KROMME-GEELHOUT CONSERVANCY MANAGEMENT PLAN

The endangered plant *Brunsvigia litoralis* which occurs in the Conservancy

January 2012 – January 2017

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1. Vision

"Preservation of vegetation, wildlife and biodiversity in a unique area for present and future generations"

Motivation for establishment of conservancy in relation to the vision

Legislative motivation
The Conservancy is in line with legislative and spatial planning requirements, including the following (see also section 3.3):

- The Constitution
- The National Environmental Management Act (NEMA) – NEMA principles
- The Eastern Cape Biodiversity Conservation Plan

Unique vegetation types
The primary vegetation type in the conservancy is classified as "Humansdorp Shale Renosterveld" (Mucina & Rutherford, 2006) which is listed as endangered and inadequately conserved. The target for conservation is 29% while only 6% enjoys protection on private land. None is conserved in statutory conservation areas and the conservancy will contribute to the preservation of this unique vegetation type.

The conservancy also contains intertidal salt marshes ("Cape Estuarine Salt Marshes") and "Gamtoos Thicket". Both of these are "least threatened" but only 6% of the thicket is currently protected in conservation while the target is 19%.

The area also falls within the Albany Centre of Endemism (van Wyk & Smith, 2001) and therefore contains several species restricted to the area such as *Bobartia macrocarpa*, *Lauridia reticulata*, *Limonium linifolium*, *Metalasia aurea*, *Pavonia praemorsa, Stachys scabrida* and *Thesium scandens*. Succulent endemics / near endemics include *Delosperma ecklonis, Cotyledon velutina*, *Cotyledon woodii, Crassula lactea, Crassula mucosa, Crassula pellucida marginalis, Crassula tetragona acutifolia, Haworthia gracilis, Pelargonium pulverulentum, Senecio angulatus,* and *Roepera maritime.*
Van Wyk & Smith further note that there is a lack of species lists for the Albany Centre of Endemism and the species database currently being developed by the conservancy could contribute greatly in this regard.

Ensure sustainability
The general Kromme River area is facing increasing pressure from development including the marina at St Francis, expansion of farming areas within the catchment and sub-division and development of properties. The Kromme-Geelhout conservancy provides a contained area within which development will be in line with the principles of the conservancy, the relevant spatial planning frameworks and in keeping with the carrying capacity of the area.

2. Goals

The goals of the conservancy are outlined below along with proposed associated projects that are envisaged to take place within the next 5 years. For a summary please refer to Table 1 below.

2.1 Improve security

The aim is to improve security in the area by controlling access to the conservancy. This includes overall physical security as well as protection of the ecosystem though the prevention of poaching, unauthorized vehicle access, disturbance to rare species and damage to the fynbos caused by quadbikes and irresponsible drivers. The overall goal is to ensure that future generations can enjoy the natural beauty of the area in safety and security.

In order to achieve this goal, the following projects are proposed:

Projects:

- ***Establish access control***

A gate at the junction of the conservancy access road and the main Oyster Bay–Humansdorp road has been installed. Regular maintenance and monitoring is required.

- ***Reporting of incidents***

Incidents involving the gate (e.g. damage to the gate) are reported to a local person who can affect the necessary repairs. Incidents of unauthorized access are reported to the relevant landowner by the person detecting the incident. Incidents may also be reported via the conservancy email list.

2.2 Establish an inventory of fauna and flora in the conservancy

In order to manage the conservancy effectively, a list of the species occurring in the conservancy is needed. In particular species requiring special protection and/or management need to be identified. The following projects are proposed to assist in achieving this goal:

Projects:

- ***Mapping of vegetation types***

Although maps of vegetation types (e.g. Mucina & Rutherford and the ECBCP) do exist for the general area, they are at a coarse scale and do not reflect all of the vegetation types within the conservancy. The aim of this project is to map the vegetation at a finer scale. This will be undertaken as an on-going project over the next 5 years. The project will involve the identification of species and mapping thereof on a Google Earth image.

- ***Expansion of species lists***

The lists of fauna and flora as given in Appendices 2-11 will be expanded and updated. Input from interested parties and/or experts from outside the conservancy will be welcomed and facilitated as far as possible. We envisage that the lists will be updated on an annual basis based on information submitted by the conservancy members over the course of each year.

2.3 Capture the inventory information in a database

To allow access to all members and other interested parties and to help with identification

Projects

- ***Establish an electronic database***

An Access database (pictures plus information) – has already been established and is updated on an annual basis (copy provided to DEDEAT)

- ***Keep database up-to-date***

The database will be updated (new species information, species name changes etc) on an annual basis

- ***Publish booklet on conservancy***

The conservancy is investigating the possibility of publishing a booklet on the conservancy but this is dependent on obtaining the necessary funding. Funding could possibly be obtained from WESSA.

2.4 Remove invasive alien plant species

To maintain the indigenous fauna and flora in as pristine a state as possible by the removal of alien species and by protecting the environment from further degradation.

Projects

- ***Removal of alien vegetation***

An attempt is already being made to control the alien vegetation within the conservancy and this effort will be intensified. Trees will initially be cut down as close to the ground as possible and coppice growth sprayed with Garlon™, Timberel™ or other registered herbicides. This method has proved to be very successful. Alien seedlings will be hand-pulled whenever possible. The areas cleared will be reported on in each annual report.

- ***Follow-up of cleared areas***

Regular follow-up programmes are undertaken to ensure that the areas cleared remain free of aliens. Follow-up consists of removing seedlings by hand or by spraying regrowth. The areas followed-up on will be reported on in each annual report.

- ***Rehabilitation***

Areas that have been cleared of alien vegetation require no active rehabilitation apart from being kept clear of alien seedlings as they are rapidly re-colonised by plants from the surrounding areas. Where possible photos of areas which have been cleared and are now rehabilitating will be provided in the annual reports.

2.5 Create and maintain a network of trails

It is the intention of the conservancy to create and maintain a network of walking trails within the conservancy. The trails will be used primarily for recreational purposes, but will also be used to access areas to monitor for invasive alien plants. Some trails already exist but are disjointed and not known to all conservancy members.

Projects

- ***Map existing trails***

The existing trails will be mapped and the map made available to all conservancy members.

- ***Maintain existing ones***

This is undertaken on an annual basis or as needed by the owners of the properties concerned.

