Biodiversity fact sheet

Glossary

** Supplementary document to a series of 8 biodiversity fact sheets **

Acid: Chemically, a hydrogen ion activity less than 7 on the pH scale. In everyday words, solutions that are sour. Acid soils are those where most of the soluble minerals are washed out, typically ancient sands and loams, although some granites are naturally acidic. Acidity can also be caused by peats and tannins, chemicals released by plants, which create black waters which can be seen on many of our south-facing rivers. These are, in essence, similar to tea! Opposite: Alkaline

Alkaline: A base, with a hydrogen ion (usually OH-) activity of greater than 7 on the pH scale. In everyday words, solutions that are soapy or slippery. Soils rich in clays (like shale) and calcium (like limestone) are typically alkaline. Opposite: acidic

Alluvial: Related to flowing water, such as the material deposited by rivers and floods. Alluvium is the rocks and soil deposited by water.

Alluvial Fans: Alluvial fans are caused by water slowing down, usually at the mouth of a canyon or gorge, and depositing material such as rocks (high energy rivers) or silt in a fan or cone shape on the plains. Coarser material is typically deposited first, with finer material on the edges. Alluvial fans in water are called deltas. Alluvial fans are best seen in deserts and the skirts of high mountain ranges.

Amphibian: Frogs (and newts, salamanders and cacaelians, which don't occur naturally in South Africa). These are vertebrates that have moist skins, are cold blooded, and usually lay their eggs in water. Many have two stages – a larval stage in water (tadpoles) and an adult stage on land (frogs). Toads are frogs, as are blaasoppies.

Annual: every year.

Annuals: Plants that live for a year or less, typically coming up after the rains and setting seed before dying in summer.

Asteraceous: Resembling daisy shrubs. Technically, plants with very fine leaves, usually woolly hairy, and often aromatic, growing as shrubs between 0.5 and 2m tall.

Bulbs: Plants that survive with underground storage organs comprised of clusters of leaves protecting a stem. Bulbous refers to all plants that resemble this, even those with corms (short, woody stems) that die down in summer (in the Mediterranean-type regions with winter rainfall and summer drought) or in winter (in the summer-rainfall regions with frost in winter). Technically such plants should be called "geophytes", and would include plants with tubers (thickened stems) and rhizomes (thickened roots), which function in the same way.

Calcareous: Containing calcium carbonate. Usually referring to soils or rocks with lime or chalk: these are typically alkaline. The rocks are typically deposited under the sea, but calcrete layers may form under the soil in arid areas from evaporation leaving behind salts rich in calcium which form a concrete-like layer below the soil surface.

Critically Endangered (CR): This term has different meanings for species and vegetation types. It is not a colloquial expression and is thus capitalised to show that it is rigorously defined: For species, this IUCN Red List status refers to a species with a 50% chance or more to become extinct within its next three generations. Various factors can threaten a species with imminent extinction, including loss of over 80% of habitat, numbers or populations within the last three generations; species with small ranges (less than 100 km2 total extent or 10 km2 occupied area) and susceptible to decline, fragmentation or population fluctuations; or

total populations numbering less than 250 individuals that are declining or less than 50 individuals even if not declining; For vegetation types, the National Status is defined under the National Environmental Management Biodiversity Act of 2004. Vegetation types are CR if an area larger than the National Target has been lost (such ecosystems can no longer conserve more than 70% of their plant species), or if they have more than 80 threatened Red List species. As a rule these ecosystems have lost the top predators and carnivores and many ecosystem processes and services are compromised.

Crustacean: An invertebrate of the subphylum Crustacea, comprising lobsters, crayfish, crabs, woodlice barnacles and similar organisms, with a hard outer carapace, many segments to the body, and appendages in two parts.

Duplex soil: A soil that does not form from the local geology.
In most circumstances, a sandy soil over a clayey substrate, usually due to wind-blown sands covering the original geology of an area. The Cape Flats comprise acid or alkaline sands over shale and granite.

