

**IMPACT ASSESSMENT (Birds) OF THE “FARMERS  
ALTERNATIVE” ROUTING OF THE SECTOR 3: SECTION 7  
PORTION OF THE PROPOSED N21 (R300) CAPE TOWN RING  
ROAD PROJECT**

**Client: Chand/Ecosense**



**Dave Pepler  
Horus Wildlife Consultants  
P.O.Box 975  
Stellenbosch  
25 September 2003**

IMPACT ASSESSMENT (Birds) OF THE “FARMERS ALTERNATIVE”  
ROUTING OF THE SECTOR 3: SECTION 7 PORTION OF THE PROPOSED  
N21 (R300) CAPE TOWN RING ROAD PROJECT

Proviso:

This report is based on a desk-top study as requested by the client. At the time of the coordinated field visit for biotic specialists, I was overseas, and requested my consultancy colleague, Mr. Kobus Jooste, to reconnoiter this section on my behalf. I therefore rely on his expert knowledge and reporting, as well as a number of digital photographs produced specifically with avian habitats in mind. As can be gleaned from the initial impact assessments, this section rated very low in its importance as seminal habitats for birds or mammals. I therefore considered it prudent to purchase the ADU (Avian Demography Unit, UCT) for the appropriate squares and to select and discuss species that may be influenced by the new alignment.

## 1. INTRODUCTION

The terms of reference for this specialist study (adapted from the original TOR) are to:

- . Identify areas and habitats significant to the conservation of bird species of special interest as identified from the scoping report as well as from additional evaluation of the proposed project,
- . Make recommendations towards avoiding or mitigation of potential impacts, whether related to route alignment, road construction or operations, including recommendations regarding post construction rehabilitation,
- . Do a field and desktop assessment of any impacts that may be identified, without and with proposed avoidance/mitigation measures, using the assessment method provided,
- . Assess the road design to ensure implementation of recommendations or concerns. This would be in the form of both desktop assessment and a workshop with the engineers and other specialists,
- . Provide a detailed description of construction phase mitigation requirements/recommendations and rehabilitation requirements for inclusion into the construction phase management plan.

This short report deals with the alternative routing for Sector 3: Highway Section 7, known as the “Farmer’s alternative” as well as two alternative routings in the vicinity of the farm Phesantekraal, known as Alternative B1 and B2

This report should be seen as supplementary to the report titled “R300 Extension/N21 Cape Town ring road toll project – environmental impact assessment – birds” and read in conjunction with said report.

## **2. SECTOR 3: HIGHWAY SECTION 7 (FARMER'S ALTERNATIVE)**

The alternative routing for the sector of the proposed N21 (R300), from Wellington Road to the N7/Visserhoek Interchange was visited on 18 and 28 August 2003 by my colleague Mr. Kobus Jooste. Although the alternative routing is slightly longer than the original routing, it passes almost entirely through an area extensively converted to agriculture and will have less effect on natural habitats than the original alignment.

The crossing of wetlands is also considerably less in extent than that of the original routing and from this perspective the "farmer's alternative" routing will also have less impact than the original route. The following discussion and recommendations are thus based on the reading and adaptation of the "Jooste Report", a perusal of habitat photographs and routing maps as supplied by the client and personal discussions with Messrs. Kobus Jooste, Henk Geertsema and Atherton de Villiers.

### **2.1 Species and habitats**

The most important habitats for birds in this section are some remnants of renosterveld still remaining at Km 8-9 and the crossing of the Diep River at Km 6. It must also be borne in mind that many species of birds have adapted to anthropomorphic habitats and some may even have benefited from agricultural activities. Full species lists were obtained from the Avian Demography unit at the University of Cape Town, and are given in full as **Appendix 1** (see pages 8-19). A substantial number of these species are simply recorded on a present/absent basis, are over-flights and/or vagrants, and can therefore not be expected to occur here under normal circumstances. The lists have therefore been colour-coded using the following key:

#### **2.1.1 Expected to occur commonly**

#### **2.1.2 Species occurring here that may be sensitive to disturbance**

### **2.3 Expected impacts**

Where the proposed road crosses ephemeral wetlands, populations of bird species could be isolated as these wetland areas are expected to be the prime habitat for most species. The only wetland affected by the alternative route is the Diep River crossing, where the effect will be less than on the original routing as the length of the crossing is considerably less. The same situation would occur where continuous patches of natural veld are bisected. Again this effect would be less than for the original routing as the proposed alternative routing only passes through the northern perimeter of small patches of natural vegetation at Km 8 and 9.

