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A Survey Of Yellow Wagtails In The
Yorkshire Dales National Park In 2000
And A Review Of Their
Historical Population Status.

¹Court, I.R, Barker, D., Cleasby, I., Gibson, M., Smith, J., Straker, C. and Thom, T.J.

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¹Correspondence address:
Yorkshire Dales National Park Authority, Colvend, Hebden Road, Grassington,
Skipton, North Yorkshire, BD23 5LB
Email: ian.court@yorkshiredales.org.uk

A SURVEY OF YELLOW WAGTAILS IN THE YORKSHIRE DALES NATIONAL PARK IN 2000 AND A REVIEW OF THEIR HISTORICAL POPULATION STATUS.

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SUMMARY

Ten areas within the Yorkshire Dales National Park were surveyed for breeding yellow wagtails during 2000. Sixteen pairs were confirmed to be breeding with an additional nine probable breeding pairs giving a maximum total of twenty five pairs. A minimum of five pairs successfully fledged young with an additional nine pairs probably fledging young giving a maximum total of fourteen pairs fledging young.

Out of the sixteen sites where nest sites were identified, eleven sites were eligible for Environmentally Sensitive Areas (ESA) payments. Only five nests were on land with an ESA agreement with eleven nests on land not in any agri-environment scheme.

When compared to limited historical data there has been a widespread decline in range and numbers of breeding yellow wagtails in the Yorkshire Dales National Park. Possible reasons for the decline are: a change from hay cropping to silage making; loss of wet and marshy feeding areas; loss or decline in habitat quality of pasture; change in weather patterns and problems on migration and in wintering areas.

INTRODUCTION

Anecdotal reports suggest that there has been a significant decline in the number of breeding yellow wagtails in the Yorkshire Dales National Park. In order to determine whether this was the case, a yellow wagtail survey in two dales in the National Park carried out in 1991 (Wilson, 1991) was repeated in 1999. The results showed that there had been a decline from eighteen pairs in 1991 to three pairs in 1999 (Court, 1999). It was decided to determine whether the population decline was more widespread across the whole of the National Park and to compare this with available anecdotal and historical information.

METHODOLOGY

Ten areas within the Yorkshire Dales National Park were surveyed for yellow wagtails. These areas were chosen for a number of different reasons. Littondale and Arkengarthdale were surveyed in 1991 (Wilson 1991) and 1999 (Court 1999). Malham Moor was surveyed as part of the National Park Farm Conservation Scheme monitoring programme. The other five Dales were chosen either because they had been identified from historical sources as supporting high numbers of yellow wagtails in the past or because of the availability of experienced volunteer ornithologists to carry out the survey work.

Yellow wagtails are known to return to the Dales from their African wintering sites in late April/early May, therefore surveying began after the first week of May. During the initial visits the whole of each area was surveyed from public rights of way and roads. The extensive nature of the public highway network ensured that the majority of fields in the area were visible. During these initial visits the location and behaviour of yellow wagtails was noted. Repeat visits were then made to sites where yellow wagtails were present and nesting behaviour or evidence of young being fed was recorded.

Where it was possible to identify the exact location of the nest, the type of habitat was recorded and referenced to the Yorkshire Dales National Park Phase 1 Vegetation Map (where this information was available). If nesting occurred in hay meadows then the cutting date of the meadow and whether fledging occurred before this date was recorded. All areas were repeatedly surveyed until there was no further sign of breeding activity.

Additional information on the presence of yellow wagtails across a wider area was obtained from an enclosed upland breeding wader survey, which was commissioned by the RSPB and National Park Authority (Shepherd, 2000). As part of this survey 3900 fields in 88 1 km² across the Yorkshire Dales National Park were surveyed for breeding waders. The surveyors were asked to record all sightings of yellow wagtails. It must be emphasised that the surveyors were not specifically surveying for yellow wagtails so the results are only an estimate of the actual status of yellow wagtail populations in these 1 km² areas.

Information on the historical distribution and abundance of yellow wagtails within the survey areas was gathered from a number of sources in order to determine the level of population change. A number of sources were used as follows:

Qualitative reports

Cleasby (2000) – personal records from the Sedbergh area from 1938 and 1942.

Smith (1950) – a monograph of the yellow wagtail including an analysis of the national population in the late 1940s.

Nelson (1907) – a review of the status of birds within Yorkshire in the early 1900s.

Shorrocks (*pers comm*) – personal records from the Malham Tarn Estate.

Ellis (1999) – a baseline ornithological survey of the River Wharfe in 1999. Yellow wagtail was not one of the species being specifically surveyed however all bird species recorded within the survey were noted.

Quantitative surveys using comparable methods

Graham (1990) – a survey of yellow wagtails in parts of the Pennine Dales ESA in 1991.

Wilson (1991) – a follow up of Grahams 1990 survey carried out in 1991. Only two dales were surveyed in order to compare fledging dates with hay/silage cutting dates.

Court (1999) – a repeat survey of the area covered by Wilson (1991) to determine whether there had been a change in the number of breeding yellow wagtails between 1991 and 1999.

Quantitative surveys using different methods

Fotherby (1987) – a study to investigate the importance of traditional hay meadows to breeding birds including yellow wagtail and to assess the impact of changes in meadow management on these birds.

Williamson (1968) – a survey of bird communities on Malham Moor in 1966 and 1967 using the methodology used in the British Trust for Ornithology's Common Bird Census.

