

## Appendix 12 :Range of resource values and uses

- (i) Employment and economic development
  - Sustained timber harvesting and sawmilling
  - Tourism
  - Ecotourism
  - Silviculture
  
- (ii) Aesthetics
  - Sights and sounds
  - Beauty
  
- (iii) Intrinsic
  - Boiling up
  - Spiritual
  - Rebirth
  - Sense of ownership
  - Satisfaction
  
- (iv) Water quality and quantity
  - Fish and fish habitat
  - Water regulation and purification
  - Domestic water supplies
  - Hydro-electric production
  - Freshwater aquatic life
  - Aquaculture
  - Industrial usage
  - Recreation
  
- (v) Processes
  - Nutrient cycling
  - Regeneration
  - Oxygen production
  - Successional patterns over landbase
  - Biodiversity
  
- vi) Recreation
  - Hunting
  - Fishing
  - Canoeing
  - Cabins
  - Berry and mushroom picking
  - Hiking
  - Biking
  - Photography

- (vii) Wildlife
  - Preservation of populations
  - Habitat
  - Recreational and commercial hunting
  - Trapping
  - Wildlife watching
- (viii) Wilderness or natural areas
  - Wetlands
  - Reserves
  - The integrity of the environment
  - No garbage
- (ix) Timber
  - A crop to be sustained
  - Domestic cutting
  - Christmas trees and wreath potential
- (x) Agriculture potential
- (xi) Minerals and aggregate
- (xii) Historic resources
- (xii) Urbanization
- (xiii) Scientific research and  
Environmental education

Expansion on each grouping or item follows.

- (i) Employment relates to maintenance of individual livelihoods and the generation of wealth or earnings to contribute to the local or provincial economy. The resources listed as providing employment are renewable when occurring within certain limits. Some activities such as timber harvesting are of long standing while others such as ecotourism are relatively new industries and like all elements of tourism hold great potential for organized growth and economic development. Employment also relates to the well being of individuals, families, and community life.
- (i) Aesthetics deals with things of beauty. While beauty may be in the eye of the beholder and therefore many of its aspects philosophical, few would find disagreement with the appealing sound of a babbling brook or the view of a vast

expanse of intact forest. Conversely vast areas of blowdown, a recently clearcut area or a rutted forest floor are not appealing sights, particularly if occupying a dominant portion of the landscape. The human senses are enhanced by forest sounds (birds, leaves, wind), smells (vegetation, fresh air) and by the variety of views near and far.

- (iii) Intrinsic values are the intangible values that make something what it is. The essential nature of something is often spiritual such as the feeling of rebirth after walking in the woods or the satisfaction of enjoying a boil up. The knowledge that something, such as the forest exists or that a sense of ownership of it exists is of tremendous satisfaction to many people.
- (iv) Water Resources Division has identified about 263 river basins on the Avalon including coastal areas drained by very small streams. These can be grouped into sixty-six drainage basins as identified in the Water Resources Atlas of Newfoundland (Water Resources Division 1992). The natural waters of the Avalon tend to be soft, slightly acidic and low in most constituents except iron and manganese. Color and turbidity levels tend to be elevated. These characteristics make the water generally good for domestic purposes, although elevated color and turbidity are aesthetic concerns (Acres 1987). Eighteen municipal water supplies on the Avalon are from groundwater while 53 are surface water supplies. The balance comes from thousands of personal wells. Overview Map 5 shows municipal water supply areas.

The Avalon Peninsula is fortunate to have not only an abundant supply of water, but to have it fairly evenly distributed throughout the year. The chief reason for the even distribution of water on the Avalon is that winters are milder than in most other locations on the island. Consequently, winter precipitation is often in the form of rain, rather than snow. In addition snowmelt frequently occurs as several small events during the winter and spring, rather than as one large spring runoff (Acres 1987). Additional information on water quality and stream flows for particular rivers is available in the literature cited.

Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas upon which fish depend directly or indirectly to and carry out their life processes. The forests and watersheds (fish habitats) of the Avalon Peninsula are so intricately bound in what has been described as the Avalon AForest Ecosystem@ that it is inconceivable, at least in biological terms, to consider one as an entity apart from the other. The same biological and physical conditions that produce healthy, productive forest lands also create some of our most productive fish habitats.

