

1. INTRODUCTION

The first time I visited the Lake District was in 1972 on an excursion from the University of Salford where I was studying a masters in environmental resources. While living in Manchester, my wife, Cynthia, and I visited the district on a number of occasions, delighting in its beauty and unspoilt character.

While at university I read a then-recent paper by K.D. Fines¹ of assessing landscape quality in the East Sussex area of southern England. The very idea of measuring scenic quality was novel and together with my visits to the Lake District, the paper triggered my interest in quantifying landscape quality. I reviewed a number of methodologies at the time as a project paper.

A decade later, while visiting the Lake District in 1984, I recorded in my travel diary the following impressions that the beauty of this lovely area had on me.

The lakes are simply superb, delightful and beautiful. I kept asking myself, what is it that makes them so lovely? Is it the variety of colours - the lush green, the mottled hues of trees, the blue lakes, the bright red and purple of the rhododendrons, the yellow buttercups; is it the land form - ever changing, contorted, full of surprises around every corner, different everywhere you look, new and exciting, grassy fields which sometimes look as though they are green felt draped over a skeleton of rocks; or is the hand of man - apparent in the herds of straggly woolly sheep crying out to be shorn, the grey flat stone walls across fields, the delightful little villages surrounded by enclosed fields, and the stands of woods.

Each one of these elements - land form, land use, and land cover are the elements of landscape and, in the case of the lakes, each on their own would

be sufficient to be a beautiful place. Put all three together and you have an outstanding area.

Why is it that we humans seem to like particular scenes though puzzles me. Yet there was no doubt in my mind that the scree slopes, forested with planted softwoods above Thirlmere just didn't compare with the variety of colour and form, of 'bumpy' fields, of farm animals, of a lakeshore, of Esthwaite or Windermere or Grassmere.

Returning to Australia I commenced my environmental policy work in the South Australian Department of the Environment which involved me a host of environmental issues at both state and national levels over a period of several decades. However I continued to visit the Lake District when in England, reviewed studies of landscape quality in South Australia and made some tentative inroads into how landscape quality could be measured. I dabbled in the area and initiated several consultancies of measuring landscape quality.

In 1992 I took the decisive step of commencing a PhD at the University of Adelaide to investigate how landscape quality could be measured and mapped. The following eight years of intellectual inquiry while working full time and undertaking studies in my spare time were among the most rewarding of my life. I enjoyed discovering new knowledge, enquiring and understanding how landscapes were perceived.

Although I had not expected my PhD would lead to a vocation, after leaving the Environment Department in 2002, projects to measure and map landscape quality started to appear. I won several tenders to carry these out as a consultant and conducted eight studies measuring and mapping landscape quality for the entire South Australian coast, the Barossa Valley region, the River Murray, and the Flinders Ranges and also assessed the visual amenity provided by large trees, the visual

1. Fines, K.D. 1968. Landscape evaluation: a research project in East Sussex. *Regional Studies*, 2, 41 – 55.

impact of wind farms and of developments in the coastal region and along the River Murray. These studies are included in my website: www.scenicsolutions.com.au.

I travelled briefly though the Lake District in 2009 and then the opportunity arose to make several visits during 2013 and I decided to carry out a landscape quality assessment of the area as a personal project. Contact was made with the Lake District National Park Authority. The Authority was involved in the nomination of the area for World Heritage listing as a Cultural Landscape, an outcome to which I hoped the assessment could contribute.

In March 2013 I spent a week in the Lake District, coming at the time of the record snow falls which constrained my travelling to the higher and western parts of the area. It did, however enable me to photograph the area while under snow. While in the area, I met with officers of the Authority who expressed interest in the project. I sought their in-kind support and assistance in the project, specifically in providing contacts to email invitations to participate in the survey and to carry out the GIS mapping at the end of the project. I was prepared to carry out the project at no cost to the Authority.

I visited the Lake District again in early June for the purposes of photography as well as in late July for the same purpose.

Subsequently I selected scenes for the landscape assessment and prepared the Internet survey which was launched on 14 August, 2013. The component surveys were launched and both these and the main survey ended by mid-September. Analysis of the results and mapping landscape quality followed and was completed in October. A presentation was made at the Lake District National Park Authority in mid-November.

2. BRITISH INVOLVEMENT WITH LANDSCAPE BEAUTY

Britain has a long and proud history of appreciating the beauty of its landscapes. British writers, poets, painters, photographers and the ordinary tourist have a love of their landscapes and have learned to appreciate and protect them.

2.1 PRE - 1950

The earliest books on landscape were written by geologists, explaining the geological reasons for the landscape's appearance².

Geographers took it upon themselves to "regard the Earth as *Mother-Earth*, and the *beauty* of her features as within the purview of geography". Curiously they argued that "the natural beauty is inexhaustible. And it is not only inexhaustible: it positively increases and multiplies the more we see of it and the more of us see it. So it has a good claim to be considered the most valuable characteristic of the Earth" (Younghusband, 1920).

In 1926, the Council for the Protection of Rural England³ was formed to safeguard the productivity and beauty of the countryside and to protect it from urban intrusion.

In the 1930s, a geographer, Dr. Vaughan Cornish wrote descriptively about scenery⁴:

"combination of the English village, with the setting of field and hedgerow and coppice, is an Arcadian scene unrivalled elsewhere in Great Britain and unsurpassed in any part of the world."

The inter-war period was very significant for shaping the English national identity, in particular linking it with the rural landscape (Brace, 2003). Books describing English rural life, landscapes and villages were exceedingly popular during this time, selling in their thousands. The books "naturalized a version of rural England in which timelessness and continuity were powerful recurring motifs." (Brace, 2003).

In 1931, the Addison Committee on National Parks reported favourably on the establishment of national parks but the Great Depression and WW2 intervened to prevent progress. The Town and Country Planning Act 1932 gave local councils power to preserve scenic amenity.

In 1942, the Scott Report on rural land use recommended the establishment of national parks for the enjoyment of the whole nation. The inquiry resulted in the 1944 White Paper, *The Control of Land Use*, which proposed national parks as part of a comprehensive post-war plan. Landscape surveys of the coast and of the countryside were also completed during the war.

The focus on landscape beauty during the wartime is striking, perhaps reflecting a deep psychological comfort associated with the character and perceived beauty of their country during the trauma and hardship of war. It also derived from the interest in the English countryside during the earlier inter-war period.

In 1945, the Dower Report defined national parks as "an extensive area of beautiful and relatively wild country, in which, for the nation's benefit ... the characteristic landscape beauty is strictly preserved..." (Cullingworth, 1985). Dower also proposed protection for areas of high landscape quality.

