CLASSIFICATION AND DETERMINATION OF THE RESOURCE QUALITY OBJECTIVES FOR SIGNIFICANT WATER RESOURCES IN THE INKOMATI

SUMMARY OF ECOCLASSIFICATION AND EWR RESULTS AT THE KEY BIOPHYSICAL NODES (EWR SITES) AND THE DESKTOP BIOPHYSICAL NODES

EcoClassification results for the EWR sites in X2 (Crocodile) and X3 (Sabie Sand)

EIS: Moderate					_
Highest scoring metric were diversity of sensitive habitat types present e.g. wetlands (including	Driver Components	PES & REC Category	Trend	AEC↓	
floodplains containing various oxbows).	HYDROLOGY	A/B		В	
Minor impacts, mainly due to farming, exotic vegetation species and trout. Impacts are	WATER QUALITY	Α		В	
mostly non-flow related	GEOMORPHOLOGY	В	Stable	С	
Maintain the PES as only moderate EIS.	Response Components	PES & REC Category	Trend	AEC↓	
AEC down: B/C	FISH	Α	Stable	B/C	
increased abstractions for Dullstroom. Growth of Dullstroom will also result in increased sewage.	INVERTEBRATES	B	Stable	B/C	
Increased grazing causing trampling and destabilisation of banks.	RIPARIAN	A/B	Stable	B/C	
	ECOSTATUS	A/B	otable	B/C	
EWR 2 Goedehoop (Crocodile River)					
EIS: High Rare and endangered fish spp. which are sensitive to flow and quality changes. High species	Driver Components	PES & REC	Trend	AEC↓	
diversity.	HYDROLOGY	В		С	
Impacts as for EWR 1 with increased agricultural activities and decreased flows. However,	WATER QUALITY	В		С	
impacts mostly still non-flow related.	GEOMORPHOLOGY	В	Stable	B/C	
Although the EIS is high, the PES is already a B and as the impacts are mostly non-flow related, it	Response Components	PES & REC Category	Trend	AEC↓	
would not be realistic to improve the PES through flow related interventions.	FISH	В	Stable	С	
See EWR 1. Possible zero flow situations and additional impacts on moderate events.	MACRO INVERTEBRATES	В	Negative	С	
		В		С	
	VEGETATION	A/B	Negative	В	
	ECOSTATUS	В		C	
EWR 3 Poplar Creek (Crocodile River)					
EWR 3 Poplar Creek (Crocodile River) EIS: High Para and and and and and and and any some of which are consistive to flow and quality.	Driver	PES	Trend	REC	AFC
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes.	Driver Components HYDROLOGY	PES Category	Trend	REC B	aec↓ D
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation,	Driver Components HYDROLOGY WATER QUALITY	PES Category C	Trend	REC B B/C	AEC↓ D C/D
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY	PES Category C C C C	Trend Negative	REC B B/C C	AEC↓ D C/D C
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components	PES Category CC CC CC PES Category	Trend Part of the second secon	REC B B/C C REC	AEC↓ D C/D C AEC↓
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B The EIS is high; therefore the REC is an improvement of the PES. This can be achieved by improving the flow regime (low flows) and removal of exotic venetation species	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components FISH	PES Category CC CC CC PES Category B	Trend Negative Trend Stable	REC B B/C C REC B	AEC↓ D C/D C AEC↓ C
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B The EIS is high; therefore the REC is an improvement of the PES. This can be achieved by improving the flow regime (low flows) and removal of exotic vegetation species. AEC down: C/D	Driver Components HyDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components FISH MACRO INVERTEBRATES	PES Category C C C C C C C C C C C C C C C C C C C	Trend Image: Constraint of the second of	REC B B/C C REC B B B	AEC↓ D C/D C AEC↓ C C/D
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B The EIS is high; therefore the REC is an improvement of the PES. This can be achieved by improving the flow regime (low flows) and removal of exotic vegetation species. AEC down: C/D Lower flows than natural in both the dry and wet season. Associated increase in temperature and oxygen.	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components FISH MACRO INVERTEBRATES INSTREAM RIPARIAN	PES Category C C C C C C C C C C C C C C C C C C C	Trend	REC B/C C REC B B B B B B B	AEC↓ D C/D C AEC↓ C C/D C C
EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B The EIS is high; therefore the REC is an improvement of the PES. This can be achieved by improving the flow regime (low flows) and removal of exotic vegetation species. AEC down: C/D Lower flows than natural in both the dry and wet season. Associated increase in temperature and oxygen.	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components FISH MACRO INVERTEBRATES INSTREAM RPARIAN YEGETATION FCOSTATIIS	PES Category C C C C C C B C B/C B/C	Trend	REC B/C C REC B B B B B B B B B B B B B B B B B B B	AEC↓ D C/D C AEC↓ C C/D C D
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EWR 3 Poplar Creek (Crocodile River) EIS: High Rare and endangered fish, vegetation and bird spp, some of which are sensitive to flow and quality changes. PES: B/C Major problems related to upstream Kwena Dam and its operation, e.g. migration, sedimentation, changed flow regime. The changed flow regime consists of higher than natural flows in the dry season and much lower low flows in the wet season. REC: B The EIS is high; therefore the REC is an improvement of the PES. This can be achieved by improving the flow regime (low flows) and removal of exotic vegetation species. AEC down: C/D Lower flows than natural in both the dry and wet season. Associated increase in temperature and oxygen. EIS: High Rare and endangered species that are sensitive to flow and quality changes are present. There is	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components FISH MACRO INVERTEBRATES INSTREAM RIPARIAN VEGETATION ECOSTATUS	PES Category C C C C C C C C C C B/C C B/C C B/C	Trend 0 Negative 0 Stable 0 Negative 0 Negat	REC A	AEC↓ D C/D C C C C C D C/D C D C/D C C D C C D C C D C C D C C D C C D C C D C C C C C C C C C C C C C
