

Dolphin tour boat monitoring - 2000

The Shannon estuary was nominated a Special Area of Conservation (SAC) for bottlenose dolphins in April 2000 as bottlenose dolphins are listed under Annex II of the Habitats Directive. Management of the SAC involves listing those activities which could potential degrade the habitat or disturb the dolphins. These notifiable activities include commercial dolphin-watching and operators must now seek permission from the Minister of Arts, Culture, Gaeltacht and the Islands to carry out dolphin-watching in the SAC. During the 2000 season, permission was granted to operators providing they fulfilled four conditions, namely:

- i) abide by the Conservation Plan (still in draft),
- ii) abide by the Codes of Conduct,
- iii) provide monitoring data,
- iv) demonstrate competence in species identification and environmental interpretation

This report reviews the monitoring data collected and analysed by the Shannon Dolphin and Wildlife Foundation on the request of Dúchas. These data fulfill one of the requirements for accreditation under the 'Saoirse na Sionna' Boat Accreditation Scheme.

Methodology

Operators were required to fill in a logsheet (see Appendix I) for each dolphin-watching trip carried out. The rationale was to provide basic data on the behaviour of the tour boats from which monitoring indices could be developed. As operators are engaged in running tours and are not trained researchers, these data should be relatively easy to record, be as objective and unequivocal as possible and be sensitive to changes in the distribution, abundance and behavior of dolphins. The present protocol was trialled in 1999 and the background is fully described in Berrow and Holmes (1999).

The quality of the trip records varied between operators and also within an operator through the season. In some cases the minimum data required (time to locate, number of dolphins and groups watched and time on dolphins) was not recorded. For some operators who may be carrying out 4 or even 5 trips per day, the dataform is cumbersome and many data required are repeated for each trip. A system whereby operators can fill in each trip record at the end of each trip and not retrospectively is required to ensure these important minimum data are collected accurately.

Operators and trips

Five companies/individuals operating 9 dolphin-watching vessels were granted permission to dolphin-watch in 2000. Of these four companies used 7 vessels during the season and these are listed in Annex I.

During the season trip records were received for a total of 403 trips, 175 (43.4%) from Kilrush, 220 (54.6%) from Carrigaholt and 8 (1.9%) from Doon near Ballybunnion, Co. Kerry (see Table 1). This is an underestimate of the total trips carried out as one company operating out of Kilrush reported carrying out 198 trips, however only 173 trip records were received – a deficiency of 25 trips. In addition there was no trip record for at least one trip from Doon as this vessel was observed carrying passengers on 19th August but no trip record was received (assuming it was a commercial trip). If we include these trips then the actual number of trips carried out during 2000 was at least 429.

Vessels are licensed to carry passengers by the Department of the Marine from April 1st to 31st October. The first trip occurred on 1st April but only 6 trips were carried out during this month and the last trip was carried out on 18th September. Despite dolphin-watching being conducted over nearly 6 months, the season was peaked with 76.8% of trips carried out during July and August.

Table 1. Number of dolphin-watching trips carried out in the Shannon estuary during 2000 season.

Month	Port			Total (%)
	Carrigaholt	Doon	Kilrush	
April	-	-	6	6 (1.5)
May	-	2	12	14 (3.5)
June	14	4	33	51 (12.7)
July	99	2	60	161 (39.9)
August	88	-	58	146 (36.2)
September	19	-	6	25 (6.2)
October	-	-	-	0
TOTAL	220	8	175	403

The reported number of trips is an increase of 70% on the 252 trips reported in 1999, however this masks a much larger increase in the number of passengers carried during 2000. Two new vessels were launched during 2000, one each from Kilrush and Carrigaholt and both with a capacity of 40-50 passengers. One of these companies reported carrying 5,655 passengers at an average of 28.5 passengers per trip. Using this estimate of passengers per

trip then at least 12,000 people went dolphin-watching during 2000 and probably more as the mean number per trip from Carrigaholt was probably greater. This is a 300% increase in passengers on 1999. Thus the increase in passenger capacity on the new dolphin-watching vessels has enabled a 3 fold increase in dolphin-watchers to be catered for with only a 70% increase in trip numbers.

