

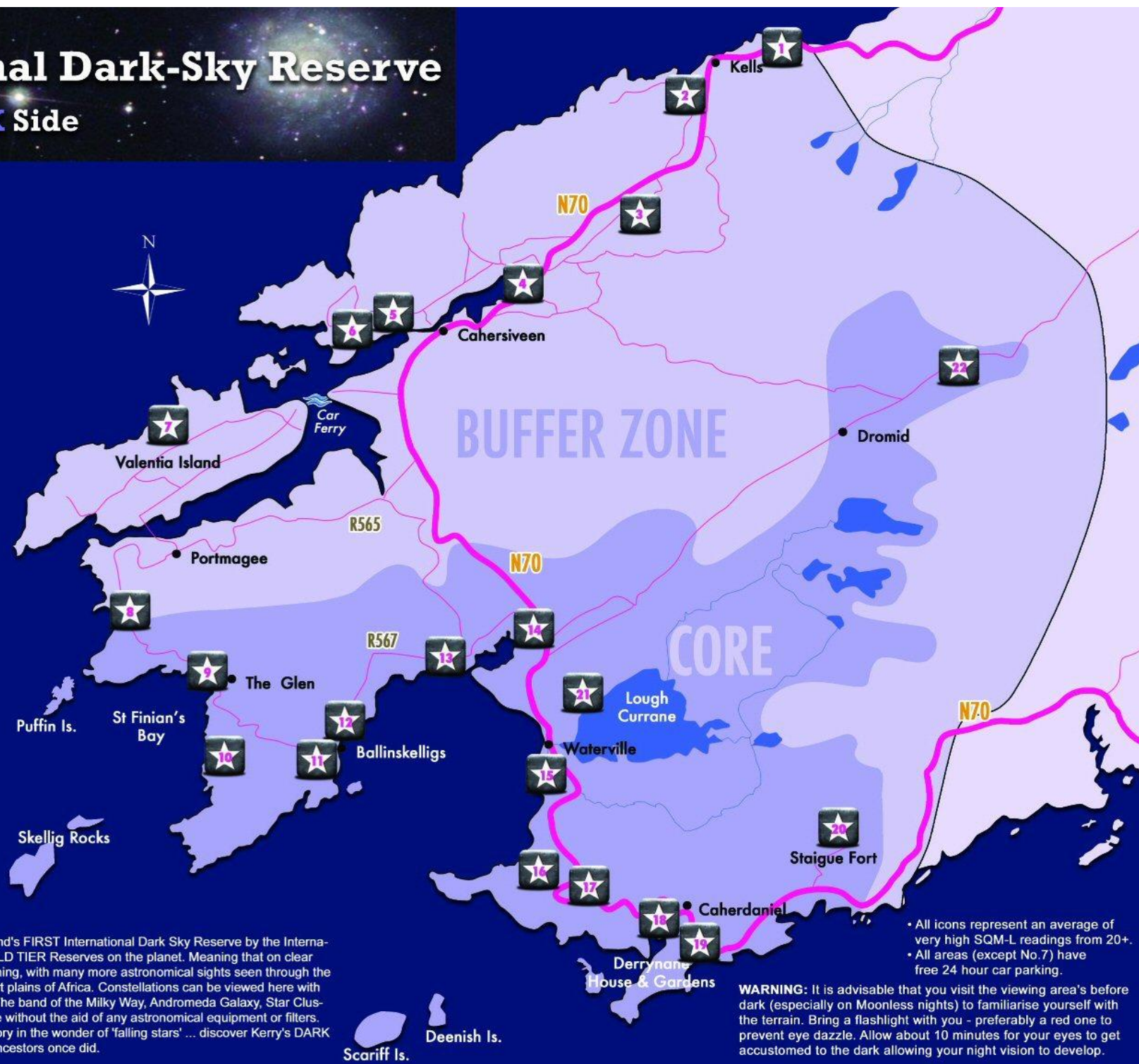
Kerry International Dark-Sky Reserve

Discover Kerry's **DARK** Side

- ★ Kells - lay-by on N70 (across from Dingle Bay)
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- ★ Foilmore
- ★ Carhan Bridge
- ★ Ballycarbery
- ★ White Strand
- ★ Geokaun Mountain
- ★ Coomanaspig
- ★ St. Finian's Bay
- ★ Duchalla
- ★ Ballinskelligs Beach
- ★ Ballinskelligs GAA Car Park
- ★ Reenroe Beach
- ★ Inny Bridge
- ★ Skellig Bay Golf Club Car Park
- ★ Coomakista
- ★ Beenarourke
- ★ Derrynane Beach
- ★ Derrynane House & Gardens (4 Car Parks)
- ★ Staigue Fort
- ★ Lough Currane Car Park
- ★ Bealach Oisin

Core Zone = Darkest part of the reserve
Buffer Zone = Peripheral area around core

Kerry International Dark-Sky Reserve has been designated Ireland's FIRST International Dark Sky Reserve by the International Dark-Sky Association (www.darksky.org) one of only 3 GOLD TIER Reserves on the planet. Meaning that on clear nights the sky in this South West region of Ireland is simply stunning, with many more astronomical sights seen through the naked eye as can be seen say in the Grand Canyon or the desert plains of Africa. Constellations can be viewed here with many many more stars than are shown on the usual sky maps. The band of the Milky Way, Andromeda Galaxy, Star Clusters and Nebula's are just some of the naked eye wonders to see without the aid of any astronomical equipment or filters. Go Satellite watching, Moon gazing, Planet hunting, or simply glory in the wonder of 'falling stars' ... discover Kerry's DARK side and you'll experience the wonder of the stars - just as our ancestors once did.



- All icons represent an average of very high SQM-L readings from 20+.
- All areas (except No.7) have free 24 hour car parking.

WARNING: It is advisable that you visit the viewing area's before dark (especially on Moonless nights) to familiarise yourself with the terrain. Bring a flashlight with you - preferably a red one to prevent eye dazzle. Allow about 10 minutes for your eyes to get accustomed to the dark allowing your night vision to develop.