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EWR 5 Malelane (Crocodile River)										
EIS: Very High	Driver DFC									
Rare and endangered spp. sensitive to flow and quality changes. High species taxon richness and	Components Category Trend REC AEC									
diversity of habitat types, KNP on LB.	HYDROLOGY C B D									
PES: C Change in low flows specifically in the dry season. Change in flooding regime. All impacts	WATER QUALITY C B D									
associated with sugarcane activities										
REC: B	GEOMORPHOLOGY C/D Negative C D									
The EIS is very high; therefore the REC is an improvement of the PES. Changes mostly focussing	Response PES Trend REC AEC↓ Components Category Trend REC AEC↓									
on improving the low flow regime and some land use management.	FISH C Stable B D									
AEC down: D	MACRO CONTRACTOR DE D									
Decreased low flows and periods of zero flows in some stretches of the river which will result in	INVERTEBRATES									
increased agai growin, temperature and numeric problems, loss of deeper charmer sections,	INSTREAM C B D									
	VEGETATION C Negative B D									
	ECOSTATUS C B D									
EWR 6 Nkongoma (Crocodile River)										
EIS: Very High	Driver PES Trand REC AEC									
Rare and endangered spp. sensitive to flow and quality changes. High species taxon richness and	Components Category Trend REC AEC									
PES-C	HYDROLOGY D B D									
Change in low flows, even zero flows present, specifically in the dry season. Change in flooding	WATER QUALITY C B D									
regime. All impacts associated with sugarcane activities.	GEOMORPHOLOGY C Negative C C/D									
RĚC: B	Response PES									
The EIS is very high; therefore the REC is an improvement of the PES. Changes mostly focussing	Components Category Trend REC AEC1									
on improving the low flow regime and some land use management.	FISH C Stable B D									
AEC down: D	INVERTEBRATES C Stable B C/D									
Decreased low flows and periods of zero flows in some stretches of the river which will result in	INSTREAM C B D									
increased read and vegetation growth	RIPARIAN VEGETATION C Negative B D									
	ECOSTATUS C B D									
EWR 7 Kaap (Kaap River)										
EIS: TIGH Pare and endangered on sensitive to flow and quality changes. High species taxon richness and	Driver PES Trend REC AEC									
habitat types sensitive to flow and quality changes. Thigh species taxon nonness and habitat types sensitive to flow and quality changes.										
PES: C										
Changes are flow and non-flow related. Low to zero flows present due to upstream abstractions.	WATER QUALITY D D C									
Land-use activities related to agriculture and mining. Extensive exotic vegetation present.	GEOMORPHOLOGY B Negative B C									
REC B:	Response PES Trend REC AEC↓									
The EIS is high; therefore the REC is an improvement of the PES.	FISH C Stable B D									
exotic vegetation removal	MACRO B Stable B C									
AEC D:										
Mountain View Dam will be present which will result in much lower flows than present and										
decreased floods. The channel will be narrower, some riffles will be sandier and smaller in general	VEGETATION C/D Negative B/C D									
which will result in more reeds and a narrower marginal zone.	ECOSTATUS C B D									
EWR 1: Upper Sabie (Sabie River)										
EIS: High										
Rare and endangered fish and vegetation species. Fish species present that are intolerant to flow	Driver PES Trend REC AEC									
and flow related water quality changes.	Components Category									
PES: B/C	HYDROLOGY A/B A/B B/C									
impacts due to forestry, exotic vegetation species, and abstraction. Impacts largely non-now	WATER QUALITY A/B A/B B/C									
RFC: B	GEOMORPHOLOGY B Stable B C									
The EIS is high; therefore the REC is an improvement of the PES. Inactivity of picnic siteand	Response PES Trend REC AEC↓ Components Category Trend REC AEC↓									
removal of aliens is required. Improved fish EC dependent on improved vegetation cover.	FISH B/C Stable B C/D									
AEC down: C/D	MACRO INVERTEBRATES B Stable A/B C									
Decreased low flows resulting in increased sediment with increased nutrients, turbidity,	INSTREAM B/C B C									
temperature, additional toxics. Increased vegetation exotics and reeds on bars.	RIPARIAN VEGETATION B/C Negative B C/D									
	ECOSTATUS B/C B C/D									
EWR 2: Aan de Vliet (Sabie River)										
EIS: HIGN Rare and endangered fish and vegetation species. Species prosent intelevent to flow and flow	Driver PES Trend DEC AEC									
related water quality changes.	Components Category Here Act									
PES: C										
Forestry and landuse activities, mostly non-flow related.										
REC: B	Response PES Turid Dec 100									
Changes in flow are not required to improve the state.	Components Category Trend REC AEC									
Remove exotic vegetation and cease mowing in the riparian zone. Reduce recreational	MACRO									
aisturbarices. I ne nutrient status must also be improved.	INVERTEBRATES B/C Stable B C									
Increased abstraction could lead to increased return flows that will cause problems due to	INSTREAM B/C B C									
pesticides, nutrient loading etc. Mismanagement of land use in terms of forestry and agriculture	VEGETATION Negative B D									
	ECOSTATUS C B C/D									

