day. Again

Dive briefing

Day 3 North west Stroma, South west Stroma and 'the Gloup'

Some confusion with bunk room keys being locked in room made start of the day a bit stressful

The boats have not been stolen

Scouting party find next slipway, further east, opposite Stroma

Van misses scouting party and overshoots turning

Boats launched down very steep slipway, some faff

Currents much more noticeable as we head round Stroma

Divers drag themselves down the shotline due to strong currents, watched by seals basking in the sun

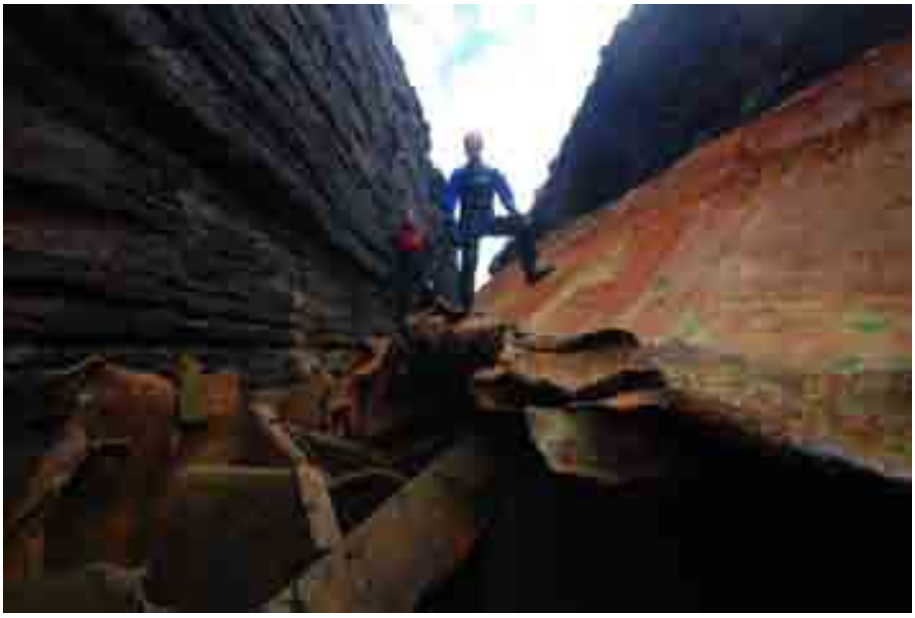
But the divers land on wreckage! Quite flattened but interesting, bollards, brass, boilers, some superstructure, excellent visibility, wreckage at both 15m and 37m, both had boilers so quite possibly two wrecks: the Copeland and Corinthia

Quick lunch and bottle filling in the sun

Head back out to south west of Stroma, dive in shadow of recent (1993) wreck of Bettina Danica: amazing to see the hull of a ship forced into a gully by the power of the sea

Excellent dive, lots of wreckage, looks like more than one wreck, in some very pretty gullies, seals hanging around, some caves to explore

We take the chance to explore the wreck on surface, clambering through the engine room and up onto the side of the hull



Exploring wreck of the Bettina Danica

Some snorkelling with seals whilst waiting for divers. Visited very strange optical illusion, due to the striations on the rock, appears as though the sea is flowing downhill!

Optical illusion – seawater flowing downhill?

We stop at huge ‘Indiana Jones’ cave on way back, a few hundred metres long, 30m high, big enough to drive the boats into and opened up into an open air pool at the end. Divers jump in with dive kit and snorkelling gear to explore. A number of surprised seals were rudely awoken!

Exploring a large cave

With the boats unloaded and vans filled with kit, the boats are driven a few miles round to John O'Groats harbour and moored up for the night

Somewhat later than hoped, the now usual routine of bottle filling and feeding divers ran late into the night. This is clearly no holiday!

Day 4 Geo of Scalites (most north-easterly point!) and east Stroma

A fairly early start in order to catch reasonable tides

Boats loaded at John O'Groats

Boats driven a short distance to the most north-easterly point of the UK mainland... the team reached another extremity!

