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Post-apartheid Transformations and Population Change Around Dwesa-Cwebe Nature Reserve, South Africa

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Abstract

This paper examines population changes around the Dwesa-Cwebe Nature Reserve in South Africa's Eastern Cape province, in light of Wittemyer *et al*. (2008a)'s argument that migration is leading to disproportionate population growth around protected areas. Migration to, and within, rural areas of South Africa reflects both migrants' diverse motives and the limits on movement created by socially-embedded land tenure systems, not simply an aggregation of populations around areas with potential livelihood attractions. At the 10 km resolution used by Wittemyer *et al*., contradictory trends are evident, related to long-standing livelihood differences and changes in rural-urban migration that accompanied the end of apartheid, and expansion of other rural population centres. At a finer resolution (2–4 km), the paper describes some small scale population movement toward the Nature Reserve, primarily attributable to the reversal of apartheid-era evictions, driven more by uncomfortable situations in the resettlement area than any attractions of the Nature Reserve. In conclusion, the paper raises broader questions about the causal claims in Wittemyer *et al*.'s analysis, given its lack of attention to local and regional political economic factors and the demography of migrant streams.

Keywords: South Africa, migration, resettlement, protected areas, Eastern Cape, Dwesa, Cwebe

INTRODUCTION

In their recent article arguing that rural populations are increasing disproportionately around protected areas (PAs), Wittemyer *et al*. concede that 'the mechanisms driving population changes around PAs are likely context-specific' (2008a: 124). As we note in the introduction, the authors' recognition of local context has been abandoned in popular and scholarly citations of the article, which have treated it as decisively demonstrating that PAs attract migration. This paper takes up their call for local investigations of the causes of population change. In doing so, it highlights the importance of three sets of considerations not captured in the aggregate analysis of Wittemyer: 1) the demographic composition of migrant streams to and within rural areas, 2) government policies and political-economic processes that shape employment, welfare and natural resource-based components of livelihoods, and 3) social institutions that mediate access to land and other resources, which thus shape or constrain population movement. It also reinforces the concern raised by Joppa *et al*. (2009) that apparent growth near PAs may be the inadvertent consequence of expansion of neighbouring population centres. Together these cast doubt on the hypothesis that population change on the margins of a PA is likely to be a consequence of perceptions that PAs 'provide opportunities otherwise scarce in rural areas' (Wittemyer *et al*. 2008a: 123). The paper develops these arguments through a review of recent studies of rural-rural migration in post-apartheid South Africa and a case study of Dwesa-Cwebe Nature Reserve, an IUCN Category II PA in the Eastern Cape province of South Africa (Figure 1).

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MIGRATION IN SOUTH AFRICA

In their response to Igoe *et al*. (2008), Wittemyer *et al*. argue

that migration to PA boundaries is comparable to migration to urban areas, attributable to 'the perception among migrants that economic opportunity awaits them' (Wittemyer *et al*. 2008c). Studies of migration within rural areas in post-apartheid South Africa suggest that this analogy does not hold, as strictly economic motives appear relatively unimportant among migrants to rural areas.

Over the last century, South Africa's rural population geography has been shaped by many factors beyond migrants' aspirations. Restrictions on land ownership and waves of evictions under segregationist and apartheid regimes reshaped South Africa's rural landscape, creating labour reserves with artificially high population densities, and rates of growth which had no relation either to natural population increase or voluntary migration. The beginnings of the end of apartheid led to new mobility. The 1980s were a decade of rapid urbanisation; in the midst of explosive protests against apartheid, the state rescinded some of the infamous 'Pass Laws' in 1986, and transport expanded vastly, with the 'national proliferation of minibus taxis….from 24,000 [in 1970] to 174,000 [in 1989]' (Beinart 2001: 216, 256). Since the political transition in 1994, new national policies of land reform, spatially-targeted development initiatives, infrastructure improvement, evictions of farm workers and labour tenants, and an influx of refugees and migrants from elsewhere in Africa have all contributed to population movement.