RESULTS

The results of the survey are summarised in Table 1 and each area is described in more detail below. Table 2 shows the number of nests on agri-environment agreement land.

LITTONDALE

Results from the 2000 Survey

Four breeding pairs were confirmed. Three of these successfully fledged young. At one site the male and female were observed feeding in an uncut hay meadow adjacent to the meadow where the nest was situated. Both birds were extremely secretive, only occasionally flying up and perching on the wall/fence. Only very limited amounts of time were spent in the open. On most occasions they were watched catching flying insects and taking them down to the same area of meadow. Both birds were virtually silent in contrast to when collecting food to take to young still in the nest. This pattern of behaviour was also noted at another site where the fledged young were observed and therefore indicates that fledged young were present at this site.

The outcome of the other pair was unknown, although presumed successful. On the last visit to the nest site when the adults were still feeding young in the nest, the young could clearly be heard calling when the adults returned to the nest. Additionally it was at least ten days since the adults were first seen carrying food to the nest and therefore at least tens days since hatching date. Cramp (1988) states fledging at c. 16 days but can leave the nest at c. 11 days. At this site the young were virtually at fledging age and were therefore presumed to have successfully fledged.

All four pairs nested in hay meadows, with two pairs nesting within 100m of each other in the same meadow. There was also one unpaired singing male present throughout at this site. This bird was present throughout the breeding season but there was a noticeable increase in display and singing after the two other pairs had fledged their young. In each instance the young were fledged and all breeding activity had ceased prior to cutting. Of note, the meadow where two pairs nested in 2000 also had a pair breeding in the 1991 and 1999 surveys. At Site 1 a pair was present in 1999 although there were no signs of breeding activity and no sightings at all after the 9th June. A pair was again present at the same site in 2000 and again showed no sign of breeding activity but a female with two juveniles was seen in early July. This was the earliest fledging date in Littondale and so the female and young could not have come from any of the other known pairs in Littondale. Even though no sign of breeding activity was noted it is assumed that the pair at this site must have fledged the two juveniles.

Comparison with Other Population Data

In 1991 nine pairs of yellow wagtails attempted to breed. Three pairs raised a total of five fledged young. Two pairs were probably successful in fledging young with hay cutting dates not an issue as the birds had departed prior to cutting taking place. Three pairs almost certainly failed due to hay cutting occurring before the young had fledged. The outcome of the final nest site was undetermined (Wilson, 1991).

In 1999 three pairs were present, two pairs fledged 5 young and a third pair was present although showed no sign of breeding behaviour and were not seen after 9th June (Court, 1999).

RAWTHEY VALLEY, DENTDALE, GARSDALE AND GRISDALE

Results from the 2000 Survey

No yellow wagtails were recorded.

Comparison with other Population Data.

In the Sedbergh area, personal records from Cleasby (1938) state “practically every meadow has a pair [of yellow wagtails] this year and they seem particularly numerous”. An estimate of the number of pairs in the Sedbergh area of Dentdale in 1939 was 50 to 100 pairs (Smith, 1950).

A bird survey of the upper reaches of the River Rawthey in 1942 revealed 3 pairs of yellow wagtails (Cleasby *in lit*). It was commented that a number of the former “bottom meadows” where yellow wagtails had nested previously are now pastures used for sheep grazing (Cleasby *in lit*).

SWALEDALE

Results from the 2000 Survey

No yellow wagtails were recorded.

Comparison with other Population Data.

Graham (1990) found a combined total of 18-28 pairs in Swaledale and Arkengarthdale compared to only one pair in the two dales in 2000.

Ellis (1999) recorded yellow wagtails as “noticeably absent” along the River Swale although he was not specifically surveying for this species. Fotherby (1987) surveyed approximately half the area of Swaledale covered in the 2000 survey for this species in 1987 and found ten nesting pairs.

Smith (1950) stated that the yellow wagtail was “generously distributed in the western Dales” and specifically mentioned the Swale.

ARKENGARTHDALE

Results from the 2000 survey

One pair was recorded and although the exact nest site was not found, the female was observed carrying food. One pair with three fledged juveniles was seen in the same area on 28th June.

Comparison with other population data

Graham (1990) found a combined total of 18-28 pairs in Swaledale and Arkengarthdale in 1990 compared to only one pair in the two dales in 2000.

In 1991 nine pairs attempted to breed. Two pairs fledged a total of two young, with one pair attempting a second brood with confirmed fledging from the second attempt and possibly fledging from the first attempt. Two pairs were unsuccessful due to the apparent disappearance of the females. Three pairs nesting in rushy pasture may have successfully fledged young. One pair nesting in a hay meadow was almost certainly unsuccessful as a result of cutting prior to fledging. The outcome of one pair nesting in a hay meadow was unknown (Wilson, 1991).

Court (1999) found only one female in the same area in 1999 as the breeding record in the present survey.

UPPER WHARFEDALE

Results from the 2000 Survey

Four breeding pairs were confirmed, two of which fledged a minimum of four young. One pair failed probably as a result of human disturbance. The outcome of the final pair was unknown. An additional male was seen on one occasion at one site, with the same bird or another reported on several occasions by an independent observer approximately 1km to the north.

Comparison with other population data

Smith (1950) states that the yellow wagtail was “generously distributed in the western Dales” and specifically mentioned the Wharfe. In upper Wharfedale the status was described as “especially abundant”.

