

Anguillid eel conservation – A global perspective



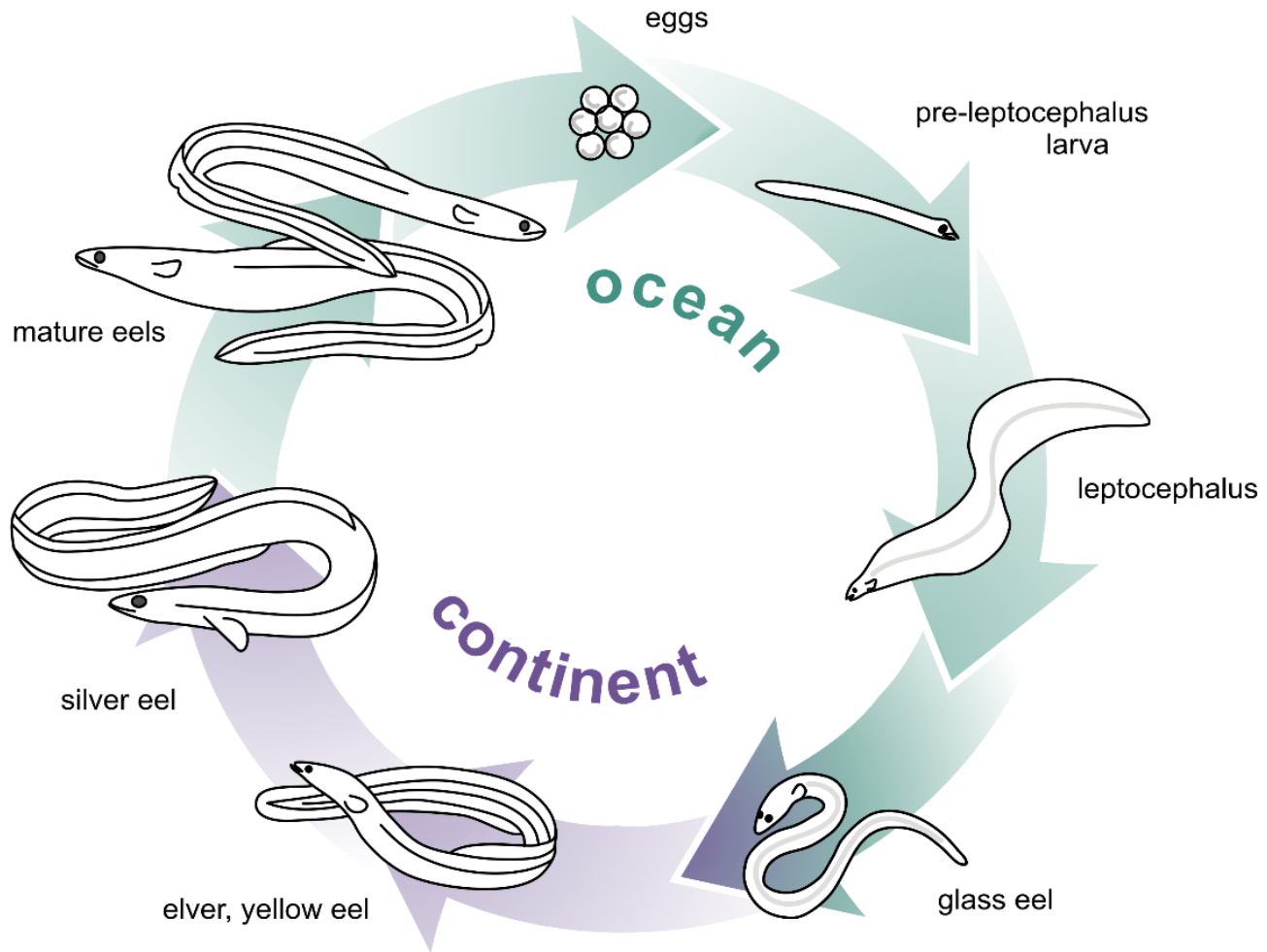
Matthew Gollock

Anguillid eels

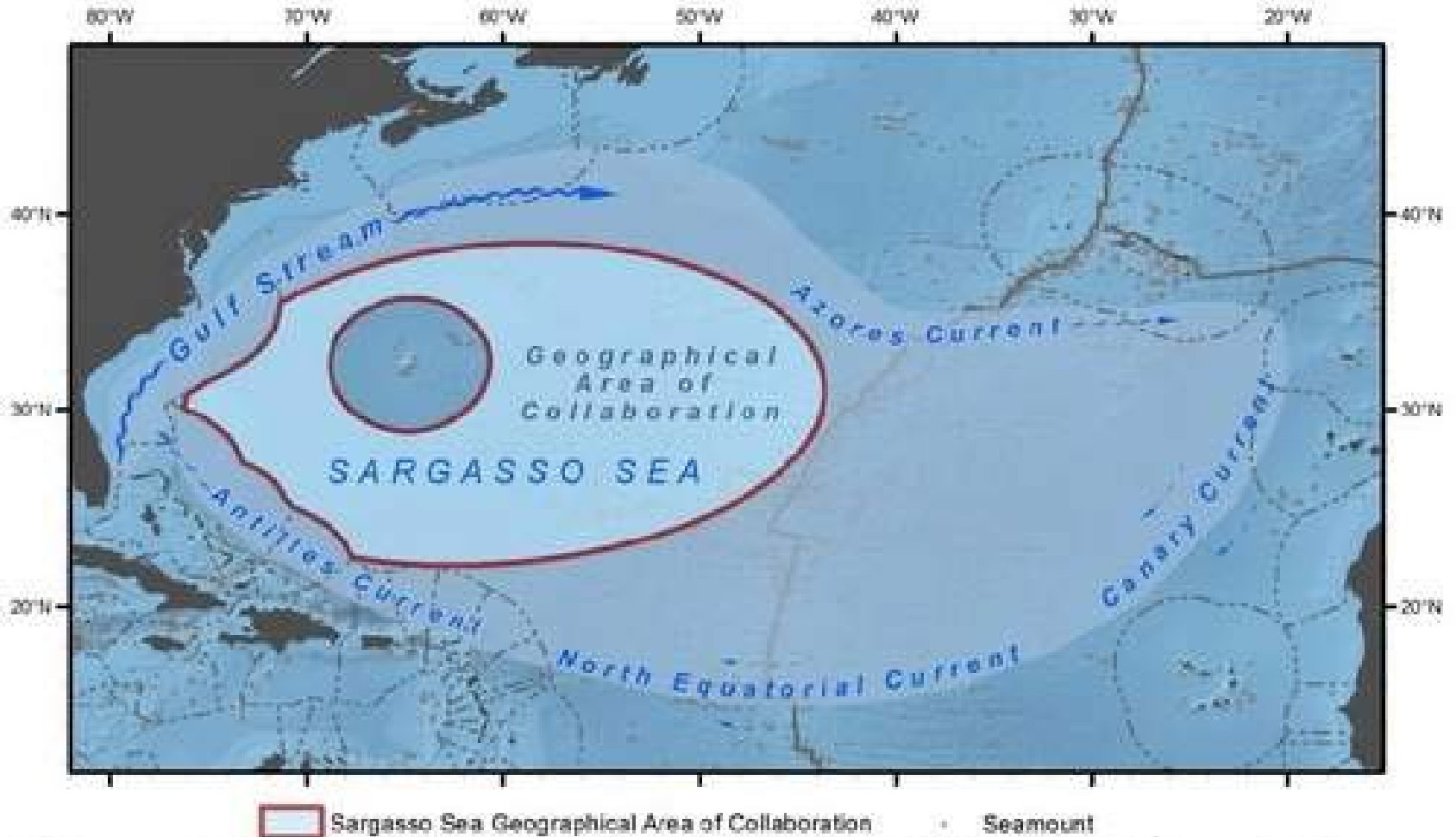
- 16 species – various opinions on sub-species / populations
- Temperate / tropical
- Mottled / bi-coloured
- Common, complex life cycle -
 - Multiple life stages
 - Catadromous
 - Semelparous
 - Panmictic