2. These include: Geikie, A., 1901. *The Scenery of Scotland Viewed in Connection with its Physical Geology*. MacMillan; Lord Avebury, 1906, *The Scenery of England and the Causes to Which it is Due*. MacMillan; Stamp, L.D., 1946. *Britain's Structure and Scenery*, Collins.

3. Now named the Campaign to Protect Rural England. www.cpre.org.uk.

4. His books on landscape included: *The Poetic Impression of Natural Scenery* (1931), *The Scenery of England* (1932), *Scenery and the Sense of Sight* (1935), *The Preservation of our Scenery* (1937), *The Scenery of Sidmouth* (1940), and *The Beauties of Scenery, a Geographical Survey* (1943).

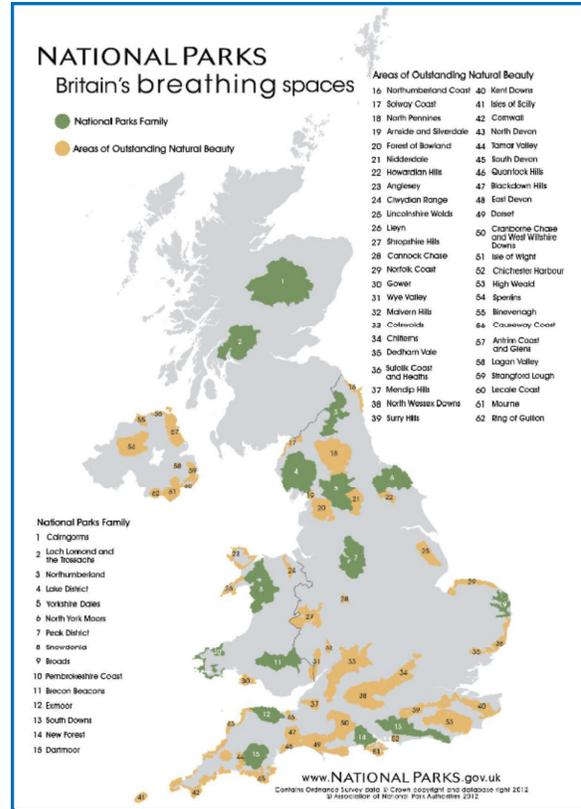
While Dower's emphasis was on "relatively wild areas of moor land and rough grazing", the Hobhouse Report, which followed in 1947, saw national parks as being larger and also covering areas of countryside which had been changed by human use.

In 1949, the National Parks and Access to the Countryside Act (the NPAC Act) was proclaimed under which ten large tracts of private land were designated as national parks between 1951 and 1957. The designation of national parks was based on their perceived natural beauty and recreational potential. Areas of Outstanding Natural Beauty (AONB) were also designated, generally smaller, less suitable for outdoor recreation, and lacking extensive areas of open countryside. The national parks were mainly highland landscapes, whereas AONBs covered farmed lowland landscapes.

By 2013, the 15 national parks totalled 22,660 sq km, or 9.9% of England, Wales and Scotland and the 46 AONBs totalled 29,581 sq km or 18% of England, Wales and Northern Ireland (there are none in Scotland) (Figure 2.1). The parks and AONBs include about one-third of the coastline of England, Wales and Scotland.

The system of national parks over private land and the designation of AONBs is a uniquely British solution to the competing desire to protect high quality environments with the need to provide food and fibre for a large population. The early emphasis on landscape parallels the experience in other countries. Scenic preservation, along with provision for public enjoyment of the parks, were the major initial reasons for the creation of national parks; concern about the protection of flora and fauna was a later factor.

Meanwhile in 1947 the *Town and Country Planning Act* had provided for the designation by councils of Areas of Great Landscape Value within council development plans.



Source: www.nationalparks.gov.uk
Figure 2.1 National Parks and AONBs in Great Britain

Selman & Swanwick (2010) traced the evolution of landscape terms from *natural beauty* (Addison, 1931), *rural areas of remarkable landscape beauty* (Abercrombie, 1930s), *landscape character and landscape pattern* (Scott, 1942), *characteristic landscape beauty* (Dower, 1945), *high landscape quality* (Hobhouse, 1947), *high scenic value* (Min of T&CP, 1949) and back to *natural beauty* of the 1949 NPAC Act. Surprisingly, *natural beauty* was never defined by legislation. In 1985, the Countryside Commission equated "outstanding natural beauty" with "outstanding landscape quality".

2.2 POST - 1950

The first real attempt to move beyond mere descriptions of the British landscape to analyse it more rigorously began with the work of David Lowenthal of the American Geographical Society and Hugh Prince from University College, London. In two seminal

papers, *The English Landscape* (1964) and *English Landscape Tastes* (1965) they described the content of the English landscape and English landscape preferences.

They identified variety, openness and atmosphere as key visual qualities of the English landscape and referred to it as “altogether so tamed, trimmed, and humanized as to give the impression of a vast ornamental farm, as if the whole of it had been designed for visual pleasure”. Components which epitomised the English landscape were the bucolic, the picturesque, the deciduous, the tidy (i.e. order and neatness), façadism, antiquarianism (rejection of the present, the sensuous and the functional; having historical associations), and Alexander Pope’s *genius loci* - the spirit of the place.

In the late 1960s, new approaches for assessing scenic beauty were developed by Fines (1968) in a survey of the East Sussex landscape, and by Hebblethwaite in a survey of the East Hampshire AONB (Hampshire C.C. *et al*, 1968).

Although criticized by Brancher (1969) as moving “from ordinality to cardinality”, nevertheless Fines tried to do something not previously attempted. He commenced his paper thus:

“In this age of the population and leisure explosions Britain’s landscape has become one of her most valuable – and most vulnerable – assets; yet there exists no recognized method of evaluating this asset; probably because the assessment of the quality of landscape, as opposed to its physiographic type, must inevitably be subjective. But if subjective judgement is inadmissible then the planner is culpable whenever he delineates an area of great landscape value or refuses planning permission on grounds of ‘visual amenity’.”

More sophisticated and objective studies based on component measurement and statistical analysis followed including the Coventry-Solihull-Warwickshire study (Study Team, 1971) and the Manchester study, a four-year research project undertaken by the

Department of Town and County Planning at the University of Manchester for the Countryside Commission (Robinson, *et al*, 1976). The project examined techniques to evaluate the visual quality of landscapes and tested statistical techniques to assess visual quality.

The Manchester Study was highly significant in influencing the Countryside Commission and is summarised below.

Manchester Study (Robinson, *et al*, 1976)

The Manchester study of landscape evaluation was a four year study (1970 – 74) conducted by the Landscape Evaluation Project and directed by the University’s Department of Town and Country Planning. Seminars, consultancy reports and research studies were conducted. The Countryside Commission indicated its intention to prepare an advisory manual for planning authorities based on the report.

