

Birds of Vasse-Wonnerup

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Department of
Environment and Conservation



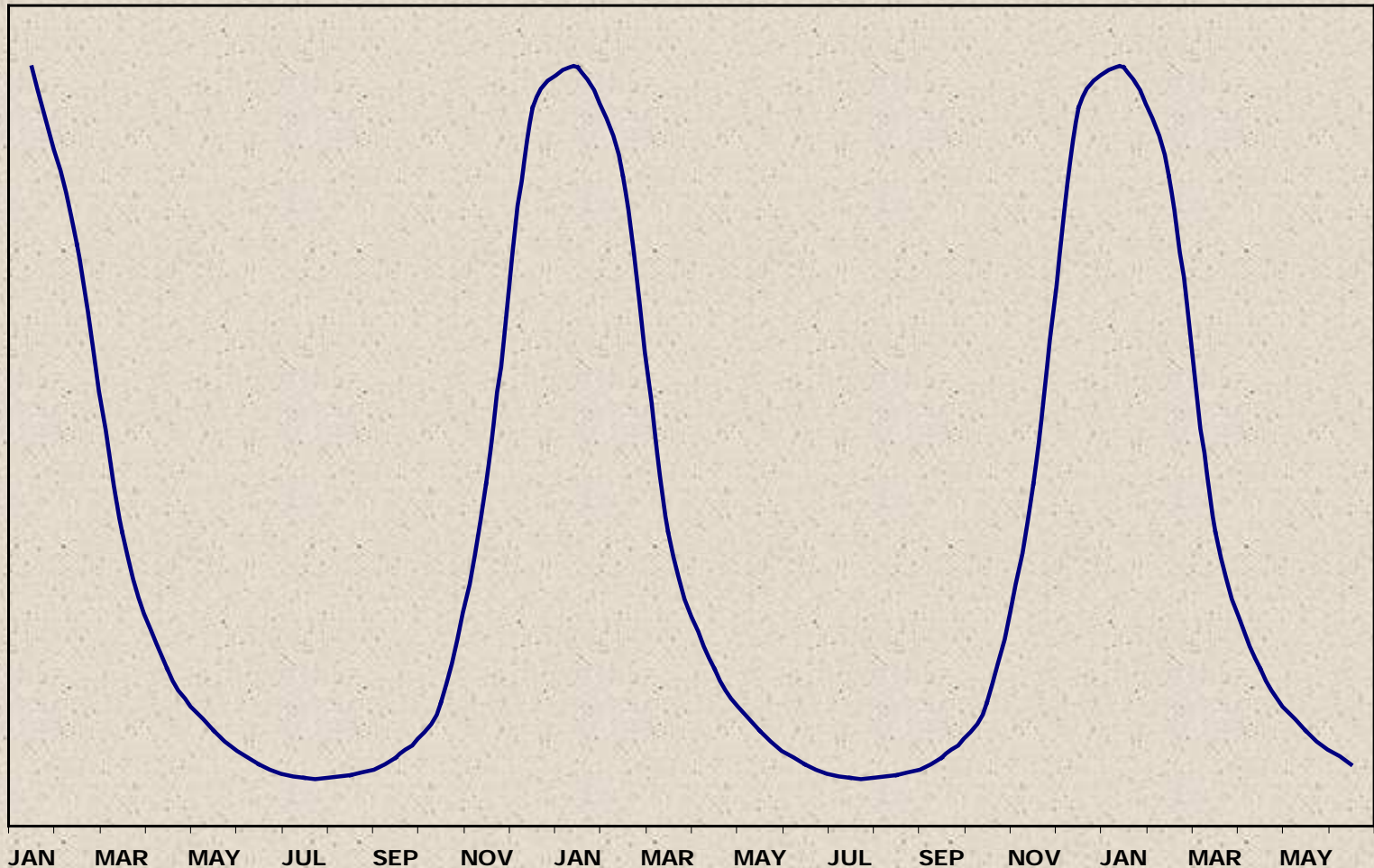
1998-00 V-W Waterbird Survey

Field Work by
Senior Technical Officer Alan Clarke
DEC Science, Busselton



Historical Variation in Bird Numbers on Vasse-Wonnerup

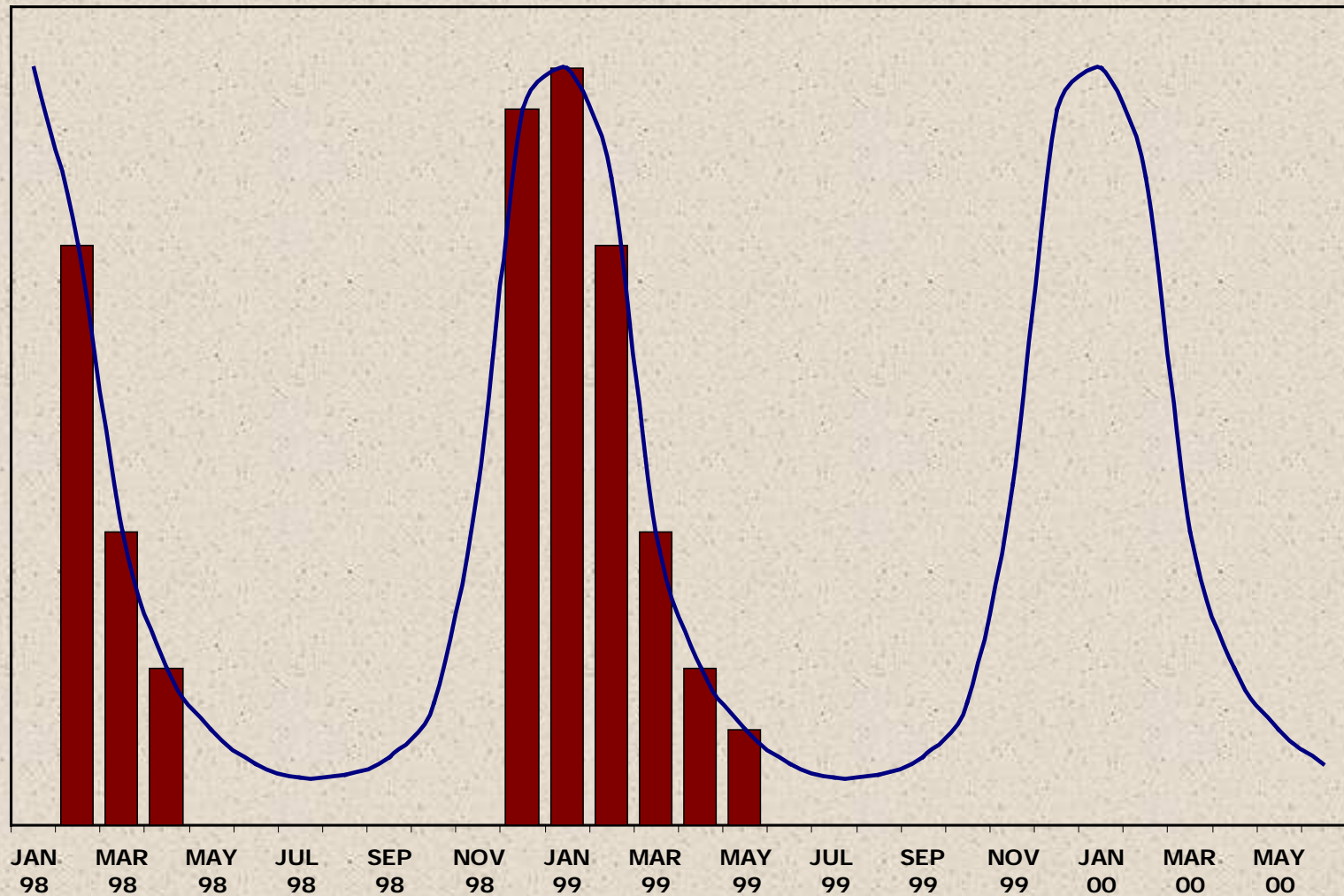
Abundance



1998-2000 V-W Survey Months

■ All Waterbirds

— Historical

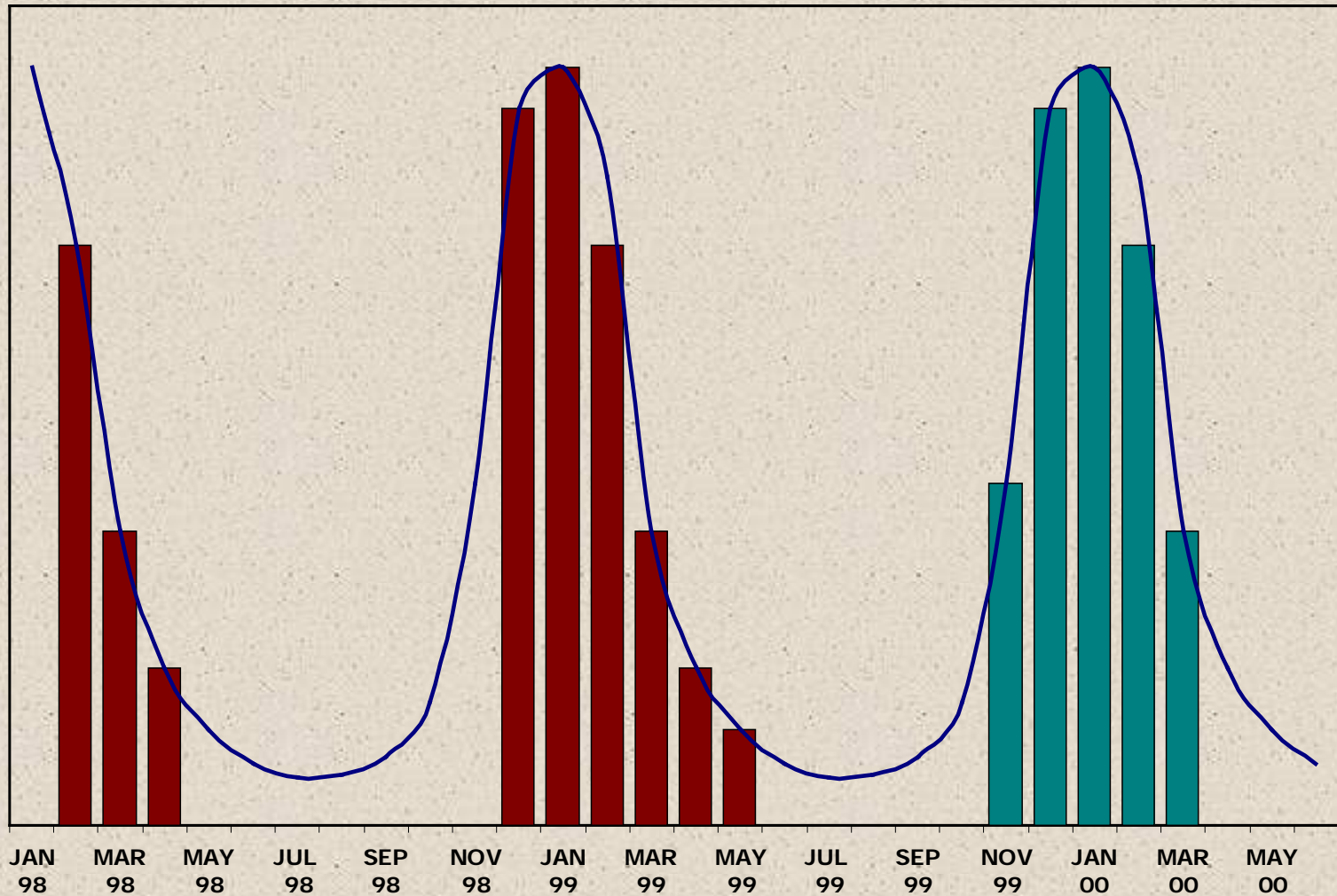


1998–2000 V-W Survey Months

■ All Waterbirds

■ Shorebirds

— Historical

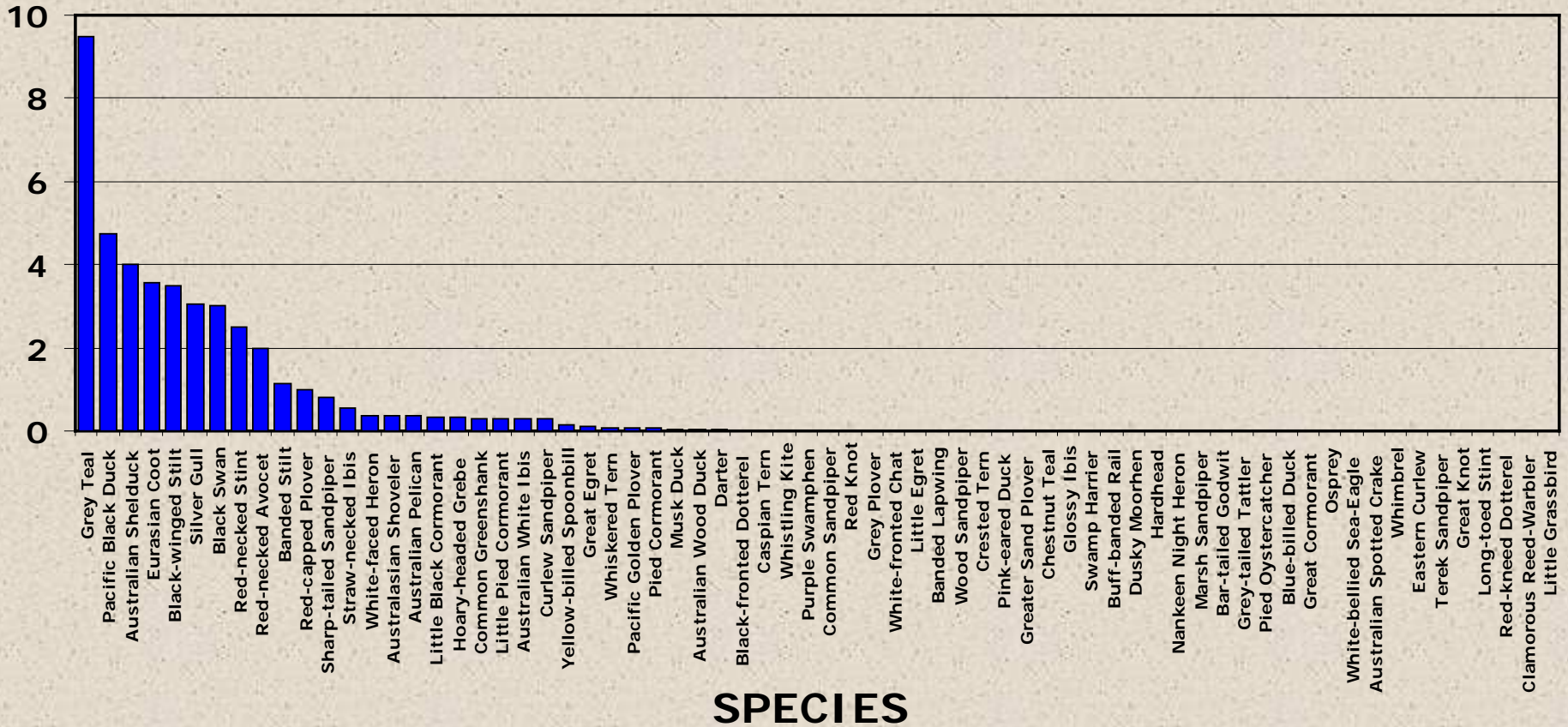


16 Families & 68 Species

- Anatidae** : Ducks, Black Swan
- Podicepsidae** : Hoary-headed Grebe
- Anhinga** : Darter
- Phalacrocoracidae** : Cormorants
- Pelecanidae** : Australian Pelican
- Ardeidae** : Herons, Egrets
- Threskiornithidae** : Ibises, Spoonbills
- Acciptridae** : Raptors
- Rallidae** : Rails, Crakes, Water Hens, Coot
- Scolopacidae** : Sandpipers & Allies
- Haematopodidae** : Pied Oystercatcher
- Recurvirostridae** : Stilts, Avocet
- Charadriidae** : Plovers, Dotterels
- Laridae** : Terns, Gull
- Meliphagidae** : White-fronted Chat
- Sylviidae** : Reed-Warbler, Grassbird