Time to locate dolphins

Although influenced by many factors, the time to locate dolphins is one of the most important variables. Dolphins were located on 94.5% of trips from all ports combined with only 14 trips from Carrigaholt (5 by the Anna M) and 3 trips from Kilrush failing to see dolphins. Dolphins were located more quickly from Carrigaholt (mean 27.8 minutes) than from Kilrush (mean 45.4 minutes) and this was consistent through the season.

Table 2. Mean time to locate dolphins (minutes) from different ports in the Shannon estuary during 2000 season (the Anna M is shown separately as this vessel is a yacht). Only those trips which located dolphins are included.

Month	Port			
	Carrigaholt	Doon	Kilrush	(Anna M)
April	-	-	58.8	-
May	-	105	48.8	-
June	20.3	22	46.8	29.2
July	16.0	?	41.7	36.6
August	19.8	-	41.5	51
September	49.8	-	97.7	-
October	-	-	-	-
Mean	27.8	55.0	45.4	40.0

One of the major challenges of this monitoring system is to distinguish between natural variation in the distribution, abundance and behaviour of the dolphins and that which may be caused by the activities of tour boats. The mean time to locate dolphins in July 1997 and 1998 ranged from 15-19 minutes from Carrigaholt and 40-50 minutes from Kilrush. The data from 2000 is consistent with these figures suggesting no significant impact on the

dolphins has occurred however the sensitivity of monitoring indices to changes in the behaviour of dolphins must be determined.

Time on dolphins

The total time on dolphins for all vessels during 2000 was calculated as 13,160 minutes or 219.3 hours, however these data were not recorded on 43 trips so the actual time will be greater. The Code of Conduct restricts vessels to 30 minutes per group per trip and this was exceeded on 78 (22.8%) occasions. However it can be very difficult to determine what constitutes a group of dolphins and when an encounter starts and finishes, given that dolphins may not always move away from the boat when their time is up ! Undoubtedly operators have attempted to restrict their time on dolphins and abide by the spirit of the Code.

Table 3. Total time on dolphins (minutes) from different ports in the Shannon estuary during 2000 season (different groups observed within a trip are indicated).

Month	Carrigaholt						Kilrush				Anna M	Doon	Total
	G1	G2	G3	G4	G5	Total	G1	G2	G3	Total			
April	-	-	-	-	-	-	105	35	20	160	-	-	160
May	-	-	-	-	-	-	288	96	-	384	?	35	419
June	125	80	60	0	0	275	750	96	-	846	?	60	1181
July	1605	1275	564	169	15	3613	1666	246	10	1922	?	?	5535
August	1711	857	260	54	0	2882	2045	192	-	2237	?	-	5119
September	455	113	33	0	0	601	145	-	-	145	?	-	746
October	-	-	-	-	-	-	-	-	-	-	-	-	0
Total													
-minutes	3896	2325	917	233	15	7371	4999	665	30	5694	?	95	13160
- hours	64.9	38.8	15.3	3.9	0.25	122.9	83.3	11.1	0.5	94.9	?	1.6	219.3

Prior to the start of the 2000 season a total overall time on dolphins of 200 hours was agreed by operators and Dúchas. The seasons total of 219 hours is close to the agreed amount and should be reviewed for 2001.

Number of dolphins and groups

The number of groups watched per trip varied greatly depending on the port. On 75.9% of trips from Kilrush only one group of dolphins were watched per trip, 22.2% of trips watched 2 groups and 1.8% watched 3 groups per trip. Only 30.6% of trips from Carrigaholt watched one group, with 60.7% watching 2 or 3 groups per trip. Occasionally (8.6%) 4 or 5 groups were watched per trip from Carrigaholt. A higher number of dolphin groups were located per trip from Carrigaholt and these groups tended to be larger.

Table 4. Mean number of dolphins and dolphin groups encountered from different ports in the Shannon estuary during 2000 season.