The report commenced with a discussion of landscape – as land use, topography, ecosystem, heritage and scenery. As a unifying concept, landscape embraces all of these and also serves as an art form for artists. The report then traced the development of interest in landscape in Britain from the 1930s Addison report through to the 1970s ecological approach. It examined the purposes and directions of landscape evaluation research. The report differentiated landscape character assessment from landscape quality evaluation: “It is important not to confuse the analysis of landscape character which is descriptive, and analysis of quality which is evaluative” (2.21). It also examined the economic value of landscape.

The report examined aesthetic concepts, in particular the nature of landscape beauty, and the influence of factors such as tastes, preferences and associations on one’s judgement about the landscape. It had a lengthy discussion of operational issues that affect evaluation: the concept of the view, classifying survey units (the report advocated analysis by grid squares), field assessments, and judgements of observers.

It critiqued existing methods focusing in particular on the choice and number of observers and the choice of scoring scales. It discussed the selection of landscape

components, and the invalid conversion of ordinal scale scores into cardinal numbers (which can be statistically analysed) and which require a base and equal intervals between numbers, whereas ordinal numbers are purely rankings without a base or equal intervals. It regarded this issue as the major problem of existing methods (5.39), all of which were “subject in varying degrees to technical errors and conceptual weaknesses.” (5.41). It therefore proposed to concentrate on improving field-based methods and the statistical techniques to avoid the problem of ordinal numbers.

Following a detailed examination of these issues, the Manchester Report recommended two alternative methods for landscape evaluation:

Method 1. Field based evaluation method. Survey all 1 km grid square survey units in the area by between 4 and 30 observers using a common scoring system with the results being a mean and distribution for each survey unit. A control square of fixed landscape quality would be selected and the quality of all other survey units compared with this to provide a common base for the landscape scores.

Method 2. Predictive evaluation method. Used factor analysis of the independent data (i.e. physical characteristics) to select components and the applied regression analysis (assesses the influence of the independent variables on the dependent variable – the landscape quality rating) to determine their weights based on a sample of survey units and using the field method as in the first method; the weights can then be applied to the remaining survey units.

The report detailed the method of each method and their application.

The reaction to the Manchester report was non-plussed. According to the 1987 landscape guidance by the Countryside Commission, “Many techniques (especially the so-called statistical methods) fell into disrepute. Practitioners tended to despair of the subject and leave it to the academics.”

Years later, Professor Carys Swanwick of the University of Sheffield (2002) identified the Manchester study as an exemplar of a “supposedly objective, scientific, often quantitative approach” which led “to a considerable degree of disillusionment with

this type of work.” She went on, “This was largely because many believed it inappropriate to reduce something as complex, emotional and so intertwined with our culture, as landscape, to a series of numerical values and statistical formulae.” It is also likely that many practitioners found the complex statistical method too overwhelming technically to be fully comprehended.

Meanwhile in 1975, Jay Appleton, a geographer at the University of Hull, published *The Experience of Landscape*, a wonderfully written liturgy of landscape which espoused his famous prospect - refuge theory to explain why people found particular landscapes beautiful, prospects being places where one could see without being seen, while refuges were hiding places.

Local landscape designations (LLDs) have been widely used by councils to protect their landscapes, their definition being “of at least county importance for reasons of their rarity, representativeness or variety.” (Scott & Shannon, 2007). Areas of Great Landscape Value (AGLV) can be declared by councils under the T&CP Act, thereby restricting development in the area. The terminology may be confused with Areas of Outstanding Natural Landscape (AONB).

Swanwick identified the Manchester-type study as *landscape evaluation* which identified “what made one area of landscape ‘better’ than another.” She described the evolution of the approach (Figure 2.2). She considered that during the 1980s the emphasis shifted to *landscape assessment*, which described why one area was different, or distinct, from another area rather than their relative value. The change appeared to mark an admission of failure to develop a commonly agreed method for valuing landscape quality, substituting in its place, a mere description of its character.

Landscape evaluation	Landscape assessment	Landscape character assessment
Early 1970s	Mid 1980s	Mid 1990s
<ul style="list-style-type: none"> • Focused on landscape value • Claimed to be an objective process • Compared value of one landscape with another • Relied on quantitative measurement of landscape elements 	<ul style="list-style-type: none"> • Recognised role for both subjectivity and objectivity • Stressed differences between inventory, classification and evaluation of landscape • Provided scope for incorporating other people's perceptions of the landscape 	<ul style="list-style-type: none"> • Focused on landscape character • Divided process of characterisation from making judgements • Stressed potential for use at different scales • Linked to Historic Landscape Characterisation • More recent emphasis on need for stakeholders to be involved

Source: Swanwick, 2002

Figure 2.2 Key differences in evolution of landscape assessment

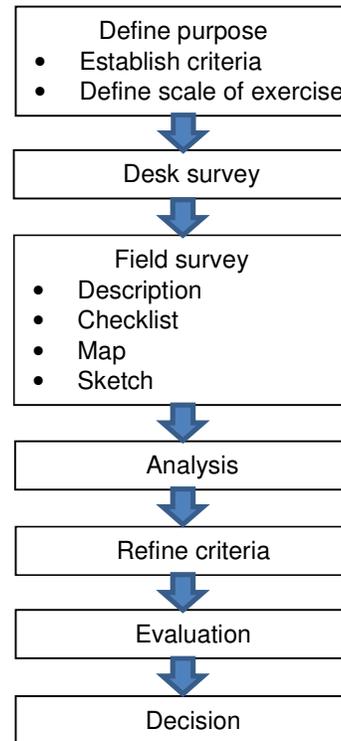
2.3 COUNTRYSIDE COMMISSION GUIDANCE

From the late 1980s onwards, the Countryside Commission and its successors addressed landscape assessment and published the following national guidance documents:

- 1987 *Landscape assessment, a Countryside Commission approach*. CCD 18
- 1993 *Landscape assessment guidance*, CCP 423.
- 1999 *Interim Landscape Character Assessment Guidance* (Scotland)
- 2002 *Landscape Character Assessment: Guidance for England and Scotland*.

The Commission's first guidance in 1987 covered a description of the landscape's physical characteristics and what distinguished one landscape from other landscapes, but it did not provide for an assessment of its aesthetic value. The Commission described it as "a broad, multi-dimensional approach based on aesthetic

taste operating within the context of informed opinion, the trained eye and common sense." Figure 2.3 summarises the method.