EWR 3 Kidney (Sabie River)											
EIS: Very High	Driver	PESSE									
rare and endangered species, taxon richness and species intolerant to now and now related water quality changes. Refuge area for biota and an important migration corridor for birds and fish	Components	Category	Trend	AEC↓							
Within KNP.	HYDROLOGY	С		C/D							
PES: A/B	WATER QUALITY	В		C							
Forestry, abstraction, Inyaka Dam and landuse activities. (Flow and non-flow related)	GEOMORPHOLOGY	B N	legative	С							
As the PES is already an A/B, the REC = the PES.	Components	Category	Trend	AEC↓							
AEC Down: B/C	FISH	В	Stable	С							
Increased abstractions, no Reserve implementation, less floods. Increased nutrients, changes in	MACRO INVERTEBRATES	В	Stable	С							
temperature, oxygen etc. Riffles lost due to sedimentation, channel shallower and sandier.	INSTREAM	В		С							
More reeds will be present in sandier areas.	RIPARIAN VEGETATION	A/B	Stable	B/C							
,	ECOSTATUS	A/B		B/C							
EWR 4 Mac Mac (Mac Mac River)											
FIS: High					-						
Rare and endangered fish and vegetation species. Species present intolerant to flow and flow	Driver	PES	Trend	REC	AEC↓						
related water quality changes.	HYDROLOGY	Category		С	C						
PES: B	WATER QUALITY	A/B		Δ	B/C						
Forestry, exotic vegetation and wastewater input. Impacts are flow and non-flow related.	GEOMORPHOLOGY	Δ	Stable	Δ	B						
The EIS is high and the REC is therefore to improve the PES by improving the fish. Improved water	Response	PES .	Trend	REC	AECI						
quality required.	Components	Category	Stable	B							
AEC down: C	MACRO		Stable		B/C						
embedded cobbles. Nutrients and temperature will increase. Increased exotic vegetation in the	INVERTEBRATES	B		B	0/0						
riparian zone.	RIPARIAN		ogativo		R/C						
	VEGETATION	AVD ····	egative		<u>Б/С</u>						
	ECOSTATOS	Ь		AVD	C						
EWR 5 Marite (Marite River)											
EIS: High.											
Rare, endangered and unique biota. Species richness high and species intolerant to flow and flow	Driver Components	PES To Category	rend	REC	AEC↓						
related water quality changes present.	HYDROLOGY	С			D						
PES: B/C	WATER QUALITY	В		В	С						
REC: B	GEOMORPHOLOGY	C Neg	gative	С	D						
The EIS is high; therefore the REC is an improvement of the PES. More natural distribution of	Response Components	PES Ti Category	rend	REC	AEC↓						
flows required. Reduce grazing and trampling, remove exotic vegetation.	FISH	B/C Neg	gative	в	C/D						
AEC down: C/D No flow releases for the EW/R less dilution and less floods due to e.g. direct abstraction from the	MACRO INVERTEBRATES	B/C SI	table	в	С						
dam. More nutrients and toxics present. Sandier river, some riffles and bedrock areas in the reach	INSTREAM	B/C		в	C/D						
will be lost, vegetation encroachment on bars and banks and embedded cobbles. Increased	RIPARIAN	B/C Neg	gative	в	C/D						
aliens, removal, grazing, and trampling.	ECOSTATUS	B/C		в	C/D						
EWR 6 Mutlumuvi (Mutlumuvi River)											
EIS: High											
Rare, endangered and unique biota. Taxon species richness high and species intolerant to flow		PES	end F	REC AF	EC↓						
and flow related water quality changes present	Driver Components	Category	ond 1								
and flow related water quality changes present.	Driver Components HYDROLOGY	Category C									
and flow related water quality changes present. PES: C Abstraction, forestry, informal settlements and landuse activities. Impacts flow and non-flow	Driver Components HYDROLOGY WATER QUALITY	Category B/C		вС	/D						
and flow related water quality changes present. PES: C Abstraction, forestry, informal settlements and landuse activities. Impacts flow and non-flow related.	Driver Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY	Category Cat	able	BC,	/D D						
and flow related water quality changes present. PES: C Abstraction, forestry, informal settlements and landuse activities. Impacts flow and non-flow related. REC: B The ELS is high and improvement requires improved system operation which improves the low flow.	Components Components HYDROLOGY WATER QUALITY GEOMORPHOLOGY Response Components	Category Image: Category B/C Image: Category PES Category Trr	able A	В С С [ес т Ае	/D D						
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EWR 8 Lower Sand (Sand River)										
EIS: High	_									
Rare and endangered species, high taxon richness and species intolerant to flow and flow related	Com	Driver Iponents	PES Category	Trend	REC	AEC↓				
water quality changes. Situated in KNP	HYDRO	LOGY	C?		С	D?				
PES: B Abstraction dame, wairs, poor landuse management, Impacts are flow and non-flow related	WATER	QUALITY	В		В	С				
REC: B	GEOMO	RPHOLOGY	С	Negative	С	Lower C				
Although the EIS is high, the PES is already in a B therefore the REC = PES. Improve the macroinvertebrate EC by increasing low flows	Re Com	sponse iponents	PES Category	Trend	REC	AEC↓				
AEC down: C	FISH		В	Stable	В	С				
More decreased low flows and longer periods of no flow.	MACRO	EBRATES	С	Negative	В	C/D				
	INSTRE	AM	B/C		В	С				
	RIPARI. VEGET	AN	В	Stable	В	B/C				
	ECOS	TATUS	В	Negative	В	С				