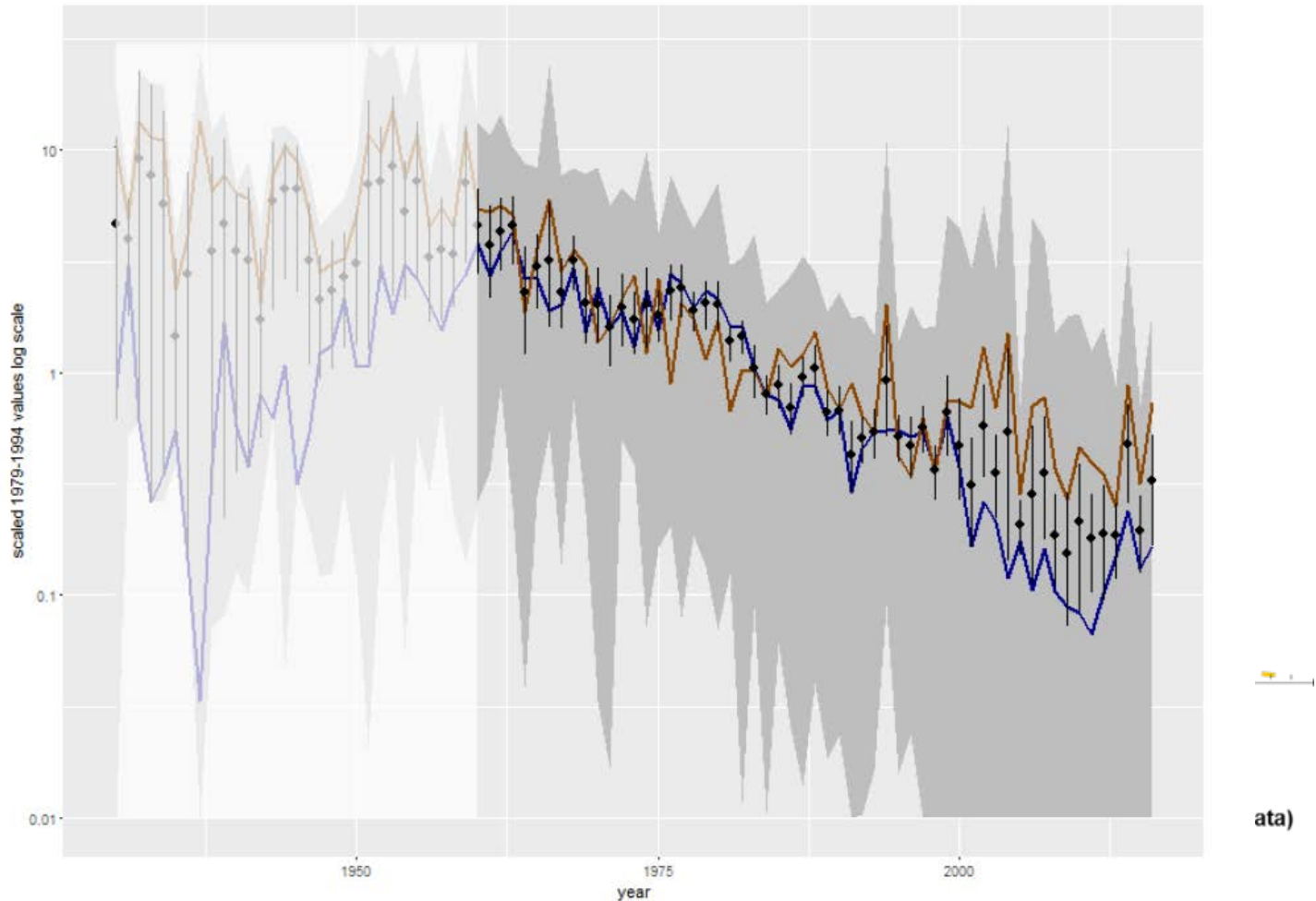
Life cycle



Where?!