- ***Establish new trails***

A long-term project is to link existing paths and create new ones.

2.6 Ensure effective waste management

Currently all household waste is removed by the owners and disposed of at the Municipal landfill site in Humansdorp. The houses all operate on a septic tank system but these tanks are all more than 3m above the high water mark and the risk of pollution is thus considered negligible. Recycling is currently not practical due to the lack of facilities to take the recycled waste to.

Projects:

- ***Collect litter from river banks***

  Litter often accumulates on the banks of the river especially after the holiday season or if floods have washed debris down the river. Collection of litter is undertaken on an “as needed” basis by the respective landowners.

- ***Reduce potential littering***

  Efforts will be made to curtail littering by education of the property owners, their guests and local residents.

2.7 Undertake monitoring & research

It is planned to monitor the environment on a regular basis and all species lists and climatic data will be updated as new information becomes available. Research into all aspects of the environment by any interested parties will be actively encouraged.

Projects:

- ***Climate change***

  Climate change is a reality and it is hoped that the species lists can be used to monitor any significant changes in vegetation types. Due to the magnitude of this project it has been identified as a very long term goal.

- ***Updated species lists/expand knowledge***

Van Wyk & Smith (2001) note that there is a lack of species lists for the Albany Centre of Endemism and the species lists currently being compiled by the conservancy could contribute greatly in this regard.

2.8 Maintain existing infrastructure

The key infrastructure in the conservancy consists of the main access road and Telkom and Eskom lines. Telkom and Eskom are responsible for the maintenance of their own infrastructure while responsibility for the road lies with the land users and not the local authority. The road is thus jointly maintained by the conservancy members and other property owners that use the road.

Projects:

- ***Road maintenance***

The road requires periodic maintenance to ensure accessibility (for members as well as for emergency services) and to prevent erosion through uncontrolled run-off.

2.9 Provide comment on relevant developments

The conservancy acts as a watchdog body and comments on various developments in the area if appropriate. This is usually done by registering as an IAP (Interested and/or Affected Party) via the EIA process.

Projects:

- Register as IAPs for developments e.g. for the proposed Thyspunt nuclear power station
- Act as advisory body for proposed developments within the conservancy by conservancy members
- Provide input for the Kromme River Committee (which is an umbrella body representing stakeholders along the entire river and marina areas) via representation of a conservancy member on the River Committee.

2.10 Adhere to fire management requirements

The following provisions of the Veld & Forest Fires Act (101 of 1998) are of relevance:

Chapter 2 – fire protection associations

It is not the intention of the Conservancy to form a new fire protection association but to rather link in with existing ones where possible as this would be more effective in achieving the overall aims of the Act. As per section 3(1) of this chapter, the formation of a fire protection agency is voluntary ("*owners **may** form an association…")* unless the Minister determines otherwise.

Section 12 – duty to prepare and manage firebreaks

As per Section 12(1), the Conservancy acknowledges the need to prepare and maintain a firebreak. As per the provisions of Section 12(7), a common firebreak will be established rather one on each individual property.

Chapter 5 – fire fighting

The conservancy will as part of their fire management plan take stock of available firefighting equipment and resources (such as the local fire department) and will map water sources available for use in firefighting.

Projects:

- Implement a fire management plan
- Submit a map of available water reservoirs to the Humansdorp Fire Department
- Approach neighbouring farms to ascertain if it is possible to use any fire fighting equipment or manpower which they may have available

2.11 Ensure smooth running of the conservancy

Certain administrative tasks are required to ensure that the conservancy functions optimally. This is especially important as most of the members are not based at the conservancy full time but utilize it throughout the year for holidays.

Projects:

- Regular meetings plus minutes thereof
- Ensure mailing list of conservancy members is up-to-date and members are alerted to relevant matters
- Ensure management plan is up to date and a new plan submitted every 5 years or as DEDEAT requires
- Submit an annual report to DEDEAT

Table 1. Summary of goals and projects

Goal	Project	Anticipated time-frame
Improve security	Access control	Completed
	Report incidents	On-going
Fauna & Flora inventory	Mapping of vegetation types	On-going
	Expand species lists	2012 – 2016 (annually)
Capture inventory on database	Establish database	Completed
	Annual database updates	2012 – 2016 (annually)
	Publish booklet	2015
Alien plant removal	Remove alien plants	On-going
	Follow-up	On-going
	Rehabilitation	On-going
Trails	Map existing trails	2012
	Maintain existing trails	On-going
	Establish new trails	2015
Effective waste management	Collect litter from river banks	As required
	Reduce potential littering	As required
Maintain existing infrastructure	Road maintenance	2012
Monitoring/research	Climate change- plant response	2016
	Updated species lists	2012 – 2016 (annually)
Act as commenting body	Register and comment as IAPs on relevant developments	As required
	Vet proposed developments within the conservancy	As required
	Provide input for River Committee	As required
Fire management	Implement a fire management plan	2012
Running of conservancy	Regular meetings	2012 – 2016 (annually)
	Updated mailing list	On-going
	Management plan up-to-date	2012
	Annual reports	2012 – 2016 (annually)

3. Background information on the conservancy

3.1 History of the area

The area of land covered by the conservancy was originally all owned by Dr FW Morrison. He was a keen naturalist and lover of 'wild places' and was always concerned about the possibility of commercialisation and over-development. It was Dr Morrison who had the foresight to include the no camping, leasing or further subdivision clauses in the title deeds of all the properties he sold.

3.2 Reason for establishment

In recent years the serenity, natural beauty and biodiversity of the area have been threatened by the invasion of many alien plant species as well as by an upsurge of crime in the area. These problems have become too big for any single property owner to cope with alone and it has become obvious that united action is required. A meeting of all interested landowners was therefore held in January 2004 at which a decision was taken to apply for conservancy status. A further meeting was held in January 2005 at which a committee was elected. The landowners and a representative of DEDAET attended this meeting.

A formal certificate of recognition was issued by DEDEAT on 14 June 2009.