Graham (1990) found a combined total of 16-24 pairs in Langstrothdale and Wharfedale compared with a total of four pairs for Upper Wharfedale in the 2000 survey

WENSLEYDALE

Results from the 2000 Survey

A total of six breeding pairs were confirmed with a further three pairs probably breeding. Only one pair successfully fledged three young, the other eight pairs failed or probably failed due to heavy rain and subsequent flooding on 3rd and 4th June. A further pair was confirmed nesting and two other probable nesting records were recorded in this area. These three breeding attempts occurred after the flooding on the 3rd and 4th June. No additional pairs were seen either before or after this date and due to the close proximity to the original nest sites that were washed out by the floods they were considered by the observer, to be pairs relaying after the first clutch was washed out. A pair, which was observed feeding two fledged juveniles within the survey area, could have been from one of these sites. In addition, an adult seen feeding within the survey area was seen to carry food to a breeding site outside the survey area, where two fledged juveniles were seen at a later date.

Comparison with other population data

No data available

MALHAM MOOR

Results from the 2000 Survey

Two pairs were presumed to have successfully fledged young. At one site the male and female were observed feeding in an uncut hay meadow adjacent to the meadow where nesting occurred. Both birds were extremely secretive, only occasionally flying up and perching on the fence. Only very limited amounts of time were spent in the open and on these occasions the birds were seen to catch flying insects and take them to the same area of meadow. This same pattern of behaviour was observed at another site where fledged young were seen and therefore indicates that fledged young were present at this site. At the second site the female was observed carrying food to two

sites within the meadow c. 20m away from the nest site. As young birds are known to leave the nest prior to fledging (Cramp, 1988), it was assumed that at this site at least two young were very close to fledging and were presumed successful. Both pairs nested in hay meadows and all breeding activity had ceased prior to cutting.

At site 3 yellow wagtail behaviour was difficult to interpret. Two males and three females were observed but exhibited no sign of nesting behaviour. These birds were very mobile and it was possible that they were using a pasture and marshy stream edge as a feeding area and flying to a nest site elsewhere. However, on no occasion were the birds seen flying away with food. It is possible that these were non-breeding birds or birds that had failed elsewhere and were using a good feeding site.

At site 4, four singing males were observed close together during the early survey period but no females were observed. It was possible that the females may have been incubating and therefore not seen. If this had been the case then it would have been expected to observe food carrying to the nest 11-13 days later [the incubation period of yellow wagtail (Cramp, 1988)]. From early June onwards there were only occasional sightings of non-territorial males and no sightings of any females until 26th June when a female and 2 juveniles were seen. It was considered that this might have related to a pair breeding outside the survey area.

Comparison with other population data

Seventeen territorial males were present on Malham Tarn Estate in 1966 (Williamson, 1968). Although some of this area overlaps with the 2000 survey area direct comparison is not possible. The number of territorial males on the Malham Tarn Estate in 1999 was estimated at five or six males (Shorrocks *pers comm*).

Table 1. Number of confirmed and possible/probable breeding pairs of yellow wagtails and the number of confirmed and possible number of pairs fledging young in ten areas of the Yorkshire Dales National Park in 2000.

Area	Confirmed pairs	Possible/probable pairs	Max. total pairs	No. pairs confirmed fledging young	No. pairs possibly fledging young	Max. total pairs fledging young
Littondale	4	1	4	2	2	4
Rawthey Valley	0	0	0	0	0	0
Dentdale	0	0	0	0	0	0
Garsdale	0	0	0	0	0	0
Grisedale	0	0	0	0	0	0
Swaledale	0	0	0	0	0	0
Arkengarthdale	0	1	1	0	1	1
Upper Wharfedale	4	0	4	2	1	3
Wensleydale	6	3 ^a	9 ^a	1 ^a	2 ^a	3 ^a
Malham Moor	2	4	6	0	3	3
Total	16	9	25	5	9	14

^a This figure does not include the three pairs which were assumed to be laying a replacement clutch after the first failed and one pair that nested outside the survey area which may have been one of the original failed pairs.

Table 2. The number of confirmed nest sites of yellow wagtail and the eligibility and uptake of agri-environment schemes on the land where the nest sites were located from a survey of ten areas of the Yorkshire Dales National Park in 2000.

Total confirmed nesting pairs	16
Number of nest sites on land eligible for ESA	10
Number on land with ESA agreement	5
Number of nest sites on land in other agri-environment schemes	0
Number of nest sites on non-agreement	11

Of the sixteen confirmed nest sites; eight were in hay meadows and eight were in pasture. All of the pasture sites were rush or wet pasture.

Only five of the sixteen confirmed nest sites were in agri-environmental schemes, which restrict the date of meadow cutting.

Results From the RSPB & YDNPA Yorkshire Dales National Park Enclosed Upland Breeding Wader Survey 2000

Yellow wagtails were recorded in 8 of the 88 km² areas as follows.