Time for another photo

Dive site is the oddly named Geo of Scalites, a large gulley (actually an open top cave), which split into two branches. Depth about 15m, large boulders in the middle of the gulley, amazing visibility and at the ends of the branches the caves went a very long way in, in narrow fissures. A stunning dive, with seals, lobsters and some beautiful views as the sun shone through the water

Diver in narrow cave

Lunch spent looking round the tourist trap of John O'Groats, divers look out of place amongst droves of tourists!

Battling our way through very large standing waves, requiring some excellent seamanship as well as lots of confidence in the boat's buoyancy, it is decided that the conditions were just not suitable to drop divers in or to head any further round the headland and so we turn back and head west for our second dive:

A drift on the east side of Stroma unfortunately one of those drifts which looked excellent on the surface, first divers in got a great dive (ending up over a mile away) but some divers were 'lucky' enough to get slack water! Lots of kelp, not a huge amount to see though. Slightly disappointing!

Boats are left moored in the busy harbour

Compressor operators had an easier job : only half the bottles require filling for the next day as there was only one dive planned

Some excellent food cooked by the chefs, followed by a couple of pints in the local pub

Hungry divers

Forecast for next day looking poor: fog

Day 5 Pentland Skerries, return journey, curry

An early start for a couple of people who offered to take a look at the fog conditions, so that we can recover and launch / dive somewhere further south if necessary. Thankfully, no fog

Nice bright day down at John O'Groats, final day of diving

Weather and tides allow us to head to a remote set of very small islands, the Pentland Skerries, which are in the middle of the firth and so bear the full brunt of the tides – there's even a wreck high and dry on one of the islands!

Once again, we have to cross some massive standing waves: the engines on the boats struggle to keep the boats ploughing through but after a lot of perseverance, we are in flat calm water and on our way

When on-site, the echo sounder is used to find an interesting site, a small wall down to about 25m

A shotline is dropped in and immediately shows us just how strong the tide is —the water whipping around the buoy and threatening to take it underwater

Good chance for everyone to relax whilst waiting for slack, amongst the alternating standing waves and flat calm water

Divers waiting for slack and hoping the buoy doesn't disappear

First divers dropped in and a DSMB appears very quickly. Thankfully as we are diving nearly at slack, not that it lasts long, they didn't drift too far into the main channel

The dive itself is quite spectacular, slope to about 30m, excellent visibility, dead men's fingers everywhere, a large number of edible crabs sheltering from the current, a good drift, huge shoals of fish and an excellent dive to finish the expedition off

Diver on the remote Pentland Skerries

Back at the harbour, the boats are unloaded and then recovered with a large crowd of tourist on-lookers. Thankfully the expedition team are more than capable of two slick and professional looking recoveries, no major embarrassment

Time for another cheesy photo!

A very happy but exhausted team of divers at John O'Groats

The boats had one more job to do, provide a table to make sandwiches on. After that, a long drive back to Edinburgh to wash the kit down, take vans back and finish it all off with a curry!

Summary

The team achieved their goals and undertook some very adventurous exploration in some of the most dangerous waters in the world, all this was done without incident and with a huge amount of fun and excellent teamwork. The feedback after the trip was incredibly positive and it is a credit to the team that the planning and execution of the diving went so smoothly. The diving in the Pentland Firth is worth the effort and there are hundreds more potential dives sites waiting to be explored.

This expedition was an excellent finale to the series – it would be impossible to have a better expedition to another extremity of Scotland and it is hoped that other divers will use the full trip report and previous expeditions in the series as inspiration to undertaken similar diving in the future.

PART III: The dive sites

A summary of the dive sites. All charts are shown at chart datum. Many thanks to Max Ruffert for collating detail and producing these.

General points:

Slack is calculated as below, however Admiralty Tidal Stream Atlas NP209 should be referred to as well as tidal diamonds—the tides in this area are notorious.

