

Draft scenic resource evaluation and visual effects analysis criteria for OPAC consideration

The Oregon Coast is an internationally recognized tourist destination. Over 20 million visits occur to our coastal parks each year (OPRD, 2011). Scenic enjoyment is the 3rd most commonly stated primary recreational activity (following walking and stationary relaxing) that visitors say they engage in at Oregon's coastal beaches (Shelby and Tokarczyk, 2002). In addition, the Oregon Coast highway (Pacific Coast Scenic Byway) has been federally recognized by the National Scenic Byways program, established by Congress and administered by the U.S. Department of Transportation's Federal Highway Administration. In addition to being one of the first Scenic Byways in the country, it has also been designated an "All American Road", which recognizes US 101 as possessing "multiple intrinsic qualities that are nationally significant and have one-of-a-kind features that do not exist elsewhere (FHWA, 2011)." Oregon's coastline is also unique in that it has over 70 state parks running along the highway, providing "public access and resource protection in a way that is unrivaled by any other U.S. coastline park system (CH2MHill, 1997)."

Oregon's Statewide Planning Goal 19 states that agencies, through programs, approvals, and other actions, shall "protect and encourage the beneficial uses of ocean resources such as...aesthetic enjoyment." This is reiterated in Part 5 of the Territorial Sea Plan (TSP). Oregon's Ocean Shore Management Plan, a FERC approved "comprehensive plan" notes that OPRD "may identify important 'scenic features' that should be protected from development or other impacts for their scenic value (OPRD, 2005)." The most recent round of TSP Working Group public meetings underscored the importance of considering aesthetic (e.g., viewshed) impacts during the TSP amendment process.

There are several accepted methodologies for managing scenic resources used by federal land management agencies (BLM, 1980a; BLM, 1980b; USFS, 1995). These methods involve conducting inventories of scenic resources and evaluating potential changes based on established criteria and objectives. The degree to which a renewable energy facility (or other development) in Oregon's Territorial Sea impacts aesthetic recreational resources depends on a variety of factors, many of which are very similar to those used in the land-based scenic impact assessments. Modeling and slightly adapting these visual subordination standards for projects proposed in the Territorial Sea may help "provide time-tested qualitative benchmarks that can be measured using objective methods (Apostol, 2009)."

OPRD is presenting the following draft recommendations to OPAC for application to areas within the viewsheds of coastal state parks. However, these draft criteria for evaluating seascape scenic quality, user sensitivity, and evaluating impacts could be used as a starting point for discussion to develop criteria that could be applied coast-wide (e.g., federal lands, private lands).

Planning Phase/Near-term (i.e., before the end of the TSP amendment process):

- Refine the draft criteria for evaluating scenic quality and user sensitivity (steps 1-3). Obtain OPAC/TSPAC and possibly outside professional advice (in coordination with OCZMA's local government effort) and suggested modifications to fit Oregon's Territorial Sea seascape.

- Apply the refined criteria to coastal park properties. This would involve evaluating the sensitivity and scenic quality (steps 1-3) of various park seascapes along the Oregon coast and categorizing viewpoints into four classes (step 4) based on levels of use, uniqueness and use by sensitive visitors. These classes could be included in the current mapping phase of the TSP amendment process.
 - This will require field visits to the viewpoints along the coast to gather detailed descriptions of individual viewpoints, GIS coordinates matched to a specific viewpoint/photo point, photos and other information necessary to determine scenic quality of the seascape at the viewpoints.
- Refine the draft criteria (“visual subordination standards”) to evaluate the potential contrast of *future* alternative energy development proposals (step 5).

Project Phase/Long-term (i.e., when developments are proposed):

- Previously established visual resource classes (included in the TSP) could be used (in combination with visual simulation techniques (e.g., the pending visual impact evaluation ArcGIS tool being developed for BOEM) to evaluate impact of proposed developments.
 - Potential contrast would be combined with the previously established visual resource classes (I-IV) and an evaluation done by the TSP Joint Agency Review Team (JART) to determine whether the impact of the project aligns with the objective for that class of resource (figure 1).
 - For example, the objective of a Class I resource would be that the impact of a project on the seascape should be very low and must not attract attention. A Class IV resource designation would allow for high levels of change where activities may dominate the view and be a focus of viewer attention.