3.3 Applicable legislation, policy and guidelines

Title of legislation, policy or guideline:	Administering authority:	Applicability
The South African Constitution	-	Right to safe and healthy environment
The National Environmental Management Act (NEMA)	DEA	NEMA principles
The EIA regulations published in terms of NEMA (Listing Notices 544, 545 and 546)	DEA/DEDEAT	If listed activities are triggered in future
The National Forest Act	DAFF	If coastal thicket is to be disturbed
The National Water Act	DWA	If required in future
The National Heritage Resources Act	SAHRA	If required in future
Eastern Cape Biodiversity Conservation Plan	DEDEA	See below
Kouga Spatial Development Framework	Municipality	Within spatial development objectives

Eastern Cape Biodiversity Conservation Plan

According to the ECBCP, the conservancy falls partly within critical biodiversity areas (dark green on the figure below) which should be maintained in their natural state. The remainder of the conservancy is identified as "cultivated land" although this is not the case. Many of these "cultivated areas" are covered with Humansdorp Shale Renosterveld which according to Mucina and Rutherford (2006) is endangered. It is likely that the scale of the ECBCP is not fine enough to identify these renosterveld areas.

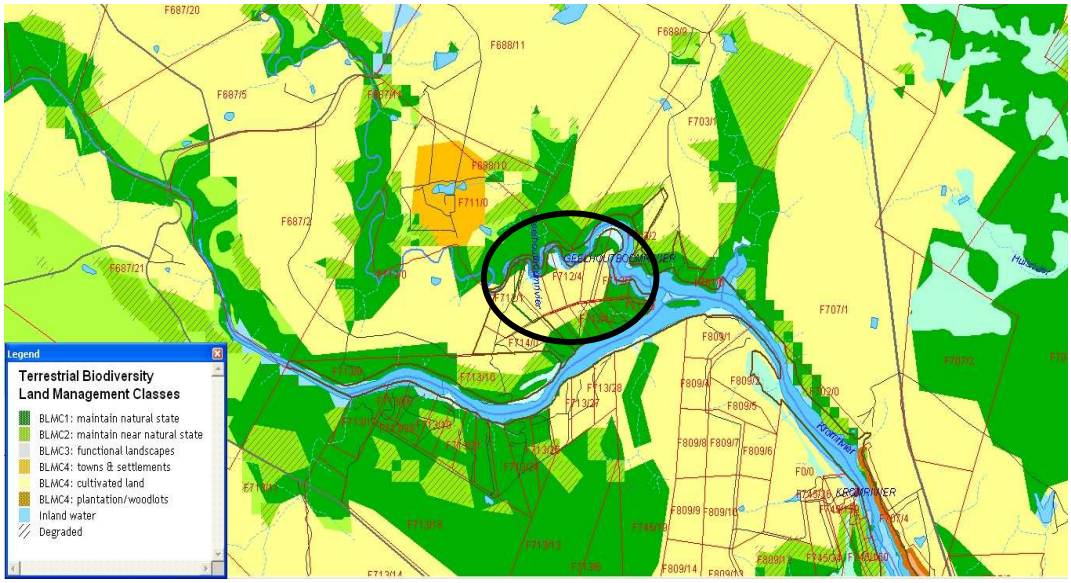


Figure 1: ECBCP map

3.4 Conservancy details and landowners

Name of conservancy

The name of the conservancy is the Kromme-Geelhout Conservancy

Total area

The total area of the conservancy is 148.1ha.

Locality and boundary description:

The conservancy lies on a peninsula between the Kromme and Geelhoutboom Rivers in the district of Humansdorp. It extends from approximately 24º46'50"E in the east to 24º45'25"E in the west and from 34º07'25"S in the south to 34º06'40"S in the north. The general geographical location is shown in Figure 2.

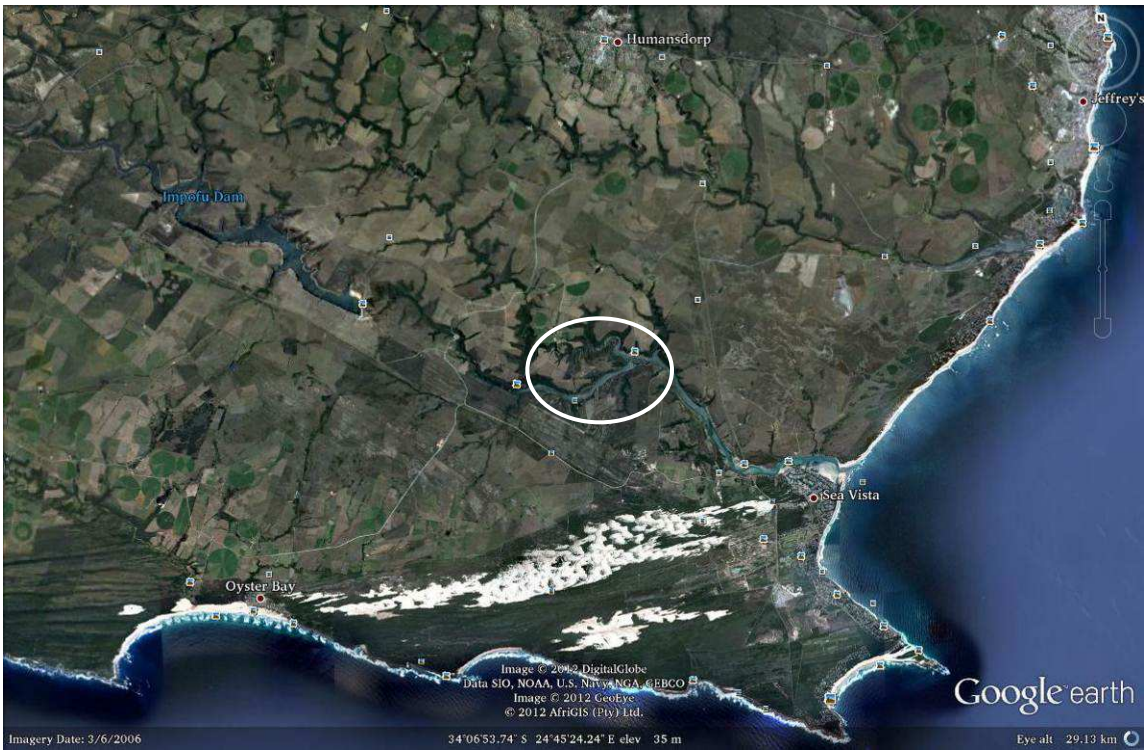


Figure 2: The geographical location of the conservancy

Figure 3: The plots within the Kromme-Geelhout Conservancy

The conservancy includes most of the land on the peninsula between the Kromme and the Geelhoutboom rivers as shown in Figure 3. At present the conservancy excludes a single property (Portion 1), which is involved in commercial activities. It is hoped that this property will be added to the conservancy at a later date.

