

Isle of Coll A Dark Sky Island

Application to the
International Dark-skies Association

Isle of Coll Community

A Dark Sky Island

This document, along with the Coll Lighting Management Plan, forms the basis of the Isle of Coll's application to the International Dark-skies Association (IDA) to become a Dark Sky Community.

The application was written by Tony Oliver Grad. Inst P., on behalf of a group of Coll residents interested in preserving the dark value of this tiny island.

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Queries about this application or the LMP should be addressed to:

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The Isle of Coll, The Inner Hebrides, Scotland

Coll is a small, low lying island some 5 kilometres west of the Isle of Mull and 6 kilometres south west of Ardnamurchan Point, the most westerly part of UK's mainland. The island is approximately 21 kilometres by 5 kilometres and is fairly central in the coastal chain of Hebridean islands, offering breathtaking views of the surrounding islands.

The highest point on Coll is Ben Hogh in the south west of the island, which rises to a height of 104 metres (341 ft).

The Isle of Coll lies 56.66 degrees north and as such has considerably longer daylight hours in the summer than most parts of the UK, particularly England and Wales. Mid summer there can be almost no darkness, however, in winter, the Isle of Coll has considerably longer dark hours making sky viewing even more exciting. In the depths of winter daylight hours are short, approximately 09:00 hrs to 15:30 hrs.

The island is well known for its sandy beaches, 23 in all, large sand dunes and a rather dull but noisy little bird called the corncrake (*crex crex*).

The island has one village, Arinagour, which houses all the island's amenities and is just 1 kilometre from the Caledonian MacBrayne ferry terminal where daily (summer) ferries connect with the mainland and the neighbouring Isle of Tiree. In the winter there are just four ferries per week. There is an airport in the S.W. of Coll with scheduled flights to Oban and Tiree on Mondays and Wednesdays.

The runway is unlit.

Coll has a residential population of just over 200 and the island enjoys a higher proportion of young families with children than found on other similarly sized Hebridean islands. The primary school is usually full to capacity. Employment is based on farming, fishing, education and the tourist industry the latter attracting niche tourists in relatively small numbers due to limitations of accommodation availability. Coll is, therefore, one of the quieter islands of the inner Hebrides.

Coll is an incredibly dark place in winter assisted by the small volume of island vehicular traffic and the fact that there is no street lighting. Aurorae Borealis are often seen during these periods.

This application is submitted to the International Dark-skies Association's Dark Sky Places program, in order for the Isle of Coll to become a "Dark Sky Island" under the Dark Sky Community program.

The Isle of Coll Location

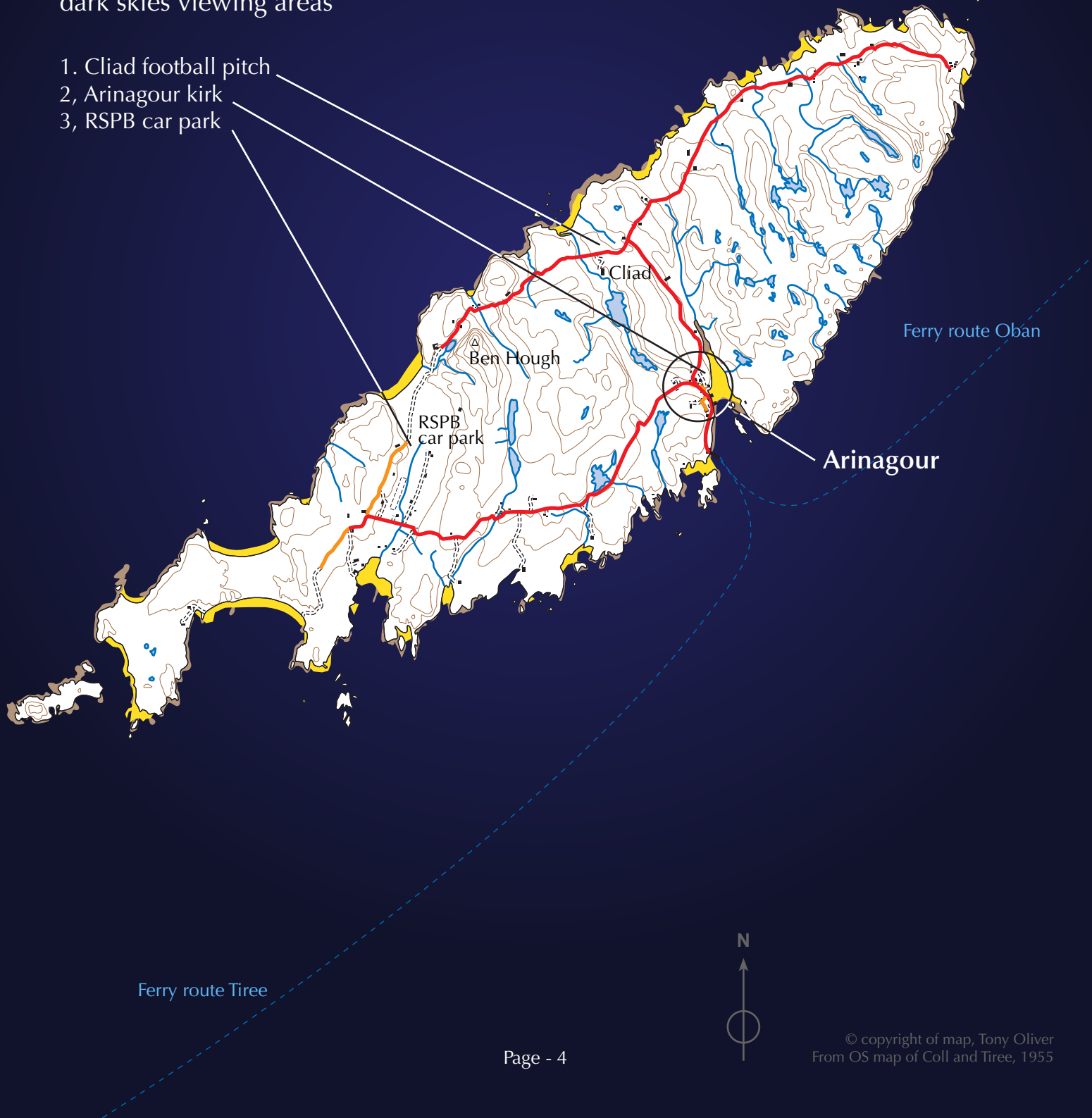
56°38'00" N 6°33'26" W



Map of the Isle of Coll

Location of the three proposed
dark skies viewing areas

1. Cliad football pitch
2. Arinagour kirk
3. RSPB car park



Isle of Coll and Tourism

The Isle of Coll has a population of just over 200 full time residents and as such has little in the way of formalised committee infrastructure. There is a Community Council together with various groups of interested parties who form working groups as deemed necessary. As such there is no formalised 'Dark Skies' committee just a collection of like minded people with a similar goal who convene as necessary.

Tourism on Coll is relatively low key. There is only one hotel, one guest house, one hostel and one 'outdoor centre' organisation offering group accommodation, other than property letting. The island has one camp site but many enjoy wild camping as the Scottish wilderness allows. The lack of beds ensures Coll's accommodation is usually full in the summer months.

Despite this, Coll is always relatively quiet and one can usually have a beach all to oneself, even on a bank holiday. If you find someone else on your beach you can always try the next one!

Coll, being close to the neighbouring Isle of Tiree, often shares visitors who 'do' both islands in one trip. Tiree has a considerably larger population (800) and infrastructure than Coll and can accommodate relatively large influxes of visitors. Coll tourists are usually considered to be niche, coming for positive and often unusual reasons; rare plants, insects, birds, castles, Celtic history etc... and, hopefully soon, for dark skies. Coll's tourist infrastructure is, therefore, ideally suited for dark skies visitors.