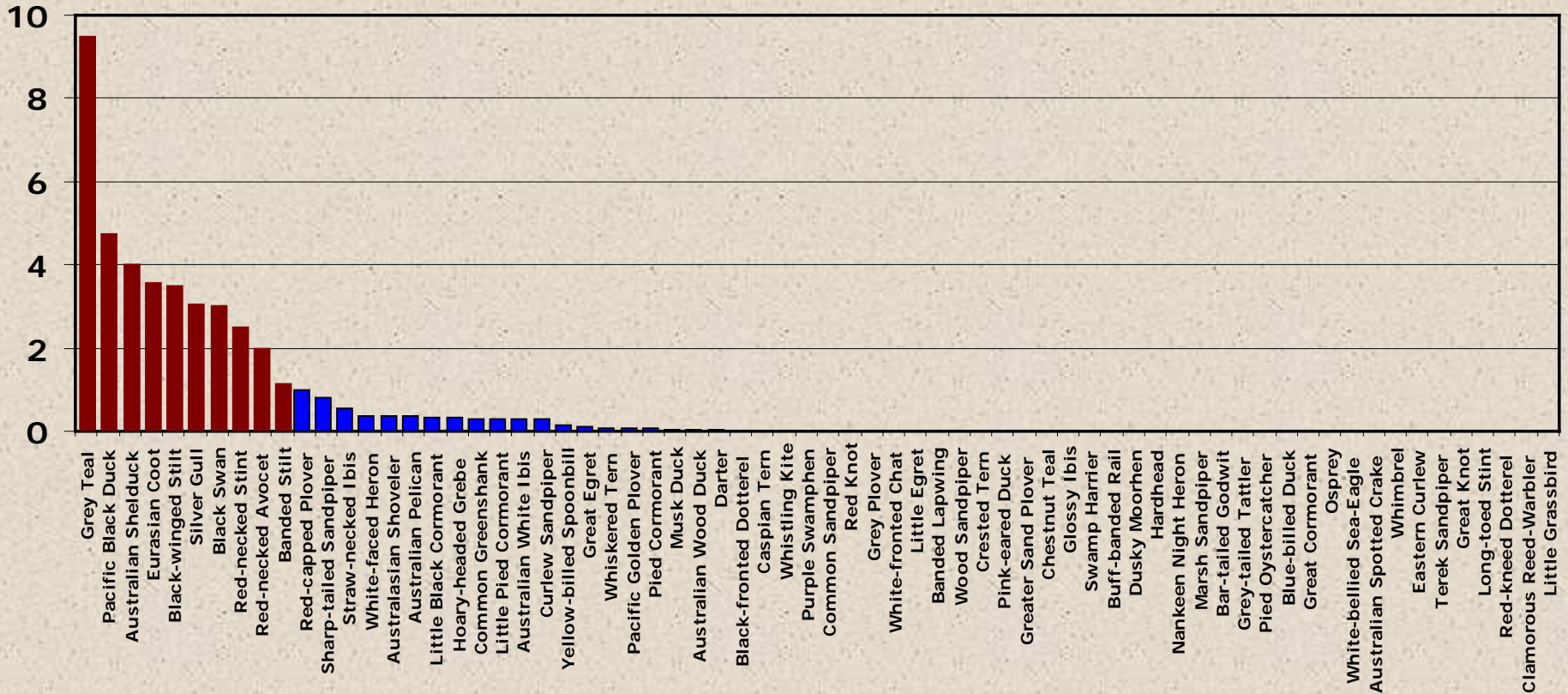
Maximum Counts of Each Species

BIRDS
(x 1000)



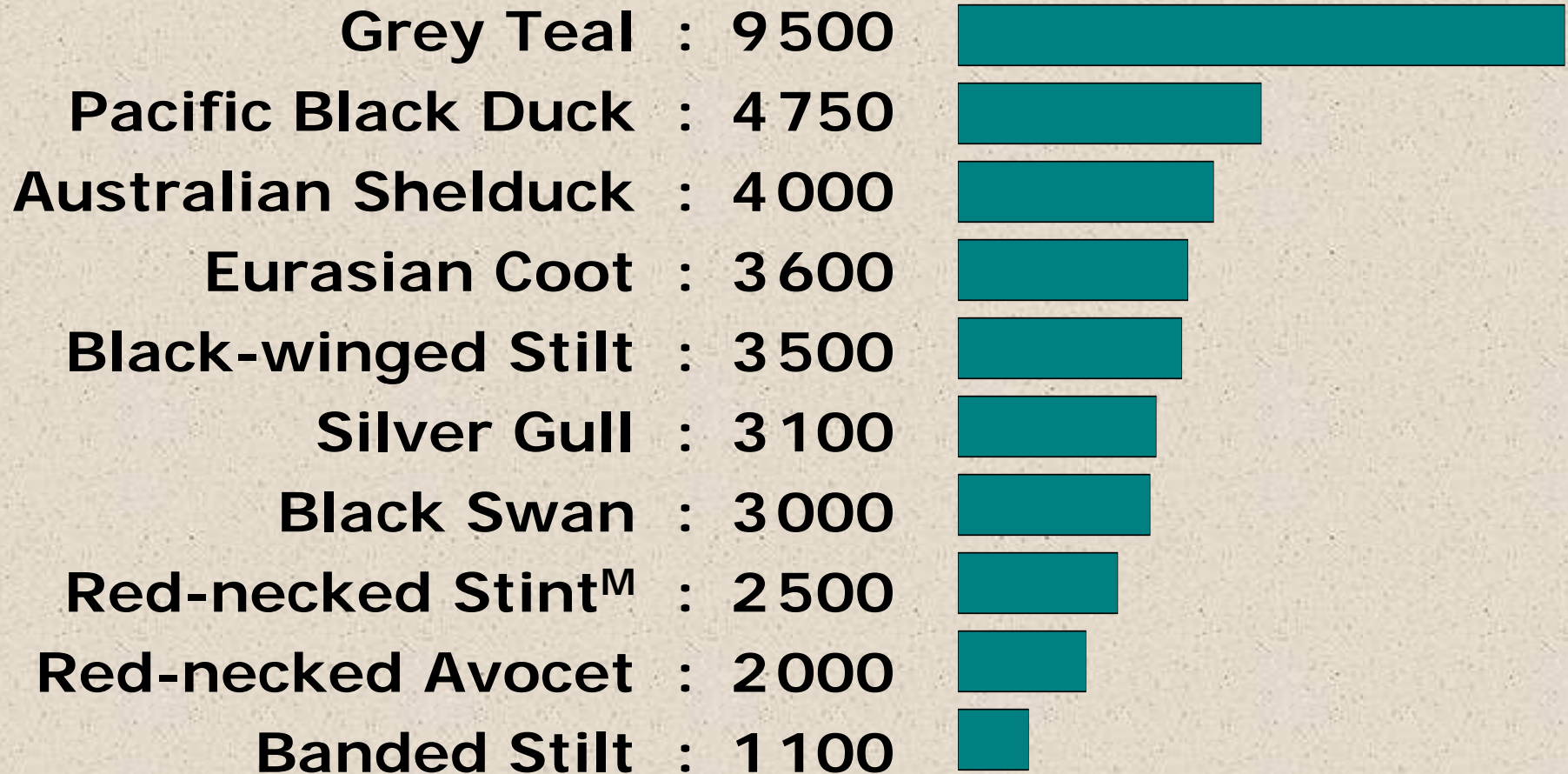
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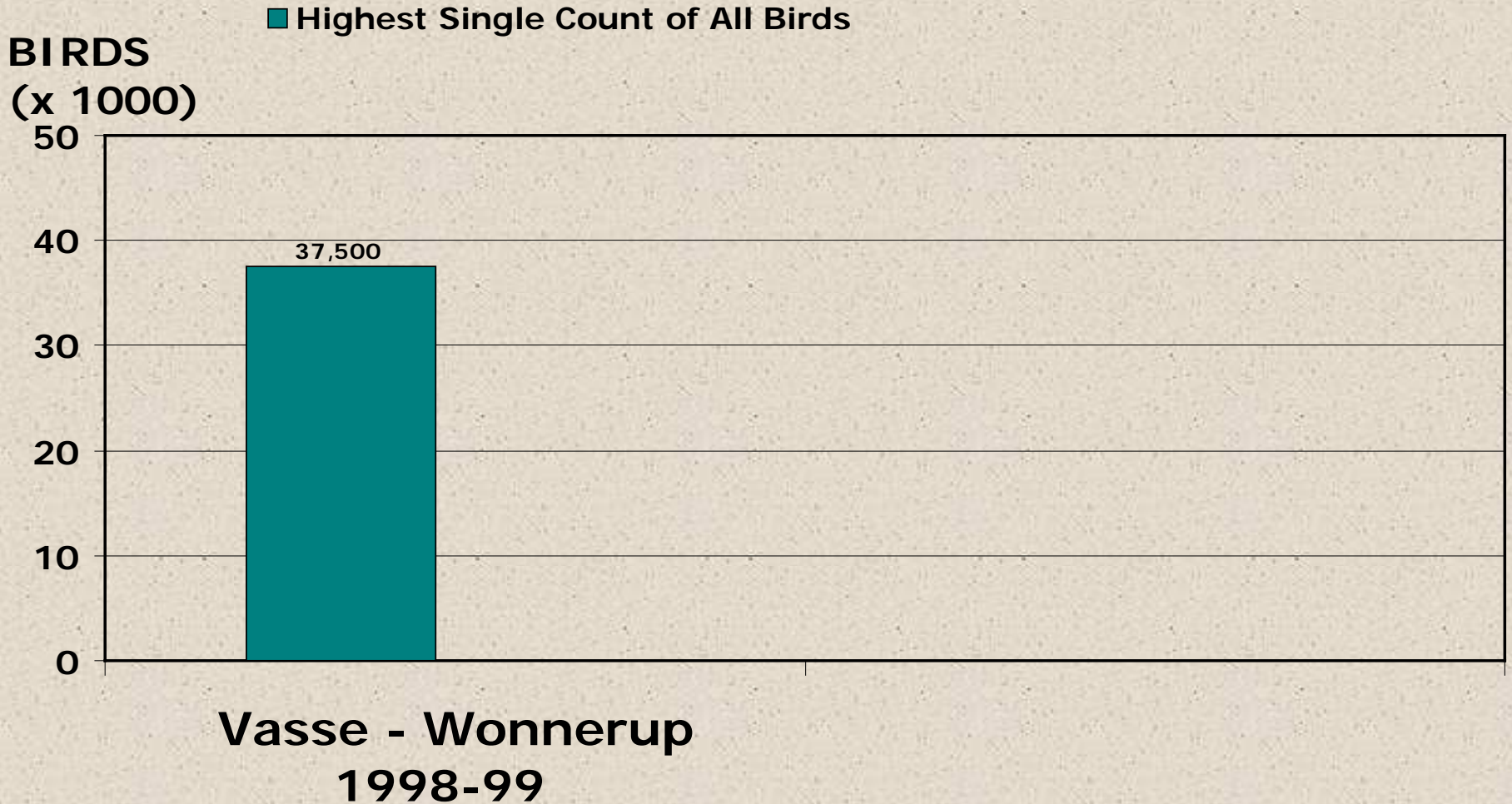