Cross' studies of migration in KwaZulu-Natal are among the few to note the importance of rural-rural migration in this shifting context.[1] In 1998, she and her colleagues observed that 'little is known about how people move from place to place, and much of what we thought we knew may be incorrect' (Cross *et al*. 1998: 635). They found that nearly a third of the population of KwaZulu-Natal had migrated in the last fifteen years, with a surprising three quarters appearing to be 'rural-rural', 'with many orientated towards advantaged rural areas around small towns and secondary cities' where housing and public amenities might be available (Cross *et al*. 1998: 635).

In a more recent study, Cross examined migrants' motives. The reasons migrants left one rural area for another were diverse, and 'there was less emphasis on employment than in other rural-origin streams, and more concern with life cycle events, evictions (21%) and family concerns (21%)' (Cross 2006: 214). The migrant stream within rural areas contained the lowest proportion of migrants demographically classified as 'economically active' (Cross 2006: 219). Likewise, migrants who moved to rural destinations were far less likely to identify

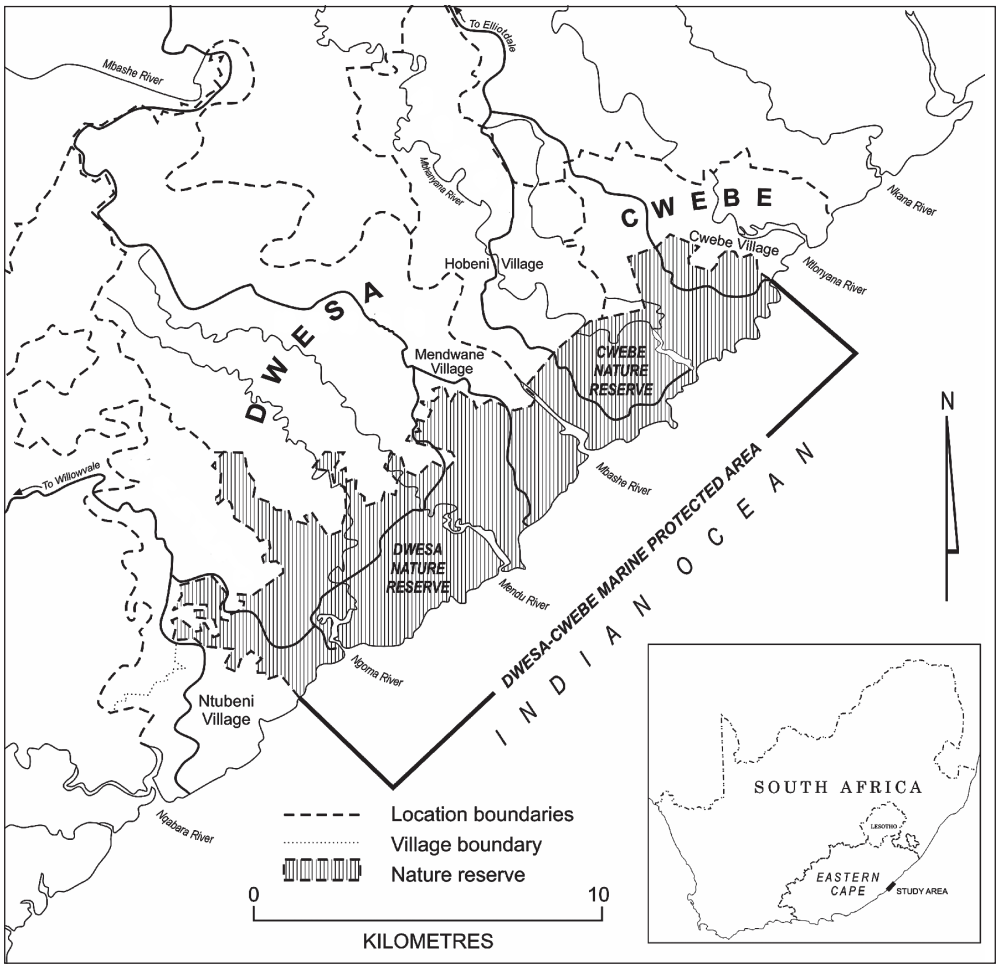

Figure 1
Map of study area around Dwesa-Cwebe Nature Reserve

employment or amenities as motivations. Table 1 illustrates the proportion of migrants identifying various reasons (multiple reasons were allowed) for moving to their current location (Cross 2006: 216). In short, people moving within rural areas appear to have more diverse, less strictly economic sets of motivations than those who move to cities.