Early seral stages: Those stages occurring after a fire in a vegetation community. Typical species of these stages includes annuals, bulbs and fire ephemerals. With age of veld after a fire these are replaced by slower growing, but larger plants which shade them out, or out-compete them for resources. Many such species produce huge quantities of seed and then vanish until the next fire.

Ecological corridors: Linear remnants of vegetation, often along rivers or ridges, which function to allow plant and animal species to move between larger patches of natural vegetation. These are not viable ecosystems in the long term, suffering a loss of integrity due to edge effects, invasion by aliens, and other impacts such as water table depletion, flooding, air pollution, lack of fire and lack of large herbivores. Ironically, although these are usually not viable as ecosystems in themselves, they do allow larger patches to remain viable by connecting them up, effectively increasing the size of these remnant ecosystems.

Ecosystem processes: The actions or events that maintain ecosystems. These are factors that impact or result from basic ecosystem integrity, such as energy cycles, nutrient cycles (Including mineralization and soil formation), water cycles (including water tables), fire cycles, community cycles (including food chains and webs), etc.

Ecosystem: A group of animals and plants living in an area that interact with one another and their environment. Ecosystems can be big (such as the Ocean) or small (such as the mites and bacteria that live naturally in the pores of your skin). Ecosystems can also have tight boundaries, such as an island where most species are confined to the island (except for some seabirds nesting on the islands but living out at sea) or intimately connected to other ecosystems (such as rivers that connect lots of other ecosystems and have lots of animals visiting them to drink). Most ecosystems are powered directly by the sun via primary producers (plants), but in some it is indirect (such as caves), and a few are powered by non-solar chemical reactions (such as bacterial communities deep in the earth and undersea steam vents).

Ecosystem services: The ecosystem processes that are of use to humans. These include absorption and filtering of pollutants (via the carbon and water cycles, for example), production of clean water, maintenance of subterranean water tables, runoff attenuation (and thus, in the short term, flood control and in the longer-term "storage" of water in aquifers to the dry season, and in the long-term reduced erosion and greater annual water storage capacity), soil formation. There are also biotic services such as providing pollinators for crops (where pollination for a few weeks of the year for example by fruit trees, is possible because natural ecosystems maintain the pollinators for the other 11 months of the year when they are not needed), biocontrol agents for pests of agriculture, and so forth. There are

also "human" services such as recreation, spiritual upliftment, and emotional refreshment, not to mention educational opportunities, tourist potential and market values (properties adjacent natural areas are often significantly more valued).

Endangered (EN): This term has different meanings for species and vegetation types. It is not the same as the colloquial term 'endangered', although it is derived from it, being rigorously applied according to specific criteria, and thus capitalised: For species, this IUCN Red List status refers to a species with a 20% chance or more to become extinct within its next five generations. Various features can threaten a species with extinction, including loss of over 50% of habitat or numbers or populations within the last three generations; species with small ranges (less than 5000 km2 total extent or 500 km2 occupied area) and susceptible to decline, fragmentation or population fluctuations; or total populations numbering less than 2500 individuals that are declining or less than 250 individuals even if not declining; For vegetation types, the National Status is defined under the National Environmental Management Biodiversity Act of 2004. Vegetation types are EN if an area larger than the National Target +15% has been lost (such ecosystems can no longer support all their ecosystem processes), or if they have more than 60 threatened Red List species. This is also usually the level at which the top predators and scavengers start to be lost from ecosystems.