1. One bird seen on 23/4/00. This square falls within one of the yellow wagtail survey areas. No birds were recorded during the detailed yellow wagtail survey. The date this bird was recorded suggests that it may have been a passage migrant.
2. One bird seen on 30/04/00. This site is adjacent to a yellow wagtail survey area and it is possible that this individual was one of the breeding birds from that area.
3. One pair was seen on 12/05/00 and another bird seen flying over the area on 10/06/00. This area was not covered by the yellow wagtail survey.
4. Three birds were seen on 03/05/00; one bird was seen on 12/05/00 and one bird was seen on 10/06/00. This area was not covered by the yellow wagtail survey.
5. Three birds were seen on 04/05/00 and one bird was seen on 20/05/00. The first record was in a field adjacent to one where a pair was recorded breeding during the detailed yellow wagtail survey. The third bird may possibly have been from one of the pairs that was located in the adjoining km² as part of the detailed yellow wagtail survey.
6. One male was recorded on 13/06/00 and was almost certainly the single male seen at virtually the same site on 16/06/00 during the yellow wagtail survey. The late date and no evidence of territorial behaviour did not suggest any breeding attempt.
7. One was seen on 19/04/00. This area was not surveyed as part of the detailed yellow wagtail survey.
8. Yellow wagtails were found at two different sites in the same square. Two males were recorded in Field A on 23/05/00 and two males and one female on 14/06/00. One male was recorded on 20/04/00, one female on 23/05/00 and one male on 14/06/00 in Field B. This area was not surveyed as part of the yellow wagtail survey.

DISCUSSION

Quantitative historical information on the distribution and abundance of yellow wagtails in the Yorkshire Dales is not readily available. Much of this information is anecdotal and based on only small sample areas of the National Park. It is only in the 1990s that more detailed quantitative surveys were conducted (Graham, 1990; Wilson, 1991 and Court, 1999).

Despite the limitations of the historical data there is evidence to suggest a serious and widespread decline in the population of yellow wagtails in the Dales which would appear to have accelerated in the last decade. Smith (1950) considered that yellow wagtails were “generously distributed in the western Dales” and “especially abundant” in Wharfedale. In the Sedbergh area of Dentedale in 1939 there was an estimated 50 to 100 pairs Smith (1950). The results of the present survey show that this is clearly no longer the case. Comparison of the present survey with surveys in 1990 and 1991 (Graham, 1990; Wilson 1991) show a marked decline in the last ten years with, for example a decline in Littondale from 9-15 pairs in 1990-91 to just 4 pairs in 2000 and declines in Swaledale and Arkengarthdale from 18-28 pairs in 1990 to just one pair in 2000.

Smith (1950) stated “that the main bulk of [yellow wagtails are] associated with river valleys, especially along the lower reaches of the rivers” and that “there is a tendency for numbers to diminish along any valley as the headwaters are approached”. The present distribution of yellow wagtails in the National Park indicates that the majority of breeding sites are restricted to the upper reaches of the river valleys and other upland areas with only a limited number of pairs along the lower river valleys. This would suggest that the bulk of the yellow wagtail population in the National Park has been lost.

Generally there has been a greater degree of agricultural intensification in the lower dales especially where the land is suitable for dairy farming as in Wharfedale. In these areas there has been a tendency for a change from hay cropping to silage making resulting in earlier cutting dates and an increase in the loss of yellow wagtail nests. It is also possible that there has been a greater degree of land drainage and a loss of unimproved pasture. It is therefore likely that this intensification is responsible for the long-term decline in populations although the reasons for the accelerated decline in the last ten years are not clear.

The results also suggest that yellow wagtails are now restricted to areas where less intensive farming practice occurs (where lowland pastures have not been drained and hay cutting dates are late) either as a result of agri-environment schemes or due to altitudinal or climatic restrictions. Two nest sites at least were in hay meadows that due to the altitude of the area are rarely cut before the beginning of July, with hay cutting occurring in most years towards the end of July.

REASONS FOR THE DECLINE

Hay Cutting Dates

Between 1800 and 1985 there was a 74% reduction in the area used for meadows in the Yorkshire Dales (Bunce *et al*, 1985)

Earlier cutting dates of hay meadows, especially where there has been a change from hay to silage is, undoubtedly, one of the main reasons behind the long-term decline in yellow wagtail populations. Smith (1950) stated that “yellow wagtails are very tenacious in general of old nesting sites and, as individuals, of one particular nesting site, and are not very plastic or adaptable”. It is likely, therefore, that yellow wagtails will continue to attempt to nest in the same fields even if the

habitat is no longer suitable. If a meadow is changed to silage production nesting is likely to fail due to earlier cutting

dates leading to population declines verified by the fact that yellow wagtails are still breeding successfully in areas of low intensity agriculture and in areas where agri-environment prescriptions (mainly ESA) restrict cutting dates. Any future changes in farming practice in these areas could potentially threaten the yellow wagtail as a breeding species in the Yorkshire Dales National Park.

The peak fledging date in the Pennine Dales is the last week of June, with approximately 70% of birds fledging prior to the 7th July (ADAS, 1996) (ESA cutting date in Tier 1 meadows). The results from the present survey support this. However, the weather in April and May 2000 was warm and dry leading to the early arrival of yellow wagtails. This contrasted with 1991 when the weather was very cold delaying the arrival of yellow wagtails, until the 13th May with mainly males arriving by the 23rd May. Pair formation was not completed until the first week of June (Wilson, 1991).

Nest building is completed in a minimum of 4 days (Smith, 1950) and eggs are laid daily with a mean clutch of 5.2 eggs (Cramp, 1988). The mean incubation period is 12.4 days with fledging occurring after c. 16 days (Cramp, 1988). This gives a total of approximately 37 days between the beginning of nest building to fledging. This indicates that nest building must begin at the end of May for fledging to occur before the ESA cutting date of 7th July. If breeding is delayed due to cold wet weather in spring, it is possible that hay cutting may take place before the young have fledged. This may account for the more recent decline in yellow wagtail populations over the last decade where there has been a succession of cool wet springs.