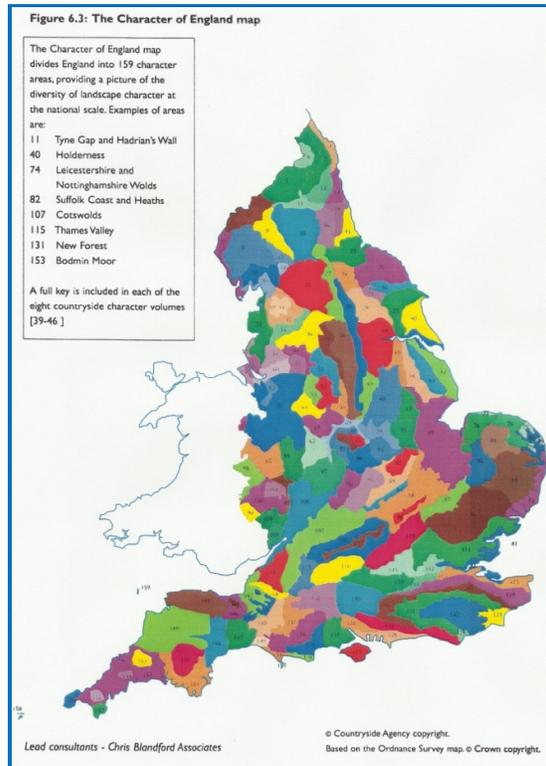
Source: Countryside Commission, 1987

Figure 2.3 1987 Landscape assessment method

In 1993, the Commission updated and expanded the advice. It distinguished landscape types (e.g. chalk downs) from landscape areas (e.g. South Downs), a useful distinction. The guidance allowed for work at different scales with national or regional assessments providing the framework for more detailed assessments, again a useful contribution. It made explicit the criteria for designating landscapes, for example for AONB status. By including non-visual factors such as physiography, history and wildlife, the guidance expanded landscape from a solely visual phenomenon.

In 1993 the Countryside Commission commenced a pilot program called the New Map of England which aimed to identify, describe and analyse landscape types at a broad regional scale and produced the map in 1996.

Figure 2.4 shows the latest iteration of the map (2013). It classified and described 159 character areas. Interestingly the word 'landscape' is diminished, it is termed the "Character of England map", not the "Landscape Character of England map" although this is expressed in the explanatory text. The entire Lake District forms one unit on the map.



Source: Countryside Agency, 2002
Figure 2.4 Character of England map

In 2002 the Countryside Agency revised its guidance on landscape character assessment. Previously landscape was the visual appearance of the land, now it was a relationship between people and place; the interaction between the "natural (geology, soils, climate, flora and fauna) and cultural (historical and current impact of land use, settlement, enclosure and other human interventions)."

The 2002 document continued the division between landscape character assessment – the description of its physical character, from judgements about its landscape value. Another shift was that in regarding landscape as based on perception which varies from person to person, its evaluation

required the participation of local communities rather than expert assessments. It advocated that landscape was about people and place rather than scenic quality.

In a retrograde step, the 2002 guidance defined landscape quality, not in value terms, but as the condition or physical state and intactness of the landscape, thus relegating it to mere description of the extent of landscape degradation rather than its aesthetic value. Landscape integrity or landscape condition would have been less confusing terms. It uses the term, landscape value as the qualitative term and scenic quality as referring to landscape's appeal to the visual senses.

In 2009, Natural England examined the services and qualities provided by landscapes through extensive interviews of the community (The Research Box, *et al*, 2009). Among its findings were:

- People talked in a way that suggested a sense of ownership about the landscape;
- Landscape provides places for peace and solitude, exercise and activity, escape, stress relief, and places for spending time with loved ones or for being alone.
- Landscape provides physical sensation, such as sound (or silence) and "the wind in your hair".
- Landscape has a life-affirming quality.
- People had a range of places from nearby to distant

It surveyed 20 landscape features:

- Water, in its various forms, greatly enhances people's landscape experience, often completing the beauty or tranquillity of a place;
- Moving, rushing water is exhilarating; still water being peaceful.
- Woodlands are treasured places, quintessentially British;
- The enclosed atmosphere of woods is "womb-like", providing comforting and calming effects.
- The coast is an iconic place for many people, especially younger ones.

- Coast walks are important to many people at fundamental points in their lives, soul-searching by staring at the sea;
- The best landscape experiences are predominantly “natural” ones - green and rural;
- Villages with traditional building methods, old churches, or thatched roofs are considered part of the countryside experience, but modern housing estates and towns are not;
- “naturalness” is a subjective term and both a well-trimmed hedgerow and a marshland habitat can be regarded as natural;

This excellent study confirmed that “all landscapes matter”, reflecting a central tenet of the European Landscape Convention.

2.4 BRITISH ACTION - CONCLUSIONS

Great Britain has a long and distinguished history of regard for its landscapes as evidenced by its poets, writers, painters and photographers. During the Second World War, Britain drew strength from the appeal and constancy of its agricultural landscapes.

Through the 20th century much was written to describe and delight in its landscapes and much action was taken, via the establishment of national parks, AONBs and through planning policies, to safeguard its landscapes from deleterious developments.

From the late 1960s onwards, planners commenced developing methods to measure and map the quality and features of the landscape. Quite sophisticated quantitative methods were developed and had they been further refined, there is much they could have achieved. However it was not to be.

For reasons best known to itself, the Countryside Commission (and its successors), with the statutory responsibility for Britain’s landscapes, retreated from evaluating landscape value (or quality), instead merely describing and classifying it by maps of landscape character. Fear of being accused of subjectivity may have been

the underlying reason for the agency’s reticence. The new approach is devoid (as far as humanly possible) of subjective judgement. Curiously though the criteria for designating AONBs included scenic quality, no guidance is provided on how to evaluate it. Scenic quality is largely obscured through the additional considerations, all of which could be measured and mapped.

Even the definition of landscape changed. Originally it was the visual appearance of the land but this has now been judged insufficient and instead it has become the relationship between people and place and covers every conceivable natural and cultural aspect as well as all five human senses. This diminishes its visual qualitative values and instead provides a footing for the focus on landscape character, a neutral and objective field to explore compared with the subjective field of landscape quality.

And as if to add insult to injury, landscape quality no longer refers to the qualitative value of the landscape but to its condition and whether it needs repair! This is far removed from the community’s view of what landscape and landscape quality comprises.

One recalls the words of the Manchester study in 1976, “It is important not to confuse the analysis of landscape character which is descriptive, and analysis of quality which is evaluative.”

In Britain, landscape has digressed far from its original meaning, perhaps spurred by an aversion to subjectively valuing landscape quality and by the demands to integrate landscape with other considerations by new corporate structures.

2.5 OTHER MEASURES

European Landscape Convention

The European Landscape Convention was adopted in 2000 and entered into force in 2004. The Convention covers all landscapes – natural through to urban, land as well as water including marine and high quality landscapes through to degraded. It aims to protect, manage and

plan landscapes as well as educate about them. It is hoped to make landscape a mainstream political issue by putting it on the agenda of governments, planning authorities and the community.

