

was established to protect the health of passengers and **crew** through minimization of the risk of gastrointestinal illness on cruise ships. The programme assists the **cruise ship industry** to develop and implement comprehensive sanitation programmes. The VSP accomplishes its mission through sanitation inspections (twice a year for ships based at **US ports**), disease surveillance and investigations, review of construction plans for new ships and on-site inspections of new ship construction and renovation. The VSP also trains cruise ship employees in proper public health techniques, including food handling and preparation, potable **water** system management and pool and spa operation and maintenance. The VSP web site posts inspection scores and illness outbreak information. It also gives access to the full inspection reports and the cruise ship's response where remedial action is required.

Related internet source

Department of Health and Human Services; Vessel Sanitation Program: <http://www.cdc.gov/nceh/vsp/default.htm>

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Vikings The Vikings were Scandinavian raiders, traders and settlers active between the end of the 8th and the 11th centuries. There is no clear reason why the Vikings began their raiding activities. Various possibilities have been suggested, including population pressures, technological advances in boat building and the desire for gold and other plunder. Whatever the reason, boats were central to Viking activities.

A number of innovations in **sailing** and boat building have been attributed to the Vikings (Sawyer, 1971). The remains of Viking boats from Gokstad and Oseberg, Norway, and Roskilde, Denmark, show that ocean-going boats were about 25–30 m long. Coastal boats could have been even larger.

Vikings travelled across the **North Sea** from Norway and Denmark to northern France, Britain and Ireland, and across the **Atlantic Ocean** to **Iceland**, **Greenland** and Canada. Swedish Vikings made use of rivers to travel east and south through Russia, as far as the Black Sea. However, the means by which the Vikings **navigated** is unknown. Saga narratives indicate the use of landmarks and

bird sightings, as well as a 'sunstone', possibly the mineral feldspar. The discovery of a fragment of a small wooden disc in Greenland has led some scholars to suggest that Vikings used a 'sun compass'. Experiments have shown modern replicas to be relatively accurate.

Tourism sites and events related to the Vikings can be found in most countries in which they settled. Interest in Vikings has also produced re-enactment groups, which specialize in Viking battles and boat burnings.

Related internet sources

Viking Ship Museum, Norway: http://www.khm.uio.no/english/viking_ship_museum

Viking Ship Museum, Denmark: <http://www.ukm.uio.no/vikingshipshuset/english.php>

Jorvik Viking Centre, England: <http://www.jorvik-viking-centre.co.uk>

L'Anse aux Meadows, Canada: http://www.pc.gc.ca/lhn-nhs/nl/meadows/index_e.asp

Sarah Carr

VIM: see Visitor Impact Management

Virgin Islands The Virgin Islands are a group of about 100 **islands** about 80 km east of Puerto Rico. The first human inhabitants were the three main **Caribbean** ethnic groups – Ciboneys, Caribs and Arawaks. The first Europeans to visit these islands were **Christopher Columbus** and his **crew** during their second voyage to the American continent in 1493. From then on their possession changed hands constantly between Spain, England, the Netherlands, France, the Knights of Malta and Denmark. By the 17th century the **archipelago** had been divided into two territorial units, one English and the other Danish. Today, most of them are part of the USA and the rest are British territory.

The US Virgin Islands

What is today the US territory of the Virgin Islands was originally acquired by The Danish West India Company, which settled on St Thomas in 1672. They later settled in St John in 1672 and purchased St Croix from the French in 1733. The islands officially became royal Danish colonies in 1754, their name in Danish being translated as *Jomfruøerne*. The

Danes used these islands for sugarcane plantation but, after the abolition of slavery in 1848, the economy of the islands went downhill. Fearing that those islands could become a base for German **submarines** during WWI, the American government approached the Danish government and, under threat that the USA was going to take possession of the islands anyway if Denmark was invaded by Germany, they sold these territories in 1917. The local population was granted US citizenship in 1927.

The US Virgin Islands consist of four major islands – Saint Croix, Saint Thomas, Saint John and Water Island, and a host of many smaller ones. In total they cover 352 km². Most of those islands are hilly and mountainous, with the highest point being Crown Mountain on St Thomas, 474 m above sea level.

In 2005 their population was estimated to be about 108,000. This population is slowly decreasing due to overcrowded conditions and the high cost of living. About 76% are black and 13% are white. These islands are a territory of the USA, and they elect their governor but cannot participate in national elections.

These islands are a great tourist magnet, and **tourism** is the primary economic activity. They receive about 2 million visitors per year, generating about 80% of the GDP and employment. Other industries include petroleum refining (in a large refinery on St Croix) and manufacturing of textiles, electronics, pharmaceuticals and timepieces. In the last few years the financial services sector has been growing. The agricultural sector is small, with most food being imported. Strategically speaking, these islands occupy an important location along the Anegada Passage, which is on the shipping lane for the **Panama Canal**.

St Thomas has one of the best natural deepwater **harbours** in the Caribbean, and hence can receive large **cruise** ships.

The capital of the US Virgin Islands is Charlotte Amalie. This is the only US territory where driving on the left side of the road is practised.

The British Virgin Islands

The British portion of the Virgin Islands (BVI) was first settled by the Dutch in 1648 and annexed by the British in 1672. Today it is a

UK territory with considerable self-government over internal affairs.