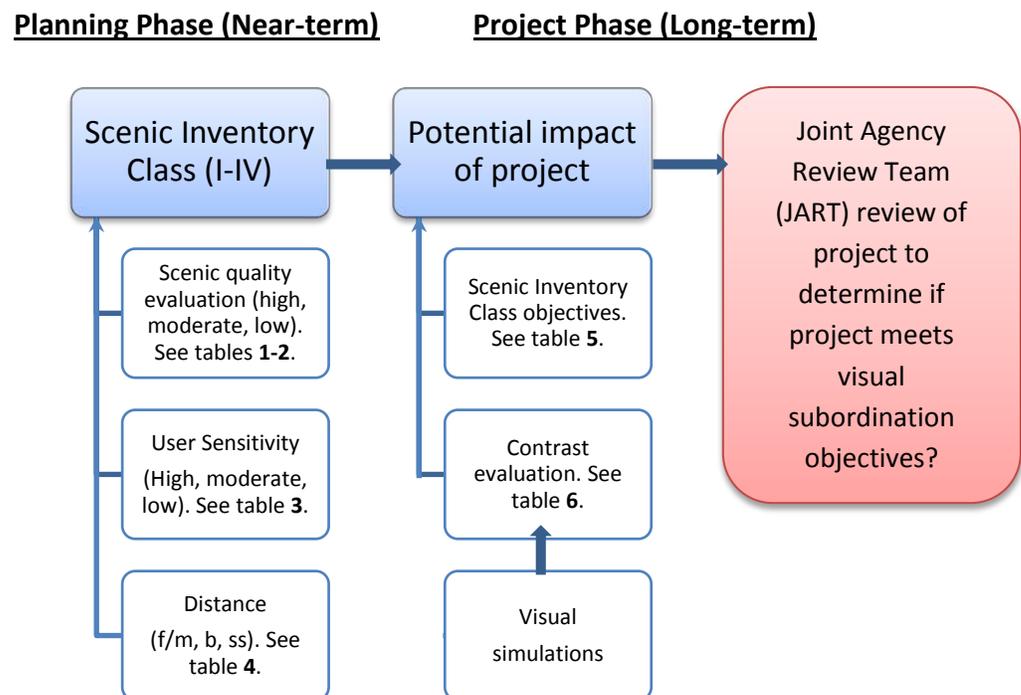


Figure 1. Scenic inventory and potential impact analysis overview (based on BLM methodology)

Draft scenic resource evaluation criteria and impact analysis summary

Planning and Inventory Phase (near-term)

- 1) **Determine scenic quality.** Scenic quality is a measure of the visual appeal of a park area and its viewshed. Viewpoints are given an A, B, or C rating based on scenic quality which is determined using the following key factors: *seascape, vegetation, color, adjacent scenery, scarcity, and cultural modification* (BLM, 1980a). For the purposes of this document, *seascape* is defined as the coastal landscape and adjoining areas of ocean, including views from the land to sea and along the coastline (DTI, 2005). See tables 1-2 for details.
- 2) **Determine sensitivity.** Sensitivity levels are a measure of public concern for scenic quality. A sensitivity level analysis is conducted for public lands where they are assigned high, medium, or low sensitivity levels by analyzing various indicators of public concern. Rating is based on the following key factors: *type of users, amount of use, public interest, adjacent land use, special areas, and other factors* (BLM, 1980a). See table 3 for details.
- 3) **Determine distance zone.** For classification, analysis, and simplification of data, seascapes are subdivided into distanced zones based on relative visibility from travel routes or observation points. The zones are: *foreground/middleground, background, and seldom seen* (BLM, 1980a). See table 4 for details.
- 4) Combine scenic quality, sensitivity and distance zone for the location to **determine visual resource classes** (BLM, 1980b). See table 5 for details.
 - **Class I.** Class I is assigned to all *special areas* where the current management situation requires maintaining a natural environment essentially unaltered. This includes administratively designated areas (e.g., protected under the National Historic Preservation Act) where decisions have been made to preserve a natural landscape (e.g, State Scenic Viewpoints and Corridors). This also includes areas with very high sensitivity and scenic quality that have not been previously designated but deserve class I level status based on an evaluation of scenic quality and sensitivity.
 - **Classes II, III, IV.** These classes are assigned based on combinations of scenic quality, sensitivity levels, and distance zones.