15% of Species = 85% of Birds

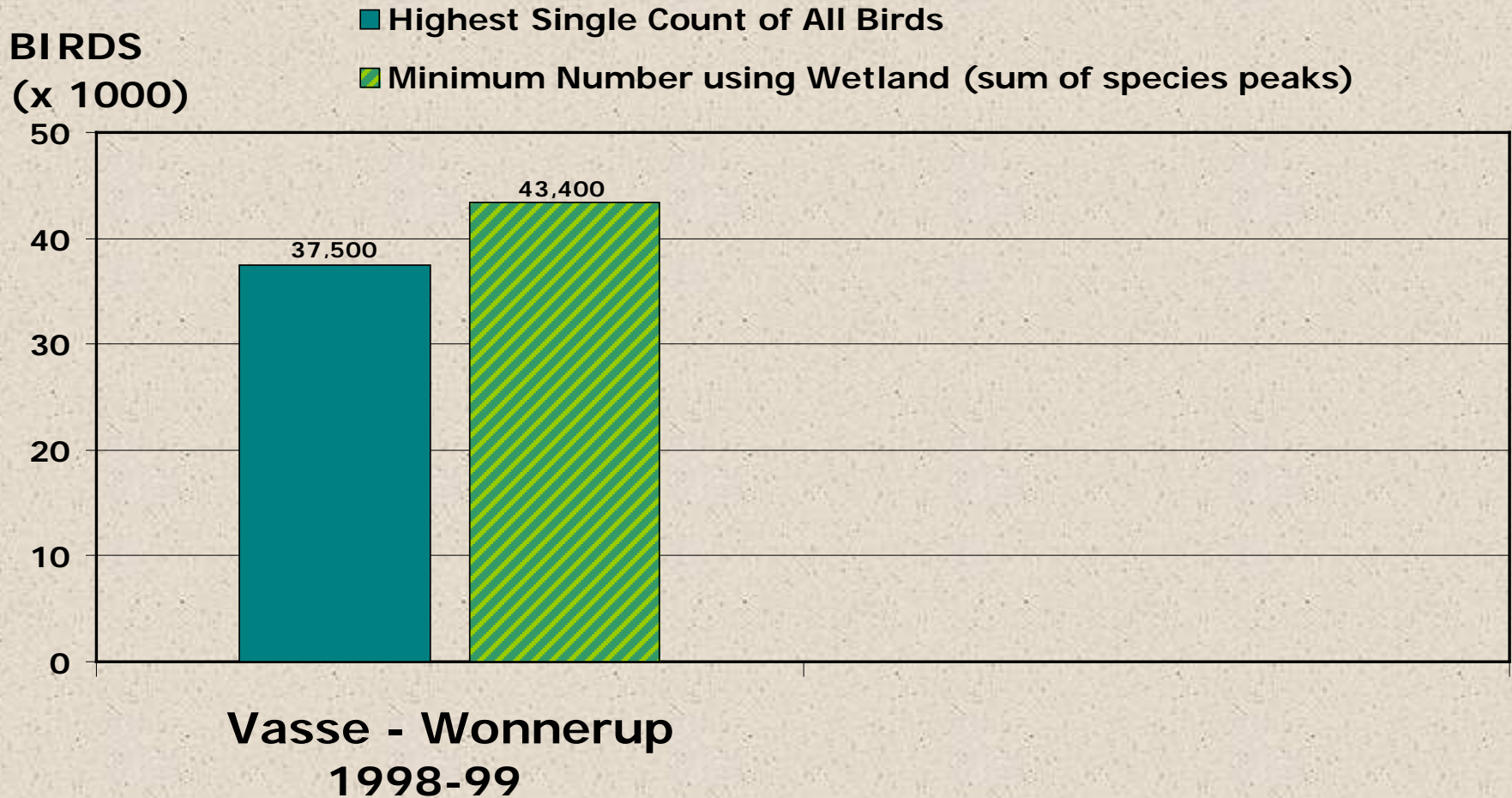
The Ten Most Abundant Species



Highest Counts and Minimum Numbers



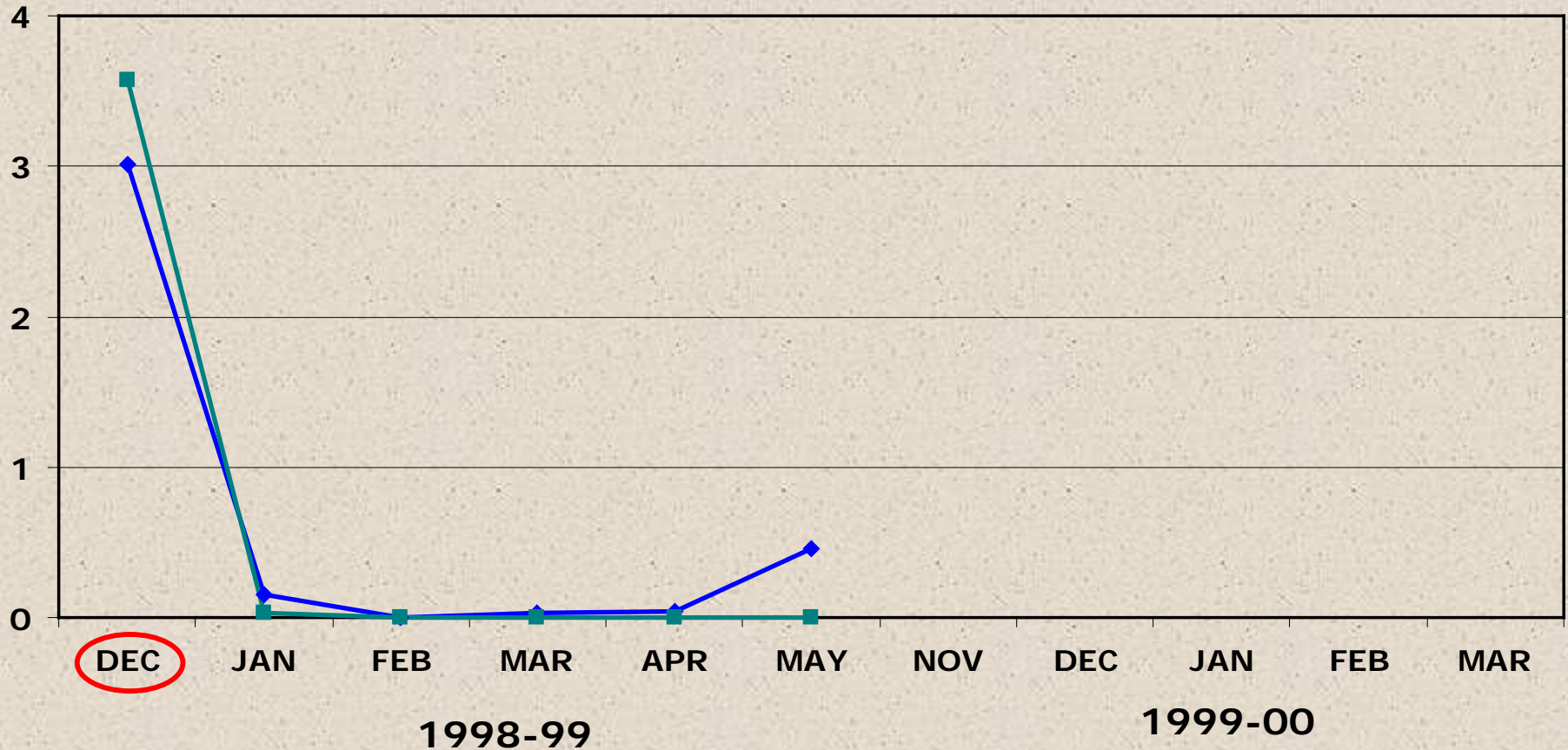
Highest Counts and Minimum Numbers



Some Species Peak in December

BIRDS
(x 1000)

—◆— Swans —■— Coots

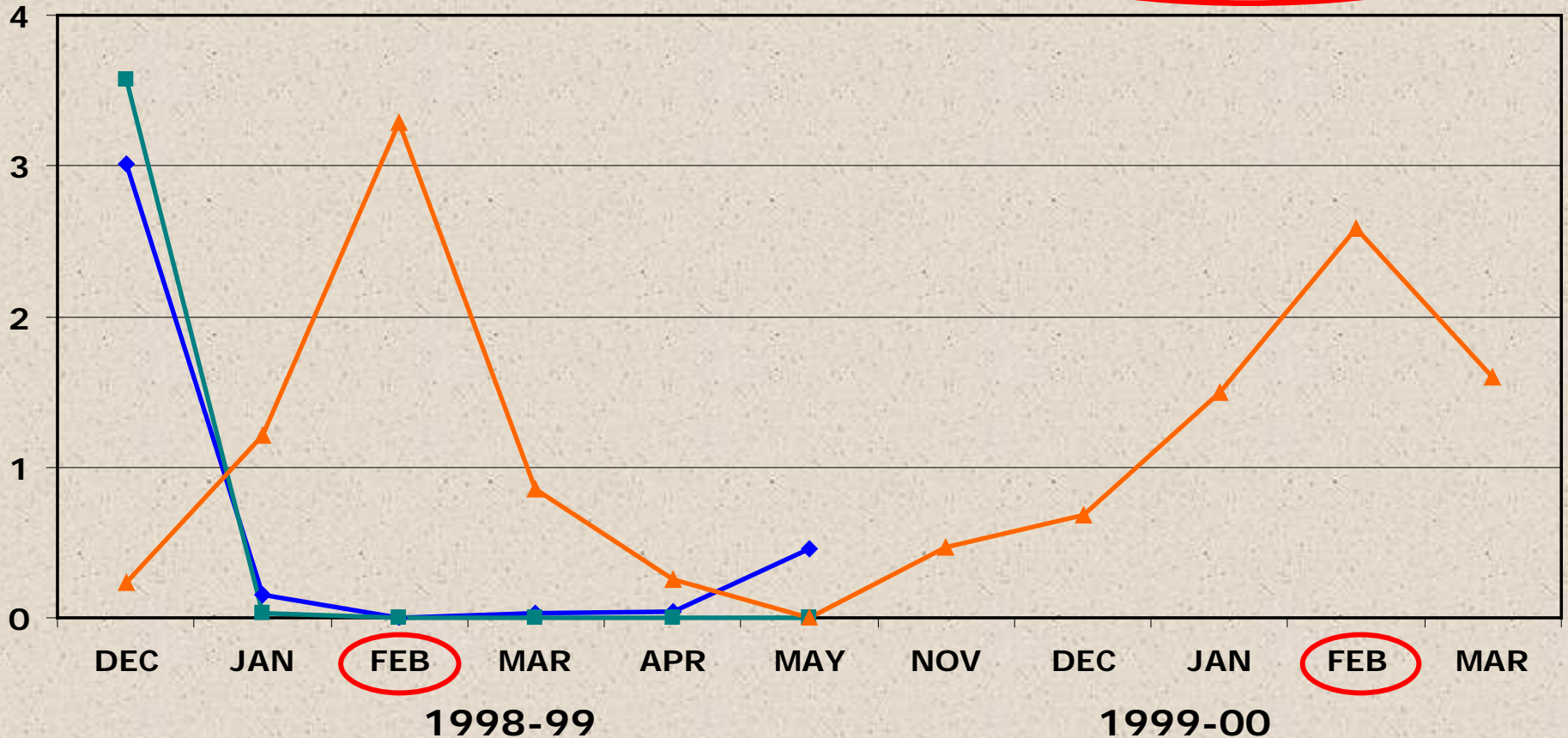


Other Species Peak in February

BIRDS
(x 1000)

◆ Swans ■ Coots

▲ Migratory Shorebirds

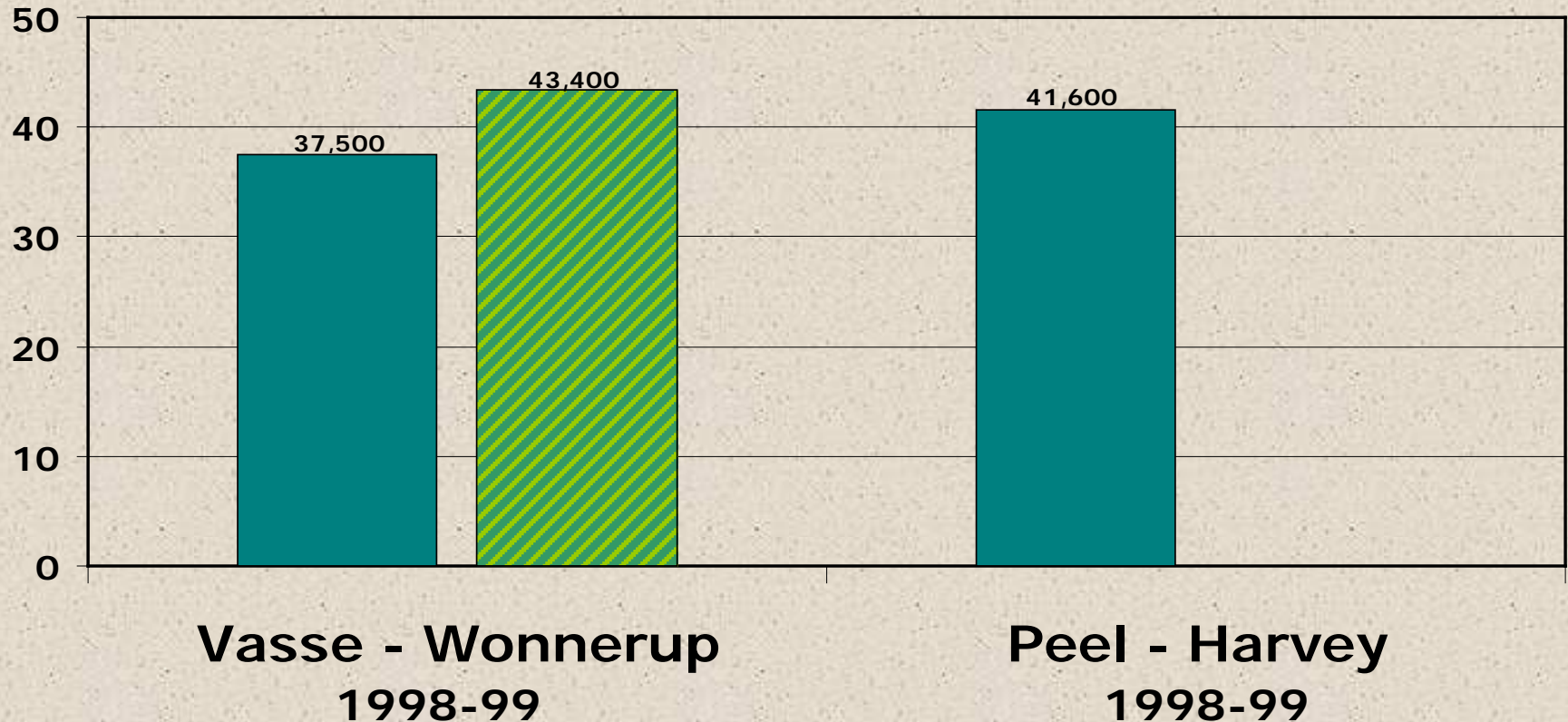


Highest Counts and Minimum Numbers

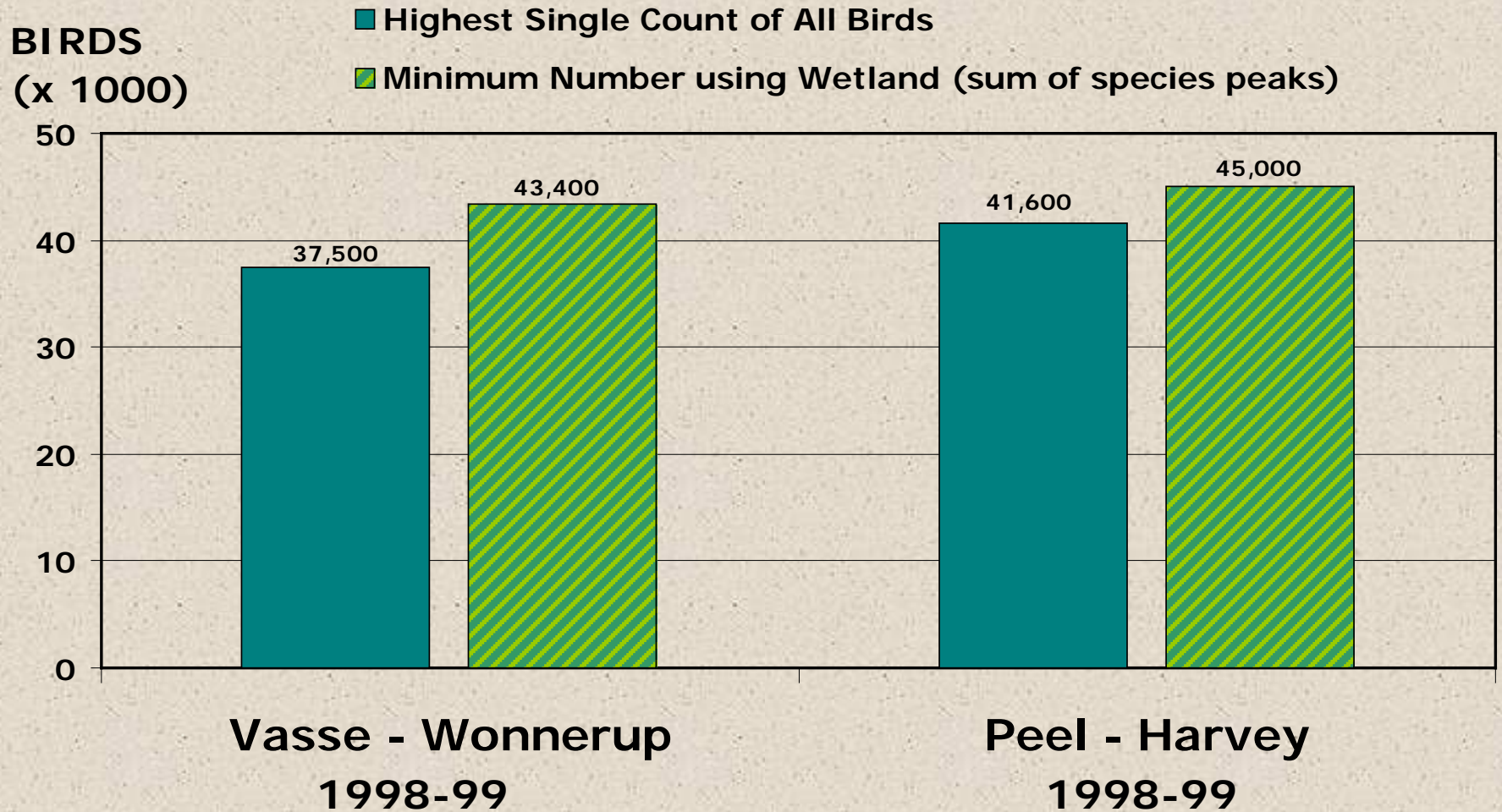
BIRDS

(x 1000)