Coll has no tourist information centre or facilities for attracting visitors other than an island based web site (visitcoll.co.uk) and a leaflet produced by island talent sponsored by Scottish National Heritage, a government funded body that looks after Scotland's nature and landscape issues.

The reputation Coll enjoys is one quite envied in the Hebrides, the island hotel winning awards for both accommodation and food over many years. This is helped considerably by Coll residents' appreciation for the quality of food produced, farmed and fished on and around the island. Although the number of accommodation providers is small, many more families benefit from tourism since so much produce used in supporting tourism is sourced from the island.

Scotland's reputation, and in particular the Western Isles, for wet and wild weather is considerable, yet the Isle of Coll, being at the westerly fringes and low lying, enjoys more clear days, and clear nights, than most parts of the highlands or the hillier islands such as Mull, Rum and Skye. This makes Coll an ideal location for viewing winter skies and in particular, due to the lack of ambient light, the Aurora Borealis.

Due to its northerly position, dark skies will not be a feature of mid summer and skies only start to become dark again in mid to late August. The wonders of Coll's dark skies is an off season phenomenon.



Northern Lights on Coll © Olvin Smith

Coll: A Dark Sky Community

Dark night-time skies are considered a normal way of life on Coll, and their quality and value are recognised by the vast majority of residents.

There are no street lights on Coll and, although their introduction has been discussed in the island's community council, the overall consensus has been to resist their installation.

The island community of Coll is therefore immersed in the dark skies overhead in a way that most communities these days are not, witnessing them whenever they venture outside after twilight.

There is also a very strong conservation ethos on Coll and a recognition that we need to preserve and protect our rare and unique environment of peace and tranquillity. Indeed these unique characteristics can attract tourists to the island, thus supporting local businesses and the community as a whole.

Following media coverage of Galloway Forest Dark Sky Park's successful bid in November 2009 to become the UK's first International Dark Sky Park through the IDA's Dark Sky Places programme, a few like minded residents discussed a similar scheme for Coll.

Being a very small community, the word soon got around and it became evident that not one person has shown any sign of disagreement. The whole community is behind the project.

It was later announced that the Isle of Sark, at the other end of the UK, had just been awarded Dark Sky Status, as the first island community. It was decided to use Sark's approach in our own application and thanks must be given to the generous assistance of these Sark pioneers and Steve Owens of Glasgow.

A Coll Community Dark Skies Action Plan was drawn up and is as follows:-

1. Carry out an initial dark sky survey of the skies above Coll, to quantify how dark they are.
2. Carry out a full lighting audit of all external lights on Coll, to estimate the percentage of lights that were compliant with good lighting practice.
3. Produce a Lighting Management Plan such that the plan can be formally adopted by Argyll and Bute Council and used to ensure good lighting practice across the island.
4. To identify those lighting fixtures that do not comply with good lighting practice and replace or modify them to ensure at least a 75% compliance rate.
5. Produce and submit to the IDA an application pack to become a Dark Sky Community.

Coll: A Dark Sky Island

The Isle of Coll's remote location assists in ensuring the island has virtually no light pollution. Despite being surrounded by other islands only one, the Isle of Mull, has street lights. Many of the surrounding islands are uninhabited or are too far away and/or too sparsely populated to have any effect. From the centre of Coll our neighbouring islands are :-

- Northerly direction - the Isles of Muck, Eigg and Rum, populations 38, 90 and 22 respectively. None have street lights.
- Westerly direction - the Isle of Mull which includes Coll's nearest street lights, found in the small fishing town of Tobermory. From the centre of Coll, the nearest proposed dark skies viewing area, the Tobermory street lights are some 28 kilometres away but the number of street lights is minimal and the town is in a hollow that effectively protects Coll from light spill.
- South easterly - the Treshnish Islands, all uninhabited.
- South westerly - the Isle of Tiree with a population of approx 800. Tiree has no street lights but has more external lighting than Coll which are often lit all night. Tiree night-time lights, although few in number, are Coll's main source of light pollution. Fortunately, the nearest Dark Skies viewing area is shielded from Tiree's lights by its location at the bottom of the hill to Totronald's car park.
- Westerly - Barra Head (Berneray) and to its north the islands of Vatersay, Barra, Eriskay and the Uists etc. Being 68 kilometres away, and more, the only visible light (in favourable conditions) is from the lighthouse on Berneray.



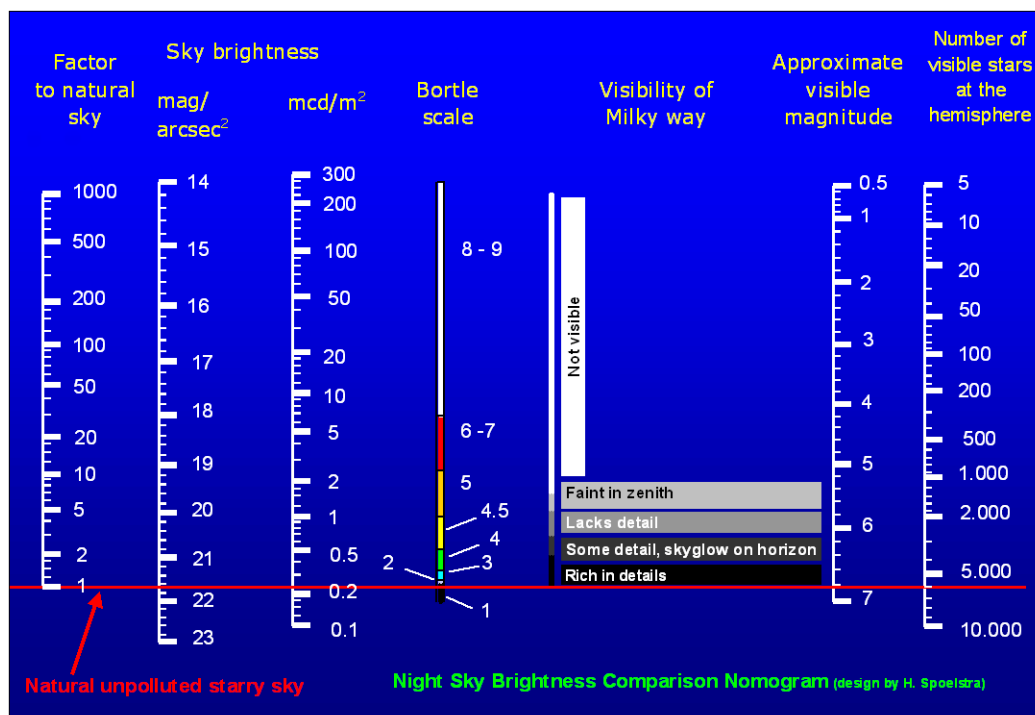
© copyright of map, Tony Oliver

The nearest town having a significant population, and consequential light pollution, is the resort of Oban. Oban lies 71 kilometres E.S.E. of Coll and has a population of about 8,000. The nearest large City to Coll is Glasgow. Glasgow lies ~150 kilometres S.E. of Coll, and the conurbation of Greater Glasgow has a population of around 1.2 million. Neither present a light polluting problem to Coll.

Air clarity is particularly high in most parts on N.W. Scotland and this is apparent to many residents and visitors alike. The *Paps of Jura*, three distinctive ~750m hill on the Isle of Jura some 75 kilometres away, are regularly and distinctively visible from Coll. This lack of airborne pollution greatly assists in the viewing of night skies.

In order to establish the true magnitude of Coll's dark skies, a survey was carried out during April 2012 by amateur astronomer, and Coll resident, Olvin Smith. A Sky Quality Meter (SQML) was used to measure magnitudes per square arcsecond of brightness of the night sky in eight separate locations around central and SW Coll.