As can be gleaned from the colour-coded lists below, there are only four species that may be negatively impacted, not only by the proposed development, but by any physical disturbance. They are:

#### **2.3.1 Barn owls**

### 2.3.2 Secretary birds

### 2.3.3 Hoopoes

### 2.3.4 Grey-wing Francolins

## 2.4 Significance of impacts

- (a) The extent of impacts is expected to be local within site boundary **(L)**
- (b) The duration of impacts is expected to be quickly reversible **(L)**
- (c) The intensity of impacts is expected to cause only minor changes in species diversity **(L-)**
- (d) The probability of the impacts occurring would be low **(L)**
- (e) The expected impact will have a negative effect
- (f) The expected impacts will be of little consequence
- (g) The expected impacts will not be significant
- (h) It can be predicted with a high degree of confidence that the expected negative impacts will not have permanent negative effects
- (i) There are no specific legal or permit requirements relevant to this project.
- (j) The expected impacts of the proposed project are not likely to affect the project decision.

	Extent	Duration	Intensity	Status	Significance	Confidence	Probability
Without mitigation	L	L	L-	Negative	L	H	L
With mitigation	L	L	L	Neutral	L	H	L

## 2.5 Mitigation (Specific)

- Provision should be made to allow underpass access to low flying where wetlands are traversed at the crossing of the Diep River. The design should allow for maximum width of such underpasses as is consistent with engineering constraints and a minimum height of about 3 meters should be maintained.
- Provision should be made in the design of the road shoulder at important wetland crossings to avoid any oil accumulations or hazardous material spills

to end up in such wetlands. This pertains only to the Diep Rivercrossing. See also the mitigation discussion as contained in the main impact study: birds.

- The re-establishment of indigenous vegetation for rehabilitation of the road verges should be encouraged as this provides corridors to link disjointed patches of natural vegetation.
- Exotic vegetation and specifically invasive species should not be allowed for rehabilitation of road verges.
- Burning of the road verges to create patches of uneven aged vegetation should be promoted to allow for a mosaic of habitats to promote dispersal of the various species. This will be particularly important for species such as Greywing Francolin.
- *In the case of Barn Owls.* Should any breeding site of barn Owls be discovered during the course of construction, operations must be immediately halted. An ornithologist must then be called in to take either eggs or chicks for incubation/hand rearing. A suitably designed Barn Owl nesting box must subsequently be erected in the general vicinity of such a find.
- *In the case of Secretary Birds:* The same procedure for Barn Owls should be followed, although the likelihood of finding a nesting tree in this area is slim.
- *In the case of Hoopoes:* Hoopoes are cavity nesters and in this case will usually nest in abandoned buildings. Upon the discovery of such a nest, the above procedure should be followed.
- *In the case of Greywing Francolins:* Proper road edge management will compensate for the loss of suitable habitat and may even be more disturbance free than agricultural land.

## **2.6 Mitigation (General)**

These general mitigation measures, which appear in the original impact assessment for the entire road, should also apply to this section.

### **2.6.1 Design (see also main report for birds):**

- Provision must be made to allow underpass access to birds where wetlands are traversed or where continuous patches of natural vegetation are bisected. The design should allow for maximum width of such underpasses as is consistent with engineering constraints and minimum height of about 3 meters should be maintained
- Provision should be made in the design of the road shoulders at important wetland crossings to avoid any oil accumulation or hazardous material spills from ending up in such wetlands.
- Bridging rather than filling should be the preferred option in all cases where patches of natural vegetation are bisected or wetlands crossed.