EcoClassification results for the EWR sites in Elands Tributary of the Crocodile (X2)¹

EWR ER1 (Elands River)								
EIS: Moderate	0							
The EIS (present) was rated as Moderate, and there were no endangered species are associated	Component	PES and REC						
with the river.	Hydrology	В						
PES: B Deleted to offerentation and nome electrostions for irrigation. Impacts are flow and non-flow	Physico chemical	A						
related to anotestation and some abstractions for imgation. Impacts are now and non-now	Geomorphology	B/C (B)						
REC: B	Fish	A/B						
Due to the moderate EIS, the REC = the PES.	Invertebrates	B						
	Riparian vegetation	В						
	EcoStatus	В						
EWR ER 2 (Elands River)								
EIS: High								
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive	Component	PES and REC						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B.	Component Hydrology	PES and REC						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being	Component Hydrology Physico chemical	PES and REC B A						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequencies is	Component Hydrology Physico chemical Geomorphology	PES and REC B A C						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequensis is present	Component Hydrology Physico chemical Geomorphology Fish	PES and REC B A C A/B (B)						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequensis is present. PES: B	Component Hydrology Physico chemical Geomorphology Fish Invertebrates	PES and REC B A C A/B (B) B						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequensis is present. PES: B Reduced flows, afforestation of the floodplain areas and some possible engineering (straightening)	Component Hydrology Physico chemical Geomorphology Fish Invertebrates Riparian vegetation	PES and REC B A C A/B (B) B D						
EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequensis is present. PES: B Reduced flows, afforestation of the floodplain areas and some possible engineering (straightening) of the active channel. Impacts are flow and non-flow related.	Component Hydrology Physico chemical Geomorphology Fish Invertebrates Riparian vegetation EcoStatus	PES and REC B A C A/B (B) B D B						
 EIS: High Endangered species, viz C. bifurcus occurs in the reach. Other flow and water quality sensitive species of particular importance include A. uranoscopus, B. argenteus, C. pretoriae and B. polylepis. The B. polylepis population in the Elands River is of particular importance due to it being isolated from L. marequensis in the Crocodile River. As a consequence, B. polylepis has developed particular variations in mouth morphology, which do not occur when L. marequensis is present. PES: B Reduced flows, afforestation of the floodplain areas and some possible engineering (straightening) of the active channel. Impacts are flow and non-flow related. REC: B 	Component Hydrology Physico chemical Geomorphology Fish Invertebrates Riparian vegetation EcoStatus	PES and REC B A A C A/B (B) B B B B						

EcoClassification results for the EWR sites in the Komati (X1)

EWR K1 Gevonden (Upper Komati River)							
EIS: High	Component	PES a	and REC				
Presence of the endangered fish, mammal, reptile and bird species. Presence of endemic fish and free species. The high importance of the area for conservation (Sengimyole Reserve, Nikomazi	Hydrology	1 20 0	C				
Wilderness Area and Transboundary Park).	Physico chemical		В				
PES: B/C	Geomorphology		С				
Major flow related impacts due to Nooitgedacht Dam – reduced low flows and floods. Forestry also	Fish		С				
impacts low flows and water quality deterioration due to trout dams and tourist developments.	Invertebrates	E	3/C				
REC: B/C	Riparian vegetation		С				
The EIS Isnigh, Indicating that an Improvement is required. However, due to the strategic	EcoStatus	E	B/C				
Maintaining the river as a Category B/C would be adequate from an ecological point of view.							
EWR K2 Kromdraai (Upper Komati River)							
EIS: High							
Presence of the endangered fish, mammal, reptile and bird species. Presence of endemic fish and	Component	PES	REC				
frog species. The high importance of the area for conservation (Songimvelo Reserve, Nkomazi	Hydrology	C/D	В				
Wilderness Area and Transhoundary Park)	Physico chemical	B/C	В				
PES: C	Geomorphology	C/D	С				
Major impacts are flow related – low flows and floods are impacted by Vygeboom Dam	Fish	С	В				
Deteriorated water quality also impacts the site	Invertebrates	С	В				
REC'S	Riparian vegetation	С	В				
The EIS is high: therefore the REC is an improvement of the PES. Improvement can be achieved	EcoStatus	С	В				
by non-flow related measures.							

¹Results are in the process of being refined. The EIS as well as the fish and macro-invertebrate results have been updated, but results for other components are still pending and 2006 data have been used.

EWR K3 Tonga (Lower Komati River)	
EIS: Moderate Diversity of habitats, the presence of rare, vulnerable and endangered fish, mammal, reptile and bird species. Presence of endemic macro-invertebrate taxa and fish species intolerant to flow. Species richness and the importance as a migration corridor for eels, Macrobracium and local breeding migrations of fish and birds. PES: E? Major problems during 2006 were related to frequent and extended periods of flow cessation, caused primarily by diversion of water at Tonga Weir; vegetation clearing and sand mining as well as deteriorated water quality. Conditions may have improved in recent years however, which may be attributed to more constant baseflow releases from Maguga Dam to meet irrigation demand in the lower Komati River and international (Mozambique) obligations. The latest information therefore indicates an improvement in the period 2006 to 2013. Revision of results is still in progress and the PES needs validation. REC: D	ComponentPESRECHydrologyEDPhysico chemicalDCGeomorphologyD/EDFishC/DC/DInvertebratesDDRiparian vegetationD/EDEcoStatusE?D
Due to the moderate EIS, the REC = the PES.	
EIS: Low Presence of two flow-dependent fish species, the sensitivity to flow changes and flow related water quality changes. PES: D Combination of flow and non-flow related impacts. The main impacts are related to reduced low flows due to forestry, water quality problems due to acid mine drainage from old gold mines, sulphates and raw sewerage, erosion and sedimentation, alien invasives and trout dams. REC: D Due to the low EIS, the REC = the PES.	ComponentPES and RECHydrologyBPhysico chemicalCGeomorphologyDFishDInvertebratesDRiparian vegetationDEcoStatusD
EWR T1Teespruit (Teespruit)	
EIS: Moderate Presence of endangered fish species and the presence of two flow-dependent fish species. PES: C Small-scale abstractions impact low flows. Deteriorated water quality in the lower reaches of the river and encroachment of alien vegetation are the main non-flow related impacts. REC: C Due to the moderate EIS, the REC = the PES.	ComponentPES and RECHydrologyBPhysico chemicalCGeomorphologyCFishCInvertebratesCRiparian vegetationCEcoStatusC
EWR L1 Kleindoringkop (Lomati River)	
EIS: High Diversity of habitats, the presence of the endangered fish, mammal, reptile and bird species. Presence of flow-dependent fish species, the high number of fish speciesand the importance of the area for conservation at a national scale. PES: C Change in low flows, due to Schoemans Dam. The dam has impacted on the geomorphology of the river. Altered fish community and vegetation has occurred. Recent data indicates that impacts on flow are ongoing, and vegetation removal, cultivation of the riparian zone and agricultural return flows impact the site. REC: C The EIS ishigh, indicating that an improvement is required. However a REC cannot be achieved by improving flows because it is probably neither feasible nor possible to improve present conditionssignificantly.	ComponentPES and RECHydrologyDPhysico chemicalB/CGeomorphologyDFishCInvertebratesCRiparian vegetationB/CEcoStatusC