Between HW and HW+1 Dover

Between HW-6 and HW-5 Dover

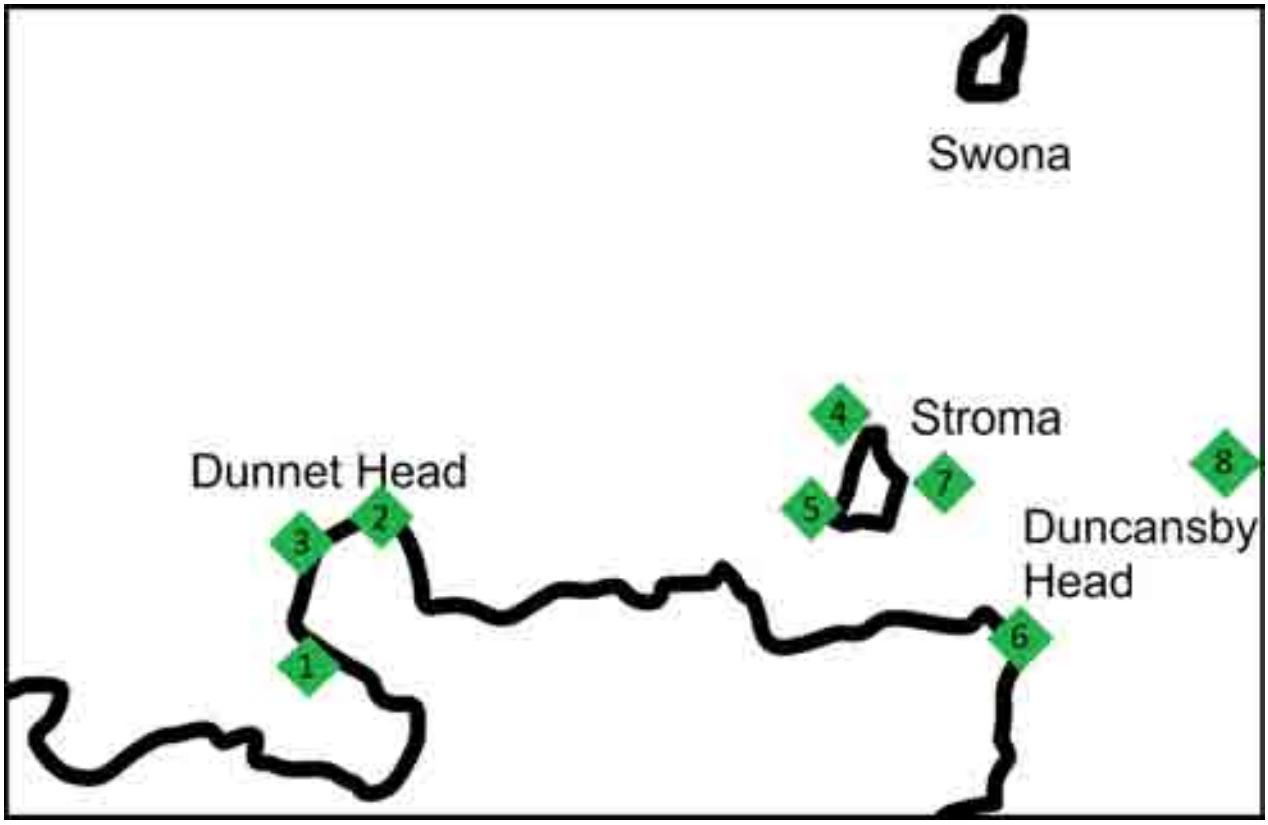
Traffic: this is quite a busy stretch of water, large shipping uses the main channel and to travel round the NE tip of the UK mainland. Large traffic ‘report in’ to the coastguard (Aberdeen covers this area) because of the tides!