Endemic: Occurring only at a particular place and nowhere else. (See indigenous) This is a site-specific term and cannot be interchanged with other sites. Thus Silvertrees are endemic to South Africa and the Western Province, but are not endemic to the Cape Peninsula as they occur naturally at Stellenbosch and Somerset West. Similarly the Queen Protea is endemic to South Africa and the Western Province, but is not endemic to the Cape Peninsula as it does not occur there: if planted on the Peninsula it would be an alien. Strictly, a species is not endemic to a certain region, even when most of the populations or individuals occur there, if a single plant or population occurs outside the region. For national purposes, a species is defined as "endemic" when most of the individuals and populations occur in the area under consideration: a cut-off of 80% of populations or individuals has been chosen – thus strictly our "endemic" species are "near-endemics". This is also applied to vegetation types when they are confined to a particular place. Note that this is different to medical terminology: an endemic disease is one that is prevalent at low levels in an area,as opposed to epidemic (at high levels) or pandemic (widespread).

Ericoid: having leaves that are narrow and with margins rolled over so that the stomata are contained within a groove. The groove may be hairy, but the upper surface is hardly ever hairy. This can refer to leaves, or to plants that have this type of leaf. These are typical of the heaths (*Erica*) and also the Dollsheads (*Phylica*).

Erosion: The removal and deposition elsewhere of sediment by wind, water (including waves, currents, tides), ice, gravity (such as soil creep, landslides and rock falls) and plants and animals. With the exception of soil movement by animals, most erosion is ultimately caused by gravity (but this does not mean that most sediment is deposited at lower altitudes – sand dunes being a classical example of erosion that can be deposited higher than the source). Erosion is natural and inevitable, but can be accelerated by some factors, the worst of which are human activities which remove vegetation, disturb topsoil or concentrate water. It can also be slowed down compared to natural levels, for instance by vegetating dunes, which can result in beaches or dune fields losing their source of sand, and becoming rocky.

Eutrophication: A process whereby an ecosystem becomes overloaded with nutrients. This is usually a problem in water bodies, as nutrients are washed out of areas upstream and transported to communities downstream where they accumulate to levels where biological activity or decay uses up all the available oxygen leading to sterilization of the waterbody. However, in Fynbos with its low nutrient status, eutrophication of the ground water or the soils can result in deaths of most of the plant species due to over-fertilization. Agricultural systems

accelerate natural eutrophication, by adding levels of fertilizers far above that natural to the ecosystems downstream.

Extinct: No longer existing – died out or destroyed. This can apply to populations, species or a lineage (see taxon). Extinction technically occurs the moment the last individual of the taxon dies. In reality, it is often difficult to define extinction; because the discovery or rediscovery of a single individual means that the species is not extinct. In reality, extinction occurs the moment a population becomes non-viable, and such taxa are referred to as the "living dead". Examples may include the last few male plants of a species without females (for instance, the Ents of Lord of the Rings, who lost their Entwives), or if all the individuals remaining are self-incompatible or unable to fertilize one another due to breeding systems, inbreeding depression or various other reasons, including if the pollinators go extinct.

Fynbos: We distinguish between "Fynbos" and"fynbos". Thus "fynbos" is a colloquial term for various communities in the Western Cape, often including Fynbos, Renosterveld and Strandveld. However, "Fynbos" is restricted to those communities that have a greater than 5% cover of Cape Reeds (or **Restioid**). Typically it also has bulbs, heaths, proteas and elements of the endemic Fynbos plant families. Fynbos comes in several different types: those dominated by grasses (Grassy Fynbos), those dominated by Cape Reeds (Restioid Fynbos), or daisies (Asteraceous Fynbos), or heaths (Ericaceous Fynbos), or proteas (Proteoid Fynbos), or tall shrubs (Scrub Fynbos). Fynbos is an exceptionally rich set of communities, which contain half of all the plant species found in southern Africa, despite occupying only 6% of the area of the subcontinent. In fact, one in every five plant species in Africa occurs in Fynbos!