Loss Of Wet And Marshy Feeding Areas

Cramp (1988) stated that in some parts of their range, yellow wagtails breed on relatively dry farmland, but that these areas support much lower densities [yellow wagtails are normally associated with wetter areas]. A decrease in the extent of wet marshy pasture could, therefore, account for the current low number of yellow wagtails present in the National Park.

Personal observations during the survey showed that where it was possible to watch a female [it appeared from limited observations that the female made many more food carrying visits to the nest than the male] fly from the nest to a feeding site, wet pasture and river edge were found to be favoured feeding areas. At one site the female repeatedly flew to a wet, cattle grazed pasture approximately 200m from the nest site to collect unidentified insects before returning to feed the young. At another site the female repeatedly flew to the edge of a stony sided stream approximately 250m from the nest site to collect unidentified insects. In one of the other survey areas birds from four out of the nine nest sites were observed collecting food along the edge of the river. At other nest sites adults were lost to sight when leaving to feed and appeared to fly long distances, possibly to favoured feeding areas.

There may, therefore, be a relationship between the proximity of suitable feeding sites to nest sites and to breeding success. Areas where there are suitable unimproved pastures or hay meadows adjacent to either wet pasture or stony sided river feeding sites may account for the clustered populations currently found within the Dales. Further research needs to be carried out in the area.

Loss or Decline in Habitat Quality of Pasture

Figures for 1970-80 show a 29% loss of rough pasture and an increase of 24% in improved pasture for the Yorkshire Dales National Park (Countryside Commission, 1991). Smith (1950) suggested that yellow wagtails are faithful to particular nest sites and the loss of unimproved pasture in some areas may be contributing to the population decline. Increased levels of grazing, particularly by sheep may lead to a decrease in sward height and make nests more vulnerable to

the weather or predation. Increased stocking levels may also increase the loss of nests to trampling. There was an increase in the number of sheep in the National Park by 69% (324,689) and cattle by 9.9% (6,499) between 1954 and 1988 (Berridge, 1991).

Weather Patterns

Yellow wagtails are known to be vulnerable to the effects of weather as nesting occurs in open and often wet areas (Mason and Lyczynski, 1980). In one area, out of six confirmed and three probable nest sites, seven were almost certainly washed out during flooding on 3rd & 4th June. Birds nesting on low-lying flood plains are therefore susceptible to flooding. The recent wet and cold spring weather, which has occurred during breeding seasons, may also have had an adverse effect on the breeding success of yellow wagtails. Current climate change models predicting wetter springs and increased flood events suggest that yellow wagtail populations will become increasingly vulnerable.

Problems on Migration and in Wintering Areas

The race of yellow wagtail *Motacilla flava flavissima* occurring in Britain and locally on the continental coast of north-west Europe is *flavissima* (Cramp, 1988). The main wintering areas of *Motacilla flava flavissima* are in tropical west Africa, chiefly between 5-15 degrees of latitude although problems with racial identification and the occurrence of hybrids makes the identification in wintering areas difficult (Simms, 1992). Simms (1992) stated that on return migration yellow wagtails increase their body weight by a third to enable a single non-stop flight over the Sahara desert (sixty to seventy hours flight). Any further increase in the size of the Sahara desert as a result of desertification could increase mortality on migration. This effect could be made worse if habitat changes to favoured feeding sites on the edge of the desert prevent a sufficient increase in body weight to be made prior to crossing the Sahara.

In addition to being site faithful to breeding areas (Smith, 1950) it also appears that birds are faithful to particular wintering sites (Simms, 1992) and may also therefore, be threatened by habitat change in these different areas.

Population declines have been noted for other trans-Saharan migrants that winter in West Africa including the common whitethroat *Sylvia communis*. Populations of this species crashed between the 1968 and 1969 breeding seasons attributed to African droughts with subsequent population increases attributed to increased rainfall in these areas (Glue, 2000). Rainfall conditions in Africa or spring weather across Europe may effect populations of whitethroats [and also potentially yellow wagtails] and requires further study (Glue, 2000). Marchant *et al* (1990) however, stated that there is no good evidence that the yellow wagtail has suffered from the effect of drought in its' African wintering quarters.

Ringling recoveries suggest that spring and autumn migration routes differ. The spring migration route from tropical western Africa is through Morocco, Algeria, eastern Spain and France. There is a more western autumn migration route, to south west France, through Portugal and into Morocco (Simms, 1992). Habitat changes along these migration routes could be a potential threat to yellow wagtail populations.

Simms (1992) stated that on migration yellow wagtails make stops at favoured sites such as lakesides and damp meadows. Again, habitat loss and change to favoured migration sites, in particular land drainage, may be having an effect on the population. Delayed breeding of yellow wagtails may be a function of constraints imposed by migration (Mason *et al*, 1980).

Declines In Other Areas

The drainage of wet ground and a change from hay to silage cutting are probably the main causes of population declines of yellow wagtails in the Yorkshire Dales National Park. These changes in agricultural practice are not restricted to the Yorkshire Dales. Nationally there was a decrease in the area of unimproved pasture from approximately 5.5 million hectares in the early 1930s to less than 0.2 million hectares in the mid-1980s (Dodds *et al*, 1995). Silage production has increased from approximately 5.5 thousand tonnes per year in the late 1960s to nearly 35 thousand tonnes per year in 1995 (Dodds *et al*, 1995). Conversely there has been a decrease in hay production from approximately 8.5 thousand tonnes per year to less than 3 thousand tonnes in the same period (Dodds *et al*, 1995). With land drainage also an issue in lowland areas the decline of yellow wagtails could be expected to be not just a regional problem but a national problem.