The Convention was initiated by the Council of Europe in 1994. Out of 47 possible signatory countries, 37 nations have ratified the Convention (2013), three have signed but not ratified, and seven have taken no action including Austria, Germany and Russia. Switzerland has signed but not ratified it.

The Convention is seen to play an important role in the well-being of Europeans, empowering them to have a say in the protection and management of their landscapes. Being trans-European, it aims to safeguard landscapes across borders. The emphasis is on landscape management rather than control.

The preamble to the Convention speaks of landscape having an important role in social, cultural, environmental as well as economic fields, helping to create local cultures and a European identity. It contributes to the quality of life of individuals, whether comprising landscapes of outstanding beauty or everyday areas. European landscapes are described as a common resource requiring all to co-operate in their protection and management.

The definition of landscape in the Convention is “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.” This recognises the changing nature of landscapes over time and unifies natural and cultural elements. By focusing on landscape character rather than landscape quality it avoids the issues associated with protecting quality.

The Convention includes an objective for landscape quality the definition of which would involve “formulation of the aspirations” of the community regarding their landscapes and would involve public authorities.

Nations that sign up to the Convention are required:

“to recognise landscapes in law as an essential component of people’s surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity.”

They are required to address landscape protection, management and planning, involve the public, and integrate landscape into planning policies as well as all relevant areas of public policy. Nations are to identify and assess their landscapes, analyse their characteristics and the pressures for change (Déjeant-Pons, 2006).

World Heritage Convention

The World Heritage Convention was adopted in 1972 and provided for the conservation of cultural and natural sites. The key concept underlying the Convention is to protect places and features of “*outstanding universal value*”. Outstanding universal value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.

The Convention establishes ten criteria of outstanding universal value including: Criterion (7) contains superlative natural phenomena or areas of *exceptional natural beauty and aesthetic importance* (emphasis added).

The willingness of this Convention to include aesthetics and natural beauty contrasts with the European Landscape Convention.

To be deemed of outstanding universal value a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding.

Under the World Heritage Convention, 911 sites have been listed world-wide comprising 704 cultural sites, 180 natural sites, and 27 mixed cultural/natural sites. These include 132 sites from 62 nations listed under the aesthetics Criterion 7.

The United Kingdom has 28 sites listed as World Heritage including five natural sites, but only one of these is in England - the Devon coast for geology. The other natural sites are in Northern Ireland (Giant's Causeway) and on remote islands (St Kilda, Henderson Island, Gough and Inaccessible Islands). The list for the UK omits the Lake District, Snowdonia, Peak District, the Cairngorms and Cornwall, as well as significant AONBs and national parks which were dedicated largely on the basis of their landscapes.

2.6 WORLD HERITAGE NOMINATION OF THE LAKE DISTRICT

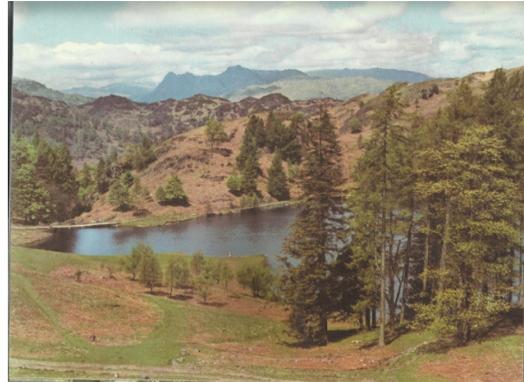
The Lake District was nominated as a World Heritage Site in 1986 and 1989, however the area did not fit within the categories then available under the World Heritage Convention and the nominations were deferred. In 1986, the evaluating committee was "open to the possibility of evaluating the site under criteria iii. (exceptional natural beauty)." (LDWHP, nd)

A joint statement of IUCN and ICOMOS following the 1986 nomination stated:

"The two organisations think that it is the conjugation of the qualities of the site in respect of these criteria [cultural and natural], rather than one or other of them which would allow them to be recommended for inscription."

The combination of the natural and the cultural were considered its essential characteristic: *"the physical landscape and its interrelationship with human landscape and the way they work together in each valley and fell."*

In 1989 it was again deferred because of "difficulties of evaluating the integrity of the natural element in a cultural landscape."



Tarn Hows 1959 (Hoys, 1959)



Tarn Hows 1972



Tarn Hows 2013

The changing face of the Lake District is illustrated by these scenes of Tarn Hows which show the scattered trees in 1959 and 1972 giving way to a dense forest by 2013. The foreground pines of the 1959 and 1972 scenes gradually died out.

UNESCO subsequently adopted a new category, Cultural Landscape. The World Heritage website states: "Since 1992 significant interactions between people and the natural environment have been recognized as **cultural landscapes.**"

In 2001 a Steering Committee was formed to initiate further work to advance the nomination of the Lake District.

A survey of people in 2002 found that “Lake District's scenic qualities, its diversity and compactness, its peacefulness and the freedoms of access were of high importance to all groups...” (Julie Graham Associates, 2002). The area's landscape and scenery topped the list of its outstanding universal value followed by its human landscape: “influenced by people and tradition over time.”

In 2002 the Countryside Agency's map of the Character of England depicted most of the Lake District as the Cumbrian High Fells: “a dramatic upland landscape, carved by past glaciations, with rugged peaks, ridges and open fells, separated by U shaped valleys with a radiating pattern of lakes and rivers.”

In 2006, the Lake District National Park Authority adopted a vision for the park covering the period to 2030 (Lake District National Park Partnership, 2006).

The vision statement read:

The Lake District National Park will be an inspirational example of sustainable development in action.

A place where its prosperous economy, world class visitor experiences and vibrant communities come together to sustain the spectacular landscape, its wildlife and cultural heritage.

Local people, visitors, and the many organisations working in the National Park or have a contribution to make to it, must be united in achieving this.

It elaborated what each part would mean including:

A spectacular landscape, its wildlife and cultural heritage – A landscape which provides an irreplaceable source of inspiration, whose benefits to people and wildlife are valued and improved. A landscape whose natural and cultural resources are assets to be managed and used wisely for future generations.

In respect of the landscape, the vision clearly goes well beyond a description of landscape character and focuses on its qualitative aspects and power to inspire.

The summary of the case for it displaying outstanding universal value was as follows (LDWHP draft nom. Doc. nd).

The English Lake District is the birthplace of what landscape means to the modern world. Its unique landscape, dominated by a long-standing, living tradition of upland pastoral farming, became renowned in the 18th century for its Picturesque views and subsequently inspired the Romantic poets, including William Wordsworth (1770-1850), who resided in the area.