Globally Extinct: Extinct is another term that is regionally specific. Thus a species may be extinct on the Cape Flats, but still survive on Table Mountain.
Regionally Extinct: A species that is extinct in part of its range is considered to be "regionally extinct" in the region. An example is the Cape Flats Conebush that used to occur extensively along most rivers and vleis on the Cape Flats. All these populations have been wiped out by agriculture and urbanization: it is thus regionally extinct on the Cape Flats. However, two populations survive on the southern Cape Peninsula, so the species is not globally extinct.
Globally Extinct: A species that is extinct over its entire range is "globally extinct." The Wynberg Conebush is one such species: it used to occur on Wynberg Hill and was last recorded in 1805.
Extinct in the Wild: A species that is extinct over its entire range, but still survives in cultivation, is thus "Extinct in the Wild." An example is the Whorled Heath, which used to grow around the vleis of the southern suburbs of Cape Town, but its habitat was drained and built up, and the plants were picked as one of the very few species flowering in the middle of summer. It was last seen in the 1960s. However, being pretty, it was cultivated widely in Europe, and has been found alive in several botanical gardens: in Vienna the collections sent from Cape Town in the early 1800s are still alive. This species has been brought to Kirstenbosch for propagation and re-introduction into the wild. Only a few suitable sites are left. It has been planted at Kenilworth, Tokai and Rondevlei. By IUCN definition it will remain "Extinct in the Wild" until these populations have maintained themselves unaided for three generations. Three generations is three fire cycles, or 45 years in Fynbos, so if all goes well this species can be removed from the "Extinct in the Wild" category in 2053.

Fire ecology/regime: Fynbos is a fire-mediated ecosystem. This means not only that it burns, but that its plants and animals are adapted to fire. In fact, many of the species can only survive if there are fires. In Fynbos fires happen every 5 to 50 years: on average every 15 years. In Renosterveld the frequency is probably much more (about 5-10 years). Other vegetation types also burn: even Afro temperate Forests burn, but only once every few hundred years. Fire ecology is thus an important feature of these types. Fire ecology includes the aspects of fire itself (its season, intensity, speed, and duration), but also the adaptation of plants to fire (such as species that coppice after fire, use ants to bury the seeds in fire safe

nests, or store their seeds in fire-proof cones on the plant).

Flood attenuation: The ability of an ecosystem(s) to spread rainfall events out so that river flow does not occur as a flash flood, but flows more continuously and is less extreme.
This is because vegetation and wetlands trap water and then release it slowly. Thus seasonal rivers may become perennial. Soil denudation and erosion reduce the capacity of ecosystems to absorb rainfall and increase the probability of more erosion, greater flash floods and the drying up of rivers.

Food web: The ecological interaction of plants and animals, whereby energy and nutrients are transferred from organism to organism. Simply, a food chain is the link between a plant (daisy), its herbivore (mouse), the carnivore (mongoose), the top carnivore (lion), the decomposer (mould). A web is all the interactions between all the members of all the chains in an ecosystem. Trophic levels (producer, herbivore, carnivore, detritivore), nutrient, energy and water cycles are all useful concepts and theories that come out of a study of food webs.

Gene Bank: A repository of genetic material. With plants this is usually seeds. With animals sperm and ova are frequently stored. But in the looser sense, zoos and botanical gardens are gene banks. Similarly, repositories of genetic material such as tissue banks could also be considered gene banks.

Globally Extinct: Species that no longer exist as living entities, known only from historical records. Typically these do not refer to long extinct species such as dinosaurs and fossils, but to those whose extinction is partly caused by man. A species may be Extinct in the Wild, meaning that no natural populations remain, although individuals may survive in botanical gardens and zoos. Such a species may be reintroduced into the wild, but is considered to remain extinct in the wild until it has successfully survived 3 generations in the wild without human interference.

Graminoid: Plants that resemble grasses in shape and ecology. This usually includes, grasses (Poaceae), sedges (Cyperaceae), Cape Reeds (Restionaceae), Marsh Reeds or Rushes (Juncaceae).

Grazing regime: The dynamics of herbivores feeding patterns.
Where farming is concerned it comprises the stocking rate, the duration of grazing and the season of grazing. In natural ecosystems it includes the mix of species in the area, including both grazers (eating grass) and browsers (eating leaves), and their patterns and seasons of migration, as well as the areas they prefer to frequent within the landscape during these times.