There are in excess of 100 river systems which wend their way through the forests of the Avalon. The fish species which inhabit these systems are: brook, brown, and rainbow trout, Atlantic Salmon, Eels, Arctic Char, smelt, whitefish, occasional shad and alewives and sticklebacks. Many of these species have both sea run and landlocked populations, often within the same watershed. The most sensitive system (in general terms) on the Avalon is scheduled salmonid systems (see Overview Map 5) and sea run systems. The most sensitive habitats are usually spawning and headwater (especially for Atlantic Salmon) areas. Spawning areas for fish consist of gravels on stream bottoms ranging in size from Apea size for smaller trout to fist size for larger salmon and sea trout. Another component of fish habitat required by anadromous fish species to complete their life cycle is access (fish must be able to migrate to their spawning, headwater, food, supply, etc. areas and to the sea). Adequate stream flow, food supply, rearing areas, clean, well oxygenated water, cover, and pool and riffle habitats are other components of fish habitat required by both anadromous and stream resident species. (Walsh 1996).

Forests play an important role in regulating fish habitat through interception of rainfall, evaporation, transpiration, storage of snow, stabilization of banks, deposition of material and shading of streams. Water temperatures between 12° and 14° are preferred by young salmon with temperatures in excess of 24° being lethal (Toews & Brownlee 1981). Careful planning and a knowledge of fisheries values can significantly avoid or reduce potentially detrimental effects of timber harvesting such as by the use of buffers and harvesting a minor fraction of a watershed at a time. The stability of stream discharge is also related to the amount and quality of vegetation including forest vegetation and bogs which save water and regulate stream flow.

Watershed profiles and stream habitat surveys are available for various rivers. Watershed principal characteristics, food availability, access to the sea, water fertility, reproductive capacity and success, and the level of predation and harvest are other factors that influence fish populations.

There are approximately sixty dams in current usage on the Avalon, fifty of which service fourteen hydroelectric plants which were constructed on the Avalon between 1908 and 1959. Locations of dams and generating facilities are available from the Water Resources Atlas.

- (v) The forest ecosystem performs many functions which are values in themselves. Most noticeable of these would be oxygen production which would be greater in vigorous

growing trees with large crowns (branch area) than in decadent trees where biomass production is decreasing. Nutrient cycling is also important and is accelerated after disturbance which provides warmer temperatures to the forest floor. The regulation of water flow and quantity has been previously mentioned, while forest succession or indeed having a forest landbase for regeneration and a variety of species and life is, in itself, necessary for ecosystem processes to be carried out.

(vi) Recreation is a broad term and encompasses a range of activities enjoyed by Newfoundlanders. Most traditional activities have a consumptive element such as hunting, salmon fishing, trout fishing, snaring or berry picking; while camping, hiking, cottaging or canoeing were generally associated with these. More modern activities include photography, bird watching, mushroom picking, Nordic skiing, mountain biking, snowmobiling and water skiing. There are many combinations or variations of these which are enjoyed in the great outdoors. Overview Map 6 shows cabin development areas, approved all-terrain vehicle trails, and hiking trails from Lands information. The most developed canoe routes are in the Central Avalon area. They are the safest for family canoeing, as the majority is flatwater routes consisting of series of ponds and gullies, joined by short portages. The rivers such as the Colinet and Rocky River may also be used but are only suitable after an inch or so of rain.

(vii) There is a variety of native and introduced wildlife on the Avalon valued for non-consumptive as well as consumptive uses. There are twenty species of land mammals found on the Avalon. Of these, the hoary bat, eastern chipmunk, black bear and caribou occupy only a portion of the peninsula as shown by Meades, 1990. Sensitive caribou habitat areas are shown on the Overview Map 7 attached. Overview Map 7 also shows sensitive waterfowl habitat, waterfowl stewardship areas, ptarmigan enhancement areas and raptor nesting sites. Areas used seasonally by moose as shelterwood areas have changed considerably from those of 1974, depending on the availability of crown cover and browse.

In addition to big and small game hunting, trapping of beaver and other furbearers occurs under license throughout the District. There are recreational and economic opportunities associated with the existence, viewing and harvest of wildlife species, but the continuance of viable populations is the major concern. To the extent that these populations must be maintained, intervention in the development of the forest must ensure a continuous and adequate flow of habitat with desired attributes for wildlife species.

- (viii) Wilderness or natural areas are highly valued and must include a variety of wetlands and

Representative as well as unique areas. Overview Map 4 shows the location of protected

areas in District 1 including provincial parks, ecological and wilderness reserves, wildlife

reserves and others. This map also shows ecoregion boundaries.