- Highest Single Count of All Birds
- Minimum Number using Wetland (sum of species peaks)



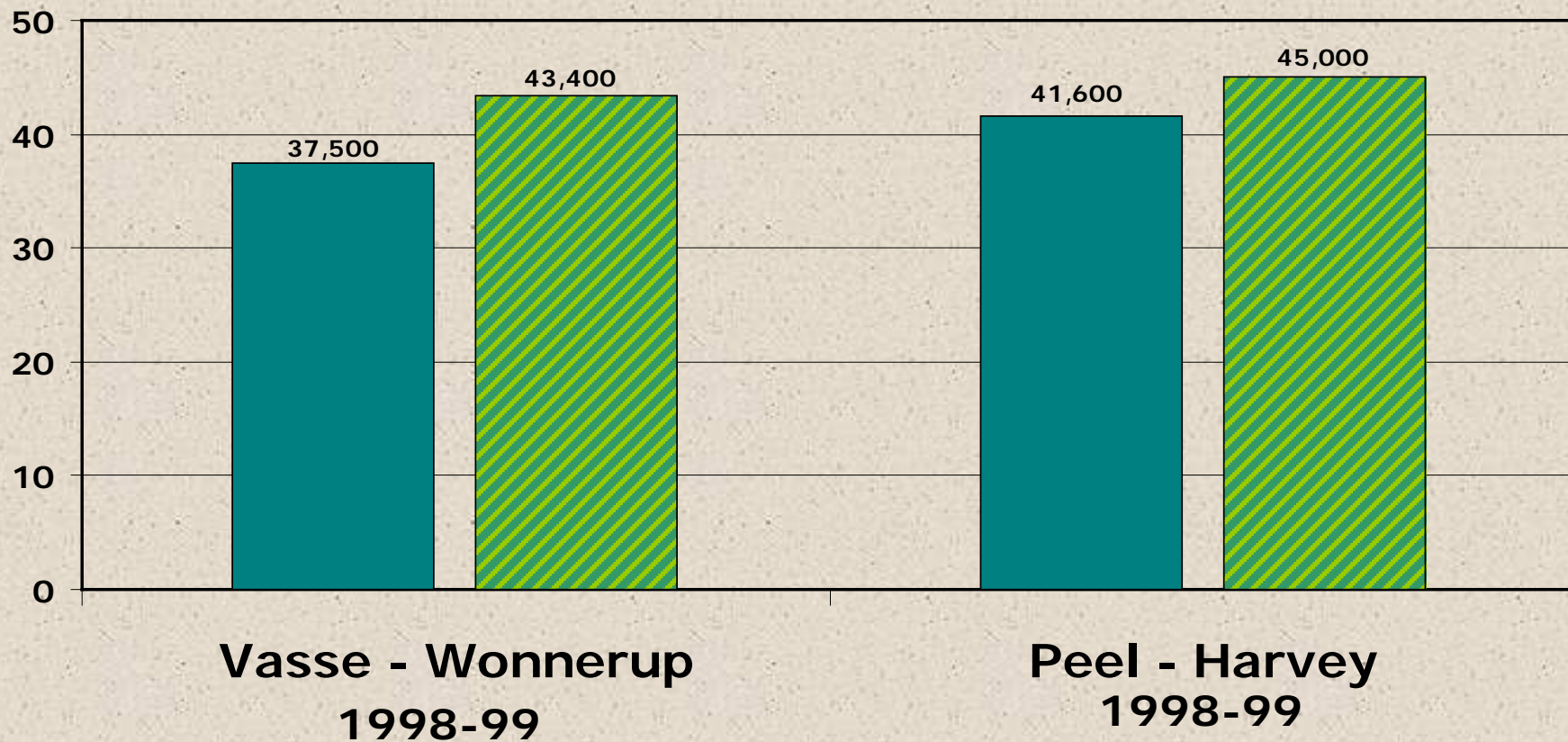
Highest Counts and Minimum Numbers



Highest Counts and Minimum Numbers

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(x 1000)

- Highest Single Count of All Birds
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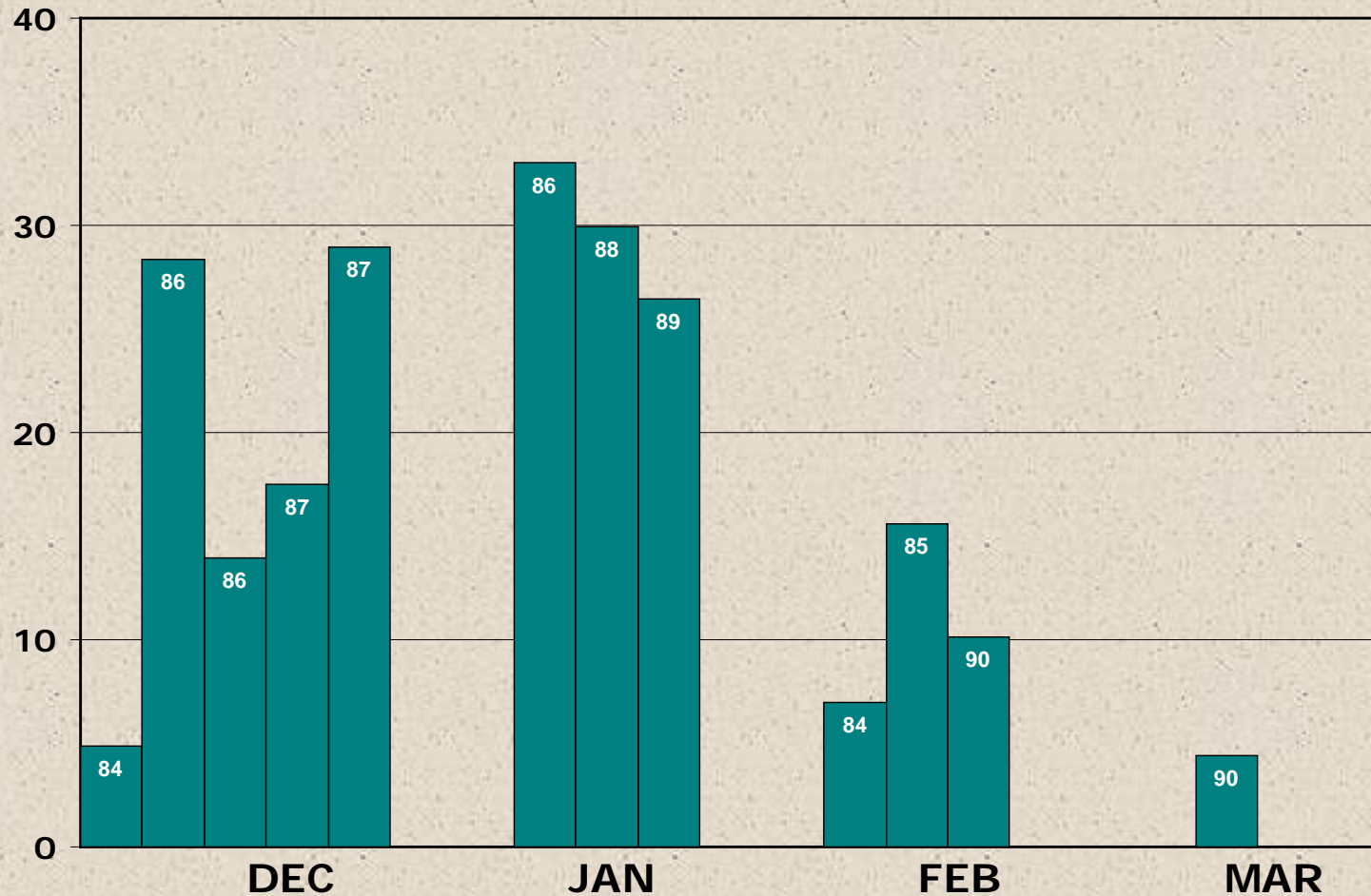


Peel-Harvey is 19x area of Vasse-Wonnerup

How does 1998-2000 data compare with earlier Counts by Month?

BIRDS
(x 1000)

■ RAOU 1984-1990 data



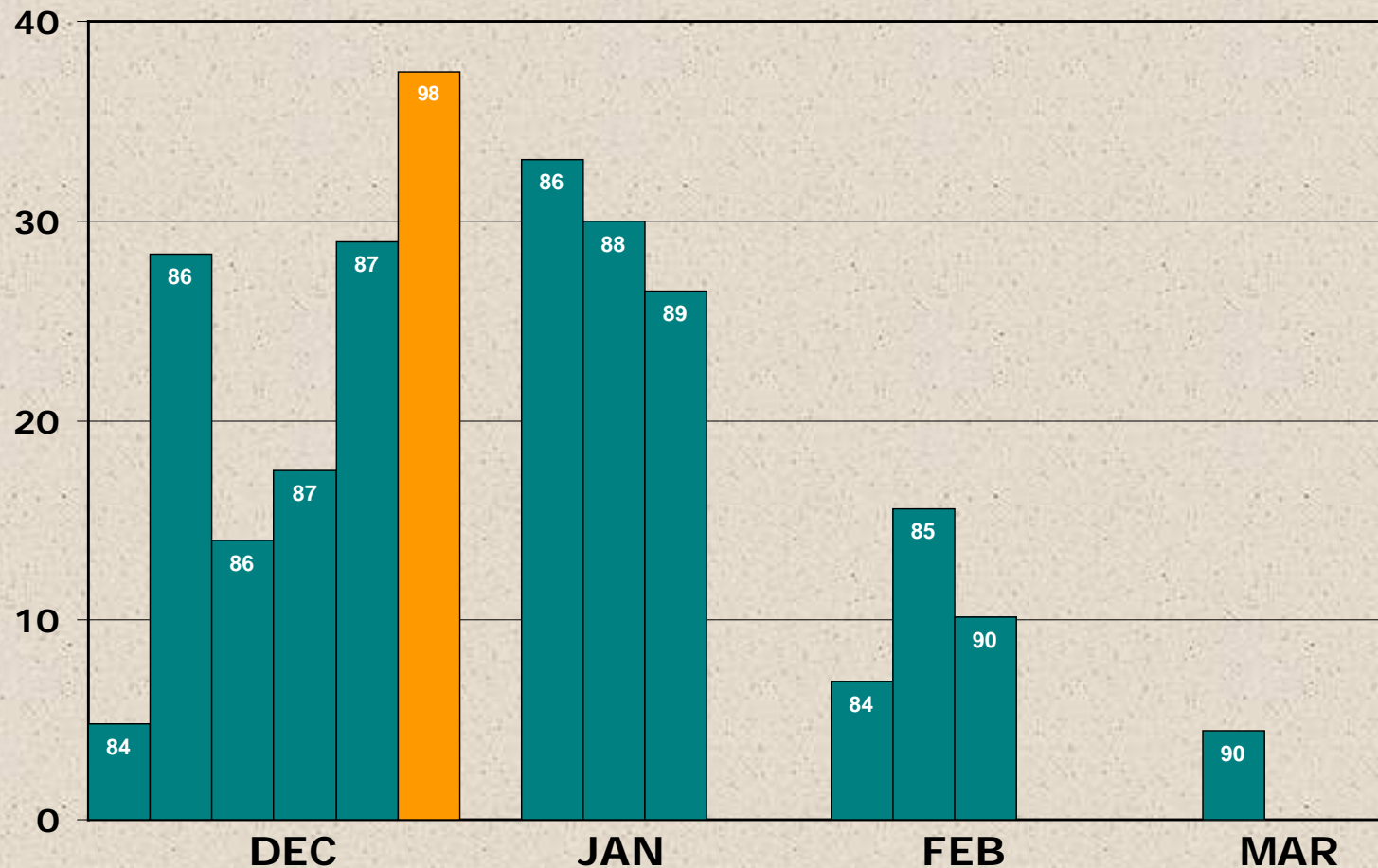
Comparison with earlier Counts by Month

BIRDS

(x 1000)

■ 1984-1990

■ 1998-2000

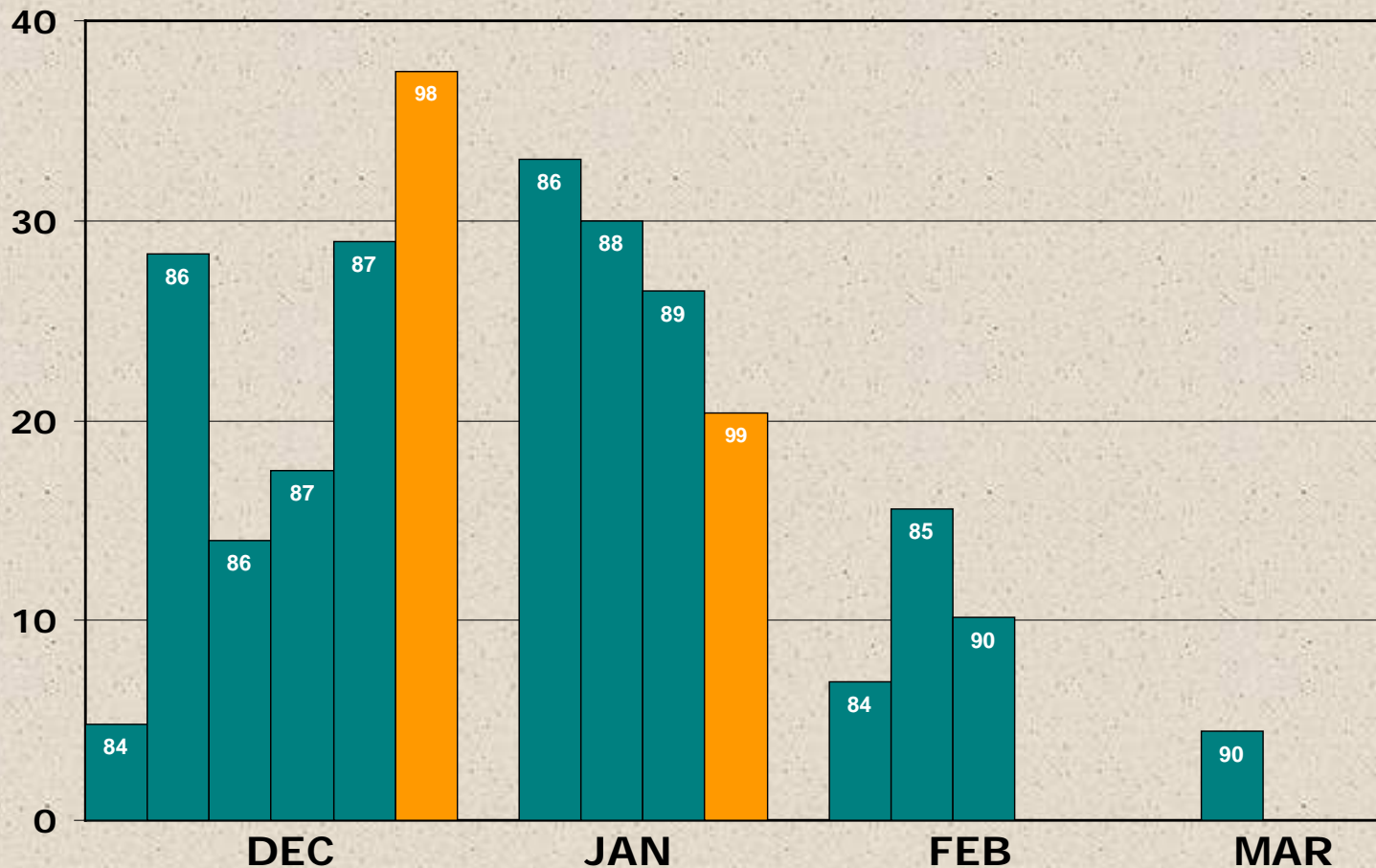


Comparison with earlier Counts by Month

BIRDS
(x 1000)

