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**Czechoslovakian Wolfdog : Report addressing the Department of Agriculture, Water and the Environment terms of reference for proposed amendments to the List of Specimens taken to be Suitable for Live Import (Live Import List)**



**September 2021**

## Summary

Consideration of the Department of Agriculture, Water and the Environment (DAWE) terms of reference for proposed amendments to the List of Specimens taken to be Suitable for Live Import (Live Import List) against information available for the Czechoslovakian Wolfdog (CWD) indicates the risk of allowing the importation of the species would pose minimal biosecurity risk to Australia. Notably, there are already Czechoslovakian Wolfdogs in the country, and they have not had any impact on the biodiversity since their arrival a few years ago.

The Czechoslovakian Wolfdog would be a welcome addition to the species permitted live importation, especially given the growing popularity of the hobby in Australia and the significant economic and social benefits of the dog breeding to Australia. Furthermore, the addition of the Czechoslovakian Wolfdog would be a common-sense decision given it is closely related to and shares a similar environmental risk profile to other species currently permitted live importation to Australia.

A structured risk assessment based on the methodology of Bomford (2008) estimated a 'serious' risk, generally consistent with the risk that would be posed by most of the species currently permitted live importation to Australia.

## 1. Provide information on the taxonomy of the species

- Czechoslovakian Wolfdog or Czechoslovakian Vlcak
- Order : Carnivora, Family : Canidae, Genus : Canis, Species : Canis familiaris

## 2. Provide information on the status of the species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For example, are the species listed on CITES Appendix I, II or III, and if so, are there any specific restrictions on the movement of this species? Include information on the conservation value of the species.

The Czechoslovakian Wolfdog is not CITES listed.

## 3. Provide information about the ecology of the species. Include, but do not restrict your response to:

- lifespan of the species : 12-16 years
- size and weight range : Height : male, at least 65cm  
female, at least 60cm  
Weight : male, at least 26kg  
female, at least 20kg
- the natural geographic range : the CWD has been created in czechoslovakia. But today you can find specimens all around the world.
- habitat :No definite habitat descriptions for the CWD have been published. However, as all other dogs, they need to have access to shelter (inside a house, kennel) and to the outside.
- diet, including potential to feed on agricultural plants : The CWD eats all sorts of dog food (dry, wet, raw feeding). They eat from 0,5kg to 1,5kg per day depending on the type of food, their weight and stage in life, The species is not reported to present a risk to agricultural plants and animals.
- social behaviour and groupings : The CWD can be a very social dog with the right exposure but can, at sexual maturity, be same sex selective/aggressive (for non neutered specimen).
- territorial and aggressive behaviours : The CWD can show some territorial behaviour towards foreigners (human or animal) who would like to enter his living space (house, garden), that can be stopped with training.
- natural predators : Not reported.
- characteristics that may cause harm to humans and other species : CWD have teeth and claws, the teeth can be more harmful, but won't be used if trained. The claws can cause minor injuries as scratch or bruises.

#### **4. Provide information on the reproductive biology of the species, including**

- the age at maturity (first breeding) : males reach sexual maturity around 8 month, females reach sexual maturity around 10 to 12 month sometimes later.
- how frequently breeding occurs : A female can reproduce every 6/7 month, but breeders usually wait at minima one year between litters.
- if the female can store sperm : Females cannot store sperm.
- how many eggs or live-born young are produced at each breeding event : There is between 6 and 9 live-born young per litter.
- if the species has hybridised with other species (both in the wild and in captivity) or has the potential to hybridise with any other species : The CWD do not have hybridised with other species in the wild, but can be reproduced with any other breed of dog.
- if the species can hybridise, are the progeny fertile : All the progeny born between a CWD and another dog are fertile.

#### **5. Provide information on whether this species has established feral populations, and if so, where those populations are. Include information on whether this species has been introduced to other countries, even if it has not established feral populations.**

The species has not been reported as having an established feral population, despite being traded internationally as household pets.