Rural society also places constraints on in-migration. Rural-rural migrants do appear to be particularly dependent on natural resources, relying on land, grazing, and other rural livelihood activities (Cross 2006: 220). This does not mean, however, that such people could translate these needs into moving to the margins of PAs (or other areas rich in desirable resources). Copious literature on land tenure in sub-Saharan Africa has illustrated how the possibility of movement into any particular rural area is mediated by the social institutions that regulate access to land and community belonging.[2] This is an important 'deterrent' for most potential migrants to any particular rural area, but one which is not considered in Wittemyer *et al*.'s list of potential 'deterrents' (Wittemyer *et al*. 2008a: 123).

Rural tenure systems' effectiveness at excluding outsiders from settlement in an area varies for reasons related (among other factors) to levels of demand and the effectiveness and integrity of local government, traditional authorities, and kinship networks. Nevertheless, possessing the social capital—ties of kinship and/or other affiliations—necessary to access land and secure labour (McAllister 2001) for rural production is likely to be at least as important as the natural or economic properties of an area in most migrants' calculations.

In short, apartheid era resettlement and post-apartheid freedom, the differing priorities of urban and rural-bound migrants, and rural tenure institutions have all shaped post-apartheid rural migration in ways that upset the notion of migrants as simply drawn by the attractions of their destinations. To explain localised population increase as a result of the attractions of a PA would risk ignoring the many other factors that shape population mobility. In the sections that follow, I move from KwaZulu-Natal to Dwesa-Cwebe Nature Reserve in the Eastern Cape province, to show how post-apartheid dynamics and diverse motives have affected population change there. I focus first on a 10 km resolution, considering the periods 1962–2001, and then on a 2–4 km resolution, examining movement since the mid-1990s.

THE DWESA-CWEBE NATURE RESERVE

The Dwesa and Cwebe forests surround the Mbhashe river as it meets the Indian Ocean on the southeast coast of South Africa, deep in the rural 'Wild Coast', an area largely free of white settlement. The forests span approximately 18 km of coastline, and extend inward for 3 to 5 km, encompassing over 5,700 ha. The river itself is a natural, political and cultural boundary, separating the forests, Gatyana and Xhora magisterial districts, and two historically distinct populations of Xhosa speakers. Between the 1890s and the 1930s, African residents were evicted from within the forest boundary, while white settlers established the Haven Hotel and holiday cottages in the same areas. By the 1940s, cash cropping was virtually eliminated in the region, and nearly all households came to depend on remittances from migrants who oscillated between their rural homes and urban workplaces. In the late 1970s, the administration of the black 'homeland' of the Republic of Transkei fenced the forests and created the Dwesa-Cwebe Nature Reserve, eliminating all local access to forest resources and grazing.

Table 1

Percentage of migrants identifying reasons for migration

Reason for migration	Rural-rural	Rural-small town	Rural-urban
Development	9	8	2
Employment	25	34	72
Education	12	29	49
Housing	8	38	49
Services	9	23	15

Source: Cross 2006: 216

Beginning around 1990, local residents began organising a formal land claim for the Reserve, and informal actions and negotiations with the reserve management. They launched a mass protest inside the reserves during a severe drought between 1993 and 1994, drawing national media coverage. By 1995, community representatives and reserve management reached a preliminary agreement which included keeping the reserve as a PA and creating a system of joint management, with ecotourism envisioned as the anchor for future development in the region.