The Common Bird Census (1972-96) and the Breeding Bird Survey (1994-98) show national declines of yellow wagtail populations of 25% and 30% respectively (Mead, 2000). Mead (2000) cites a decline in damp pasture and marshy areas as the reason for the decline.

Smith (1950) stated that in Lancashire the yellow wagtail was increasing in the late 1940s. Breeding occurred in all areas of east Lancashire and was abundant in the north of the county "where the number of breeding pairs is probably equal to that of the pied wagtail *Motacilla alba*" (Smith, 1950). In 2000 the yellow wagtail is close to extinction as a breeding species in Lancashire (Jones *pers comm*). There have been considerable declines in Lancashire and North Merseyside, "perhaps on a small-scale during the late 1960s and 1970s, but at a considerable rate during the period 1980-95" with further declines since then (Wilson *pers comm*). The declines are attributed to the change from hay to silage although in some parts of east Lancashire the beginning of the decline pre-dates this change. (Wilson *pers comm*).

If the number of passage migrants is used to indicate population trends then selected spring passage data from Lancashire supports the overall widespread population decline. At Leighton Moss (near Carnforth) 50-75 birds roosted in the 1960-70s with only 4 individuals reported in 1995; nearly 300 birds were present at Marshside (Southport) on May 3rd 1978 with the highest count in 1995 – 5 birds on April 27th and from Marton Mere (Blackpool) 83 birds in 1983 with 2 singles in 1994 (Wilson *pers comm*).

Yellow wagtail is also now considered to be extinct as a breeding species in the Bradford Metropolitan District Council area (Barker *pers comm*). In the Bradford Ornithological Group recording area there are now only occasional breeding records from two sites (Barker *pers comm*).

In conclusion, the results of the present survey provide strong evidence that yellow wagtail populations in the Yorkshire Dales National Park have suffered a significant and catastrophic decline. There would also appear to be a growing body of evidence to suggest that this decline has occurred throughout the region and could be occurring nationally. There is clearly a need for urgent action to address the conservation needs of this species.

RECOMMENDATIONS FOR THE CONSERVATION OF YELLOW WAGTAILS.

- There is a need to determine the current national status of the yellow wagtail population either by a national survey or collation of regional data followed by recognition of this species on the Red List of Birds of Conservation Concern if applicable.
- Research is needed into the relationship between delayed breeding and the impact of hay cutting dates.
- Research is needed to determine the relationship between nesting sites and the importance of unimproved and wet pasture for feeding during the breeding season particularly in upland areas such as the Yorkshire Dales National Park.
- Further research is needed into possible problems during migration and in wintering areas.

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Ian Court is the Species Officer with the Yorkshire Dales National Park Authority. The Post of Species Officer for the Yorkshire Dales Is Jointly Funded By English Nature, The Royal Society for the Protection of Birds and The National Park Authority.

REFERENCES

- Berridge, L. 1991.** *A preliminary Review of Agricultural Statistics in the Yorkshire Dales National Park 1954-1988.* Yorkshire Dales National Park Authority. Grassington.
- Bunce, R.G.H., Crawley, R.V., Gibson, R.A. and Pilling, R. 1985.** *Composition of Enclosed Grasslands.* Yorkshire Dales National Park Authority. Grassington.
- Countryside Commission. 1991.** *Landscape Change in the National Parks.* Countryside Commission. Levenshulme.
- Court, I. 1999.** *Yellow wagtails in the Yorkshire Dales National Park.* Yorkshire Dales National Park Authority. Grassington.
- Cramp, S. 1988.** *The birds of the western Palearctic 5.* Oxford University Press. Oxford.
- Dodds, G.W., Appleby, M.J. and Evans, A.D. 1995.** *A Management Guide to birds of Lowland Farmland.* RSPB. Sandy.
- Ellis, I. 1999.** *Baseline ornithological survey of the River Swale corridor in the Yorkshire Dales National Park.*
- Fotherby, D.I. 1987.** *Birds and hay meadows. Habitat usage in a changing landscape.* M.Sc. dissertation. University of York.
- Glue, D. 2000.** Whitethroats' fortunes across a continent. *BTO News* 228. 12.
- Graham, K. 1990.** *Yellow Wagtails in the Pennine Dales ESA.* ADAS.
- Hagemeijer, W.J.M., & Blair, M.J. 1997.** *The EBCC Atlas of European Breeding Birds.* London.
- Marchant, J.H; Hudson, R; Carter, S.P and Whittingham, P.A. 1990.** *Population trends in British Breeding birds.* British Trust for Ornithology. Tring.
- Mason, C.F and Lyczynski, F. 1980.** Breeding Biology of Pied and Yellow Wagtails. *Bird Study* 27: 11-20.
- Mead, C. 2000.** *State of the Nations Birds.* Whittet Books Ltd. Suffolk.
- RSPB. 1996.** *Birds of conservation concern in the United Kingdom, Channel Islands and the Isle of Man.* RSPB. Sandy.
- Shepherd, K. 2000.** Yorkshire Dales National Park: Enclosed Upland Breeding Wader Survey 2000. RSPB & YDNPA. Unpublished research report.
- Simms, E. 1992.** *British Larks, Pipits and Wagtails.* Harper Collins. Frome.
- Smith, S. 1950.** *The Yellow Wagtail.* New Naturalist Series. Collins. London.
- Wilson, R. 1991.** *Yellow wagtails in Littondale and Arkengarthdale in 1991.* English Nature. Leyburn.

