

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Transfer of the Chilean population of *Rhea pennata pennata* from Appendix I to Appendix II, in accordance with the precautionary measures in Annex 4, B. 2. b), of Resolution Conf. 9.24.

B. Author of the proposal

Republic of Chile.

C. Supporting statement1. Taxonomy

- 1.1 Class: Aves
- 1.2 Order: Struthioniformes
- 1.3 Family: Rheidae
- 1.4 Genus, Species: *Rhea pennata* (d'Orbigny 1834)
- Subspecies: *Rhea pennata pennata*
- 1.5 Scientific synonyms: *Pterocnemis pennata*, *Rhea darwini*
- 1.6 Common names:
- | | |
|----------|--|
| English: | Lesser Rhea, Darwin's Rhea |
| French: | Nandou de Darwin |
| Spanish: | Ñandú cordillerano, Avestruz de Magallanes, Choique, Ñandú petiso, Suri Cordillerano |
| Aymaran: | Suri |
| German: | Darwinnandau |
| Italian: | Nandú de Darwin |
- 1.7 Code number: A-202.001.001.001

2. Biological parameters

2.1 Distribution

The species *Rhea pennata* only lives in South America. It has three subspecies: *R. p. pennata*, distributed in southern Chile, west-central and southern Argentina, and in very small numbers on Tierra del Fuego Island, where it was introduced (Del Hoyo et al. 1992) (Fig. 1). Of the other two subspecies, *Rhea pennata garleppi* can be found in southern Peru, south-western Bolivia and north-eastern Argentina. The third subspecies, *R. p. tarapacensis* is present in northern Chile. It should be noted that these two northern subspecies are isolated from each other, as well as from the southern subspecies that is the object of the present proposal.

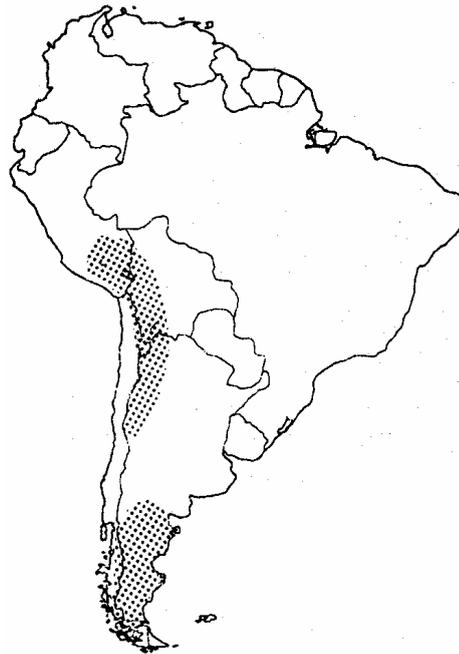
The subspecies *Rhea pennata pennata* inhabits the steppes of the Patagonian foothills and meseta up to 2,000 metres above sea level. The two northern subspecies inhabit open plateaux with pastures and underbrush on the high 'Puna' plains and intermountain basins (3,500-4,500 metres above sea level) (Blake 1977, Del Hoyo et al. 1992).

Fig. 1. DISTRIBUTION OF DARWIN'S RHEA (*Rhea pennata*)

Rhea pennata tarapacensis

Rhea pennata garleppi

Rhea pennata pennata



2.2 Habitat availability

The population of *Rhea pennata pennata* in Chile is mainly concentrated in the Region of Magallanes (Magellan) and Chilean Antarctica. Specifically, it is partly present in the agricultural and fishing areas of the Magallanes provinces, the Laguna Blanca communes, San Gregorio and in the northern portion of the Punta Arenas commune. The other part occurs in the province of Ultima Esperanza, and in the Torres del Paine commune. The Torres del Paine and Pali Aike National Parks, located in the Torres del Paine and San Gregorio communes, must be added to this range. Both of these belong to the National System of State-Protected Wild Areas.