EWR results for the EWR sites in the X2 (Crocodile) and X3 (Sabie Sand)

EWR	nMAR PMAR		%PMAR of nMAR	EC	Mainte	enance low flows	Droug	nt low flows	Hig	jh flows	Long	term mean		
site	МСМ	МСМ	МСМ		МСМ	(%nMAR)	МСМ	(%nMAR)	МСМ	(%nMAR)	MCM	(% nMAR)		
			-	-		Crocodile			-	-	-	-		
	15 10	14.00	0.99/	A/B PES, REC	3.8	24.8	1.54	10.13	0.93	6.14	4.69	30.9		
EWR 1 15.	EWR1	15.19	14.90	17.90	90%	B/C AEC	2.56	16.84	1.54	10.13	0.93	6.14	3.71	24.4
	47 1 1	44.80	44.80	05%	B PES, REC	23.53	49.95	9.23	19.58	3.50	7.43	26.85	57	
EWRZ	47.11			44.00	95%	C AEC	11.39	24.18	9.23	19.58	3.03	6.44	17.43	37
		9 1515.2				B/C PES	74.76	44	30.75	18.1	16.7	9.8	93.78	55.2
EWR 3	169.9		.2 892%	B REC		A time series of requirements could not be generated as improvement of th PES required flows higher than the reference time series (present day), during the wet season.								
	7544	500.0	700/	B PES, REC	216.4	28.7	74.66	9.9	46.8	6.2	260.16	34.5		
EWR 4	754.1	528.3	70%	C/D AEC	99.54	13.2	74.66	9.9	38.7	5.1	160.62	21.3		
		637.9	637.9		C PES	214.3	21.3	121.8	12.1	53.3	5.3	301.87	30	
EWR 5	1006.2			63%	B REC	349.2	34.7	121.8	12.1	74.5	7.4	404.50	40.2	
					D AEC	121.8	12.1	121.8	12.1	29.2	2.9	214.33	21.3	

EWR	nMAR	PMAR	%PMAR of nMAR	EC	Mainte f	enance low lows	Droug	ht low flows	Hig	jh flows	Long	Long term mean		
site	МСМ	МСМ	МСМ		MCM	(%nMAR)	МСМ	(%nMAR)	МСМ	(%nMAR)) MCM	(% nMAR)		
				C PES	147.8	13.9	112.7	10.6	78.7	7.4	264.72	24.9		
EWR 6	1063.1	525.2	49%	B REC	323.2	30.4	112.7	10.6	140.3	13.2	466.71	43.9		
				D AEC	123	11.6	47.84	4.5	48.9	4.6	152.03	14.3		
				C PES	25.2	14.9	11.16	6.6	10.82	6.4	38.87	23		
EWR 7	WR 7 169	86.6	51%	B REC	50	29.6	11.16	6.6	12.51	7.4	62.20	36.8		
				D AEC	10.14	6	11.16	6.6	8.96	5.3	27.72	16.4		
Sabie Sand														
				B/C PES	46.54	33.2	17	12.1	7.43	5.3	52.99	37.8		
EWR 1	140.18	109	78%	B REC	61.82	44.1	17	12.1	8.55	6.1	64.90	46.3		
	<u> </u>					C/D AEC	29.02	20.7	17	12.1	6.31	4.5	43.46	31
	262.1	199.5	1 100 5		B/C PES	51.90	19.8	29.1	11.1	11.5	4.4	73.39	28	
EWR 2			76%	B REC	81.52	31.1	29.1	11.1	13.1	5	93.57	35.7		
				C/D AEC	32.76	12.5	29.1	11.1	9.44	3.6	57.93	22.1		
	495.86	3 495 86	000.4	050/	A/B PES/REC	155.2	31.3	48.1	9.7	31.7	6.4	183.5	37	
EWR 3		322.1	65%	B/C AEC	101.2	20.4	48.1	9.7	26.8	5.4	134.4	27.1		
	05 70	54.0	700/	A/B PES/REC	20.59	31.3	6.38	9.7	4.21	6.4	24.34	37		
EWR 4	65.78	51.8	79%	B/C AEC	13.42	20.4	6.38	9.7	3.55	5.4	17.83	27.1		
				B/C PES	32.67	20.8	12.6	8	10.2	6.5	44.30	28.2		
EWR 5	157.09	89.7	57%	B REC	47.44	30.2	12.6	8	11.2	7.1	57.02	36.3		
				C/D AEC	15.39	9.8	12.6	8	8.48	5.4	31.10	19.8		
				C PES	9.99	22.2	4.63	10.3	2.83	6.3	14.58	32.4		
EWR 6	44.99	29.9	66%	B AEC	14.49	32.2	6.03	13.4	2.83	6.3	17.37	38.6		
				C/D AEC	6.21	13.8	4.63	10.3	2.56	5.7	11.56	25.7		
				C PES	5.11	17.7	2.05	7.1	3.18	11	9.15	31.7		
EWR 7	28.88	17.3	60%	B REC	7.65	26.5	3.23	11.2	3.81	13.2	11.38	39.4		
				D AEC	2.71	9.4	2.05	7.1	2.95	10.2	7.77	26.9		
	(00.6)	00 F	0.001	B PES/REC	22.85	17.1	4.54	3.4	9.75	7.3	33.80	25.3		
EWR 8	133.61	88.5	66%	C AEC	12.69	9.5	4.54	3.4	8.82	<u>6.</u> 6	24.58	18.4		