Responsible regulatory authorities:
Responsible regulatory authorities include:

- The Cacadu District Municipality
- The Kouga Local Municipality
- DEDEAT: Western Region, Jeffrey's Bay Office

  DEDEAT contact person and details:
  Gerrie Ferreira
  DEDEAT
  PO Box 1733
  Jeffrey's Bay 6330
  Tel: 042-2920339

Table 2 Property owners and contact details

NAME	ADDRESS	TELEPHONE/FAX	E-MAIL
Syd Lippstreu	PO Box 10534 Linton Grange 6015	Home: 041 775 1412 Cell: 082 469 2424 Kromme: 0422951554	lipps@aerosat.co.za
Jan Vosloo Skuilwater Beleggings cc (CK91/25625/23)	Skuilwater Kromme River Humansdorp District	Town: 042 296 0842 Kromme: 0422952205 Cell: 083 261 4181	cwstuka@netactive.co.za
Marist Brothers (Brother Christopher)	Box 1945, Uitenhage 6230	Tel/Fax:041 992 1287	muth@telkomsa.net
The Evans Investment Trust c/o Bryn Evans	20 Erica Avenue, Cotswold, Port Elizabeth 6045	Home: 041 364 1211	Lndevans5@gmail.com
Rod Philip (Rod Philip Family Trust)	10 The Grange, Church Road, Walmer 6070	Home: 041 367 1648 Fax: 041 581 6056 Cell: 082 550 8936	rodfdphilip@gmail.com
Rosanne Morgan c/o Jess Morgan	32 Victor Road Hout Bay 7806	Home: 021 790 0664 Cell: 082 777 3024	jess@reddwestdesign.com
Martheanne Finnemore	5 Casa d'Oro, Admiralty Way, Summerstrand, Port Elizabeth 6001	Mobile: 083 659 2744	finn@intekom.co.za
Melissa Dyer	9 Muirfield Road, St Francis Links, St Francis Bay 6312	Home: 042 294 0556 Kromme: 0422952611 Cell: 082 800 1195	ndyer@telkomsa.net
Gayle Youthed	PO Box 242, Grahamstown 6140	Home: 046 622 6423 Work: 046 622 9698 Kromme: 0722881829	gay@nisc.co.za
Gavin Morrison	73 The Orchards, University Drive, Pinelands 7405	Home: 021 531 8699 Kromme: 0422951280	Morrison@netactive.co.za
Geoff Blackburn	PO Box 1498, George 6529	Home: 044 802 8400 Cell: 071 676 0721	geoff.blackburn@za.sabmiller.com

Property ownership details

Note:
The farm Eastcot is the remainder of Portion 10 (a Portion of Portion1) of the farm Klein River No 713 in the division of Humansdorp and is a private nature reserve declared in terms of Section 12(4) of the Nature and Environmental Conservation Ordinance. It is known as Eastcot Private Nature Reserve gazetted 20/201987.PN65/1987.
Portions 2-13 are all Portions of Portion 1 of the farm 712, District of Humansdorp

Table 3 Property ownership details

OWNER	PROPERTY NAME	DEED OF TRANSFER	SITE	AREA
Syd Lippstreu (SLA Trust)	Eastcot	T48780/1984 dated 10/07/1984	Portion 10, A Ptn of Ptn of farm Klein Rivier 713.	50.4612 ha
Jan Vosloo Skuilwater Beleggings cc (CK91/25625/23)	Skuilwater	T68811/1991 dated 1991	Portion 2	9.3011ha
Institute of the Marist Brothers of the Schools (Brother Christopher)		T3440 dated 15/03/1950	Portion 3 Portion 4	10.3638ha
The Evans Investment Trust	Little Woods	T1438/1996 dated 09/01/1996	Portion 5	9.7205ha
Rod Philip Family Trust	Ripon	T6913/1995	Portion 6 Portion 7	7.3273ha 4.1905ha
Rosanne Morgan		T15782/86 dated 1986	Portion 8	2.4921ha
Martheanne Finnemore		T55020/89 dated 25/9/1989	Portion 9	2.6914ha
Melissa Dyer	The Property	T25257/1977 dated 20/07/1977	Portion 10	4.1994ha
Gayle Youthed	Melkhout	T1915/1979 dated 06/02/1979 T671/1977 dated 26/01/1977 T588865 dated 1983	Portion 11 Portion 13 Half share portion 12	4.9781ha 4.6128ha 4.6434ha
Gavin Morrison	Kingfisher Cottage	Portions 11 & 13: T670/1977 dated 26/01/1977 Portion 12: T588865 dated 1983	Portion 14 Portion 15 Half share portion 12	4.8946ha 4.7923ha
Geoff Blackburn	The Rest	T18152/2003 dated 2003	Portion 16	23.4204ha
TOTAL				**148.0889ha**

Servitudes

Property owners are responsible for a pro-rata share of the upkeep of servitude rights of way over adjoining properties. There are also servitudes allowing private access and the storage and diversion of water from the Kromme River over adjacent properties. Currently none of these rights are being exercised and any such proposed activities would be subject to the approval of the Department of Water Affairs (fresh water) or Marine & Coastal Management (salt water). The title deeds of each property include restrictions on sub-division, leasing and camping.

Eskom and Telkom also have servitudes/right of way across the properties.

4. Conservancy functioning/management

Constitution
The constitution of the conservancy is attached as Appendix 1.

Communication

- **Meetings / forums**
  Meetings of the conservancy members will be held as laid down in the Constitution (Appendix 1). Such meetings include the annual general meeting of members of the conservancy which shall be held annually at a place and time determined by the executive committee. Written notice of such annual general meeting shall be given to each member at least 14 days prior to the intended meeting. The executive committee may at any time also convene a special general meeting, provided that notice is given in the same manner as for an annual general meeting and the matters to be discussed are clearly stated in such notice. A special general meeting must be convened if one-third or more of the members request such a special meeting.
- **Email communication**
  The conservancy maintains an updated list of members' email addresses and the chairperson or the secretary distributes information when necessary. This email list is also used by any member wishing to raise any issues.
- **Liaison with other organizations**
  The conservancy has representation on the River Committee as well as links to WESSA

Annual report
A copy of the annual report will be submitted to DEDEAT every year.