Wordsworth was the central poet and writer of the age of English Romanticism, which placed emotion at the centre of the aesthetic experience, especially in relation to perceptions of landscape. Wordsworth's Romantic vision, shaped by the landscape, people and farming culture of the Lake District, has had wide international influence. His work particularly inspired the American Transcendental Movement, including writers such as Emerson and Thoreau, and John Muir, founder of the American national park movement. Of even greater universal importance is the increasing recognition that Wordsworth and fellow 'Lakes Poets' such as Coleridge were primary exponents of the intrinsic value of landscape and nature that underpins much of modern ecological thought.

Wordsworth also wrote a *Guide to the Lakes* (1810) which included the famous assertion that the Lake District stood as “a sort of national property in which every man has a right and interest who has an eye to perceive and a heart to enjoy”. This sentiment, the foundation stone of the international concept of protected landscapes, would be taken up with

vigour in the fight to protect the Lake District from large scale development in the later 19th century.

The modern conservation movement springs from this association of the Lake District with powerful ideas. In 1873, the artist, philosopher and philanthropist John Ruskin (1819 –1900) came to live in the Lake District. His ideas, together with those of Wordsworth, underpinned campaigns in the second half of the 19th century to protect the area from damaging development. The protest against the construction of a reservoir at Thirlmere in the 1870s marked the first time that people other than landowners claimed a right to influence the future of valued landscapes.

Ruskin's concern for protecting important landscapes influenced Octavia Hill, Sir Robert Hunter and Canon Rawnsley, to found the National Trust in 1895. In addition to being the home of one of its founders, Rawnsley, the Lake District has been central to the development of the National Trust. Today the organisation owns and manages 25% of the area of the Lake District National Park...

The UK's National Parks, of which the Lake District is the prime example, are recognised internationally as exemplars of protected, lived-in, working landscapes. As a result of earlier nominations for World Heritage Site inscription, the Lake District itself provided the stimulus for the definition of the category of World Heritage cultural landscape.

The Lake District is therefore the landscape which more than any other has influenced the way that the modern world views, values and conserves landscape.

The nominating document spoke of the “The fusion of aesthetics and practical land management...”

In 2008, the Lake District National Park Authority engaged Chris Blandford Associates to prepare a Landscape Character Assessment and Guidelines for the Park. The approach was based on the 2002 guidelines by the Countryside Agency. The report defined 13 landscape character types which are generic units of landscape with a distinct and recognisable pattern of elements that occur consistently throughout the type (See Chapter 5).

A Technical Evaluation was submitted in 2012 to the UK Department of Media, Culture and Sport which coordinates bids for listing. Further work on aspects was suggested by the expert panel that reviewed it. During 2013, the National Park Authority revised its nomination for World Heritage Listing and it is intended to resubmit later in 2013.

The nominating document emphasised the aesthetic qualities of the Lake District, including:

The Lake District's special significance was launched by a remarkable alliance between the aesthetic appeal of its natural environment and unique character of its indigenous farming culture with the output of writers and artists who, inspired by the landscape, showed how it could appeal to the higher senses and be accessible to all.

3. LANDSCAPE OF THE LAKE DISTRICT

The Lake District National Park is the largest national park in England and was declared in 1951 covering an area of 2,292 km², 52 km west to east and 64 km north to south. It has a resident population of 42,200 but these are vastly exceeded by the 15.8 million annual visitors.

The Lake District comprises an approximately circular area with a high central dome glaciated into a series of radial deep U-shaped valleys, many containing linear lakes, separated by moorlands, low and high fells, and mountain ridges. In the north and south west, the high land has a smooth rounded outline whereas in the central volcanic area they are craggy and angular. The maximum height is the Scafell Pike, England's highest mountain at 978 m, and there are many other high peaks including Scafell (964 m with a 200 m rock face), Bow Fell (902 m), Great Gable (899 m),

Skiddaw (931 m), Blencathra (868 m) and Helvellyn (949 m). The south-east comprises lower lying land, undulating hills and wide flat valleys.

There are nearly 100 lakes, larger tarns and reservoirs, the largest by area being Windermere (14.8 km²), Ullswater (8.9 km²), Derwent Water (5.4 km²), Bassenthwaite Lake (5.3 km²) and Coniston Water (4.9 km²).

In the 1950s, "tarn baggers" counted 463 tarns – and they swam in every one of them! Being the wettest part of England and with many high areas, there is an abundance of waterfalls including Birker Force, Lodore Falls, Scale Force and Stanley Force. Some were used in the past to power water wheels. Rivers in the Lake District are short and steep, reflecting both the height of their origins and their proximity to the coast.



Source: Fir Tree Maps

Figure 3.1 Map of the Lake District

Key rivers are the Cocker, Derwent, Eamont, Lowther, Leven, Bela, Winster, Crake, Kent, Lickie, Duddon, Annas, Esk, Calder and Ehen.

The tree line for the Lake District is probably around 550 m⁵ but due to the steepness of the terrain, exposure to wind and grazing pressure, many areas well below this height are treeless, e.g. around West Water which is only 61 m elevation but has few trees around its shores or on the steep scree slopes adjoining it. Broad leaved forests once reached to around 600 m (2000 feet) in some locations but as early as the beginning of the 17th century had been denuded for charcoal and timber. Constant grazing by sheep since their clearance has prevented natural regeneration.

Trees and juniper shrubs occur more frequently on the crags and fell sides than on the open fells because of the constant grazing of seedlings by sheep on the fells. The upper fells contain woodlands of sessile oak, birch, ash and alder. Bracken clings to the upper slopes above the tree line, colouring the hills orange in autumn.

In the lower valleys and fells, native oak woodlands occur, many fragmented by farms but nearly 6,000 ha of woods are classified as ancient. The autumn colours of the deciduous broad-leaved woodlands are a major tourist drawcard.

During the 18th and 19th century, planting of conifers commenced and dense dark green forests now cover many areas around the lakes such as Ennerdale and Thirlmere and across the slopes of Skiddaw, Lorton Fells and Old Man of Coniston and the extensive Grizedale Forest between Coniston Water and Windermere. The establishment of the Forestry Commission in 1919 led to much of the large-scale afforestation.

Sheep farming has been practiced in the Lake District since Roman times with several specialised breeds common in the area. The dry stone walls which provide boundaries to the fields result from the sheep farming and originated in the medieval period. The fields they define have not changed significantly since the late 18th century. Sheep farming occurs both in the lower valleys and also on the higher barren fells. Most of the Lake District is classified as poor to very poor for agriculture with a few better areas on the outer extremities of the Park. Improved pastures have been established in some valleys and in the south-east area.

The Lake District has considerable diversity: its land forms range from flats through to steep high rockfaces; water bodies range from large lakes to tiny tarns; vegetation ranges from large stately oaks to tiny flowers; and land uses cover agriculture, industry, mines, forestry and the many tourist attractions; and all of this in a relatively confined area.