Lifeboat: Thurso, Wick, Longhope

Coastguard: Aberdeen

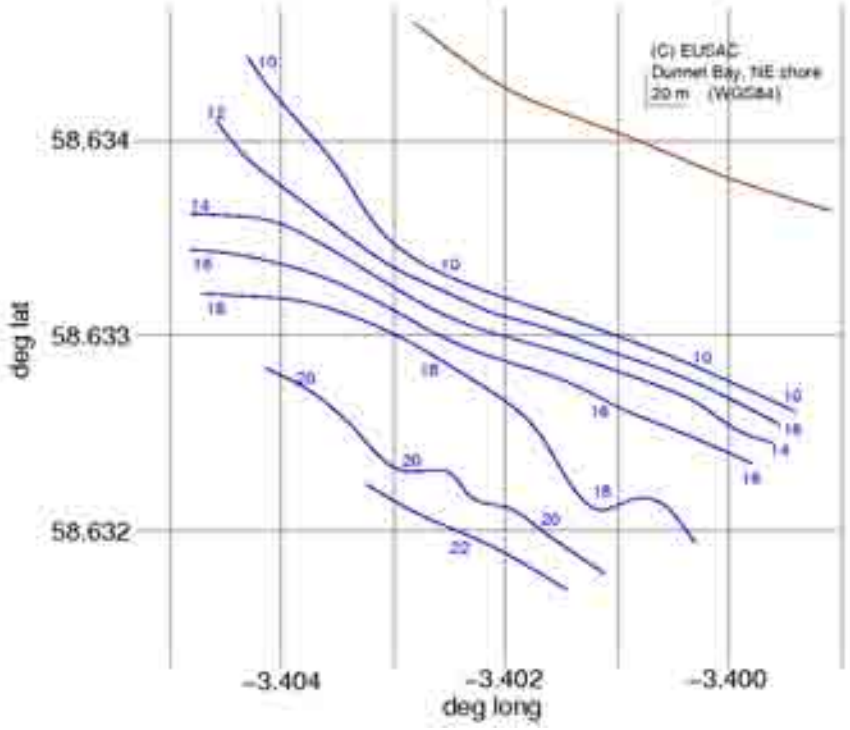
Recompression chamber: Scapa flow

The map below shows dive sites by dive number (i.e. dive site 2 is the second site we dived and is referred to as #2 below). Many thanks to Max Ruffert for producing the charts of the area. More detailed charts are available with more data, those given are simplified for clarity.



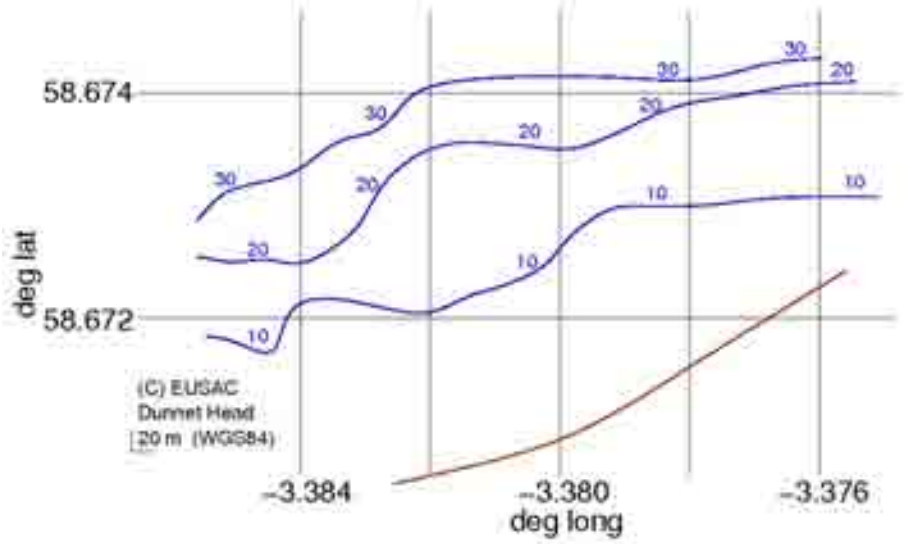
<1> Dunnet Bay

A gentle slope to 25m, excellent visibility, large boulders and gulleys, huge number of dogfish, john dory!