IAP complaints
All complaints received will be forwarded to the chairperson who will record them as well as the response/action taken. Efforts will be made to resolve complaints to the satisfaction of all parties concerned.

Administrative matters

- ***Asset management:***
  All members of the conservancy will be responsible for a pro-rata share of the upkeep the communal access road, road signs and the access control system.

- ***Personnel management:***
  No staff are employed on a full time basis. Local residents may be employed on a part-time basis from time to time to help with such projects as the eradication of alien trees or road repair.

- ***Financial management:***
  The financial affairs of the conservancy will be handled by the Treasurer as laid down in the Constitution (Appendix 1)

- ***Constitution:***
  Amendments to the constitution may be made as given in Section 10 of the Constitution (Appendix 1).

- ***Sub-committee activities:***
  Sub-committees may be appointed from time to time to undertake specific tasks such as the installation of the access control system, road maintenance or the removal of specific areas of alien vegetation.

- ***Training:***
  Since the conservancy does not employ any permanent staff no formal training will be undertaken. Contract staff will be trained to do the specific task required of them if necessary.

- ***Security management:***
  Land access to the conservancy is controlled by means of a security gate, which has been placed on the main access road near its junction with the road to Humansdorp. No control

over river access is possible while the owners are away. Members keeping an eye on each other's houses when the owners are not present will improve security.

- ***Development control:***
  Any changes in such things as roads or land use, which affect the conservancy as a whole, will be approved by a majority of the conservancy members before being undertaken.

- ***Standards:***
  The speed limit along the access road will be 40 kph and this will be indicated on signs along the road. The cost of maintenance of any road signs will be on a pro-rata basis.

- ***Use of poison:***
  The only poisons used within the conservancy are the herbicides used to control alien invasive plants and some cattle dip, which is used on the farm Eastcot. At present very limited quantities of these chemicals are used. The herbicides (less than 1 litre at a time) are brought in by the owners when they come on holiday. All diluted herbicide is used up and there is no waste to dispose of. Any surplus concentrate is stored in a locked room while the owners are away. No more than 500ml of cattle dip is used on Eastcot at any given time. The use and storage of these chemicals poses no environmental threat.

5. Physical description

5.1 Overall description

The conservancy covers 148 hectares of land on the peninsula formed between the confluence of the Geelhoutboom and Kromme Rivers. This land is split into 14 portions ranging in size from 2-50 hectares. Improvements on each property typically include a house, dirt access road, Eskom line and borehole. Apart from this infrastructure, the properties are in their natural state.

From the rivers the land generally slopes fairly steeply to where the vegetation transitions from Gamtoos Thicket to Humansdorp Shale Renosterverld. At this transition point the land flattens out and the top of the peninsula is flat with only a few very minor undulations which are typically along small drainage lines. Where salt marshes occur they do so on the river banks in the transition zone between the river and the riverine thicket.

5.2 Geology

The conservancy is part of a coastal terrace into which the Geelhoutboom and Kromme Rivers have incised themselves. The underlying rocks are slates and shales belonging to the Bokkeveld group with hydrothermal quartz intrusives in places. These shales are overlain unconformably by a lateritic conglomerate (marine pebbles), which forms the terrace surface.

Figure 4: Rock types

Mineralisation: The rocks of the Bokkeveld group are notoriously poorly mineralized. The hydrothermal quartz intrusives, however, do carry traces of gold and an unsuccessful attempt was made in the early 1900s to mine one of these quartz veins occurring on the Eastcot property (see Section 8). Some clay and ochre occurs at the base of the lateritic conglomerate but these are of no economic significance.

5.3 Water resources

The conservancy is surrounded on three sides by estuarine rivers and there are no surface fresh water resources.

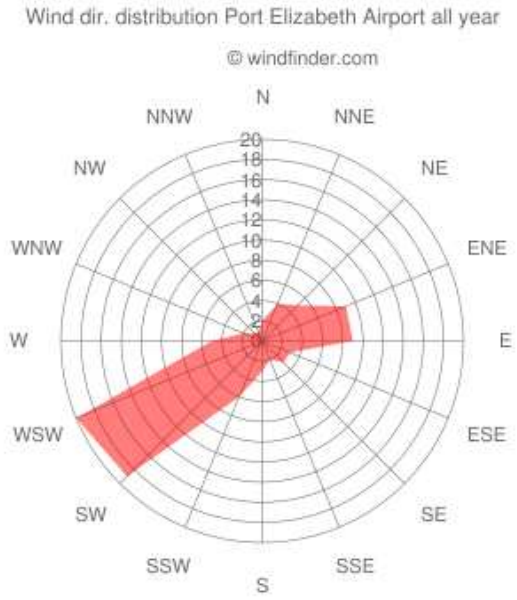
Groundwater in the area is not abundant and has a fairly high salt content, but is generally suitable for domestic use.

5.4 Climate:

The climate is temperate with generally nonseasonal rain with slight optima in March and November. The average annual rainfall is approximately 600-800mm p.a. Further rainfall information will be recorded as it becomes available.
The average maximum daily temperature for the region is 24° in January and the average minimum daily temperature is 9° in July. The closest official weather station is at Port Elizabeth Airport and the following statistics are available.

Port Elizabeth Airport (ELIZBETH)
Statistics based on observations taken between 9/2001 - 1/2012 daily from 7am to 7pm local time.

Month of year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	SUM
	01	02	03	04	05	06	07	08	09	10	11	12	1-12
Dominant Wind dir.													
Wind probability > = 4 Beaufort (%)	61	57	54	45	41	37	42	49	58	65	66	65	**53**
Average Wind speed (Knots)	14	13	12	12	11	10	11	12	13	14	14	14	**12**
Average air temp. (°C)	24	24	23	21	19	17	16	17	18	19	21	22	20
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**



A limited range of rainfall statistics is available for the Kromme-Geelhout Conservancy due mainly to the fact that available rain gauges can only be emptied when members are in residence over the holiday season. An effort will be made to gather more climate information.