5. Chris Blandford Associates, 2008, indicated dense deciduous woodland up to 800 m following the last glaciation. Given that the tree line in Wales and Scotland is considerably lower (550 – 500 m), this figure is considered unlikely.

4. MEASUREMENT OF LANDSCAPE QUALITY

4.1 COGNITIVE AND AFFECTIVE PARADIGMS

The challenge in measuring landscape quality is to appreciate its subjective nature and to ensure that this is what is measured. Many early attempts measured everything in the landscape that was measurable – the height and steepness of landforms, the extent and nature of vegetative cover, water bodies, the land uses, colours and a host of other attributes anticipating that through doing so, a measure of landscape quality would emerge. It never did.

The reason is that as a subjective quality, landscape quality can only be assessed via our affective capacity, our likes and dislikes, our aesthetic preferences, not via our cognitive abilities which analyse and logically comprehend the environment. The error was in confusing paradigms, using the cognitive analytical approach to measure a subjective quality. The paranoia of analysts not to be subjective missed the point, it is possible to objectively measure subjective qualities.

Dictionaries reinforce the distinction between the cognitive and the affective in their definition of aesthetics as “things perceptible by the senses (*i.e. affective*) as opposed to things thinkable or immaterial (*i.e. cognitive*)” (Shorter Oxford, 1973).

Using an analogy from music, an individual’s liking for music does not derive from an analysis of the use of instruments, the number and range of notes, the scoring for the orchestra, or a detailed analysis of the score. Rather it is immediate and without analysis. The same can be said of our preferences for coffee, chocolate, holiday destinations, even love...

4.2 PSYCHOPHYSICS

The basis of measuring landscape quality lies in the science of psychophysics which

was developed by Gustav Fechner (1801 – 1887), an early German psychologist. Psychophysics measures the effect on the brain of stimuli from the senses – sight, sound, taste, touch and smell. A vast literature has developed in psychophysics.

In the 1980s and 1990s, psychologists mainly in the US, turned their attention to applying its methods to understanding how humans comprehend landscape quality. Researchers including Terry Daniel, Stephen and Rachel Kaplan, T.R. Herzog, Bruce Hull, Herbert Schroeder, Greg Buhyoff, Paul Gobster, Philip Dearden, Roger Ulrich, and, in Australia, Allan Purcell, Richard Lamb and Ian Bishop carried out numerous studies which established a methodological framework and greatly enhanced understanding of human-landscape interaction.

4.3 USE OF PHOTOGRAPHS

An issue which was investigated by many researchers was whether photographs could serve as an adequate surrogate for in-field assessments of landscape quality. Research by Daniel and Boster, 1976; Dunn, 1976; Shuttleworth, 1980; Trent, Neumann & Kvashny, 1987 and Stamps, 1990 established that the results of photographs could be comparable with field assessments. Applying meta-analysis to existing studies, Stamps (1990) found a correlation of 0.86 in the ratings of photographs and on-site assessments.

Photographs provide significant advantage in not having to transport large groups of participants through the countryside. They also enabled areas remote from each other to be assessed on a comparative basis which would not be possible through field assessment, and for the effects of temporal landscape changes such as seasonal colour to be assessed. Finally, photographs enable the visual effects of changes in the landscape such as new developments or changes in land use to

be assessed using scenes with and without the change.

The researchers identified a range of criteria that photographs should meet, and I have extended these in my studies. The aim is that the photographs be standardised as far as possible so that the differences are in the landscape quality, not the quality of the photograph.

The photographs should meet the following criteria:

- Not include people or animals as their inclusion affects ratings;
- Avoid photographic composition of a scene to frame a view or to lead the viewer into a scene; such composition enhances its appearance;
- Aim for good lateral and foreground context to scenes and of typical representative scenes, not unusual (i.e. rare) scenes. However significant features such as waterfalls, cliffs and water bodies may be included;
- Avoid transitory effects of special atmospheric lighting such as sunsets or particularly vivid side lighting. Aim for sunny cloud-free conditions to standardise scenes against a blue sky. However this ideal may be sometimes difficult to achieve in England;
- Extend photographs to the horizon where possible and avoid close-up confined views;
- Scenes from mountain tops of valleys and vistas below should include some foreground to provide context as the scene can otherwise appear as though it was taken from an aircraft;
- Use 50 mm focal length (equivalent to 35 mm in digital camera) in horizontal (landscape) format.

4.4 METHOD

The method that the researchers established has the following components:

- Rating scale Use of a rating scale such as 1 (low) – 10 (high) by which the landscape quality can be judged. The scale is a surrogate for landscape quality and forces the participant to condense their assessment of the scene into a number. Experience of thousands of participants in previous surveys indicates that this is not difficult and the results reflect closely their perception of landscape quality. Ratings on a 1 – 10 scale provide an absolute measure of landscape quality at the interval scale which can be analysed statistically. Rankings (i.e. scene 1 is better than scene 2) by contrast compare one scene with another and are only an ordinal measure which cannot be analysed statistically.
- Survey instrument Use of a survey instrument – a form provided to participants, or an on-line survey that they are invited to enter.
- Participants Access to a large number of participants in the survey to achieve statistical validity. Based on a 5% (0.05) margin of error and a confidence interval of 95%, a sample of around 380 is required.

The technology that is now available facilitates landscape surveys and was not available to the early researchers:

- Digital cameras that allow large numbers of photographs to be taken of the study area; typically 3 – 4,000 in a survey, thus providing a large data base from which a sample may be drawn for the survey;
- Digital manipulation of photographs through use of Photoshop® and similar programs which enable features to be removed from scenes, or proposed developments inserted for assessment;

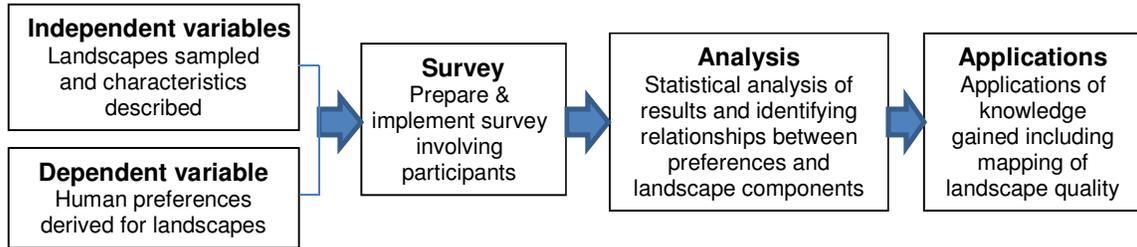


Figure 4.1 Landscape quality assessment method

- Placement of the survey on a website such as Survey Monkey® either on a restricted or open basis; invitations to participate are sent by email with the link to the survey included, thus making it very convenient. The surveys can be entered at the participant's own work place or home and at their timing, thus not requiring attendance at say a university or community centre to be shown the scenes. The on-line survey enables the participant to complete it at their own pace. The survey instrument automatically re-randomises the scenes for each survey respondent.
- Statistical packages including Excel® and SPSS® readily enable analysis of the results.