Kerry Dark-Sky Reserve



South West Kerry is in a unique position in having little or no light pollution, but we need to protect what we have and indeed improve upon our status as being the first area in the whole of Ireland to receive IDA (International Dark-Sky Association) recognition of what is fast becoming a rarity in this over-lit world of ours.

So, what is a Dark-Sky Reserve?

Official explanation:

Public or private land possessing an exceptional or distinguished quality of starry nights and nocturnal environment that is specifically protected for its scientific, natural, educational, cultural, heritage and/or public enjoyment mission of a large peripheral area.

Un-official explanation:

- A place where you can see many thousands of stars not seen under the conditions of light pollution.
- A place where you can see with YOUR OWN EYES the white band of the Milky Way (our own Galaxy) - the visible result of hundreds of billions of other stars.
- A place where animals, plants, insects and humans can have a good night's sleep in natural darkness - no need for heavy black-out curtains!
- A place where you can view the skies as our ancestors viewed them. When we say 'ancestors' we usually think of the far distant past, but in this case the word 'ancestors' cover just a couple of generations ago... just ask anyone over 60 what the skies looked like when they were growing up!
- A place where you can take a walk in real Moonlight.
- A place where you can see distant Galaxies, Star clusters, nebula's, falling stars, as well as our own satellites, without the use of binoculars... honest!
- A place where your brain becomes quiet and relaxed: The simple viewing of a starry sky is very therapeutic, humbling and grounding.
- A place where you just might see a UFO... but remember, most (but not all) UFO's actually turn out to be IFO's (Identified Flying Objects).

What is Light Pollution?

In 1879, Thomas Edison's incandescent light bulbs first illuminated a New York street, and the modern era of electric lighting began.

