Ocean & Coastal Management 104 (2015) 57–64

Contents lists available at ScienceDirect

Ocean & Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman

The KwaZulu-Natal Boat Launch Site Monitoring System: A novel approach for improved management of small vessels in the coastal zone

Bruce Q. Mann [a, b, *], Jade Q. Maggs [a], Musa C. Khumalo [a], Derrick Khumalo [a], Omar Parak [c], James Wood [d], Santosh Bachoo [d]

[a] Oceanographic Research Institute, P.O. Box 10712, Marine Parade, Durban 4056, South Africa
[b] School of Life Sciences, College of Agriculture, Engineering and Science, University of KwaZulu-Natal, Private Bag X54001, Durban 4000, South Africa
[c] KZN Department of Economic Development, Tourism and Environmental Affairs, Private Bag X9152, Pietermaritzburg 3200, South Africa
[d] Ezemvelo KwaZulu-Natal Wildlife, Private Bag X3, Congella, Durban 4013, South Africa

ARTICLE INFO

Article history:
Received 17 June 2014
Received in revised form
3 December 2014
Accepted 3 December 2014
Available online 9 December 2014

Keywords:
Coastal zone management
Boat launching
Launch and catch register
Resource-use monitoring
KwaZulu-Natal
South Africa

ABSTRACT

The KwaZulu-Natal (KZN) province of South Africa has a large recreational and commercial boating industry, which includes line-fishing, scuba diving and other activities. Most of the vessels used are relatively small (less than 10 m long) and are capable of being launched from a beach directly through the surf. Beach launching in KZN is restricted to officially registered beach launch sites. The provincial government is responsible for the management of these sites, which is currently governed by national legislation controlling beach driving. Stakeholders in these launch sites include various government and non-government institutions as well as the launch site licence holders, the launch site operators and the boat users themselves. Collaboration between the stakeholders in KZN has resulted in the development of a Boat Launch Site Monitoring System (BLSMS) which includes maintenance of a daily launch register at all registered launch sites. All records from the launch registers are captured onto the BLSMS database providing comprehensive resource-use statistics. This is the first attempt at a province-wide monitoring initiative for boat launch sites in South Africa. The system also provides the only estimate of total fishing effort by marine recreational boat-based anglers. It is an example of unique, mutually beneficial co-operation between different stakeholders towards the common goal of improved management of small craft launch sites in KZN and the resources accessed offshore. Some of the highlights and challenges of this innovative monitoring programme for the period 2005–2012 are presented and discussed.
© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Access to the offshore marine resources of KwaZulu-Natal (KZN), a coastal province on the east coast of South Africa, has traditionally been facilitated by the use of off-road vehicles to launch small vessels into the sea (Penney et al., 1999; Dunlop and Mann, 2013) – an activity which can potentially have a negative impact on the coastal environment (Celliers et al., 2004). In 2002, regulations were promulgated under the National Environmental Management Act (Act No. 107 of 1998) to limit the use of off-road vehicles in the coastal zone of South Africa (Government Gazette No. 22960). Simultaneously, the launching of small vessels from designated beach launch sites was also placed under stricter control with the obligatory licensing of these launch sites (see Section 7 in the above mentioned regulations). Historically, management of launch sites in the province was based on safety and logistic considerations with little or no consideration for environmental factors (Town & Regional Planning Commission, 1988; Goble et al., 2014). The new regulations placed greater emphasis on the environment, a task which was delegated to the Coastal and Biodiversity Management Unit (CBMU) of the then provincial Department of Agriculture and Environmental Affairs (DAEA) in 2003 (note that the CBMU now falls under the Department of Economic Development, Tourism and Environmental Affairs [DEDTEA]). Through extensive stakeholder participation, this licensing initiative introduced a mandatory launch and catch register system as a condition of the

* Corresponding author. Oceanographic Research Institute, P.O. Box 10712, Marine Parade, Durban 4056, South Africa.
E-mail address: bruce@ori.org.za (B.Q. Mann).

http://dx.doi.org/10.1016/j.ocecoaman.2014.12.003
0964-5691/© 2014 Elsevier Ltd. All rights reserved.

Environmental Management Plan (EMP) developed for each successfully licensed small craft launch site. This development represented an opportunity for the province's coastal zone managers to obtain useful information on the usage patterns of launch sites and to further the ecological understanding of the use of offshore marine resources accessed through boat launching. The diverse activities of small craft, which use the coastal zone of KZN to access offshore resources, represents an important socio-economic and natural resource asset that requires monitoring, assessment and protection (Goble et al., 2014).

There are many examples both nationally and internationally of studies which have been conducted on boat launch sites (also called ramps or slipways) but these are normally to assess catch and effort in fisheries (Wise et al., 2012; Dunlop and Mann, 2013) or tourism in marine parks (Smallwood et al., 2012). Most of these studies use survey clerks who conduct on-site interviews with boat skippers using access point and bus-route survey techniques over a relatively short period of time such as one or two years (Pollock et al., 1994). There are however, very few examples of ongoing long-term monitoring systems designed to provide boat launching statistics on a province-wide basis. The primary purpose of this paper is, therefore, to describe and present the results of this simple, innovative monitoring system which was implemented along the KZN coast in 2004 and has subsequently been used by coastal managers to effectively monitor launch sites and boat use in the coastal zone of KZN.