Project Phase (long-term)

- 5) **Do visual assessment/contrast rating once project is proposed**
 - Obtain detailed project description (e.g., siting and layout information such as height, number, and arrangement, onshore offshore/infrastructure, distance, angle etc.).
 - Select key observation points (most critical viewpoints).
 - Review visual simulations (consult appropriate professional guidance; see Apostle, 2009 for a start). Use available tools including the “Visual Impact System for Evaluating Offshore Renewable Energy (VISEORE)” being prepared for BOEM.
 - Complete the contrast rating for each point. See table 6 for details. Table 6 is included below for easy reference.

Contrast rating criteria (modified from BLM, 1980b; USFS, 1995; DTI, 2005*; Apostle, 2009)

Degree of Contrast or Magnitude (BLM/USFS/DTI)	Criteria/Definition	Descriptors (DTI, 2005)	Notes
None/Retention/ Negligible	The element contrast would not be visible or perceived. There is no legible change. It is visually subordinate.	Weak, not legible, near limit of acuity of human eye	A development that remains sub-dominant (visually subordinate) may have a low to moderate impact, depending on the sensitivity of the viewpoint. However, even development with weak contrast at a <i>very high-quality</i> viewpoint with <i>high viewer sensitivity</i> may have high impacts on visual resources (Apostle, 2009).
Weak/ Partial retention/ Very Small	The element contrast could be seen but isn't so prominent or contrasting that it attracts attention and becomes a dominant element. It remains subordinate.	Lacking sharpness of definition, not obvious, indistinct, not clear, obscure, blurred, indefinite, subtle	
Moderate/ Modification/ Moderate	The element contrast begins to attract attention and begins to dominate the characteristic seascape. Proposed development causes "moderate alteration to elements/features/characteristics of the baseline seascape or visual conditions...such that there is a distinct change (DTI, 2005)." It is no longer subordinate.	Noticeable, distinct, catching the eye or attention, clearly visible, well defined	A development that has moderate or strong contrast seen from a highly sensitive viewpoint or corridor would likely have a moderate to high impact (Apostle, 2009). However, development that has moderate contrast at a location with low sensitivity might have a low to moderate impact.
Strong / Unacceptable Modification/ Very Large	The element contrast demands attention, will not be overlooked, and is dominant in the seascape. It is no longer subordinate. Proposed development would cause very large "alterations to key elements/features/characteristics of the baseline seascape or visual conditions...such that there is a fundamental change (DTI, 2005)."	Commanding, controlling the view, foremost feature, prevailing, overriding	

*The UK guidance document has additional categories (DTI, 2005).

Factors to be considered. At a minimum, consider the following factors when applying the contrast criteria to the portion of the project that is visible (modified from BLM, 1980b):

- Distance from viewpoint. The contrast created by a project usually is less as viewing distance increases.
- Angle of Observation. The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the project is to take place.
- Length of Time the Project Is In View. If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.

- Relative Size or Scale. The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed. This should include consideration of size of the development (e.g., number of devices) along with size of the individual devices and associated structures along with layout and spacing. For example, minimizing horizontal spread of the layout may reduce contrast (DTI, 2005).
- Season of Use. Contrast ratings should consider the physical conditions that exist during the heaviest or most critical visitor use season.
- Light Conditions. The amount of contrast can be substantially affected by the light conditions. The direction and angle of lighting can affect color intensity, reflection, shadow, form, texture, and many other visual aspects of the seascape. Light conditions during heavy use periods must be a consideration in contrast ratings.
- Spatial Relationships. The spatial relationship within a seascape is a major factor in determining the degree of contrast. For example, projects in areas that are the “focus of key views” like a headland or large offshore rocks could have a higher contrast (DTI, 2005).
- Atmospheric Conditions. The visibility of projects due to atmospheric conditions such as fog or natural haze should be considered.
- Motion, lights and color. Movement and lighting draw attention to a project and vary depending on conditions and time of day and night. Surface treatment (e.g., color) may increase or decrease visibility.
- Shore-based facilities. Associated shore-based facilities (e.g., buildings, cables etc.) should also be considered in the visual impact analysis (DTI, 2005).

Professional guidance should be provided to ensure thorough and accurate evaluations are done using photo evaluations, GIS simulations etc. (see Apostle, 2009 and DTI, 2005 for a start).

6) Determine potential impact

- Combine visual resource inventory class with visual assessment of contrast to conduct an evaluation of the potential impact to the seascape.
- Compare the contrast ratings with the objectives for the class.
- Determine whether objectives are met, if not mitigating measures should be considered to minimize visual impacts (if allowed).
- Consider cumulative effects (see DTI, 2005 for a start).
- The impact analysis could be done by the Joint Agency Review Team (JART) as outlined in the TSP (see [table 7](#)).
- Adaptive management and monitoring of actual impacts will likely be necessary.