Since then, the world has become awash in electric light. None of this is to say that electric lights are inherently bad. Artificial light has benefited society by, for instance, extending the length of the productive day, offering more time not just for working but also for recreational activities that require light. But when artificial outdoor lighting becomes unpleasantly overpowering and unnecessary, it is known as light pollution. Many environmentalists, naturalists, and medical researchers consider light pollution to be one of the fastest growing and most

pervasive forms of environmental pollution. And a growing body of scientific research suggests that light pollution can have lasting adverse effects on both human and wildlife health.

Urban Sky Glow - The brightening of the night sky over inhabited areas.

Light trespass - Light falling where it is no intended, wanted or needed.

Glare - Excessive, brightness which causes visual discomfort. High levels of glare can decrease visibility.

Clutter - Bright, confusing and excessive group of light sources, commonly found in over-lit urban areas. The proliferation of clutter contributes to urban sky glow, trespass and glare.



- Changing or altering your light fixture not only saves you money but allows the night sky to be seen as it should and you are helping the environment. Turn off outside lights when you don't need them, if you use outdoor lights for security then consider installing a sensor light.

CONUNDRUM:

In our modern world many millions of children have never seen a star filled sky - ever! How can our children be expected to pass on this ancient wonder to their children if they don't even know that there is a wonder to wonder at!

Discover Kerry's Dark Side

Ireland's FIRST
Internationally Recognised
Dark-Sky Reserve welcomes you

St. Finian's Bay



Kells • Cahersiveen • Portmagee • Valentia Island
The Glen • Ballinskelligs • Waterville • Caherdaniel

T: 087 7845688

www.kerrydarksky.com

MAP



Light Pollution and Human Health Issues

Research is on-going on the effects of Light Pollution on Human Health. Below is a brief approach to this area, more information can be found throughout the Internet.



Emerging research demonstrates that the presence of light (or darkness) actually controls your body's internal clock. Our bodies have evolved over many thousands of years with the guidance of night and day telling us when to sleep and rest and when to become active.

It works like this: Light travels through your eye's optic nerve to a part of your brain called Suprachiasmatic Nucleus (SCN). Once there, it gives your body the message that it's either time to go to bed or time to get up.

When it is dark outside the message triggers the production

of melatonin –the sleep hormone. On the other hand when there is light your SCN tells your body it's time for you to get up. Light also signals your SCN to initiate other processes associated with being awake, such as raising your body temperature and producing hormones like Cortisol.

So to be clear: Melatonin is produced when it's dark. Your body stops producing it when there's light. The more your sleep is disrupted by light pollution the lower your melatonin levels are. Believe it or not science is coming to the understanding that the amount of light required to disrupt or stop the production of melatonin can be very, very minimal – even as small as a night light or the light from your digital clock.

What is melatonin? Melatonin is a naturally occurring hormone which is released by darkness and is inhibited by light. It serves many functions in the human body, primarily regulating the daily cycles of our systemic activities. Research has shown that our body needs melatonin to starve off the effects of certain cancers.

Circadian Rhythm – what is it? Most people are at least cursorily familiar with the concept of the circadian rhythm. For those who aren't, the circadian rhythm refers to our internal clock, which is approximately the 24-hour cycle of biochemical, physiological, and behavioural processes. Every living thing, from fungus to bacteria to plant to animal, has a circadian rhythm.

- Other consequences of not getting a good night's sleep are depression and stress. The US National Institution of Health believes humans function best when they sleep at night and act in daytime. From birth, we humans spend a third of our lives asleep. After decades of research, we're still not sure why, but we do know that sleep is an essential part of human health – therefore a good night's sleep is the best health supplement of all.