#### **6. Provide information on, and the results of any other environmental risk assessments undertaken on the species both in Australia and overseas, including any Import Risk Analyses undertaken.**

The addition of the CWD to the Live Import List would be generally consistent with Australia's biosecurity arrangements given that the species is closely related to and shares a similar environmental risk profile with other dogs like the Labrador Retriever or the German Shepherd both of which are currently permitted live importation to Australia.

## **7. Assess the likelihood that the species could establish a breeding population in the Australian environment should it ever be released from effective human control.**

Assessing the risk of the potential of introducing a new organism into the environment involves assessing the risk of it becoming established and spreading and the likely impacts if establishment occurred. The risk assessment for the establishment of exotic mammals and birds introduced to Australia developed by Mary Bomford has been adopted by DAWE for its mammals risk assessments (Bomford 2008). The following considers each of the risk factors considered by Bomford to be applicable to mammals and birds. The specific criteria in the DAWE template terms of reference are also covered. A structured risk assessment based on the Bomford methodology is at Appendix A.

- ability to find food sources : As a carnivore feeding primarily on small mammals (in the wild), the species is expected to find food sources in the unlikely event it is introduced into the wild.
- ability to survive and adapt to different climatic conditions : CWD can adapt to different climatic conditions. This means they could theoretically establish a breeding population.
- ability to find shelter : As a domesticated species opportunity to find shelter in the event of deliberate or inadvertent release into the wild would be easy as they can live and breed in human-disturbed habitats.
- rate of reproducing : Reproductive rate (the number of offspring that a female produces during its lifetime) data in the wild population have not been reported. Under breeding conditions, females are productive for about 5 years and produce in the order of 6 to 9 live-born young per litter.
- any characteristics that the species has which could increase its chance of survival in the Australian environment : The species is not considered to have any characteristics that would increase its likelihood of survival in the wild in Australia.

In summary, CWD is considered likely to establish, although the species is not reported to have established breeding populations outside being bred by human control despite being traded internationally as household pets. This conclusion can be ground-truthed to an extent by comparing CWD with similar species such as Labrador Retriever, which have not established wild populations despite decades of importation to Australia as household pets.

The above information is presented as a structured Bomford (2008) risk assessment at Appendix A.

## **8. Provide a comprehensive assessment of the potential impact of the species should it establish feral population/s in Australia. Include, but do not restrict your assessment to the impact of this species on:**

- similar niche species : In the unlikely event this species establishes in the wild in Australia, it may compete for small mammals with other carnivore species in

human-disturbed habitats. The species will compete for ground level habitat, they do not climb trees.

- is the species susceptible to, or could it transmit any pests or disease : The species is not known to spread pests or disease to wild specimens. Despite they are known to have the capacity to spread the pests and diseases already present in the living environment of their species.

- probable prey/food sources, including agricultural crops : As a domesticated species CWD eat different kinds of dog food (wet, dry, raw feeding). In the unlikely event this species establishes in the wild the species will eat human garbage, small mammals, such as rodents, rabbits, but also poultry and sheep.

- habitat and local environmental conditions : CWD is known to adapt to his owner/breeder habitat. Nothing has been reported for wild specimens.

- any control/eradication programs that could be applied in Australia if the species was released or escaped : Potential controls measures include listing as a noxious species; eradication or containment programs (including movement controls) or broader education/awareness building campaigns as advertising.

- any characteristic or behaviour of the species which may cause land degradation i.e. soil erosion from hooves, digging : There are no reports of this species exhibiting any behaviours that may cause habitat degradation.

- any potential threat to humans : The only threat reported is biting. This can happen if the specimen is in extreme danger or pain. But this can be avoided with education or restraint (eg muzzle)

**9. What conditions or restrictions, if any, could be applied to the import of the species to reduce any potential for negative environmental impacts (e.g. single sex imports, desexing animal prior to import etc.) :**

Potential environmental impacts from importation of live animals into Australia can take the form of direct pest risks or indirect risks associated with the introduction of new diseases that may be carried in imported specimens. In the case of CWD, importation under Australia's current import conditions would reduce potential disease risks to a high level, consistent with previous Australian Government disease risk analyses.