Population Change Within 10 km of the Nature Reserve, Through 1996

The available sources on population change around the Dwesa-Cwebe Nature Reserve at the 10 km resolution through the mid-1990s reveal contradictory trends: population declined slightly at Dwesa, and increased slightly at Cwebe. It is clear, though, that this period of restricted access, exclusionary conservation, and struggle did not lead to immigration, as rates of change remained below those of encompassing rural areas.

Moreover, despite the common factor of proximity to a PA, overall population trends on the Dwesa and Cwebe sides remain, to the present day, linked to long-standing differences in culture and livelihood between the peoples on either side of the Mbhashe river originating in the late nineteenth century. Following the 1877–1878 frontier war, the Cape Colony administration wanted a buffer zone against the defeated Xhosa king Sarhili, and settled loyalist Mfengu around Dwesa forest, west of the Mbhashe. Refugees from Natal, the Mfengu had allied with the colonial administration, and embraced Christianity, western education, and cash cropping.

The population of the Cwebe side has different origins, and distinct patterns of religion, education and labour migration. After the 1877–1878 frontier war, on the Cwebe side the armies of the defeated Gcaleka Xhosa king scattered throughout the area just east of the Mbhashe, where many of their descendants

currently live in the villages adjoining Cwebe forest. Residents of these areas rejected Christianity and education, espousing a self-consciously traditionalist 'Red' Xhosa ideology for most of the twentieth century (Mayer 1980; McAllister 2001).

As agriculture declined over the first third of the twentieth century, migrant labour became the mainstay of rural livelihoods. By the 1990s, after the end of the 'pass laws', distinct patterns of migration were in place: the relatively well-educated population of the Dwesa community of Ntubeni was more successful in finding urban jobs, and the absent proportion (37% in 1998; 32% in 2003) was nearly twice the absent proportion in the Cwebe communities; moreover, women made up the majority of migrants (Fay & Palmer 2002: 151).[3] Nearly a third of households had multiple generations absent, suggesting that entire nuclear families were migrating to town, and 38% of households in 1998 had an absent student, reflecting preferences for urban schools (Fay & Palmer 2002: 153).

Labour migration took a different course on the Cwebe side. Migrants primarily held unskilled mining jobs, where single-sex hostels allowed workers to minimise their expenditures, and labour migration was ritually incorporated in a rurally-focused ethic of 'build[ing] the homestead' (McAllister 2001).[4] Migrant demography differed accordingly: even after the end of the 'pass laws', migration remained focused on the mining industry and largely limited to adult males. In 1998, for every woman nearly two men were absent, and only about 20% of the population was absent, which went down to 17% in 2003 (Fay & Palmer 2002: 151–153).

These historical-cultural differences have affected local population density, rates of change, and perceptions of land scarcity and availability. Based on an analysis of the numbers of structures in aerial photos from 1962 to 1995, census data, and interview data, Timmermans estimated local rates of change for Ntubeni (one of the five communities adjoining Dwesa) and Cwebe village, and compiled annual percentage rates of change for the encompassing magisterial districts (Timmermans 2004: 75–76, 87). Table 2 illustrates his results. Interviews confirmed local perceptions of the changes: a majority of informants interviewed in Ntubeni in 1998 stated that it had 'either stayed the same or decreased' (Timmermans 2004: 75). In contrast, on the Cwebe side, 75% of those Timmermans (2004: 75) surveyed shared the perception that the population was growing, and his informants and my own interviewees in Hobeni (the other village adjoining Cwebe forest) shared concerns about increasing land scarcity.

Nevertheless, in both villages, the presence of an adjoining PA by itself did not lead to disproportionately high rates of population growth; rather, in this era of exclusionary approaches to conservation, rates of growth were below those of the encompassing magisterial districts. Moreover, local historical-cultural differences shaped the demographics and scale of outward migration within the area surround the PA. By themselves, these findings neither confirm or refute the local applicability of Wittemyer *et al*.'s hypotheses, but they point out the limits of examining aggregate populations around PAs, without attention to local variations and demography.