***A holiday or short break in an area with little or no light pollution encourages deep restful sleep.**

Nature and Light Pollution



Life on this Earth has evolved over billions of years to exist with a regular and dependable day-night schedule aligned to the natural Sun/Moon/Stars illumination levels in the environment. This regularity is naturally ingrained into the DNA of all species up and down the evolutionary tree. It regularises basic and fundamental biological activities across species from plants to us humans. It is the height of our collective human ignorance and insanity that we expect other living organisms on this planet to just "adapt" to newly created lighting schedules that we fit and use for our convenience. The effects of light pollution on plants and animals in the environment are numerous and are becoming more known. In general, the most common action is that light pollution alters and interferes with the timing of necessary biological activities. But for approximately half of all life - those nocturnal species that begins its daily activities at

sundown - our artificial lights at night seriously constrain their lives, exposing them to predators and reducing the time they have to find food, shelter, or mates and reproduce. Even the humbling yet beautiful 'dawn chorus' of our songbirds is fading into memory, because the birds no longer know night from day and are thus in danger of dying out. But all is not lost – every preventative action taken now will help in the long run. Education into the effects on our lighting habits will change those habits, just as it changed how we disposed of our rubbish. No-one deliberately sets out to disturb the natural environment; we just simply didn't know the consequences of our light-pollutive actions. But now that you do know (having read this flyer) there is no excuse! Help us help nature get back to its natural rhythm by installing Dark-Sky Compliant fixtures - and by passing on this leaflet.

Astronomy

It's a fact:

Astronomy is humanity's oldest science. Our ancestors studied the movements of the Sun, Moon and Stars to try and figure out what was going on in the world around them. They measured the length of an hour, a day, week, month and year, taking many hundreds of years to get it right. Every culture in all continents studied the stars. They eventually built monuments of stone to mark the measurements so that the next generation could continue on with the work of studying the heavens.



The Milky Way

the view of our own Milky Way stretch across the sky like a band of light - which is in actual fact the collective light of billions of other stars all within our own Galaxy... how cool is that!



Andromeda Galaxy

One of the major assets of having a true dark sky is of course being able to look up on a clear night and enjoy the sky as our ancestors enjoyed them. The darker the sky the more stars can be seen. But, that is not the only thing one can see in a dark sky area, you can also see our nearest galactic neighbour – The Andromeda Galaxy – without the use of binoculars or telescope. Andromeda is over 2.5 million light years away, meaning that when you see it you see it as it was over 2.5 million years ago – long before human's walked the earth!

One of the many other wonders to be seen in a Dark-Sky area is

Other things to see in the Kerry International Dark-Sky Reserve are our own man-made Satellites, the ISS, falling stars, nebula's, star clusters and many, many more stars included in Constellations than usually depicted.

Walking under the light of a Full Moon is of course something very special. Light pollution in our Cities and Towns means that the population there doesn't even experience the gentle light of a Full Moon.



The Kerry Dark-Sky Reserve

has been designated as Ireland's FIRST International Dark Sky Reserve by the International Dark-Sky Association (www.darksky.org) this means that on clear nights the sky in this South West region of Ireland is simply stunning, with many more astronomical sights seen through the naked eye as can be seen say in the Grand Canyon or the desert plains of Africa....see inside map for more details.

Distances to Cahersiveen (Capital town of the reserve)



Kerry Airport:	58km	Rosslare Ferry:	332km
Shannon Airport:	184km	Killarney:	58km
Cork Airport:	143km	Tralee:	67km
Dublin Airport:	367km	National road:	N70

This project has been co-funded under the Rural Development (LEADER) Programme, administered in this area by the South Kerry Development Partnership Limited.