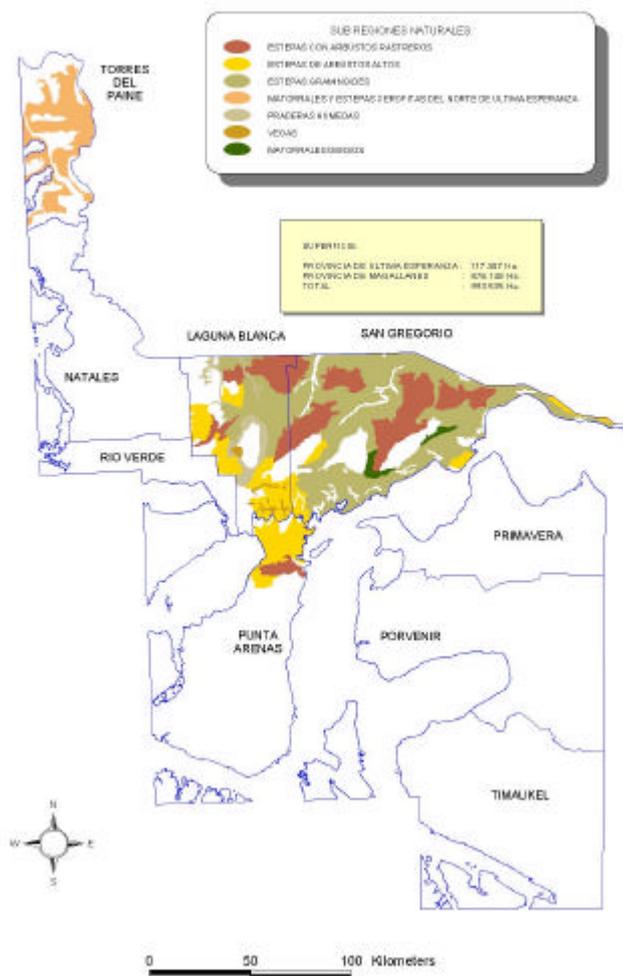
From the viewpoint of a 'potential habitat', it must be noted that in the same region, in the Primavera and Porvenir communes in the province of Tierra del Fuego, there is an important additional area where there are environmental similarities. Although the species is not naturally present on the island, this is an environment that is worth studying, with an aim to evaluate a possible conservation project for this species.

A more detailed ecological analysis of the habitat shows us that it is mostly a natural region where rolling hills and plains prevail, followed by more pronounced hills, mountain ranges and plateaux. The natural sub-regions that predominate are steppes with high bushes, gramineous steppes, steppes with creeping shrubbery, humid prairies, fertile valleys and dense underbrush, in the case of Magallanes. In Torres del Paine, the vegetation is mainly underbrush and xerophytic steppes of northern Ultima Esperanza. In this context, the most favourable habitat for the lesser rhea, characterized by steppe environments with rolling hills and plains, currently occupied by natural populations, covers 980,647 hectares, of which 966,753 are in agricultural or fishing areas and 13,894 in wild protected areas. If we add the less favourable environments with higher hills, mountain ranges and plateaux, the total area comes to 993,535 hectares. In the event of considering similar environments on the island of Tierra del Fuego, we could estimate a total potential area of around 1,732,037 hectares in the entire region.

The majority of the land is privately owned, with 139 livestock holdings on the continent and 322 on the island of Tierra del Fuego. The continental livestock amount to 657,381 ovine and 10,605 bovine cattle, while there are 986,301 ovine and 5,704 bovine cattle on the island.

Current and potential distribution of the populations of Darwin's rhea in Region XII by habitat availability	
Type of habitat	Hectares
Habitat occupied by the current population of <i>Rhea pennata p.</i>	
Favourable Habitat (rolling hills and plains with steppe and shrub vegetation)	980,647
Secondary Habitat (higher hills, mountain ranges and plateaux with dense underbrush and fertile valleys)	12,888
Total	993,535
Potential habitat for <i>Rhea pennata p.</i> on the island of Tierra del Fuego	
Favourable Habitat	624,628
Secondary Habitat	113,876
Total	738,504

HABITAT DE *Rhea pennata pennata*
EN LA REGION DE MAGALLANES Y ANTARTICA CHILENA.



2.3 Population status

2.3.1 Wild population

All the natural populations in the region have been estimated using formal methods based on census work or area sampling. There has been follow-up on these estimates since 1996.