■ 1984-1990

■ 1998-2000



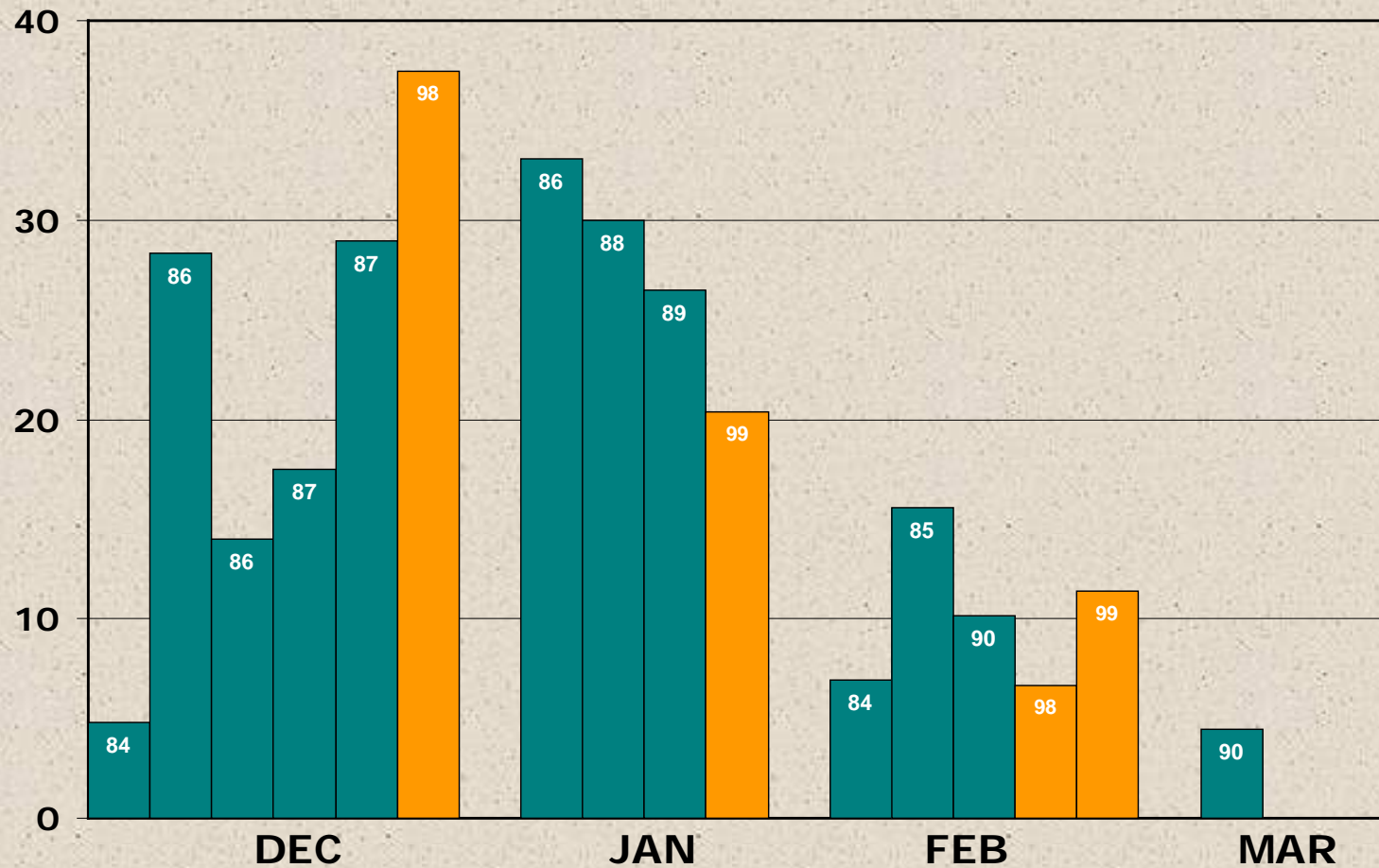
Comparison with earlier Counts by Month

BIRDS

(x 1000)

■ 1984-1990

■ 1998-2000

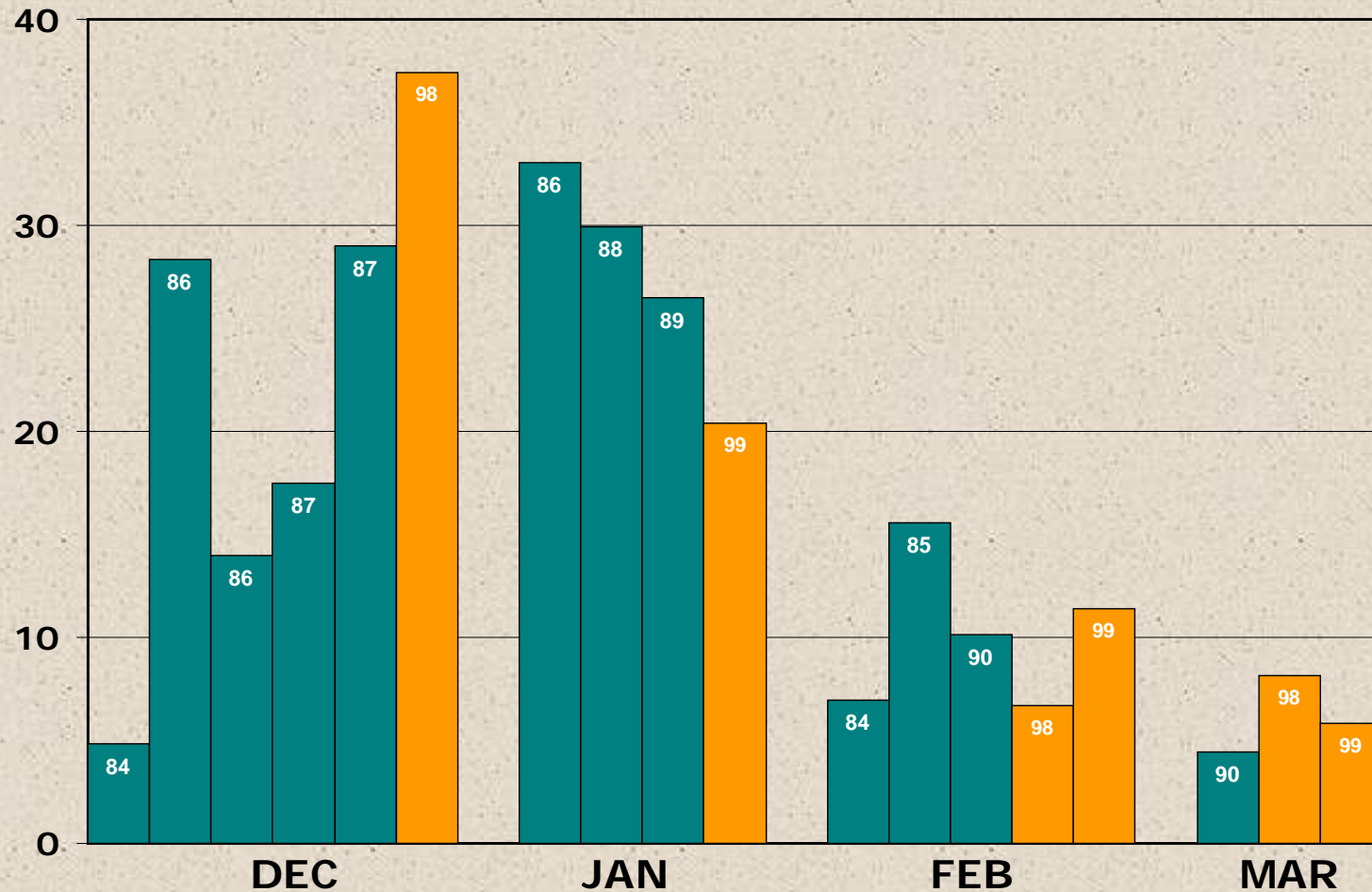


Comparison with earlier Counts by Month

BIRDS
(x 1000)

■ 1984-1990

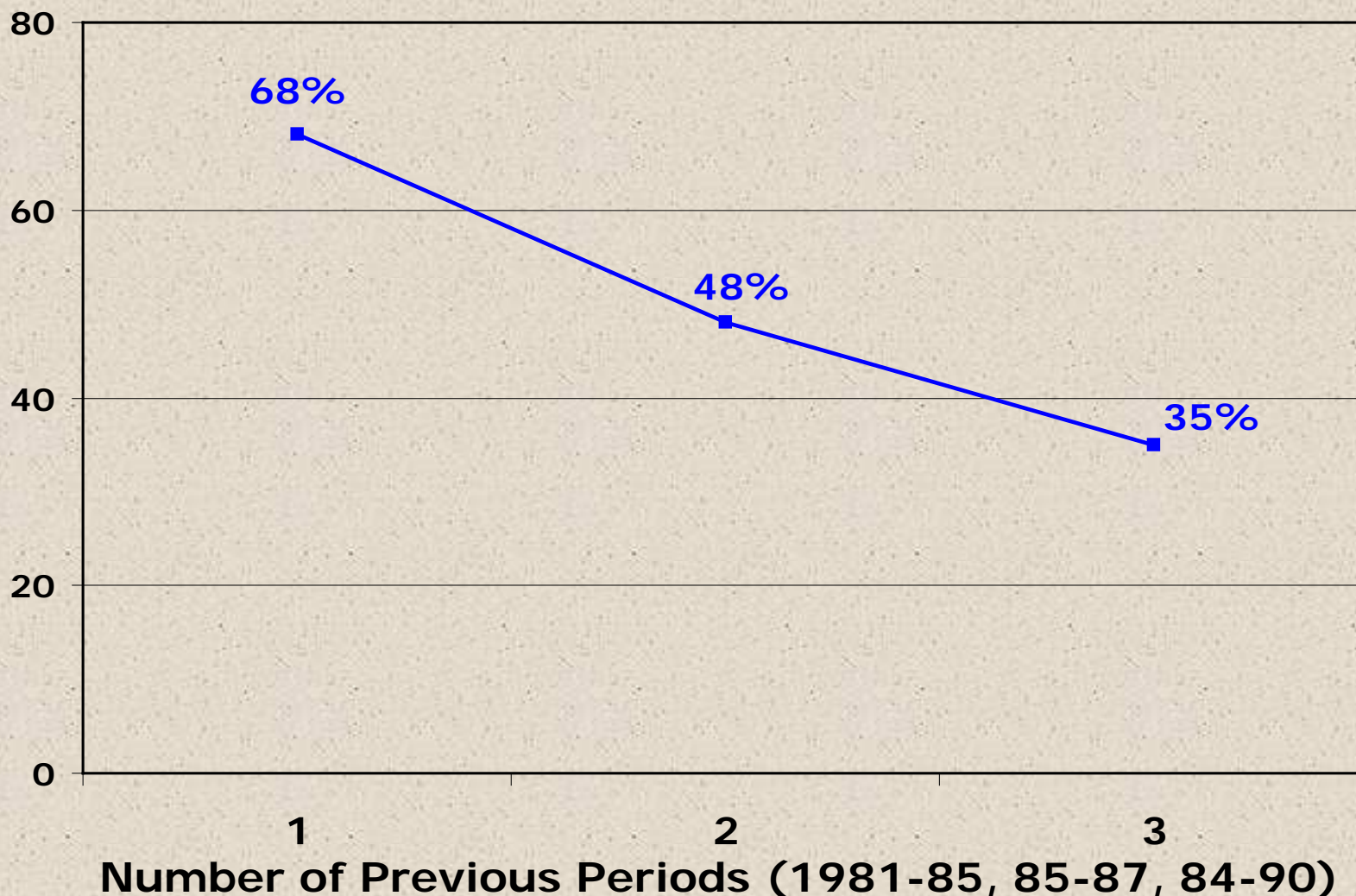
■ 1998-2000



Comparison of Species Maxima

% of
Species

■ % of 1998-2000 Species with Maximum Counts
higher than in 1, 2 or 3 previous reporting periods



Notable Increases in Abundance

Silver Gull	1500 → 3100	More residents/tourists?
Red-necked Stint	2000 → 2500	National population increase in 1990s
Banded Stilt	200 → 1100	Breeds episodically in Goldfields
Aust. White Ibis	80 → 280	SW population increase since 1970s



© Mark Young



© Mark Young



© Darryl Jones



Richard Major © Australian Museum

Concerning Decreases

Curlew Sandpiper	1000s → 100s	National (total population?) decline
Great Egret	200+ → 100+	Local or Regional decline
Great Cormorant	10s → 1	Regional decline
Blue-billed Duck	<10 → 0	Regional decline



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© Steven Kuitert



Species Needing Further Survey on V-W

Sharp-tailed Sandpiper 1000s → 100s

Wood Sandpiper 10s → <10

Long-toed Stint 10s → 0



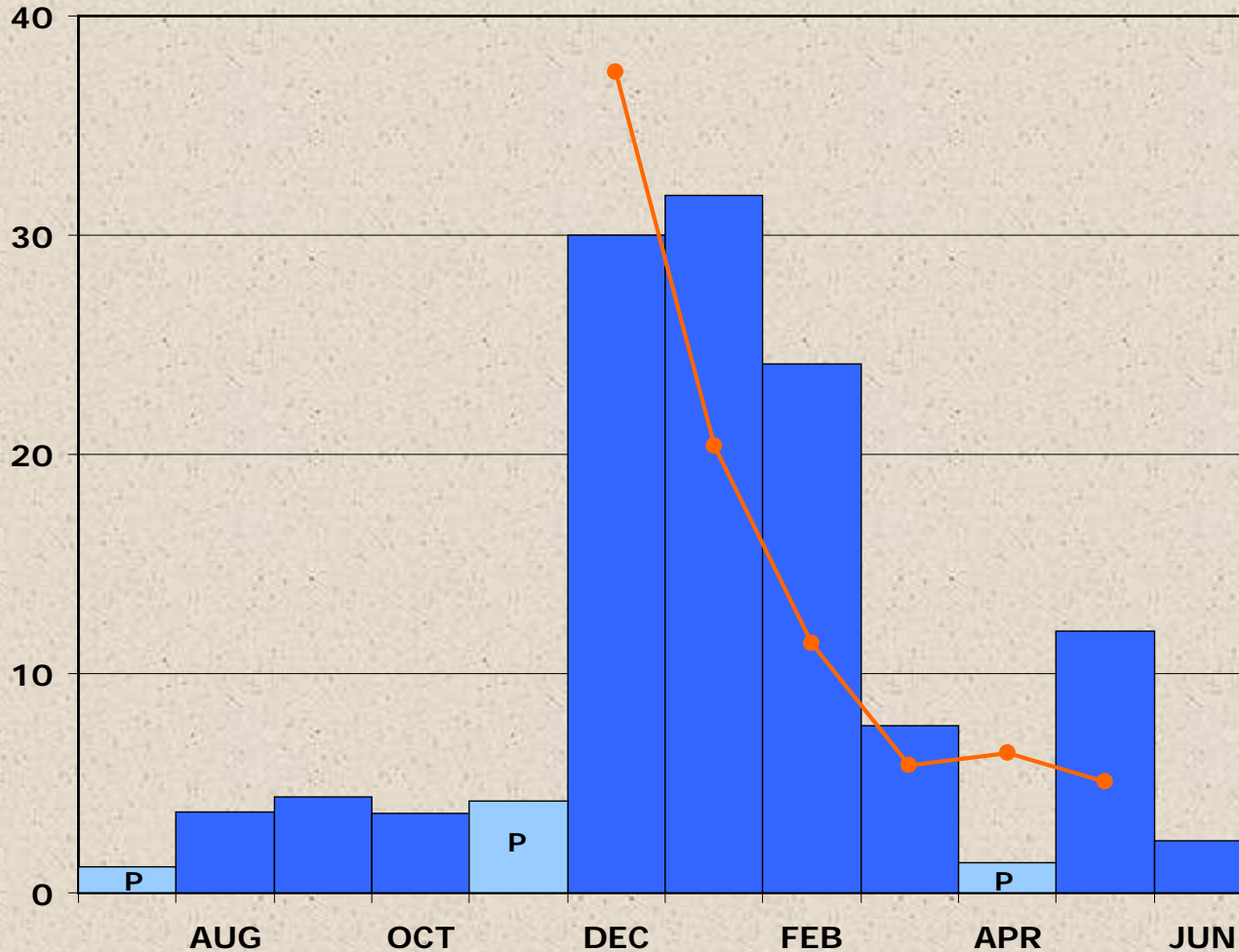
Seasonal changes in bird numbers

Where do they come from and go to?