<2> Dunnet Head point

Prominent headland, with lighthouse on surface. Large rock steps to ~30m, amazing visibility. Not too susceptible to currents but be aware of huge variations in currents during all states of the tide.



One of many dogfish near Dunnet Head!

<3> Briga Head

Gentle slope down to 35m, with massive boulders, lots of dead man's fingers, gentle drift, lots of dogfish, octopus, superb visibility, scorpion fish, gullies.

No echo sounding data available for this site.

Nudibranch at Briga Head

<4> North west Stroma

Very exposed to currents which rip around the north and south tip of Stroma, extra care should be taken when diving near these points. Very strong currents whilst we were on-site but amazing visibility as a result. Worth spending more time at this site, lots to find and explore. Brass was seen in shallow water.

Gentle slope to 40m+, wreckage at 15m and 35m, boilers at 10m and 37m, deeper wreck probably Copeland, shallower wreck probably Corinthia.

Copeland, 798 tons gross, sunk 1888, well broken up in 36m

Corinthia, 1378 tons gross, sunk 1903, only stern section definitively dived, suspect foreward section is the wreckage in 15m we found, quite flattened. Stern and prop (minus one blade) in this area.

No echo-sounder data for this site.

Diver examines bollards from wreck (Corinthia?)

<5> South west Stroma

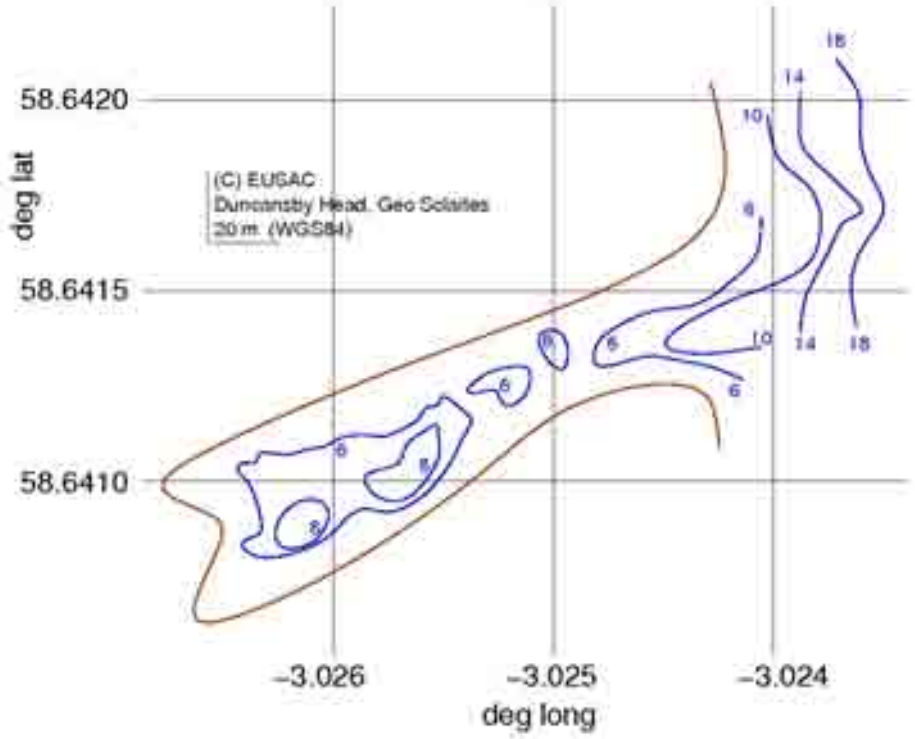
In the shadow of the Bettina Danica, a gentle slope with gullies, boulders and caves and caverns. Lots of kelp (to 17m) and seals on the surface. Wreckage all around, compacted into gullies in places. Surprisingly good dive site, well worth a rummage amongst the wreckage. Also worth taking a look at the Bettina Danica on the surface.

No echo sounder data for this site.

