

Recognising stranded harbour seal pups

Definition of stranded pup

An operation definition of a live-stranded seal pup is one that is outside its 'survival envelope', i.e. outside its habitat or context for survival with no prospect of returning to a viable habitat or context.

This definition includes 'orphan' pups which are not viable due to being permanently separated from their mother and older pups stranded due to injury or illness due to parasitic or other infection.

Potential causes of neonatal separation of pup from mother ('orphan' pup)

- Disturbance during post-partum bonding (1st hour post-natal)
- low birth weight
- Mother has insufficient milk during 1st days post-partum
- Twin birth (Rae, 1969)
- Inexperienced mother fails to care for pup
- Open *ductus arteriosus* (Courbis, 1997) or other congenital conditions
- Death of mother during labour
- Storms with rough sea in neonatal period

Identification of 'orphan' pup

ALERT: A small pup is seen without its mother.

Criteria for 'orphan' pups seen without their mother

1. The pup has umbilical cord still attached or white lanugo coat AND/OR is not more than birth weight (average~11kg, occasionally 12-13 kg)
AND
2. The pup is observed without its mother over a tidal cycle or on a receding tide
3. The pup is trying to follow, approach or suckle from other mothers and pups
AND/OR
4. The pup remains alone when other seals move to alternate locations as the tide recedes
5. The pup is found away from a seal haul-out site, either on a public beach or remote location
6. The pup is usually not aggressive to human approach.

Note (1): Criteria 3, 4, 5 & 6 *must* be combined with 1 or 2 for the pup to be identified as an 'orphan'. Criteria 3-6 may also be characteristic of healthy, viable pups of more than birth weight.

Note (2): A seal colony should never be entered in order to take a potential 'orphan' pup. Such a pup should only be approached if there are no other seals in the vicinity.

Note (3): A healthy pup may occasionally be cared for by its mother on a public beach (Courbis, 1997)



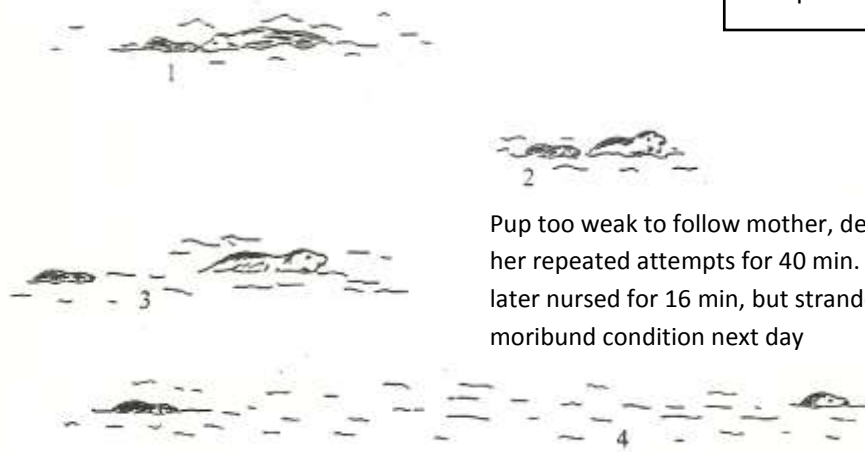
Fig. 1. Premature harbour seal pup in lanugo coat in Lincolnshire, England (photo: Paul King)



Fig. 2. Illustrations of neonatal stranded pups taken for rehab at a haul-out site in Co. Down, N. Ireland. All pups observed alone during haul-out period and after other seals had moved to different site on receding tide. Pups also observed swimming alone during haul-out period and following other seals. Pup weights at stranding were 7.25kg (Star); 11kg (Lora), 8kg (Evie) and 8.5kg (Dora). All except Dora had umbilicus still attached. Lora was normal birth weight (and should have survived in the wild if she had not been separated from her mother), the other three were of low birth weight and would probably not have survived, even with their mother.



d. 4 post-natal



Pup too weak to follow mother, despite her repeated attempts for 40 min. Pup later nursed for 16 min, but stranded in moribund condition next day



Pup at post-mortem, weight 7 kg

Fig. 3. Illustration of events leading up to neonatal pup stranding. Causes possibly include low birth weight, mother has insufficient milk, high PCB contamination (114 mg/kg in pup blubber; Wilson, 2001).

Pups 'orphaned' as neonates may survive for nearly a week. Such pups will be very emaciated and may have secondary conditions appearing such as sore eyes from sand (Fig. 5). These pups may develop secondary opportunistic infections, causing pneumonia. Pups may be found lying in a prone position (Fig. 5 – 'Silver').