European eel



Potential impacts

- Climate change / Changing oceanic currents
- Disease / Parasitism

A. crassus from a European eel swimbladder



Potential impacts

- Climate change / Changing oceanic currents
- Disease / Parasitism
- Pollution
- Barriers to migration / Habitat loss

Migration barriers

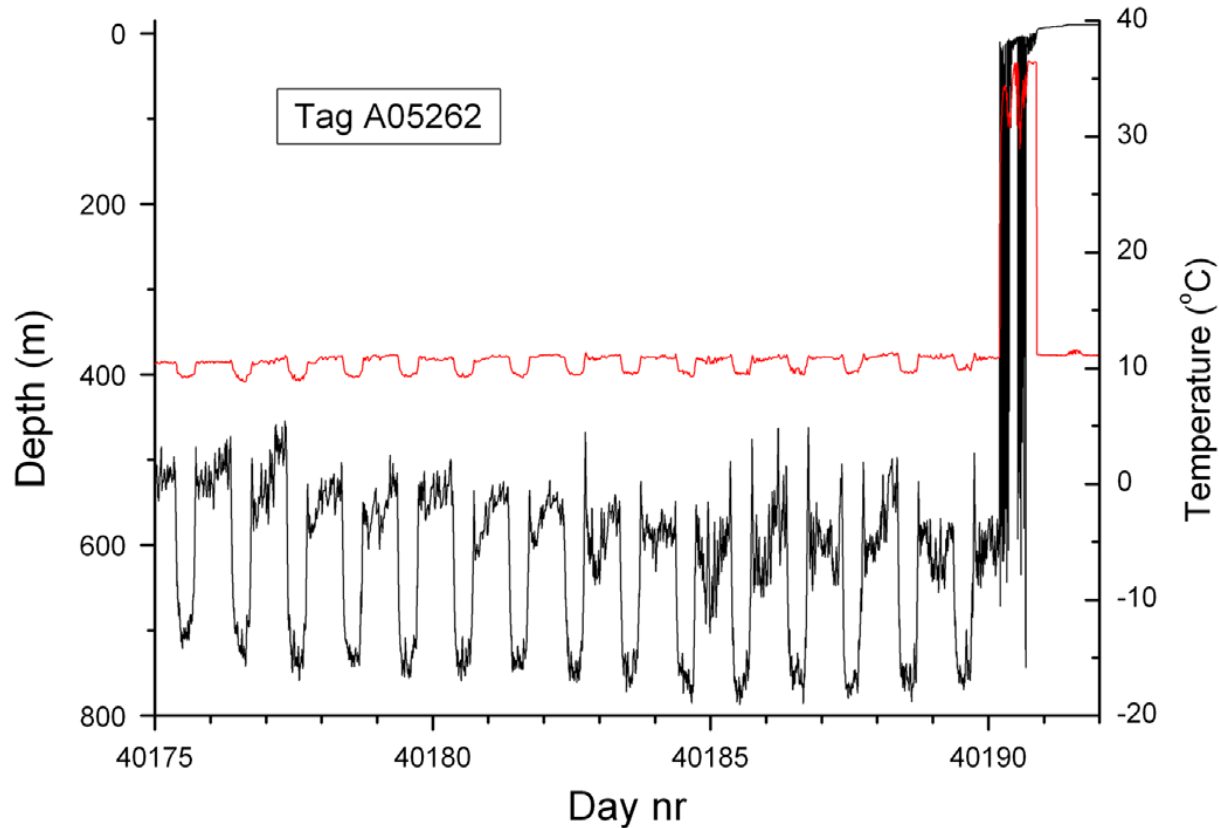
- Navigation and transport
- Power generation
- Tidal flow
- Reduction in habitat availability and therefore potentially increased competition for resources.
- Fish pass design is not eel friendly – only taken into consideration relatively recently.