Table 4: Rainfall figures for the conservancy

DATE	RAINFALL (mm)
1 Jul 2002 to 30 Sept 2002	290
1 Oct 2002 to 7 Jan 2003	147
8 Jan 2003 to 28 Mar 2003	122
29 Mar 2003 to 15 Jun 2003	214
Total July 2002 to June 2003	**773**
13 Jul 2003 to 1 Oct 2003	171
2 Oct 2003 to 31 Dec 2003	94
1 Jan 2004 to 13 Feb 2004	74
Total July 2003 to February 2004	**339**

5.5 Land uses:

The predominant land-uses are open space and recreation. Recreational activities (swimming, boating) are generally concentrated on the river and river banks, while some (such as walking, running and cycling) occur throughout the conservancy area. The rest of the land is used as open space. There is also some very limited farming on the Eastcot property where approximately a dozen cattle are kept on 40-45 hectares.

5.6 Vegetation description:

The area covered by the conservancy falls within the limits of the Albany Centre of Endemism (Van Wyk and Smith, 2001). A number of plants are found which are endemics / near endemics to the Albany Centre. Non-succulent species include *Bobartia macrocarpa*, *Lauridia reticulata*, *Limonium linifolium*, *Metalasia aurea*, *Pavonia praemorsa, Stachys scabrida* and *Thesium scandens*. Succulent endemics / near endemics include *Senecio angulatus, Cotyledon velutina*, *Cotyledon woodii, Crassula lactea, Crassula mucosa, Crassula pellucida marginalis, Crassula tetragona acutifolia, Pelargonium pulverulentum, Haworthia gracilis, Delosperma ecklonis* and *Roepera maritima.*

Figure 5: Some endemic plants

Vegetation types

The conservancy contains a number of different vegetation types which include:

- Fynbos
- Gamtoos (Riverine) Thicket
- Tidal wetlands
- Seasonal wetland
- Agricultural land

Each of these vegetation types is described in more detail below and the areas covered by each are shown in Figure 6.

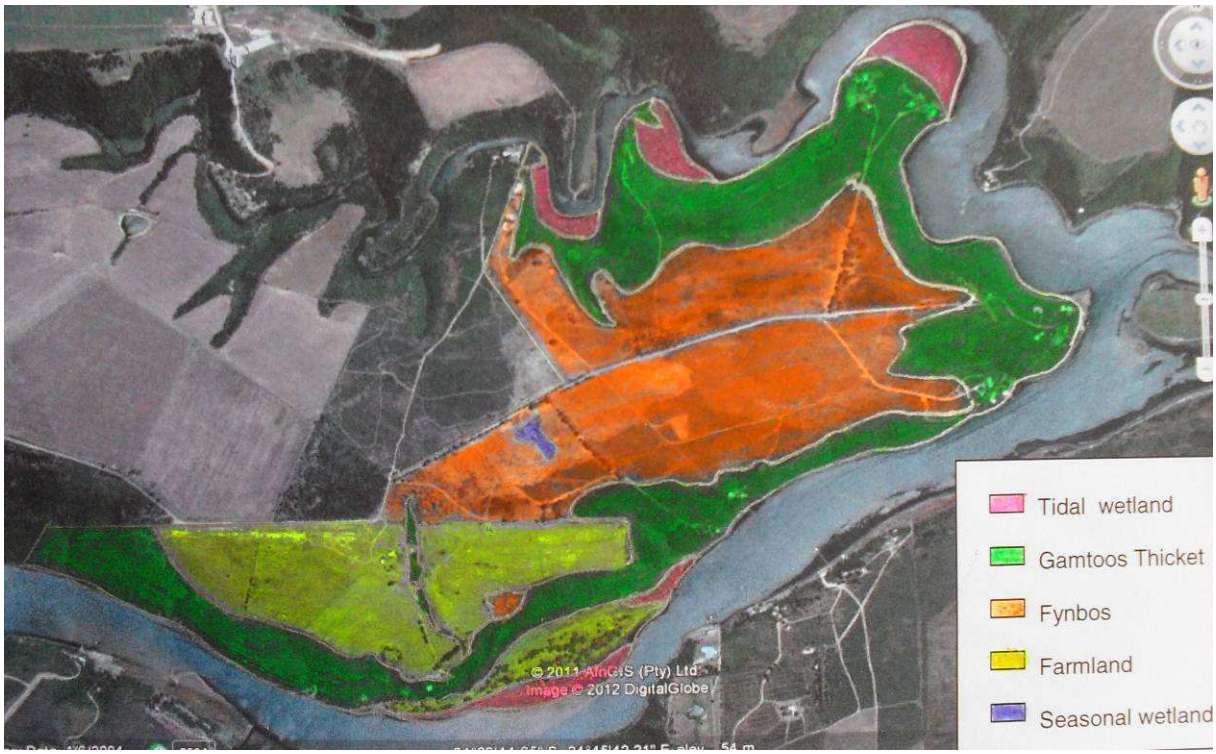


Figure 6: The vegetation types

Fynbos

The conservancy falls within the Fynbos Biome and is classified as Humansdorp Shale Renosterveld (Mucina & Rutherford (eds.) 2006) This veld type was formerly known as Coastal Renosterveld or South Coast Renosterveld (Low & Rebelo, 1996). Within the conservancy the fynbos element is found mainly on the raised plateau between the Kromme and Geelhoutboom Rivers. This fynbos has a high proportion of grasses such as redgrass (*Themeda triandra*), ratstail dropseed (*Sporolobus africanus*), velvet signal grass (*Brachiaria serrata*) and *Pentaschistis pallida*. Other typical and dominant plants include *Hermannia flammea*, *Chaetacanthus setiger* and *Indigofera denudata*. A complete list of the indigenous plant species is given in Appendix 2.

Figure 7: Some typical fynbos plants

Figure 8: Humansdorp Shale Renosterveld

Gamtoos Thicket

The steeply sloping banks of the rivers are covered with Gamtoos Thicket (Mucina & Rutherford (eds.) 2006).

Figure 9: Gamtoos thicket

This thicket was formerly classified as Kromme Forest Thicket. The generally north-facing slopes on the Geelhoutboom River side of the conservancy are hotter and drier than those on the south-facing Kromme River side. The vegetation on the north-facing slopes is shorter and more stunted than that on the south-facing slopes. Although many species are common to both slopes there are some differences in community structure. Some of the dominant species in the thicket are *Hippobromus pauciflorus*, *Euclea undulata* var. *undulata, Mystroxylon aethiopica* and *Olea europaea africana.*

Figure 10: Common thicket species

There are a number of very old *Podocarpus falcatus* trees on the farm Eastcot. These trees are some of the few in the area which escaped the devastating fire which swept the region in the late 1800s.