### **2.6.2 Construction (see also main report for birds):**

- In the construction phase, care should be taken to ensure that the area physically destroyed or damaged is kept to a minimum by fencing off the construction sites.
- Storage of sand, cement, fuel, tarmac and other hazardous material should be at predetermined sites where the danger of it leaching into watercourses can be kept at a minimum.
- The location of borrow pits and quarries should be selected to cause minimum environmental damage.
- An Environmental Site Officer should be appointed for the duration of the construction and rehabilitation phases of the project to ensure compliance with environmental prescriptions or recommendations.
- Regular environmental training should be given to construction workers during the construction phase to ensure that individuals of the various taxa affected are properly translocated and not killed.

### **2.6.3 Rehabilitation (see also main report for birds):**

- The rehabilitation of the road verges should only be done with suitable indigenous plant species, preferably with plants that are genetically site adapted. A qualified horticulturist should advise on suitable species. Under no circumstances should invasive exotic species be used for this purpose.
- Where alien invasive plant species occur in the road reserve area it should be removed.
- No pesticides or herbicides should be used for controlling weeds or invertebrates in the road reserves. Burning of the road reserve in a mosaic pattern of uneven ages would provide the habitat diversity necessary to maintain the diversity of other taxa.

### **EVALUATION OF ALTERNATIVES B1 AND B2.**

Both the alternatives B1 and B2 in the vicinity of the farm Phesantekraal will not have any detrimental effect on the bird populations likely to occur in the area. Both the alternative routings pass through extensively altered landscapes without any natural vegetation left.

## Appendix 1: Birds of the new alignment\*

This is a summary report for squares. The number of checklists taken monthly is given, as well as the number of species present and breeding. A list of recorded species is given followed by a string of characters:

1. A string of 12 numbers (one for each month). These numbers are "percentages" of the number of times the bird was recorded against the number of checklists taken in that month, i.e. reporting rates. A star denotes that no checklists have been taken.
2. The 13th column gives the percentage of total sightings against total checklists taken, i.e. the reporting rate.
3. In column 14 is N, the number of checklists taken. For breeding records the figures have a different significance. The monthly "percentage" given here is of the number of times the species was recorded breeding in the month against the total number of breeding records, thus reflecting in which months it breeds more often. The total number of breeding records is given in the last column.

### Notation used:

- \* a percentage of 1 denotes a reporting rate of 5%-14.9%
- \* a percentage of 2 denotes a reporting rate of 15%-24.9%, and so on.
- \* R denotes 'rare' for a reporting rate of 1%-4.9%
- \* V denotes 'vagrant' for a reporting rate of <1%
- \* X denotes unseasonal breeding (<5%).

### Red Data Status:

C Critical  
E Endangered  
NT Near-threatened  
V Vulnerable  
RE Regionally Extinct

**Reference:** K.N. Barnes (Ed). 2000. *The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland*. Johannesburg: BirdLife South Africa

### Square: 3318DA PHILADELPHIA

#### Number of cards per month

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
21	25	14	22	25	25	39	40	36	30	24	19	320

#### Number of species present:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
149	163	129	140	141	132	145	154	158	172	147	131	211

**Number of species breeding:**

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC TOTAL  
 11 8 4 7 5 4 20 24 40 51 21 13 74