The full SQM-L data is available in the Lighting Management Plan appended to this application, but SQM-L readings varied between 19.75 and 22.44 in the eight locations. As usual, with any SQML meter, the first of each set of readings was atypically low, as the meter 'warmed up' to the darkness; the higher the reading's value, the darker the sky. Ignoring the first reading of each set, and using only readings from the three chosen dark sky viewing areas readings varied from 20.24 to 22.12, with an average of 21.93 (26 readings). Using H. Spoelstra's nomogram, below, these readings approximate to natural unpolluted starry sky having a **limiting magnitude of ~6.8**, and a **Bortle Class of 2**.



© H Spoelstra

It is traditional to supply a fish eye, 180° image from a camera mounted looking straight up to the sky. Below is such an image taken from the Cliad site on 10th March 2013. This was following a period of extremely clear skies which, unfortunately, coincided with a very bright and visible moon. Once the moon's cycle vacated the night sky the weather turned cloudy. This image was taken during one of the brief cloud free nights on Coll but clearly shows light pollution from Tobermory on the isle of Mull. Normally there is nothing visible and it is rare to see such reflected light (see 7 to 8 o'clock) but Mull had a thin, low cover of cloud all that night.

Many thanks to Steve Owens for his assistance in equipment loans for this shot.



180° image taken from Cliad site, 10th March 2013.
North is to the top
© Tony Oliver

Dark Sky Community Status

Why does Coll wish to become a Dark Sky Community?

1. Coll is a unique island, with no street lighting, a tiny population and is located an adequate distance from other islands that may have significant street lights or light pollution. Coll enjoys very dark skies in the winter.
2. Coll, being relatively far north in the UK, has more hours of winter darkness than England and Wales. This phenomenon should be used to our advantage.
3. Everyone involved in Coll's tourist industry welcomes the opportunity to promote astro-tourism within the winter months, and so support the island economy off season.
4. The presence of a stunningly beautiful night sky is a natural phenomenon that could be lost if new developments are not encouraged to foster the dark sky ethos, already present within a large majority of the community. Dark Skies status will add some weight in encouraging compliance during the presentation of new planning applications to the local council.
5. Coll's community intends to hold regular winter events promoting Dark Skies and Astronomy and have been offered assistance from Dark Skies Scotland and the Royal Astronomer for Scotland. It is hoped this will encourage the whole community, including the island's school children, to appreciate the unique opportunity this dark island offers.
6. The publicity generated in the UK, and world press, as a result of Galloway Forest Dark Sky Park's award in November 2009 and the Isle of Sark's award in 2011 shows how much media interest could be generated for the Isle of Coll, the IDA and the notion of dark skies in general.



Island Lighting Survey

An island survey has been conducted to gather information about all existing external lighting on Coll's premises. Even though response was purely voluntary, approximately 95% of Coll houses responded and completed their survey. This is an astonishing result which, again, reinforces the whole island commitment to the Dark Skies project. People were contacted either in person, by email or by letter.

The results of the survey are shown in appendix 2 and for the sake of anonymity house names and occupiers names have been removed. The complete set of data is available for verification should this become necessary.

Summary of the survey findings

The 141 properties inspected represents a total of 272 outside lights. Of these 217 were compliant giving a whole island compliance percentage of 79.78 %.

Following this survey six properties have had their non-compliant lights altered. This was quite simple, usually just the action of pointing the lights downwards instead of straight out. Four properties have changed their bulkhead lights to downlighters, the example below showing a newly installed 4watt LED downlighter set at 45°.



© Tony Oliver

Commitments

As a result of the work that has been carried out in preparation for this application, there is raised awareness with respect to light pollution amongst the island community, the ethos of dark skies is now well known to virtually all residents. The community seem to be whole heartedly committed to adopting an Island Lighting Management Plan, and abiding by seven principles an Island Lightning Management Plan would probably suggest:

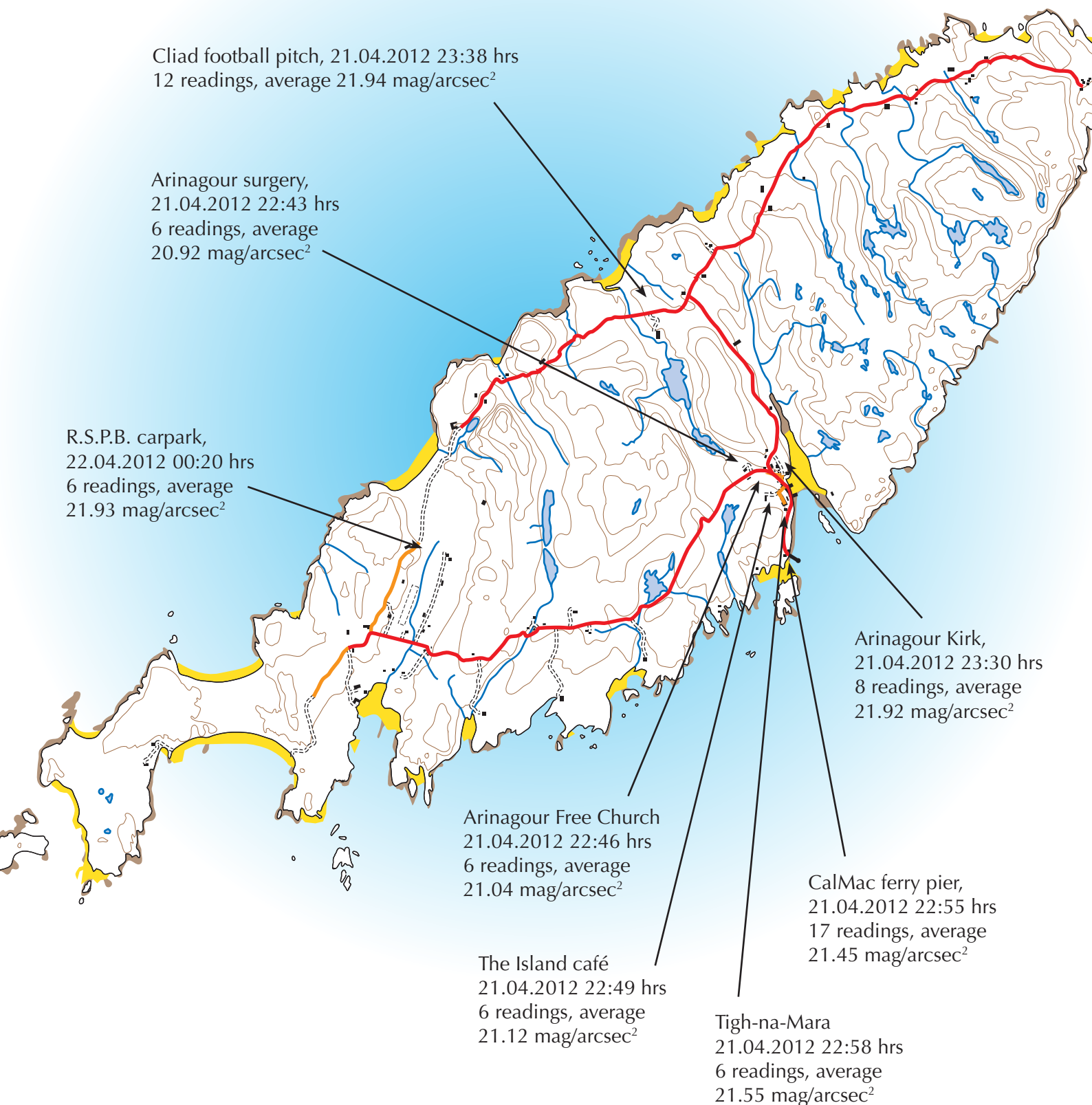
- 1: Luminaires using lamps greater than 1000 lumens should be installed as a “Fully Shielded” example.
- 2: Residents of the Isle of Coll are to be encouraged to limit the overspill light at their property boundary to no more than 0.1 lux.
- 3: All new lighting within the Island’s main settlement (Arinagour) should be designed and installed to provide lower glare or intensity values than that recommended by the ILP for an E1 night time Environmental Zone.
- 4: All design submissions for new lighting on the Isle of Coll should be encouraged to show evidence of compliance with the zero candela intensity at 900m and above and encourage domestic luminaires to be selected from units having some form of upward light control
- 5: The Island Buffer Zone (the surrounding waters), with the exclusion of the neighbouring inhabited islands etc, to be maintained as Environmental Zone E0 for a distance of 20 miles beyond the Island Boundary.
- 6: Through this LMP it will be possible for Coll Community Council and Argyll & Bute Council to provide a basis for discussion with its neighbours on various options to help reduce upward light transmission.
- 7: All residential and business occupiers on the Island should be encouraged to switch off or reduce their exterior lighting quantity at 22.00 hours (except when the commercial licence allows a later opening time). Coll Community Council and Argyll & Bute Council will ensure that all Island Properties (within their governance) will comply to these exacting policy statements, and encourage the occupiers of all other private buildings to do the same.