Tidal wetlands

There are a number of tidal wetlands along the banks of both the Kromme and the Geelhoutboom rivers. These wetland areas are only flooded at very high spring tides. Common plants include *Sarcocornia perennis*, *Sarcocornia pillansii*, *Salicornia meyeriana, Chenolea diffusa* and *Triglochin striata*.

Figure 11: Tidal wetland plants

Seasonal freshwater wetlands
There is only one small freshwater wetland in the conservancy which has largely dried up due to alien *Eucalyptus* trees. Remnants of wetland vegetation include *Drosera cistiflora, Grammatotheca bergiana* and *Wurmbea stricta*.

Figure 12: Freshwater wetland plants

IUCN listed plants (International Union for Conservation of Nature)
The only plant that is listed as being Endangered (Victor and Dold, 2003; Red List of South African Plants) is *Brunsvigia litoralis,* while *Bobartia macrocarpa* and *Pauridia minuta* have been listed as Near Threatened. Plants which were previously listed in the Red Data list as 'threatened with extinction' but which are now listed as Least Concern (LC) or Rare (R) (Victor and Dold, 2003) include *Agathosma ovata* (LC)*, Bonatea speciosa* var*. speciosa* (LC), *Carpobrotus delisiosus* (LC), *Cotyledon velutina* (LC), *Gladiolus maculatus* (LC), *Pentaschistis pallida* (LC)*, Podalyria burchellii* (LC)*, Selaginella pygmaea* (R) and *Chaenostoma campanulatum* (LC)*.*

Figure 13: Some IUCN listed plants

Freesia corymbosa, which was previously listed in the Red Data list as "threatened with extinction" but which is now listed as Least Concern or Rare (Victor and Dold, 2003), has been found on the southern bank of the upper reaches of the Kromme River in the gorge region. Although this plant has so far not been found on Conservancy land it is possible that it could occur there.
The plant *Microloma tenuifolium* used to occur on the conservancy land but no specimens of this plant have been seen for about 15 years.


Micranthus alopecuroides


Microloma tenuifolium

A number of plants which occur in the conservancy are outside their listed distribution range. These include *Hesperantha acuta, Gladiolus tristis, Micranthus alopercuroides, Orphioglossum bergianum, Pauridia minuta, Spiloxene aquatica* and *Wurmbea stricta,*

In addition to the indigenous vegetation a large number of alien plant species are found, including many invader and weed species. These are listed in Appendix 3.

Plant usage
A number of the plants which occur in the conservancy have been recorded as having traditional medicinal uses and these are indicated in Appendix 2. No medicinal usage has been reported within the conservancy itself. Invader species such as black wattle (*Acacia mearnsii*) and rooikrans (*Acacia Cyclops*) are generally used as firewood. Much of this wood is purchased from local people who make a small income from its sale.

5.6 Faunal description:

A list of the birds is given is Appendix 4, mammals in Appendix 5, amphibians and reptiles in Appendix 6, land molluscs and other invertebrates in Appendix 7, insects in Appendix 8 and spiders in Appendix 9. These lists of fauna and flora will be expanded and updated on an ongoing basis and the information recorded in a database. Research by interested parties from outside the conservancy will be welcomed and facilitated as far as possible.

As the high tide level forms the boundary of the conservancy no riverine species fall within the conservancy boundaries. They are, however, included in the database and species lists as this information could be used to track water quality changes.

Common large mammal species in the conservancy include the bushbuck (*Tragelaphus sylvaticus*), the grysbok (*Raphicerus melanotis*), the porcupine (*Hystrix africaeaustis*) and the gennet (*Genetta tigrina*).

Figure 14: Common mammal species

IUCN listed animals

The blue crane (*Anthropoides paradiseus)* is listed as an Endangered Species. Denham's bustard (*Neotis denhami*) is listed as Near Threatened and the baboon spider (*Harpactira chrysogaster*) is a Protected species. The Cape clawless otter (*Aonyx capensis*), which is also a protected species, is thought to occur in the area since crab remains are often found. This animal has not yet been positively identified due to its secretive nature.

Figure 15: Some IUCN listed animals

Cape hyrax *(Procavia capensis)* used to be common on rocky slopes along both the Kromme and Geelhoutboom Rivers but none have been seen on conservancy land since about 2003 and it appears that they no longer occur in this area. There has only been one sighting of an aardvark in recent years but a number of termite mounds show signs of having been dug open. The hamerkop (*Scopus umbretta)* also used to be more common in the area than it is currently.

Management of the fauna

No formal census of the mammal fauna will be undertaken due to the difficulty of conducting a census in the dense vegetation. While every effort will be made to prevent poaching, no formal management measures are envisaged at this stage. The conservancy members will, however, be informed about the IUCN listed species.

In addition to the indigenous fauna there are a few alien animal species which are listed in Appendix 3. These exotic species occur in very low numbers and no formal management is required.

5.7 The conservancy database

The conservancy database is an access database which contains information on the following:

- Indigenous plants, lichens fungi, hepatophytes, bryophytes, gymnosperms and angiosperms
- Indigenous land invertebrates, insects, spiders, amphibians, reptiles, birds and mammals
- Exotic and invader plants and animals
- Riverine algae, invertebrates, molluscs, crustaceans, macrophytes, and fish. Although not strictly within the conservancy boundary these have been included as an aid to the identification of organisms seen by the members and also to allow for the possible tracking of water quality changes
- An historical collection of sea shells from the Kromme River mouth

Each record in the database contains the following information where it is available:

- The full taxonomy
- A brief description
- The conservation status or frequency of occurrence
- Synonyms
- Common names
- A colour photograph
- The time of year at which plants flower or migratory species are present
- The habitat
- Any known medicinal uses or poisonous properties

The database is fully searchable and may be searched by taxonomic names, common names, flower colour or habitat.

The database is updated on an on-going basis and is issued on a DVD free of charge to all members or other interested parties.

6. Fire management

6.1 Significant events/history

The conservancy land has been burnt on several occasions in recent years. These fires are generally confined to the fynbos vegetation and only rarely penetrate the Riverine Thicket. Recent fires have included the following:

The fynbos area burnt in August 1989 but no details are available about the cause or extent.