Green Lung: An area in the city absorbing air and noise pollution, and providing tranquillity, recreation and shade.

Habitat: The home of an animal or plant: it is the area inhabited by a population of the species. Habitats can be subsets of or entire ecosystems and are usually determined by the climate, the geology and soils and the other species that occur in the area. In some cases, such as parasites and diseases, the habitat can be other organisms or even organs, but these are usually considered microhabitats, as in cases of species confined to streams or rotting logs or beneath stones. For modelling the impacts of climate change on a species, a "habitat envelope" is often modelled, to investigate how species' ranges may change due to changes in temperature or rainfall.

Habitat transformation: The conversion of natural vegetation to farmland and cities. Transformation refers only to those conversions that are normally permanent. Partial or

temporary loss of natural vegetation is usually a separate category of "habitat degradation".

Herbivore: Animals that eat plants. They can eat grasses (grazers) or leaves (browsers) or seeds (graminivores).
Herbs: Plants, usually annual or short-lived that do not form wood. Where these plants are tall the stems tend to be green and pulpy. Woody plants (shrubs and trees) have secondary growth of stems that result in wood formation, usually as annual rings, and bark.

Higher plants: Plants that produce seeds and flowers. This usually excludes mosses and ferns.

Indicator Species: A species that can be used to measure an ecological impact. Thus Lichens can be used as an indicator of air pollution, or indigenous fish as an indicator of river health. A perfect indicator species provides a reliable index of the impact being measured, efficiently and cheaply. Very few indicator species are perfect.

Indigenous: Occurring at a particular place. (See endemic). This is a site-specific term and cannot be interchanged with other sites (thus most species indigenous to South Africa are not indigenous to Cape Town). The opposite of indigenous is alien (see Invasive Alien Species). Any species is indigenous to the area where it occurs naturally, and alien elsewhere. Not often used for vegetation types – usually restricted to species of animals or plants.

Invasive Alien: An animal or plant or microbe species that does not belong naturally in an area and that spreads into natural vegetation. The term is area specific and is meaningless out of context: all species are indigenous to Earth. An alien can come from another continent, another country, another province, or another mountain range. Most aliens do not spread much, but some are able to get into croplands (ruderals), others are able to establish in natural vegetation (naturalized), and some of these may be able to spread aggressively (invasive) or even become major pests, changing the ecosystems they invade (transformers).
Cf Weeds: Species spreading beyond their natural ranges of their own accord are considered colonizers or extralimitals, and are not normally considered aliens. Species that periodically invade areas, but do not establish natural populations there, are considered eruptions.

Invertebrate: An animal without a backbone. This is a large and diverse grouping of unrelated species, including insects, crustaceans, worms, and many other forms of life.

IUCN: The International Union for the Conservation of Nature- a donor organisation responsible for housing the Species Survival Commission and maintaining the Red List (previously known as the Red Data list).

Keystone Species: Species that have a major impact on the food web, or that are connected to unusually many food chains: termites are a good example. Also species that transform habitats and thus include or exclude many other species: Aardvark are a good example, in that their holes and excavations allow animals to live in an area that could not survive without the holes for shelter, breeding or predatory evasion.

Mammal: An animal, that is a vertebrate (with a backbone), that is warm-blooded (maintaining an elevated body temperature that does not fluctuate with the environment), that produces live young (not eggs), has hair (not scales or feathers) and suckles its young (with milk).

Maritime influence: The stabilizing effect of the sea. Areas near the sea tend not to experience as high temperatures in summer, or as low in winter, as areas further from the sea. They also have fewer frost days and much less snow. This is because of the heat capacity of water which allows it to absorb or radiate far more energy than the atmosphere per unit

volume.