Month	Carrigaholt		Doon		Kilrush	
	Groups	Dolphins	Groups	Dolphins	Groups	Dolphins
April	-	-	-	-	1.8	8.6
May			1.5	6.7	1.4	7.8
June	2.3	8.5	1.0	8.0	1.1	9.8
July	2.4	13.4	(2)	(20)	1.3	8.0
August	1.8	9.4	-	-	1.2	7.1
September	1.7	10.0	-	-	1.0	8.0
October	-	-	-	-	-	-
Mean	2.1	11.7	1.3	10.0	1.3	7.4

The larger number of groups encountered from Carrigaholt meant that the vessel would often pass by groups of dolphins without stopping in order to locate other groups for dolphin-watching. It is not clear however whether the same dolphins were watched on the same trip but had formed into different groups. Due to the mobile nature of dolphins, the same group may have been encountered on a single trip but recorded as a new group which increases the difficulties associated with collecting monitoring data. Regular photo-ID of groups watched by tour boats through the summer will help to determine which groups are being watched most frequently. During 2000 photo-ID of dolphins watched by tour boats was collected on 22 trips, 17 from Kilrush and 5 from Carrigaholt on the

Anna M. The photo-ID data have not been analysed for the present report but more trips need to be accompanied for photo-ID. Calves were present in groups watched from tour boats on at least 219 (54.3%) of trips (40.6% from Kilrush and 65.4% from Carrigaholt) showing that breeding groups are subjected to dolphin-watching in the Shannon estuary.

Recommendations

The following recommendations for the 2001 season should be considered:

- i) logbooks should be produced for operators to streamline further the collection of trip records,
- ii) a working definition of a "group" of dolphins needs to be agreed upon between the operators,
- iii) more photo-ID of dolphins observed from tour boats should be carried out. A sample rate of once a week from Kilrush and Carrigaholt is recommended,
- iv) an ethogram of dolphin behaviour with and without the presence of tourboats should be determined,
- v) the sensitivity of monitoring indices to changes in the behaviour of dolphins must be determined,
- vi) the cost of monitoring should be borne by the industry and considered an overhead, as important as fuel and insurance.

Summary

This is the first year in which trip data is required from dolphin-watching vessels as part of the management of commercial dolphin-watching in the Shannon estuary SAC. The system has been successful due to the support of the operators. Difficiencies have been identified and recommendations for improvement are presented.

During the 2000 season trip records from 403 trips were received from a minimum of 429 dolphin-watching trips, a return rate of 94%. The Conservation Plan for the Shannon estuary SAC will seek to limit the total time on dolphins to within the carrying capacity of the dolphins. As the carrying capacity of the dolphins is not known the growth of the industry has to be monitored. Adopting the precautionary principal and following consultation with operators prior to the start of the season a total time on dolphins for the 2000 season was set at a maximum of 200 hours. Under the Codes of Conduct, the maximum time on dolphins per group per trip was not to exceed 30 minutes and the mean time on dolphins was calculated at 32 minutes per trip. The total figure of 219 hours for the 2000 season is very close to the agreed limit. When reviewing the total time on dolphins for the 2001 season, a number of factors should be considered.

1. The weather conditions during 2000 were generally favourable for dolphin-watching. Conditions in April and May were better than expected however the season finished earlier than hoped due to very wet and windy weather in September and October.

2. The new vessel in Carrigaholt was launched at the end of June and thus only 7 trips were carried out by the beginning of July. In 2001 this vessel should be available for the whole season increasing the potential number of trips it can carry out.
3. Further promotion of the dolphins through META and national and regional publicity should further increase the demand for dolphin-watching.

Monitoring the impact of dolphin-watching activities in the Shannon estuary is a long term commitment. Only by understanding natural fluctuations in dolphin behaviour can the effect of tour boats on individuals and groups be determined. Effective monitoring of the dolphin-watching industry, which is growing rapidly and becoming economically important to West Clare, is essential if the conservation status of the Shannon estuary is to be maintained together with the long term sustainability of the industry.

Reference

Berrow, S.D. & Holmes, B. (1999) Tour boats and dolphins: A note on quantifying the activities of whalewatching boats in the Shannon Estuary, Ireland. *Journal of Cetacean Research and Management*. 1(2), 199-204.

Annex I: Vessels operatinng dolphin-watching trips in the Shannon estuary during 2000.

<i>Company</i>	<i>Vessel</i>	<i>Number of trips</i>
Dolphinwatch Carrigaholt	Draoicht	189
Robert Stack	Lady Elish	8
Saoirse SeaSports	Anna M	33
Scattery Island Ferries	Deva	3
	Dolphin Discovery	162
	Dolphin Explorer	6
	St Sennan II	2