Fig. 4. 'orphan' pup, probably several days old, persistently follows another pup and tries to suckle from it. Pup found dead at same place next day. *Pup could not be taken for rehab because of proximity to rest of breeding colony.*

Criteria for identifying 'orphan' pups stranding later in the nursing period

ALERT: A small pup is seen without its mother

1. The pup weighs less than ~13 kg
AND
2. The pup is >200m from a seal haul-out site
OR
3. The pup has been observed continuously alone for more than 24h and appears distressed
4. The pup is weak and emaciated
5. The pup appears sick or has trouble breathing
6. The pup is injured, or is bleeding from mouth, nose or anus



Fig. 5. 'orphan' pups rescued from haul-out sites in Co. Down after an estimated 5-6 days post-natal.
Note: Dana's sore eyes, presumably from sand irritation

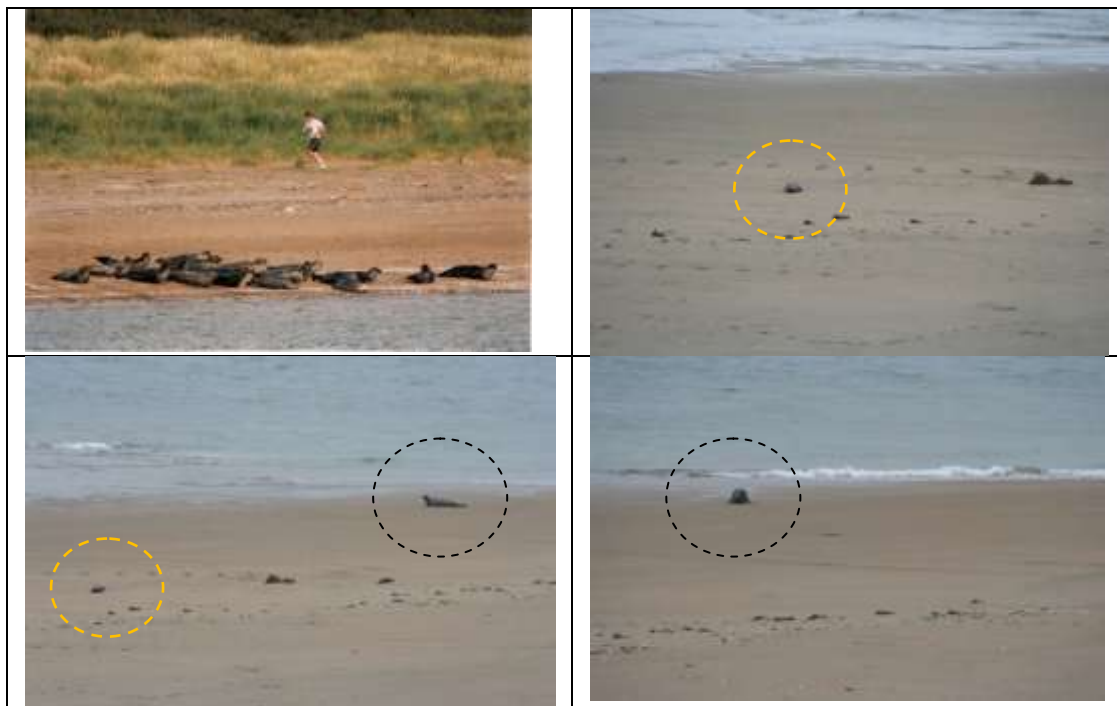


Fig. 6. Pup separated from mother by jogger disturbance
Clockwise from top left: typical jogger disturbance at Ballykinler beach, Co. Down, N. Ireland; pup left alone on beach after seals rushed to water after jogger disturbance; female returns to beach, apparently searching for pup – pup is silent; mother and pup on beach, pup still silent, ?mother still not reunited with pup.

In our experience it is quite unusual for pups to strand later in the nursing period, i.e. from ~7–20 days, after the mother-pup bond and nursing are established. The most likely reasons for such later stranding are misadventure, i.e. death of mother (e.g. from propeller injury while offshore foraging; Thompson et al., 2010) or the pup being swept away from mother by a storm (Boness et al., 1992).