Comhshaoil, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government



Information and layout by Julie Ormond 087 7845688
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Astronomical Heritage

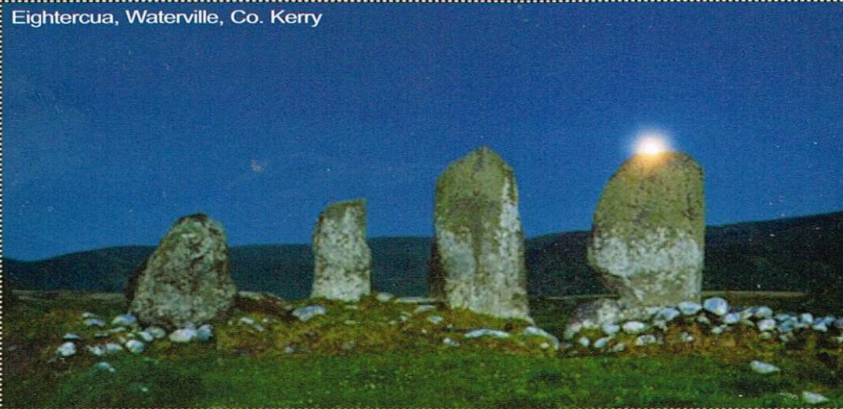
The huge amount of Standing Stones, Dolmens, Souterines, and pre-historic Rock Art pieces (some HUGE some small) found in and around the Kerry International Dark-Sky Reserve is testament to how our ancestors were in awe of their surroundings. Scientific measuring of the Sun/Moon/Star alignments between the stones show a sophistication that belies our pre-conceived notion of our ancient ancestors been not as intelligent or as innovative as we now like to think we are. These stone monuments belong to all mankind not just to Kerry, Ireland or the individual who now is in possession of the land which these protected pieces now stand, sit or lie upon. Sadly stories of the destruction and movement of Standing Stones and/or Rock art pieces are sometimes told by caring neighbours who has witnessed such destruction. IT IS AGAINST THE LAW to damage, move or destroy these stony treasures. Anyone witnessing such actions should



Kerry Dark-Sky Reserve Group has an annual day where the overgrowths around some rock art items will be cleared, photographed, and have its GPS co-ordinates correctly recorded.

report it to the authorities. It has to be said though, that the vast majority of individuals on whose land these monuments reside are caring in their responsibility of protecting what are - in effect - pieces of a global puzzle still been analysed. Humanities past wanderings, worships, studies and cultures are remarkably and mysteriously similar. We must protect these monuments for future archeological study.

Eightercua, Waterville, Co. Kerry



Brief information on each area within the Kerry International Dark-Sky Reserve

Kells: The N70 road will eventually bring you to the scenic beauty of Kells. All during the tourist season one can see many buses, cars etc stopped on or near to the many large lay-bys offering the tourist stunning photographic views. Across the Bay you can see the Dingle Peninsula while looking down from the N70 one can view the charming little fishing village of Kells. What tourists are not aware of is that when darkness falls another, more dramatic, scenic view appears - on clear nights one can see an uninterrupted vista of many tens of thousands of stars and in the summer time when the band of the Milky-Way is high, the star numbers climb up into the billions. Having or not having extra optical equipment-like for instance binoculars - makes no difference, as your own eyes will see almost too much to take in with a single glance.

Caherdaniel/Derrynane:

Staigue Fort, Derrynane House and Gardens and Derrynane Beach are

suggested offerings for a daytime visit. The views to be seen along route between Waterville and Caherdaniel are simply breathtaking and every photographers dream. There are quite a few areas in this area very suitable for Stargazing. Coomachoiste is a large parking area approx 4/5km outside of Waterville. The road can be busy before 6pm during the summer tourist season, but in the evening and especially during the off-season the road has little traffic. Staigue Fort can be absolutely pitch black on moonless nights, should you choose to go inside the fort to stargaze it is advisable that you visit the area during the day to familiarise yourself with the terrain. Derrynane House and gardens has 3 car parks, the two car parks away from the house are much darker should you wish absolutely no local light intrusion, though the car park near to the house is still most suitable for star-gazing.