The Wild Coast Spatial Development Programme and Population Change at the 10 km Resolution from 1996 to 2001

In the midst of the negotiations over local residents' land restitution claim, in 1997, Dwesa-Cwebe was designated as a 'node' for the high profile Wild Coast Spatial Development Initiative (WCSDI), a 'public-private partnership' aimed at attracting tourism investment around nature reserves and other scenic areas along the Transkei coast. The WCSDI drew some public recognition: in two surveys of over 2,300 residents of districts along a 200 km stretch of coastline in 1997 and 2000, 22% and 20% had heard of the WCSDI (Mitchell *et al*. 2008: 125). At the ceremony marking the resolution of the land claim in 2001, the then Deputy President Jacob Zuma discussed the WCSDI before an audience of more than a thousand, exhorting them: 'Prepare yourselves people of Dwesa and Cwebe – development is coming your way!' (Palmer *et al*. 2002: 113).

Given the publicity around potential development at Dwesa-Cwebe, one might expect, following Wittemyer *et al*.'s hypothesis, that it would have attracted immigration. Census data from 1996 to 2001 suggest that its effects were limited, and very difficult to detect. Statistics South Africa (n.d.) provides census data for 1996 and 2001 organised according to the 2001 election ward numbers.[5] Table 3 compares the wards immediately adjoining Dwesa Nature Reserve (covering roughly a 10 km radius from the reserve) to the areas immediately beyond.[6]

Throughout Gatyana, the population declined slightly in rural areas in this period. The demography of decline was largely similar, characterised by movement of women and youth away from the area: both adjoining the reserve and further away, the female population declined more than the male, and roughly 90% of the male decline was among those aged 14 or under, while the decline in the female population was uniform among those aged 35 or under. In both areas, the only groups to show an increase were men aged 35 to 64 and women 65 or older.

Table 2

Local rates of population change for Ntubeni and Cwebe village and encompassing magisterial districts

Local rate (1962–1995)		District-wide rate (1960–1996)	
Ntubeni (Dwesa)	Cwebe	Gatyana district	Xhora district
-0.60%	+1.10%	+1.80%	+2.60%

Source: Adapted from Timmermans 2004

Table 3

Population change in wards adjoining Dwesa Nature Reserve and adjacent rural areas

	Local rate of change (1996–2001)
Wards encompassing and adjoining Dwesa (wards 17 and 19)	-1.78%
Adjacent rural areas (wards 12, 16 and 18)	-2.12%

Source: 1996 and 2001 census data

The main demographic difference was in the male population aged 35 to 64: around Dwesa, it grew at a rate of 0.02%, while in the more distant areas, it grew at a rate of 0.002%. While this may appear as a tenfold difference, in absolute terms these differences are extremely small (161 men or 0.6% of the 1996 population in an area of roughly 250 sq. km around Dwesa, and 26 men or 0.1% of the 1996 population in an area of roughly 450 sq. km for neighbouring wards).

Cwebe was likewise consistent with adjoining wards, though in the opposite direction (Table 4): the increases of prior years continued, exacerbated by retrenchments in the mining industry throughout this period (Kenny & Bezuidenhout 1999).

While these figures might suggest that the PA is attracting settlement, determining the causes of growth around Cwebe itself is confounded by the presence of what has become a rapidly growing small town about 8 km from Cwebe, at the far north end of ward 2, surrounding the Madwaleni Hospital (a centre for post-apartheid expansion of health services in this underserved region), the Bomvana Tribal Authority offices, and the Nobangile Secondary School in Gusi. The majority of the area of all these wards falls within a 10 km radius of Madwaleni, while roughly half of ward 23 is outside a 10 km radius from Cwebe. Ward 2 is close as the crow flies, but the Ntlonyane river bisects it, leaving only half of it easily accessible to Cwebe. Rather than a scenario where the PA is attracting population, the increases are more likely driven by the expansion around Gusi; as Joppa *et al*. (2009: 3) observe in describing a similar scenario around Kafue National Park in Zambia, 'what growth does occur in buffers is often from the growth of existing population centres incidentally expanding towards protected areas'.