BIRDS
(x 1000)

■ All Data to 1990

● 1998-99 Data



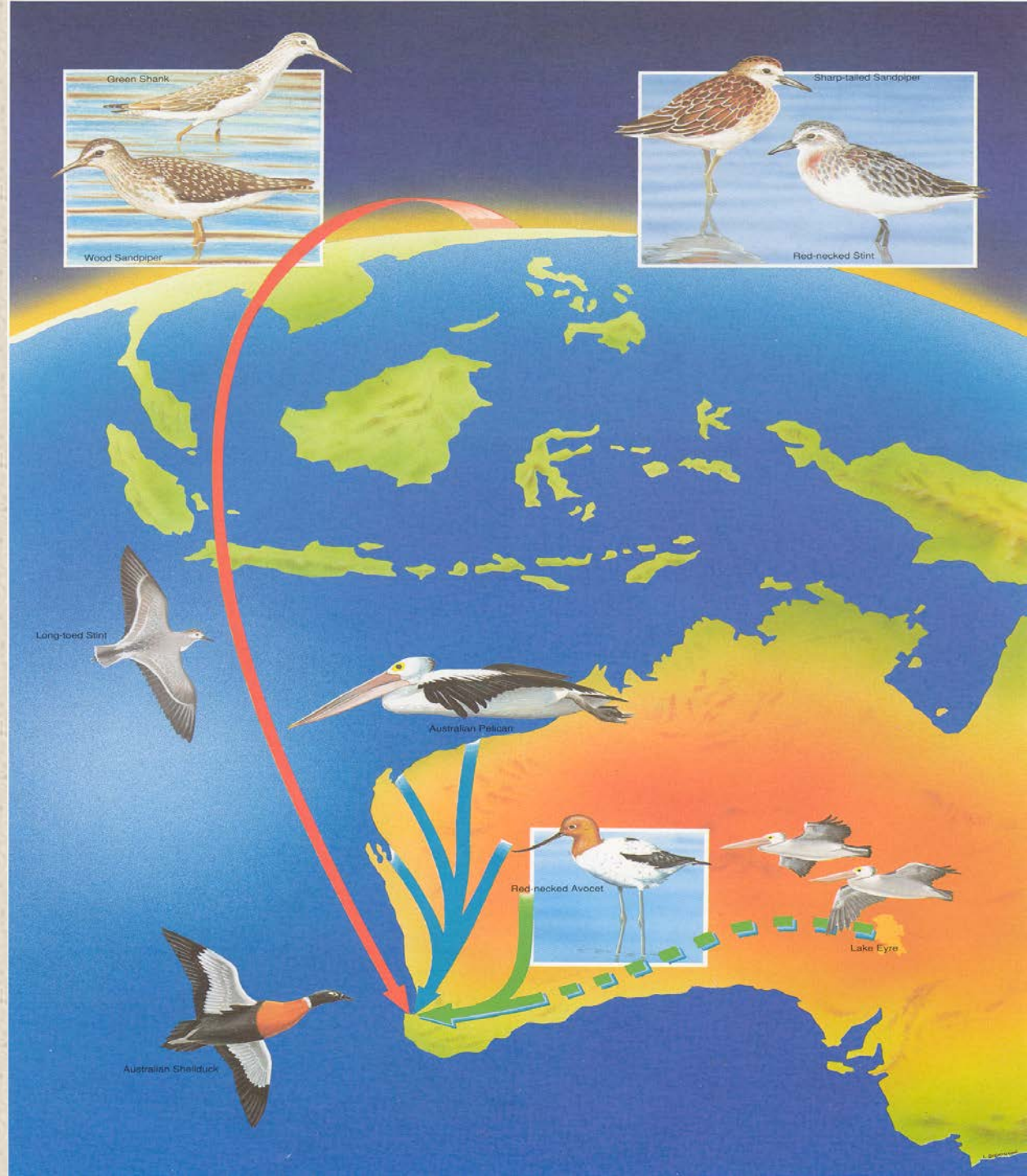
Migratory shorebirds from north-east Asia.

Pelicans from northern WA.

Avocet and Banded Stilt from the Goldfields.

Shelduck from the SW agricultural area.

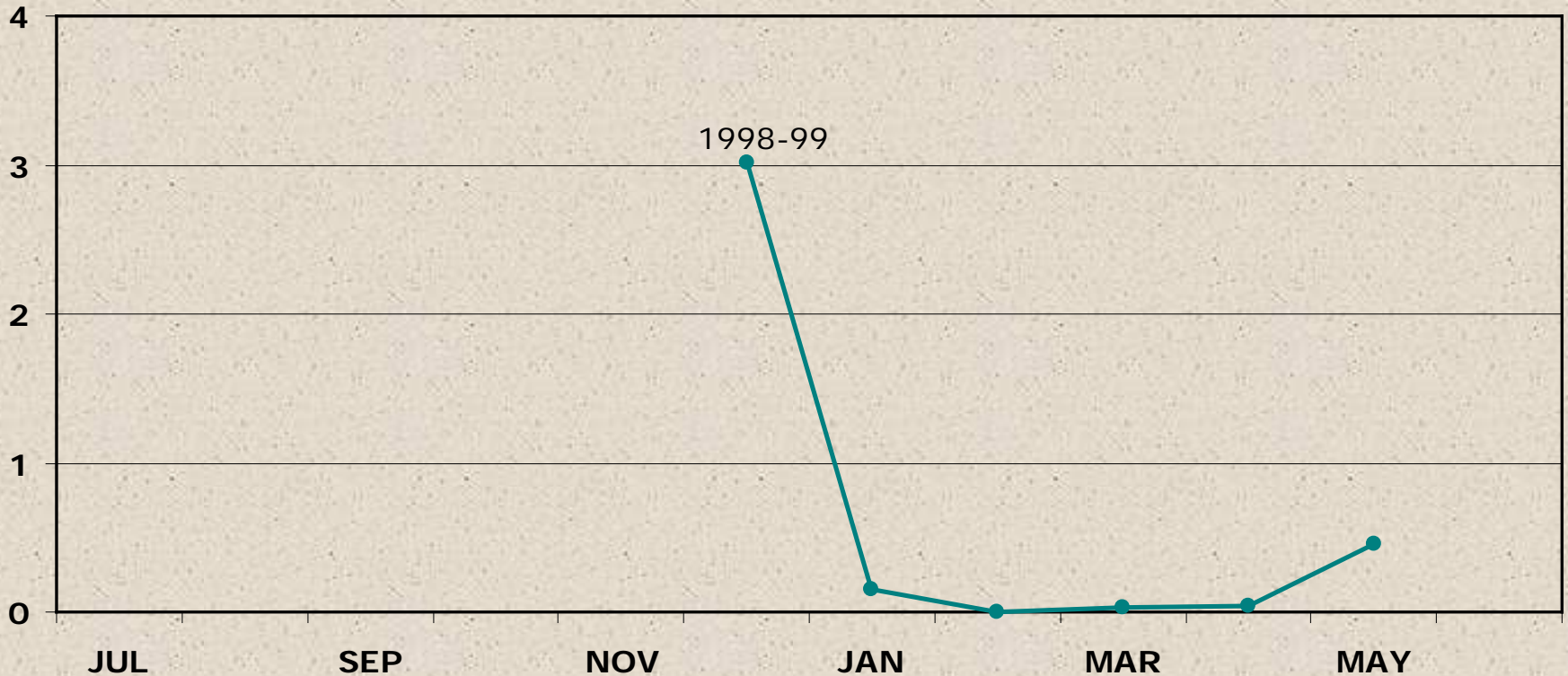
Grey Teal from anywhere in Australia.



Where Do the Swans Go?

SWANS
(x 1000)

— Vasse-Wonnerup

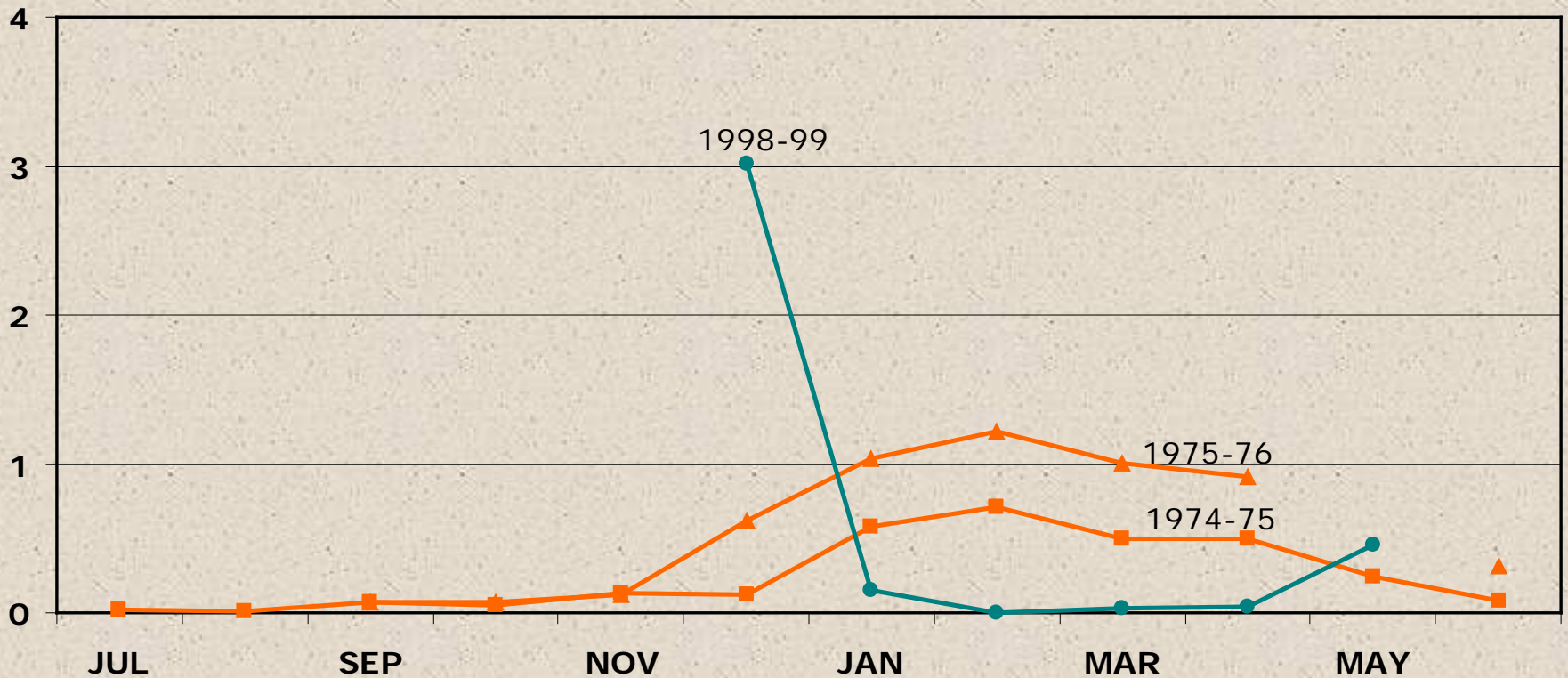


Where Do the Swans Go?

SWANS
(x 1000)

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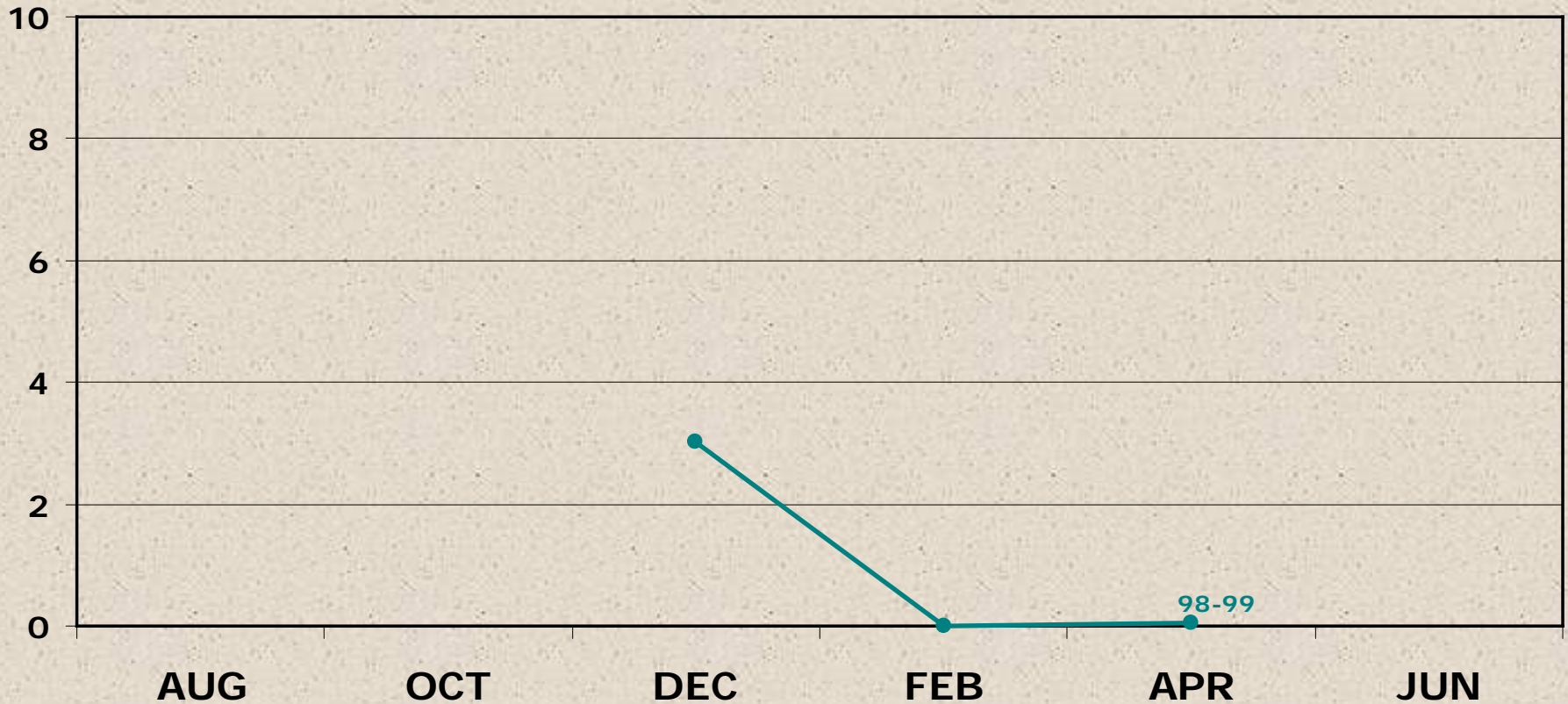
— Hardy Inlet



Do V-W Swans go to Peel-Harvey?