A major fire occurred in April 1991. This fire started on the Woodlands side of the Geelhoutboom River probably by picnickers who left a fire burning. This fire, driven by a strong berg wind, jumped the Geelhoutboom River and spread across the peninsula threatening the houses of Dr Morrison and Mr Blackburn. Considerable damage was done to the riverine bush on the Kromme River side of the peninsula and this has allowed alien tree species to invade the area.

In early June 2002 a relatively small fire started on the Vosloo property. This fire was confined mainly to the Vosloo, Marist Brothers, Evans, Morrison and Youthed properties. The cause of the fire was not determined.

6.2 Legislative requirements

The following provisions of the Veld & Forest Fires Act (101 of 1998) are of relevance:

Chapter 2 – fire protection associations

It is not the intention of the Conservancy to form a new fire protection association but to rather link in with existing ones where possible as this would be more effective in achieving the overall aims of the Act. As per section 3(1) of this chapter, the formation of a fire protection agency is voluntary ("*owners **may** form an association…")* unless the Minister determines otherwise.

Section 12 – duty to prepare and manage firebreaks

As per Section 12(1), the Conservancy acknowledges the need to prepare and maintain a firebreak. As per the provisions of Section 12(7), a common firebreak will be established rather one on each individual property.

Chapter 5 – fire fighting

The conservancy will as part of their fire management plan take stock of available firefighting equipment and resources (such as the local fire department) and will map water sources available for use in firefighting.

6.3 Fire management plan

The conservancy covers a very small area of land and fire management will be undertaken by the conservancy as a whole and not by individual landowners. The conservancy is situated on a peninsula between the Kromme and the Geelhoutboom rivers and hence no special protection measures need to be put in place along these boundaries. Fire management is, however, required on our eastern boundary where conservancy land adjoins neighbouring farmland. In terms of the Veld and Fire Act 101 of 1998 we are obliged to create and maintain firebreaks along this border. The firebreaks which already exist do not penetrate the riverine bush and none will be cut into the bush as it does not burn. Cutting into the riverine bush merely allows the fire access and also allows entry to alien species which pose a very much greater fire hazard.

Firebreaks

The existing firebreaks are shown in the map below (Figure 16). A wide mowed field separates the farm Eastcot from the neighbouring properties and this forms a very effective firebreak on that side. The firebreak then follows the access road which runs the length of the peninsula. The remaining border between the Vosloo property and the neighbouring Malherbe property also has a road which runs very close to or on the boundary line and which acts as a firebreak. These firebreaks are all permanent features and require no special maintenance.

Figure 16: Existing firebreaks

Fire response plan

In the event of a fire it will be reported to the Humansdorp Fire Department by whoever fist discovers it.

A map will be drawn of the location of water reservoirs which may be used in case of fires. This map will be supplied to the Humansdorp Fire Department. There are currently 8 reservoirs available for them to use.

Fire prevention

In addition, the neighbouring farm Woodlands is to be approached to ascertain if they have any fire fighting equipment or manpower which could be called on in case of a fire. The conservancy does not plan to maintain its own water truck since the property owners are generally only there during holiday season and are thus not available to use it

Every effort will be made to prevent the start of fires by the education of landowners their families and staff.

No controlled burning of the fynbos will be undertaken due to the due to danger to homes, reservoirs and other property.

7. Special or threatened habitats

7.1 Fynbos area

The fynbos area of the conservancy falls within the endangered Humansdorp Shale Renosterveld (Mucina & Rutherford, 2006) of which only 6% is formally conserved. It is therefore very important that as much as possible should be under conservation control. The bulbous plant *Brunsvigia litoralis* is found in the fynbos area. This plant has been listed as Endangered (Red List of South African Plants) while *Bobartia macrocarpa* has been listed as Vulnerable and *Pauridia minuta* and *Pterygodium newdigitata* are listed as Near Threatened. Plants which were previously listed in the Red Data list as 'threatened with extinction' but which are now listed as Least Concern (LC) or Rare (R) (Victor and Dold, 2003) include *Agathosma ovata* (LC), *Bonatea speciosa* var. *speciosa* (LC), *Carpobrotus delisiosus* (LC), *Cotyledon velutina* (LC), *Gladiolus maculates* (LC), *Pentaschistis pallida* (LC), *Podalyria burchellii* (LC), *Selaginella pygmaea* (R) and *Sutera campanulata* (LC).

7.2 Wetlands

Salt marshes

Tidal salt marches occur at numerous sites along the rivers and their position is indicated in the map Figure 6 which shows the position of the various vegetation types.

Figure 17: Salt marsh

Seasonal wetlands

The small area of wetland on Portion 16 (shown in Figure 6) is in danger of drying up due to the invasion of alien trees. Historically this area was far wetter than it is today.

7.3 Threatened species management:

A number of threatened plants and animals occur in the conservancy (see the sections on vegetation and fauna above) and the following management measures are being put into place:

- The conservancy members will be informed about the locality and conservation status of the plants *Brunsvigia litoralis, Bobartia macrocarpa* and *Selaginella pygmaea* to ensure that they are not accidentally disturbed. They will also be informed of the presence of the endangered animals *Anthropoides paradiseus*, *Neotis denhami* and *Harpactira chrysogaster* and requested to avoid disturbing them. In addition they will be asked to ensure that their domestic dogs do not disturb any wildlife.
- Alien vegetation is being removed to ensure that the habitat of these species remains in as pristine a state as possible.
- There are a number of rare and endanged species which have been recorded outside the conservancy borders and it is possible that they could also occur within our boundaries. They include *Phyllodactylus peringueyi* (Péringuey's leaf-toed gecko), a rare gecko, which has been found inhabiting salt-marshes along the lower reaches of the Kromme River (The Argus 29/01/1992). Although this reptile has not yet been found on Conservancy land it is possible that it could occur there. A thorough search for this reptile in the salt-marshes along the banks

of the Kromme and the Geelhoutboom Rivers should be undertaken by members of the Conservancy. Smith's dwarf chameleon (*Brachypdion taeniabronchum*), which is listed as endangered in the Red Data book, has been found near the Churchill Dam and the Albany adder (*Bitis armata*), which is listed as very rare, and which was only described in 1997 in the Algoa Bay area could both possibly occur in the conservancy.

8. References

Scientific references

Note: All references used in the compilation of Appendices 2-121are also given in the relevant Appendices in an abbreviated form.

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