Household surveys at Cwebe and southern Hobeni, the two communities within 5 km of the Cwebe Nature Reserve boundaries, confirm the likelihood of this scenario. Though a resurvey of households cannot give insight into overall population trends because it does not count absolute changes in population or the number of households, it can give insight into the migration patterns of residents of existing households. In both surveys, respondents were asked to identify resident and absent household members.[7] At Cwebe, the proportion absent increased from 13.8% in 1998 to 17% in 2003 (N=40). At Hobeni, the proportion absent increased from 19.9% in 1998 to 27.7% in 2009 (N=80). If the population increases identifiable in the census data were concentrated around the PA, one would also expect that the proportion of absent household members would decrease; instead one finds the opposite.

Table 4

Population change in wards adjoining Cwebe Nature Reserve and adjacent rural areas

	Local rate of change (1996–001)
Wards encompassing and adjoining Cwebe (wards 2 and 23)	3.9%
Adjacent rural areas (wards 20, 21, 22, 24)	1.9%

Source: 1996 and 2001 census data

The overall picture from 1996 to 2001 reveals continuities with the patterns described earlier in the paper: the Dwesa communities and adjoining areas have remained consistent with the trend towards out-migration to urban areas, while the Cwebe communities and adjoining areas have continued to be characterised by relatively rapid growth.

Assessing more recent trends decisively will follow the 2011 South African census, but the increasing out-migration observed from Cwebe and Hobeni is not surprising. Despite the high hopes for the WCSDI and ecotourism-led development, little has materialised. The WCSDI was a 'public-private partnership', which involved little direct spending by the state, and which ultimately failed to attract investors to upgrade the Haven Hotel, establish new facilities, or affect local livelihoods (Kepe 2001; Mitchell *et al*. 2008). Knowledge of the programme in the region declined as well, with only 9% of those surveyed in 2004 expressing familiarity (Mitchell *et al*. 2008: 125). In the meantime, at Dwesa-Cwebe, restitution grants from the resolution of the land claim in 2001 were still tied up in local government planning processes in 2009, providing no evidence of on-the-ground development and leaving residents frustrated (Fay 2009). While the land claim on the Nature Reserve and ecotourism proposals may have raised some expectations, development on the ground has not offered new employment or other economic opportunities, beyond occasional alien plant eradication and road work projects that employ no more than a few dozen people on short-term contracts.[8] As for natural resources, these are valuable components of local livelihoods (Timmermans 2004; Shackleton *et al*. 2007), but they do not produce a cash income, for which employment and/or state pensions and welfare grants are essential. In this context, it appears likely that historically-grounded relationships to labour markets will continue to shape population change in the absence of new local earning or employment opportunities.

Population Change at a 2–4 km Resolution

When one moves to a resolution of roughly 2–4 km, it is possible to identify some movement towards the reserve boundaries on the Cwebe side. This is largely attributable to the reversal of apartheid-era forced resettlement, rather than expanding livelihood opportunities near the reserve boundaries. Again, local processes, invisible or incomprehensible in aggregate or remotely-sensed data, shaped population change. People around Dwesa-Cwebe had been subject to a round of forced evictions in the 1970s and 1980s, the Transkei administration finally implemented a long-resisted soil conservation programme which entailed forced resettlement into dense villages, a policy known in South African administrative jargon as 'betterment'. In this case, the planned villages would also create depopulate buffer zones around the border of Dwesa-Cwebe Nature Reserve. Residents of all of the Dwesa-Cwebe communities were ordered to move during the 1970s and/or 1980s.

I focus here on the Cwebe side, the area situated closest to the existing tourism facilities inside the reserve.[9] People living

near the Nature Reserve boundary were scattered among the homesteads of neighbourhoods in 'villages' 1–3 km further from the forest, creating buffer zones along the roads leading into the forest (people in parts of Cwebe and Hobeni further from the roads were ordered to move to the new villages as well, but most did not move).