SWANS
(x 1000)

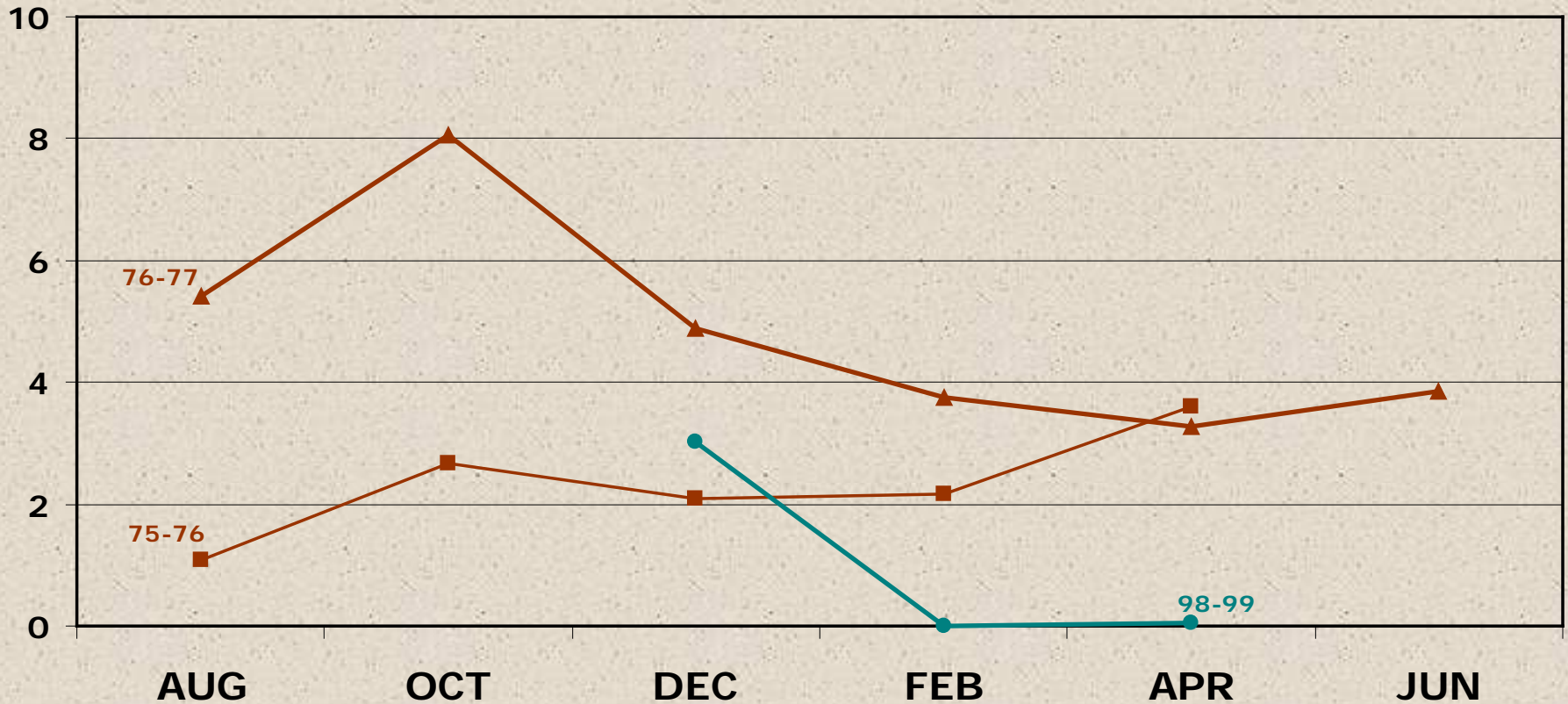
— VW 1998-99



Do V-W Swans go to Peel-Harvey?

SWANS
(x 1000)

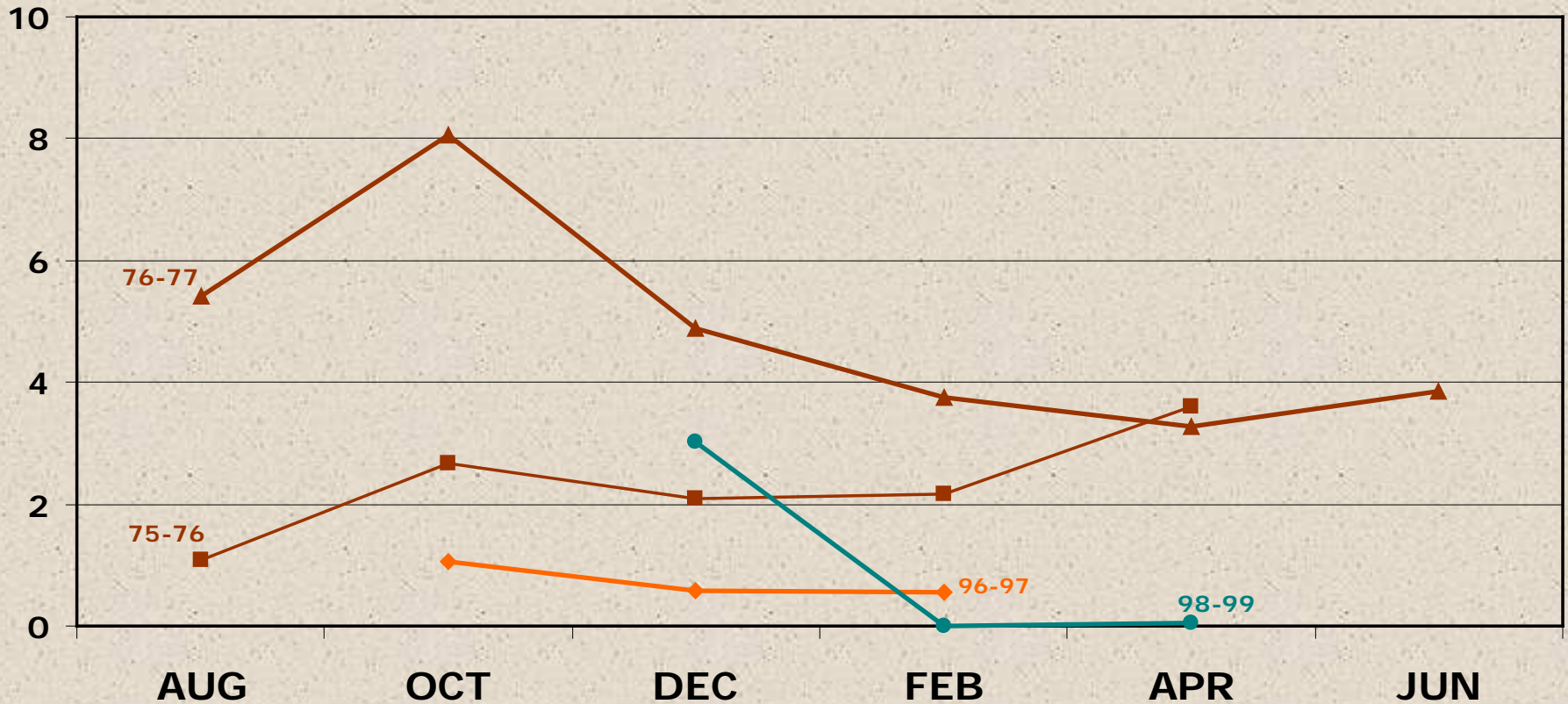
— VW 1998-99 — PH 1975-77



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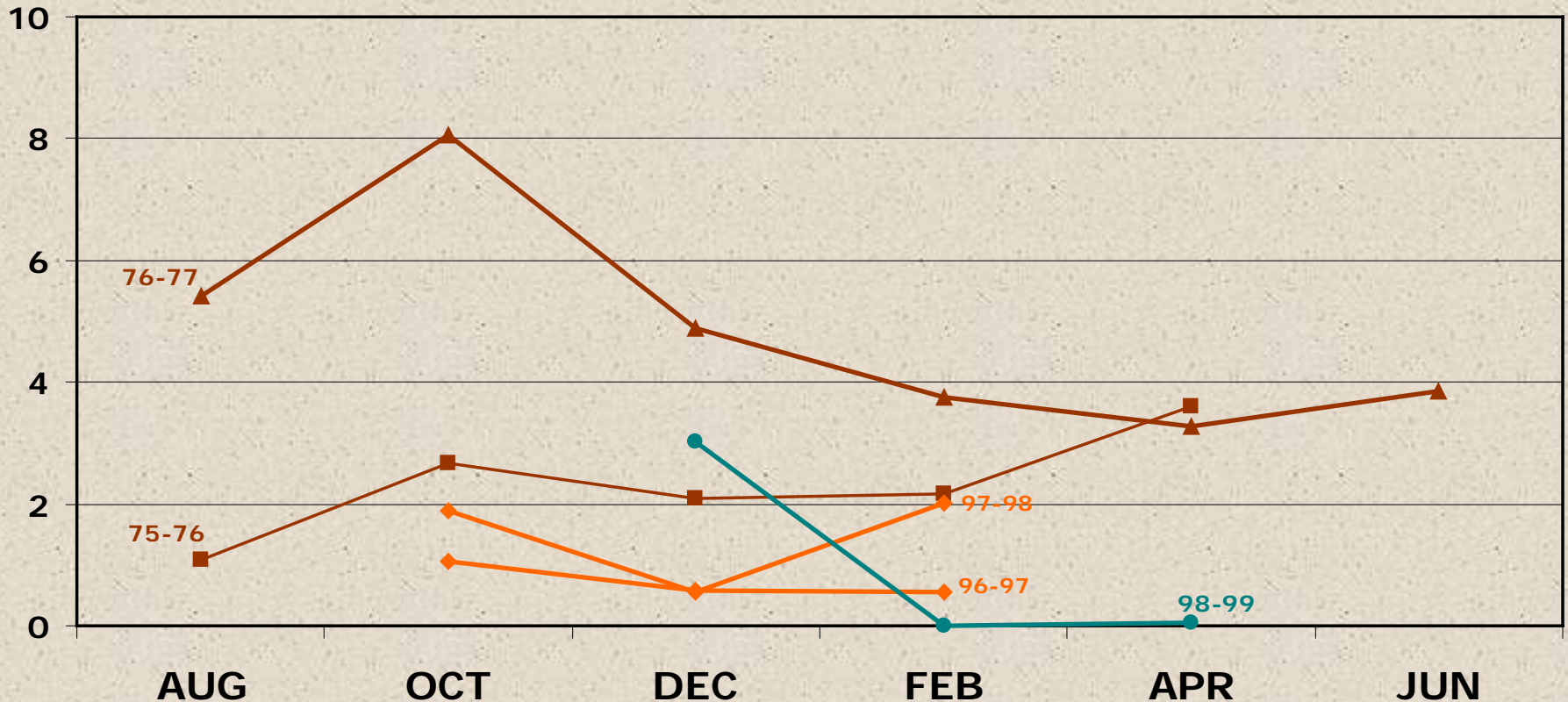
— VW 1998-99 — PH 1975-77 — PH 1996-2003