Bettina Danica stern, forward section is compacted into gulley

<6> Geo of Scalites

An excellent dive site, one of the best on the trip, well sheltered from currents and wind as it is a large open cave, a couple of hundred metres long into which boats can be driven. General depth 15m in middle of gulley, large boulders and lots of life around. Cave splits into two large branches (not visible on chart below, but at south west end of the geo, both extend into very long narrow covered caves which are very atmospheric and pretty. Well worth a dive. Be aware of the extreme tides outside the entrance.

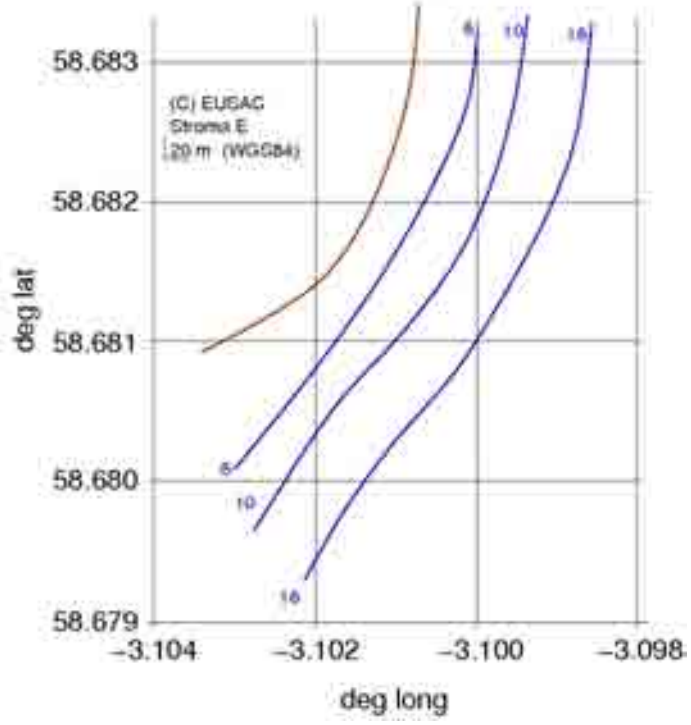


Diver explores cave

Happy diver at Geo of Scalites

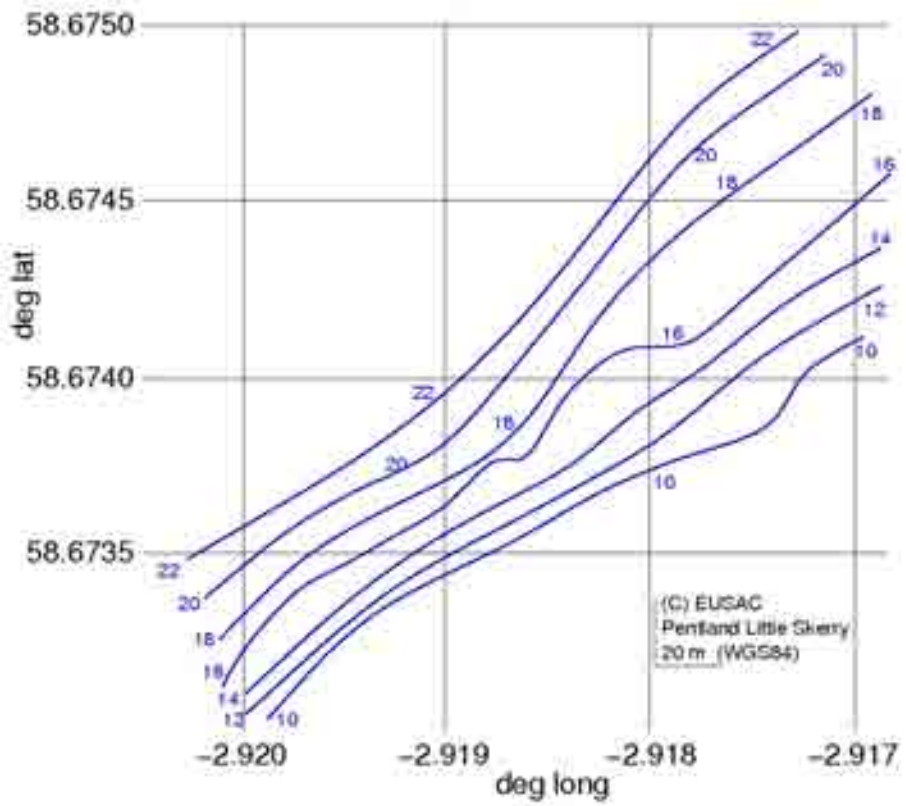
<7> East coast of Stroma

Strong currents in this area as the stream of the firth diverts round Stroma itself. Unremarkable dive site apart from the current. Flat seabed to about 18m. Only worth diving with strong current as a drift.



<8> Pentland Skerries, north east of Little Skerry