They comprise 16 inhabited and more than 20 uninhabited islands, and cover less territory than their US counterpart, at 153 km². There are two types of British Virgin Islands, geologically speaking – flat, **coral** islands and volcanic, hilly ones. The highest point is Mount Sage, on Tortola, at 521 m above sea level.

The population is relatively small – about 22,500 in 2005, of whom 83% are black and the rest a composite of whites, Indians and Asians. The capital is Road Town, on the island of Tortola.

The BVI have a very stable and dynamic economy. They receive about 350,000 tourists per year and that industry generates 45% of the GDP. Since the 1980s the local government has started to offer financial services for companies wishing to incorporate there, and today more than 400,000 companies claim to be registered as UK Virgin Islands corporations. Local laws provide a great deal of protection regarding confidentiality for business transactions.

The economy is closely tied to the larger and more populous US Virgin Islands to the west; the US dollar is the legal currency. They produce some vegetables and have small local livestock, poultry and **fishing** industries. They also manufacture rum and construction materials. Most of the imports are building materials, automobiles, diverse machinery and food.

Common tourism issues

The Virgin Islands in general are a great tourist attraction, not only because of their location and tropical climate but also because of the variety of activities they offer. These include crystal-clear **water**, sandy **beaches**, top-ranking scenery, **coral reefs** and even rainforests. Thus, swimming, boating, **kayaking**, hiking, fishing and **whale** and **dolphin watching** are very popular activities.

From the cultural viewpoint one will find a great variety of cuisine, but the Creole cuisine continues to be the most attractive. There are all kinds of places to stay, from luxury hotels to campgrounds, as well as a great deal of shopping and cultural events.

One of the major problems for these islands is the lack of freshwater **resources** and the quality of the few existing ones. Others include

sediments produced by dirty roads, farmland, construction sites, urban encroachments and other disturbed soils. They not only dissolve in the scarce water resources, but eroded sediment kills coral reefs and **seagrass** beds that need light to meet their biological requirements. These, in turn, affect the local fish population by diminishing fish feeding and breeding sites. They also have an impact on recreational activities such as **scuba-diving**. In the US Virgin Islands, crime and government inefficiency have also been chronic problems.

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Visitor Activity Management Process (VAMP)

Over the past 25–30 years, many **recreation** planning and management processes and frameworks have been established, trialled and variously described and evaluated, mostly on the precondition that they will help resolve, to a greater or lesser extent, visitor management problems. Many of the approaches have stemmed from researchers and federal agency staff in the USA and, to a lesser extent, in Canada; these have drawn on the significant work of people such as Driver and Brown (1978) and Clark and Stankey (1979) on ROS and, in the mid-1980s, with the development of LAC (Stankey *et al.*, 1985) and VAMP (Parks Canada, 1995, 2004a, b, 2005, 2006; Nilsen and Taylor, 1998, p. 49). Each recognizes limitations in the traditional concept of **carrying capacity** and 'was a response to both legislative and policy requirements, as well as to increasing recreation demands, impacts, and conflicts' (Nilsen and Taylor, 1998, p. 49).

These advances in thinking, theory and application have gradually moved agencies towards more integrated approaches to environmental (including visitor) management. Perhaps, not surprisingly, no single process or framework has received unanimous support among **resource** managers and researchers as a means of solving the problems associated with visitor management.

Tensions between resources and visitors led to the development of the Visitor Activity Management Process by the Canadian Parks Service (now Environment Canada). VAMP offers a fundamental change in orientation in

parks management, from a product or supply basis to an outward-looking, market-sensitive approach (Graham *et al.*, 1988). Resource managers are thereby encouraged to develop detailed strategies for developing and marketing visitor experiences that will appeal to specific market segments.

The VAMP is a proactive and flexible framework that contributes to decision building related to the planning, development and operation of park-related services and facilities. It includes an assessment of regional integration of a park or **heritage** site, systematic identification of visitors, evaluation of visitor market potential and identification of interpretive and educational opportunities for the public to understand, safely enjoy and appreciate heritage. The framework was developed to contribute to five key park management contexts: (i) park establishment; (ii) new park management planning; (iii) established park planning and plan review; (iv) facility development; and (v) operation (Graham and Lawrence, 1990, p. 279).

In the same way as for carrying capacity, the **Recreation Opportunity Spectrum (ROS)**, the **Limits of Acceptable Change (LAC)** and the **Visitor Impact Management (VIM)**, the Visitor Activity Management Process uses information from both social and natural sciences to facilitate decision making with respect to access to and use of protected areas (although it has the potential to be applied to a wider range of **environments**), and incorporates an evaluation requirement to measure effectiveness in outcomes and **impacts** (Graham and Lawrence, 1990). It employs an overt marketing orientation to integrate visitor activity demands with resource opportunities, in order to produce specific recreation opportunities (Lipscombe, 1993). A generic version of VAMP (see Fig. V1) generally involves the following steps:

- Set visitor activity objectives.
- Set terms of reference.
- Identify visitor management issues.
- Analyse visitor management issues.
- Develop options for visitor activities and services.
- Provide recommendations and seek approval for activity/service/facility plan.
- Implement recommended options (Graham *et al.* 1988).