Mist precipitation: That component of precipitation that occurs due to mist. This is over and above that of rain, snow or dew. Many plants are adapted to extract moisture from mist, and especially in the mountains mist precipitation may be much more than precipitation by rain. Cape Reeds are especially efficient at extracting moisture from mist.

Molten Granite: Liquid rock, deep in the earth, deposited on the underside of the continents and in the bases of some volcanoes. As this cools very slowly, crystal formation occurs and consequently the rock that forms has large crystals. With millions of years of erosion, these rocks become exposed as granites. In the Cape the granites were deposited about 800 million years ago into the Malmesbury shales. Table Mountain rests on a granite base. Bottelary Hills, Paarl Mountain, Paardeberg are examples of granite hills around the City. A world-renowned area showing how the granites melted the rocks they formed in (in this case the Malmesbury Shale) can be seen at Moullie Point. Darwin described the rocks and this was one of the first proofs that granites formed deep underground, and not in the seas.

National Target: A spatial target established for National Vegetation Types which indicates the area at which that ecosystem can support 70% of its constituent plant species. Any further loss of habitat will result in an unacceptably high level (>30%) of species extinctions. For most Fynbos types this is in the region of 30% of the historical area, for Renosterveld around 26%, Strandveld around 24% and Afrotemperate Forest about 34%. This differs from the IUCN goal of 10% of a region which contains 90% of plant species, but which fails to incorporate the need for these species to survive long-term - rather than merely being present in the area.

Niche: The role a species (or group of species) plays in an ecosystem. A niche can be generalist (e.g. the carnivore niche) or a specialized (Sabre-toothed cats). A niche may be filled by a different species in different ecosystems or geographical regions. (or even more than one species, or the niche may be empty)

Ordovician (Cape Supergroup): The geological time at about 500 million years ago.

Parasite: An animal or microbe that lives off other organisms by living inside it or off it. Parasites are usually much smaller than their prey. Examples include Athletes Foot, Mosquitoes and Fleas. Similar animals that consume their prey are called predators.

Plinthic: A rock occurring as a soil horizon rich in oxidized minerals. It tends to occur in sandy soils with fluctuating water tables and may comprise iron, silicon or magnesium oxides. These form hard, rocky crusts, nodules and irregular aggregates. They are particularly suitable for making hard road surfaces, generally termed "gravel."

Pollinator: An animal that transfers pollen between flowers and thus assists plants with breeding. There are many types of pollination, each with syndromes relating to their pollinators. Thus there are features of flowers associated with pollination by different animals (e.g. pale flowers that open at night emitting Jasmine scent with moths, or robust, yeasty-smelling flowers born on the ground with rodents). Animals are attracted by rewards of nectar, pollen, oil, scent, breeding sites and even sex, although some flowers are deceitful and trick animals to visit without providing any reward.

Proteoid: Plants resembling proteas in having large, hard leaves, with both surfaces very similar. Many are the dominant species in the Fynbos communities in which they occur: although they take longer to grow and flower, they tend to grow taller and bigger than other Fynbos plants, shading out resprouting species and dominating vegetation that is older than 8 years old. Because of their role in influencing other species in their communities, they are keystone species.

Recent: The geological era encompassing the last 10 000 years. This follows the Pleistocene Epoch of Quaternary period. Recent sands tend to be alkaline, having recently blown onto the land from the sea, whereas Tertiary sands tend to be acidic, having been well leached by rainfall. So what about sand dunes that formed during the Pleistocene? Well these are intermediate and can be acidic or alkaline, depending on the local rainfall and position in the dune profile (more acidic in the slacks and more alkaline on the crests).

Red List: A list of all the species of earth and their risk of extinction. Species may be extinct, or threatened with extinction (Critically Endangered - typically threatened within 3 generations of the organism), Endangered (10 generations) or Vulnerable (20 generations), or Near Threatened (not currently threatened with extinction, but close to risk), or Least Concern (under no known threat). It is incorrect to refer to a taxon (cf) as a Red List taxon, because all species are potentially on the list, although at present only a few thousand species have been evaluated. Those on the list include those ranked as Least Concern, and any species not on the list should strictly be termed Not Evaluated, rather than not threatened by extinction. The term "threatened Red List taxa" is the correct term for referring to CR, EN and VU taxa.