APPENDIX 2

Yellow wagtail records for each separate survey area have been defined as "confirmed breeding", "probable breeding" or "possible breeding" as recommended by the European Atlas Committee (Hagemeijer & Blair, 1997). These are defined as follows:

- Confirmed breeding: adults injury-feigning (distraction display), or at apparently occupied nest, or carrying faecal sac or food for young; or current year's used nest, fresh eggshells, recently fledged or downy young, or nest with eggs or young.
- Probable breeding: pair observed in suitable nesting habitat in breeding season or permanent territory presumed (through registration of song or other territorial behaviour on at least two occasions a week or more apart); or observations of courtship, visiting probable nest-site, agitated behaviour of adults, nest-building or broodpatch on adult.

- Possible breeding: birds observed in possible nesting habitat or singing male (or breeding calls) in breeding season.

LITTONDALE

Site No: 1

Breeding Status: Confirmed

Singing male and female present. No indication of nesting behaviour. Female and 2 fledged juveniles seen in adjacent pasture. These were seen before any other young and so could not be from any of the other pairs.

No. Fledged Young: 2

Reason for Failure: Not applicable

Habitat Type: Hay meadow SNG 2/3a

Agri-environment Scheme: ESA 1992 Agreement

Site No: 2

Two pairs nesting in the same hay meadow plus an unpaired singing presumed 1st summer unpaired singing male.

Nest 1.

Breeding Status: Confirmed

Singing male and both adults carrying food to, and female carrying faecal sacs from nest.

No. Fledged Young: both adults presumed feeding unknown number of juveniles in adjacent hay meadow.

Reason for Failure: not applicable

Habitat Type: 3a hay meadow

Agri-environment Scheme: non-agreement, ESA eligible.

Nest 2.

Breeding Status: confirmed

Singing male and both adults carrying food to nest.

No. Fledged Young: 2

Reason for Failure: not applicable

Habitat Type: 3a hay meadow

Agri-environment Scheme: non-agreement, ESA eligible

A third male [lacking bright yellow of normal male, possibly first summer?] was present throughout the nesting period singing from within and from fenceposts surrounding the hay meadow with the two nests in. This male was generally ignored by the two other paired males but was chased away by one of the females on several occasions. Of note, the duration and intensity of singing by the un-paired male increased significantly after both pairs had fledged the young and were feeding them in fields surrounding the nesting field. No interaction was noted between the un-paired bird and any of the adults or juveniles. Under the breeding status criteria this has been identified as a possible breeding bird.

Site No: 3

Breeding Status: confirmed

Distraction display from the male, female seen carrying food to, and faecal sacks from the nest.

No. Fledged Young: not known

Reason for Failure: presumed successful. Hay meadow uncut one week after last sighting.

Habitat Type: SNG 3b hay meadow. Meadow adjacent to marshy grassland.

Agri-environment Scheme:

RAWTHEY VALLEY, DENTDALE, GARSDALE AND GRISDALE

No records

SWALEDALE. REETH TO KELD

No records

ARKENGARTHDALE

Site No.1.

Breeding Status: confirmed

Male and female present with female seen carrying food.

No. Fledged Young: pair feeding three fledged juveniles at same site.

Reason for Failure: nest site not located.

Habitat Type: exact nest site not located.

Agri-environment Scheme: not applicable.

UPPER WHARFEDALE

Site No: 1

Breeding Status: confirmed

Pair frequently visiting nest site.

No. Fledged Young: minimum 2

Reason for Failure: n/a

Habitat Type: patch of rushes in calcareous grassland

Agri-environment Scheme: ESA 1997 agreement

Site No: 2

Breeding Status: confirmed

Female seen carrying nest material to a clump of rushy ground.

No. Fledged Young: 0

Reason for Failure: considered to be human disturbance (nest was on a roadside verge favoured by picnickers)

Habitat Type: patch of rushes on calcareous grassland

Agri-environment Scheme: outside, but on the edge of the ESA boundary

Site No: 3

Breeding Status: confirmed

Pair seen prospecting nest site

No. Fledged Young: minimum 2 (single fledged young plus adults still taking food to nest)

Reason for Failure: n/a

Habitat Type: semi-neutral grassland 3a

Agri-environment Scheme: just outside ESA boundary

Site No: 4

Breeding Status: probable. Pair seen prospecting nest site. Not seen after 16/5/00.

No. Fledged Young: not known

Reason for Failure: not known

Habitat Type: patch of rushes in rough pasture

Agri-environment Scheme: outside ESA boundary

Site No. 5

Single male seen 16/6/00 at one site (probably the same bird seen by wader surveyors on 13/06/00.

Did not exhibit any behaviour indicative of breeding therefore not recorded as possible breeder.

WENSLEYDALE BAINBRIDGE TO APPERSETT

Site No: 1

Breeding Status: confirmed

Singing male and female, aggression between two males. Male and female seen carrying food to nest.

No. Fledged Young: none

Reason for Failure: flooding on 3rd /4th June

Habitat Type: semi- neutral grassland, rough pasture

Agri-environment Scheme: ESA eligible

Site No: 2

Breeding Status: confirmed

Singing male and display flight. Aggression towards another male. Male and female carrying food to nest.

No. Fledged Young: none

Reason for Failure: flooding on 3rd /4th June

Habitat Type: semi- neutral grassland, pasture heavily grazed with a large area of soft rush.