Non-malicious disturbance of haul-out sites, e.g. by boats or pedestrians, may cause temporary separation of pups from their mothers (see Fig. 6). It is, however, important to note that there is no documentation of actual mother-pup separation in published studies of disturbance (e.g. Renouf et al., 1981; Allen et al., 1984; Osinga et al., 2012). If both mother and pup return to the water during a disturbance and become lost to view, it may be assumed that they are not separated, but are together in the water. If a pup is left stranded on a rock or sandbank following a disturbance, such separation is *not* likely to be permanent provided the bond between mother and pup is fully established (i.e. after 1–2 days). Such separation, if it interrupted the neonatal bonding between mother and pup, would probably be permanent.

The mother and pup in Fig. 6 were later reunited, and such temporarily abandoned pups at seal colonies should not be considered to be permanently stranded unless they are seen to be alone for at least 24 hours. The size of the pup would inform a decision on whether a pup seen alone at a disturbed colony should be treated as ‘orphaned’: if the pup is ~13 kg or more and with no umbilicus, it should normally be left and the mother given the opportunity to effect a reunion.

It is well established that harbour seal mothers are obliged to make foraging trips from around 11 days post-partum (Boness et al., 1994; Thompson et al., 1994). Pups may accompany their mothers on foraging trips (Boness et al., 1994; Bowen et al., 1999; Bekkby & Bjørge, 2000; Wilson, 1974), or the mother may ‘park’ her pup within the colony, often beside other mother-pup pairs or other ‘Lone’ pups of temporarily absentee mothers, and will later return to reclaim and nurse it (Boness et al., 1994; Wilson, 1978; unpublished data). Whether a pup accompanies its mother on foraging trips may depend on colony size (mothers in very small pupping groups tend not to leave their pups behind – Bowen et al., 1999), foraging location and other factors.

Each foraging trip by Sable Island mothers lasted on average ~ 7h, i.e. about half a tidal cycle. While the mother is away, the rest of the colony acts as a sort of primitive ‘crèche’, with ‘Lone’ pups following one another, other mother-pup pairs or other seals in the colony when the colony moves according to the tide. However, these pups may sleep very deeply and remain asleep during the mother’s absence, sometimes lying ‘high and dry’ at a low tide, even if the rest of the colony has followed the receding tide-line (Fig. 6). Healthy lone pups will usually be ~14 kg or more in weight and may be aggressive to human approach or attempt to intervene. Care should be taken not to mistake these ‘Lone’ pups for ‘orphans’ needing human intervention. Because of the difficulty in distinguishing a genuine orphan pup from a healthy lone pup without an observation period of at least 24 hours, we would recommend never taking a pup from a colony if it weighs more than 13 kg and has no umbilicus.



Fig. 7. Healthy 'lone' pups of nursing age whose mothers are temporarily absent (Co. Down, N. Ireland). Clockwise from top left: sub-group of four mother-pup pairs with lone pup (extreme right)'parked' by its mother; pup sleeping at haul-out site when other seals moved to follow receding tide, pup sleeping at haul-out site after other seals left, then awakened by observer checking its condition; pup making its way to sea after awakening and finding other seals had left site on receding tide.

Criteria for pups stranding in the immediate post-weaning period (1–2 months, or 3–6 months)

ALERT: A pup is seen alone, on the high tide-line, OR more than 200m from a haul-out site OR on a public beach

Criteria for identifying stranded pup in post-weaning period (1–6 months)

1. Pup is thin (usually < ~14 kg at 1–2 months, <20 kg at 3–6 months) with dull eyes, dehydrated (indicated by dry areas around eyes), weak AND USUALLY ONE OR MORE OF FOLLOWING:
2. Visible serious injury, such as cuts, wounds, swelling or bleeding from nose, mouth or anus
3. Discharge from eyes or nose
4. Mouth/muzzle infection or swelling
5. Coughing or breathing difficulties
6. Patchy fur, ulcers on skin, external parasites (mites, lice)
7. Entangled in fishing net
8. Oil or tar on fur
9. May not try to escape to sea when approached (though some do!)

Coughing is symptomatic of lungworm and breathing difficulties are symptomatic of pneumonia, often associated with lungworm. Criteria 6–8 are most often seen in pups aged 3–6 months.



Fig. 7. Pups stranded in post-weaning period.
Clockwise from to left: 'Leo' age est. 6 wks, stranding wt 10 kg, suspected septic arthritis; 'Cecilia' age est. 10 wks, stranding wt 12 kg, broken and infected left ulna, lungworm (Wilson et al., 1999); juvenile harbor seal entangled in fishing net; harbor seal pup stranded in Denmark with bleeding from mouth.

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