EWR results for the EWR sites in Elands Tributary of the Crocodile (X2)

EWR site	nMAR	FC	Maintenance low flows		Drought low flows		High	flows	Long term mean		
	МСМ	EC	МСМ	(%nMAR)	МСМ	(%nMAR)	МСМ	(%nMAR)	МСМ	(% nMAR)	
ER 1	50.1	B PES, REC	18.45	36.82	4.9	9.79	6.01	12	24.46	48.82	
ER 2	50.1	B PES, REC	68.46	33.98	21.77	10.8	22.23	11.03	90.7	45.02	

EWR results for the EWR sites in the Komati (X1)

EWR	nMAR	PMAR	%PMAR of nMAR	EC	Maintenand	ce low flows	High	flows	Long term mean		
site	МСМ	МСМ	МСМ		МСМ	(%nMAR)	МСМ	(%nMAR)	МСМ	(% nMAR)	
K1	158.62	108.46	68.38	B/C PES, REC	27.38	17.30	16.30	10.20	43.68	27.50	
K2	545.56	318.64	58.41	C PES	50.87	9.30	49.00	9.00	99.87	18.30	
КЗ	1021.67	489.84	47.95	D REC	101.10	9.90	74.46	7.30	175.55	17.20	
G1	29.52	21.18	71.75	D PES, REC	5.89	19.90	2.05	7.00	7.94	26.90	
T1	56.36	45.13	80.07	C PES, REC	12.75	22.60	7.15	12.70	19.89	35.30	
L1	294.31	229.53	77.99	C PES, REC	34.46	11.70	16.50	5.60	50.96	17.30	

Summary of Desktop EWRs for the biophysical nodes in the Inkomati Catchment (Komati, Crocodile and Sabie Rivers)

			MAR (1	10 ⁶ m ³)		Long-term requirements				
IUA	SQ node	River name	Natural	חפ	REC	Low	flows	Total	flows	
			Naturai	FD		10 ⁶ m ³	MAR	10 ⁶ m ³	MAR	
Inkomat	ti River Catchm	ent								
X1-1	X11A-01248	Vaalwaterspruit	26.3	22.4	С	3.73	14.2%	6.19	23.5%	
X1-1	X11A-01295	Vaalwaterspruit	15.4	12.9	С	2.81	18.2%	4.20	27.2%	
X1-1	X11A-01300		1.7	1.4	В	0.31	18.1%	0.48	28.1%	
X1-1	X11A-01354		3.9	3.1	С	0.59	15.1%	0.96	24.5%	
X1-1	X11A-01358	Vaalwaterspruit	6.6	5.7	С	1.13	17.3%	1.76	26.8%	
X1-1	X11B-01272	Boesmanspruit	51.2	41.9	С	7.76	15.1%	12.38	24.2%	
X1-1	X11B-01361		4.2	3.6	B/C	0.68	16.0%	1.14	27.0%	
X1-1	X11B-01370	Boesmanspruit	4.8	3.5	В	0.91	19.0%	1.39	28.8%	
X1-1	X11C-01147	Witkloofspruit	11.4	9.9	С	1.54	13.5%	2.51	22.1%	
X1-2	X11D-01129	Klein-Komati	21.0	17.8	С	4.04	19.2%	5.76	27.4%	
X1-2	X11D-01137	Waarkraalloop	11.7	10.9	С	2.18	18.6%	3.19	27.3%	
X1-2	X11E-01237	Swartspruit	14.8	13.8	С	2.85	19.3%	4.13	27.9%	
X1-2	X11F-01133	Bankspruit	6.5	5.8	В	1.32	20.3%	2.00	30.8%	
X1-2	X11G-01143	Gemakstroom	10.4	7.9	С	1.82	17.5%	2.72	26.1%	
X1-2	X11G-01188	Ndubazi	17.4	14.2	В	4.33	24.9%	6.07	34.9%	
X1-3	X11D-01196	Komati	95.4	51.1	С	13.39	14.0%	19.17	20.1%	
X1-3	X11D-01219	Komati	73.6	33.0	C/D	6.78	9.2%	9.04	12.3%	
X1-3	X11E-01157	Komati	118.3	72.4	B/C	20.99	17.7%	30.31	25.6%	
X1-4	X11K-01165	Poponyane	13.7	10.8	С	2.01	14.7%	3.12	22.7%	
X1-4	X11K-01179	Gladdespruit	64.4	30.8	С	8.68	13.5%	13.04	20.2%	
X1-4	X11K-01194	Gladdespruit	71.2	36.8	С	7.86	11.0%	13.59	19.1%	
X1-4	X11K-01199		2.4	1.5	D	0.36	15.1%	0.53	22.3%	
X1-5	X12K-01316	Komati	577.0	348.9	D	79.99	13.9%	122.33	21.2%	
X1-6	X12A-01305	Buffelspruit	32.0	24.2	С	7.26	22.7%	9.69	30.3%	
X1-6	X12B-01246	Hlatjiwe	22.1	17.1	С	5.04	22.8%	6.75	30.5%	
X1-6	X12C-01242	Phophenyane	6.3	5.9	В	1.80	28.7%	2.35	37.5%	
X1-6	X12C-01271	Buffelspruit	71.1	56.4	В	22.53	31.7%	28.76	40.5%	
X1-6	X12D-01235	Seekoeispruit	97.0	80.0	С	22.54	23.2%	29.58	30.5%	
X1-6	X12H-01318	Sandspruit	13.9	13.3	С	3.36	24.1%	4.43	31.7%	
X1-6	X12H-01338	Sandspruit	4.4	4.3	В	1.24	27.9%	1.64	36.7%	
X1-6	X12H-01340		4.8	4.3	В	1.48	30.6%	1.92	39.5%	
X1-6	X12J-01202	Mtsoli	66.5	58.6	В	15.92	23.9%	22.26	33.5%	
X1-6	X12K-01332	Mhlangampepa	3.4	3.4	В	1.06	30.7%	1.38	40.0%	
X1-6	X12K-01333	Mlondozi	22.4	22.3	С	4.56	20.3%	6.34	28.2%	
X1-7	X14A-01173	Lomati	84.4	72.0	В	23.24	27.5%	30.65	36.3%	
X1-7	X14B-01166	Ugutugulo	20.9	14.3	B/C	4.88	23.4%	6.61	31.7%	
X1-9	X13J-01141	Mzinti	6.3	4.2	D	0.66	10.5%	1.21	19.1%	
X1-9	X13J-01205	Mbiteni	5.9	5.1	D	0.50	8.6%	1.04	17.6%	
X1-9	X13J-01221	Komati	1000.3	535.0	D	137.12	13.7%	197.35	19.7%	
X1-10	X13K-01068	Nkwakwa	5.4	5.4	C/D	0.61	11.2%	1.23	22.7%	
X1-10	X13K-01114	Komati	1341.4	645.6	D	172.51	12.9%	242.23	18.1%	
X1-10	X13K-01136	Mambane	1.8	1.8	D	0.24	13.1%	0.41	22.4%	
X1-10	X13L-00995	Komati	1356.6	504.8	D	97.40	7.2%	150.08	11.1%	
X1-10	X13L-01000	Ngweti	4.6	2.5	D	0.35	7.5%	0.67	14.5%	
Crocodi	ile River Catchr	nent								
X2-1	X21A-01008		na	na	C/D	na	na	na	na	

