

EXAMPLE PAPER OUTLINE

Cost and Benefits of Salmon Aquaculture

1. Introduction

- Global description of history and rise of aquaculture
 - fastest growing animal protein source since 1990 (13M) – 2005 (48M)¹
 - decline in fisheries stocks

Position Statement: The economic and environmental detriments of contemporary salmon aquaculture techniques outweigh the benefits.

2. Background

- Rise in global demand
- Environmental Benefits
 - Less fishing pressure on natural stocks (Ref)
 - Less bycatch (Ref)
- Economic Benefits
 - Lower overhead and higher profit margin for producers (Ref)
 - Safer work environment and lower liability (Ref)
- Environmental Costs
 - Fish meal production (carnivores NOT herbivores) (Ref)
 - Escaped fish, low genetic variability, pathogens
 - Pathogens locally (Ref)
 - Pathogens in rivers (Ref)
 - Pathogens in pens (Ref)...
 - Life cycle of Atlantic vs. Pacific salmon (Ref)
- Economic Costs
 - Escaped fish/pathogens destroying wild fisheries (Ref)
 - Devalued wild caught salmon – local and global effects (Ref)

3. Position

- Environmental
 - Tonnage consumption of fishmeal negates lower fish pressures on natural stock
 - Statistic for waste production (Need Ref.) / environmental fouling / impacts on local coastal fisheries (pathogens wild salmon, shellfish, etc...)

- coastal aquaculture spatially disruptive and unsightly
- Economic
 - Devaluation of wild caught fish bankrupts heritage fisheries
 - Economic impact on wild caught salmon fisheries because of escaped fish, and river systems destroyed by pathogens
 - Increased fish meal costs, and economic sustainability of feeding (Ref)
- Case studies to include with data above: (Need References)
 - Destruction of Norway and Scotland salmon fisheries
 - Aquaculture on British Columbia coast

4. Conclusion

- Restate thesis statement with reference to above material
- Better ways to do it (herbivorous aquaculture like carp in China²)
- contemporary aquaculture should shift focus away from salmon

References

- [1] FAO, *FishStat Plus*, electronic database, as www.fao.org, updated March 2007
- [2] Brown, Lester R., *Plan B 3.0, Mobilizing to Save Civilization* 2008, New York: Norton.