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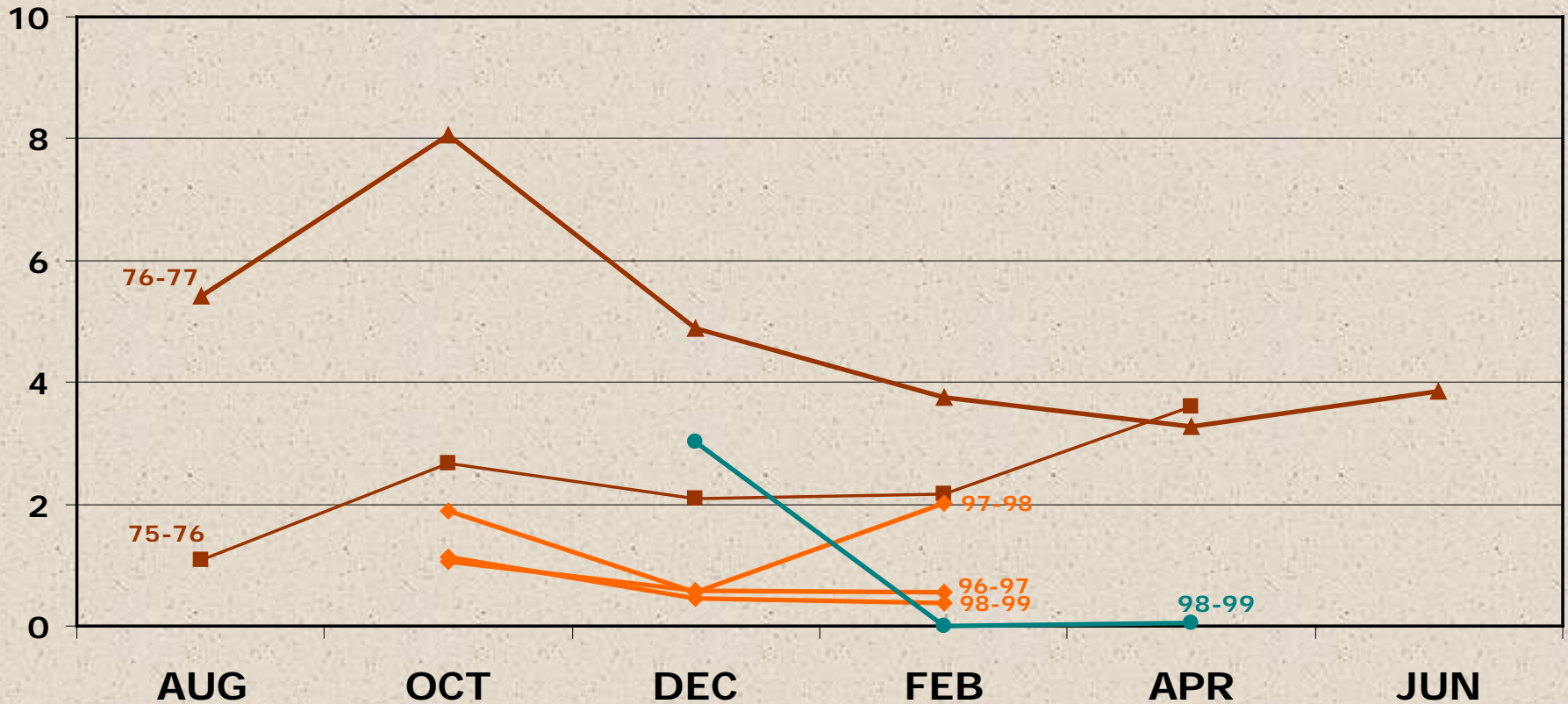
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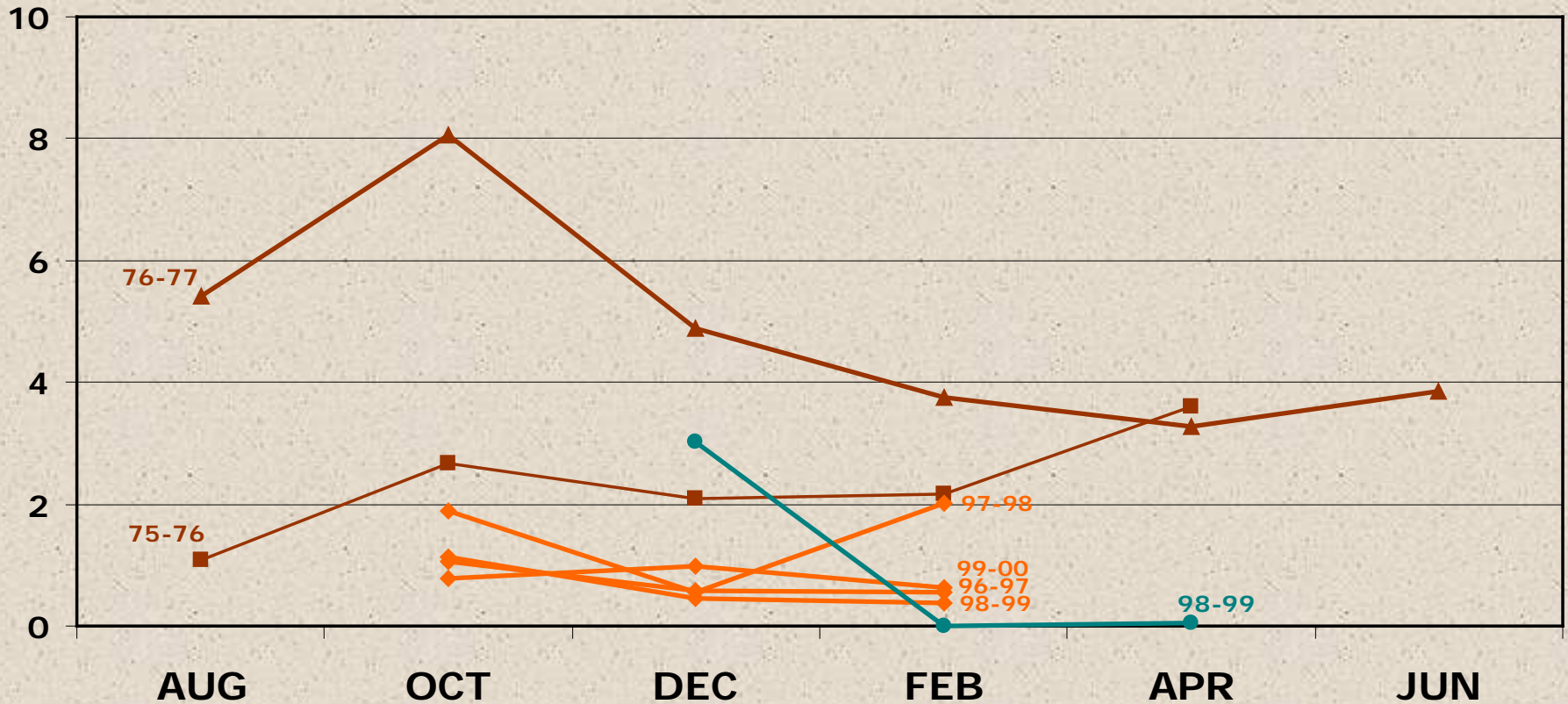
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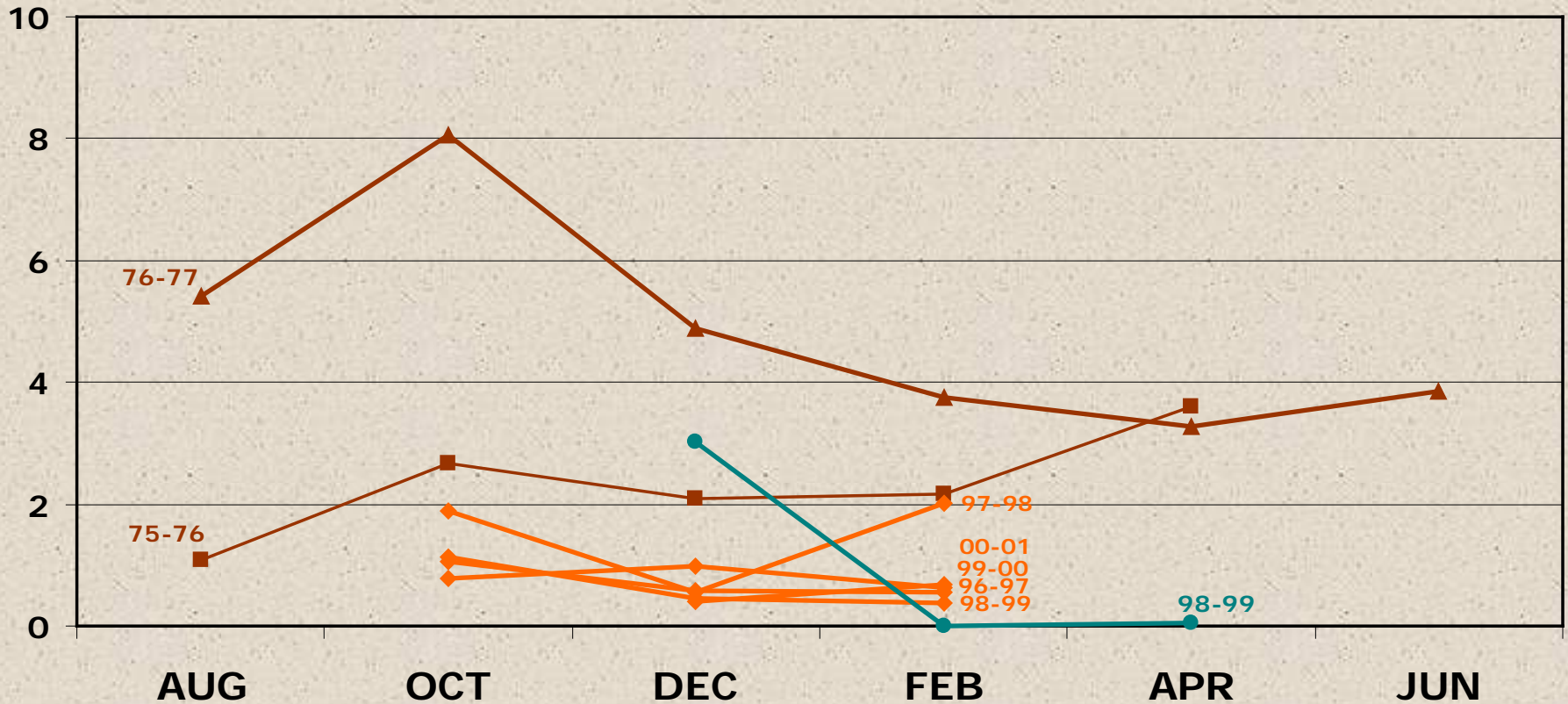
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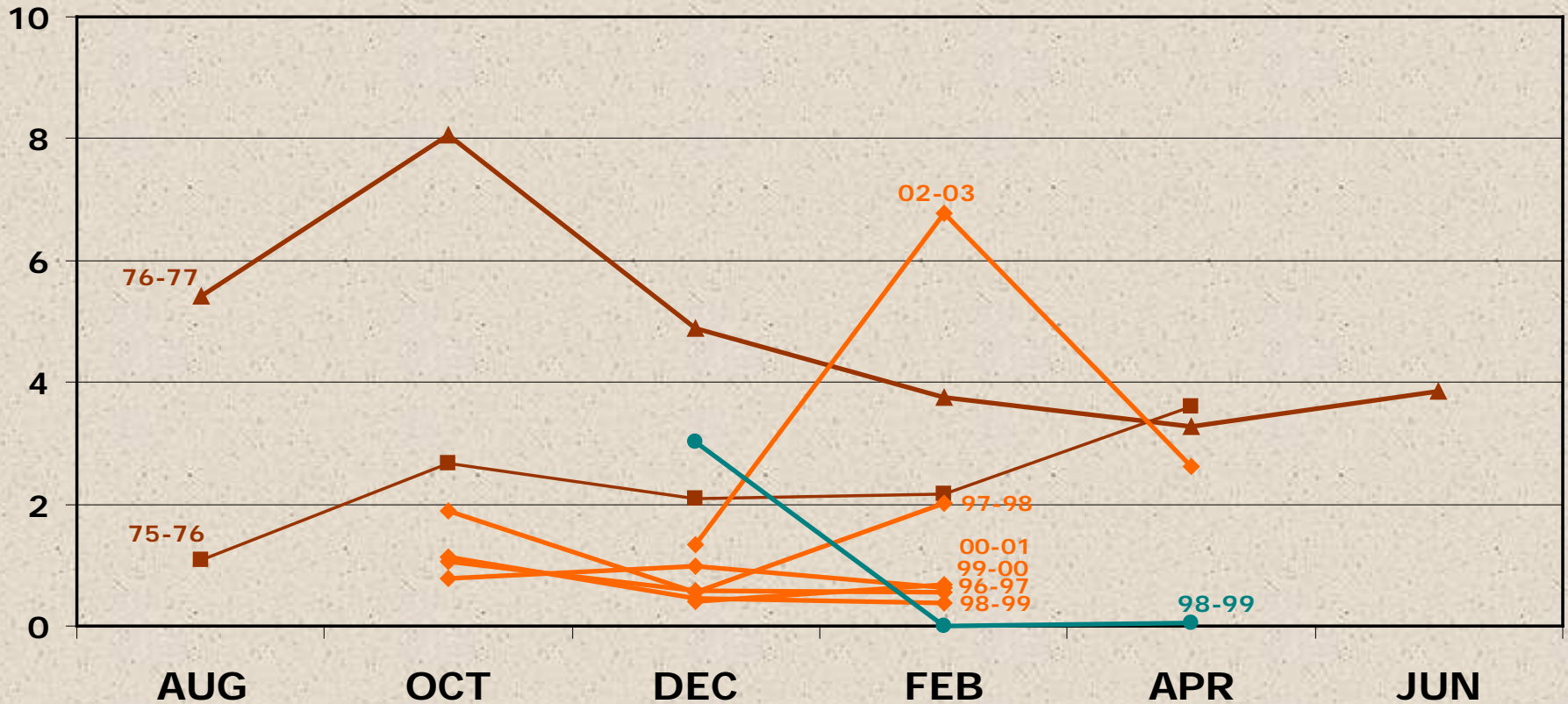
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Do V-W Swans go to Peel-Harvey?

SWANS
(x 1000)

— VW 1998-99 — PH 1975-77 — PH 1996-2003



A wide-angle photograph of a large body of water, possibly a lake or a wide river, under a cloudy sky. The water is filled with numerous birds, including several black swans in the foreground and middle ground, and many smaller birds, likely gulls, scattered throughout. The background shows a line of trees and a distant shoreline. The text 'BIRDS' is overlaid in large white letters at the top.

BIRDS

FOOD

PRODUCTIVITY

NUTRIENTS

Total Bird Biomass on VW in 1998-99

**43,000
Birds**

=

**42
Tonnes
of Bird**

Maximum Biomass of Individual Species on V-W in 1998-99

Max Biomass
(tonnes)



Maximum Biomass of Individual Species on V-W in 1998-99

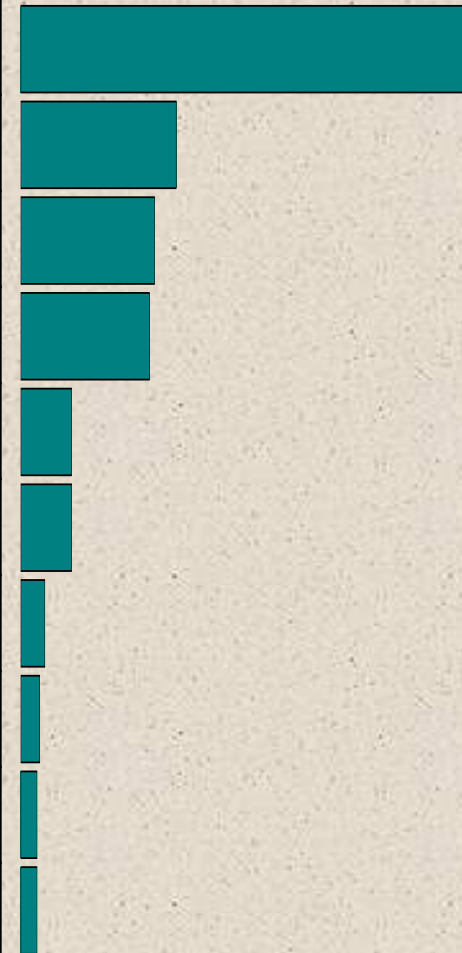
Max Biomass (tonnes)



10 species = 93% of Total Bird Biomass

Top Ten Bird Species by Biomass

	Max Count	Bird Weight (kg)	Species Biomass (t)
Black Swan	3013	5.5	16.6
Aust. Shelduck	4000	1.4	5.8
Pacific Black Duck	4750	1.1	5.0
Grey Teal	9500	0.5	4.8
Eurasian Coot	3570	0.5	1.9
Australian Pelican	354	5.4	1.9
Silver Gull	3058	0.3	0.9
Straw-necked Ibis	562	1.3	0.7
Black-winged Stilt	3494	0.2	0.6
R-N Avocet	2000	0.3	0.6



Preferred foods¹ of 10 species with highest biomass (tonnes)

Black Swan	16.6	Pasture plants, submerged macrophytes
Australian Shelduck	5.8	Aquatic invertebrates and plants
Pacific Black Duck	5.0	Invertebrates and plants
Grey Teal	4.8	Aquatic plants, seeds and invertebrates
Eurasian Coot	1.9	Aquatic plants
Australian Pelican	1.9	Fish, aquatic invertebrates
Silver Gull	0.9	Omnivorous, scavenger
Straw-necked Ibis	0.7	Fish, other vertebrates, invertebrates
Black-winged Stilt	0.6	Molluscs, crustaceans, occasionally...
Red-necked Avocet	0.6	Molluscs, crustaceans, occasionally...

¹Preferred foods from Appendix F of VW ECD (2007), sourced largely from Phillips & Muller (2007) and Pizzey (2007).

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Not a coincidence!



TWO KEY QUESTIONS

- How much **NUTRIENT** can the food web that supports the 35,000 birds of 60+ species each year **TOLERATE**?
- How much **NUTRIENT** does this food web **NEED**?