**All Records**

**Breeding Records**

JFMAMJ JASOND % N JFMAMJ JASOND N

-----  
 OSTRICH 001 223322 223323 23 75 333\*\*\* \*\*\*\*\* 3  
 GRT CRESTED GREBE 006 446412 223455 31 99 11\*\*1\* \*\*\*331 8  
 BLACK-NECKED GREBE 007 321121 222444 23 74 \*\*\*\*\*3\* \*\*\*33\* 3  
 DABCHICK 008 666844 444675 51 163 13\*\*\*\* \*\*\*113 7  
 WHITE PELICAN NT 049 557532 233323 33 106 \*\*\*9\*\* \*\*\*\*\* 1  
 WHITBRST CORMORANT 055 411333 343333 28 89 \*\*\*\*\* \*\*\*9\*\* 1  
 REED CORMORANT 058 556756 788775 64 205 \*\*\*\*\* 5\*5\*\*\* 2  
 DARTER 060 112323 32331\* 21 66 \*\*\*\*\* \*\*9\*\*\* 1  
 GREY HERON 062 577644 545665 52 167 \*\*\*\*\* \*\*\*\*\* 0  
 BLACKHEADED HERON 063 353846 554456 48 155 \*\*\*\*\* \*\*\*\*\* 0  
 PURPLE HERON 065 12\*\*RR \*R\*1\*1 4 12 \*\*\*\*\* \*\*\*\*\* 0  
 GREAT WHITE EGRET 066 R\*\*\*1R R\*\*\*\*\* 2 5 \*\*\*\*\* \*\*\*\*\* 0  
 LITTLE EGRET 067 222R11 231212 15 49 \*\*\*\*\* \*\*\*\*\* 0  
 YELLOWBILLED EGRET 068 23111\* 322113 18 56 \*\*\*\*\* \*\*\*\*\* 0  
 CATTLE EGRET 071 887989 999999 89 285 \*\*\*\*\* \*\*\*\*\* 0  
 BLKCRN NIGHT HERON 076 1111R2 111221 11 35 \*\*\*\*\* \*\*\*\*\* 0  
 HAMERKOP 081 R21111 2113R1 13 43 \*\*\*\*\* \*\*55\*\* 2  
 WHITE STORK 083 R\*\*\*\*\* \*11R1\* 3 10 \*\*\*\*\* \*\*\*\*\* 0  
 BLACK STORK NT 084 121RR\* R\*\*\*\*1 4 13 \*\*\*\*\* \*\*\*\*\* 0  
 SACRED IBIS 091 756886 777774 66 212 \*\*\*\*\* \*\*\*\*\* 0  
 GLOSSY IBIS 093 RR1\*R\* 11\*R1\* 4 14 \*\*\*\*\* \*\*\*\*\* 0  
 HADEDA IBIS 094 11\*\*\*R R\*11\*\* 4 12 \*\*\*\*\* \*\*\*\*\* 0  
 AFRICAN SPOONBILL 095 566443 653224 42 133 \*\*\*\*\* \*\*\*\*\* 0  
 GREATER FLAMINGO NT 096 434443 343333 32 103 \*\*\*\*\* \*\*\*\*\* 0  
 LESSER FLAMINGO NT 097 111522 22\*1R1 15 49 \*\*\*\*\* \*\*\*\*\* 0  
 WHITEBACKED DUCK 101 11\*R\*R\* \*R1RR\* 4 13 \*\*\*\*\* \*\*\*\*\* 0  
 EGYPTIAN GOOSE 102 788879 988888 81 259 21\*\*1\* \*\*\*231 15  
 S AFRICAN SHELDUCK 103 341222 1112R3 17 53 \*\*\*\*\* \*\*9\*\*\* 1  
 YELLOWBILLED DUCK 104 576846 899756 69 221 \*\*\*\*\* \*\*1432 12  
 AFRICAN BLACK DUCK 105 \*R1\*R\* R1\*\*\*1 2 7 \*\*\*\*\* \*\*\*\*\* 0  
 CAPE TEAL 106 435433 354443 37 117 \*\*1\*\*\* \*\*2231 9  
 HOTTENTOT TEAL 107 \*\*\*\*\* R\*\*\*\*\* 0 1 \*\*\*\*\* \*\*\*\*\* 0  
 REDBILLED TEAL 108 446444 656654 48 155 \*\*\*\*\* \*\*262\* 9  
 CAPE SHOVELLER 112 554645 564555 51 162 \*\*\*\*\* \*\*3331 13  
 SOUTHERN POCHARD 113 2212RR R13234 16 50 \*\*\*\*\* \*\*\*\*\* 0  
 SPURWINGED GOOSE 116 367566 766535 55 175 3\*\*\*3\* \*\*\*33\* 4  
 MACCOA DUCK 117 434222 333456 32 102 \*\*\*\*\* \*\*\*\*\* 0  
 SECRETARYBIRD NT 118 \*R\*\*R1 R\*R\*\*\* 2 6 \*\*\*\*\* \*\*\*\*\* 0  
 BLACKSHOULDRD KITE 127 987886 876679 74 236 \*\*\*\*\* \*\*\*\*\* 0