Using a mobile hide in wader research

TAMÁS SZÉKELY[1], JÁNOS KIS[2] & ANDRÁS KOSZTOLÁNYI[3]

[1] Department of Biology and Biochemistry, University of Bath, Bath BA2 7AY, UK, T.Szekely@bath.ac.uk; [2] Department of Ecology, Faculty of Veterinary Sciences, Szent István University, Rottenbiller u. 50, H-1078 Budapest, Hungary; [3] Department of Evolutionary Zoology and Human Biology, University of Debrecen, Egyetem tér 1, H-4032 Debrecen, Hungary

Székely, T., Kis, J. & Kosztolányi, A. 2003. Using a mobile hide in wader research. *Wader Study Group Bull.* 103: 40–41.

We describe a mobile hide (or blind) that we designed for making observations of breeding plovers. We recommend it as being particularly suitable and flexible for studying waders in open habitats.

INTRODUCTION

Researchers often investigate the behaviour and ecology of waders using hides (or blinds). Ideally, these should be mobile since waders (or their nests) may be scattered, and observations may be collected in several locations. For instance, the parents may leave their territory to feed, or the precocial chicks may move to distant areas. For these reasons, research workers often use motor vehicles such as cars, particularly all-terrain vehicles. However, these can be expensive; moreover their chassis can easily overheat and the noise of vehicles may disturb the birds. An additional source of disturbance may arise if researchers get out the vehicle, for instance to catch waders or to check their nests. To overcome the limitations of motorised vehicles, we developed an inexpensive and convenient mobile hide for our studies of Kentish Plovers *Charadrius alexandrinus* in Southern Turkey. For details on the study site and methods see Székely & Cuthill (2000), Kosztolányi *et al.* (2003) and Lendvai *et al.* (2004).

We focus on using the mobile hide in breeding ecology and behaviour, although it might be worth considering applications in studying migratory shorebirds at stopover sites or coastal wintering areas. This hide is probably best suited to studies of waders in open terrain where the substrate is fairly hard.

THE MOBILE HIDE

The mobile hide had three main components: the frame and accessories, the wheels and the cover. First, the frame was made of 20 × 20 mm square-profiled iron (Fig. 1a). The frame ended in two forks at the front (see Fig. 1.). The lateral branches of the forks were made of 500 × 20 × 5 mm iron (L × W × H). Two small horizontal plates at the rear stopped the frame from sinking in the mud. The observer sat on a wood bench of 1050 × 250 × 30 mm (L × W × H) that was put across the bottom bars. We also fixed a basket of 300 × 170 × 250 mm (L × W × H) on the frontal and lateral middle bars, and 2–4 hooks on the top bars to hold bags, traps, tripods and binoculars. The frame, the basket and the hooks were all painted with rustproof metal paint.

Second, one bicycle wheel of 635 × 38 mm diameter with standard road tires was screwed to each fork so that the frame stood in an upright position (Fig. 1.). The observer moved the hide by gripping the bottom bars (either lateral or rear), and pushing the hide forward or backward. Before the hide was moved, the bench was pushed forward to let the observer walk.

Third, a hessian (or burlap) cover was made to cover the frame, and attached to it with straps (Fig. 1b). On each side of the hessian cover, there were two window slits; the top slits were used when the observer stood or walked, and the bottom ones were used when the observer sat down. When the slits were not in use, they were covered by roll-down hessian flaps from the inside and strapped to the cover. Three corners of the cover were not fully sewn down to the bottom: one slit of 1700 mm in the rear was left open for the observer to enter the hide, and two slits of 900 mm were left free for the wheels. The total weight of the hide was about 20 kg.

USING THE MOBILE HIDE

Mobile hides constructed according to this design were indispensable to our fieldwork. They were relatively inexpensive (total cost: about 200 €), and made locally using simple materials. They were very effective, and caused less disturbance (and probably less stress) than motor vehicles. Four hides were spread over the study site so that they were stationed about one km apart. We only used a car to reach the hides, and to relocate them to different parts of the study site as necessary. We used the hides for the following tasks.

First, we searched for Kentish Plover nests and checked nests from the hide (Fig 2). When an incubating plover was spotted we carefully approached its nest, and measured the eggs whilst we stayed inside the hide. Care was taken to avoid trampling the eggs. Plovers were tolerant of the approaching hide; for instance a female only left her nest when the hide was less than one metre from her. After the hide was pushed away from the vicinity of nests, the parents quickly resumed incubation.

Second, we trapped parents at their nest using funnel traps. The trap was put above the nest, and after the parent went inside the trap, the hide was slowly pushed over the trap and the parent was gently removed from it. Captured plovers were measured and ringed in the hide away from the nest. This procedure was less disruptive than standard nest-trapping when the researcher walks (or runs) to remove the trapped wader.

Fig. 1a. The frame of the mobile hide (black lines) and the accessories (grey lines). Measurements are in mm.