A new web site darkskies.visitcoll.co.uk devoted to Dark Skies Coll will be developed to offer advice and support information on compliance of Dark Skies objectives on Coll.

Map of Coll showing SQM-L reading

These readings demonstrate that Coll has a valuable dark sky resource that it is important to protect, and that might form a key part in developing Coll's tourism.

The three sites of choice, to recommend as dark skies viewing areas, are Cliad football pitch, the R.S.P.B. car park at Totronald and by the Kirk in Arinagour, which is elevated above the village.



Letters of Support

The following pages include a selection of letters of support for the Dark Sky Community Project, from residents of Coll, bodies with connections to Coll and other interested parties. These letters are from:

1. Alan Reid, Member of Parliament for Argyll and Bute.
2. Robert Pollock, Head of Economic development and Strategic Transportation, Argyll & Bute Council.
3. Colin MacFarlane, Operations Officer - Mull, Coll and Tiree, Scottish Natural Heritage.
4. Paula Smalley, Tigh na Mara guest house, Isle of Coll.
5. Ben Jones, warden for R.S.P.B Coll Reserve (Royal Society for the Protection of Birds).
6. Julie Oliphant, The Coll Hotel, Arinagour, Isle of Coll.
7. Keith Chapman, 3 Main Street, Arinagour, Isle of Coll.
8. George McConnachie, An Cridhe & Coll Bunkhouse, Arinagour, Isle of Coll.
9. Stuart Hawkins CfDS, Bridport, Dorset.
10. Councillor Fred Hall BSc (Hons), Ward 4: Oban South and the Isles.
11. Pauline White & Julian Senior, The Island Café, Isle of Coll.
12. Angus and Fiona Kennedy, An Acarsaid gift shop & Post Office, Isle of Coll.
13. Dr. Mike Fitcher, astrophysicist, London.
14. Mr Olvin Smith, Kilbride, Isle of Coll, PA78 6TB
15. Mrs & Mrs Ken Graham, Isle of Coll campsite, PA78 6TB



Alan Reid MP, Argyll & Bute



HOUSE OF COMMONS

LONDON SW1A 0AA

Please reply to:
95 Alexandra Parade
Dunoon
Argyll PA23 8AL
Tel: 01369 704840
Fax: 01369 701212
E Mail:
reida@parliament.uk

7 August 2012

International Dark Skies Association

Dear Sirs

I am writing in support of the Isle of Coll's campaign to be recognised as a Dark Skies Community.

The island has no street lights and very little other light pollution and is distant from the mainland and other islands. This means that stunning views of the night sky can be seen, including the Northern Lights.

Coll seems to me to be an ideal candidate to be recognised as a Dark Skies Community and I am fully supportive of the island being granted that status.

Yours sincerely

Alan Reid MP

Whilst Alan Reid MP will treat as confidential any personal information which you pass on, he will allow staff and authorised volunteers to see it if this is needed to help and advise you. The MP may pass all or some of the information to agencies, such as DSS, Inland Revenue or Local Council if this is necessary to help with your case. We may wish to write to you, from time to time, to keep you informed on issues that you might find of interest. Please let him know if you do not wish to be contacted for this purpose.

[X:\sent\Aug12\Work\Isle](#) of Coll Dark Skies Community.doc



Development and Infrastructure Services

Director: Sandy Mactaggart

Ms Paula Smalley
Tigh na Mara Guesthouse
Arinagour
Isle of Coll
PA78 6SY

Development and Infrastructure

1A Manse Brae, Lochgilphead, Argyll PA31 8RD

Tel: (01546) 604243 **Fax:** (01546) 604678

E-mail: Stuart.green@argyll-bute.gov.uk

Website: www.argyll-bute.gov.uk

Ask For: Stuart Green

Our Ref: Dark Skies Project, Isle of Coll

Your Ref: Dark Skies Project, Isle of Coll

Date: 02/10/2012

Dear Madam

DARK SKIES PROJECT, ISLE OF COLL

Further to your request for a letter of support in respect of your aim for the Isle of Coll to be the first Scottish island to become a designated Dark Skies Park, I can advise that it is considered that the proposal is a commendable aspiration.

Please accept this letter as support in principle from Argyll and Bute Council and I wish you success in your endeavour.

I trust that the above is sufficient for your requirements; however, should you wish to discuss further, please do not hesitate to contact Stuart on the above number.

Yours sincerely

A handwritten signature in blue ink, appearing to read "R. Pollock", written over a light blue grid background.

Robert Pollock
Head of Economic Development and Strategic Transportation



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Mr Tony Oliver
Coll Digital
Druim Dearg
Isle of Coll
PA78 6TE

3 October 2012

Dear Tony

DARK SKIES COMMUNITY APPLICATION – ISLE OF COLL COMMUNITY

I write in response to your recent email and telephone conversation regarding the community's application to be considered as a 'Dark Skies Community'. Thank you for consulting us on this matter.

Given the island's remote location from the mainland and the significant distance from any light pollution I feel Coll would be a worthy addition to the Dark Skies Community. I confirm that the designation of a Dark Skies Community will have no adverse impact on the islands natural heritage interests, many of which are of European importance.

The designation will assist the Community to promote good lighting practice on the island, which is important as the community continues to develop and expand. I believe it will also provide a baseline in which to educate both the local and visiting public on the importance of energy saving through good lighting practice.

In terms of the natural heritage it will maintain and possibly enhance the existing dark skies enjoyed on the island and could act as a platform for many aspects of formal/ informal environmental education and recreation.

Good luck in your application.

Yours sincerely.

Colin MacFarlane

Operations Officer - Mull, Coll and Tiree
Argyll & Outer Hebrides

Colin.macfarlane@snh.gov.uk

Scottish Natural Heritage, Cameron House, Albany Street, Oban, Argyll PA34 4AE
Tel 0300 244 9360 Fax 0300 244 9361 www.snh.org.uk

Dualchas Nàdair na h-Alba, Taigh Chamshron, Sràid Albany, An t-Òban, Earra- Ghàidheal PA34 4AE
Fòn 0300 244 9360 Fax 0300 244 9361



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Tigh na Mara

(HOUSE BY THE SEA)

13th August 2012

Please accept this letter as my support for the application to achieve Dark Skies status.

As a parent of two children that attended Arinagour Primary School I am aware of the keen interest the teachers pass on to their students regarding our skies, this is something achieving DSS would help to encourage.