Cahersiveen: This is the Capital Town of the Reserve and indeed the whole of the Iveragh Peninsula. Just a ten minute walk from the town's main street will provide you with many great Star-gazing spots. Cahane Bridge at the entrance to Cahersiveen (coming from Killarney) provides a great little parking spot and you can also see the sampling of newly installed Dark-Sky Compliant public street lights ahead, showing just how effective these lights can be and how they not deter from viewing the stars. The Kerry County Council will be installing similar kinds of public street lights throughout the whole county of Kerry beginning the end of 2014. In a few short years Kerry will be the only county in Ireland to have Dark-Sky compliant public street lighting. This also means that the dreadful orangey glow globally associated with the distant night-time view of towns, villages and cities will be soon be a nuisance of the past in Kerry.

Waterville: Once you've walked the Waterville promenade, have taken more than a few photographs of the famous Charlie Chaplin statue, or maybe have returned from one of the many local Kerry Way walks staying in the area a while longer to witness/photograph the sunset in Ballinskelligs Bay will be most rewarding. Depending on the time of year you just may be lucky enough to see the sun set in the company of the inner trailing planets Venus or Mercury or maybe the outer gas giants Jupiter or Saturn will be viewable. The Moon also makes a striking scene hanging over the Bay. Just outside the village the wonderful Eightercua pre-historic standing stones are testament to how our ancestors once marked the passing of the Season's, and the phases of the Moon.

Portmagee: The fishing village of Portmagee was the proud winner of Ireland's 'best' tourism town in 2012. Here is a place of traditional Irish entertainment and for many the departure hub for awe-inspiring visits to the Skellig Islands, which is a UNESCO World Heritage Site. From here one can drive over the bridge to Valentia Island. Before entering the village one can pull in near to the local GAA grounds to view the stars. As in all the other towns and villages within the reserve these lights will be replaced with Dark-Sky Compliant lighting which will allow better star gazing views in the area.

Valentia Island: Obviously there are lots to see on the island during the day, from dinosaur footprints to a real slate quarry. Or maybe an exotic garden or a real light house is more to your liking; either way Geokaun Mountain is a must visit for day-time 360° scenery viewing, or night time

star-gazing. There is a small entrance/parking fee but the mountain it is open 24 hours all-year-round and there's no time limit. The views from on top of the Mountain (you can drive up it if you want to) is nothing less than awesome during the day, but on a clear - or relatively clear - night all one can say is...if you haven't got an SLR Camera you'll wish you had one. Lie down, look up and you'll think you have floated off into space.

The Glen: This is the only village in the Core Zone of the Kerry Dark-Sky Reserve and a visit there will enlighten anyone as to the reason why. A lot of surfers come here to ride the rolling waves, but to most visitors simply sitting and looking out into the Atlantic at those rocky spikes is fulfilling enough. The beautiful fish-eye photo of St. Finian's Bay at night with it star studded sky really speaks volumes for the whole of the Reserve. During the daylight hours the view from that

same Bay shows the Skellig Islands in all their mystic glory. The Sunsets one can witness there are a photographers dream, as is the view of the Skelligs in full or partial moonlight. Also nearby is a bird sanctuary and a chocolate factory....what more could one ask for.

Ballinskelligs: Has many interesting places to visit during the day, the Old Abbey, McCarthy's Castle and Bolus Head are just three suggestions, not forgetting the relaxing stroll along Ballinskelligs beautiful Blue-Flag beach. Along with the other areas within the Kerry Dark-Sky Reserve it offers excellent photographic opportunities. The large parking area at beach is a great place to view the stars without any intrusion of local light pollution.

Dromid: The roads that winds through the Parish of Dromid also leads one up into the pass called Bealach Oisín (The Rock of Oisín) where legend has it that the great Fiannan warrior Oisín, having lived happily in the land of eternal youth (Tír na N'óg) for over 300 years, fell from his horse while helping some local men to move a big boulder. Instantly he turned into an old man and died shortly after. Whether the tale be fact or fantasy can always be debated, but what is true and totally agreed upon is that the stellar view in this area on a clear dark night is mesmerising. The peculiar quiet that hangs over the area also lends to the sense of wonder and deep mystery. A daytime visit is also heavenly with a clear view of the Kerry Mountains, plenty of picnic spots and parking spaces.