Thus, Balmford and Barrientos (1991) estimated that in the Laguna Azul and Laguna Amarga, sectors, in the Torres del Paine National Park, in a sample area of 28.1 km², density was around 8 specimens/km². This was the area of highest density, followed by the Sarmiento, Paso de la Muerte and Laguna Verde sectors. In this sense, Mr. Jovito Gonzalez, Chief of Park Wardens in the Torres del Paine National Park, points out that historically, the lesser rhea population in this unit is estimated at around 400 specimens. However, the current situation reflects a low density attributed to the effects of the harsh winter of 1995 and to the sustained increase in wild carnivores, particularly pumas (*Felis concolor*). The useful habitat within the park is nearly 107.5 km².

In the Pali Aike National Park, annual censuses taken between 1995 and 2002, over a useful area of 31.44 km², register an average of 122 individuals/year, with a density of 3.97 specimens/km². (Information from CONAF personnel, 2002).

Estimates of the abundance of fauna in the wild carried out by the Region XII Agriculture and Livestock Service – SAG (G. Milic, 2002) in the area used for agriculture and fishing indicate an upward trend. Thus, for the province of Magallanes, there are annual registers as of 1996, with 8 transects totalling an average of a 1,264 km. route, of which 1,165 belong to the range of the lesser rhea. Consequently, 349.5 km² are estimated as an effective sampling area. A 300-m wide field of vision is considered effective. In this context, the average densities, obtained directly from the fringe sampled, have varied between a minimum of 1.29 specimens per km² in 1976 and a maximum of 5.37 specimens per km² in 1999. The figures were 1.55 in 1997 and 5.13 in the year 2000. The upward trend observed is interpreted as a function of the impact the harsh winter of 1995 may have exerted upon the population; also as an improvement in the design of the land transects and increased activity in education and enforcement of the hunting law. Direct extrapolation of the densities obtained on the fringe where surface population counts were performed within the species' habitat would indicate a current population of approximately 47,049 individuals in the province of Magallanes and 2,477 specimens in that of Ultima Esperanza, for a total of 49,526 in the region.

Relative densities of <i>Rhea pennata pennata</i> in Region XII		
	Density indiv. / km ²	Abundance estimate
Agriculture/Fishing Area		
Magallanes Province	1.29 to 5.37	11,302 to 47,049
Ultima Esperanza Province	2.11	2,477
Protected Wild Areas		
Torres del Paine National Park	8	400
Pali Aike National Park	3.97	122

Censuses of Darwin's rhea taken in the Province of Magallanes, Region XII (extreme South of Chile) are compared. 1,352,730 hectares were defined as the area for study by the Agro-Fisheries

Research Institute as land used for agriculture and fishing. (Of these 1,352,730 hectares, 32.4% are prairies and 80% of the sightings occurred on prairies.) 12 transects averaging 100 km each were determined. Along these routes, animals observed are counted, registering the distance at which they are sighted, with no restrictions on the width of the fringe.

2.4 Population trends

Patagonian natural grazing lands were colonized with the arrival of large herds of ovine cattle, producing negative effects on all wildlife. In the case of *Rhea pennata pennata*, there seems to have been a gradual adaptation to this new situation, evidenced by what is apparently a new balance – of course, with lower densities – but which responds to the established interaction between man, his agricultural and fishing practices, and wildlife.

As there has been more and more migration of fieldworkers to the cities, and livestock activity is predominantly extensive, perhaps we could pose the hypothesis that direct pressure exerted by man on Darwin's rhea has lessened, especially with respect to hunting and egg collecting. This is coherent with the densities registered by the SAG in their population monitoring, which show a tendency to grow, although data are only available for a short period of time.

2.5 Geographical trends

In general, there has been no reduction in the area used for agricultural and fishing purposes in the region, especially the part that forms the species' habitat. So any possible negative effect on the lesser rhea population cannot be attributed to this cause. On the contrary, in Magallanes initially, livestock was typically raised on few but large holdings, which gradually decreased in size until there were more middle-sized cattle ranches, with predial estates of around 5,000 hectares. Nowadays, market prices are forcing an adaptation that means a return to increasing the size of these enterprises, to profit from economies of scale. In fact, this situation is generally beneficial for conservation of natural resources, especially for fauna.