I am also proprietor of the only Guesthouse on the Isle of Coll, and after discussing this proposal with my guests this summer, I am confident enough to say the vast proportion of my visitors are extremely supportive.

This is such an exciting proposal and one I am happy to say the whole community is behind.

Should you need any further help or information please do not hesitate to contact me.

Regards,

Paula

Tigh na Mara | Isle of Coll | Argyll | PA78 6SY
T 01879 230354 E enquiries@tighnamara.info
www.tighnamara.info



for birds
for people
for ever



Coll Nature Reserve
Totronald
Isle of Coll
Argyll PA78 6TB
Tel: 01879 230301
www.rspb.org.uk

7th August 2012

Dear Dark Sky

This letter is to acknowledge mine & the RSPB support for the Coll dark skies project. We have granted permission for one of the dark sky discovery sites to be at the RSBP reserve.

We recognise that if the Island gets the status of a dark skies island it will limit Coll from light pollution, educate & enlighten the residents of Coll & increase low season tourism. All these would be beneficial for our island & community.

Yours faithfully

Ben Jones
Coll Reserve Site Manager

100 years working for Scotland's wildlife

Patron Her Majesty the Queen **President** Jonathan Dimbleby **Chairman of Council** Professor Ian Newton OBE FRS
Chairman Scottish Committee Pamela Pumphrey **Director Scotland** Stuart Housden OBE

Registered charity no 207076

52-1223-02-03





SCOTTISH ISLAND HOTEL OF THE YEAR 2008 & 2009

The Coll Hotel is happy support the Coll dark skies group in its desire to achieve dark skies status & for the Coll dark skies group to use a part of the hotel land as a dark skies discovery site.

Coll achieving dark skies status will be great for the island in many ways

- It will bring the community together to realize the beauty above us
- It will encourage education of the stars & planets to young & old
- It will protect Coll from unwelcomed development
- It will encourage visitors to the island in the winter

Y. Duplant

Y. DUPLOANT
OWNER

3 MAIN STREET
ARINAGOUR
ISLE OF COLL
PA78 6SY

28/8/12

THE DARK SKIES GROUP
c/o COLL HOTEL
ARINAGOUR
PA78 6SZ

Dear Sirs,

I would like to register my support for the proposed 'Dark Skies' status for Coll as I believe it would be beneficial to the island.

Owning a property in the village where there are no streetlights I am well aware of the enhanced ability for stargazing this provides. The skies on clear nights in Summer and particularly in Winter are quite spectacular both from the village and especially outwith the village environment.

Being granted Dark Skies status can only encourage astronomers and stargazers alike and add to the island economy.

Yours faithfully

Alfham

Dear Sir/Madam,

I am writing in support of the Isle of Coll's campaign to be recognised as a Dark Skies Community. An Cridhe has recently hosted events in conjunction with Dark-Sky Scotland and the local Dark Skies Group aimed at encouraging stargazing and learning about the night sky.

Both An Cridhe and Coll Bunkhouse are fully supportive of the Dark Skies Action Plan and the commitments of the Lighting Management Plan in order to preserve Coll's unpolluted night skies.

We will also endeavour to inform and educate visitors to the community centre and the bunkhouse on the benefits of minimising light pollution by holding further events on astronomy and the night sky as a natural resource.

Yours sincerely

George McConnachie
Business Development Officer

23 St. Katherine's Avenue,
Bridport,
Dorset DT6 3DE.

23 September 2012

Ms. P Smalley,
Tigh na Mara,
Arinagour,
Isle of Coll,
Argyll PA78 6SY.

Dear Ms. Smalley,

I understand that you are involved in the project to obtain Dark Sky status for the Isle of Coll. This received a short mention in the Autumn 2012 Newsletter of the British Astronomical Association's Campaign for Dark Skies; I enclose a copy of the relevant page together with a copy of Starry Starry Night.

One Committee member of CfDS is very interested, as he, and others, are working to obtain a similar status for Romney Marsh.

We hope that you will be successful.

Best wishes,

Yours sincerely,



Stuart Hawkins. CfDS

Copy to Mr. Bob Mizon, National. Coordinator CfDS

From: Hall, Fred [mailto:Fred.Hall@argyll-bute.gov.uk]
Sent: 03 October 2012 11:24
To: 'enquiries@tighnamara.info'
Subject: Support for Dark Skies project in the Isle of Coll.

Dear Mrs Smalley,

I would like to put on record my full support for the Dark Skies Tourist initiative you are engaged in lobbying for the Isle of Coll. The Isle of Coll is a unique island in many ways not least of which its beautiful countryside and sea views but also the lack of light pollution. I can think of no better Island in the inner Hebrides to gain the Dark Skies accolade. The Dark Skies initiative would hopefully draw attention to eco tourists of the wonder that is the Isle of Coll and benefit tourism in a sensitive way. It only remains for me to wish you well in your endeavours.

Yours sincerely,

Fred Hall

Councillor Fred Hall BSc (Hons)
Ward 4: Oban South and the Isles
Tel: 01631 567963
Mob: 07901 682796

Argyll and Bute Council
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This email has been scanned for viruses, vandals and malicious content.

The First Port of Coll

Arinagour

Isle of Coll

Argyll.

9th October 2012

Dark Skies Application.

To whom it may concern.

We own the building in Arinagour Village, beside the loch, known as The First Port. Within The First Port is the Island Café, our shop called The Ethical Sales Co. (T.E.S.Co) and on the first floor a letting flat housing seven, Hebrides.

The building is naturally a busy one and we, my husband and I, live behind the property.

I am writing to tell you of our unequivocal support for the Dark Skies application for Coll. Not only do we, as members of the community, get a great amount of pleasure at 'stargazing' (and watching The Northern Lights this week) but we are very aware of the interest in the skies shown by our visitors.

Coll is growing in reputation as an unspoilt destination. This aspect of the Tourist trade here is absolutely key with so many other places spoilt by industrial intrusion, Coll can still boast absolutely natural surroundings and this includes the night skies, as any lights at night are only 'domestic' and the Hebridean Sky in all its expanse is a fantastic feature in its own right of course.

We would be thrilled were Coll to be designated and would see it as a great assistance in the ongoing nurturing of visitors who love to come to unspoilt destinations.

Kind regards,

Pauline White and Julian Senior.

Cloiche,
Isle of Coll,
Argyll, PA78 6TE.

3rd October 2012.

Dear Sir/Madam,

Dark Skies Designation, Isle of Coll, Argyll, Scotland.

We write in support of a Dark Skies Designation for the Isle of Coll Argyll Scotland.

Our family the Kennedy's have lived on the Island since 1690 and we continue to be the beneficiaries of Coll's in many ways unique environment including most noticeably our Dark Skies particularly during winter time.

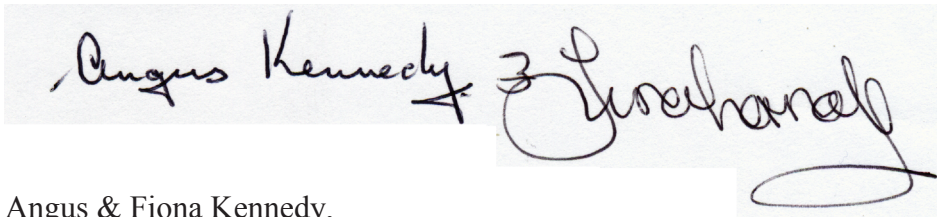
On many nights the night sky is nothing short of magnificent even to our untrained eyes. We get everything from Northern lights to Stars, Planet and meteors. Situated as we are low lying and out in the ocean our skies appear vast and as light pollution is non-existent a much enhanced and reliable experience for astronomy is enjoyed.