**10. Provide a summary of the types of activities that the specimen may be used for if imported into Australia (e.g. pet, commercial, scientific).**

The specimen can be imported as a household pet, but it can also be used in search and rescue, service dog (mental and physical disability), Schutzhund sport, tracking, herding, agility, obedience, hunting and drafting.

CWD has multiple qualities, such as high intelligence, endurance, docile, courageous and tremendous loyalty towards his owner. Those qualities make him a perfect family dog as much as a perfect working dog.

**11. Provide detailed guidelines on the way in which the species should be kept, transported and disposed of in accordance with the types of activity that the species may be used for if imported into Australia :**

CWD will be transported in a transport box according to International Air Transport Association (IATA) regulations.

The specimen does not need a special enclosure to be kept in. As a household pet any type of household will be sufficient as long as their physical needs are provided.

**12. Provide information on all other Commonwealth, state and territory legislative controls on the species :**

– The species' current quarantine status: The species is not currently on the permitted species list.

– Pest or noxious status: The species is not listed on any state or federal pest or noxious species list.- Whether it is prohibited or controlled by permit or licence in any state or territory : The species is not prohibited or controlled by permit or licence in any state or territory.

## References

Bomford M (2008) Risk assessment models for the establishment of exotic vertebrates in Australia and New Zealand: validating and refining risk assessment models. Invasive Animals Cooperative Research Centre, Canberra. Available online: [https://pestsmart.org.au/wp-content/uploads/sites/3/2020/06/Risk\\_Assess\\_Models\\_2008\\_FINAL.pdf](https://pestsmart.org.au/wp-content/uploads/sites/3/2020/06/Risk_Assess_Models_2008_FINAL.pdf)

Department of Agriculture and Water Resources 2016, Biosecurity Import Risk Analysis Guidelines 2016: managing biosecurity risks for imports into Australia, Department of Agriculture and Water Resources, Canberra. Available online : <https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/bira-guidelines-2016.pdf>

ABARES 2021, The National Priority List of Exotic Environmental Pests, Weeds and Diseases: Information Paper (Version 2.0), ABARES report to client prepared for the Chief Environmental Biosecurity Officer, Department of Agriculture, Water and the Environment, Canberra, ACT. CC BY 4.0. Available online : <https://www.agriculture.gov.au/sites/default/files/documents/eepl-information-paper.pdf>

Wikipedia (n.d.). “Czechoslovakian Wolfdog” [online] Available at: [https://en.wikipedia.org/wiki/Czechoslovakian\\_Wolfdog](https://en.wikipedia.org/wiki/Czechoslovakian_Wolfdog)

Federation Cynologique International (AISBL) : “Czechoslovakian Wolfdog Standart” St-FCI n°332/03.09.1999. Available online : <http://www.fci.be/nomenclature/Standards/332q01-en.pdf>

Convention On International Trade In Endangered Species Of Wild Fauna And Flora, Appendices I, II and III, valid from 22 June 2021. Available online : <https://cites.org/sites/default/files/eng/app/2021/E-Appendices-2021-06-22.pdf>



## **Appendix A: Bomford model risk assessment:**

Assessing the risk of the potential of introducing a new organism into the environment involves assessing the likelihood of it becoming established and spreading and the likely impacts if the species does establish. . The following analysis applies to the assessment method for determining the risk of establishment of exotic birds and mammals introduced to Australia. Two models were developed by Bomford (2003 and 2006). The first model has four factors that are strongly linked to establishment risk in the analyses by Duncan et al (2001) and Forsyth et al (2004). The second model includes an additional three factors that many experts suggest are linked to establishment success, but for which there is not such strong quantitative evidence (Bomford 2003 and 2006).