The enforcement of betterment policies was short-lived: in 1987, General Bantu Holomisa seized control of the Transkei, and by 1989, the Holomisa government had cancelled enforcement of betterment. Beginning in 1993 on the Cwebe side, people began returning to their pre-resettlement sites, and most had returned by 2005. Instead of purchasing building materials, they had built more 'traditional' huts of mud and wood, with thatched roofs, which could be inexpensively reconstructed at their prior sites.[10] The dynamics underlying the reversal of villagisation shifted over time. The first people to move included an existing employee of the Nature Reserve and others who were seeking to return to their less-crowded former sites and ancestral graves. Over time, though, the moves came to be driven more by conflict with and pressure from the original residents of the betterment 'village' (Fay 2003).

Access to the forests facilitated the reversal of villagisation. Early in the land claim negotiations from 1995 to 1999, the forests were temporarily opened under a permit-based system that made affordable building materials available during the period when people on the Cwebe side began returning to their former sites (Fay 2003: 310–314). Ironically, conflicts created by coercive conservation practices a decade before spurred movement back towards, and higher utilisation of, the area they were aimed to protect.

By 1999, the majority of those remaining in the resettlement village were those who said they were too old or too poor to move. Rather than driving people towards the Nature Reserve, poverty *prevented* them from moving. The availability of forest resources was not a primary cause for moving; while many informants mentioned relations with neighbours and access to larger sites as a motive for moving, references to the PA and the tourism facilities within were limited to those who were already employed there, who aimed to shorten their daily walk to work.

Social Control of Land and Resources

As we argued in the introduction, socially-embedded land tenure, unrecognised by Wittemyer *et al*. (2008a: 123), is an important deterrent to migration to rural areas. Its effects are evident around Cwebe: people were moving out of the resettlement village, towards Cwebe Nature Reserve, but in doing so they were moving back to their and their families' old sites, which they had generally continued to use as agricultural land. These sites were not available to prospective migrants from outside the area; they were already under the control of local residents.

Likewise, local control extends to the few areas of unenclosed commonage around the periphery of the reserve. People living next to Cwebe Forest recounted an incident around 1994, when the then village headman attempted—without their permission—to allocate part of the commonage and formerly cultivated land adjoining Cwebe Nature Reserve to an outside entrepreneur with a dubious reputation, who intended to construct huts there for tourist accommodation. As one local resident recalled, "the people here didn't agree at all—we knew that if that man came here, we could wake up to find that there are no cattle in our kraal—[so] we chased him away", and the land remained vacant (Fay 2005).

Finally, the Cwebe case illustrates the importance of social capital for access to resources besides land. Employment in the tourism facilities in Cwebe Nature Reserve is, in practice, dependent upon social ties. Since its establishment around 1922, the Haven Hotel tended to seek a more 'civilised' labour supply among the Mfengu communities across the Mbhashe river, rather than more culturally conservative adjacent areas. These hotel employees were predominantly women, who would designate a daughter or other female descendant for their job at the time of their retirement. While the hotel may have drawn migrants early in the twentieth century, its workforce has been shrinking: since 1994, the hotel has undergone several rounds of retrenchments, from roughly 80 workers down to fewer than 20 in 2009; the remaining employees are those with both seniority and a family history of employment at the hotel. Together with the practice of hiring the kin of existing employees, this situation makes it unlikely that anyone would move to the area with the intention of working at the hotel. Indeed, residents of Hobeni and Cwebe frequently complain that despite living next to Cwebe Nature Reserve, they are passed over for jobs at the Haven. The sporadic seasonal employment at the holiday cottages follows a similar pattern: members of select local families have worked with the same cottage owners for generations, passing on their position to designated successors.