A Dark Skies designation would publicise to the world of astronomy what we take for granted as the norm.

The recent visit of Dave Charleton of Dark Skies Scotland from the Royal Observatory Edinburgh generated a very significant level of interest from within the community clearly demonstrating support and motivation for our bid to be successful.

The potential for economic benefit to Coll is self-evident and would be welcomed by our and other island businesses, but equally important we look forward with anticipation to sharing our "Dark Skies".

Yours faithfully,

The image shows two handwritten signatures in dark ink. The first signature, on the left, is 'Angus Kennedy' written in a cursive style. To its right is a second signature, which appears to be 'Fiona Kennedy', also in cursive. The signatures are written on a light-colored, slightly textured background.

Angus & Fiona Kennedy,
Coll Post Office & An Acarsaid Gift Shop,
Isle of Coll.

41 The Wheelhouse
Burrells Wharf
London
E14 3TA

Phone 0797 411 9243

11 October 2012

Hello,

I am writing in support of a Dark Sky initiative for the Isle of Coll.

I am an astrophysicist by training with a PhD from Cambridge. I was lucky enough to work on Coll as a GP (it's a long story but I re-trained!) in 2000 and have since had numerous holidays there.

I was struck by how amazing the night sky is there and feel strongly that such places are to be supported. While there in 2000 I gave a talk on Astronomy and had an amazing turnout – I think this reflects the general interest people have in this area.

I wrote a paper once on the distribution of wide binary visible stars – which came up with some very interesting results – and it is amazing to think that these are visible from Coll!

It is rare to find a place these days where people can enjoy the Night sky so easily. I'm very much in support of anything that promotes and maintains this.

Best wishes

Dr Mike Fitchett

OLVIN SMITH
KILBRIDE
ISLE OF COLL
ARGYLL
PA78 6TB

3/10/2012

I am writing in support of the Dark Skies application. I am an amateur astronomer who spends a lot of nights each winter outside in awe of the skies we have here. Having just returned from holiday in Essex I can't believe the difference in the sky here, no glow from all the towns and cities masking the stars I take for granted here. I feel strongly that we need to preserve what we have here which is why I have given my support and time in helping to prepare this application.

Olvin Smith
Member of British Astronomical Association, Society for Popular
Astronomy and International Dark Skies Association

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GARDEN HOUSE
ISLE OF COLL
ARGYLL
PA78 6TB
01 879 230374

MR KENNETH & MRS PAT GRAHAM

October 5, 2012

DEAR COLL DARK SKIES GROUP

DARK SKIES ACCREDITATION

As owners of the Garden House Camp Site and fulltime residents of the Isle of Coll my Husband and I fully support your group in asking the International Dark Skies Association for accreditation for Coll to be included in 'Dark Skies'

This accolade will be of considerable importance to a remote island with such a small population. The island is unique for not being commercialised and naturally unspoilt and anything that encourages this situation is very special to us.

We came to this island for its beauty and peace over twenty years ago and the first thing we noticed was the sky at night, and we soon realized that we too were just a speck in a wonderful creation.

May we wish your group every success and hope that we can help where ever possible.

Yours Sincerely,

Kenneth and Pat Graham

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Examples of Good Lighting



This light is sold as being “dark sky friendly”. It has a reflector that is shaped to direct the light downwards, and has a sensor which switches it on when someone is nearby. It should be fitted with a lamp of 150W or less. It also provides reduced illumination dusk to dawn for courtesy and full power on presence detection.

This double-light unit can direct light in two directions and the lamps are less than 100 watts. You should limit elevation angle to less than 45 degrees. It is available in various styles, and some are fitted with a sensor.



The “SILL 453 CityLiter” is designed to be mounted horizontally and available in a range of low wattage lamps. It has International Dark Sky Association *Dark Sky Friendly Fixture Award*.

These lights, while not perfect, are good examples of partially shielded lighting, so that the amount of spilled light is limited.



Examples of Bad Lighting

In this light, the lamp reflector and sensor point in same elevation and rotational direction, so the light always has to be fitted pointed out rather than down, causing light to be spilled into the sky and nearby ground. They are often fitted with 300W or 500W Tungsten Halogen lamps which provide too much light for use in rural settings.



Although this lamp has a low wattage bulb, it projects light upwards when mounted as shown and needs to be near horizontal to limit sky glow. However the bracket does not allow horizontal fixing!

These lights are all poor as they have no lighting control, spilling their light in all directions. Where possible, you should look to instead fit versions of these lights that are at least partially shielded.



Property Self-Audit Guidelines

– The Next Step

This leaflet is intended to help you carry out a self-audit of the lighting on your property, and is taken from appendix F of the Sark Lighting Management Plan, copies of which are available at the Sark Tourist Office.

There are three simple steps to this self-audit:

1. Survey your property externally (all buildings and any free-standing lighting)
2. Make a note of all outside lighting, including the type of fixture, how it is angled, the brightness of the bulb, and whether it is on a sensor, timer, or switch. You should then confirm that this matches the inventory in the Sark Lighting Management Plan, and if not you should ask that the inventory is updated.
3. For all fittings which are **not fully shielded*** implement changes / upgrades as follows.

* fully shielded lights are ones that prevent any light from spilling above the horizontal.

For all external lighting

If your lights are on a timer, make sure that the time they are on is sensible, and conforms to the suggested lighting curfew (at 2200 local time) as set out in the lighting management plan (LMP).

If you have a sensor (normally a passive infrared (PIR) sensor) make sure that it is pointed in the right direction, so that it is not triggered by “false alarms”.

You might also consider installing a push button switch with short time delay facility. These switches allow you to turn lights on as normal, but automatically turn them off again after a certain time has elapsed.

Lights with no or minimal lighting control



Option 1 (preferred) – Replace your lights with better ones

Measure your building footprint in square metres (i.e. total area of house, garages, outbuildings, sheds etc) and use the table below to work out your total illumination allowance. You should replace your old fitting(s) with new fitting(s) having good light control, meeting the requirements of the Lighting Management Plan, and within these limits.

Total lumen (lm)** limit and individual lamp lumen limit per property	
Total Lumens for exterior lighting	750 lm + 4.5 lm / m ² of site structures
Fully shielded luminaires (each lamp lumen maximum)	1200 lm
Part shielded luminaires (each lamp lumen maximum)	750 lm
No light control luminaires (each lamp lumen maximum)	480 lm***

** Lamp lumens is a measure of lamp brightness, like wattage, and is a consistent value. Although difficult to find on some packaging, lumens may in the future supersede lamp wattage as the standard measure of brightness. See the table at the end of this document for lumen values for all types of lamp.


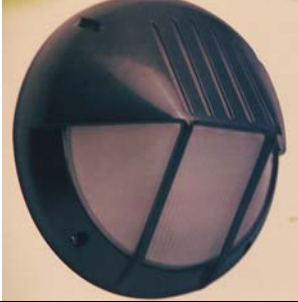

*** The maximum lumens for each lamp with no light control relates to replacing lamps in existing lighting units only. No new lights with no light control should be considered

Option 2 (next best) – Shield your existing lights

You could fabricate your own shielding from aluminium or a similar material and securely fix it to the wall such that it prevents any light escaping above 90° (i.e. above the horizontal). You should also make sure that your new fully shielded lights have bulbs no brighter than 1200 lm. If you are unable to fully shield your lights, but can partially shield them (i.e. some light does escape above the horizon) then you should limit your bulb brightness to 750 lm.

Option 3 (minimum) – Replace your bulbs

If you're unable to replace or shield your lights then you should replace the bulb with one having less than 480 lumen output.