Bomford (2008) identified a range of factors that determined establishment success of exotic birds and mammals, including climate match, history of establishment elsewhere, overseas range size, taxonomic class, diet, dwelling in disturbed habitat, and non-migratory behaviour. These risk factors as well as the potential impacts of the Czechoslovakian Wolfdog of establishing wild populations in Australia are discussed below, as are the outputs of applying the Bomford (2008) methodology. These findings should be considered together with information addressing the DAWE terms of reference for proposed amendments to the List of Specimens taken to be Suitable for Live Import (Live Import List) in the body of this submission.

### **Risks posed by captive or released individuals**

- Public safety rank :

As a household pet it is pretty unlikely for the CWD to show aggressive behaviour. For specimens in the 'wild' (getting lost or abandoned) aggressive behaviour can be shown if in extreme danger or extreme pain.

The Bomford (2008) Public Safety Risk Rank has been calculated as 'Moderately dangerous' by the criteria of 'Risk to people from individual escapees' and 'Risk to public safety from individual captive animals'.

Although, we have not to forget that the CWD is not a wild species, but a household pet who can easily be trained.

### **Risk of establishment**

#### **Model 1: Four-factor model for birds and mammals**

- Climate Match Score :

Climatch (v2.0) was run with the source region defined as an area in Europe (Czechoslovakia, cradle of the breed) in order to compare the climates between this area and Australia. A climate match prediction was generated using the Euclidean algorithm applied to the 'world stations' data set (Figure 1). Climatch calculated a 'value X' (Climate Closest Standard Match Sum Level 6) of 18 936, by sum the highest five match classes.

The result is a Climate Match Score of 6 (Extreme). We can easily see why we have a score this high. These two regions have a pretty similar climate, and means specimens that will be imported will easily adapt to the Australian climate.

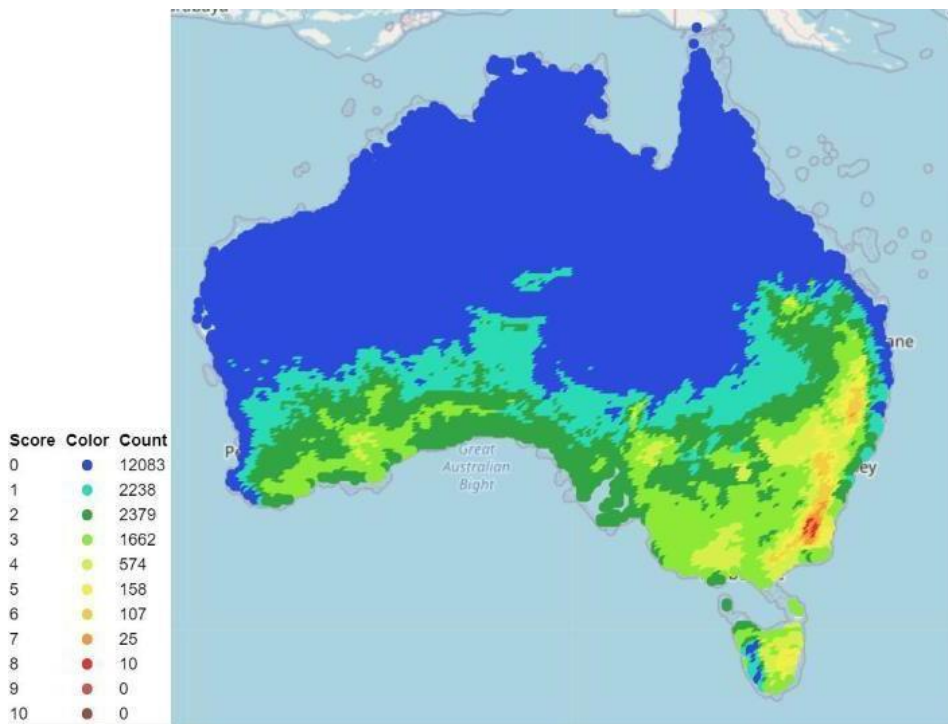


Figure 1 : Climatch output for CWD

- Exotic Population Established Overseas :

No exotic population established overseas has ever been reported. The CWD that are lost or abandoned do not stay long enough in the 'wild' to be able to establish any population.