CONCLUSION

Wittemyer *et al*. have begun an important conversation about the relationship between PAs and rural population change. Movement to rural areas in South Africa, however, may not fit the model they propose: their hypothesis (based on an analogy with urban migration) that migration to the boundaries of PAs is a consequence of perceived attractions of the PAs, is questionable in the light of the multiplicity of factors affecting movement to and within rural areas. At Dwesa-Cwebe, the population of areas adjoining the PA grew more slowly than encompassing rural districts from 1962 to 1996. From 1996 to 2001, the population near Dwesa decreased at a marginally lower rate than neighbouring areas, while the population within 10 km of Cwebe (but probably not along the reserve border) increased because of expanded government facilities and other opportunities distant from the reserve but within a 10 km radius of Cwebe (cf. Joppa *et al*. 2009). At the 2–4 km level, population movement largely resulted from state-imposed resettlement and its partial reversal, out of concerns for personal security and community, desire for agricultural

land, and proximity to ancestral graves, with little reference to any direct appeal of the Nature Reserve. Access to land around the Nature Reserve, and tourism and conservation job opportunities, has been structured by existing social networks that effectively exclude outsiders, highlighting a 'deterrent' that is unrecognised by Wittemyer *et al*. (2008a: 123).

While case studies cannot decisively disprove the conclusions of a meta-analysis,[11] they can highlight conceptual limitations. Cross' studies of migration in KwaZulu-Natal, and population movement at Dwesa-Cwebe reveal that migration to and within rural areas is more complex than an analogy with economically-focused urban migration would suggest. Demographically disaggregating migration streams and recognising other sources of population change within buffer areas—whether resettlement programmes and their reversal as at Cwebe, expansion of rural towns and urban areas (Joppa *et al*. 2009), or other case-specific factors—are steps which are essential to understanding the relationship between a PA and population change in nearby areas. Likewise, an understanding of historical patterns of migration appears necessary to understand the directionality of trends and their relation to any new opportunities near PAs: historically-grounded relationships to labour markets and government policies have likely affected population movements in other places as much as or more than perceived opportunities from PAs. Finally, as we argue in the introduction, trends in population movement in rural areas cannot be understood independently of the systems of land and resource tenure that affect the ease or difficulty of migration.

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Notes

1. Cross' studies did not include any migrants from towns or cities to rural areas, because the number present in the sample was too small.
2. Cousins (2007) offers a recent review; Fay (2005) illustrates variations in socially-embedded land tenure in Hobeni, adjoining Cwebe Nature Reserve; Cross *et al*. (1998: 639) discusses the importance of social networks in migration.
3. This analysis draws upon unpublished data from household surveys in Ntubeni and Cwebe in 2003 kindly provided by Robin Palmer and Herman Timmermans.
4. In 1996, mining provided 36% of total income in Xhora district, more than any other district in the Eastern Cape, while in Gatyana, it provided less than 16% (Segal 2000: 10–11).
5. This makes it impossible to decisively separate the Dwesa and Cwebe sides of the Mbhashe: the five Dwesa communities were combined in ward 19, which also included Hobeni on the Cwebe side, while Cwebe village was included in ward 2, which included rapidly-growing areas far from the Nature Reserve. Ward 13 to the west of Dwesa experienced growth of 1.18% per year, but it included the town of Willowvale. Maps of the 2001 wards can be found at http://gis.ecprov.gov.za, but GIS layers were unavailable.
6. Rates were calculated according to the UNPD average exponential growth rate equation cited in Wittemyer *et al*. 2008b: 2.
7. In contrast, the census figures are based on those present at the time of the census, and do not include people considered to be part of a household but absent.
8. Work for Water is a programme aimed at eradicating non-native plants.
9. Detailed reports on betterment on the Dwesa side are unavailable, but it appears that removals were incomplete. At Ntubeni, residents were ordered to move (Timmermans 2004: 76), but in 1998, only seven of 40 households surveyed reported having moved because of betterment. Aerial images and interviews at Mendwane suggest that betterment removals were more widespread there.
10. On the Dwesa side, where people had moved in the 1970s, and invested in their houses in the resettlement villages, they tended to stay put.
11. Dwesa-Cwebe would be particularly unsuited, as it would be excluded from the Wittemyer study as it has ecological characteristics that differ from those of adjoining rural areas (Wittemyer *et al*. 2008a: 123), and the adjoining rural areas contain (rural) settlements of over 1000 people (Wittemyer *et al*. 2008b: 1).

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