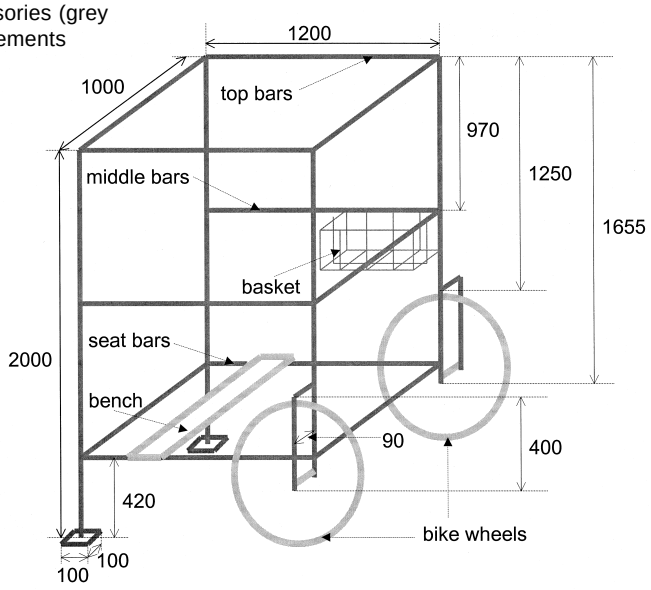


Fig. 1b. The hessian cover of the mobile hide (grey lines). One of the roll-down flaps is indicated by dots. The thick dotted lines represent middle bars of the iron frame.

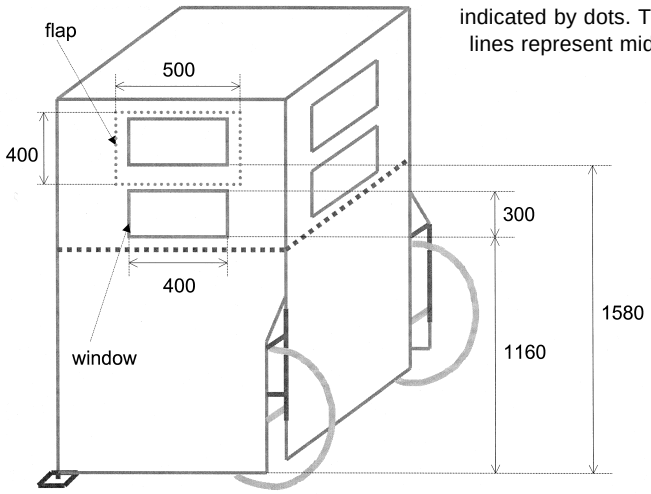
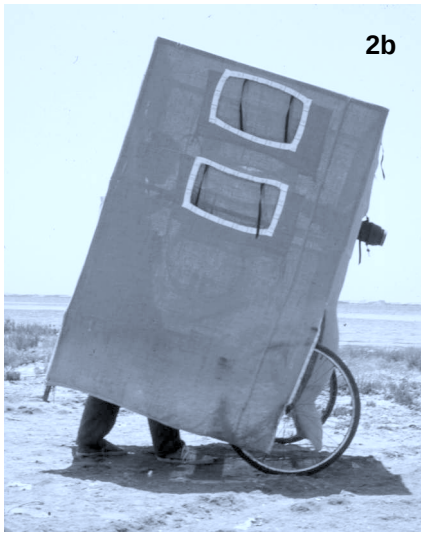


Fig. 2. The mobile hide in (**a**) standing position, and (**b**) in mobile position. Photos by T. Székely.



Third, we carried out various behavioural observations from the hides (Székely & Cuthill 2000, Kosztolányi *et al.* 2003). Even secretive behaviours, such as brood attendance and courtships, were easy to record, and the plovers appeared to behave naturally. A telescope was mounted on a middle bar using a window-mount (Fig. 2b), and it remained there while the hide was being moved. The mobile hide was particularly handy when the plover(s) under observation waded across mudflats, shallow shores, ditches or thick vegetation, since the observer was able to follow the bird monitoring its behaviour without disruption using the hide. Note that particularly strong winds may make the hide unstable and difficult to manage and manoeuvre.

All things considered, we strongly recommend this mobile hide for wader researchers, since it is more economic and effective than motor vehicles, and causes less damage to the habitat. Unlike hides or blinds that are commercially available and designed for hunters, fisherman or photographers, our hides were easy to move around. Moreover the hessian cover both shades the observer from direct sunlight, and also allows a breeze to blow through the hide and reduce discomfort in hot weather. If the hide is used in locations where the weather is cold and/or wet, we recommend using a waterproof canvas cover instead of hessian.

ACKNOWLEDGEMENTS

Ö. Karabacak (Turkish Ministry of Forestry and National Parks), and Drs S. Berberoglu, M. Özdemir, T. Yilmaz (Çukurova University, Adana) gave us logistic help. We acknowledge the comments of Drs Brett Sandercock and Humphrey Sitters on a previous version of the manuscript.

REFERENCES

Kosztolányi, A., Székely, T. & Cuthill, I.C. 2003. Why do both parents incubate in the Kentish plover? *Ethology* 109: 645–658.

Lendvai, Á.Z, Kis, J., Székely, T. & Cuthill, I.C. 2004. An investigation of mate choice based on manipulation of multiple ornaments in the Kentish plover. *Anim. Behav.* 67: 703–709.

Székely, T. & Cuthill, I.C. 2000. Trade-off between mating opportunities and parental care: brood desertion by female Kentish plovers. *Proc. R. Soc. Lond.* B 267: 2087–2092.