Table 1. Scenic Quality-Explanation of Rating Criteria (modified from BLM, 1980a)

Scenic Quality - Explanation of Rating Criteria	
Seascape/Landform	
	The ocean seascape, which includes adjacent topography and landforms, becomes more interesting as it gets more dramatic, or more severely or universally sculptured. Outstanding landforms may be monumental, as the coastal headlands, large offshore rocks and the Oregon coast range, or they may be exceedingly artistic and subtle as certain dunes, small offshore rocks and pinnacles, arches, and other extraordinary formations. Consider things such as shoreline type, offshore and onshore focal features, and elevation/slope.
Vegetation	
	Give primary consideration to the variety of patterns, forms, and textures created by plant life. Consider short-lived displays when they are known to be recurring or spectacular. Consider also smaller scale vegetational features which add striking and intriguing detail elements to the seascape.
Water	
	That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.
Color	
	Consider the overall color(s) of the basic components of the seascape (e.g., soil, rock, vegetation) as they appear during seasons or periods of high use. Key factors to use when rating "color" are variety, contrast, and harmony.
Adjacent Scenery	
	Degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the area. The distance which adjacent scenery will influence scenery within the area will normally range from 0-5 miles, depending upon the characteristics of the topography, the vegetative cover, and other such factors. This factor is generally applied to units which would normally rate very low in score, but the influence of the adjacent area would enhance the visual quality and raise the score.
Scarcity	
	This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare along the Oregon coast. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery - the scarcity factor can be used to recognize this type of area and give it the added emphasis it needs.
Cultural Modifications	
	Cultural modifications in the seascape, vegetation, and addition of structures should be considered and may detract from the scenery in the form of a negative intrusion or complement or improve the scenic quality of an area.

Table 2. Scenic Quality Inventory and Evaluation Chart (modified from BLM, 1980a)

Key factors	Rating Criteria and Score		
Seascape/ Landform	High vertical relief as expressed in prominent headlands, large rock outcrops, or severe surface variation; or detail features dominant and exceptionally striking and intriguing. 5	Variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional. 3	Few or no interesting seascape features. 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. 5	Some variety of vegetation, but only one or two major types. 3	Little or no variety or contrast in vegetation. 1
Water	Water is a dominant factor in the seascape. There are interesting and dominant water feature(s) (e.g., rivers, streams, waterfalls on cliffs, waves crashing on rocks) in addition to the ocean as part of the seascape. 5	Flowing, or still, but not dominant in the seascape. There may be additional features but they are not dominant. 3	There are no additional water features in the seascape. 0
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, and water. 5	Some intensity or variety in colors and contrast of the soil, rock and vegetation, but not a dominant scenic element. 3	Subtle color variations, contrast, or interest; generally mute tones. 1
Influence of adjacent scenery	Adjacent scenery greatly enhances visual quality. 5	Adjacent scenery moderately enhances overall visual quality. 3	Adjacent scenery has little or no influence on overall visual quality. 0
Scarcity	One of a kind; or unusually memorable, or very rare along the coast. * 5+	Distinctive, though somewhat similar to others along the coast. 3	Interesting within its setting, but fairly common along the coast. 1

Cultural modifications	Modifications add favorably to visual variety while promoting visual harmony. 2	Modifications add little or no visual variety to the area, and introduce no discordant elements. 0	Modifications add variety but are very discordant and promote strong disharmony. -4
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NOTE: Values for each rating criteria are maximum and minimum scores only. It is also possible to assign scores within these ranges. * A rating of greater than 5 can be given but must be supported by written justification.

Scenic quality overall rating: A = 19 or more, B = 12-18, C = 11 or less.

Consider variety, vividness, order and uniqueness of all of these individual factors as well as the harmony of the seascape and uniqueness of the whole view.