- Overseas Range Size :

No overseas range size can be calculated of the fact that no population have been establish overseas.

- Taxonomic class :

The specimen is a mammal and more specifically a Canis Familiaris.

The establishment risk rank has been calculated as 'Moderate'.

**Model 2:** Seven-factor model for birds and mammals

- Diet class :

The specimen is dependent on a restricted range of foods.

- Habitat class :

CWD can survive and breed in human-disturbed habitats without access to undisturbed habitats.

- Migratory class :

This species is a non-migratory one.

The establishment risk rank has been calculated as 'Moderate'.

## **Risk of becoming a pest**

### - Taxonomic group :

Mammal in one of the orders that have been demonstrated to have detrimental effects on prey abundance and/or habitat degradation (Carnivora, Artiodactyla, Rodentia, Lagomorpha, Perissodactyla and Marsupialia).

### - Diet and feeding :

Mammal that is a non-strict carnivore (mixed animal–plant matter in diet).

### - Competition with native fauna for tree hollows :

The specimens do not use tree hollows. So have no competition with native fauna for tree hollows.

### - Overseas environmental pest status :

CWD have never been reported as an environmental pest in any country or region.

### - Climate match to areas with susceptible native species or communities :

The species has 10–20 grid squares within the highest two climate match classes, and/or has 30–100 grid squares within the highest four climate match classes, that overlap the distribution of any susceptible native species or ecological communities.

### - Overseas primary production pest status :

Minor pest of primary production in any country or region.

### - Climate match to susceptible primary production :

The total Commodity Damage Score is calculated by multiplying the Commodity Value Indices with the Potential Commodity Impact Score and the Climate Match to Commodity Score.

All noted in 'Table 2.1.'

### - Spread disease :

All birds and mammals (likely or unknown effect on native species and on livestock and other domestic animals).

### - Harm to property :

The property damage risk total annual in dollar could be \$1.00–\$10 million.

### - Harm to people :

Species capable of aggressive behaviour, plus the possession of organs capable of inflicting harm, such as sharp teeth, tusks, claws, spines, a sharp bill, horns, antlers or toxin-delivering organs may enable animals to harm people. Take into account aggressive behaviour that may occur when the species is protecting the nest or young.

Injuries, harm or annoyance likely to be minor and few people exposed: Low risk

The Pest Risk Rank has been calculated as 'Serious'.

**Table 2.1. Calculating Total Commodity Damage Score**

<b>Industry</b>	<b>Commodity Value Index1 (CVI)</b>	<b>Potential Commodity Impact Score (PCIS, 0–3)</b>	<b>Climate Match to Commodity Score (CMCS, 0–5)</b>	<b>Commodity Damage Score (CDS, columns 2 x 3 x 4)</b>
Cattle (includes dairy and beef)	11	1	5	55
Timber (includes native and plantation forests)	10	0	5	0
Cereal grain (includes wheat, barley sorghum etc)	8	0	5	0
Sheep (includes wool and sheep meat)	5	1	5	25
Fruit (includes wine grapes)	4	0	5	0
Vegetables	3	0	5	0
Poultry and eggs	2	1	5	10
Aquaculture (includes coastal mariculture)	2	0	5	0
Oilseeds (includes canola, sunflower etc)	1	0	5	0
Grain legumes (includes soybeans)	1	0	5	0
Sugarcane	1	0	5	0
Cotton	1	0	5	0
Other crops and horticulture (includes nuts, tobacco and flowers)	1	0	5	0
Pigs	1	1	5	5
Other livestock (includes goats, deer, camels, rabbits)	0,5	1	5	2,5
Bees (includes honey, beeswax and pollination)	0,5	0	5	0
<b>Total Commodity Damage Score (TCDS)</b>	-	-	-	<b>97.5</b>

## Decision process — assigning a VPC threat category

Risk to public safety posed by captive or released individuals (A= 0–4):

A = 1 Moderately dangerous

Risk of establishing a wild population (B = 1–16):

B = 7–11 Moderate establishment risk

Risk of becoming a pest following establishment (C = 1–37):

C = 15–19 Serious pest risk

All noted in 'Table 2.2'.