IUA	SQ node	River name	MAR (10 ⁶ m ³)			Long-term requirements					
			Notural	חם	REC	Low flows Total flows					
			Naturai	FD		10 ⁶ m ³	MAR	10 ⁶ m ³	MAR		
X2-1	X21B-00898	Lunsklip	9.6	8.4	C/D	1.78	18.4%	2.49	25.8%		
X2-1	X21B-00925	Lunsklip	25.8	22.2	С	6.01	23.3%	8.07	31.3%		
X2-1	X21B-00929	Gemsbokspruit	3.8	3.3	C/D	0.71	18.9%	0.99	26.3%		
X2-1	X21C-00859	Alexanderspruit	28.8	26.2	С	6.81	23.6%	9.09	31.5%		
X2-2	X21D-00938	Crocodile	124.8	104.5	С	24.51	19.6%	29.99	24.0%		
X2-2	X21D-00957	Buffelskloofspruit	16.9	12.9	С	4.22	25.0%	5.50	32.6%		
X2-2	X21E-00897	Buffelskloofspruit	8.4	6.6	В	2.15	25.6%	2.96	35.3%		
X2-2	X21E-00947	Crocodile	125.1	104.7	В	30.35	24.3%	36.11	28.9%		
X2-3	X21F-01046	Elands	35.1	31.6	С	9.49	27.1%	12.35	35.2%		
X2-3	X21F-01081	Elands	50.8	46.8	С	13.90	27.4%	18.02	35.5%		
X2-3	X21F-01091	Rietvleispruit	3.3	3.1	С	0.90	27.1%	1.17	35.4%		
X2-3	X21F-01092	Leeuspruit	11.9	11.2	C/D	2.81	23.6%	3.70	31.2%		
X2-3	X21F-01096	Dawsonsspruit	na	na	Α	na	na	na	na		
X2-3	X21F-01100	Leeuspruit	11.9	11.2	С	3.21	27.0%	4.17	35.1%		
X2-4	X21G-01016	Swartkoppiespruit	11.4	9.7	С	2.77	24.4%	3.70	32.5%		
X2-4	X21G-01090	Weltevredespruit	5.5	4.7	С	1.31	23.6%	1.77	32.0%		
X2-4	X21H-01060	Ngodwana	59.6	36.2	В	7.61	12.8%	13.20	22.1%		
X2-4	X21J-01013	Elands	151.5	124.1	С	33.97	22.4%	46.15	30.5%		
X2-4	X21K-01007	Lupelule	29.4	22.9	В	6.59	22.4%	9.43	32.1%		
X2-7	X22A-00824	Blystaanspruit	21.0	15.0	B/C	5.76	27.4%	7.42	35.3%		
X2-7	X22A-00875	Houtbosloop	6.9	5.0	B/C	1.82	26.2%	2.36	34.2%		
X2-7	X22A-00887	Beestekraalspruit	3.7	2.7	B/C	0.96	25.9%	1.26	33.9%		
X2-7	X22A-00913	Houtbosloop	75.3	53.9	В	24.84	33.0%	31.11	41.3%		
X2-7	X22A-00917	Houtbosloop	14.8	10.6	С	3.31	22.3%	4.40	29.7%		
X2-7	X22A-00919	Houtbosloop	10.6	7.6	B/C	2.85	26.8%	3.69	34.7%		
X2-7	X22A-00920		1.7	1.2	В	0.52	30.8%	0.67	39.4%		
X2-7	X22C-00990	Visspruit	3.4	3.0	B/C	0.67	20.0%	1.05	31.1%		
X2-8	X22C-01004	Gladdespruit	16.3	10.7	С	1.80	11.1%	3.39	20.9%		
X2-8	X22D-00843	Nels	20.6	14.9	С	4.51	21.9%	6.09	29.6%		
X2-8	X22D-00846		13.8	10.0	С	3.32	24.1%	4.39	31.9%		
X2-8	X22E-00833	Kruisfonteinspruit	11.1	8.2	С	2.08	18.7%	2.96	26.6%		
X2-8	X22E-00849	Sand	8.7	6.4	С	1.71	19.8%	2.40	27.7%		
X2-8	X22F-00842	Nels	74.9	45.1	С	8.37	11.2%	14.21	19.0%		
X2-8	X22F-00886	Sand	48.9	37.3	С	9.48	19.4%	13.41	27.4%		
X2-8	X22F-00977	Nels	125.4	84.9	C/D	21.08	16.8%	30.24	24.1%		
X2-8	X22H-00836	Wit	43.0	20.0	D	3.41	7.9%	6.39	14.9%		
X2-9	X22K-01029	Blinkwater	7.6	6.8	С	1.44	19.0%	2.05	27.2%		
X2-9	X22K-01042	Mbuzulwane	1.2	1.1	В	0.34	28.7%	0.46	38.5%		