2. Methods

Following the promulgation of the beach vehicle ban in 2002 (Celliers et al., 2004), a stakeholder committee (i.e. the Boat Launch Site Advisory Group – BLSAG) and a Technical Committee (i.e. the Boat Launch Site Technical Committee – BLSTC) were formed by the CBMU in 2003 to provide guidance on matters relating to licensing and management of beach launch sites. Through this process a launch register system was developed. This system involves the collection, processing and interpretation of daily launch statistics from each of the registered launch sites along the KZN coast. The *modus operandi* involves a clear division of function between three agencies namely the CBMU of the DEDTEA (licensing and launch site management), the provincial conservation authority Ezemvelo KwaZulu-Natal Wildlife (Ezemvelo) (ensuring compliance with environmental legislation) and a local research NGO the Oceanographic Research Institute (ORI) (capturing and analyses of data), all acting in collaboration. Boat skippers are required to complete a launch register before and on return from each outing to sea. This is a mandatory requirement for licensed boat launch sites both in terms of the EMP developed for each launch site and in terms of safety at sea. Failure to comply with this requirement can result in the cancellation of the licence and the prohibition of launching at that site. Each launch site licence was issued for a period of five years after which it expired and the launch site licence holder (normally the local municipality) would have to re-apply to have the launch site license renewed. Such applications (which included an EMP) were then evaluated by the BLSTC based on a set of agreed criteria including completion of the launch site register and a site inspection. The BLSAG would then review the launch site recommendations and the site licence would then either be renewed, given a period of probation or the application could be rejected.

ORI annually prints approximately 100 registers, each with space for recording 800 launches. These are distributed to the participating launch sites along the KZN coast by Ezemvelo staff. The registers are generally placed at a convenient place for the users to complete, often in a water proof, lockable box at the launch site access gate. There are 18 fields in the register that must be filled in by the users. Thirteen of the fields must be completed before the launch (i.e. launch site name, date, boat name, boat registration number, crew names, emergency contact number, vessel type, outing type, outing purpose, intended destination [using a numbered 5 × 5 nautical mile grid-map provided with each copy of the launch register], launch time, estimated return time and signature of the skipper). Five additional fields must be completed on return (i.e. actual return time, signature of the skipper, whether multiple launches were undertaken, proportion of time spent targeting different species groups [i.e. baitfish, gamefish, bottomfish, billfish and sharks] as well as the identification and quantity of fish caught and retained). Completed launch records are collected on a monthly basis by Ezemvelo staff and delivered to ORI. ORI then do an inventory of the received sheets and separate estuarine and marine boat outings (i.e. launches where vessels remained in an estuary or harbour and those where the vessel proceeded to sea via the estuary or harbour mouth). All data from the launch registers are then captured onto a PostgreSQL database. At the time of capture, data are screened for errors, which are corrected according to a set of capture rules. All data entered is validated daily. Data are analysed annually, once the data from the preceding calendar year has been entered. ORI then compile a detailed annual report that includes a summary of data for each participating launch site (e.g. Mann et al., 2012b). All analyses are performed using Microsoft Access and Microsoft Excel.

In terms of the legislation, licensing of beach launch sites only applied to those sites where a vehicle was used to tow a boat and trailer across the beach for purposes of launching and retrieval. As a consequence there were numerous launch sites and boat slipways within KZN's two major ports at Durban and Richards Bay where launch sites did not have to be licensed. In order to provide the greatest possible coverage of all small vessel launching activities, individual boat clubs within harbours under the jurisdiction of the port authorities were requested to complete the same launch register on a voluntary basis. Similarly, launch sites within the jurisdiction of the iSimangaliso Wetland Park – a World Heritage Site on the northern KZN coast, were also requested to complete the same launch register.

3. Results

The Boat Launch Site Monitoring System (BLSMS) was started in 2004 and by the end of 2005 was operating at full capacity. From 2006 to 2012 between 40 and 45 launch sites were submitting

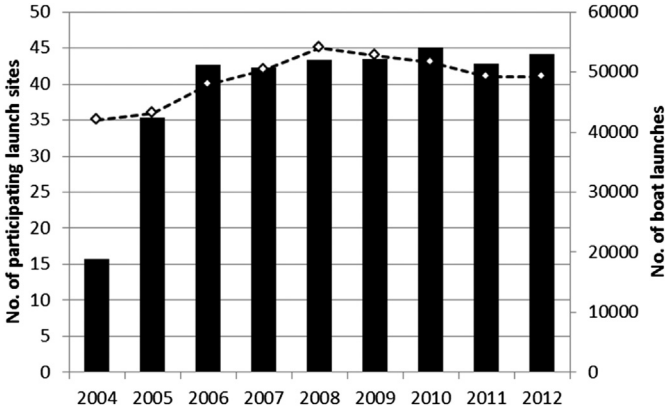

Fig. 1. Number of participating boat launch sites (dashed line) and total number of marine boat launches (bars) recorded on the Boat Launch Site Monitoring System in KwaZulu-Natal from 2004 to 2012.

Download English Version:

https://daneshyari.com/en/article/1723527

Download Persian Version:

https://daneshyari.com/article/1723527

Daneshyari.com