2.6 Function of the species in its ecosystem

Although this species is an omnivore, its diet centres largely on plant species. Bushes and shrubbery are its main food, supplemented by herbage and gramineae. The eggs, baby chicks, younger individuals and adults are prey for various predators, particularly the puma (*Felis concolor patagonica*), the South American red fox (*Dusicyon culpaeus*) the South American grey fox (*Dusicyon griseus*), the West South American hog-nosed skunk (*Conepatus chinga*), feral dogs, and the Southern Caracara (*Caracara plancus*)

2.7 Threats

According to the observations made by Jurgen Rottmann and Gladys Milic, important factors in the decreased populations of Darwin's rhea used to be hunting and egg collecting for local consumption. The predatory activity of foxes, pumas and dogs, as well as human settlements, fences, oil and mining exploitation and incidences of extreme climatic conditions caused further impact.

Potential threats to the Patagonian subspecies are estimated to be insignificant. The species has demonstrated very good adaptation to livestock raising and has overcome the pressures associated with this activity. Such pressures include aspects related to health and infrastructure (fences, cattle paths, sheepdogs, etc.), as well as those said to bear relation with deteriorated pastures due to the incorporation of a significant amount of biomass (cattle) into the habitat. Population dynamics show the lesser rhea's great capacity for reaction and adaptation, in its response to the pressures it has suffered through hunting, egg collecting and severe climatic conditions in the winter.

2.8 Strengths

The Magallanes productive sector is reacting positively to more demanding markets that value ecological or organic products. This means monitored, certified integral production processes based on environmental sustainability of the productive system and breeding of animal species in natural conditions. This philosophy of production gives value and room for the wildlife associated with cattle-raising environments, which doubtless represents a stimulus that should be reflected in guarantees for the conservation of this and other wild species. Thus, in the month of April 2002, the region had an area of nearly 600,000 hectares where methods of organic production were followed.

In coherence with these precepts, the Region XII SAG is immersed in an effort to improve and implement a "Strategy for Wildlife Recovery, Management, Control and Appraisal in the Forestry-Agricultural-Fishing Environment of Region XII." This is an instrument based on the IUCN Global Strategy for Biodiversity Conservation. To this end, a project is being prepared for presentation to the WWF and the GEF.

3. Use and trade

3.1 National use

The Chilean Hunting Law prohibits ownership, transport and trade of any part, product or specimen of lesser rhea, unless from established and authorized breeding operations regularly controlled by the SAG. Thus, the scarce products traded come from these sources. Poaching is estimated to have considerably declined, along with egg collection and sale at bakeries. In rural zones, some workers who traditionally consumed rhea eggs may continue to do so, knowing that it is now illegal. In any case, a Patagonian worker's staple diet revolves around the very ovine cattle he tends.

3.2 Illicit international trade

Mostly originating from Chile and for zoos. Between 1978 and 1987, the exports of 25 live specimens were reported. Between 1987 and 1997, this figure increased to 57 (source: WCMC).

3.3 Illicit trade

Data are unavailable on illicit trade in this subspecies. Records of infringement of the Hunting Law in Region XII have been scarce; usually cases of finding ranch workers in illegal possession of rhea eggs, or tourists holding such eggs.

3.4 Real or potential effects of trade

Commercial activity with wildlife products and by-products can undoubtedly affect the conservation of any species, as long as control, enforcement and sanction mechanisms are not ensured. In this case, the amendment will only facilitate international trade of products and by-products of *Rhea pennata pennata* from captive management units (breeding operations). These ideas are accompanied by an effort in developing a national and regional enforcement strategy to prevent offtake of wild populations. A Regional Wild Fauna Commission has been set up in Region XII for this purpose. The Commission is made up of the Regional Intendant, in his capacity as the chief authority, representatives of State services and various professional organizations and private NGO's, including the regional gastronomic association, which co-operates with the SAG in organizing and controlling the *Rhea pennata pennata* meat supply.

This in turn will guarantee identification and permanent follow-up on the subspecies, in order to ensure its proper management. It will also effectively exclude the other two subspecies from the commercial circuit.

3.5 Control measures

3.5.1 International trade

International trade in *Rhea pennata pennata* products and by-products will be based on regulation of the species listed in Appendix II of the CITES Convention, with the additional identification and certification measures detailed under point 4.3.2.