Renosterveld: The set of plant communities that replace Fynbos on richer, drier soils. These lack Restioids, and very seldom contain heaths and proteas. It occurs in two phases: a grassy phase and a shrub phase, usually dominated by Renosterbos. Renosterbos is a daisy, filled with phenolic chemicals making it unpalatable. Apparently, only rhinos are able to eat this plant, which gave the plant its name, from which the veld type was named.

Restioid: Plants resembling Cape Reeds, Restionaceae. These are graminoids (cf) that have green stems and reduced leaves. They are an important feature of Fynbos – an indicator (cf) of Fynbos is that there is at least 5% of Restionaceae, and in most Fynbos ecosystems they are keystone species (cf) in that they maintain the fire regimes (cf). Fynbos communities dominated by restios are called Restioid Fynbos.

Seral stage: A stage in the development of a community between some disturbance and the climax vegetation. In Fynbos all the species germinate after the fire and although different species become prominent at different veld ages, no new species enter the community, although some "early seral" species may flower at a young age, set seed, and then die out, not to be seen again until after the following fire. Other veld types, such as Strandveld and Afrotemperate Forest, go through a series of seral stages, from pioneer species, to mature species to climax species, as each stage prepares the environment for colonisation by the next phase.

Serotinous: Plants keeping their seeds in cones and seedheads on the plants themselves, rather than dropping them onto the ground, or using dispersers to carry them to safe and ideal sites. This strategy occurs in Fynbos in the Protea, Heath, Blacktip and Cape Cedar Families, where the seedheads are fire proof, and the seeds are only released after a fire when conditions are ideal for germination. It also occurs in Succulent Karoo, where Vygies store the seeds and only release them when it rains.

Silcrete: A rock formed by the cementation of soil, sand or gravel by silica. This occurs typically near the base of the low water table within the soil profile.

Silty Soils: Soils in which the smooth, soapy feel of silt is the dominant soil texture. Silt is intermediate between sand and clay.

Skeletal: Areas which lack soil, usually because erosion is removing the soil faster than it is being formed by mineralization. However, there is some residual soil present, otherwise the area would be considered rocky or bedrock.

Statutory Nature Reserves: Nature reserves that are protected by legislation. Many so-called "nature reserves" are merely farms, and other are areas set aside for future development, or without any long-term plans. These have no long-term future, as anyone may propose some development of them at any time.

Strandveld: The veld type that replaces Fynbos on young, alkaline sands near the sea-shore, where fires are less common. In some situations, Strandveld may burn, in which case it often has an early seral stage of Fynbos vegetation.

Succulent: Plants that store water in their roots, trunks or leaves.

Symbiosis (Symbiont): Symbiosis is the association or interaction of two species to their mutual advantage. Some keystone examples are: the nitrogen-fixing bacteria that live in the root nodules of pea plants, which yield nitrogen for the plants in return for photosynthetic energy, the soil-fungal associations with plants which yield nutrients for the plants in return for photosynthetic energy; and the gut bacteria in the intestines of animals which ferment food, releasing sugars in return for food and shelter.

Taxa/taxon: A group of individuals forming a coherent biological entity is called a taxon. Most commonly used is species, but subspecies and populations (below the level of species), and families and genera (above the level of species) are also well-used groupings. Collectively these groupings are termed taxa. Where lists are given as taxa instead of species, it usually refers to species and distinct subspecies.

Termitaria: Termite mounds. Mistakenly regarded as ant hills by many, however ants are colonies of female "wasps", many of which are carnivorous, whereas termites are colonies of herbivorous cockroaches. In terms of biomass, termites are probably the most important herbivores in warmer ecosystems. In Renosterveld the heuweltjies are underground termitaria, the tops of which are usually covered by different plants to those found between the heuweltjies. The spots that gave "Tygerberg" (Leopard Mountain, in Dutch) its name, are heuweltjies covered with grass within the dark Renosterveld vegetation.