## VPC Threat Category

The species' Vertebrate Pests Committee Threat Category (Natural Resource Management Standing Committee and Vertebrate Pests Committee 2004) is 'Serious' (Table 2.3)

**Table 2.2 Score sheet for Australian Bird and Mammal risk assessment model for assigning VPC threat category**

Factor	Score
A1. Risk to people from individual escapees (0–2)	1
A2. Risk to public safety from individual captive animals (0–2)	0
<b>A. Risk to public safety from captive or released individuals: A = A1 + A2 (0–4)</b>	<b>1</b>
B1. Degree of climate match between species overseas range and Australia (1–6)	6
B2. Exotic population established overseas (0–4)	0
B3. Overseas range size (0–2)	0
B4. Taxonomic Class (0–1)	1
B5. Diet (0–1)	0
B6. Habitat (0–1)	1
B7. Migratory behaviour (0–1)	1
<b>B. Establishment Risk Score: B = B1 + B2 + B3 + B4 + B5 + B6 + B7 (1–16)</b>	<b>9</b>
C1. Taxonomic group (0–4)	2
C2. Overseas range size (0–2)	0
C3. Diet and feeding (0–3)	1
C4. Competition with native fauna for tree hollows (0–2)	0
C5. Overseas environmental pest status (0–3)	0
C6. Climate match to areas with susceptible native species or communities (0–5)	4
C7. Overseas primary production pest status (0–3)	1
C8. Climate match to susceptible primary production (0–5)	3
C9. Spread disease (1–2)	2
C10. Harm to property (0–3)	1
C11. Harm to people (0–5)	2
<b>C. Pest Risk Score: C = C1 + C2 + C3 + C4 + C5 + C6 + C7 + C8 + C9 + C10 + C11 (1–37)</b>	<b>16</b>

**Table 2.3 Vertebrate Pests Committee Threat Category**

Establishment risk1 (B)	Pest risk 1 (C)	Risk posed by individual escapees (A)	VPC Threat Category
Extreme	Extreme	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
Extreme	High	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
Extreme	Moderate	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
Extreme	Low	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
High	Extreme	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
High	High	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
High	Moderate	Highly Dangerous, Moderately Dangerous or Not Dangerous	Serious
High	Low	Highly Dangerous, Moderately Dangerous or Not Dangerous	Serious
Moderate	Extreme	Highly Dangerous, Moderately Dangerous or Not Dangerous	Extreme
Moderate	High	Highly Dangerous, Moderately Dangerous or Not Dangerous	Serious
Moderate	Moderate	Highly Dangerous	Serious
Moderate	Moderate	Moderately Dangerous or Not Dangerous	Moderate
Moderate	Low	Highly Dangerous	Serious
Moderate	Low	Moderately Dangerous or Not Dangerous	Moderate
Low	Extreme	Highly Dangerous, Moderately Dangerous or Not Dangerous	Serious
Low	High	Highly Dangerous, Moderately Dangerous or Not Dangerous	Serious
Low	Moderate	Highly Dangerous	Serious
Low	Moderate	Moderately Dangerous or Not Dangerous	Moderate
Low	Low	Highly Dangerous	Serious
Low	Low	Moderately Dangerous	Moderate
Low	Low	Not Dangerous	Low

**Conclusion**

The estimated risk of ‘moderate’ using the Bomford (2008) methodology is generally consistent with the risk that would be posed by most of the species currently permitted live importation to Australia. It is recommended that Czechoslovakian Wolfdog is added to the Live Import List.