Figure 4.1 illustrates the method of measuring through the survey instrument, the dependent variable (i.e. the rating of landscape quality) and the independent variables (significance of land forms, land cover, water etc.), and analysing and applying the results.

The method followed in the project involves the following steps:

1. Photograph the region. This may include seasonal change in the landscape to quantify how much landscape quality changes across the seasons.
2. Classify the region's landscape into landscape units of similar character.
3. Select a set of 100 – 150 photographs to sample the landscape units. A

survey of 150 scenes can be processed by most participants very quickly, say 15 - 20 minutes. The brain is able to rapidly discriminate the appropriate rating for a scene (Herzog, 1984, 1985) and rapid evaluation minimizes the likelihood of analysis and revision. The aim is to draw on the person's affective judgement, not on their cognitive processes which involve analysing each scene. Around 20% of the survey comprises benchmark scenes from outside the study area to provide a wider range of likely ratings; the range within the study area may extend only over 2 – 3 units of the 1 – 10 scale. However the Lake District is considered likely to cover a wider range and benchmark scenes will not be required (it covered 5 units, 4 – 8).

4. Prepare an Internet survey containing the scenes and instructions. The survey includes randomisation of the scenes and automatically entering the ratings into the data base. The survey includes basic demographic data (age, gender, education, birthplace) and also gauges their familiarity with the Lake District and whether they reside in it. The survey commences with an explanation of the survey, provides instructions, urges participants to use the entire rating scale and to judge each scene on its merits – to trust their initial instinct and not analyse their response. The survey also provides a contact point for questions, and an opportunity to provide comments. Finally it offers the respondent the opportunity to comment on the survey and to register

to receive a summary of the results. Four sample scenes are shown at the beginning of the survey to cover the range of landscape quality and to cue participants to the highs and lows they will encounter in the survey. In the UK in 2012, 80% of households had Internet access with 93% via broadband (ONA, 2012). Lack of Internet access will therefore not significantly affect the viability of the survey.

5. Send invitations by email to potential participants to log into the Internet survey and rate the scenes on a 1 (low) to 10 (high) scale; the survey may be visited by several thousand over one month.
6. Invite up to 30 participants⁶ score the scenes for the significance of various characteristics (e.g. trees, landforms, water, diversity, naturalness); this scoring is carried out via additional Internet surveys. The landscape scores when combined with the scene ratings enable their contribution to landscape quality to be quantified.
7. Prepare the data set comprising the survey ratings and the landscape component scores. Conduct various statistical tests on the data to ensure their quality and check for strategic bias (e.g. entire ratings of 1 or 10 where the participant uses the survey for their own objectives such as diminishing or enhancing the rating of the area) and apply Cronach's alpha to test for an internal consistency estimate of reliability of test scores.
8. Analyse the influence of participant characteristics (e.g. age, gender, education) on ratings, compare the characteristics of the participants with those of the wider UK community, assess the influence of the participant's familiarity of the region and residence on their ratings.

Inevitably the participants in these surveys tend to be far better educated than the wider community, however most surveys find it very difficult to gain the participation of members of the community who lack interest.

9. Analysis of the ratings commences with the general and moves progressively to the specific. Mean ratings are derived for the landscape units and the range of landscape characteristics, and ratings are analysed against the landscape scores (e.g. ratings vs scores for land form).
10. Derive predictive models using multiple linear regression to combine the ratings (dependent variable) with the scores of landscape characteristics (independent variables) thereby identifying the contribution of the landscape factors to landscape quality. The models may be tested against the ratings of each scene.
11. Examine comments of the participants on the survey or its subject, classify the comments, and provide examples where relevant.
12. Use the detailed knowledge gained from the analysis and the models to map landscape quality for the region.

The steps of the method are outlined in Figure 4.2.

6. The Manchester Study (1976, 130) stated that 30 respondents is the minimum number to prove normality.

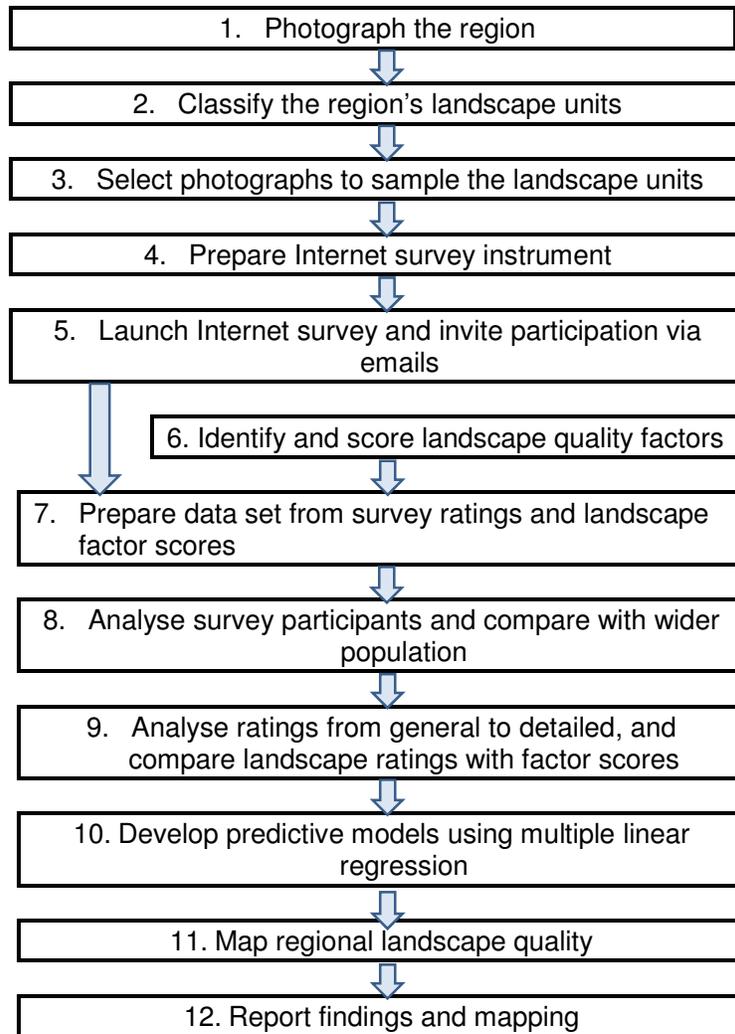


Figure 4.2 Steps in the landscape quality assessment method