Potential impacts

- Climate change / Changing oceanic currents
- Disease / Parasitism
- Pollution
- Barriers to migration / Habitat loss
- Predation

Predation



- American eel predated by Porbeagle sharks.
- Up to 25% mortality in published studies.

Potential impacts

- Climate change / Changing oceanic currents
 - Disease / Parasitism
 - Pollution
 - Barriers to migration / Habitat loss
 - Predation
 - Unsustainable exploitation and trade - Farming
-
- These will vary depending on species and location
 - Many still not fully understood e.g. Climate change
 - Majority of management limited to continental waters

What are we doing?

European eel case study



EU Eel Regulation

- Eel Management Plans
 - Fisheries management
 - Fish passage
 - Re-stocking
- Devolve management to national level - Good in theory...
 - Little co-ordination / harmonisation
 - Difficult to test their effectiveness
 - Management needs to be co-ordinated across the range
 - **Regulation review at present...**



CITES

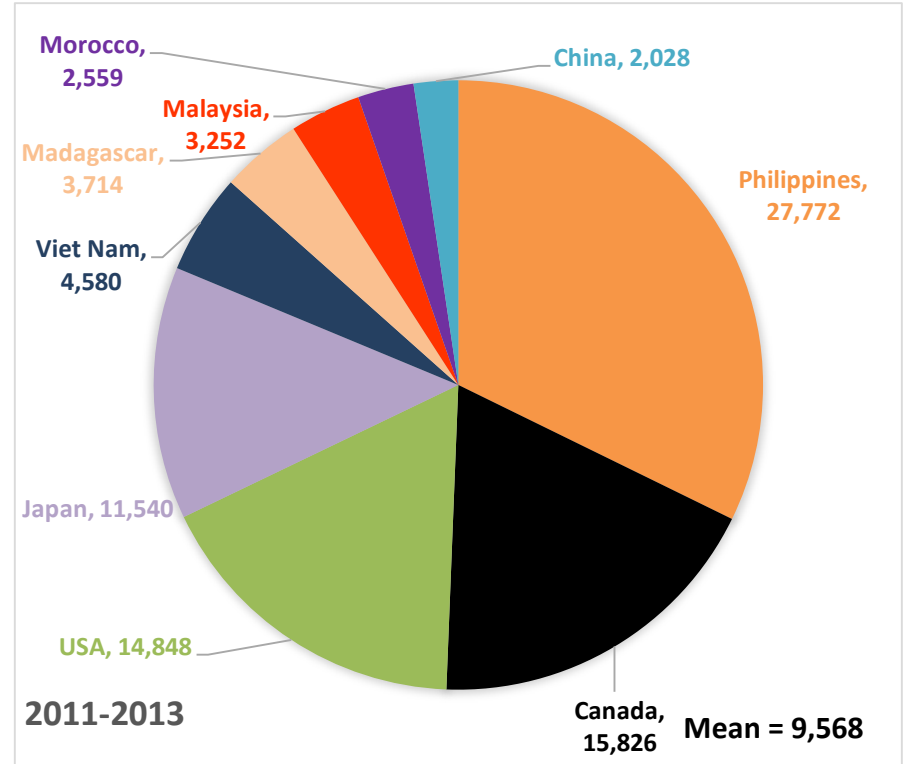
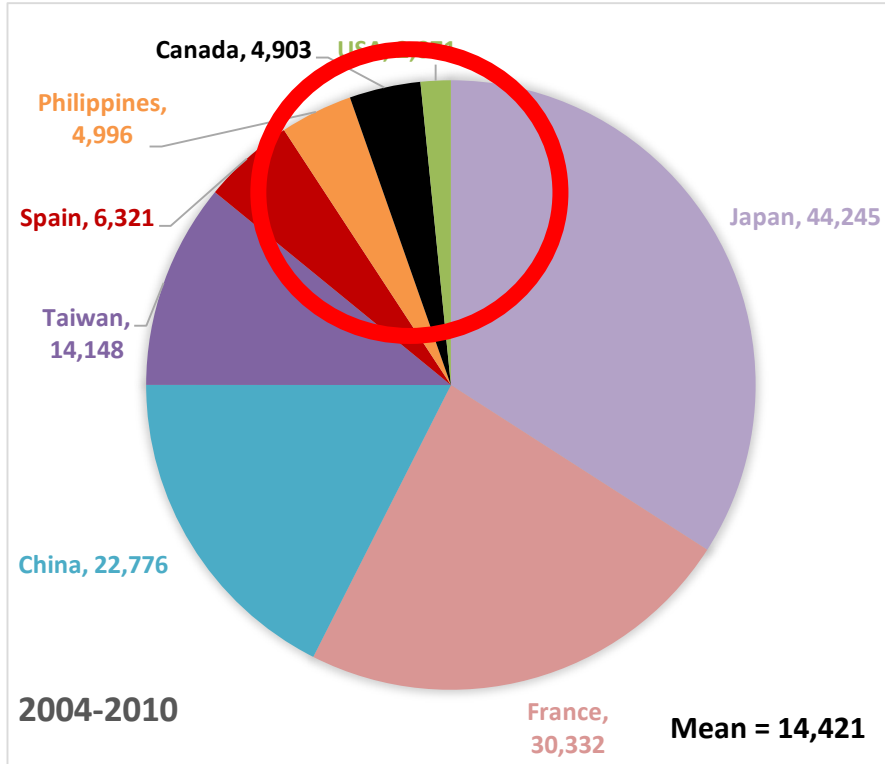
- *“International agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.”*
- Significant trade in eels – 1kg ~\$5.5k (Maine ‘18)
- European eel listed **Appendix II** in 2007.
 - Control of trade to prevent unsustainable use
 - ‘Non-Detriment Finding’
 - Analysis to evidence trade is sustainable