- (ix) Timber production was seen as a value to be sustained and enhanced through silviculture for a variety of products including domestic and commercial sawlogs and fuelwood as well as Christmas trees and wreaths, among other uses. Direct employment in the forest sector employs an estimated two hundred persons on the Avalon Peninsula alone. It is recognized that timber production is one aspect of a number of varied products and uses of the forest, and must be done in combination with these other products and uses (eg. with Christmas tree production on some productive sites throughout the District). It is strongly recommended that steps be taken to strengthen the long term security of the (Central) Avalon Forest which is key to the well being of the District 1 forest industry. The (Central) Avalon Forest is central to the protection of the integrity of the proposed Ecoregion V reserve and protects the water quality and hydrology of part or all of at least three of the largest sea run trout and salmon rivers on the Avalon Peninsula. A Forestry Reserve proposed to the Interdepartmental Land Use Committee was rejected by ILUC due to concerns on restriction of cabin development. Consideration of the area of the proposed Forestry Reserve was to have been included as part of a Land Use/Management initiative by the Lands Division which did not materialize. If a forest reserve or land use management area were created in the Central Avalon area of District 1, all commercial operator/sawmillers in District 1 would have equal opportunity to access allocations specified on permits in areas which may be designated for timber harvest.

- (x) Agriculture is an expanding and diversifying industry on the Avalon and is seen by many as a potential value or use of forest land. Overview Map 9 attached shows Agriculture Development Areas, and Blueberry Management Unit boundaries. Some agriculture roads are shown on base mapping and others located using Global Positioning Systems. Mapping of farm locations is currently available on 1:50 000 scale mapping. Despite the fact that agriculture removes area from the productive forest, it creates a different habitat (particularly at its edges) and it must be considered at the landscape level as long as the health and functions of the ecosystem are not compromised. If agricultural expansion is not possible or

desirable adjacent to existing farm operations, agricultural development at a distance from existing sites must be considered. It is recognized that in order to be viable, Christmas tree farming must be conducted on suitable sites (i.e., sites with deep fertile soils, low exposure, good drainage, access and with lower browsing potential or fenced). Where possible, Christmas tree farming will be encouraged on existing private and leased lands, abandoned agricultural land and public utility right-of-ways. However, where these lands are unavailable or unsuitable, Christmas tree farming will be considered on all classes of suitable forest lands. The industry will not be encouraged to expand beyond sustainable market levels.

- (xi) Minerals and aggregate resources are values which when developed generally remove small areas of the landbase for varying lengths of time. However, with proper development and rehabilitation, areas can be returned to the forest landbase and the long-term impact on the forest ecosystem minimized

Mineral exploration and aggregate extraction are very active in District 1. In February, 2006, there were 1319 mineral claims staked within the District covering an area of 32,795 ha. The focus of exploration activity has been gold and base metals (mainly copper). Aggregate extraction is increasing yearly with a total of 168 quarry permits issued within the district in 2004 and production of approximately 406,000 tons reported (Kirby, 2006). Some cutting will be required in connection with mineral exploration and development activities. Relevant approvals are required including cutting and other permits.

At present there are no producing mines within the District. However, the pyrophyllite mine at Long Pond, Manuels shipped approximately 35,000 tonnes of stockpiled pyrophyllite in 2005. Monthly updates on the number of mineral claims in good standing are available on the Department of Mines and Energy website at <http://www.gov.nf.ca/mines&en/mqrights/mineralrights/stm>. Areas of mineral potential are shown on Overview Map 11.

Geologically there are many points of interest on the Avalon as outlined in the Travelers Guide to the Geology of Newfoundland and Labrador (Coleman-Sadd and Scott 1994). Mistaken Point fossils are the oldest Metazoan fossils known in Canada, and some of the fossils are unknown anywhere else in the world. This site is protected under the Wilderness and Ecological Reserves Act as Mistaken Point Ecological Reserve.

- (xii) Historic resources are of irreplaceable value to the Province's history and culture with educational and tourism potential. The Historic Resources Division is aware of over fifty sites in District 01 which represent various cultural groups including the Maritime Archaic Indians, Dorset Eskimo, Recent Indian, Beothuk and some of the earliest European settlements on the Eastern seaboard (Drake 1996). Many of these sites have been located on the coast in part because relatively little interior archaeology has been conducted on the Avalon Peninsula. The site at Russell's Point in Blaketown is a good example of use of interior resources. Archaeologically sensitive sites are known on the Avalon and are being further researched. Historic Resources Division will be reviewing forestry activity proposed at the operational level rather than showing maps of sensitive areas in the strategic document.
- (xii) Urbanization is an expanding form of land use on the Avalon, and is seen by many as a potential value or use of forest land. The St John's urban area has grown particularly rapidly over the last number of years. The expansion of the municipal boundaries of the city is a reflection of this trend. Moreover, despite a stagnant or decreasing population in many of the more rural parts of the Avalon, forest land is also being taken up outside the St. John's area, if in smaller amounts.
- (xiii) Scientific research and environmental education are particularly important as they relate to the continually increasing understanding of native ecosystems and imparting this knowledge through formal education of our youth and continuing education of the general population. The MUN Woodlot and the Brother Brennan Center contribute to environmental education on the Avalon while research is conducted by a number of agencies involved with natural resources.