		
Fully shielded lights should have bulbs less than 1200 lm	Partially shielded lights should have bulbs less than 750 lm	Lights with no light control should not be installed. Existing lights should be fitted with bulbs less than 480 lm

Lights that are Partially Shielded



Option 1 (preferred) – Adjust lights so that they point straight down

Adjust tilt angle down to meet LMP requirements, so that the light points straight down and no light spills above 90° (i.e. above the horizontal). You should also make sure that the bulb is no brighter than 1200 lm.

Option 2 (next best) – Adjust lights so that they point down, and shield

Tilt down if adjustable, and if you cannot make them point straight down, then provide additional shielding to comply with LMP requirements. You could fabricate your own shielding from aluminium or a similar material and securely fix it to the wall such that it prevents any light escaping above 90° (i.e. above the horizontal). You should also make sure that your new fully shielded lights have bulbs no brighter than 1200 lm. If you are unable to fully shield your lights, but can partially shield them (i.e. some light does escape above the horizon) then you should limit your bulb to 750 lm.

Option 3 (next best) – Replace your lights with better ones

Measure your building footprint in square metres (i.e. total area of house, garages, outbuildings, sheds etc) and use the table below to work out your total illumination allowance. You should replace your old fitting(s) with new fitting(s) having good light control, meeting the requirements of the Lighting Management Plan, and within these limits.

Total lumen (lm)** limit and individual lamp lumen limit per property	
Total Lumens for exterior lighting	750 lm + 4.5 lm / m ² of site structures
Fully shielded luminaires (each lamp lumen maximum)	1200 lm
Part shielded luminaires (each lamp lumen maximum)	750 lm
No light control luminaires (each lamp lumen maximum)	480 lm***

** Lamp lumens is a measure of lamp brightness, like wattage, and is a consistent value. Although difficult to find on some packaging, lumens may in the future supersede lamp wattage as the standard measure of brightness. See the table at the end of this document for lumen values for all types of lamp.

*** The maximum lumens for each lamp with no light control relates to replacing lamps in existing lighting units only. No new lights with no light control should be considered

Option 4 (minimum) – Replace your bulbs

If you're unable to adjust, shield or replace your lights then you should replace the bulb with one having less than 480 lumen output.

Tungsten Halogen Floodlights



Option 1 (preferred) - Adjust lights so that they point straight down








Adjust so that the glass is pointing down and is horizontal (parallel to the ground), so that the light points straight down and no light spills above 90° (i.e. above the horizontal). You should also make sure that the bulb is no brighter than 1200 lm.









Option 2 (next best) - Replace your lights with better ones




Replace the tungsten halogen floodlights (which are generally considered to be poor lighting) with new lights having good light control & meeting LMP requirements. You should also make sure that the bulb is no brighter than 1200 lm.

Option 3 (minimum) - Adjust lights so that they point down, and shield

Tilt down if adjustable, and if you cannot make them point straight down, then provide additional shielding to comply with LMP requirements. You could fabricate your own shielding from aluminium or a similar material and securely fix it to the wall such that it prevents any light escaping above 90° (i.e. above the horizontal). You should also make sure that your new fully shielded lights have bulbs no brighter than 1200 lm. If you are unable to fully shield your lights, but can partially shield them (i.e. some light does escape above the horizon) then you should limit your bulb to 750 lm.

Illustration	Lamp Name	Lamp Type	Nominal Watts	Output Lumens
	Standard, clear bulb	Incandescent GLS	15W 25W 40W 60W 100W	90 220 420 710 1,100
	Standard, pearl frosted bulb	Incandescent GLS	15W 25W 40W 60W 75W	90 220 415 700 935
	Candle, clear bulb	Incandescent Tungsten	25W 40W 60W	200 400 660
	Candle, opal bulb	Incandescent Tungsten	25W 40W 60W	190 390 640
	Twisted Candle, clear bulb	Incandescent Tungsten	15W 25W 40W 60W	90 200 400 660
	Twisted Candle, opal bulb	Incandescent Tungsten	15W 25W 40W 60W	90 200 400 660
	GE Candle Lamp (B&Q)	Incandescent Tungsten	18W 30W 45W	170 415 710

	Round, clear bulb	Incandescent Tungsten	25W 40W 60W	200 400 660
	Round, opal bulb	Incandescent Tungsten	25W 40W 60W	200 400 660
	Superlux Krypton mushroom, opal Standard	Incandescent Tungsten	25W 40W 60W 75W	240 455 760 1,000
	Superlux Krypton mushroom, opal Any burning position	Incandescent Tungsten	25W 40W 60W	160 300 530
	Halolux halogen energy saver	Incandescent Tungsten Halogen	18W 30W 42W 45W 52W	170 415 630 710 840
	Haloline linear	Incandescent Tungsten Halogen	60W 100W 120W 130W 230W	840 1,900 2,400 4,650
	Halostar 12V	Incandescent Tungsten Halogen	10W 20W 35W 50W	140 320 600 925
	LED Parathom clear globe	Solid State	1.6W	70

		Light Emitting Diode	2W 3W	117 165
	Master LED opal globe	Solid State Light Emitting Diode	7W	230
	Master LED reflector	Solid State Light Emitting Diode	4W 7W	110 230
	Lumilux T2 tubular	Discharge Linear Fluorescent	6W 8W 11W 13W	330 540 750 940
	Energy Saver - short T5 tubular	Discharge Linear Fluorescent	4W 6W 8W 13W	130 270 385 830
	Lumilux T8 tubular	Discharge Linear Fluorescent	10W 15W	650 950
	Biax Extra Mini	Discharge Compact Fluorescent	9W 11W 15W	480 600 900
	Elegance Globe	Discharge Compact Fluorescent	7W 9W 11W 15W	286 405 580 799

	Elegance Candle	Discharge Compact Fluorescent	5W 7W 9W	177 286 405
	Elegance Spiral	Discharge Compact Fluorescent	8W 12W 15W 20W 23W	460 700 950 1152 1380
	2D	Discharge Compact Fluorescent	10W 16/14 21/19	650 1100 1350
	Biax S	Discharge Compact Fluorescent	5W 7W 9W 11W	250 400 600 900
	Biax S/E	Discharge Compact Fluorescent	5W 7W 9W 11W	265 425 600 900
	Biax D	Discharge Compact Fluorescent	10W 13W	600 900
	Biax T	Discharge Compact Fluorescent	13W 18W 32W 42W	900 1,200 3,200

Appendix 2

Isle of Coll External Lighting Survey

A survey was carried out during July/August 2012 with personal visits to every house, letters to vacant house owners or email.

The results are detailed below but have had their house names and occupier names removed for anonymity.

The 141 buildings listed below represent approximately 95% of Coll's households/premises.

Property ref	Type of Fitting	Quantity	Building Type	Elevation	Angle Adaptable	Type and wattage	Duty Cycle	Application	Fully Shielded
1	BULKHEAD	2	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOORS	NO
2	BULKHEAD	1	FLAT	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
3	HERITAGE STYLE	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
4	DIY SECURITY FLOODLIGHT	1	HOUSE	0	YES	HALOGEN 100W	SWITCH	DOOR	YES
5	BULKHEAD	3	CAFÉ	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
6	NONE		HOUSE						
7	BULKHEAD	2	COTTAGE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
8	BULKHEAD 1 UNDER EAVE	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
9	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		0	YES	HALOGEN 100W	SWITCH	ACCESS	YES
10	BULKHEAD PART/SHIELD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
11	DIY SECURITY FLOODLIGHT	2	HOUSE	45	YES	HALOGEN 230W	SWITCH	ACCESS	NO
	BULKHEAD	1		90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
12	NONE		HOUSE						
13	DIY SECURITY FLOODLIGHT	1	COTTAGE	45	YES	HALOGEN 100W	PIR	ACCESS	YES
14	WELLGLASS	1	COTTAGE	90	NO	CLEAR BULB 40W	SWITCH	DOOR	NO
15	BULKHEAD	3	HOUSE	90	NO	CLEAR BULB 100W	SWITCH	DOOR/ACCESS	NO
16	DIY SECURITY FLOODLIGHT	2	HOUSE	0	YES	HALOGEN 60W	SWITCH	DOOR/ACCESS	YES
17	DIY SECURITY FLOODLIGHT	2	HOUSE	0	YES	HALOGEN 100W	PIR	DOOR	YES
18	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
19	DIY SECURITY FLOODLIGHT	1	HOUSE	0	YES	HALOGEN 100W	SWITCH	DOOR	YES
20	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
21	WELLGLASS	3	B&B	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ ACCESS	NO
	BULKHEAD	1		90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
22	BULKHEAD	1	COTTAGE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
23	BULKHEAD	2	COTTAGE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
24	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
25	NONE		HOUSE						
26	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		45	YES	HALOGEN 100W	SWITCH	ACCESS	NO
27	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 40W	SWITCH	DOOR	NO
28	NONE		HOUSE						