Tertiary: The geological period prior to the Quaternary (cf. Recent) Period, spanning from the end of the dinosaurs (63 million years ago) until the arrival of man (1.6 million years ago).

Transitional: The area of change from one ecosystem to another and often featuring features of both ecosystems. Some transitions may be abrupt, such as the change from Renosterveld on Malmesbury Shale to Fynbos on granite on Lions Head, where you can place one foot in each type. Others are gradual and may extend over hundreds of metres, such as the transition from Fynbos to Renosterveld on granite soils. The intertidal zone between land and sea is a very familiar example of a transition zone.

Underground stems: Stems which grow underground, usually in plants that survive fires, or that need to store water. In Fynbos, most underground stems have buds that allow the plants to coppice after a fire: one-third of plants in Fynbos have this strategy!

Vegetation Type: A set of plant communities that occur in a landscape.

Veld Type: A popular term for "vegetation type" – a set of plant communities that occur in a landscape. Popularized through Acocks' Veld Types – units of agricultural potential, but used herein in the sense of the current National Vegetation types recognized for South Africa.

Vertebrate: An animal with a backbone (or spinal column). These include mammals, birds, reptiles, amphibians and fish.

Vulnerable (VU): This term has different meanings for species and vegetation types. It is not the same as the colloquial term 'vulnerable', although it is derived from it, being rigorously applied according to specific criteria, and thus capitalised: For species, this IUCN Red List status refers to a species with a 10% chance or more to become extinct within the next 100 years. Various features can make a species vulnerable to extinction including loss of over 30% of habitat, numbers or populations within the last three generations; species with small ranges (less than 20,000 km2 total extent or 2000 km2 occupied area) and susceptible to decline, fragmentation or population fluctuations; or total populations numbering less than 10,000 individuals that are declining or less than 1000 individuals even if not declining; For vegetation types, the National Status is defined under the National Environmental Management Biodiversity Act of 2004. Vegetation types are VU if an area larger than 50% of the original vegetation type has been lost (such ecosystems start failing to maintain their ecosystem processes), or if they have more than 40 threatened Red List species.

Water Table: The level of water in the soil. The level is usually high in winter and low in summer, and can vary a lot especially in sandy areas such as the Cape Flats.

Weeds: These are plants that are not wanted. They may be indigenous or alien to a region. They may or may not pose a problem and are both context-specific (they may be a problem in wheat fields, but not vineyards) and people specific (weeds of agriculture may be the source of food to poor people).

Winter-rainfall regime: Those climates in which rainfall falls mainly in winter. This is equivalent to the Mediterranean-type climate, characterized by cool, rainy winters, and hot, dry summers. Most of the vegetation of the region is also fire-prone in summer.

The City of Cape Town is one of the hottest of the Biodiversity Hotspots on Earth. In terms of unique diversity, there are few places elsewhere that even come close. To create an awareness of our biodiversity, and to allow people to get to grips with this overwhelming biodiversity, a set of pamphlets has been produced. These require the use of some rather technical terms and we have explained the terms here for those interested. Here too you will find the more technical information, such as the Latin names for the species of plants and animals shown and discussed on the pamphlets.

Our conservation situation is dire. Much work is being carried out by the Biodiversity Management Branch of the City of Cape Town, and also by the Table Mountain National Park and Cape Nature. You too can help in many ways by joining organizations such as CREW (Custodians for Rare and Endangered Wildflowers), the various "Friends" groups (such as Friends of Tygerberg or Friends of Silvermine), the IKAPA Honorary Rangers (that service the National Park), the Botanical Society of South Africa (which leads botanical walks in the city). Your assistance in helping to conserve our beleaguered biodiversity is essential.

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