Agri-environment Scheme: ESA eligible

Site No: 3

Breeding Status: confirmed

Singing male and female. Seen carrying food to nest.

No. Fledged Young: none

Reason for Failure: flooding on 3rd /4th June

Habitat Type: semi- neutral grassland, rough pasture. Marshy grassland fringing standing water.

Little sign of improvement, probably liable to flooding.

Agri-environment Scheme: ESA eligible

Site No: 4

Breeding Status: confirmed

Pair seen together with the male singing. Food carrying to nest site.

No. Fledged Young: none

Reason for Failure: flooding on 3rd /4th June

Habitat Type: semi- neutral grassland, rough pasture and marshy grassland fringing standing water. Little sign of improvement, probably liable to flooding

Agri-environment Scheme: ESA eligible

Site No: 5

Breeding Status: confirmed

Singing male. Male and female present with both birds seen carrying young to nest.

No. Fledged Young: three

Reason for Failure: not applicable

Habitat Type: Semi-neutral grassland P/3a

Agri-environment Scheme: Outside ESA

Site No: 6

Breeding Status: confirmed

Singing male, male and female seen carrying food to nest. Actual nest site out of site but presumed to be in hay meadow.

No. Fledged Young: not known, presumed successful.

Reason for Failure: not applicable

Habitat Type: semi-neutral grassland 3a

Agri-environment Scheme: ESA eligible

Site No: 7

Breeding Status: probable

Male and female present on several occasions. Breeding was considered possible but no birds seen at this site after the flooding of 3 & 4/6/00.

No. Fledged Young: not known

Reason for Failure: if nesting had occurred probably washed out by flooding on 3/4 June.

Habitat Type: semi- neutral grassland P/3a.

Agri-environment Scheme: ESA eligible/possibly 1993 agreement

Site No: 8

Breeding Status: possible male and female seen at distance in suitable habitat.

No. Fledged Young: not known

Reason for Failure: not known

Habitat Type: semi- neutral grassland 3a.

Agri-environment Scheme: ESA eligible

Site No: 9

Breeding Status: probable

Male seen carrying food. It was not possible to observe this area from the road or footpaths.

No. Fledged Young: not known

Reason for Failure: not applicable

Habitat Type: semi- neutral grassland, pasture. Much less improved banks of short grazed herb rich turf.

Agri-environment Scheme: ESA eligible

Site No: 10

Breeding Status: possible.

Two singing males with one displaying to female on 10/6. Thought to be a second breeding attempt from site 1.

No. Fledged Young: not known

Reason for Failure: not applicable

Habitat Type: semi- neutral grassland, rough pasture.

Agri-environment Scheme: ESA eligible

Site No: 11

Breeding Status: confirmed.

Assumed second breeding attempt from site 3 with singing male on 10th June. Female seen carrying food and removing faecal sack from nest. No activity seen after 8th June.

No. Fledged Young: assumed failed.

Reason for Failure: not known

Habitat Type: semi- neutral grassland, rough pasture Marshy grassland fringing standing water.

Little sign of improvement, probably liable to flooding.

Agri-environment Scheme: ESA eligible

Site 12

Breeding Status: probable.

Possible second attempt from one of the failed pairs. Singing male on 10 and 18/6/00. No further sightings until 8/7/ when pair seen feeding two fledged juveniles.

No. Fledged Young: male and female seen feeding 2 fledged juveniles possibly from this site.

Reason for Failure:

Habitat Type: semi- neutral grassland 2. Grade 3 with less improved herb rich slopes.

Agri-environment Scheme: ESA eligible

Site No: 13

Breeding Status: confirmed [outside of survey area]

Adult seen carrying food from wet riverside pasture to an unknown site outside survey area.

No. Fledged Young: female with 2 fledged juveniles begging and being fed.

Reason for Failure:

Habitat Type: semi- neutral grassland 3a

Agri-environment Scheme: ESA eligible

MALHAM MOOR

Phase 1 habitat data not available

Site No: 1

Breeding Status: confirmed

Territorial male and female seen carrying food to nest and removing faecal sac.

No. Fledged Young: Adult male and female seen feeding in adjacent hay meadow possibly with fledged young. Presumed to have fledged unknown number of young.

Reason for Failure: not applicable

Habitat Type: hay meadow.

Agri-environment Scheme: CSS agreement on surrounding pasture, meadows not in agreement.

Site No: 2

Breeding Status: confirmed

Male and female carrying food to nest. Female removing faecal sack.

No. Fledged young: female seen carrying food to an area in hay meadow c. 15m from nest site.

Young presumed to have left nest but not fledged. Assumed successful.

Reason for Failure:

Habitat Type: semi- neutral grassland 3a

Agri-environment Scheme: ESA eligible

Site No: 3

Breeding Status: Possible

2 males and 3 females seen. No indication of any display, territorial behaviour or other indication of breeding activity. Considered to be failed breeders.

No. Fledged young: non seen

Reason for Failure:

Habitat Type: hay meadow adjacent to wet marshy cattle grazed pasture.

Agri-environment Scheme: no limitations on the meadows, CSS agreement on the adjacent pastures.

Site No: 4

Breeding Status: 4 Possible breeding records.

4 singing males present in May. No females were seen at all.

No. Fledged young: female with 2 fledged juveniles seen on 26 June. These may have come from a nest site outside of the survey area.

Reason for Failure: not applicable

Habitat Type: hay meadows surrounded by limestone grassland.

Agri-environment Scheme: ESA eligible