Very exposed site, current rip past these islands, a 12kn mark is shown on the chart immediately next to the dive site as well as an extensive eddy. Moderately steep slope to at least 36m, you will be at the mercy of whatever current is running at the time and slack is very short. Lots of fish, squishy life and dead men's fingers, as well as edible crabs. An exciting dive!

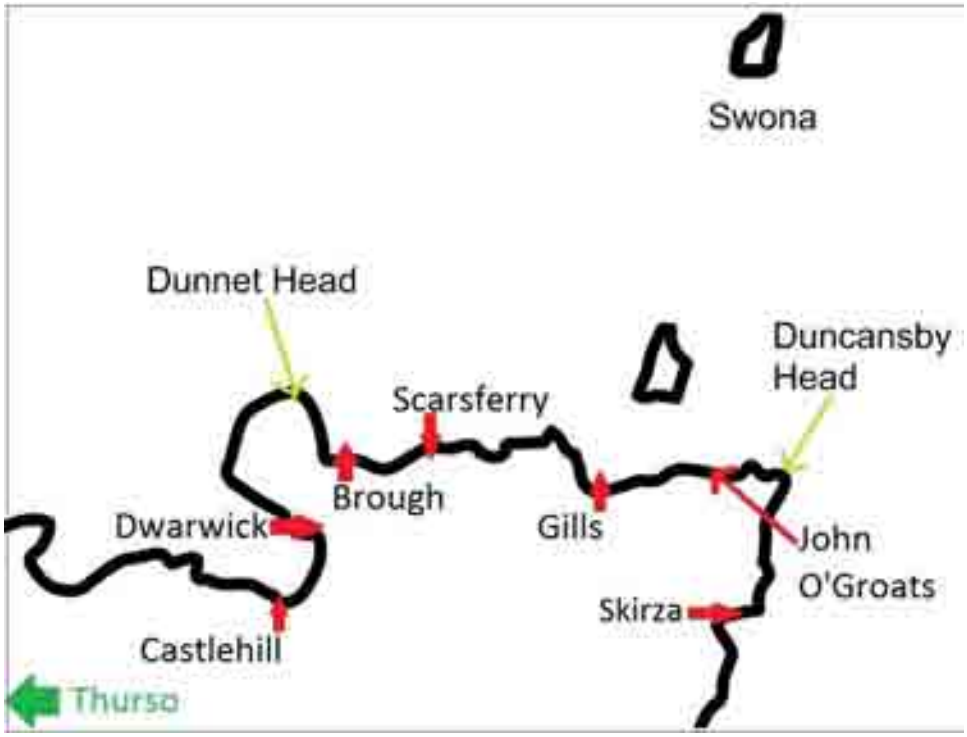


Field of dead men's fingers at Pentland Skerries

Ascending diver surrounded by fish, good dive to finish the trip with!

PART IV: Launching and local facilities

The map below shows slipways reported, however EUSAC only used Dwarwick, Gills and John O'Groats, which are detailed below.



Dwarwick

A very good modern slipway, wide enough for two boats, very quiet, small car park.

Gills bay

Next to ferry terminal (just before you reach the office), steep slipway with some road and water traffic. Thick mud beyond slipway, limited space at top of ramp. Useful jetty to load kit.