3.5.2 National measures

All specimens from breeding operations (ranches) will be identified with microchips. The Agriculture and Livestock Service will be in charge of enforcing and registering this identification, to be performed only once, covering all young individuals produced each year that have survived to 4 months of age. A standardized national register is carried out in each Region of the Country, and copies of all of them are kept at the central headquarters. Through this system, breeding stocks are known and monitored by semester. The SAG registers, among other things, updated figures on the establishment, births and deaths during the season, and purchases and sales over the preceding semester.

4. Conservation and management

4.1 Legal situation

4.1.1 National legislation

- Law No. 19,473 of 1996
- Agriculture Decree No. 5 of 1998, including hunting regulation.
- Law No. 873 of 1975 approving the CITES Convention, and decree No. 141 of the Foreign Affairs Ministry, in which Chile subscribes the CITES Convention.

4.1.2 On the International Level

Currently, the Chilean population is listed in Appendix I of the CITES Convention. In Chile's Region XII, the state of conservation is considered Vulnerable (Magallanes and Tierra del Fuego). The species is not catalogued in Danger of Extinction, as in the rest of the country. Argentina, the other country where this subspecies is present, has its entire population in Appendix II.

4.2 Management of the species

4.2.1 Supervision of the population

The Agriculture and Livestock Service (SAG) of Chile's Region XII has been performing population estimates and monitoring of fauna since 1996 in the three main provinces of the Region. This task has led to approximations of the situation in which these populations may be found, detection of dangerous changes and timely response when necessary and possible. It has also allowed for capacity building, in generating professional field studies, enhancing relations among stakeholders involved in the species' threats or defence mechanisms.

4.2.2 Habitat conservation

Today, the State of Chile, through the Agriculture Ministry, is fostering various practices with the aim of recovering degraded lands in the agricultural-fishing environment. These actions provide a proportional benefit for lesser rhea populations. The Programme in question is the "Incentive System for Degraded Land Recovery," created through a Legal

Decree (No. 235/98). One of its outstanding features is that the fund is guaranteed for 10 years as of 1999.

Habitat Conservation also benefits from the growing interest of the livestock sector in certifying its production with the seal "Organic Product." This initiative is accompanied by a relevant, valuable, positive side effect favouring wildlife conservation.

4.2.3 Management measures

Trade is strictly limited to products from breeding operations. Specimens from the wild shall not be harvested for commercial purposes.

Encouragement for developing breeding operations in the regional and national context (see numeral 5).

4.3 Control measures

4.3.1 International trade

The plan for international trade of *Rhea pennata pennata* products and by-products will be based on regulation of the species listed in Appendix II of the CITES Convention, with the additional identification and certification measures detailed under point 4.3.2.

4.3.2 National measures

All specimens from breeding operations will be identified with the system of integrated microchips. The Agriculture and Livestock Service will be in charge of enforcing and registering this identification, covering all young individuals produced each year that have survived to an age of a lower risk of death (from 4 months of age). The SAG has implemented a system of wild fauna semester reports, showing increases and decreases since the previous semester.

5. Captive breeding of *Rhea pennata pennata* in Chile; data to support the request for amendment

Breeding the lesser rhea in captive conditions is an initiative that has aroused special interest among producers and cattle raisers of Chile's southernmost regions. They had previously sought to diversify their traditional production through the offer of new products, such as the lean meat of wild species, feathers, eggs and reproducing specimens to begin new breeding operations, or the offer of services, such as the creation of eco-tourism parks and animal exhibition centres. Thus, seven authorized breeding operations presently exist in Region XII. While some of them were initiated several years ago, it has only been in the past three years that well-defined, structured projects have been developed. These projects have clear objectives, goals, activities and indicators of results, as well as external funding from State sources, notably, the Agro-Fisheries Innovation Fund (FIA) and the Technological Research and Development Fund (FONTEC).

Chilean lesser rhea breeding operations		
Name of breeding operation or owner	Initial year	Current stocks
La Dehesa Acclimatisation Centre	1980	13
Carlos Montt Breeder, Santiago	1992	25
Siglinda Stanke Breeder, Temuco	1994	18
Lolita Ranch, Region XII	1994	14
Otway Lesser Rhea Breeder, Region XII	1998	70

Petar Ivelic Lesser Rhea Breeder, Region XII	2002	No stock
Raul Lira Lesser Rhea Breeder, Region XII	2002	No stock
Paulina Hitchins Lesser Rhea Breeder, Region XII	2001	No stock
Ea Lesser Rhea Breeder, Los Calafates, Region XII	1992	180
INIA CRI Kampenaike Breeder, Region XII	2000	200

5.1 Advances in rhea breeding at breeding operations

From information gathered at the breeding operations themselves, the following advances, problems and future perspectives can be identified and signalled.