X2-9	X22K-01043	Blinkwater	5.9	5.4	В	1.43	24.2%	2.07	34.9%		
X2-10	X23B-01052	Noordkaap	50.9	33.5	D	8.66	17.0%	11.96	23.5%		
X2-10	X23C-01098	Suidkaap	61.8	37.8	С	20.12	32.6%	24.40	39.5%		
X2-10	X23E-01154	Queens	39.5	25.0	С	7.26	18.4%	10.71	27.1%		
X2-10	X23F-01120	Suidkaap	109.8	57.1	С	26.51	24.1%	34.04	31.0%		
X2-12	X24A-00826	Nsikazi	2.0	1.9	С	0.48	24.2%	0.67	34.0%		
X2-12	X24A-00881	Nsikazi	11.7	11.3	В	3.44	29.5%	4.75	40.6%		
X2-12	X24B-00903	Gutshwa	25.4	24.8	D	4.11	16.2%	6.21	24.4%		
X2-12	X24B-00928	Nsikazi	42.4	41.4	A/B	13.46	31.8%	18.65	44.0%		
X2-12	X24C-00978	Nsikazi	52.3	42.0	В	16.06	30.7%	21.15	40.5%		
Sabie River Catchment											
X3-1	X3-1 X31A-00741 Klein Sabie 14.6 11.8 C 2.15 14.7% 3.37 23.0%										
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IUA	SQ node	River name	MAR (10 ⁶ m ³)			Long-term requirements			
			Nature 1	PD	REC	Low flows		Total flows	
			Natural			10 ⁶ m ³	MAR	10 ⁶ m ³	MAR
X3-1	X31A-00783		12.1	9.5	С	3.17	26.1%	4.09	33.8%
X3-1	X31A-00786		4.7	3.6	В	1.82	39.1%	2.22	47.8%
X3-1	X31A-00794		na	na	В	na	na	na	na
X3-1	X31A-00796		na	na	В	na	na	na	na
X3-1	X31A-00803		na	na	B/C	na	na	na	na
X3-2	X31B-00792	Goudstroom	12.2	9.8	B/C	3.79	31.0%	4.75	38.9%
X3-2	X31E-00647a	Marite	79.9	62.8	B/C	20.58	25.8%	27.74	34.7%
X3-2	X31F-00695	Motitsi	43.9	35.8	С	7.82	17.8%	11.62	26.5%
X3-4	X31D-00773	Sabani	19.2	7.6	C/D	3.13	16.3%	3.75	19.5%
X3-4	X31H-00819	White Waters	28.9	16.2	С	7.51	25.9%	9.09	31.4%
X3-4	X31J-00774	Noord-Sand	45.1	20.2	D	4.21	9.3%	7.22	16.0%
X3-4	X31J-00835	Noord-Sand	12.0	11.0	D	2.91	24.2%	3.76	31.3%
X3-4	X31K-00713	Bejani	2.4	2.4	D	0.40	16.9%	0.61	25.7%
X3-4	X31L-00657	Matsavana	3.8	2.6	С	0.17	4.3%	0.65	16.8%
X3-4	X31L-00664	Saringwa	10.9	9.5	С	1.47	13.5%	2.67	24.5%
X3-4	X31L-00678	Saringwa	3.2	3.2	B/C	0.59	18.2%	1.00	30.8%
X3-4	X31M-00673	Musutlu	1.8	1.8	B/C	0.19	10.6%	0.34	19.0%
X3-6	X31K-00771	Phabeni	2.5	2.5	В	0.70	27.8%	0.97	39.0%
X3-7	X32E-00629	Nwarhele	10.6	9.9	C/D	1.93	18.2%	2.76	26.1%
X3-7	X32F-00628	Nwarhele	14.8	14.0	C/D	3.44	23.3%	4.63	31.3%
X3-8	X32B-00551	Motlamogatsana	15.4	10.4	С	2.75	17.9%	3.95	25.7%
X3-8	X32C-00558	Nwandlamuhari	49.7	25.0	С	7.64	15.4%	10.02	20.2%
X3-8	X32C-00564	Mphyanyana	3.1	2.0	С	0.05	1.6%	0.33	10.5%
X3-8	X32C-00606	Nwandlamuhari	53.2	33.7	С	8.77	16.5%	12.54	23.6%
X3-8	X32G-00549	Khokhovela	3.9	3.8	С	0.41	10.4%	0.67	17.0%
X3-9	X32H-00560	Phungwe	7.6	7.3	A	1.19	15.7%	1.98	26.1%

na: Small SQ catchment areas (less than 3km²) and hence no hydrology modelled (small flows and inaccurate at this resolution).