John O'Groats

Very busy harbour, lots of tourists and boat traffic. Not much space for mooring. Good facilities for food, etc. Slipway is in top right of this photo (unusually quiet – boats were all out on tourist charters).

Further Sites for exploration

Other sites in the area worthy of exploration—there are plenty, however:

NW Stroma

Duncansby stacks

Pentland Skerries

Swona

Scotland's Haven (snorkelling, perhaps)

APPENDIX I: Photographs

Photographs for the expedition can be found at the following locations:

A collection of photos by Clare Nisbet and Paul Bullen, will be available on the EUSAC website (under BEGS) , www.eusac.co.uk

Photos by Clare Nisbet http://picasaweb.google.com/Clare.j.Nisbet/DunnetHead#

Underwater photos by Paul Bullen http://picasaweb.google.com/xpabux.PB/DunnetHeadUW#

Surface photos by Paul Bullen http://picasaweb.google.com/xpabux.PB/DunnetHead#

APPENDIX II: Expedition costs

A comparison of forecast and actual expenditure is below, a copy of the values from the detailed calculations can be provided as an attachment.

	Budgetted total	Acutal total	Notes
Accommodation	£ 960.00	£ 672.00	Far cheaper because budget hostel accommodation
Compressor hire	£ 160.00	£ 100.00	Compressor rates negotiated at time of booking. Variable dependent
Transit hire 1	£ 220.00	£ 287.50	Van for towing and dive gear
Transit hire 2	£ 88.00	£ 287.50	Needed additional van due to payload, towbar guarantee very expens
Boat fees (club)	£ 192.00	£ 176.00	Two half days of diving classed as one day
Boat 1 fuel	£ 216.00	£ 151.00	Good use of local slipways to reduce journeys
Boat 2 fuel	£ 216.00	£ 151.00	Good use of local slipways to reduce journeys
Food	£ 288.00	£ 274.70	
Vehicle fuel	£ 230.00	£ 301.80	
Compressor fuel	£ -	£ 21.08	
Cylinder fills	£ -	£ 64.40	
Misc	£ -	£ 69.00	Wreck search, charts, padlock
	£ 2,570.00	**£ 2,555.98**	

APPENDIX III: divers and qualifications

	Grade	BSAC/branch Role	Branch	SDCs (not exhaustive)	Mem #	Branch instructor ?
Paul Bullen	AD		EUSAC	O2, CO, FA, PRM, DPM, DCA, ABH, AND inst	A705226	y
Amal Al Sayegh	AD	Area coach	EUSAC	O2, FA, PRM, DPM, DC, AND inst, CO	A705224	y
Max Ruffert	1st	BSAC expeditions officer	eDivers/BSAC 21/EUSAC	O2, FA, PRM, DPM, DCA, AND inst, ABH, CO	A696692	y
Graeme Kirk	AD		eDivers/EUSAC	O2, FA, PRM, DPM, DC, CO	A725785	y
Sian Griffiths	DL		EUSAC	O2, FA, PRM, DPM, BH, CO	A716475	y
Peggy Butler	SD		EUSAC	O2, BH	A726694	y
Peter Swann	SD		EUSAC	O2, BH, CO	TBC	y
Steve Czuprynski	DL	Branch Diving Officer	EUSAC	O2, PRM, DPM, DC, AND, ERD, CO	TBC	y
Clare Nisbet	SD		EUSAC	O2	A726694	y
David Gibson	AD		eDivers/EUSAC	O2, PRM, DPM, DC, AND, CO	A764235	y
Kirsty Hitchen	SD	Chairperson, EUSAC	EUSAC	O2	A772634	y
Alexander Zacheshigriva	DL		EUSAC	O2, DC, AND, CO	A782560	y

O2	Oxygen administration
CO	Compressor operator
FA	First aid
PRM	Practical Rescue Management
DPM	Dive Planning and Marshalling
DC	Diver Cox'n
AND	Advanced Nitrox Diver
BH	Boat handler
DCA	Diver Cox'n assessor