Table 3. Sensitivity criteria (modified from BLM, 1980a)

<p>a) Type of Users. Sensitivity will vary with the type of users. For example, recreational sightseers may be highly sensitive to any changes in visual quality. <i>Maintenance of visual quality is:</i></p> <ul style="list-style-type: none"> – a major concern for most users.....high – a moderate concern for most users.....moderate – a low concern for most users.....low
<p>b) Amount of Use. Areas seen and used by large numbers of people are potentially more sensitive. However, this is just one factor considered in sensitivity analysis because there are cases where few viewers may have high sensitivity (e.g., wilderness areas). Protection of visual values <i>usually</i> becomes more important as the number of viewers increase*.</p> <ul style="list-style-type: none"> – high level of use (500,000+ visitors/year).....high – moderate level of use (100,000-500,000 visitors/year).....moderate – low level of use (under 100,000 visitors/year).....low
<p>c) Public Interest. The visual quality of an area may be of concern to local, State, or National groups. Indicators of this concern are usually expressed in public meetings, letters, newspaper or magazine articles, newsletters, land-use plans, etc. Public controversy created in response to proposed activities that would change the seascape character should also be considered. <i>Maintenance of visual quality is:</i></p> <ul style="list-style-type: none"> – a major public issue.....high – a moderate public issue.....moderate – a minor public issue.....low
<p>d) Adjacent Land Uses. The interrelationship with land uses in adjacent lands can affect the visual sensitivity of an area. For example, an area within the viewshed of a park area may be very sensitive, whereas an area surrounded by developed lands may not be as visually sensitive. <i>Maintenance of visual quality to sustain adjacent land use objectives is:</i></p> <ul style="list-style-type: none"> – very important.....high – moderately important.....moderate – slightly important.....low
<p>e) Special Areas. Management objectives for special areas such as parks, natural areas, wilderness areas, scenic areas, scenic roads or trails, and designated Historic Areas frequently require special consideration for the protection of the visual values. This does not necessarily mean that these areas are scenic, but rather that one of the management objectives may be to preserve the natural seascape setting. The management objectives for these areas may be used as a basis for assigning sensitivity levels. <i>Maintenance of visual quality to sustain special area management objectives is:</i></p> <ul style="list-style-type: none"> – very important.....high – moderately important.....moderate – slightly important.....low
<p>f) Other Factors. Consider any other information such as research or studies that includes indicators of visual sensitivity.</p>

***Note:** *These numbers were modified to accommodate the much higher use of Oregon's coastal parks. The figures used by the BLM were much too low for coastal park visitation.*

Table 4. Distance Zones (modified from BLM, 1980a)

<p>Foreground-Midground Zone</p> <p>This is the area that can be seen from each travel route or observation point for a distance of 3 to 5 miles where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the seascape. In some areas, atmospheric conditions can reduce visibility and shorten the distance normally covered by each zone. Also, where the foreground-midground zone from one travel route overlaps the background from another route, use only the foreground-midground designation.</p>
<p>Background Zone</p> <p>This is the remaining area which can be seen from each travel route or observation point to approximately 15 miles. Do not include areas in the background which are so far distant that the only thing discernible is the form or outline. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark.</p>
<p>Seldom-Seen Zone</p> <p>These are areas that are not visible within the foreground-midground and background zones and areas beyond the background zones.</p>

Table 5. Visual Resource Classes (modified from BLM, 1980a)

		Visual sensitivity						
		High			Medium			Low
Special Areas		I	I	I	I	I	I	I
Scenic Quality	A	I	I	I	II	II	II	II
	B	II	III	III*	III	IV	IV	IV
				IV*				
	C	III	IV	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s	s/s
	Distance zones							

* If adjacent areas is Class III or lower assign Class III, if higher assign Class IV

Note: The only change made to the original BLM visual resource classes table (BLM, 1980a) was to move high sensitivity/high scenic quality (A) sites to Class I that were originally noted as Class II. This change was meant to accommodate highly sensitive and highly scenic sites within coastal state parks that may not have a previous designation specifically geared toward scenic values.

Objectives for Visual Resource Classes (BLM, 1980a):

- **Class I:** The objective of this class is to preserve the existing character of the seascape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic seascape should be very low and must not attract attention.
- **Class II:** The objective of this class is to retain the existing character of the seascape. The level of change to the characteristic seascape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic seascape.
- **Class III:** The objective of this class is to partially retain the existing character of the seascape. The level of change to the characteristic seascape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic seascape.
- **Class IV:** The objective of this class is to provide for management activities which require major modifications of the existing character of the seascape. The level of change to the characteristic seascape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

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*The UK guidance document has additional categories (DTI, 2005).

Table 7. Visual resource impact analysis

Viewpoint (Park name)	Class (I-IV)	Contrast (None-strong)	Impact (None, Low, Moderate, High)	Meets visual resource objectives (Y/N)

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