29	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
30	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
31	BULKHEAD	1	HOUSE	90	NO	HP SODIUM 70W	SWITCH	ACCESS	NO
32	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
33	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
34	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
35	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
36	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
37	BULKHEAD	3	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR/ACCESS	NO
38	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
39	BULKHEAD UNDER EAVE	4	HOUSE	0	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR/ACCESS	YES
40	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
41	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
42	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
43	BULKHEAD	1	OFFICE	90	NO	HALOGEN 100W	SWITCH	DOOR/ACCESS	NO
	DIY SECURITY FLOODLIGHT	2		45	YES	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
44	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
	WELLGLASS	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
45	BULKHEAD	1	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
46	BULKHEAD	1	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
47	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
48	BULKHEAD	3	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
49	BULKHEAD	3	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
50	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
51	UPLIGHTS ONTO WALLS		HOUSE	180	NO	LED 3W	SWITCH		NO
52	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	2		45	YES	HALOGEN 100W	SWITCH	WORKING LIGHT	NO
53	HERITAGE STYLE	4	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
54	BULKHEAD	3	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR/ACCESS	NO
55	HERITAGE STYLE	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
56	HERITAGE STYLE	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
57	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
	WELLGLASS	1		90	NO	COMPACT FLUOR'T 14W	SWITCH	ACCESS	NO
58	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
59	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
60	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
61	BULKHEAD	2	TOILETS	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
62	NONE		HOUSE						
63	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
64	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
65	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
66	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		0	YES	HALOGEN 100W	SWITCH	DOOR	YES
67	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		45	YES	HALOGEN 230W	SWITCH	ACCESS	NO
68	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
69	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
70	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
71	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
72	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
73	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
74	BULKHEAD	1	CHALET	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
75	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO

	DIY SECURITY FLOODLIGHT	1		45	YES	HALOGEN 100W	SWITCH	ACCESS	NO
76	BULKHEAD	4	SCOOOL	90	NO				
77	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		0	YES	HALOGEN 100W	SWITCH	ACCESS	YES
78	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
	WELLGLASS	1		90	NO	CLEAR BULB 60W	SWITCH	ACCESS	NO
79	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
80	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
81	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
82	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
83	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
84	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
85	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
86	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
87	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
88	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
89	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
90	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
91	HERITAGE STYLE	2	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR	NO
92	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
93	BULKHEAD	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
	DIY SECURITY FLOODLIGHT	1		45	YES	HALOGEN 100W	SWITCH	ACCESS	NO
94	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
95	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
96	BULKHEAD	1	FLAT	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
97	BULKHEAD	2	FLAT	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
98	DIY SECURITY FLOODLIGHT	1	COTTAGE	45	YES	HALOGEN 100W	SWITCH	ACCESS	NO
	HERITAGE STYLE	1		90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
99	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
100	HERITAGE STYLE	3	HOUSE	90	NO	COMPACT FLUOR/T 14W	SWITCH	DOOR/ACCESS	NO
101	NONE		HOUSE						
102	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
103	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
104	DIY SECURITY FLOODLIGHT	2	HOUSE	45	YES	HALOGEN 100W	SWITCH	DOOR/ACCESS	NO
105	NONE		HOUSE						
106	WELLGLASS	1	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
107	WALLPACK	3	COMMUNITY	90	NO	SODIUM 50W	SWITCH	ACCESS	NO
108	SHOP	2	SHOP	90	NO	1 LOOP COMPACT FLOUR/T 11W	SWITCH	ACCESS	NO
109	BULKHEAD	3	EX-CHANGE	90	NO	SODIUM 50W	SWITCH	ACCESS	NO
110	BI-SYMMETRIC	3	FIRE STAT	0	YES	3 TUBE COMPACT FLOUR/T 24W	PIR	ACCESS	YES
111	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
112	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
113	NONE		HOUSE						
114	BULKHEAD	1	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
115	BULKHEAD	2	AIRPORT	90	NO	COMPACT FLUOR/T 8W	SWITCH	ACCESS	NO
116	BI-SYMMETRIC	2	WATER WO	0	YES	HALOGEN 250W	PIR	ACCESS	YES
117	DIY SECURITY FLOODLIGHT	3	HOUSE	45	YES	HALOGEN 100W	SWITCH	DOOR/ACCESS	NO
118	BI-SYMMETRIC	7	HOTEL	0	YES	HALOGEN 26W	SWITCH	ACCESS	YES
119	CONTEMP DOWN ONLY	8	HOUSE	0	NO	1.6 & 3W LED	SWITCH	ACCESS	YES
120		1	HOUSE	90	NO	COMPACT FLUOR/T 18W	SWITCH	ACCESS	NO

121	BULKHEAD	6	PIER	90	NO	COMPACT FLUOR'T 14W	SWITCH	ACCESS	NO
122	HERITAGE STYLE	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
123	BULKHEAD PART/SHIELD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	PIR	DOOR	NO
124	BULKHEAD	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR/ACCESS	NO
125	WELLGLASS	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR/ACCESS	NO
	DIY SECURITY FLOODLIGHT	2	BARN	45	YES	HALOGEN 100W	SWITCH	ACCESS	NO
126	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
127	WALLPACK	4	HALL	90	NO	COMPACT FLUOR'T 26W X2	SWITCH	DOOR/ACCESS	NO
	EMERGENCY LIGHTING	2		90	NO	FLOUR'T 8W	AUTO	DOOR/ACCESS	NO
128	WALLPACK	2	BUNK HOUSE	90	NO	COMPACT FLUOR'T 26W X2	SWITCH	DOOR/ACCESS	NO
129	BULKHEAD	1	COTTAGE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
130	BULKHEAD	1	COTTAGE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
131	BULKHEAD	1	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
132	BULKHEAD	1	COTTAGE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
133	BI-SYMMETRIC	3	SUGERY	0	YES	2 LED X 9 & 1 LED X 16	SWITCH	ACCESS	YES
134	WALLPACK	2	HOUSE	90	NO	CLEAR BULB 60W	SWITCH	DOOR	NO
135	BI-SYMMETRIC	8	PIER	70	YES	HALOGEN 400W	OFF 20.00	ACCESS	NO
		5		0	YES	SODIUM 50W	OFF 20.01	ACCESS	YES
136	NONE		HOUSE						
137	NONE		SHOP						
138	BULKHEAD	2	WORK-SHOP	90	NO	CLEAR BULB 60W	SWITCH	ACCESS	NO
139	WELLGLASS	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOORS	NO
140	BULKHEAD	2	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR	NO
141	BULKHEAD	3	HOUSE	90	NO	COMPACT FLUOR'T 14W	SWITCH	DOOR/ACCESS	NO