5.1.1 Technical advances, problems and opportunities

Successful artificial incubation:	65 a 74%
Egg fertility:	85%
Mortality:	40%
Mortality from 1 to 3 months:	15%
Mortality from 3 to 12 months:	2%
Mortality > 12 months:	1%
Survival at 2.5 years:	52.82%
Causes of mortality:	Malformations, infectious diseases, tight quarters, perforations of the gastric or intestinal tract by extraneous objects, accidents, injuries.
Problems in breeding:	Inbreeding and space requirements, quick weight gain vs. skeleton development.
Problems related to the behaviour of the species:	Reaction of panic in the face of stressful situations, with associated injuries.
Noteworthy advantages:	
Marketing-related problems:	Listed in CITES Appendix II, products cannot be marketed outside Chile.

5.2 Synthesis of the supporting arguments for the amendment request

5.2.1 Chile, through its Agriculture Ministry and its Service agencies (SAG, CONAF) has endeavoured to protect, study and recover the natural populations of *Rhea pennata pennata*. For this purpose, the Government has implemented schemes to monitor the existing populations in the region, both in protected wild areas and in the agricultural-fishing area. Furthermore, continuous work on a regional and national scale is in progress to optimize education and enforcement of the Hunting Law. A technical framework and specific plans have been developed to improve the prevention and investigation of illicit conduct.

5.2.2 Chile, through various development agencies (CORFO, FIA, FNDR, Fondecyt, Fondema) designed to improve the sector's competitiveness and diversify the country's agricultural and fishing production, has financed applied research projects on reproduction, breeding and economic appraisal of the species bred in captivity. However, this effort is insufficient if the CITES category for this species in Chile is not modified, transferring from Appendix I to Appendix II specimens from breeding operations. This will allow for future operation of these enterprises, thus facilitating technical benefits and economic profits.

- 5.2.3 The increased population of captive-bred rhea provides important backing to guarantee conservation of the species, both as a reservoir of germ plasm and as a source for populating or reinforcing natural areas. In addition, as this source of birds exists, there is an automatic decrease in pressure on natural populations to initiate new breeding operations.
- 5.2.4 Institutionally, the Agricultural and Livestock Service (SAG) is an agency with national presence and coverage. It is structured into technical and budgetary frameworks, and its control procedures and mechanisms have credibility. This situation offers reliability when it comes to initiating the captive breeding of a native species for commercial purposes.
- 5.2.5. Substantial advances in national and regional professional capacity building have accompanied the gradual development of rhea breeding operations. New knowledge and experience on this zootechny have been generated.
- 5.2.6 Rescuing, studying, appraising and using – in the broad sense of the concept (consumer and non-consumer use) – a wild species constitutes a beneficial cycle generating elements that support the conservation of the species.

6. Other comments

Argentina, as range State of the species, stated that it had no objection to the proposal from Chile (see Annex).



Ministerio de Desarrollo Social
Secretaría de Ambiente y Desarrollo Sustentable

BUENOS AIRES, 3 de junio de 2002

SR. DIRECTOR NACIONAL:

Tengo el agrado de dirigirme a Ud. a fin de comunicarle que hemos recibido y analizado la propuesta de enmienda a los Apéndices de la Convención CITES, referida a la especie *Pterocnemia pennata pennata*, a ser presentada por la República de Chile a la Duodécima Reunión de la Conferencia de las Partes de la Convención CITES, no encontrando objeciones a la misma, en nuestro carácter de país del área de distribución de la especie.

Deseándole el mayor de los éxitos como país anfitrión de la mencionada Reunión, saludo a Ud. con mi más distinguida consideración.

Lichtschein

Lta. VICTORIA LICHTSCHEIN
DIRECTORA DE FAUNA Y
FLORA SILVESTRES

DEPTO. PROTECCION R.A.R.
A: <i>Vida Silvestre</i>
Nº REG: <i>75</i>
FECHA: <i>3 JUN. 2002</i>

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