EU Export ban

- EU export ban in 2010
 - N. Africa – *A. anguilla*
 - Americas – *A. rostrata*
 - S.E. Asia – *A. bicolor*



Change in trade



- Pre- / Post-zero export quota in 2010.
- Legal export in t/yr (Not species/life-stage specific)

EU Export ban

- EU export closure
 - N. Africa – *A. anguilla*
 - Americas – *A. rostrata*
 - S.E. Asia – *A. bicolor*
- Capacity issues
 - Countries not always equipped for sudden shift in demand.
- Illegal trade from EU
- Genus-wide appraisal
 - CoP17 Decision 17.186 (EU)



CITES Decision 17.186

- Reports
 - Implementation of European eel A2 listing
 - Status of non-listed species
- Workshops
 - American eel – DR
 - Japanese eel - Tokyo
 - Global - London
- SC69+70 / AC29+30
- CoP 18 – Draft decisions



Convention on Migratory Species

- *A. anguilla* – SSC/Monaco/IUCN
- Appendix II (2014).
- Chris' talk...



Azores tagging

- Multi-agency project
- Three fish tagged
- No news is good news...



Conclusions

- Amazing animals that face a range of threats.
- Progress has been made:
 - European eel case studies / existing tools (CMS/CITES/EU)
 - How to replicate / modify for other anguillids?
 - Flagship species for aquatic conservation – IUCN.
- Species and their management are globally linked:
 - Certain areas of focus may require multi-species approach.
 - National and international collaboration essential.
 - Have to work at local to global scale.

Thank you.

